



UNIT 09 IT PROJECT MANAGEMENT

Assignment 1

Learning Aim A

Investigate the principles and methodologies of IT project management as used
in the industry.

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Introduction

IT project management is involved in almost every part of IT, as when working through different projects, whether it be developing software, making a game, or even producing an operating system, it is crucial to plan and manage the project constantly in order to ensure constant communication between departments, with everyone knowing what they have to specifically work on. Furthermore, IT project management ensures that the processes of the project are efficient and effective.

What is a project?

A project can be defined as a sequence of tasks that have to be completed to finish a larger task, usually within a defined beginning and end period (deadline). Projects often include a budget to meet these goals, and are undertaken by individuals or groups with the tasks broken down to complete sequentially in order to achieve the next goal.

Within projects it is crucial to break down the goal into manageable and doable tasks which can be completed by the members, otherwise the chances of becoming overwhelmed with the work and designing and developing in the incorrect order, which can cause catastrophic consequences later down the line due to your code and design being dependent on each other.

A project can also be displayed through three primary points of focus:

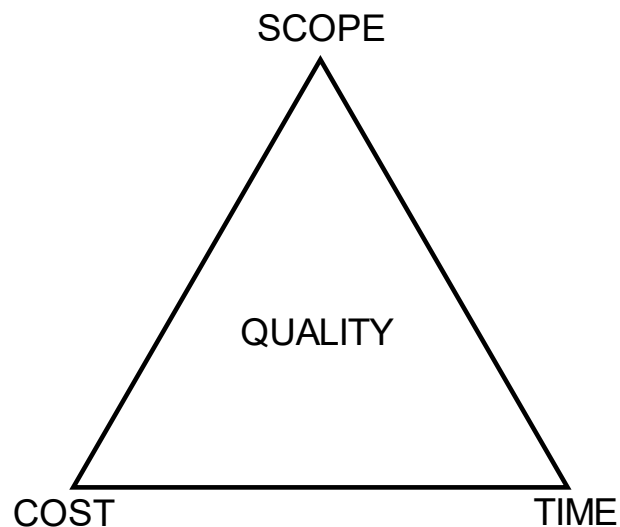
- Time
- Budget
- Scope

Time refers to the time spent on the project, including beginning dates and deadlines to be completed by.

Budget refers to how many resources have been allocated to the project, whether it be manpower or funding.

Scope of the project refers to documenting the project boundaries and what the main objectives are.

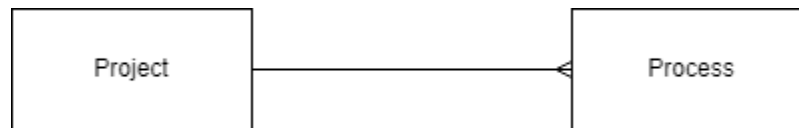
This diagram can help to understand the relationship between the points of focus.



Difference between a project and a process

It can often be confusing to understand the difference between projects and processes and their relationship with each other, including how they communicate, so it is important to clarify how these vary and what the key differences are.

While a project is usually long term, including a start and end date, processes are established procedures that help with ongoing work. These can be changed constantly and are not strict in what they contain. To help further understand the difference between a project and processes it can be helpful to view them through their relationship.



Through this we can understand that a project has many processes, however a process belongs to the instance of that project. This means that a project is a parent process (usually) and the process is born out of the project. While there are some scenarios where a project can also be a process or be born out of a project (making it a process), this is rare and only seen in much larger scale projects made up of multiple smaller ones.

What do IT projects include?

IT projects in particular include more specific definitions for what is typically involved in the overall project. In no particular order, this commonly includes:

- Software application development
- Installation of IT systems and networks
- Information collection
- Analysis
- Maintenance

Software application development

Software application development consists of physically making the software that the company or individual has been contracted to make (in the example of business). This can also be extended to include processes like design, testing, and refinement. Generally, software application development will happen once the requirements and design of the application has been reviewed and approved by the client and project manager, ensuring that everyone is happy with how the software will be developed.

Installation of IT systems and networks

Installation of IT systems and networks can refer to both physically and digitally installing IT systems for a company or individual.

Physically installing IT systems and networks is comprised of being on site in the location and manually installing the IT system, whether it be a desktop computer or a server rack for the company, both vital components for businesses to function. This can also include mundane jobs like establishing cable links between the servers and desktops so they are able to access each other.

Digitally installing IT systems consists of installing software for the users to use so they are able work with the required applications for their business or company projects.

Information collection

Information collection within IT projects refers to activities where members of the project are able to share data with each other to help advance the project.

An example of a common information collection activity would a meeting, where people establish what they are doing and what support or blockers might be affecting them in their work. Furthermore, meetings will also happen between the client and company in order to remain updated about their project and allow for new input from the client incase situations arise.

Analysis

Analysis within an IT project refers to analysing the requirements of the job and what will need to be accomplished in order to achieve success. This can vary from analysing what the program that will be developed is supposed to do and seeing what steps have to be taken to achieve this goal.

Maintenance

Maintenance in an IT project means to ensure that the delivered program will continue to function smoothly, providing software updates to the technology and fixing any bugs that occur to destabilise the program.

What is project management?

Project management can be defined as the process of planning, organizing, and controlling a project and its activities in order to ensure that the project is completed successfully within the previously referenced three primary points of focus within the project. Alongside this, it is also important for project management to mitigate any appropriate risks and resolve any problems or issues that may arise during the project's lifetime. These three processes mentioned can be further broken down to gain a better understanding of them.

Planning

Planning within a project can vary vastly in what must be accounted for and achieved within this time period of the project. For example, this can range from planning the tasks that have to be achieved in the project in order for successful completion of the project, to planning how to split up personnel and departments and assigning work. Planning ties in closely to organisation and as such the lines between what is planning and what is organisation can be regularly

blurred. It is necessary to understand that these outlines, the outlines being planning, organisation, and controlling, are intentionally vague and only serve as to help establish the project, and thus can be easily manipulated and merged depending on the situation.

Organisation

As previously mentioned, organisation and planning can often merge together depending on the situation and the individual's interpretation on what organisation and planning include. Typically, in organisation within project management is responsible for identifying the roles and responsibilities of each position that facilitates coordination and implementation of different project activities. This means that it is necessary to identify and define all the roles of the different team members in order to effectively organise and execute the project.

Controlling

Controlling a project refers to how the project is managed while it is ongoing. This includes responsibilities like tracking and managing the core project elements with regards to the three primary points of focus, those being time, cost, and scope, in order to effectively run the project and achieve the product decided on before the deadline and within the budget. Further duties of controlling the project can be adjusting the course of activities and swiftly making changes in order to resolve blockers which might inhibit the progression of the project due to unaccounted, or accounted for, variables which impact it.

Project life cycle

A project generally follows a life cycle of five main stages, and although that most projects will follow this structure, the order in which these stages and steps are implemented depends on the project methodology that is being applied to the project.

Initiating

Initiating a project is the first stage in the project life cycle, and this step includes outlining the justification for the project alongside the requirements to achieve a successful outcome.

Planning

Planning a project is the second stage in the project life cycle and includes the information regarding how the project will work, with regards to how it is going to be carried out, and then monitored and controlled to achieve the end of the project successfully.

Executing

Executing a project is the third stage in the project life cycle and manages the human resources, i.e., dividing the teams up to develop separate parts of the program, and the other available resources such as programs to help aid development. This is all to help undertake all of the tasks of the project within the constraints time, cost, and quality.

Monitoring and controlling

Monitoring and controlling is the fourth and penultimate stage in the project life cycle and it includes, as the name says, monitoring and controlling the project in line with the initiation and planning documentation in order to achieve the end of the project.

Closing

Closing the project is the fifth and final stage of the project life cycle and is the formal process of closing and ending the project. During this time, it can be common to review the original goals again and compare it to the final product, learning from the success and mistakes of the project.

Different project management methodologies

There are a variety of methodologies that a project can utilize in order to effectively complete and execute a project. It is important to understand the different methods of project management available as it allows the project manager to choose the best method available for and effectively execute the project.

Projects IN Controlled Environments (PRINCE2)

The PRINCE2 methodology is a methodology that primarily focuses on a process-based approach with heavily emphasizes organisation and control from start to finish over the whole project. As the name suggests, PRINCE2 is the sequel to PRINCE and was initially developed over four decades ago. The British government and the UN primarily use it currently. It ensures six goals that should be defined, as well as seven principles that every PRINCE2 project should ensure. The six goals include:

- Scope
- Timescale
- Risk
- Quality
- Benefits
- Cost

And the principles of PRINCE2 include:

- Continued business justification where each project should have a clear need, a defined customer, realistic benefits, and a cost assessment.
- Learn from experience where each team member should gain experience in order to help improve future performance.
- Roles and responsibilities should be clearly defined between each member so everyone knows who is responsible for what.
- Manage by stages where the work is broken up into individual phases to be worked through with periodic reviews.

- Manage by exception where in the instance of issues arriving that impact established requirements, rather than the project manager resolving it the issue is escalated and a board will resolve it.
- Focus on quality where the deliverable projects are checked for quality to ensure the product is of high quality.
- Tailored approach where each project has its own needs and adjustments that must be made in order to achieve a successful project.

Finally, there are the seven stages of the PRINCE2 project:

- Start up where the project board is made, the initial project brief is proposed, and initial staff members are appointed like a project manager and team members.
- Directing a project where authorization of project, authorization of initiation and other key aspects of the project are covered as well.
- Project initiation where an initiation document can be made by the project manager and discussion about risk management, planning, refinement, and other important parts of starting a project.
- Controlling a stage where the project manager breaks down the work into smaller work packages for team members to complete and controlling risks/escalating issue takes place during this stage.
- Managing product delivery where the project manager checks the progress against the project brief and makes sure the quality is ensured in the project.
- Managing stage boundaries where the project manager updates the business case and the project board is decided whether to continue to the next stage or be abandoned completely.
- Closing a project where the project is decommissioned and is reviewed through the project documentation.

Some of the benefits of PRINCE2 include:

- It includes scalability
- PRINCE2 is flexible due to its nature as general use
- Built to deal with the unknown
- Widely recognised and well known
- Has established fundamentals and teaches good practice
- It has good and clear consistency

Some of the limitations include:

- Cost of training and qualification
- Requires senior management to approve of project
- Requires experience
- Documentation heavy
- Too rigid and can be unable to adapt

RAD

The RAD methodology is a precursor to the Agile development methodology and is generally suited for short-term, large-scale projects, similar to Agile, and is known for having a short turnaround time. This short turnaround time is what makes RAD such an attractive project management methodology for specific fields like IT. It also ensures to remain open-ended meaning that the client is kept involved in the project and it remains easy to make changes in the project.

The different stages of RAD include:

- Requirements planning where the project members, including the client, communicate to determine the goals and expectations of the project along with any current and potential issues that might need to be addressed.
- User design is the stage where the developers work hand in hand with the clients in order to ensure that their needs are met at each stage of the design process and the prototypes that are developed function smoothly and meet the client's needs. In this phase, the bugs and kinks are also resolved through an iterative process much like Agile. This phase also includes various stages internally, such as verification and validation of code, configuration of the program, metrics and measurements, and general project management such as scheduling.
- Rapid construction involves taking the prototypes and beta design systems and from there converts them into a working model. Due to the previous iterative phase most of the bugs and kinks have been resolved and therefore development can be focused on the final working product. This phase of development can be broken down to smaller steps, those being preparation for rapid construction, program and application development, coding, unit integration, and system testing. ("4 Phases of Rapid Application Development Methodology") This stage also includes communication with the client which allows for the client to add input and possibly help solve any problems, ensuring they are satisfied with the final project.
- Cutover is the stage where the finished project goes to launch and includes systems like data conversion and final testing. Final changes are made now while bugs can be discovered and resolved.

Some benefits of the RAD methodology include:

- Task oriented structure
- Client is involved
- Easy to make changes
- Regular communication between team and client
- Risk control

Some of the limitations of RAD include:

- Less control on the overall project
- Can be rushed design and app
- Lack of scalability
- Unable to plan for the future

Waterfall

The Waterfall methodology is based on planning and accounting for every variable in each of stage of the project. This means that it can take months before any development takes place in a project as there will be a large focus on the planning and requirements aspect before it can advance onto the next stages. Waterfall is often suitable for plans that are very clearly outlined from the beginning with a concrete timeline and well-defined deliverables.

The different stages of Waterfall are:

- Requirements where the projects product requirements and end goals are documented for the future development.
- Analysis where the project management develops the system for the project that will be followed.
- Design where the different elements of the project that might need design planning, like program architecture and UI elements.
- Implementation of the three previous steps and ongoing development of the project and software, etc.
- Testing where the project focuses on searching for bugs within the code and fixes any uncovered issues.
- Operation/Deployment of the final project and the delivery of the software/program.
- Maintenance where the final product is updated and any issues that arise are dealt with.

Some of the benefits of Waterfall methodology include:

- Easily copied in the future for successful projects
- Simple to understand
- Timeline of events, all planned out
- Outputs of project visible at each stage

Some of the downsides and limitations of the Waterfall methodology includes:

- Difficult to make any changes to plan
- Expensive to make changes in plan
- Inflexible
- Not suited for constantly changing programs/projects
- Difficult to know everything required during the requirements and planning phases

Agile

The Agile methodology is based on working through 'sprints', which usually last 1-2 weeks and consist of daily meetings where team members mention what stage in their work that they are in and what is blocking them from continuing their work. In this, work is prioritized based on what is important and critical to what can be dealt with later, which leads to a backlog of work and therefore a constant workflow. It is more suited for longer term projects where changes can be made regularly. Feedback is critical within Agile as it allows for the product to move forward in a positive direction that will ensure that the customer is satisfied with the final result.

The different stages of Agile include:

- Concept or iteration phase 1 where the scope of the project is decided and different projects and processes are prioritised.
- Inception or iteration phase 0 where the projects team is slowly built and the initial planning and modelling of the project takes place. The prototypes and MVP can be decided during this phase as well.
- Iteration or construction where the project team work to turn all of the design and feedback from the customer through 'sprints' of work. This is one of the most important phases of Agile development as it allows developers to create software swiftly and make improvements that will be able to satisfy the customer. Each sprint is reviewed by a scrum master who manages the sprints and is then adapted for the average workload possible during the sprint.
- Transition and release phase where the product is released on a small scale alongside software testing to smooth out any kinks in the software and ensure a wild scale release is as bug free as possible.
- Maintenance or production phase where the product is released to the customer or wider market while maintenance and bug fixes are available and support from the developers is available to understand how the program works.
- Retirement phase where the program is either removed from development due to being replaced or has become obsolete, either way the project and product is no longer being worked on.

Some of the benefits of Agile methodology include:

- Flexibility
- Clear outputs from each iteration
- Appropriate use of resources
- Satisfied customers due to constant feedback
- Adaptability
- Predictability due to working in short bursts
- Less risks as it is cheaper to catch mistakes and errors earlier on

- Better communication i.e daily meetings

Some of the limitations of the Agile methodology include:

- Requires fast communication and effective teamwork, work often depends on others progressing at a similar rate
- Limited documentation due to fast work pace
- No finite end
- Difficulty to tell when project will be finished

Project Management structures

There are several structures within project management that should all be followed in order to achieve a successful outcome and a high level of quality with the final release. These structures are:

- User requirements
- Project job roles and responsibilities
- Quality assurance
- Operation test environment
- Live deployment

User requirements

Within user requirements there are two section to focus, those being both functional and non-functional requirements.

Functional requirements are things like defined inputs, outputs, and processes. This could include things like data entry, controller inputs, and even a keyboard input. An output could be anything from a value returned in or from a table to a character moving in a game. Processes are the things that decide how these inputs turn into outputs, such as converting controller input into movement by adding force to a character or providing calculations to output data according to what was inputted.

Non-functional requirements are requirements to satisfy the system such as maintained quality and high performance. These are much more abstract compared to clearly defined functional requirements however they are just as important when developing a high-level application.

Project job roles and responsibilities

Within projects it is important to also assign job roles and the responsibilities that comes alongside those job roles in order to ensure that everyone knows who is responsible for their own part of the project, so that the overall project runs smoothly and there is no confusion between different team members.

Some of the different job roles include:

- Project Manager, who is responsible for running the project, ensuring effective communication between the teams and other important tasks like risk management, scheduling and delivery.
- Systems architect, who is responsible for the design and implementation of hardware and the software infrastructure and explaining how the hardware meets the requirements of the project.
- Electronics engineer, who is responsible for designing the electronic components, along with different circuits and system to ensure that software implementation is possible.
- Product owner, who is generally the key stakeholder and is responsible for identifying requirements of the product and has a vision for the products future.
- Lead developer, who has a responsibility for the underlying architecture and communication between management and the standard developers. Typically mentor the junior new developers as well.
- Developers, who are responsible for writing software code and testing.
- Quality assurance test lead who are responsible for designing the test plans and test suites and assigning work to the QA testers.
- QA tester, who are responsible for testing the functional and non-functional requirements against the product and general individual testing.
- IT support technician, who are responsible for resolving user issues/faults and ensuring that the IT services are operating to allow the organisation to work and meet the users' needs to work.
- Users, who use the product during deployment and produce requirements based on usability and testing while sending feedback to upper management and stakeholders.

Quality Assurance

As previously mentioned, quality assurance is a key process and part of the project structure. The role of quality assurance is primarily to ensure that the product meets the quality standards that has been previously defined by the product owner and customer.

If quality assurance is not there, it can lead to customers being unhappy with the final product and would overall be bad for business and is therefore critical for the company charged with the project.

Operational test environment

An operational test environment is a pre-release environment with the architecture being close to live deployment. This part of the project allows for the project team members to measure the field performance of the software alongside measuring the user system interaction effects. It also facilitates the consideration of different environmental factors that can influence system behavior, such as different hardware of user's performance, and evaluate the effectiveness of the system.

Live deployment

Finally, there is live deployment. This is where the product is deployed and an operational deployment environment for the final product of the project is created and the product is released to it.

Website Development Case Study – Waterfall methodology

As mentioned above, the Waterfall project management methodology is suited for website development due to the nature of websites and the fact that it is easy to create a roadmap of features that can be developed in line and it is easy to define the requirements for this project.

Job roles

These are the various job roles available in this project and they are documented in order to ensure that all the positions are fulfilled and completed.

The designer, developer and quality assurance roles are fulfilled by myself, these roles include designing the website and developing the code, and then ensuring that the website is high quality for the customer. I am also the project manager and therefore I have to keep track of everything in order to ensure that everything is delivered on time and on schedule. I am the team leader and therefore I have to ensure that the tasks are broken up in order for me to be able to do it step by step and therefore finish on time. I have invested nothing into this website other than time and I have gotten nothing out of it as there is no monetary compensation to be had here.

Stages of Waterfall in Website Development

In the Waterfall methodology it follows 6/7 set steps that must be completed in full in order to progress to the next stage of development, similarly to how a waterfall fills an empty vessel before flowing onto the stage.

The website in question is a website designed to raise awareness for a charity that rescues animals, primarily, in the Netherlands however they also rescue animals in Spain and Romania.

Requirements

It is important to lay out the requirements of the website, which are already defined in the assignment criteria, and from there it is possible to expand on it to include other possible features that might improve the website. The requirements mentioned include:

- Be at least five pages
- Feature an image carousel/slide show and social media integration
- Feature suitable images, text and at least 1 video
- Use scripts in at least 1 way i.e., a booking/quote/email form

Listing out the requirements like this allows for the project members to understand what their goals are and what they have to achieve by the end of the project, allowing them to focus on the important tasks before focusing on anything else. The programming languages that can be

used for this will be CSS for the styling and JavaScript for the scripting, while the website will be made in the markup language HTML5. All websites are made with these languages so this project will as well.

From this the analysis can begin along with development for the systems, for the project.

Analysis

The analysis from here consists of the theoretical design of the system for the project without the software and hardware technologies in the way. For a relatively simple website like this, the analysis is limited to discussion on how the image carousel and script for the email form might work.

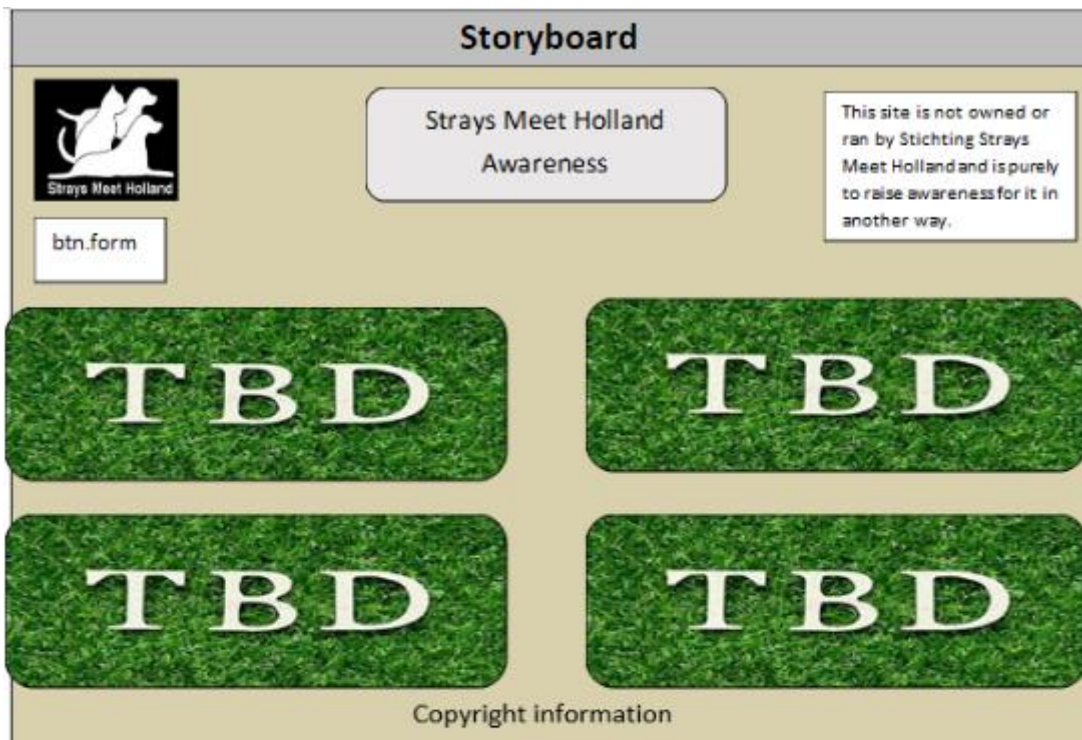
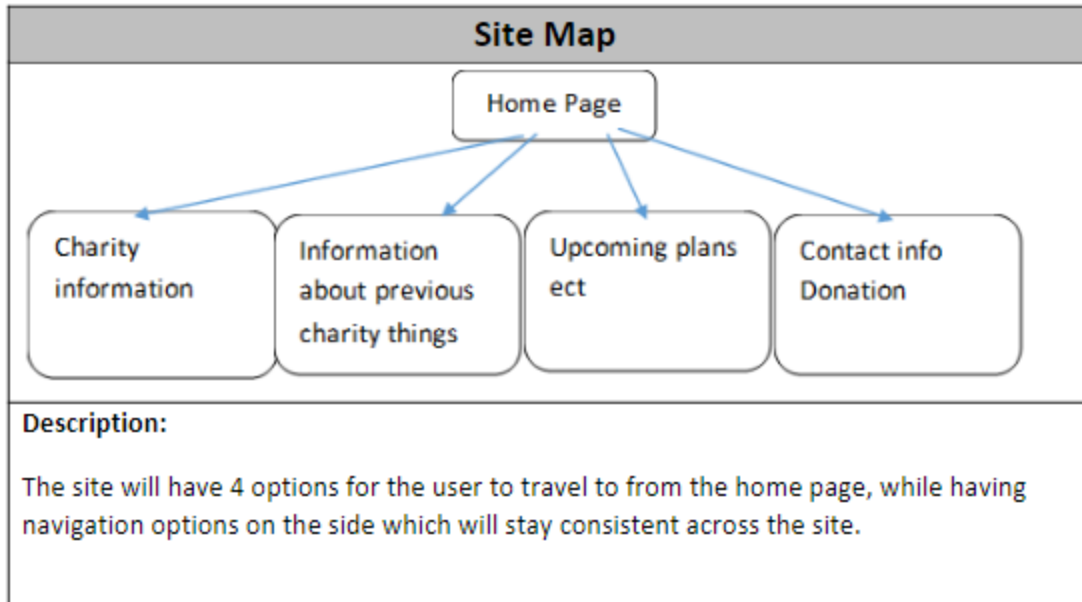
In this project, the image carousel will be written in JavaScript, as most work in scripting is done for HTML, along with the email form and validation for it. The video will be in MP4 format and set to auto-play with the audio muted as this is required for videos to auto-play in Chrome.

The pages will be planned before hand and will remain with a similar colour scheme to the original site. This will allow for the site to remain a neutral colour and allow developers to focus on working on the production of the website and different features.

Design

The design work of this project can now begin with storyboarding the website and mapping out all of the requirements, from the website font to the colour scheme and images/videos used. Due to the simplicity of this website, it will be easy to make minor changes to suite the website, however large changes will not happen.

Here is the design plan:



Description:

The "TBD" boxes are to be determined/decided images for the site and they will be images the user can click on to go to the next page. The next pages will all follow the same format and I have included that this site is separate to the original site. The background matches that of the original site in order to maintain consistency for conveniences sake.

Moodboard

Website Colours

Hex: #ce0d4ac	#e9e7e7			
---------------	---------	--	--	--

Website Fonts


I will be using "Arial Font" at 12px for my website as the normal text and "Lucida Sans" at 16px for my headers.

Images are to be determined however they will be centred around the charity such as where it is, and animals they have rescued as long as permission is given. Example of potential animals is as below.



Description: The colours chosen are to stick to a neutral colour scheme which is the same as the original charity in order to stick to consistency. The grey I chose is to compliment the neutral colour the charity has and to slightly differentiate but not enough to throw anyone off.

Page #1	Page Name
<div>Image carousel</div>	<div>Info about image</div>
<div>Copyright information</div>	
<p>Description:</p> <p>This page will feature an image carousel of different animals that the charity has saved and information available about the animal</p>	

Page #2	Page Name
<div>Information on charity</div>	<div>  <p>Strays Meet Holland</p> </div> <div> <p>Credits for images social media links regarding charity</p> </div>
<div>Copyright information</div>	
<p>Description:</p> <p>Information on charity and links to different pages that the charity is related to.</p>	

Page #3	Page Name
Image of animal	Anbi certification
	Anything they want me to add
Copyright information	
Description: <p>Here I will explain that the charity is <u>anbi</u> certified and explain what that is, alongside an image of an animal and anything the charity wants me to add</p>	

Page #4	Page Name
Donate here (clickable button)	
Asking users to donate to charity here	Links to Instagram account where more info can be found
	image of the account
Copyright information	
Description: <p>Here I will add a clickable button that links users to the donation page of the charity, as well as adding something to track how many users click on the donation. I will also link my Instagram account for the charity which I am doing for my other unit.</p>	

Scripts
Description: Image carousel Email verification

Implementation

With the design mapped out of the website, the waterfall can now flow into implementation and writing the code for the website. The outcome of this implementation and development can be seen in the website as its development progresses.

In order to write the website I used visual studio code and tested my website just through google and html.

Below is the JavaScript that was developed for the website.

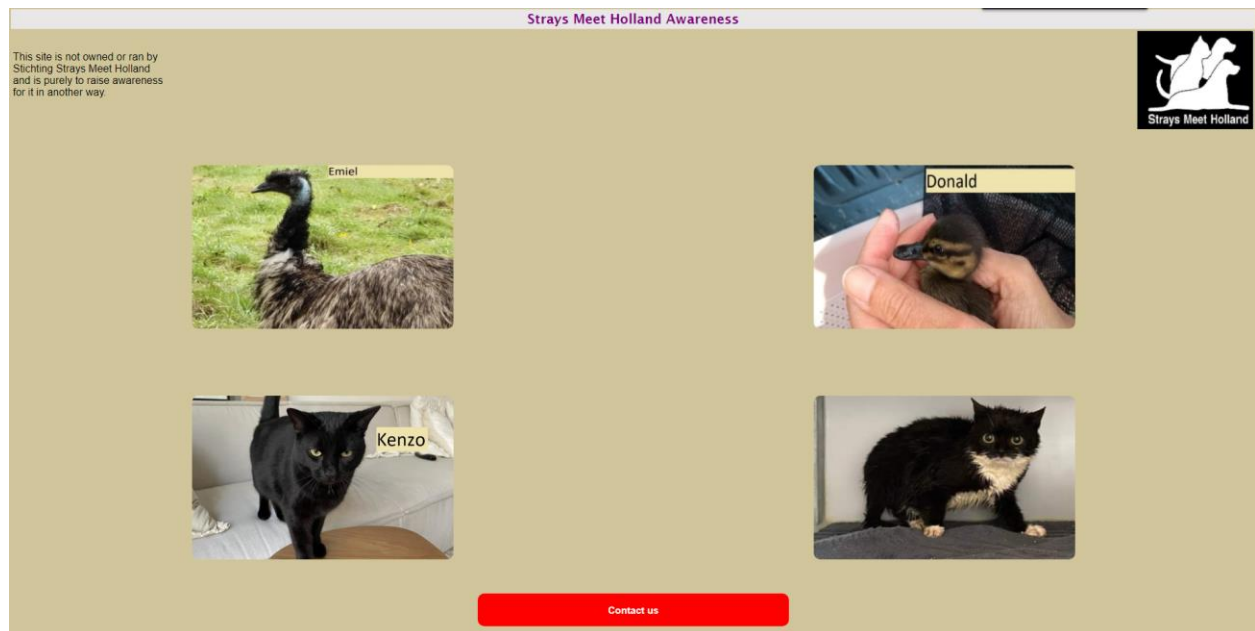
```

scripts > JS alertContact.js > requiredForm
1  function requiredForm(){
2      var emptyEmail = document.forms["ContactForm"]["Email"].value;
3      var emptyName = document.forms["ContactForm"]["Name"].value;
4      var emptyContent = document.forms["ContactForm"]["ContentArea"].value;
5      if (emptyEmail == ""){
6          alert("Please fill all fields");
7          return false;
8      }
9      else if (emptyName == ""){
10         alert("Please fill all fields");
11         return false;
12     }
13     else if (emptyContent == ""){
14         alert("Please fill all fields");
15         return false;
16     }
17     else{
18         alert("Submitted");
19         return true;
20     }
21 }
22 }
23
24

```

```
Scripts > JS slideshowImages.js > ...
1  let slideIndex = 0;
2  showSlides();
3
4
5  function showSlides(n){
6      let i;
7      let slides = document.getElementsByClassName("slideshowImg");
8
9      for (i = 0; i < slides.length; i++){
10         slides[i].style.display = "none";
11     }
12
13     slideIndex++;
14     if(slideIndex > slides.length) {slideIndex = 1}
15     slides[slideIndex-1].style.display = "block";
16     setTimeout(showSlides, 3000);
17 }
18
```

And finally, there is the website once the HTML has been made.





Waterkippie.

These are all different animals that have been saved by Strays Meet Holland, each with their own story. It is important to the charity to make sure that every animal they can is rescued and provided a safe environment where they can recover until they are eventually ready to find their forever homes!

This is only a small sample of the many, many, animals that have been saved by Strays Meet Holland, and there is so much work they have done that is not even documented on their website, but instead on their Facebook page which can be found just by searching "Strays Meet Holland", along with their actual site.

They can also be found on the "Information" page which can also be reached through this button.

Information

Home

Strays Meet Holland is an organisation run by volunteers that rescue and care for stray animals in the Netherlands, southern Spain, and Romania. They primarily take in stray cats in the Netherlands at their own shelter with the hopes of rehoming them once they are ready and providing a better life for them after all they have experienced.

Abroad, Strays Meet Holland supports 2 permanent foreign shelters by sending things such financial support and relief, supplies like medicine, food, and other accommodations like beds for animals and leads/collars.

Throughout this site I aim to raise awareness for them and to showcase the work that they do in 3 different countries.

Their contact information can be found below,

Contact:
Strays Meet Holland Foundation
Hoogveldweg 2
5315 AG Church District
06-48810911
Info@straysmeet holland.nl
Chamber of Commerce: 30242185
IBAN: NL92 RBRB 0918 1140 47



Links:
[Strays Meet Holland](#)
[Strays Meet Holland Facebook](#)
These are officially ran pages

My awareness
page on instagram:
[Strays Meet Holland Awareness](#)

Home

ANBI CERTIFICATION



Harry

Strays Meet Holland has achieved ANBI status from the Dutch government.

This means that the charity has certain tax benefits, one of which can be seen below, taken directly from the site


"Since April 2014 we have the ANBI status. This means that all donations are tax deductible. You are most welcome as a donor to our foundation, whether this is structural or incidental. We are happy with any donation with which we can help our stray animals. Our bank details can be found in the contact details"

Contact Details

Home

Strays Meet Holland Awareness

DONATE HERE



Please consider donating to Strays Meet Holland and helping them to support animals in three different countries. Any donation helps it starts with as little as 2 Euros, and even this can help to save just one more animal.

Every little helps when it comes to charity, help save an animal.

This is a video of Gus, a cat which was saved by Strays Meet Holland. The caption for the video reads:

"Very good news for Gus. The couple who fed him for a while were actually quite attached to him. They have given it a lot of thought over the past weekend and they really want to adopt Guus. So the smart guy has chosen his own house. Tomorrow evening Guus will return, but then officially. He will stay inside for the time being."

Home

Strays Meet Holland Awareness

Name:

Email:

Subject:

Content:

Your Name

Your Email

Subject

Content

Submit

Home

Testing

With the website designed and developed, it is important to now begin testing and ensure that all of the parts of the website are functional.

Below is the documentation of testing if the JavaScript works.

Strays Meet Holland Awareness

Name:

Email:

Subject:

Content:

This page says Submitted

Name:

Email:

Subject:

Content:

Here we can see that the email validation validates that the email has been submitted.

This page says Please fill all fields

Name:

Email:

Subject:

Content:

And here is an example if one of the required fields is missing.

And finally for testing there is the image carousel.

Strays Meet Holland Awareness



These are all different animals that have been saved by Strays Meet Holland, each with their own story. It is important to the charity to make sure that every animal they can is rescued and provided a safe environment where they can recover until they are eventually ready to find their forever homes!

This is only a small sample of the many, many, animals that have been saved by Strays Meet Holland, and there is so much work they have done that is not even documented on their website, but instead on their Facebook page which can be found just by searching "Strays Meet Holland", along with their actual site.

They can also be found on the "Information" page which can also be reached through this button.

Information

Home

Strays Meet Holland Awareness



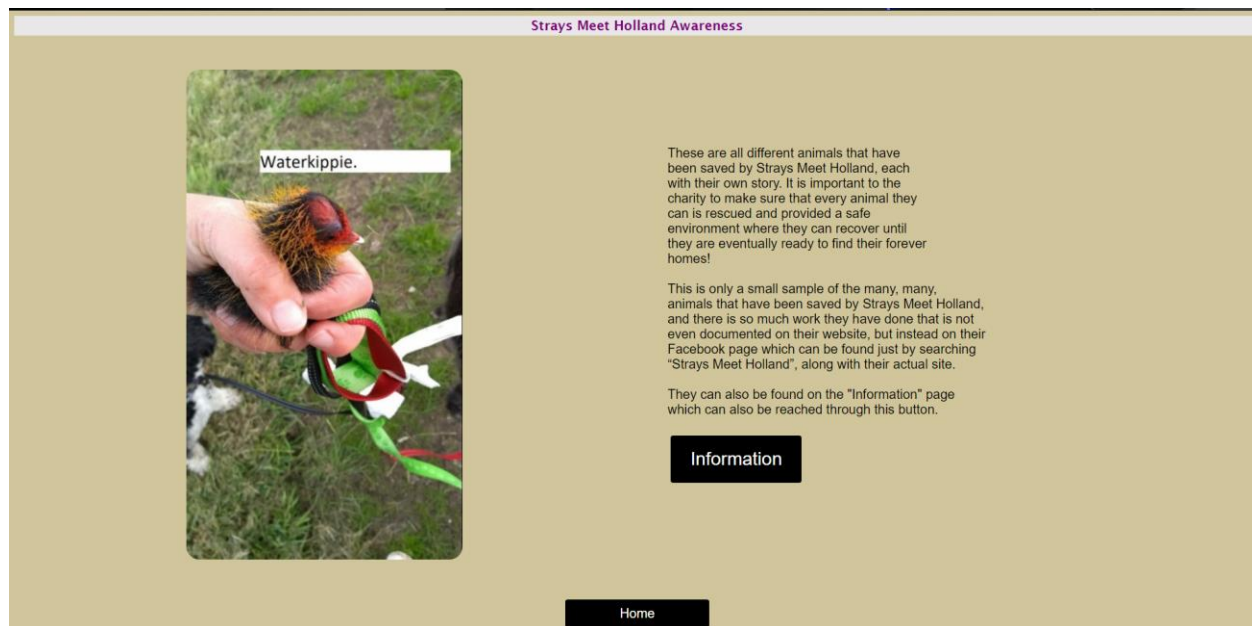
These are all different animals that have been saved by Strays Meet Holland, each with their own story. It is important to the charity to make sure that every animal they can is rescued and provided a safe environment where they can recover until they are eventually ready to find their forever homes!

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They can also be found on the "Information" page which can also be reached through this button.

Information

Home



Here we can see that the image changes and the image carousel works, meaning that the script works and therefore the requirements have been met, with all the different parts of the website functional.

The testing used in this is iterative testing, whereas the application is developed the code is tested alongside it in order to fix any bugs or issues that might develop and prevent it from working. This is commonly used in software development and is a core feature of development for all methodologies as testing only once development has been completed is impractical and expensive.

Deployment

Now that the testing stage has completed and all the parts of the website are functioning, it is now possible to deploy the project and close it.

Conclusion

In conclusion, although the Waterfall methodology is effective for website development, its restrictive nature around changes is unfriendly when it comes to the everchanging nature of software development and therefore I believe that there are more effective software project methodologies out there that could be more adequately suited for website development. Overall, the project was a success and Waterfall is a viable project management methodology.

Mobile Application Development Case Study – PRINCE2 Methodology

Here, the PRINCE2 methodology will be looked at due to its nature of focusing on six goals and the numerous stages that allow a successful program to be developed and its ability to work for a variety of different project types, even those outside of the IT industry.

Job roles

Within PRINCE2 the job roles and responsibilities need to be defined in order to ensure that the work can be finished and completed and if there are any errors or mistakes then people can be held responsible for their incompetence.

The designer, developer and quality assurance roles are fulfilled by myself, these roles include designing the mobile application and the UI for the application. I am also the developer so I have to program the application and ensure that it is functioning, and then ensure that the quality is high for the customer. I am also the project manager and therefore I have to keep track of everything in order to ensure that everything is delivered on time and on schedule. I am the team leader and therefore I have to ensure that the tasks are broken up in order for me to be able to do it step by step and therefore finish on time. I am also all the members of the board so any project update reports are reported to myself. I have invested nothing into this mobile application other than time and I have gotten nothing out of it as there is no monetary compensation to be had here.

Stages of PRINCE2 in Mobile Application Development

PRINCE2 is noted for having 6/7 stages of development and remaining thorough in its development, ensuring that the work is not wasted and that a purpose for what is done remains in order to ensure integrity within the project.

Start up

The startup phase in PRINCE2 is important as it allows for the project to begin gaining traction within an organisation, from creating the project board to appointing project managers and the team. For this project, although there is no larger organisation to present the project to, it is still important to follow the different stages as it allows the project to be developed properly. In this instance as there is no board, the equivalent will be external feedback from peers and the assignment authorisor.

There is no previous experience to learn from in this situation so it is important that there is a lot of documentation for this project. While the project management will be documented here, the project itself can be viewed further upon request in another document to ensure there is no confusion between the documentation.

Directing the project

This stage of PRINCE2 is important as it is where authorization of the project comes from as well as further documentation of the different stages of development. Here, although there is no board to gain authorization from, the feedback from my peers and assignment authorisor allows me to progress forward from their previous stages and advance to the initialization of my project.

It is again important to mention that in PRINCE2 there is consistent constant documentation of the process in order to look back on it later and understand what happens at all the various

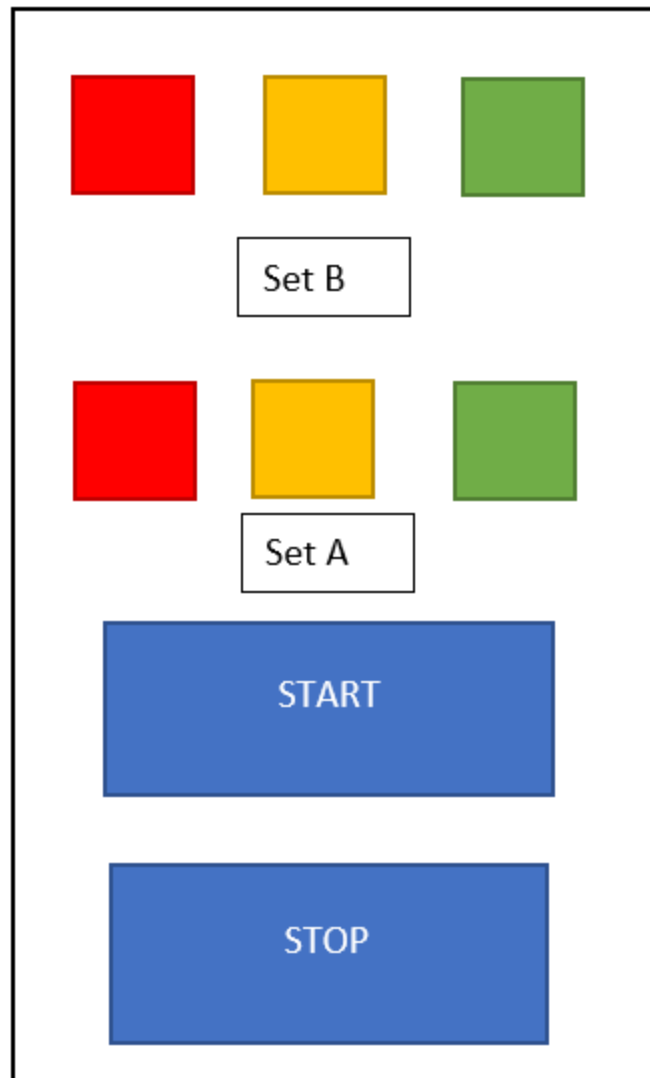
stages of development, from the start up all the way to the conclusion and closing of the project. Therefore, it may be required to assign someone whose sole responsibility is to documentation of the project.

Initialisation

The initialization of the project is not so different from the direction phase, however a key difference here is that this phase is more focused on progressing the project rather than authorization and ensuring that the project is actually able to run.

It is necessary here to plan the project and refine the business cases, along with any risk planning and project documentation.

For the plan, this project will produce a mobile application which runs a set of artificial traffic lights according to a set timer that is predefined. The plan can be viewed below. The risk planning for this is minimal as it is a one-man, short term small-scale project that will bear minimal consequences, and certainly none that are financial or business wise. The project documentation will continue in the other paper that can be viewed.



The pseudocode for my application will be this, as I believe this is the best way to do this.

IF BUTTON START PRESSED Then

Start coroutine sequence1

Or I will establish a timer and when that timer reaches past a certain value, it will run a specific function which sets the light to the right colours.

IF BUTTON START PRESSED Then

```
timerLights += Time.deltatime
```

```
IF timerLights > int step1Time Then
```

```
    Sequence1();
```

```
IF timerLights > int step2Time Then
```

```
    Sequence2();
```

Controlling the stage

Controlling the stage for this project involves breaking down the work into more manageable chunks and slowly working through it. Any issues that arise during this phase of development that are unrelated to programming would be escalated to the assignment authoriser and as such there is no need to worry about that part of development.

To split up the work properly, I followed the unit specification and worked my way through it day by day, doing as much work as I could make myself do in that time and then focusing on developing my application when that part of the project came up. This would be the best way to do as it allowed for me to finish my project properly and work on a good schedule.

In this I also tested the application, and I tested the application using Unity and the Unity debugger to make sure that the application works well, which can be seen in the other documentation about the content of the project.

Managing product delivery

Managing product delivery is relatively simple as it only just making sure that the work mentioned above is overseen properly and work is done on time in order to ensure that the deadline will be met in a timely manner.

Managing stage boundaries

This part of PRINCE2 development consists of updating the board, and in my case my assignment authoriser on the development of my project and receiving feedback from both peers and project authorisers alike in order to move forward and finally focus on closing development and being able to conclude my report about development, allowing me to close the project entirely.

Closing a project

Finally, the project is closed and development on the application alongside the application development documentation can be finalized and closed out. The project will be decommissioned by the assignment authoriser. The project end also means that it will be reviewed, and in my case this means that the project will be graded and I will receive a result for my project work.

This review also allows me to focus on the process of my whole project and look at the benefits and limitations of developing my application in the way that I did.

Conclusion

To conclude, PRINCE2 turns out to be a remarkably effective and thorough project management methodology. Its constant documentation allows for the ability to look back at a certain period in development and understand what was going on at the time. Furthermore, its thorough stages ensured that the project was covered on all ends, from authorization to project closing and review, or in my case grading, and allowed for me to achieve the highest review possible for this project.

Moreover, its constant documentation also allows me to repeat this project in the same way if I so wished, meaning that it can be used for repeated application development.

Social Media Charity Case Study – Agile methodology

For the final case study, it will focus on the Agile project management methodology in a project that is more related to business than IT. This project has been chosen alongside Agile as the way that the whole project ran out can easily be molded to the Agile project management methodology and as such will be used as the basis for this project.

Job roles

The job roles of a social media charity campaign are slightly different, however there remains some aspects similar to the others and therefore it is important to document and note them.

The designer, scrum master and quality assurance roles are fulfilled by me. The design aspect refers to how I planned all of the different posts before I could post them and developed them myself after designing them. The scrum master role is where I kept track of the Agile sprints and ensured that the work week by week was completed and everything was kept up to date.

Finally, the quality assurance role is there in order to ensure that before the posts were published, that they are of high quality and suitable for the social media charity. I am also the project manager and therefore I have to keep track of everything in order to ensure that everything is delivered on time and on schedule. I am the team leader and therefore I have to ensure that the tasks are broken up in order for me to be able to do it step by step and therefore finish on time. I have invested nothing into this social media charity campaign other than time and I have gotten nothing out of it as there is no monetary compensation to be had here.

Stages of Agile with a Social Media Campaign

Agile is most noted for its fast turn around and iterative development cycle of working through “sprints.” This concept sets Agile apart from other project management methodologies like Waterfall that plans everything from the beginning and works through the project incrementally.

Concept

In this phase, the scope of the project will be determined by the product owners and the projects are organized into which are the most important, in order to prioritise those and work

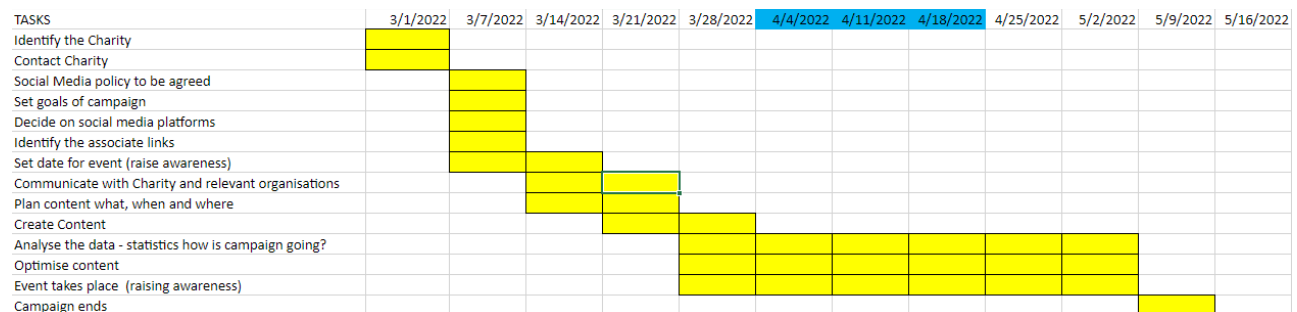
through the list. This idea of prioritizing remains a constant theme within Agile development and will be here one here as well. Documentation of the project also begins here and communication between the project team and client is essential and remains open this whole time.

For my project in this example, I will run a social media campaign to raise awareness for the charity that I also based my website about. Doing this allowed me to keep the charity involved and communicate with them about both the website and the social media page. As this is the only project, there is no need to prioritise and choose between different projects, so that part of the conception phase is not an issue. No planning happens in this phase however there is constant communication between the assignment authorisor as they are what allows the project to proceed to the next phase and are kept updated.#

Inception

The inception phase of this project consists of planning what to do with the social media campaign and how to approach it, while also outlining any responsibilities that I might have to take on as I am the only team member on this. Here I also communicate with the charity to ask what they require from me to post on the page, if anything, and continue to move forward with the stages.

There are no prototypes for me to complete at this stage and there is only base planning that needs to be completed at this phase. Below you can see the planning that was done for the project.



This is my Gantt Chart which is my general plan for my assignment. It spans the whole of the given time, with space at the end to write for my assignment and post what my Instagram page has done for my charity. It is broken up into different parts of the assignment, with the different tasks being completed in the allotted timeframe. Each square represents a week of real time, giving me adequate time to complete the tasks in the given timeframe and ensure that my social media campaign runs smoothly and on schedule.

I plan to run my campaign from the 28th of March to near the end of April – April 21st – in order to allow myself time to write my assignment and work on other projects in the works.

The further documentation of the assignment and project can be viewed in the other document run alongside the social media campaign.

Iteration

This phase is where the bulk of the work within the project will occur and can also be referred to as the construction phase of the project. The work done in this phase is done in two-week sprints generally, however due to the short-term nature of the project and small team, only me, it will be done in one-week sprints, with the layout as follows.

	A	B	C	D	E	F
1	Day of the week	Content type	Platform	Post Content	Post Goals	
2	Tuesday	Photo	Instagram	Tip for animal care	To get 10 likes and 1 comment	(Excluding Tuesday 29th March, as this is introduction post)
3	Thursday	Photo or Video	Instagram	Post about charity	To get 10 likes and 1 comment	
4	Friday	Story post and photo	Instagram	Story including animal and post linking to charity every Friday	10 views on the story and 5 likes on charity post	
5						
6	This is my current plan. It is subject to change and optimisation at any moment and is likely to change over the course of the campaign.					

Production of the posts will be done either the day of release or the day prior in order to allow the most time possible to create a high-quality post for the social media campaign.

This phase will also mix with the next phase and repeat between the two, as this is a social media campaign and not a software development project and therefore the release of content has to happen much more regularly to accommodate for the nature of a social media campaign mixed with the Agile project management methodology.

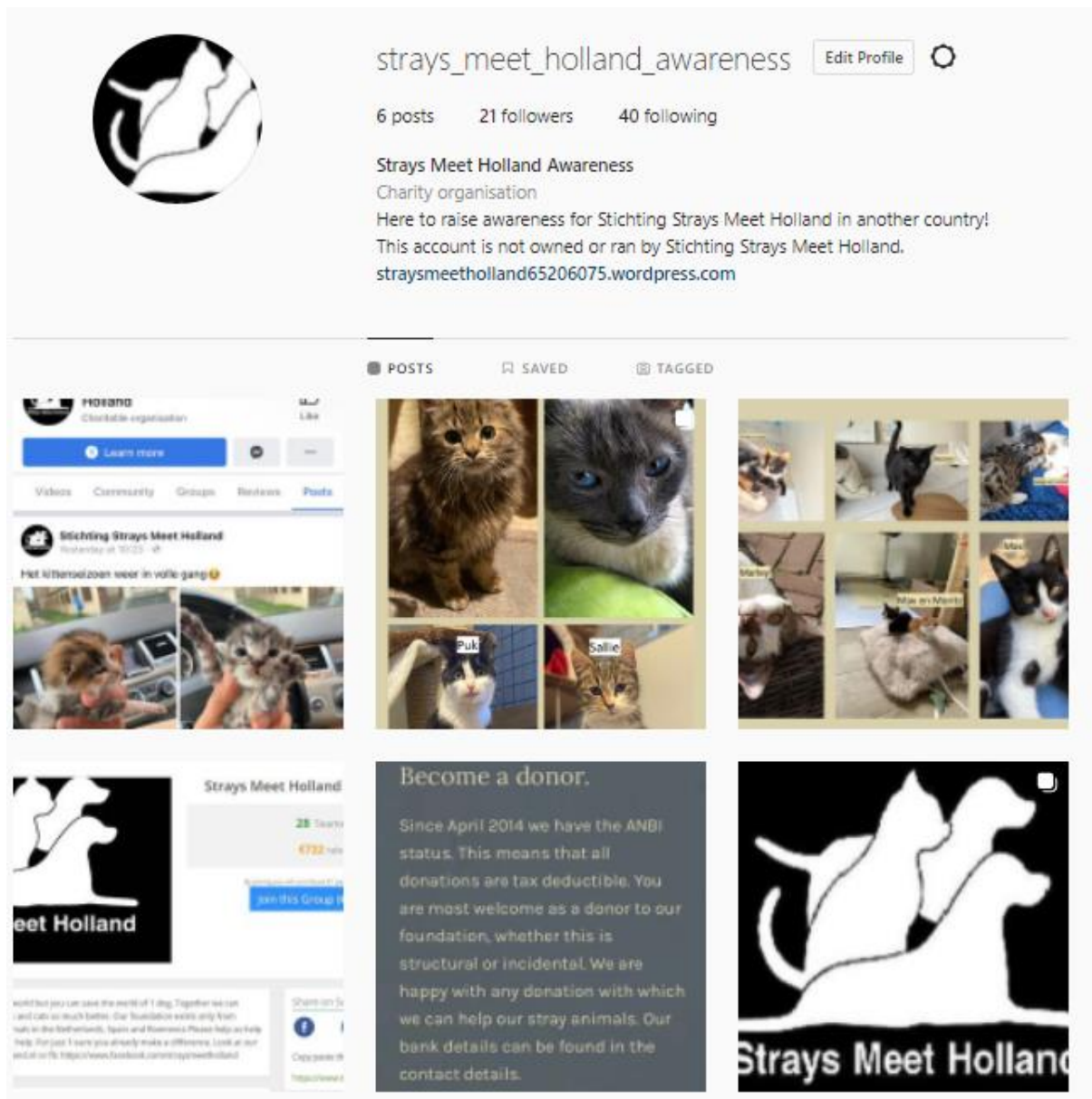
Transition and release

After the creation of any social media post, it has to be transitioned into the social media page and published so that people are able to see the posts. There is no testing that needs to occur however traditionally there would be testing of the software to ensure that it functions well without any bugs occurring and the project can be prepared to be released. Although I cannot display the individual posts due to the social media page note existing anymore, the posts will be viewable in the production phase.

Production

The penultimate phase is the production phase where the product is completed and all the Instagram posts are finished, moving the phases to support and maintenance, which would ordinarily occur if there was an actual software that was developed, however in the case of this project there is no need for further support and maintenance, unless any serious issues arise which can be addressed when they arise.

Below is the final product.



Retirement

With the project completed and documented the whole way, it is time to retire the project and remove it from development in order to allow for other projects or assignments to take the stage, alongside with the fact that there is no longer any need to continue posting as the assignment has finished and the documentation will be reviewed and graded.

Conclusion

To conclude, while the Agile management methodology is very well suited to making changes and consistently working and outputting product, it may not be the best suited for this kind of project. If I had a choice to do this again, I would not choose the Agile project management methodology, however if I was working on a program or developing any software, I would absolutely choose Agile as its ability to make changes swiftly and work through one/two-week

sprints allows for constant adjustments to the prioritisation of tasks ensuring that the most important work is finished first and that the essential tasks are completed.

Comparison and Evaluation of different methodologies and structures

Although the three different projects all had their own strengths and weaknesses, here we will compare and evaluate the effectiveness of the different projects and talk about the best situations that these different project management methodologies could be used and support those conclusions with reasonable judgements and justifications.

Comparison between the project management methodology

Although there are many project management methodologies available to be used in projects, for this comparison will compare PRINCE2, Agile, and Waterfall, as I feel that this is a good range of different kinds of project management methodologies and they all contribute something different to a project and have completely different structures and development cycles.

Waterfall

Benefits

With Waterfalls focus on slow but overarching and careful development makes it well suited to projects which are not urgent and the customer is likely to know all of the features that they want their software to do. It has an extensive period of initiation and planning to ensure that every possibility is fleshed out and can also result in less bugs when the projects development has completed due to more testing time and more time to resolve any issues.

Moreover, Waterfalls strict development process based on flowing forward linearly means that the projects are likely to be finished on time and within the budget, a goal that all projects aim to achieve. Furthermore, with the development of the project completely road mapped, this leads to regular milestones for the project to achieve, making it easy for developers and customers to track the progress of the overall project.

Limitations

Within the Waterfall methodology, any deviations down the line within the project often result in an increase of cost and schedule, and the further along in development that these changes occur, the more expensive and time costly to resolve any issues and make the necessary changes.

Also, unlike Agile which is noted for involving the customer the whole time, Waterfall does not involve the customer beyond the requirement planning at the beginning of the project, and therefore if the customers only have a vague idea about the project then the finished project often will not meet the users' requirements. Similarly, if the project hits its testing phase then it can become even harder to amend the software and even more costly for the customer.

PRINCE2

Benefits

The method in which PRINCE2 was developed has features that ensure that there is constant improvement between projects as the review at the end and start of projects allows project management members to focus on improving the project compared to the previous development cycles.

One of the greatest strengths in PRINCE2 is the expectation that any major decisions made regarding the project are based on upon the business case, meaning that there is a clear understanding of the benefits versus the cost, timescales and risks required. This business focused approach is built before the project and improved upon in the initiation phase and is maintained and updated stage by stage.

Another big strength of PRINCE2 is its detailed description and definition of multiple project management project member roles, as within the documentation for the project, there is extensive documentation for a total of nine different project management team roles.

Limitations

One of the most notable limitations of PRINCE2 is the fact that it does not address or cover soft skills, which are the skills needed to interact with people and communicate effectively and to collaborate harmoniously with people. Another disadvantage of PRINCE2 is that it typically requires experience with PRINCE2 previously to work effectively meaning that team members either have to have had previous experience, have to be trained, or hire specific team members to manage and implement the project management methodology effectively.

Furthermore, PRINCE2 also has a famous double-edged sword based in the fact that it is documentation heavy and this can be an incredibly cumbersome task on top of already trying to manage a project and could mean that a business might have to dedicate a role to just documentation of the project, spending more money on the project budget than initially expected.

Agile

Benefits

As mentioned above, one of the largest benefits of Agile software development is that it involves the customer at every stage of development leading to users constantly providing feedback on the software leading to the final product of the project being much more likely to meeting the needs of the users. This means that changes can be made constantly with the Agile project management methodology and it is fundamentally more flexible than the Waterfall methodology and even the PRINCE2 methodology.

This approach of Agile also means that the software is developed much quicker and makes it ideal for any projects where a fast turnaround is essential, the complete opposite of Waterfall.

This means that urgency is a big focus in Agile, as it also has stages within it that all focus on prioritization of important tasks in order to achieve a successful final product.

Limitations

With the nature of Agile development being focused on fast development and customer involvement to achieve a satisfactory final product, the project can quickly fall apart if the customer is not engaged with and interacting with the development teams in order to push them in the right direction.

Moreover, as Agile focuses mainly on working in short sprints, it makes it much harder to develop systems that might need months of work on them, such as a database. This issue is also prevalent if there is another system or software that has to be developed in order for the final product to work in a few months' time, however as Agile does not look this far ahead, it can impact development and work on the final product.

Evaluation and comparison

Judging from the benefits of each of the three project management methodologies, it is clear to see where each of these project management techniques will excel.

Due to the fact that Agile projects focus primarily on a fast turnaround and shorter iterations of development and planning, it is much more suited to dynamic/unstable sectors where the user requirements might not be as clear. An example of this industry might be multiplayer games development, where the user requirements are based on changing strategies and constantly figuring out the best new way to do something. Based on the current strategies and the user feedback, changes may have to be made swiftly, such as in order to balance out weapons that are too powerful or make map changes that could level the playing field.

On the other hand, the Waterfall project management methodology focuses primarily on delivering a concrete final product that has been built from the ground up and has been completely planned out and developed in order to ensure that the final product is of the highest quality. This includes developing a strong foundation among other things. However due to the fact that Waterfall handles changes in development negatively and often makes development take longer and much more costly, it is clearly more suited to projects that have the requirements planned out extensively, which means either previously completed projects that have been made much more efficient over time or projects where the customer knows explicitly what they want. An example of this industry or project that might be suitable is when human life is at stake, and system failures can lead to fatalities. This is a good example of when to use the Waterfall methodology as its slow but careful approach to development leads to more secure final systems and is worth the cost over risk when human life is at stake.

Finally, as mentioned above, the PRINCE2 methodology is a general project management methodology as can be adapted to most projects due to its diverse nature. With the development of PRINCE2 coming from the UK government for IT projects, it makes sense that

PRINCE2 is often used by government organisations, not just the UK, and as such is suited for such projects. This is due to the fact that PRINCE2 is easily scalable for a project of any size, and clearly defines the six goals that the project should aim to achieve, focusing solely on business case development and providing benefits that outweigh the cost and risk of the projects. This makes it extremely useful for development by government organisations that cannot afford to have projects which do not provide the necessary benefits or have the correct justification for continuation of development.

Further evaluation of project case studies

Website development case study – Waterfall

With the website development case study of the Waterfall project management methodology, I believe that it was very effective in development of the website. This is due to the fact that all of the requirements were clearly written out for us and the decisions regarding programming languages were already made for us as development for websites is done in HTML primarily, with CSS and JavaScript used for styles and scripting respectively. The structure of the project management methodology allowed for constant development and an effective development life cycle, allowing me to progress as swiftly as possible to the finished and final product. The structure of Waterfall here allowed me to establish all the building blocks needed to create a strong foundation and high-quality final product on time.

The benefits of developing using the Waterfall methodology with this project case study of website development include:

- Clear requirements
- Clear end goal
- Efficient planning
- Dedicated testing phase
- Road map of development
- Milestones during development
- Linear development

The limitations of developing using the Waterfall methodology with this project case study of website development include:

- Minimal ability to update plan
- Might not be scalable in the future
- Extensive documentation for short term project, can be overwhelming
- Minimal involvement with any customers or assignment authorisers due to the nature of Waterfall methodology

Mobile application case study – PRINCE2

With the mobile application case study of the PRINCE2 project management methodology I believe it allowed for an effective product to be developed within the primary three points of

focus for any project, time, scope and budget, and the further goals of the PRINCE2 project management methodology mentioned above. This is because the different PRINCE2 stages of development allowed for constant documentation and effective planning, while also receiving feedback from the assignment authoriser due to the reports that PRINCE2 focuses on creating, rather than constant meetings which can hinder progress. Furthermore, the structure of PRINCE2 allowed for the assignment authoriser to authorise the initiation of the project and created an overarching high level of foundation for the project in order to be built and allowed it to be successfully completed.

The benefits of developing using the PRINCE2 methodology with this project case study of mobile application development include:

- Constant documentation of project
- Recognised project management methodology so able to communicate with others who have used it before
- Checklist of goals that have to be met in order to have successful project
- Allowed for constant progression in the correct direction
- Communication between assignment authoriser was efficient and concise

The limitations of developing using the PRINCE2 methodology with this project case study of mobile application development include:

- Does not measure quality of final product
- No way to determine if final product is high quality
- Focuses on achieving goals but not whether the goals were achieved well
- Documentation heavy which can be overwhelming
- Can be inefficient if not certain what you are doing

Social media charity case study – Agile

With the Social media charity case study of the Agile project management methodology, I believe that although this is an extremely effective project management methodology, compared to some like Waterfall with regards to turnaround, it is not the most effective project management methodology that could be used with running a social media charity campaign. It felt like Agile was restricting the ability I had to work on the social media campaign due to its structure and the one-week sprints felt rushed. I felt that this led to lower quality posting and due to some unavoidable circumstances, posting every week was not possible and quickly led to a feeling of being overwhelmed with the work that needed to be done. The structure of Agile is well suited to working in an environment with other people and supporting each other through development that just simply was not possible with a single person social media campaign, and therefore I do not believe it was as effective as some other project management methodologies might have been in this situation.

The benefits of developing using the Agile methodology with this project case study social media charity include:

- Fast turnaround for posting content
- Ability to plan content in advance of the week and develop it swiftly
- Constant communication with assignment authoriser who provided feedback on project
- Focus on work in the moment in order to avoid feeling overwhelmed
- Weekly reviews helped to judge stages in progress and move forward accordingly
- Work through each sprint and goal was achieved

The limitations of developing using the Agile methodology with this project case study social media charity include:

- Feeling overwhelmed with amount of work that needed to be done
- Not enough time to develop high quality content
- Rushed work
- Not suited for social media project
- Would work more effectively for software development
- Unable to plan ahead and work on ideas for the future
- Limited to working in sprints

Conclusion

To conclude, there are a large variety of different, both complicated and simple, project management methodologies out there. This large variety allows for there to be a project management methodology to match to the kind of project that is being completed, and therefore it is just a matter of finding the right project management methodology for the project.

The various factors that contribute to making a project management methodology so efficient are not only limited to the goals and stages that it intends for the users to follow, but also the structure of the project management methodology, and all of these various factors combined ultimately allow for a successful project to be completed.

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