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Natasha Hockey

*“Researching, designing and testing a
cloud-based resource scheduling
application for small-medium sized
creative teams”*

Supervisor : Martin Reid
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N.HOCKEY

Researching, designing and testing a cloud-based resource
scheduling application for small - medium sized creative
teams

Tutor: M.Reid

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Abstract

The purpose of this project was to explore and create a project management tool to solve the problems of teams working in small - medium sized creative teams. This project has been done in collaboration with The Idea Bureau, a small creative team in the South West of England. Extensive user research has been carried out to better understand the problem at hand before creating a design solution that works for users. This project identifies the current tools in the project management industry to prove that there is a need for a new tool in this market. The design solution exists as a clickable prototype, which has been tested on users to identify the strengths, weaknesses and areas of improvement for this project moving forward. Recommendations have been included that will be carried out after the project has finished to ensure that the implementation of this project management tool by The Idea Bureau is as successful as it can be.

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Acronyms

HTA - Hierarchical Task Analysis

IA - Information Architecture

SVG - Scalable Vector Graphic

UI - User Interface

USP - Unique Selling Point

UX - User Experience

QA - Quality Assurance

1. Introduction

The Gantt chart was created in 1903 by Henry Laurence Gantt with the purpose helping to manage and plan projects according to Trainer (2012). These charts are used as a visual way of documenting the duration of a project and its progress. Gantt (2016) reveals that years ago these charts were prepared by hand, however in a projects life-cycle schedules change and this is a natural occurrence. When this does inevitably happen the Gantt charts need to be amended / redrawn in order to remain consist with a projects schedule. As soon as the Gantt chart comes out of sync with the project it becomes redundant. Managing client expectations then becomes impossible. On both small and large scale projects this was not a convenient medium for Gantt charts to exist.

When personal computers became available in the 1980s, digital and more complex Gantt charts could be created. This meant that the natural changes in a projects life-cycle could be better managed and conveyed to teams. Paymo (2016) states that as Gantt charts became accessible on web-based application the popularity of this project management tool increased. Gantt charts are one of the most popular project management scheduling tools in the creative industry according to Heaton (2016b). These charts became digitalised over 100 years ago, yet user's needs are still unfulfilled, especially within the creative industry.

This project is a result of the team at The Idea Bureau wanting to create a product to help solve the issues with managing projects in creative teams. The Idea Bureau is a small digital workshop located in Taunton, Somerset. The company's ethos is to create engaging digital experiences that have a positive impact around the world. After having tried and tested a vast amount of project management tools in the industry, The Idea Bureau feel that it is now

time to design and build a tool that can work for creative teams effectively. The Idea Bureau's website can be found at www.theideabureau.co and Figure 1 provides a preview of the website.

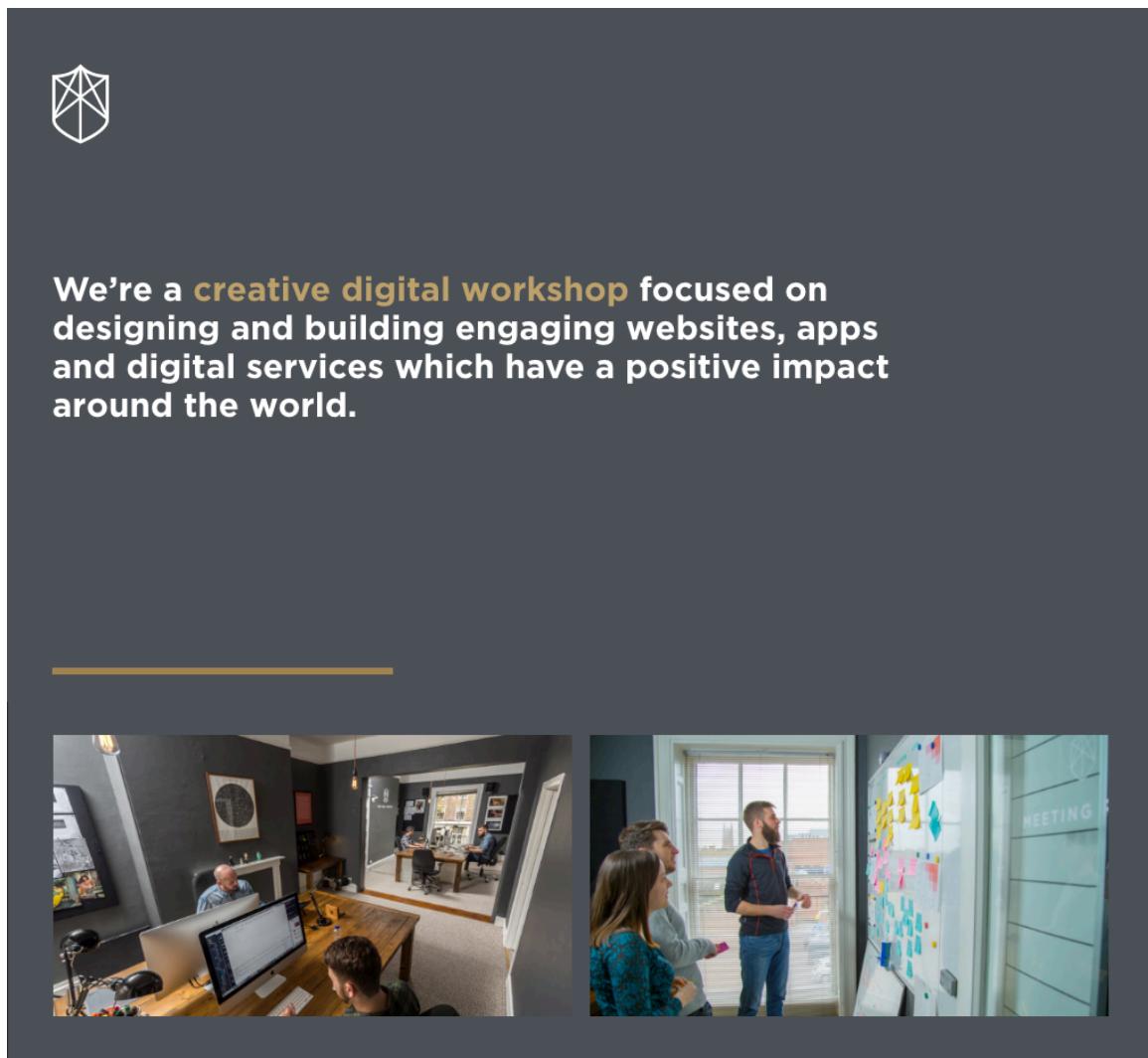


Figure 1 - The Idea Bureau Website

Working alongside the team at The Idea Bureau is going to involve being in constant communication about the different phases of this project. Having regular meetings and check-ins will be essential in the progression and high quality delivery of this project.

2. Aim and Objectives

The aim of this project is to identify the growth in the creative industry and how there is a demand for project management tools within this industry. A suitable solution will be designed based on users' needs and the final output will be a clickable prototype.

1. Carry out research into the history of Gantt charts and the progression over the last 100 years, competitor's analysis, the growth of the creative industry and how these charts are currently used in the industry will be carried out to gain a solid understanding. This research will be achieved by 19th March 2017 and roughly 50 hours will be spent on this.
2. Carry out quantitative and qualitative research into user's behaviours to an industry based standard. The data gained from this will inform design solutions and the overall user experience of the end product. 10 hours will be spent on this and it will be done by 29th March 2017.
3. Analyse research findings in order to identify trends and anomalies before moving forward and creating personas and user journey's. A UX workshop will be essential so that research findings can be shared with the team at The Idea Bureau. A total of 20 hours will be spent on this and it will be achieved by 4th April 2017.
4. Using the research gathered wireframes and rapid prototyping will be done to allow for exploration of IA and UI components. This will be done by 13th April 2017 and 10 hours will be spent on this.
5. This will result in high fidelity designs created in Sketch, an industry standard UI design tool. These designs will then be synced with InVision to create a professional prototype for user testing purposes. 50 hours will be spent on this and it will be finished by 23rd April 2017.
6. The final clickable prototype will be tested on a minimum of 5 users. All of this data will be analysed and necessary design improvements will be

considered. 15 hours will be spent on this and it will be done by 3rd May 2017.

3. Literature Review

With milestones and deadlines constantly changing, project management is a difficult task, no matter what sized team. Teams can easily fall behind if there is no effective guidance and tracking from a project manager, and this is why Gantt charts are a beneficial way of dealing with client / team member's expectations. Nishadha (2012) reveals that Gantt charts provide a visual representation of the project pipeline and what is expected.

A Gantt chart is the best graphic available for project managers as it is the most useful and insightful diagram. Figure 2 shows a basic diagram of a Gantt chart.

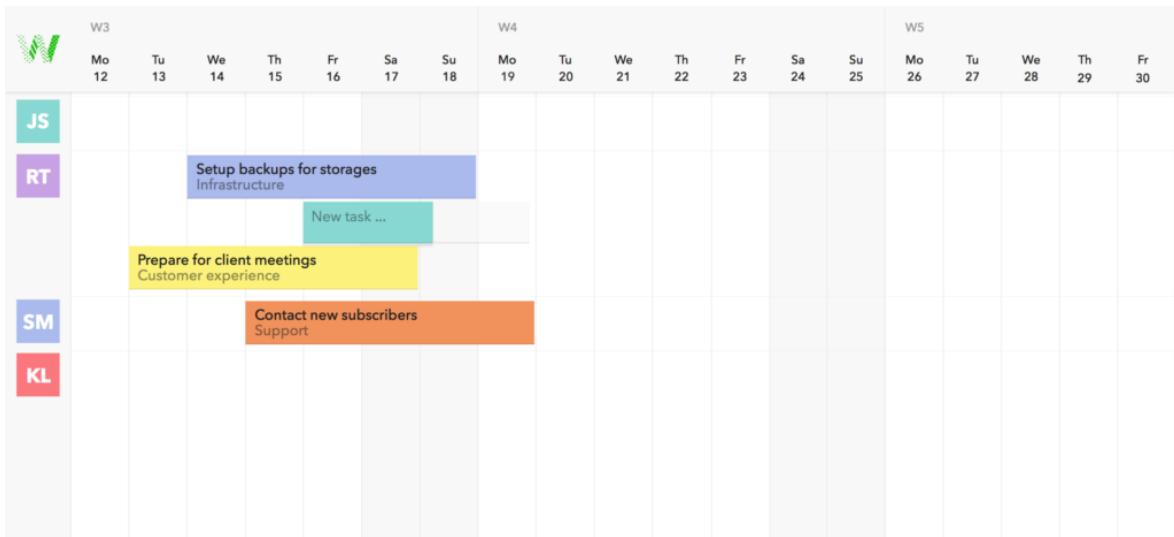


Figure 2 - Basic Gantt Chart Diagram

However, Gantt charts do come with issues. The common errors behind these issues are:

- Providing too much information
- No consideration for version control

It can be tempting to start adding multiple layers to Gantt charts, but this only increases the upkeep and is visually overwhelming. As a project evolves maintenance is required and more often than not there is no backlog showing the history of a project. Harper-Smith and Dery (2012, pp. 141 - 142) writes how having the visual understanding of a projects evolution is priceless.

In recent years drag and drop functionalities have been implemented into most online Gantt chart software. This makes it easier to add tasks, create dependencies and update timeframes according to John (2011). Dependencies have become a staple feature and they are used between tasks that occur chronologically in a waterfall methodology. This means that if a task is delayed then the remaining project pipeline will adapt to accommodate for this writes Valdellon (2014). Dependencies refer to data relationship between tasks and there are four main types. These are finish to start, start to start, finish to finish and start to finish. All of these could exist within a single Gantt chart project reveals Project Insight (n.d). Figure 3 is a diagram showing how these four types of dependencies appear visually.

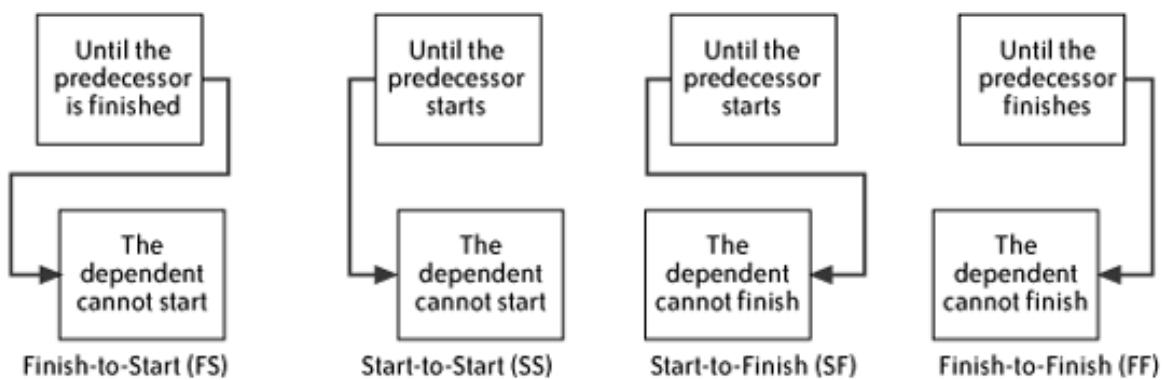


Figure 3 - Types of Dependencies

There is an ongoing debate as to whether or not Gantt charts can fit into an agile workflow. Woo (2014) explains that Gantt charts are still beneficial as they are quick to communicate whether a project is on track. Dependencies are also a crucial feature needed, even in an iterative process.

Within an iterative process there are still layers that make up an iteration or a sprint and these can be visualised in a Gantt chart. However, Sutherland (2006) who invented Scrum in 1993 (a smaller version of the agile methodology) banned the use of Gantt charts. This was because even after the first working day the chart would be outdated and the maintenance of this would be too much. Even after 13 years Jeff Sutherland still frowned upon mixing Gantt charts with an agile / scrum methodology. Croft (2015b) reveals that there has been a lot of competition and rivalry between the two methodologies and which ones are suitable for managing creative teams. Waterfall, agile and scrum methodologies are the main contenders but they all bring advantages and disadvantages. Agile and scrum do not allow for planning of duration and costs, which is why Jeff Sutherland was against the usage of Gantt charts. However, the cost and duration of a project contains key information that should be communicated with clients. By breaking down the iterative sprints into phases this can be clearly documented in a Gantt chart format effectively.

Within an Agile methodology it is common for burndown charts to be used. These charts usually plot the tasks left of a project against the amount of time in sprints available. This way if a project is beginning to fall behind schedule it can be dealt with immediately, which is a good way of managing project risks reports Mittal (2013). When teams have multiple projects on the go burndown charts can be really helpful in providing a high level overview of project progress according to Waters (2011). Including some sort of chart feature within the project management tool that is being designed for this project could be beneficial. There are not many existing project management tools

that offer this sort of functionality. Figure 4 is an example of how burndown charts look.

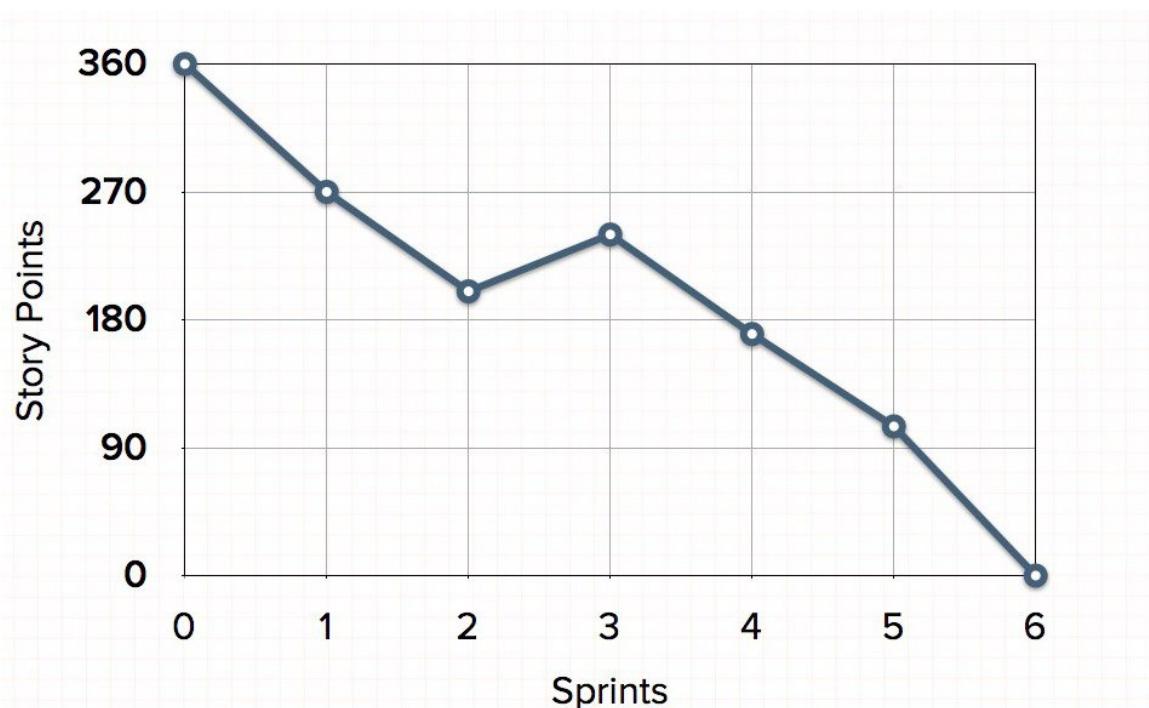


Figure 4 - Burndown Chart

In today's industry it is rare for there to be single teams working on projects, it is becoming much more of a collaborative process. Naturally this is making managing projects more complex. Especially when there are multiple teams dispersed in different locations. A Gantt chart can help to become a central place for all teams involved, whilst also providing higher level insights for management according to Horvath (2016).

By having a central place for team members it means everyone is on the same page with upcoming milestones and deadlines. Collaborating effectively is key to completing projects on time and in budget. Having a visual representation of tasks helps to put projects into perspective for users. This means that if one

member misses a deadline, then the member is aware of the implications on the rest of the current / other projects reports Proof Hub (2016). Croft (2015a) states that when making estimates for the duration of tasks and working within client budgets it is essential to double check with team members. This is because the team members are the ones completing the work, so if there are any issues then this can be addressed earlier on. For effective planning it is important for team members to communicate realistic timeframes in order to show a realistic implementation of the project pipeline. Whilst also allowing the project manager to handle client expectations professionally and effectively writes Meredith, Mantel and Shafer (2016, pp. 272 - 273).

Paula (2016) argues that contingency planning is a really important process in order to identify and deal with problems in a calm and effective manner that have the least impact on the project pipeline. Contingency planning is about knowing what can be done to prevent problems arising and ways to reduce the risk of this happening. Risk management and contingency planning go hand in hand for effective project management states Webster (2014).

Lindenthal (2016) explains that one of the biggest reasons why projects fail, alongside poor management is scope creep. All the small extra tasks that get agreed to along the way add up and without clear insights into the project plan it is difficult to understand the implications. Scope creep often occurs once the project is already underway and clients increase expectations according to Stachowiak (2014).

Aldahleh (2014) reports that Gantt charts are not a suitable method in modern professions. It can be seen as a counter productive method and discourage innovation and creativity. Gantt charts that rely on dependencies showing team members the direct impact on future phases create too much pressure for professionals. The first idea is not also the best idea and presenting deadlines

and dependencies could hinder creativity. Within the creative industry projects life span is usually scheduled over a few months, if not more. According to Aho (2013) Gantt charts are not suitable for projects that last over 2 -3 weeks. This is because the maintenance becomes too much work and there are too many conflicting variables. On the other hand, projects spanning a few months can be broken down into weekly sprints if needed. But this approach very much depends on the project manager and the level of detail. Sehlhorst (2007) agrees with Aho (2013) in saying that Gantt charts are only effective for immediate plans and the value decreases when long term scheduling occurs.

The purpose of this project is to create a Gantt chart for creative teams and the 2016 Tech Nation report states that there are now 58,000 digital businesses in the United Kingdom alone. 17% of these businesses are built up of software and app development companies, this makes up for the top sector according to Smirke (2016). Figure 5 provides a clear overview of findings from the 2015 Tech Nation report. The tech sector allows for Britain to have a competitive edge, which transforms the economy and changes day to day living reports Tech City and Nesta (2016). There has also been a rise in the number of small independent companies stepping into the creative field explains The Independent (2011). Whilst this is referred to as a creative boom, it is important to understand that these companies are working together in partnership and thrive together. It is not about stealing and pitching for the same work, it is about establishing a solid creative community writes Blackwell (2015). With this creative industry boom it is easy to establish the need for better project management tools, even for smaller sized teams.

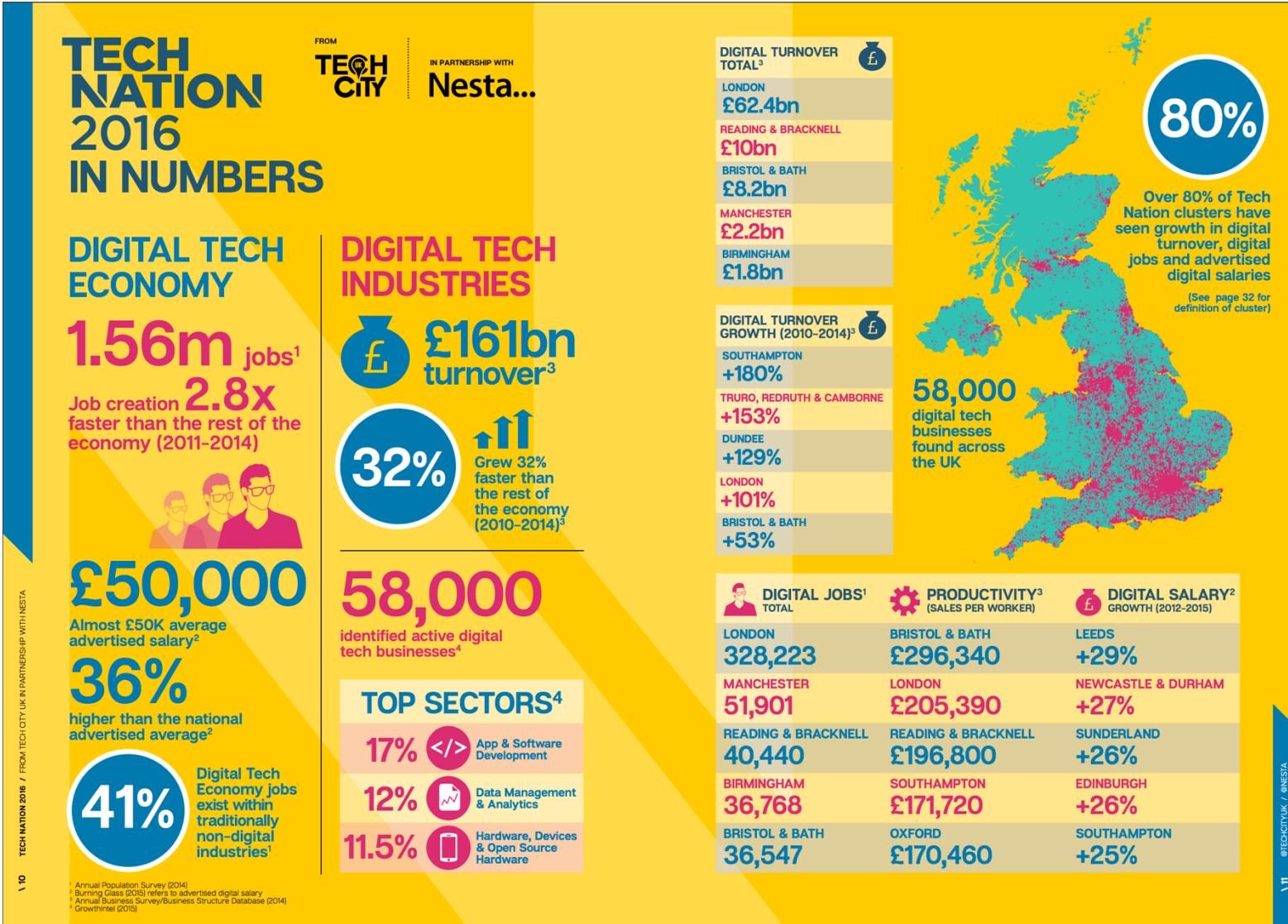


Figure 5 - 2016 Tech Nation Report

All of these studies present insights into the state of Gantt charts and how they can fit into different workflows. The 2016 Tech Nation Report reveals that with the growth of the creative industry there is a need for more project management tools that cater specifically for these needs.

4. Specification

4.1 Purpose

The main purpose of Project Pipeline is to provide a service for small - medium sized creative teams wanting to manage projects successfully.

4.2 Scope of the System

In order to avoid scope creep, the scope of the project was defined before moving forward in the UX / UI phases.

1. The design of Project Pipeline will be a desktop web app.
2. Costs in carrying out user research, designing the interface and testing should be predominantly free. However, if any costs do arise then The Idea Bureau will cover them.
3. The design will be modern, minimalistic and easy for users to use.
4. Users should be able to carry out a substantial amount of tasks through the prototype. Although there will be no ability to add real data.

4.3 Product Perspective

There are lots of project management tools available to creative teams in the market. However, after having tried and tested a variety of these tools it was time to create a product that works for users intuitively. The aim of Project Pipeline is to allow users to create and manage projects easily with the ability to add project budgets. Adding budgets will provide users with an insight into if a project is expected to be under / over budget. Users are also able to see a projects history. This means that teams can be better prepared when planning

new projects e.g. if a team went over on a design phase then more time could be allocated in the next project for this.

4.4 User Interface Requirements

Creating a fully functioning prototype is going to require having a variety of screens for users to experiment with. A list has been created below of the main screens needed to ensure that all functionalities are captured.

- Home Screen
- Sign Up Screen
- Log In Screen
- Projects
- Create New Project
- Edit Project
- Settings
 - Settings Sub Pages
- Timeline View
- Team Member View
- Daily Digest
 - Today
 - Tomorrow
 - Weekly
- Add A Task
- Card View

4.5 Functionality

There are a number of functionalities that will need to be included within the screens to make them functional for users. The following functionalities will be included within the prototype for Project Pipeline:

Functionality	Why is it needed?
User sign up	Users are required to have the ability to sign up to an account. This will mean that the date created inside projects and team member information will be protected.
User log in	Returning users will be required to log in with an email address and password.
Creating a project	Users should be able to create different timeline sections for different projects.
Editing a project	Once a project has been created, it is important to make sure that users can edit the format of projects in future.
Adding a task	The timeline interface should allow users to add new tasks and assign team members.
Milestones	Milestones will be created to document important dates inside a project. This will help to make all team members aware of what is happening.
Budgeting	Being able to budget projects is one of the main USP's of Project Pipeline. So allowing users to set daily rates is an essential feature.
Team member view	Users should be able to toggle between a project view and team member view. This will allow users to see schedules in different formats.

Settings	Users should be able to alter settings for Project Pipeline in one section. This will make it easier to manage accounts etc.
Integrating apps	Another USP for this project management tool is the ability to integrate it with apps. This will provide a more fluid workflow.
Daily schedule	Users will be provided with a daily schedule in a to-do list format. This means that there is not the need to dive into specific project timelines to find out daily plans.
Card view	A card view can be viewed to provide an overview of tasks that are in progress, completed etc.
Notifications	Notification emails can be provided daily if users feel the need for this functionality.

Table 1 - User Interface Specifications

4.6 Constraints

There are several constraints to this which could effect the process and user testing phase. These are:

1. Users may not understand the purpose of a prototype. A prototype means that the user can not input any data and it is purely just clickable to show a user's journey.
2. Web browsers, specifically out of date ones, may not be able to load the prototype properly. Especially taking into consideration the size of the prototype.

4.7 Criteria for Success

In order to effectively measure the success of this project a criteria for success has been created. A table of this criteria can be found below. If all the criteria are met, then this means that the project has been successful.

Has a clickable prototype been created using InVision?	Yes	No
Does a style guide exist? (colour, typography)	Yes	No
Is there the ability to add tasks?	Yes	No
Can tasks have dependencies?	Yes	No
Can projects have milestones?	Yes	No
Have budget constraints been considered?	Yes	No
Can apps be integrated?	Yes	No

Table 2 - Criteria For Success

5. Methodology

5.1 Comparing Methodologies

Fellner (2014) reveals that methodologies help to carry out projects comprehensively. If the right methodology is being used, then the process should feel intuitive and accurate. Not using a methodology for projects reduces the success rate. This is down to a lack of structure and project control according to Borysowich (2010). With there being a variety of different methodologies, it was essential to carry out a comparison (Appendix X and X) before deciding which to move forward with.

5.2 Agile Methodology

After carrying out a comparison between Agile, Waterfall (Appendix A) and Spiral (Appendix B) it was decided that an Agile approach would be used to complete this project successfully. Figure 6 is a visual diagram of how the Agile methodology works.

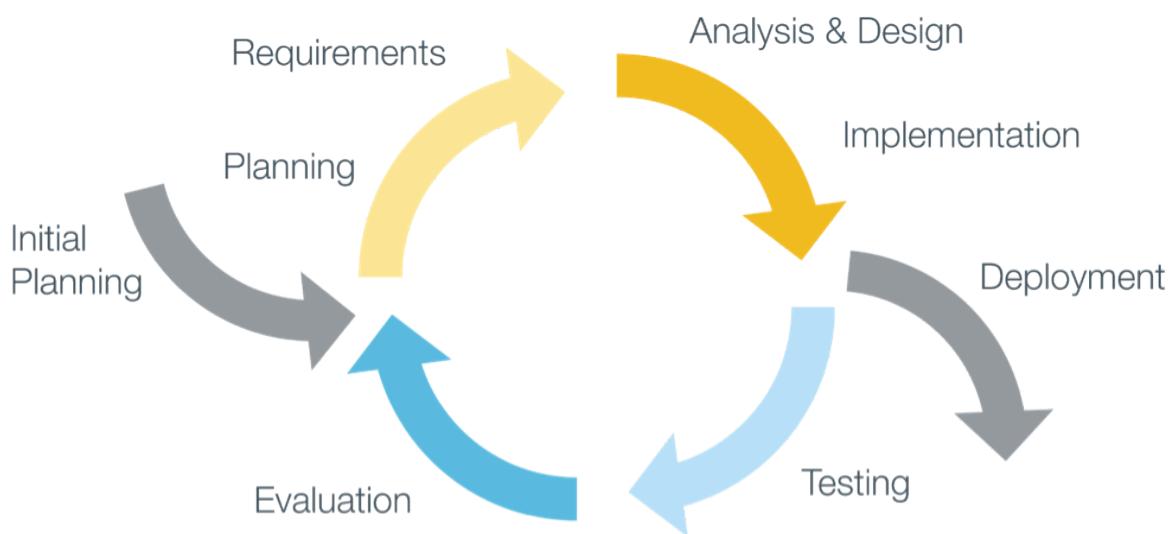


Figure 6 - Agile Methodology

The term Agile for designers can be slightly odd to comprehend as when the methodology came around in 2001 it was primarily aimed at software developers. Joel (2015) explains that despite this Agile can be a very effective method for the design process. It allows for large scale problems to be broken down according to Brooks (2014). As this method is an iterative process it removes the pressure of getting the design right first time. This also allows for user testing and UI changes to be considered and then tested again.

On the other hand, Lillington (2015) argues that working to a fast pace and in iterative sprints the overall quality of the design could suffer. Designing

websites and apps takes time and research and this is something that the Waterfall approach allows for. The benefits of gaining user feedback earlier on in the design process outweighs Lillington's argument. Having the ability to design and roll out new features and functionalities is a lot easier with an iterative workflow.

It was vital that this project stayed on track and within the schedule created, otherwise the final deadline would be in jeopardy. Clum (2013) states that this methodology has a strong emphasis on designing and implementing products and services on-time and in-budget. This methodology also ties in with the process followed at The Idea Bureau, which means that a professional workflow is being adhered to.

5.3 Project Management

Since the Project Review schedule was created certain timings have changed and this is due to having to manage other assignments and working at The Idea Bureau alongside. A new Gantt chart has been created (Appendix C) to show how the project ended up being scheduled. Despite falling behind schedule due to other commitments the final deadline was still achieved. Allowing to spend more time on the design of the prototype has helped to create a more polished prototype. The schedule was only a couple weeks behind, which meant that all elements were still achieved successfully.

Ensuring that the project was managed well was essential in meeting deadlines. There was no time for work to be lost and so it was vital to have all files backed up. The decision was made to back files up on Dropbox and GitHub. GitHub has allowed for version controlled files, which means that if at any point the design file needed to roll back to previous designs then this was possible. A private GitHub repository was set up and then the repository was cloned through the GitHub desktop application. This meant that when changes occurred this could be pushed up to GitHub in a matter of seconds. Figure 7 shows what the GitHub repository looked like for this project.

File	Commit Message	Time Ago
Initial commit	Initial commit	5 minutes ago
designs	Initial commit	5 minutes ago
images	Personas created	a month ago
Logo.png	Initial commit	5 minutes ago
Logo.svg	Initial commit	5 minutes ago
Project Pipeline.docx	Initial commit	5 minutes ago
User Interviews.docx	Updates	26 days ago
~\$object Pipeline.docx	Initial commit	5 minutes ago

Figure 7 - GitHub Repository for Project Pipeline

5.4 Project Risks

Prior to diving into the project a list of risks was identified and displayed in a risk register (Appendix D). Overall throughout the duration of this project there has not been any significant issues with the risks previously identified. Users were sourced easily for the user interviews and this was done through asking

project managers / designers / developers on Twitter. There were also no issues with scope creep, Sketch bugs or website content.

The only two risks that did occur were inaccurate estimates and not being able to get into the usability lab. However, there was plenty of time left at the end of the project so all of the work still got completed. Due to work commitments with The Idea Bureau and running slightly behind schedule it meant that there was not time to travel to Southampton to use the usability lab. Whilst doing this would have provided some useful insights (heat maps and gaze plots) effective user testing has still taken place.

5.5 Was the Project Methodology Followed?

An Agile methodology has been followed for this project. Due to the time constraints of this project, sprints have been done to ensure that work was done on time and feedback could be carefully considered. After user testing another design sprint happened where valid feedback was implemented. Any feedback that required for in-depth design thinking has been included in the recommendations of this report. This work will be continued at a later date so that The Idea Bureau can implement it.

6. Ethics

As discovered at the beginning of this project there was undoubtedly going to be ethical issues to consider. This project required the need to be in contact with potential users of Project Pipeline through the use of surveys and interviews. Due to this an ethics form needed submitting to the university (Appendix E). This form was accepted hassle free and it meant that carrying out these user interviews was possible whilst also conforming to the university ethics regulations.

The research collected from the participants has been kept anonymous and has not been shared outside The Idea Bureau or university. As stated in the ethics form the participants involved were not children or vulnerable making the user research phase of this project successful.

7. Planning

7.1 User Research

Having an understanding of users when designing user interfaces is essential. There are two types of data that can be collected and these are quantitative and qualitative. Veal (2016) states that inexperienced designers often skip the user research phase and rely on biased opinions to create designs. This is dangerous and can impact clients' business or service.

For this project a combination of quantitative and qualitative research has been carried out. Using a combination of these methods helped to gain a solid foundation to move forward into the design phase of this project. According to Thelwell (2015) surveys are a great way to collect large amounts of data. Surveys also help to gain a better understanding of the end user and Gray (2014) reveals that an intuitive experience starts with a great survey.

The survey (Appendix F) created was made up of eight questions and presented and shared on Typeform. Typeform is an online survey platform that allows users to create customisable surveys that provide in-depth analytics on research findings reveals Funke (2016). The data collected through this tool is all anonymous. This survey was about finding out about user's habits with existing project management tools, what features should be included in a new tool and if there was room in the market for a new tool. The survey got 25 responses from a combination of project managers and team members working in small - medium sized teams. Results show that 80% of participants felt that there was a gap in the market and the main features required by users were:

- Dependencies
- Assign tasks
- Organisation cards

- Overview of schedules

The second part of the user research phase was to carry out five user interviews. Nielsen (2000) reports that interviewing only five participants is needed to gain the most valuable information. Anything beyond this is seen as a waste of time and resources. Figure 8 is a graph supporting Nielsen's research on this.

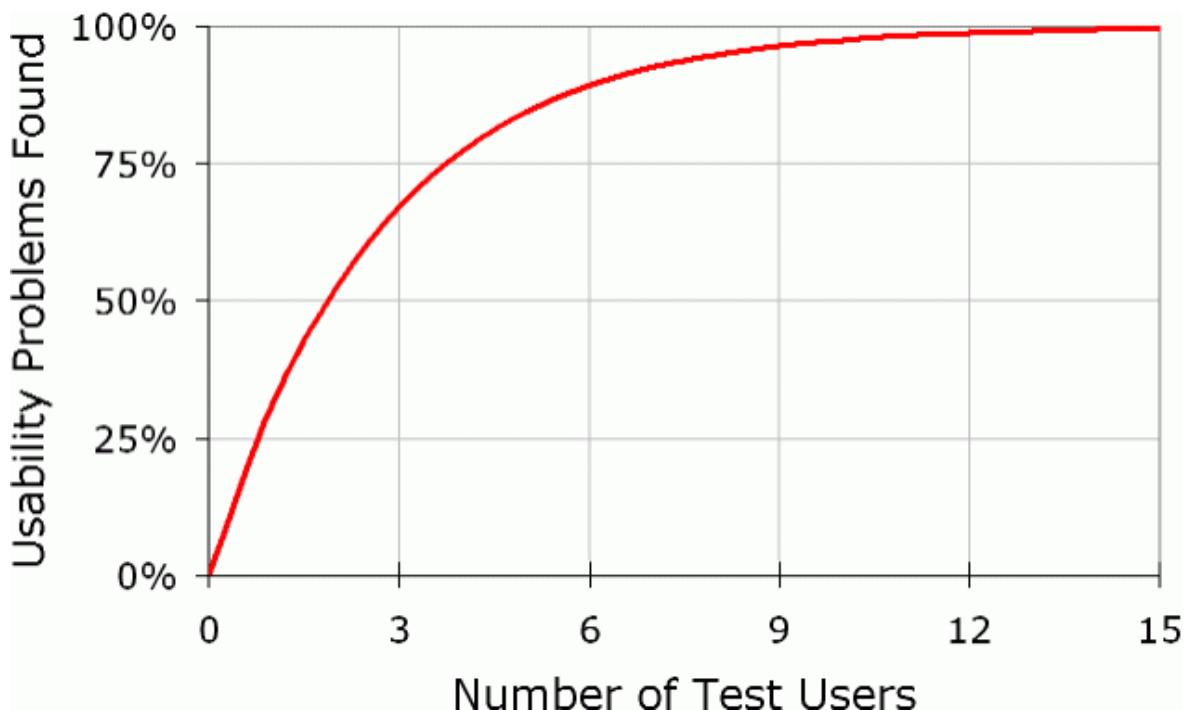


Figure 8 - Usability Testing Statistics Nielsen Norman

Since it has been established that the two user types for the project are project managers and team members a variety of these users have been interviewed. This means that both user perspectives have been carefully considered. These interviews have helped to understand the frustrations and pain points of existing tools as well as what works. Transcripts of these interviews can be found in (Appendix G).

All of the research gained in this phase of the project has heavily influenced the design of the clickable prototype. Without these research findings the prototype would have been built based on personal experiences with these tools. Taking into consideration a wider audience has definitely helped to create a professional workflow with a detailed end product.

7.2 Personas

Personas are a tried and tested part of the UX process as they have been in use since the mid 90's reveals Goltz (2014a). Usability Gov (2013) explains that personas are about creating realistic representations of different user types. These personas should be informed by user research collected. The more in depth research carried out the better quality personas.

Based on the user research that was collected for this product, two personas have been created for each user type (team member and project manager). These personas (Appendix H) have been used as a base for the user journeys. By factoring in personas it makes the process more realistic and relatable both for the client and the designer working on the project. Meyer and Wachter - Boettcher (2016, pp. 7 - 10) stress that taking into consideration user's stress cases is important as this is when the application is tested the most.

7.3 User Journey and Empathy Mapping

Typically, user journey's follow on from the persona phase of the UX process. According to Adaptive Path (n.d.) the process of mapping out a user's journey is a strategic process that helps to capture and communicate user's interactions

with the product. Doing this helps to iron out complexities and reduces the likelihood of creating a bad user experience. The user journey can be seen below in figures 9, 10 and 11.

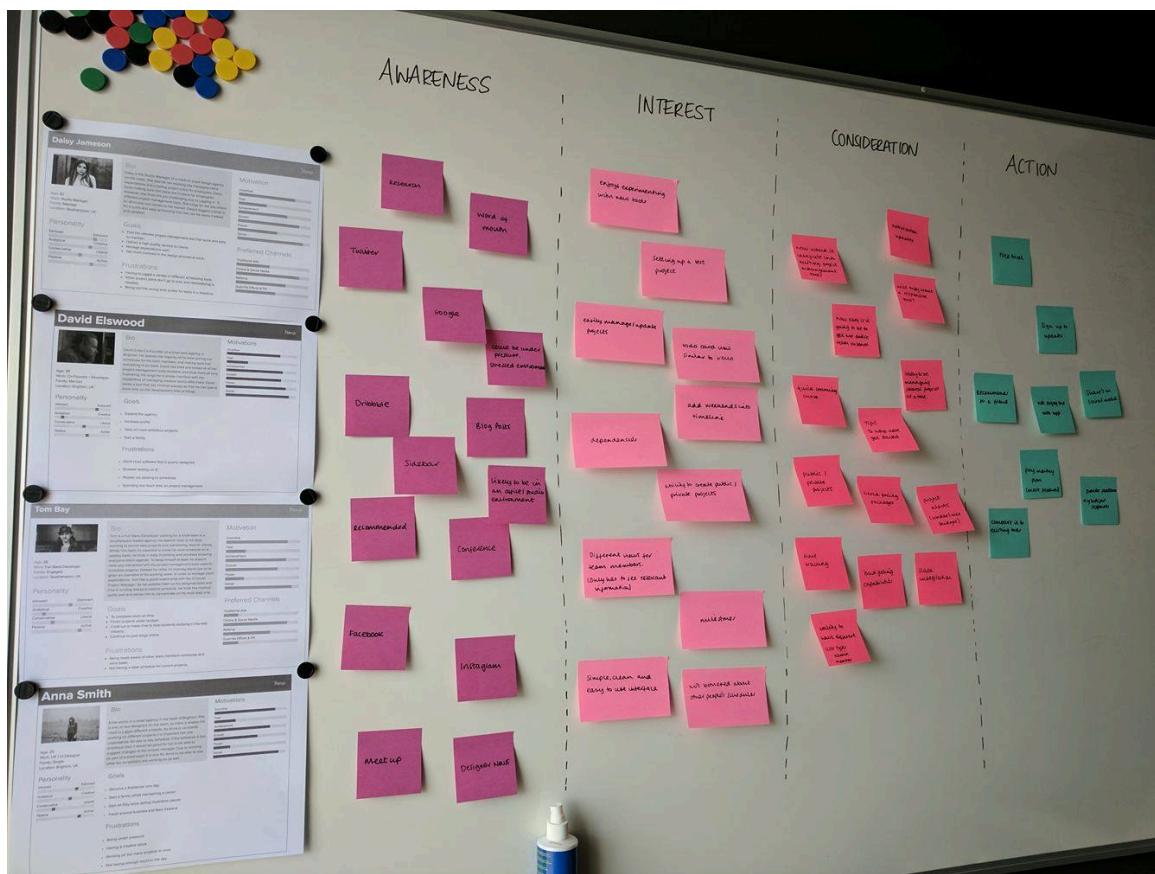


Figure 9 - User Journey Overview

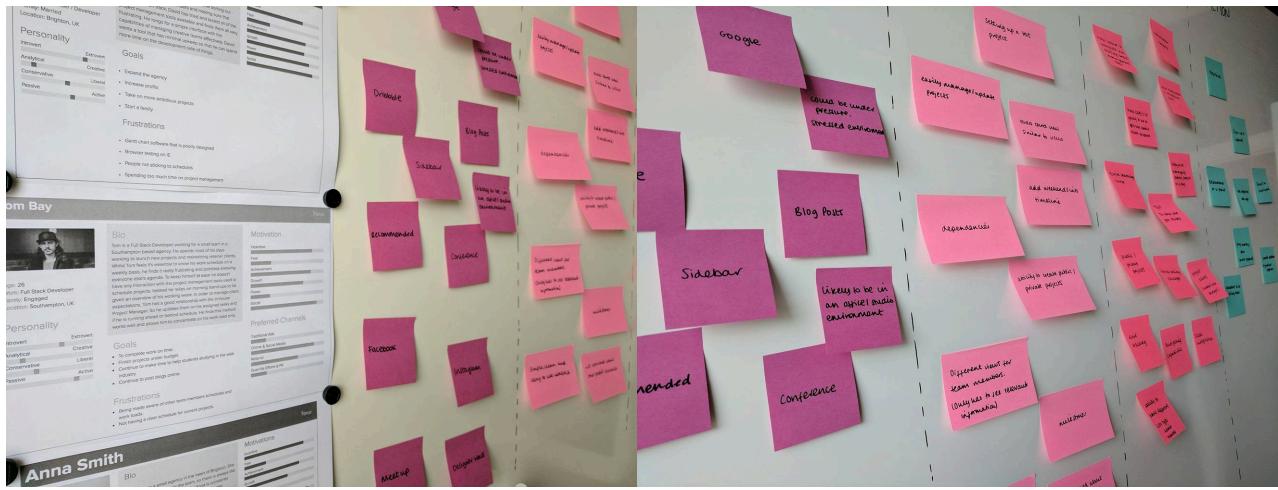


Figure 10 and 11 - User Journey Close Ups

To create the user journey above the four personas previously created were printed out. This meant that the journeys could be mapped against the two different user types, admin and team members. The user journey was then broken down into four sections: awareness, interest, consideration and action. These four sections covered users becoming aware of the product, what might be of interest to them, considerations to be made and what would be the users end action.

The user journey revealed insightful insights into what users may expect when visiting Project Pipeline and also how users may be feeling. Getting users on board with a new product is not easy and understanding this really helped to move forward in the design process. Creating a product that was familiar with users was essential in providing a good experience. This lead promptly onto the next phase of the planning process which was to carry out a competitor's analysis.

7.4 Competitor Analysis

Analysing competitors is a vital part of the user research phase. It is inevitable that in today's industry that a product / service has competitors. Ensuring that these competitors are investigated is a good way to establish an understanding of the current market. There are many competitors to Project Pipeline but the three that are being investigated are Teamweek, Team Gantt and Roadmap. Three SWOT analysis have been created (Appendix I, J and K) to look into the strengths, weaknesses, opportunities and threats of these existing tools.

7.4.1 Teamweek

According to Karlson (2016) Teamweek is a project management tool that follows a timeline based structure. It allows teams to schedule meetings and tasks in a minimalistic interface. See Figure 12 for an overview of this interface.

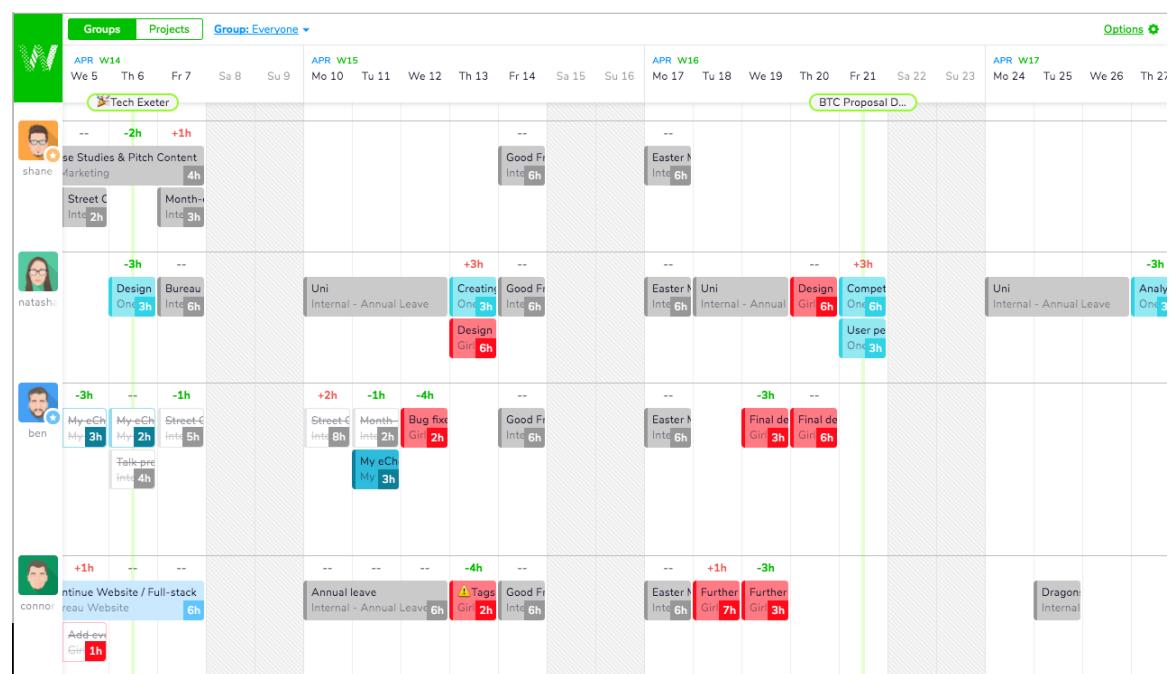


Figure 12 - Teamweek Interface

One of the best selling points about this app is the fact that it is completely free for users to create schedules. Although this tool could not be used as a single project management tool. Recently Tiburca (2017) blogged about how Teamweek should be used to provide an overview of schedules. However, it should be paired with Trello to document ideas and Toggl for time tracking purposes. Using a combination of these tools is proven to create a powerful workflow.

7.4.2 Team Gantt

Team Gantt is an online Gantt chart software that enables teams to collaborate on projects easily. Whilst it is easy to plan projects and track progress in this software its design is outdated and not the easiest to use reveals Santos (2014). Figure 13 is provides an insight into the timeline view.

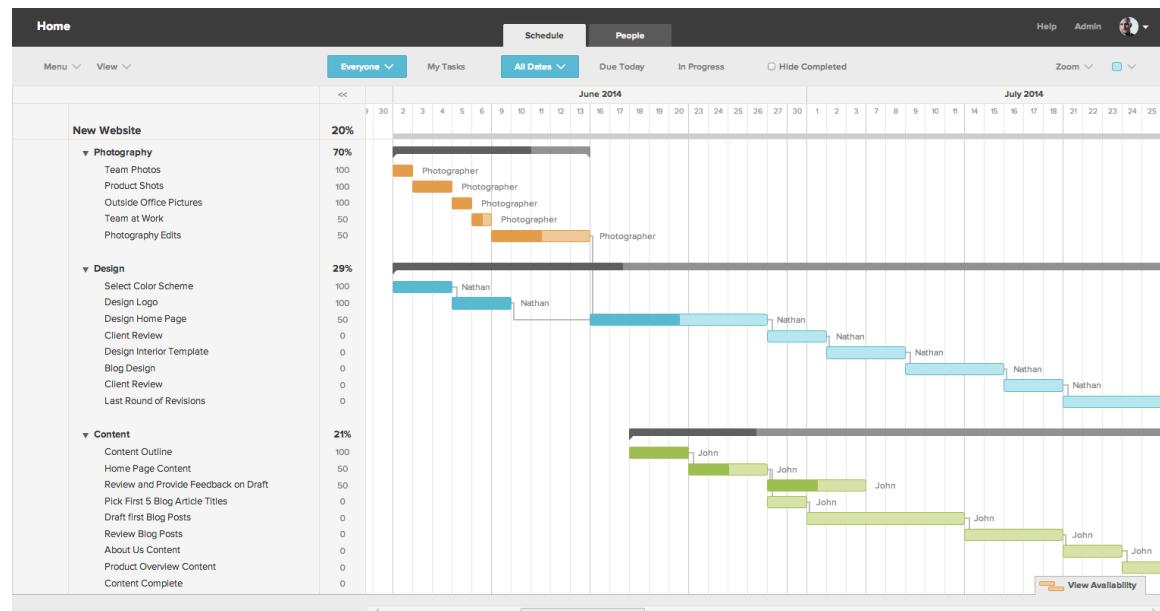


Figure 13 - Team Gantt Interface

Biggs (2012) reports that a 30-day free trial is available to users however there are four different paid for plans. Figure 14 gives an overview of these plans. Considering that there are better and free tools available for this style of

project management Team Gantt does not seem like the most reliable product to manage projects.

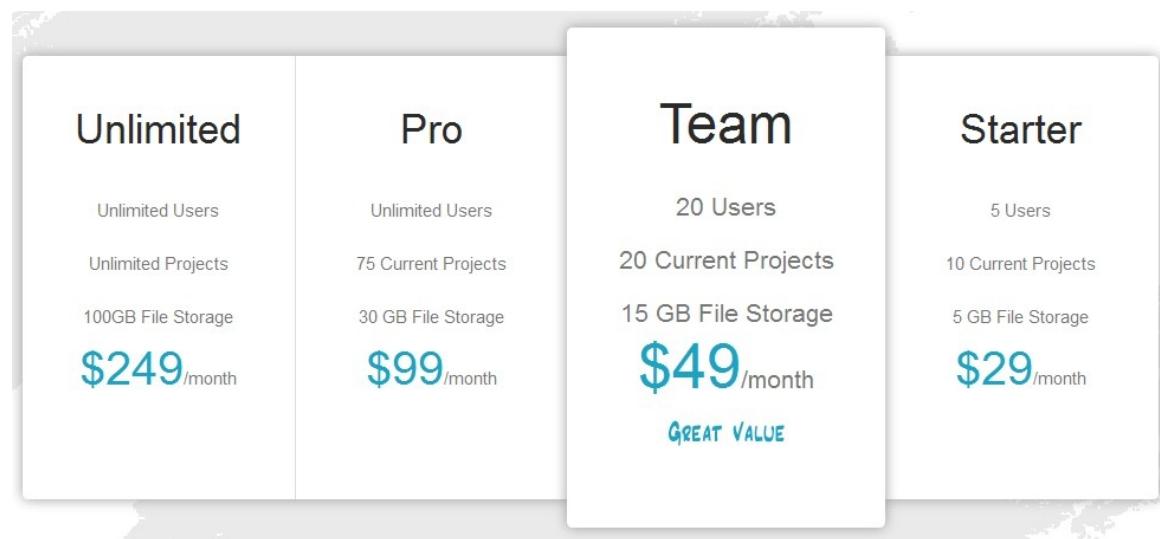


Figure 14 - Team Gantt Pricing

7.4.3 Roadmap

Roadmap is a new competitor to enter the market and has been created by the team at 3drops. Whilst currently it has basic functionality it does look like the team want to improve and add features regularly. Roadmap is currently in beta and is going to be rolled out to everyone very shortly. As part of the research on Roadmap, a meeting was held over Skype with the team and meeting minutes were documented (Appendix L). This helped to gain a better idea of where the team want to take the app.

7.5 Mood Boards

Before beginning the wireframing phase it is important to collect design inspiration, which could influence the design of Project Pipeline. This inspiration could be anything from page structures, typography, iconography and colours reveals Molson (2016). There are a variety of tools that can be used

to gain inspiration and these have been compared (Appendix M). Based on this research it was decided to create the mood board using InVision boards. According to Bryd (2015) InVision boards are beneficial as font and colour swatches can be included and this is a unique feature. There is also the ability to comment on these boards, which would be especially helpful when working with multiple designers on a project.

It is important to remember that mood boards are not just a visual aid for designers but they are also a deliverable that can be shown to a client. Having this board to refer back to throughout the design project, especially on longer projects, is beneficial. It can help to get ideas across to other team members reports Epstein (2015).

Figure 15 provides an insight into what this board looks like. However, it can also be accessed by following the following URL:

<https://projects.invisionapp.com/boards/8X35YUHVJ4UQG/>

Figure 15 - InVision Mood Board for Project Pipeline

7.6 Site Map

Site maps are a hierarchical diagram that visually show the structure of a website. This is an important part of any design process as it is a way of ensuring that content is where users expect it to be. Defining a site map after the UX phase helps to identify any areas of concern earlier on reveals Mears (2013b). Site maps help to reduce and fix the number of poorly linked internal pages. If the navigation structure of a website is strong then this will improve the overall user experience of the website according to Bigby (2016).

The site map for this project (Appendix N) has been designed using a tool called Timblee. Timblee is a free web service that allows users to create high level site maps for websites. This was an easy and hassle free way of creating a site map for Project Pipeline. From this it is easy to see how users would interact with the site and how tasks would be achieved.

7.7 Wireframes

After all of the UX tasks had been completed it was time to move into the design phase. This began with creating low fidelity wireframes (Appendix O) of the pages that were going to exist in Project Pipeline. Having the site map mapped out meant that planning for these pages was easy. According to Latus (2016) before starting the wireframe phase a list of the products main features and functionalities should be created. With this in mind hierarchy can be established between components. The best way to achieve these low fidelity wireframes was through pen and paper. This meant that all the ideas were throw away as there was not much investment in them at this stage. It is essential to avoid becoming attached to the first idea.

It was important to get feedback on these designs. Doing this at an early stage saved a lot of time later on in the design process. A lot of thought went into how to make users aware of project alerts / budget warnings easily. This required experimentation with project card views. Figure 16 shows how this was thought out in the early stages.

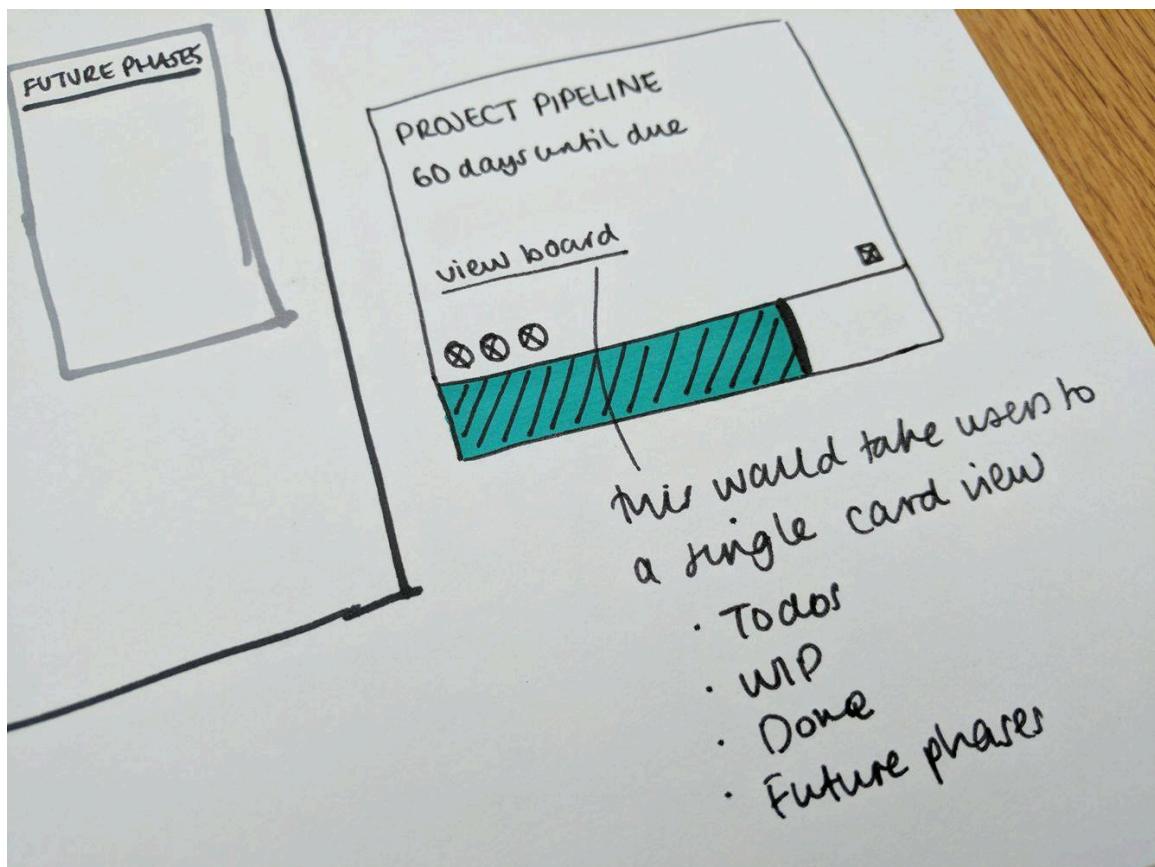


Figure 16 - Low Fidelity Project Alert / Budget Warnings

When the low fidelity wireframes had been achieved it was time to progress them to a medium fidelity. For this Sketch was used to create simple layouts that had more solid layout considerations. There are a variety of tools that could be used for medium fidelity wireframes. The important thing to remember when creating these wireframes in Sketch was to not get too invested in spacing and typography. Using a basic and stripped back tool would

have avoided this altogether. However, for this design process using minimal software tools was essential in having a smooth and reliable process. This was a really part of the design phase as it was reassuring to know how the prototype was going to work and how the complicated design was going to fit in a single view port. It also helped to gain a better understanding of the information architecture. The medium fidelity wireframes can be found in (Appendix P).

8. Design

8.1 Branding

Creating and establishing a powerful brand is all part of gaining the trust of users. It is important to ensure that users are aware of the purpose of Project Pipeline when visiting the website. This applies for both new and returning users.

Beginning with rough sketches was the ideal way of coming up with different ideas for the brand. It also meant that these ideas were thrown away and there was no significant attachment, similar to the wireframe phase. Figure 17 provides an insight into the rough ideas at the beginning stage.

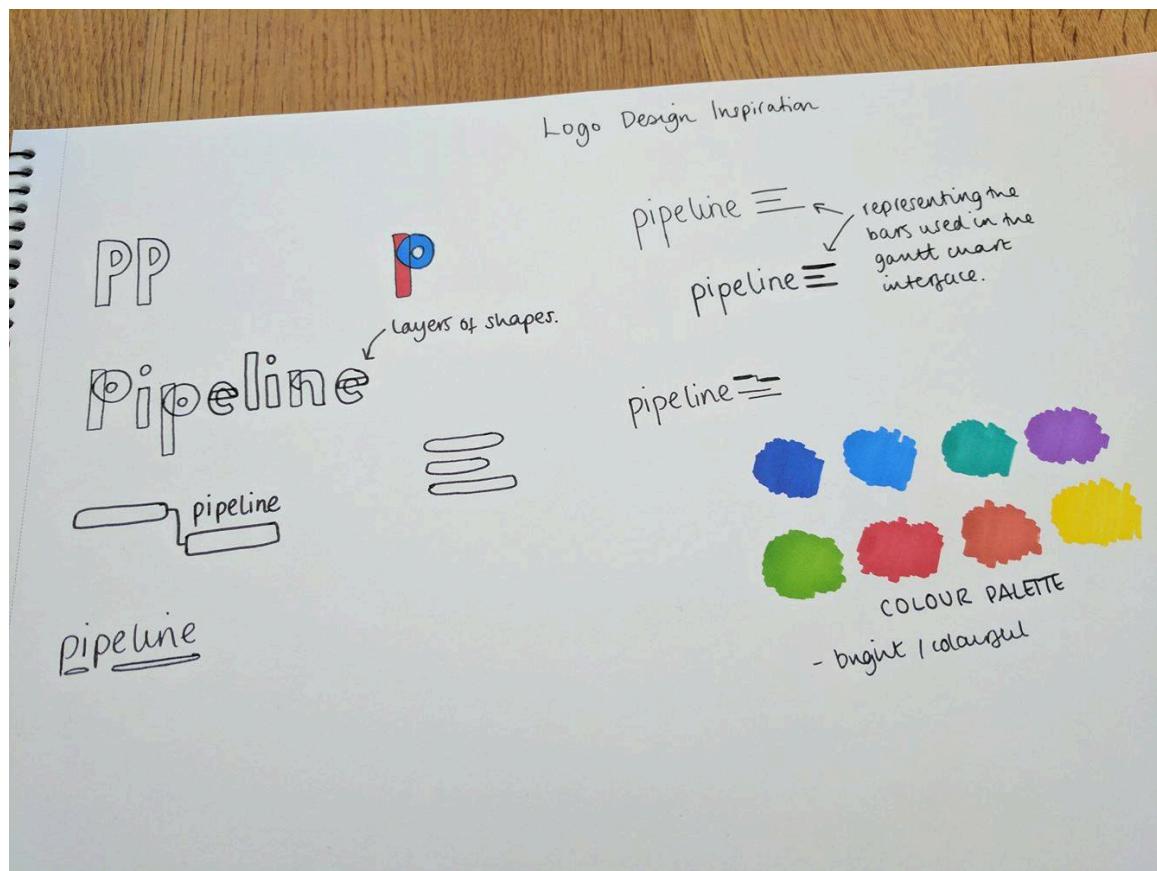


Figure 17 - Logo Drawings

Following on from this low fidelity phase experimentation began in Sketch. This meant taking several of the rough ideas and taking it further. This resulted in experimenting with colours and typography options. By creating the logo in Sketch it meant that it was vector driven resulting in SVG file types. An SVG file type allows the logo to be resized freely without losing quality. Figure 18 captures the logo experimentation that happened in Sketch.

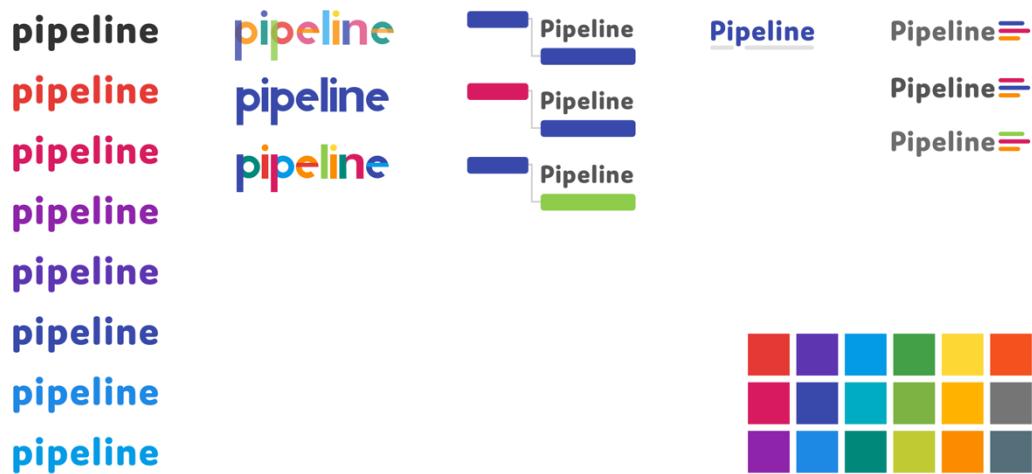


Figure 18 - Logo Experimentation in Sketch

A lot of time was spent going through Adobe Typekit in order to find the appropriate font to use for the logo. In the end the chosen font was Domus used in the font weight extra bold. The design of this font fits very closely with the design of the interface.

This font has been accompanied with 3 lines that relate to the pipeline used in the timeline interface of this web app. The logo can be used with the font and lines or just the three lines. Figure 19 clearly shows how the logo can be used in different formats.

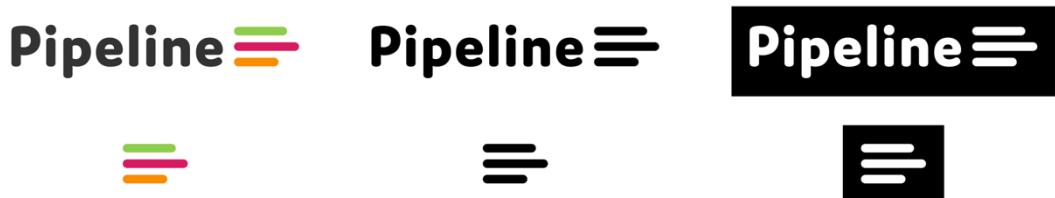


Figure 19 - Logo Usage

8.2 Design

Once all of the wireframing had been done it was time to move into high fidelity mock-ups. This required using industry standard software to create a high end final output. A comparison of the latest industry standard software can be found in (Appendix Q).

It was decided that Sketch was going to be used to create the UI for Project Pipeline. Sketch is a simple and easy to use design programme with a clean interface. The minimal interface means that there are no unnecessary tools on show, which can often make users feel overwhelmed. Sketch has a vector driven environment so it means that all components are easy to scale and resized according to Andrew (2016). Avocode (2017) reveals that there are now more designers using Sketch than Photoshop. This is mainly because of the constant updates that are released with Sketch. Figure 20 shows the statistics of Photoshop vs Sketch users.

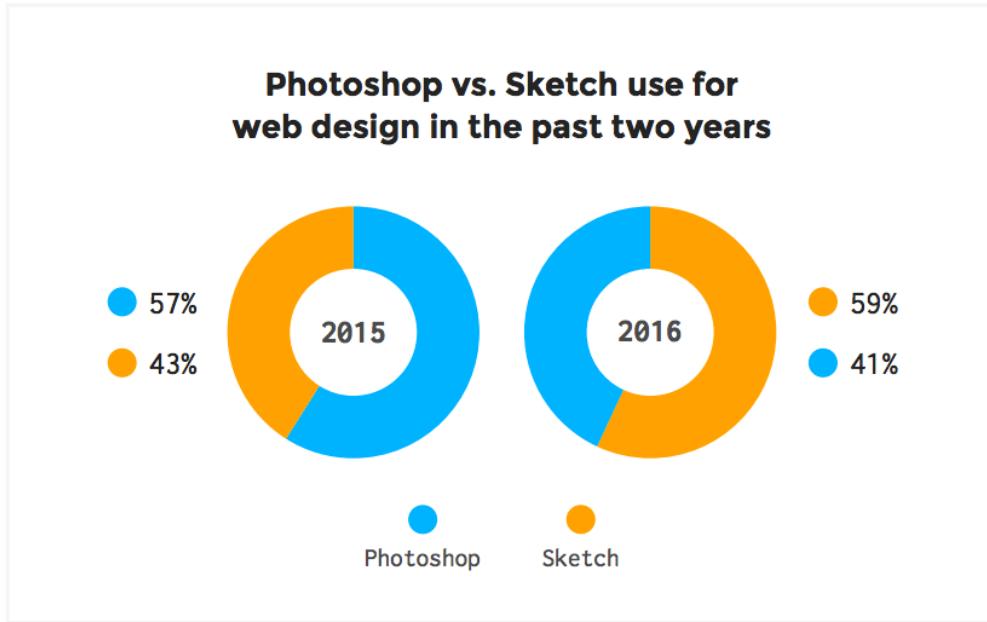


Figure 20 - Sketch vs Photoshop Statistics

Sketch is incredibly powerful because of all the plugins that can be used with the software. A list of the plugins can be found in (Appendix R).

When first creating a new Sketch file it was really important to make sure that artboards were organised. As there were a lot of screens it meant that being able to easily navigate was vital. Pages have been created inside the Sketch file to indicate different features. Figure 21 shows how this was achieved.

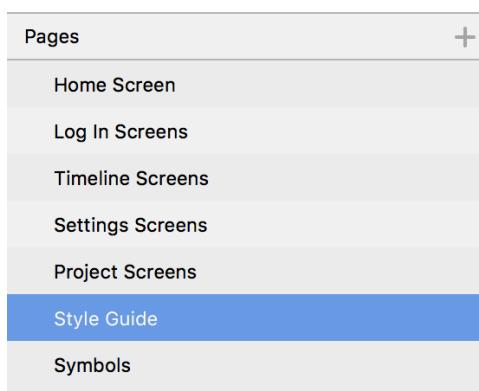


Figure 21 - Sketch Page Names

It was also important to make sure that all layers were named appropriately and symbols were used when required. Sketch is really powerful for allowing users to create nested symbols for repeated styles. This ensures that there is design consistency.

When the structure of the file was set up right it was time to start experimenting with colour palettes and typography options. The design of this project management tool was made to be minimal and colourful. Research into Google Material Design colours helped to choose a bright and consistent colour palette. The main colours used in the design can be found below in Figure 22. During this phase it was important to research and understand colour theory (Appendix S).

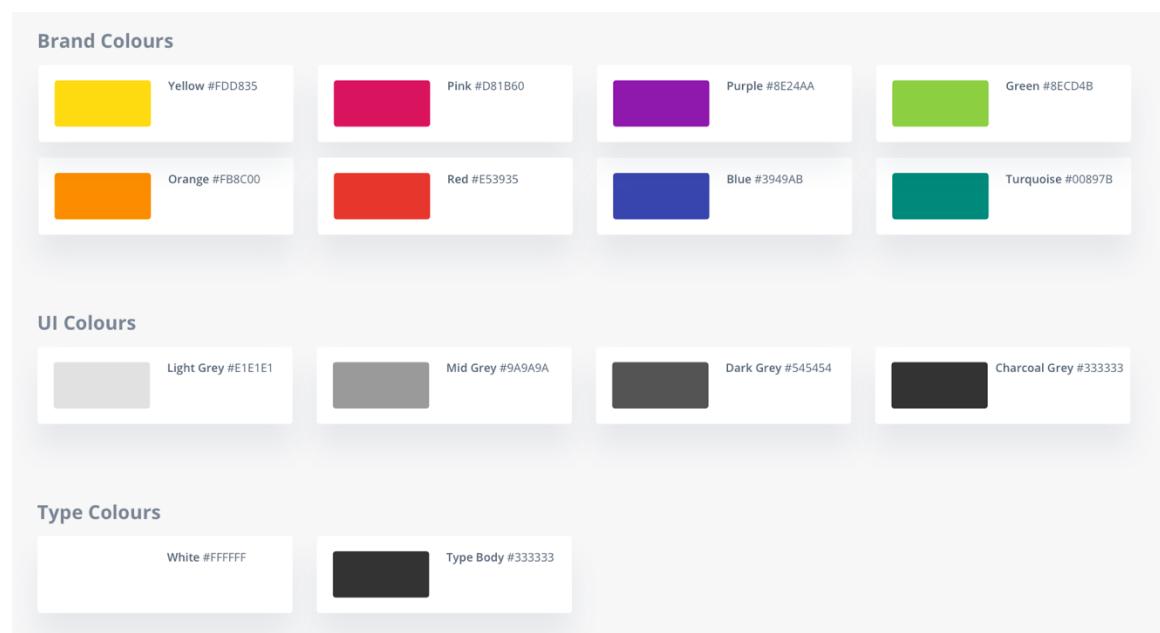


Figure 22 - Project Pipeline Colour Swatches

The fonts used in the design have been downloaded from Adobe Typekit. A great amount of time went into sourcing fonts that were right for the design. When it came to selecting font sizes the modular scale was followed. This

allows for type sizes to work well and be meaningful. The modular scale refers to line height and type face sizes report Brown (2011). In order to calculate the font sizes the modular scale website is going to be used. The final fonts chosen work really well and more details on this can be found in the style guide (Appendix T).

The next step was to decide on what grid the designs were going to fit to. After reading in to Bryn Jackson's articles on the 8px grid system it was decided to work to this. Introducing the 8px grid system meant that there was greater consistency. Figure 23 shows a comparison of how components lie on an 8px grid vs no clear grid.

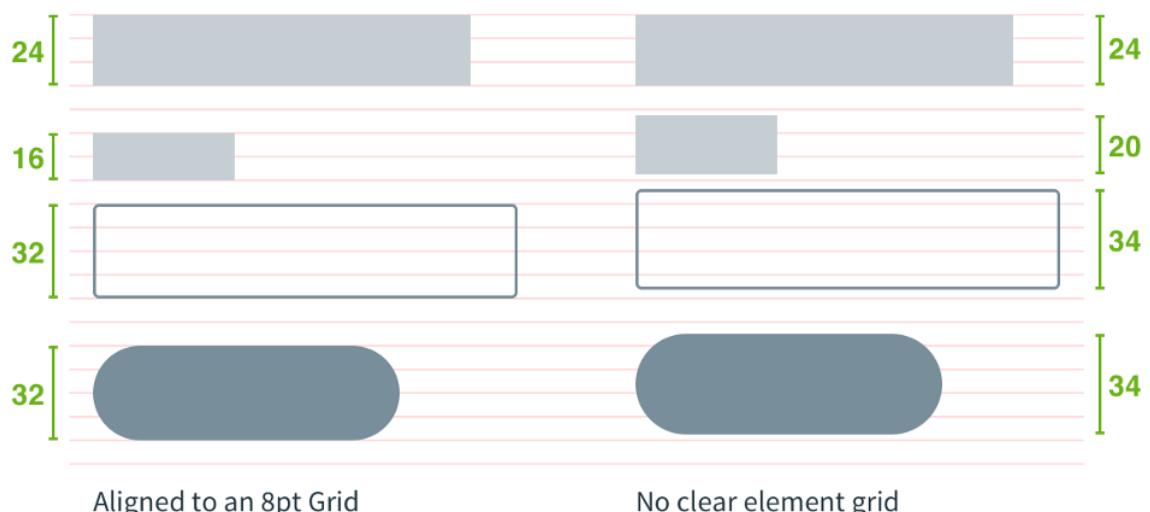


Figure 23 - 8pt Grid vs No Clear Grid

There have been a lot of articles recently talking about a component driven workflow in Sketch. This is something that has been adhered to in the design process. It is based on Brad Frost's atomic design principles.

8.3 Design Features

After talking to users about what features and functionalities were needed for Project Pipeline to be successful, it was important to ensure that these were available in the prototype. There were five main features that are explained in detail below. However, a list of all the features can be found in (Appendix U) along with the designs (Appendix V). For the five main features HTA's have been created to indicate how a user would go about using Project Pipeline's interface. Hornsby (2010) reveals that a hierarchical tasks analysis provides details on the tasks user would need to undertake in order to achieve a goal. Breaking the main features down in this way makes it easier to understand how screens link together effectively.

8.3.1 Creating A Project

Having the ability to create a project is one of the main features of the app. Without this the app would not fulfil user needs. The main purpose of this app is to be minimalistic and simple. So ensuring that users can carry out tasks in the minimum amount of steps was necessary. Figure 24 shows the steps users would take in creating a project. After logging in to Project Pipeline it only takes two clicks and entering some data to set up a project. The data that would need entering by the user is the name of the project, the duration (start and end date), the daily rate and members involved.

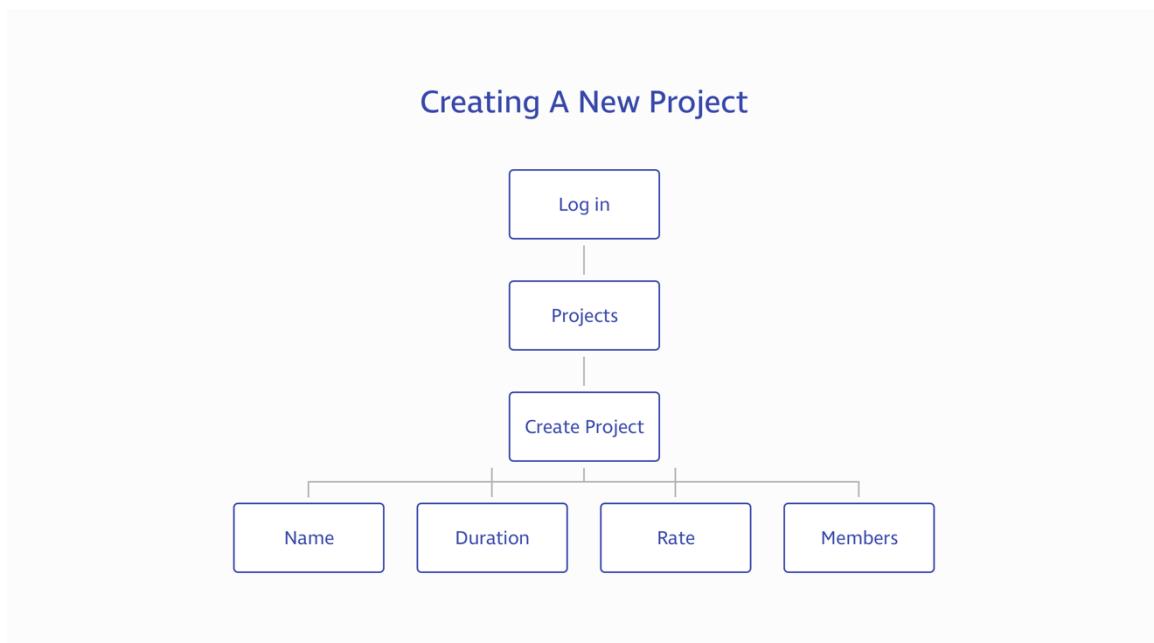


Figure 24 - HTA Creating A New Project

8.3.2 Editing A Project

After creating and working on a project there is likely to be a time where the project needs editing. Editing a project will allow users to edit the name, duration, daily rate and members. There is also the ability to delete the project in this view. It takes the same amount of steps to edit a project as it does to create a new one. This means that it is quick and easy to alter and update projects when needed. Figure 25 shows how users would go about editing a project.

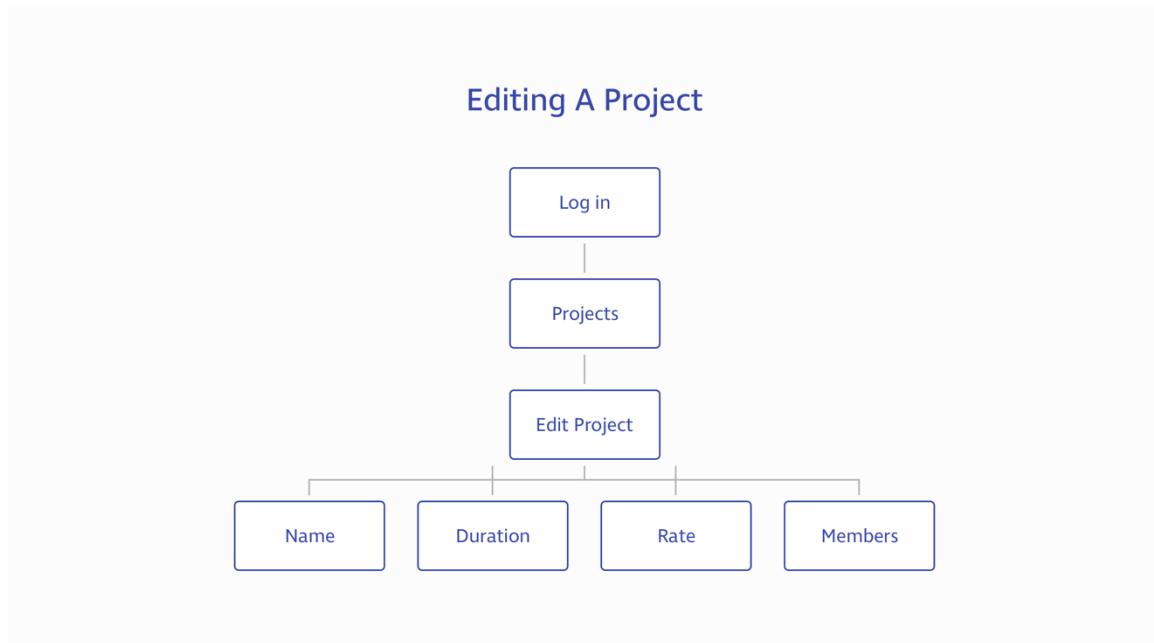


Figure 25 - HTA Editing A Project

8.3.3 Adding A Task

After creating a project one of the next steps a user may want to take is adding a task. Adding tasks will bulk up the project pipeline and provide users with data on budget and looming deadlines. Users are required to be inside the specific project to add a task and there are also some form fields to fill out. These are the duration of the task and the members involved in the completion. Whilst it has been hard to convey this in the prototype, tasks can be rearranged simply by dragging and dropping individual tasks. The number of steps required to complete this goal is three after logging in and a breakdown of this can be seen in Figure 26.



Figure 26 - HTA Adding A Task

8.3.4 Viewing Schedule

One of the USPs of Project Pipeline is its ability to provide users within an insight into individual upcoming schedules. The interface allows users to see schedules for that specific day, the following day or a weekly overview. This is a beneficial feature when just wanting to see a high level overview of tasks. It means that users would not have to look in project specific schedules. Users are provided with a notification daily to be made aware of tasks. Accessing this only requires clicking on the avatar when logged in and then toggling between the three different options. See Figure 27 for a breakdown of the steps required in viewing a schedule.

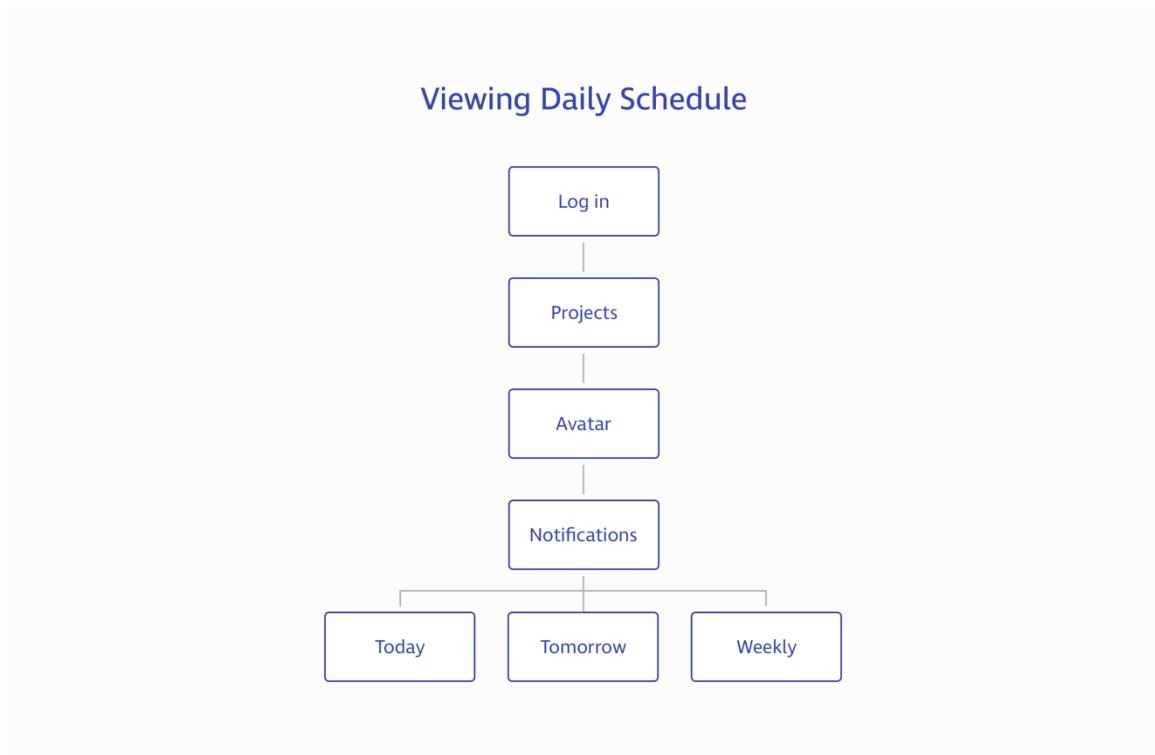


Figure 27 - HTA View Daily Schedule

8.3.5 Setting Up App Integration

Another USP for Project Pipeline is being able to integrate it with a variety of apps. Whilst at the moment this is limited to three apps there are plans to push the boundaries and add more options for users. Currently users can integrate Project Pipeline with Slack, Harvest and Basecamp. In order to do this user's are required to carry out four steps after logging in. The integrations set up lives in the settings part of the app as this seemed like the most logical place to exist. Creating this feature was a request that appeared in the user interviews carried out. Figure 28 shows a breakdown of the tasks required to complete this goal.

Setting Up An App Integration

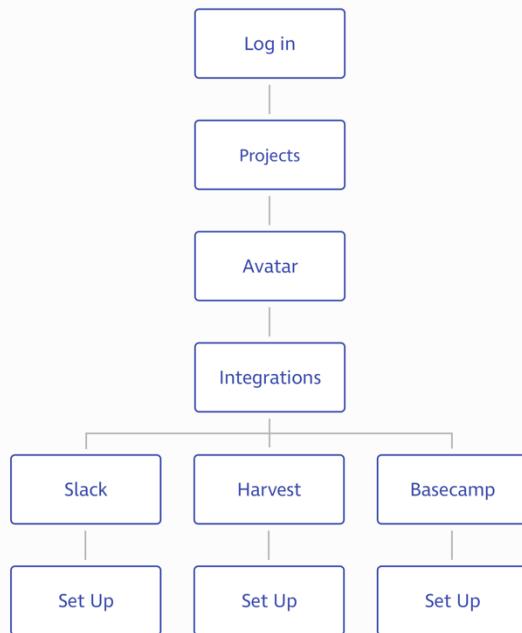


Figure 28 - HTA Setting Up App Integration

9. Prototyping

Prototyping allows for designers to better communicate concepts and ideas with the wider team and clients. This means that everyone involved within this process can provide feedback and suggestions on improvements. These feedback comments can then be refactored into the design before the development phase begins according to Sandu (2016). Mejia (2016) explains that there are a variety of prototyping tools available to users. The purpose of these tools is to bring ideas to life and convey concepts clearly. When deciding on what tool to use it comes down to personal preference reveals Mockplus (2016). A comparison of these tools can be found in (Appendix W).

InVision was the prototyping tool used for this project and it worked really well in creating a clickable prototype. This is a simple tool that allows designers to create interactions between artboards. There are also commenting features, which allow feedback to be recorded easily states Order Group (2015). In order to get the artboards from Sketch into InVision the Craft plugin was used. This provides one click syncing and this made it really quick and easy to import the large quantity of artboards. When creating the prototype there were a lot of clickable hotspots that needed repeating on all pages. This was easy to achieve in InVision using Hotspot templates and saved a lot of time when putting together the prototype. Figure 29 shows how hotspots have been created in InVision to link all the screens together.

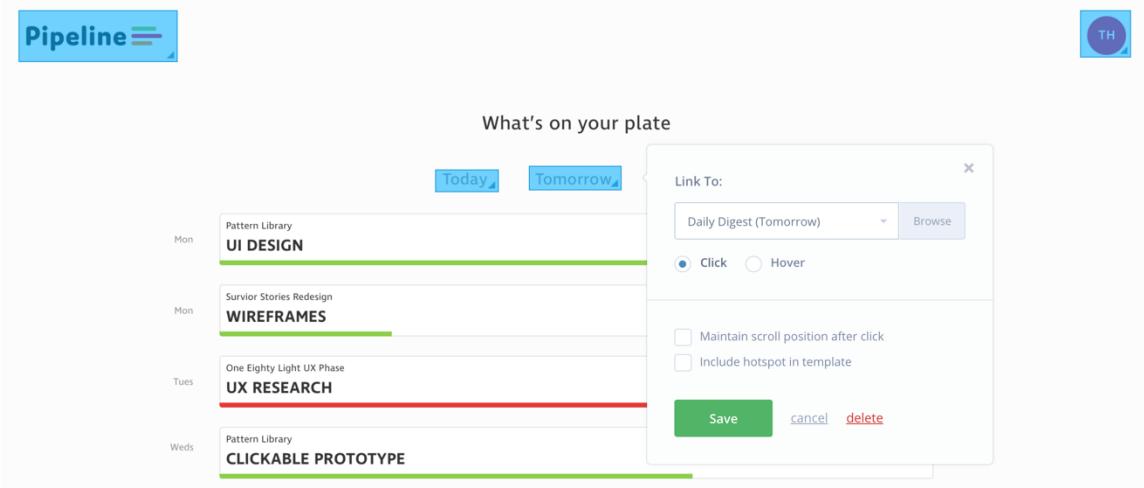


Figure 29 - InVision Hotspots

Once the prototype was completed a shareable URL was created so that the prototype could be tested with users. Having previous experience with using InVision for user testing made this process a lot smoother. The completed prototype can be accessed following the following URL:

https://invis.io/32BLMEEB4#/231320655_Home_Screen

10. Testing

Once the prototype had been created the next step was to test it on typical users that would be interacting with the web app. This was a really important phase and would dictate the next steps for this project. Unfortunately, due to time and location constraints it was not possible to book a space in the Usability Lab at the university. It would have been really beneficial to use the Tobii Studio to get eye tracking results of users interacting with Project Pipeline.

Instead users were contacted personally to interact with the prototype and answer a few questions which were created through Typeform. This meant that users would be in comfortable and less stressful surroundings, which could provide more realistic results. The survey (Appendix X) asked users for personal opinions on the design of the interface as well as asking users to carry out a few tasks to better understand the navigation structure. Due to popular demand of project managers / designers / developers wanting to try out Project Pipeline ten users answered the questions in this survey. Whilst Nielsen Norman recommends only five users, gathering this data was free and easy to collect. All thoughts and opinions from users would help to benefit the progression of this product for The Idea Bureau.

A five-minute video of a user interacting with the prototype was also recorded. This helped to get an insight into the users thought process when completing tasks set. Figure 30 shows the user interacting with the prototype. Quicktime was used to record to user and the users screen. This meant that the emotion of the user could be recorded as well as the mouse clicks which was really insightful.

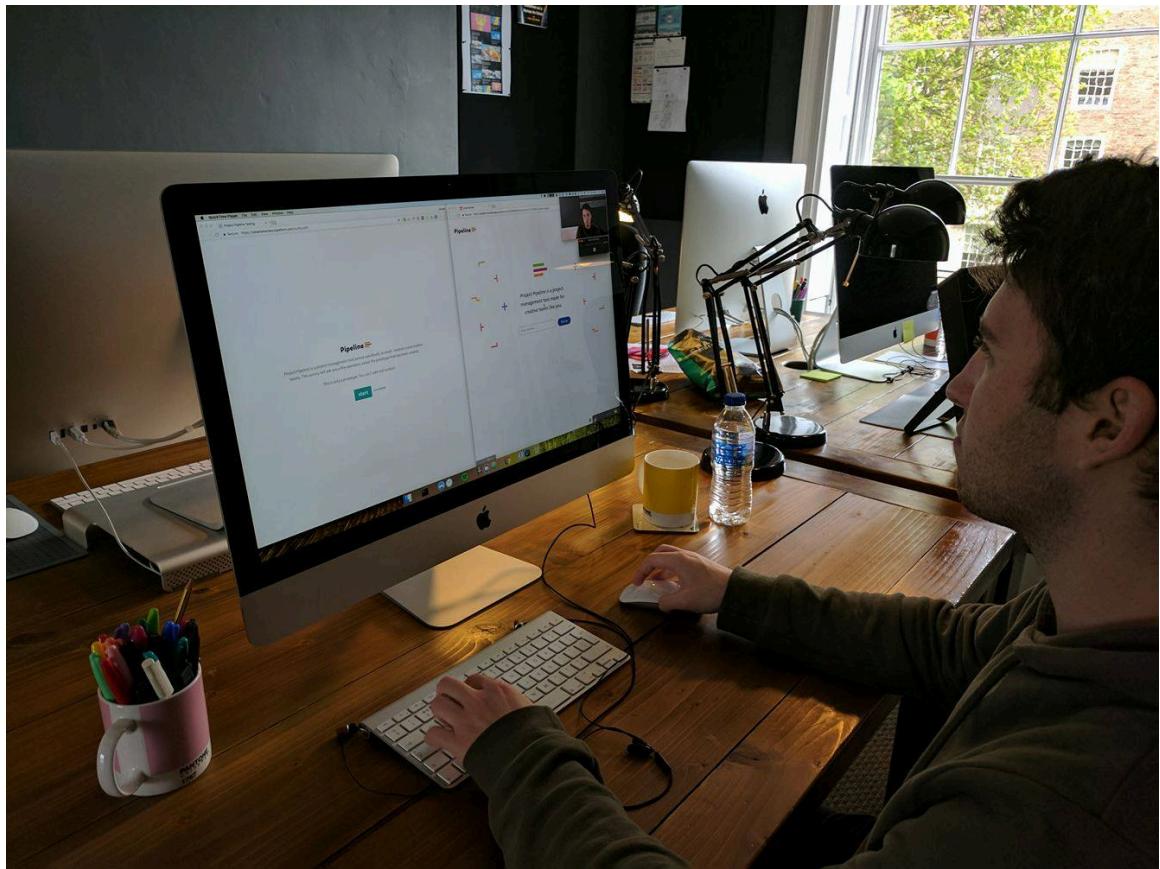


Figure 30 - User Interacting With Project Pipeline

A link to this video can be found below:

<https://youtu.be/vpg9Ju2qq6A>

11. Results

The results from the survey (Appendix Y) provide great insights into how users felt about the design and interaction of Project Pipeline. Overall the response from users was really positive and some great design improvements were suggested. The response from the user testing video was also positive and the way in which the user interacted with the prototype to complete tasks was as expected.

11.1 First Impressions

Users first impressions of Project Pipeline were all complimenting the design of the interface. Comments were made on how clean, uncluttered and minimal the design looked. This was really reassuring as this was the design aesthetic Project Pipeline was meant to follow. A user even commented saying how small - medium sized businesses would benefit from a product like this. And another user stated how straight away they understood it was a project management tool. Creating a new yet familiar project management tool was one of the main objectives for the design of this product.

11.2 Navigation

Within the survey there were two questions aimed at the navigation of the prototype. Users were asked to add a new project and open an existing project. 100% of the users who tested the prototype were able to carry out these two tasks. It is reassuring to know that the time spent working on the site map for the interface has paid off.

Users were also asked to add a task to a prototype. All users also found this easy, however one user did mention about changing the hierarchy of the

content. Instead of having the ‘Add a task’ button at the bottom of the list of tasks that maybe instead it could be at the top. This would mean that users would not have to scroll down a list to add a new task. The reason that this has been designed the way it has is because the interface is following a Waterfall methodology (although as discussed in the literature review, an Agile workflow can still work) meaning that tasks should appear in a chronological order. If the add a task was at the top of the interface, then this would not work well at all.

The user testing video revealed that the user found it easy to navigate around the prototype and could easily complete the tasks in the survey. It also showed that the user was able to navigate into areas which were not asked in the survey meaning that the additional functionalities were found such as: app integrations, notifications and card view.

11.3 Design Improvements

Several design improvements were documented in the survey, which has been really helpful in finding ways to progress the web app further. One suggestion was to include a search option in the projects interface. This will allow teams with large amounts of projects to easily and quickly navigate to the specific project. This feature has been implemented and the design for this can be seen in Figure 31.

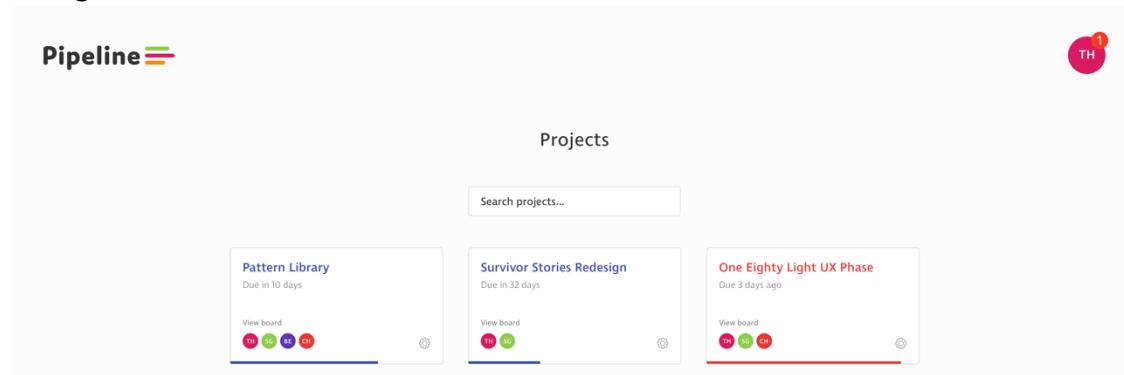


Figure 31 - Project Screen With Search Functionality

Another feature that was requested was the ability to toggle weekends on and off in the settings. This gives more flexibility to users who may want to schedule work in over the weekends or just prefer a view with this in mind. A simple toggle functionality has been added to the settings screen. This can be seen in Figure32.

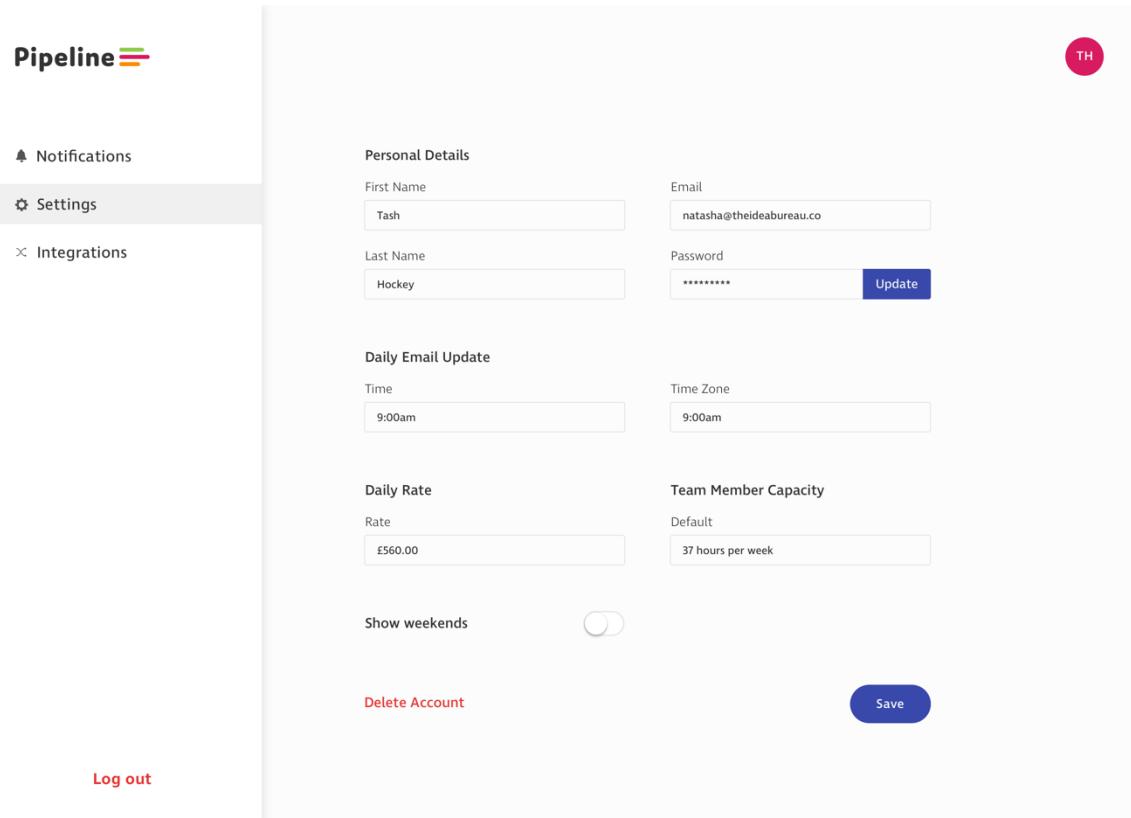


Figure 32 - Settings Weekends Toggle

Overall the feedback received through user testing has been positive and there have been some design changes suggested to improve the product. It would be great to make some more design changes that were suggested and then test the prototype again.

12. Evaluation and Conclusions

The purpose of this project was to investigate if there was a need for a new project management tool in the industry. Through carrying out user research it became clear that users were in need of a solution to managing projects effectively in one tool. A competitor's analysis was essential in understanding the current state of the market and it helped to know what the strengths / weaknesses of the existing tools were. Having a solid UX process helped to identify user journeys and the site map of Project Pipeline at an early stage. Without this the navigation system of the web app would have become confusing.

The final prototype for Project Pipeline consisted of 54 screens in order to make the prototype feel as realistic for users in the user testing phase. Testing Project Pipeline on real users was extremely beneficial in gaining an understanding of how the project went. It also helped to plan for what can be improved after The Idea Bureau begin implementing this design. In the user testing phase it was great to hear that the participants actually want to start using this product when it has been built. This shows that the project as successful.

Looking back at the aim and objectives that were created at the beginning of this project it is clear that this project has been a successful. These objectives have been broken down in the table below.

Objective	Status
Carry out research into the history of Gantt charts and the progression over the last 100 years, competitors analysis, the growth of the creative industry and how these charts will be used in the industry to gain a solid understanding.	Completed
Carry out quantitative and qualitative research into user's behaviours to an industry based standard. The data gained from this will inform the design solution.	Completed
Analyse research findings in order to identify trends and anomalies before moving forward and creating personas and user journey's.	Completed
Using the research gathered wireframes and rapid prototyping will be done to allow for exploration of IA and UI components.	Completed
Create high fidelity designs in Sketch. These designs will then be synced with InVision to create a professional prototype for user testing purposes.	Completed
The final clickable prototype will be tested on a minimum of five users. All of this data will be analysed and the necessary design improvements will be made.	Completed

Table 3 - Objectives Summary

The process behind this project worked really well and was carried out to a high standard. The results of the criteria for success (Appendix Z) proves this. The Idea Bureau were also happy with the final product and are excited to start implementing Project Pipeline.

If this project were to be completed again then it would be vital to carry out more user testing. Having smaller designer sprints with more frequent user testing sessions would allow for new features to be considered and tested more

rapidly. However, this is still going to be done, just outside of the project timeline. It would also be beneficial to carry out some user testing in the university Usability Lab.

The final prototype for Project Pipeline can be found here:

https://invis.io/32BLMEEB4#/231320655_Home_Screen

This project has been really interesting and beneficial to carry out. Lots of new processes have been learned and this will definitely benefit when working full time in the industry. Overall, the project went smoothly and the final output is to a high level.

13. Recommendations for Further Work

Overall the process for this project has been successful and the finished prototype meets the criteria for success. But as with any project there are always improvements that can be made in the future. Without carrying out the user testing phase it would have been impossible to gage how users felt about the current state of Project Pipeline. As this project is in collaboration with The Idea Bureau this project is far from finished. There are still some design improvements to be made which would be rolled out after the implementation of the current prototype begins. This project has helped to create a solid foundation.

13.1 Implementation

The current designs have been added to InVision with the Craft plugin using Sketch. This means that all the designs are accessible in the Inspect feature of InVision. The developers at The Idea Bureau already have access to the designs and assets, along with a style guide that will help to begin implementation. As all of the design files have been version controlled through GitHub it means that the whole team at The Idea Bureau have access to these files. This means that if the team need any extra information that Inspect can not provide then this is easily accessible.

13.2 Design Tweaks

Whilst some design tweaks that were mentioned in the user testing have already been implemented, there are still more instances to be considered.

13.2.1 Budgeting Alerts

More work needs to be done around budgeting projects. Whilst users can currently input a daily rate and duration of the project, which calculates whether or not a project is going to run over or under budget this could be considered further. It would be good to make this a feature that can be edited in more detail, especially for projects that have more complex project budgets. The Idea Bureau do a lot of work with charities and the project budgets for this are a lot more complicated than a normal project. It all depends on when the charities receive the donations that pay for the design and development of online platforms. So designing a system that could handle this would be incredibly useful.

13.2.1 Typography

In the user testing one user commented on the typography of Project Pipeline could be improved. The typography was apparently too quiet and needed some stronger font weights from the font family. Including a variation of font weights could improve the hierarchy of content and this is something that is going to be looked into moving forward. The font sizes work well and these will not be changing as they follow the modular scale.

13.2.1 History View

One of the main USPs of Project Pipeline was creating a project management tool that allowed users to see the history of a project. Usually if a project overruns then the timeline is just updated accordingly. Project Pipeline is meant to show this change and allow users to see how this has changed. Whilst this has been achieved in the timeline view it would be good to have a section

where the history of a project can be seen in an individual interface. This would provide details and who made the change and the date it was made. Doing this should help to plan for projects better moving forward.

13.3 Further Testing

After making updates to UI interfaces it is important to keep testing the product. Small changes could have a significant impact on the user experience and who better find this out from than the users. In future it would be beneficial to use the university Usability Lab to get some heat maps and gaze plots on the app. However, there are lots of online tools that can help to achieve this level of detail. Usability Hub is an app that will be considered for testing in the future.

13.4 Design Accompanying Mobile App

When continuing with further work on this an accompany mobile app could be designed and implemented. This would provide users with an overview of schedules and the availability of team members. During the user research phase for this project this was a point that came up. However, users said that it would not be an essential component to create it would be a luxury. This is why it has not been designed within this project schedule. It was more important to make sure that the desktop interface worked effectively and was to a high standard. Now that a design system has been created for this product, creating a mobile app would not be too much work as the colours, typography and base grids already exist. There would just need to be more user research, planning, designing and testing into how users would expect this mobile app to work.

13.5 Branding Considerations

The branding of Project Pipeline has been carefully considered. However, if there was more time then the usage of this logo and other assets would be better documented. Creating a brand guidelines document would be really beneficial to this project. It would make people working on the project aware of the ways in which the logo / typography should be used. Before creating this document, it would be really important to ensure that the logo is pixel perfect and works on both the mobile and desktop apps that will be created.

13.6 Marketing

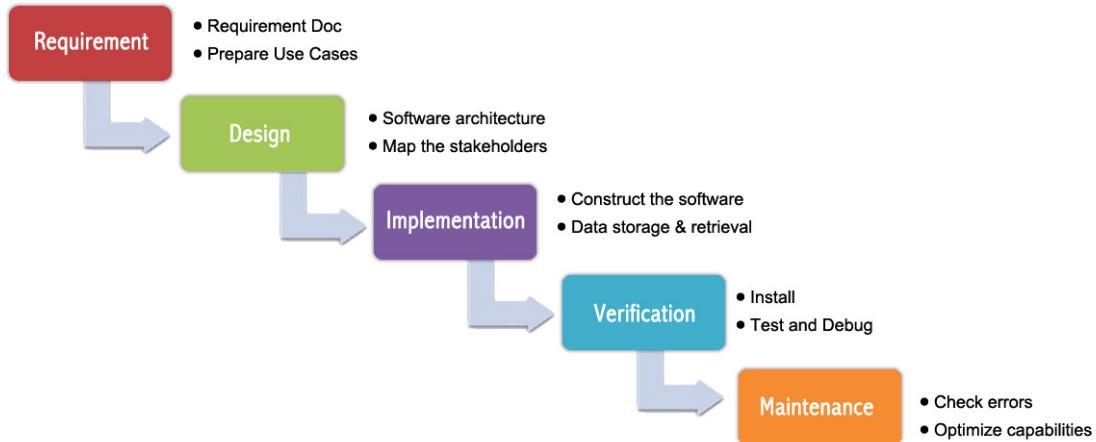
Marketing Project Pipeline is going to be essential in getting people to sign up to the beta version of this product. Without this it will be hard to build up a community of people interested in the progression of Project Pipeline. This will be done through showing sneak peeks of the design on Dribbble, setting up a Twitter account for the product, building up a mailing list, writing blog posts and using other social media to promote it. This should lead to a well marketed product resulting in people trying out and signing up for the product.

13.7 Analytics

Once the designs for Project Pipeline have been implemented it will be important to set up Google Analytics and Hot Jar. These tools will provide helpful insights into user's behaviours and patterns that emerge. Tests can be set up with Hot Jar to monitor user's cursor and scrolling movements. Heat maps will be created based on this data and videos of users interacting with the interface will also be recorded. This will help to inform design decisions that will be made later on.

14. Appendices

Appendix A - Waterfall Methodology



Description	
A classic approach to software development projects is the Waterfall methodology. This approach is made up of distinctive goals for each milestone in a project ¹ . When completing a phase, it is not possible to revisit that phase later on in the project ² . However, to prevent being unsatisfied with the outcome of each phase QA checks happen before moving forward ³ .	
Advantages	Disadvantages
With this methodology there is high managerial control. This is needed to reduce the risk of error and not being able to solve this ⁴ It is easy to measure the progress of a project ⁵	This methodology does not allow for revisions to be made easily ⁷ There is a higher risk of not meeting client expectations as the final product is delivered at the end of the project with no feedback throughout ⁸

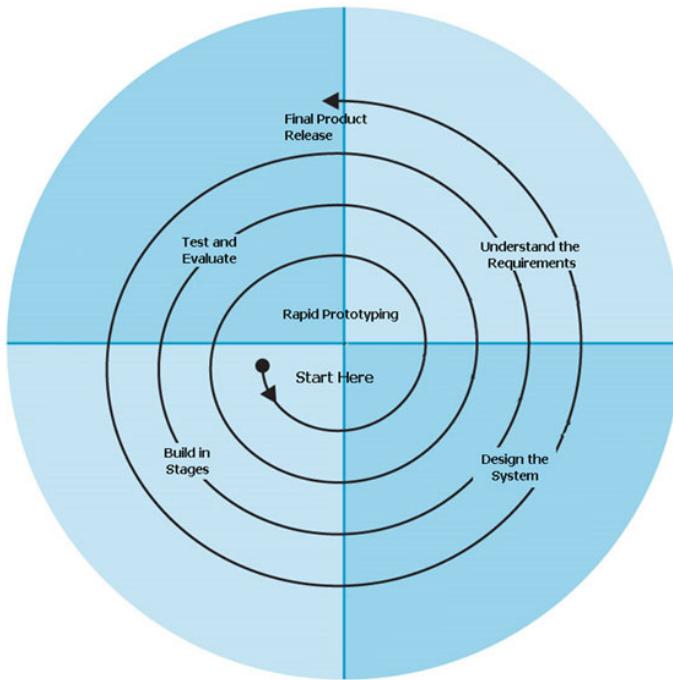
Waterfall methodology is considered a secure approach to projects ⁶	The testing of products following this methodology only happens at the end of a project ⁹
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1, 4 & 7 LOTZ, M., 2013. *Waterfall vs. Agile: Which methodology is right for your project?* [viewed 27 February 2017]. Available from:
<http://www.seguetech.com/waterfall-vs-agile-methodology/>

2, 6 & 9 BABICH, N., 2016. *Waterfall vs agile* [viewed 27 February 2017]. Available from: <https://medium.com/@101/waterfall-vs-agile-9da25daf18e8#.4yx8knw2l>

3, 5 & 8 ROUSE, M., 2007. *What is waterfall model? - definition from WhatIs.com* [viewed 27 February 2017]. Available from:
<http://searchsoftwarequality.techtarget.com/definition/waterfall-model>

Appendix B - Spiral Methodology



Description	
<p>The Spiral methodology is a combination of both the Waterfall and an iterative process¹. This method is a realistic approach targeted primarily at large scale projects. It caters for the natural evolution of projects². The iterative part of this methodology works well for projects that are continually evolving³.</p>	
Advantages	Disadvantages
<p>Spiral methodology concentrates on monitoring project risks continuously⁴</p> <p>Due to high project control and risk management the development process is faster⁵</p> <p>Control of the project is done to a high level⁶</p>	<p>Spiral is considered a waste of time and money on smaller scale projects⁸</p> <p>The duration and costs of projects is hard to manage⁹</p> <p>There is a lot of documentation for this methodology due to the constant spiral of phases that occur¹⁰</p>

Always time for feedback on the project which can be considered immediately ⁷	
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1 & 7 GURU 99, 2017. *What is spiral model? When to use? Advantages & disadvantages* [viewed 27 February 2017]. Available from:

<http://www.guru99.com/what-is-spiral-model-when-to-use-advantages-disadvantages.html>

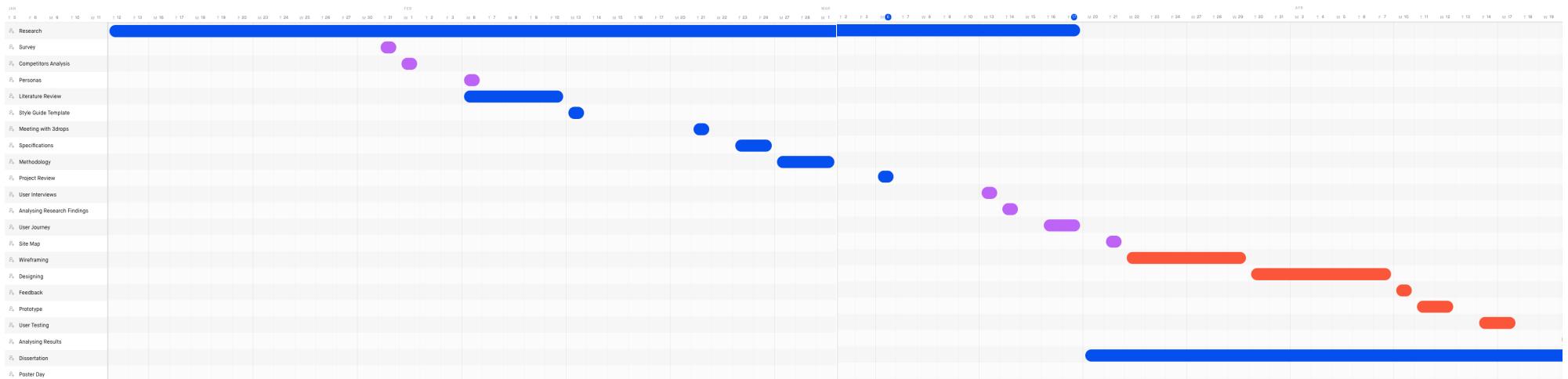
2, 4, 8 & 9 SOFTWARE TESTING BOOKS, 2016. *What is spiral model? Advantages and disadvantages of spiral model*[viewed 27 February 2017]. Available from:

<http://softwaretestingbooks.com/what-is-spiral-model>

3, 5 ,6 & 10 SOFTWARE TESTING HELP, 2016. *Spiral model - what is SDLC spiral model? – software testing help* [viewed 27 February 2017]. Available from:

<http://www.softwaretestinghelp.com/spiral-model-what-is-sdlc-spiral-model/>

Appendix C - Gantt Chart



Appendix D - Risk Register

Risk	Likelihood	Impact	Impact Description	Contingency Plan
Users unavailable for user interviews	Medium	High	Not being able to get 5 users available to interview within the time frames for the project.	Ensure that preparation work is done to find 5 users and communication is clear and consistent.
Inaccurate estimates	Medium	High	Making estimates that are too ambitious and will affect the progression of the project.	Thorough research into project timings and allowing extra time at the end of the project incase deadlines overrun.
Scope creep	Low	High	Features and functionalities that were not originally planned for move into the project specifications.	Set out a clear list of the products specifications, which will be shared with The Idea Bureau. This will be discussed and agreed upon before starting any design work.
Delays in website content	Medium	Medium	Before the design phase there is a risk of the websites content still not being approved.	Designing with content first is the ideal scenario. However, it will not make it impossible to continue with designs. This would just be best practice. To avoid this from happening meetings

			with The Idea Bureau will be held to discuss content.	
Decision delays	Low	High	This involves there being delays in feedback on wireframes and high fidelity designs.	This would hold up the design process and could make working to deadlines harder. Using collaborative tools such as InVision will help to encourage The Idea Bureau to feedback on the designs quicker.
Update bugs with Sketch	Low	High	This refers to the possibility of a Sketch update containing bugs and preventing design work.	The likelihood of this happening is low. Over the duration of Sketch being around there has only been one time where a big issue has occurred. This was handled within a couple hours of the update. If the problem is ongoing then other design tools such as Figma and Adobe XD could be used.
InVision sync with Craft not working	Medium	Medium	Craft is a plugin for Sketch and if this does not function properly it could mean that Sketch artboards will	If the final designs can not be uploaded to InVision through the Craft plugin it means that the

			not work with InVision's Inspect feature.	developers will not have access to assets and styles. In the event that this does happen Zeplin will be used instead. This will mean that the design files will still be production ready for the development team at The Idea Bureau.
No assistance with the usability testing lab	Medium	High	Not having anyone to help out in the usability testing lab.	To use the testing lab effectively there needs to be at least 2 people in the lab. If this is not possible then it will make the usability testing less effective and more stressful. To stop this from happening preparation is going to be done in advance.
Failing to meet company standards	Low	High	This refers to not completing work to The Idea Bureau's standard as this is an industry based project.	To ensure this does not happen there will be a high level of collaboration throughout the project. This will involve using Slack, Basecamp and having regular meetings.

Design lacking flexibility	Medium	High	<p>This risk is about not having a design system that can easily be tweaked and worked on iteratively.</p>	<p>To prevent this from becoming a problem a style guide will be created. This will document all of the base styles. Symbols in Sketch will also be used so that tweaks can be made to designs quickly and effectively.</p>
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Appendix E - Ethics Form

Ethics release checklist (ERC)

Project details

Project name: Researching, designing and testing a cloud-based resource scheduling application for small - medium sized creative teams

Principal investigator: Natasha Hockey

School: School of Media Arts and Technology

Level: Undergraduate

Course: BSc (Hons) Web Design and Development

Unit code: CDA600

Supervisor name: Martin Reid

Other investigators:

Checklist

Question	Yes	No
Q1. Will the project involve human participants other than the investigator(s)?	<input type="radio"/>	<input checked="" type="radio"/>
Q1a. Will the project involve vulnerable participants such as children, young people, disabled people, the elderly, people with declared mental health issues, prisoners, people in health or social care settings, addicts, or those with learning difficulties or cognitive impairment either contacted directly or via a gatekeeper (for example a professional who runs an organisation through which participants are accessed; a service provider; a care-giver; a relative or a guardian)?	<input type="radio"/>	<input checked="" type="radio"/>
Q1b. Will the project involve the use of control groups or the use of deception ?	<input type="radio"/>	<input checked="" type="radio"/>
Q1c. Will the project involve any risk to the participants' health (e.g. intrusive intervention such as the administration of drugs or other substances, or vigorous physical exercise), or involve psychological stress, anxiety, humiliation, physical pain or discomfort to the investigator(s) and/or the participants?	<input type="radio"/>	<input checked="" type="radio"/>
Q1d. Will the project involve financial inducement offered to participants other than reasonable expenses and compensation for time?	<input type="radio"/>	<input checked="" type="radio"/>
Q1e. Will the project be carried out by individuals unconnected with the University but who wish to use staff and/or students of the University as participants?	<input type="radio"/>	<input checked="" type="radio"/>
Q2. Will the project involve sensitive materials or topics that might be considered offensive, distressing, politically or socially sensitive, deeply personal or in breach of the law (for example criminal activities, sexual behaviour, ethnic status, personal appearance, experience of violence, addiction, religion, or financial circumstances)?	<input type="radio"/>	<input checked="" type="radio"/>
Q3. Will the project have detrimental impact on the environment, habitat or species?	<input type="radio"/>	<input checked="" type="radio"/>
Q4. Will the project involve living animal subjects?	<input type="radio"/>	<input checked="" type="radio"/>
Q5. Will the project involve the development for export of 'controlled' goods regulated by the Export Control Organisation (ECO)? (This specifically means military goods, so called dual-use goods (which are civilian goods but with a potential military use or application), products used for torture and repression, radioactive sources.) Further information from the Export Control Organisation [https://www.gov.uk/government/organisations/export-control-organisation]	<input type="radio"/>	<input checked="" type="radio"/>
Q6. Does your research involve: the storage of records on a computer, electronic transmissions, or visits to websites, which are associated with terrorist or extreme groups or other security sensitive material? Further information from the Information Commissioners Office [https://ico.org.uk/for-organisations/guide-to-data-protection/]	<input type="radio"/>	<input checked="" type="radio"/>

Declarations

I/we, the investigator(s), confirm that:

- The information contained in this checklist is correct.
- I/we have assessed the ethical considerations in relation to the project in line with the University Ethics Policy.
- I/we understand that the ethical considerations of the project will need to be re-assessed if there are any changes to it.
- I/we will endeavour to preserve the reputation of the University and protect the health and safety of all those involved when conducting this research/enterprise project.
- If personal data is to be collected as part of my project, I confirm that my project and I, as Principal Investigator, will adhere to the Data Protection Act (DPA) 1998. I also confirm that I will seek advice on the DPA, as necessary, by referring to the [Information Commissioner's Office further guidance on DPA](https://ico.org.uk/for-organisations/guide-to-data-protection/) [<https://ico.org.uk/for-organisations/guide-to-data-protection/>] and/or by contacting freedom.information@solent.ac.uk. By Personal data, I understand any data that I will collect as part of my project that can identify an individual, whether in personal or family life, business or profession.
- I/we have read the [prevent agenda](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/445916/Prevent_Duty_Guidance_For_Higher_Education__England__Wales_.pdf) [https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/445916/Prevent_Duty_Guidance_For_Higher_Education__England__Wales_.pdf].

Ethical clearance for research and innovation projects

Project status

Status



Your application has been approved by the General Ethics Standing Panel. You may continue with your project.

Conditions applying to all research and innovation projects

- All sensitive data must be held in a confidential and secure place and destroyed on completion of the project or associated assessment results being confirmed. Anonymity and privacy should be guaranteed. You should ensure that it is not possible to identify an individual from the data you collect. The data should only be used for the purposes it was collected.
- Informed consent should be obtained where appropriate and participants should have the right to withdraw without explanation.
- The approval given applies **only** to the submission to which it relates. If you change your research, then you are required to resubmit for approval.
- Evidence of any specific ethical requirements will be sought in the outputs from the project.
- Please remember that a breach of Southampton Solent University ethics procedures is considered as academic misconduct (2L: Student Academic Misconduct, 11.x; 4L: Procedure relating to academic misconduct in Postgraduate Research Degrees, 4.iv; Staff Disciplinary Procedure: Appendix 4).

Actions

Date	Who	Action	Comments
07/04/2017 12:28:00	Martin Reid	Supervisor approved	
07/04/2017 12:27:00	Natasha Hockey	Principal investigator submitted	

Appendix F - Survey Results

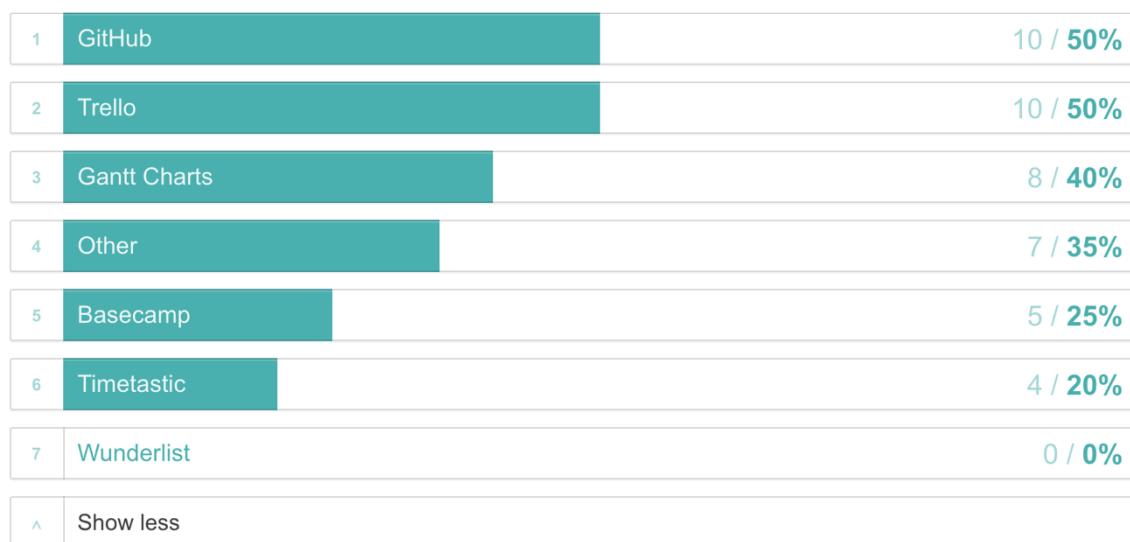
Do you use project management tools?

20 out of 20 people answered this question



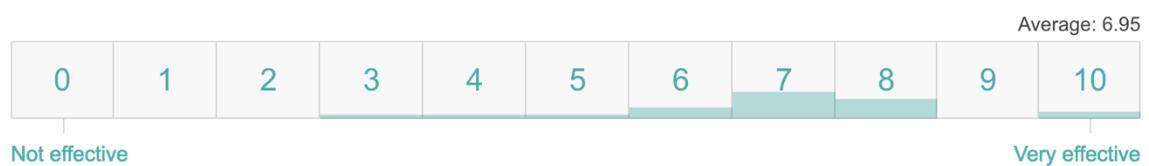
What project management tools do you use?

20 out of 20 people answered this question



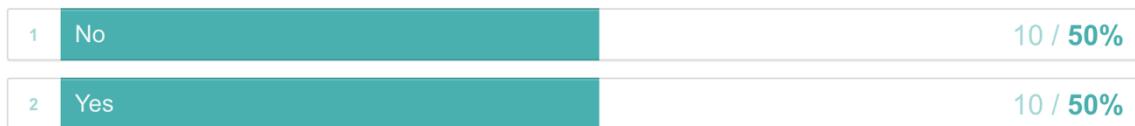
How effective do you find these project management tools?

20 out of 20 people answered this question



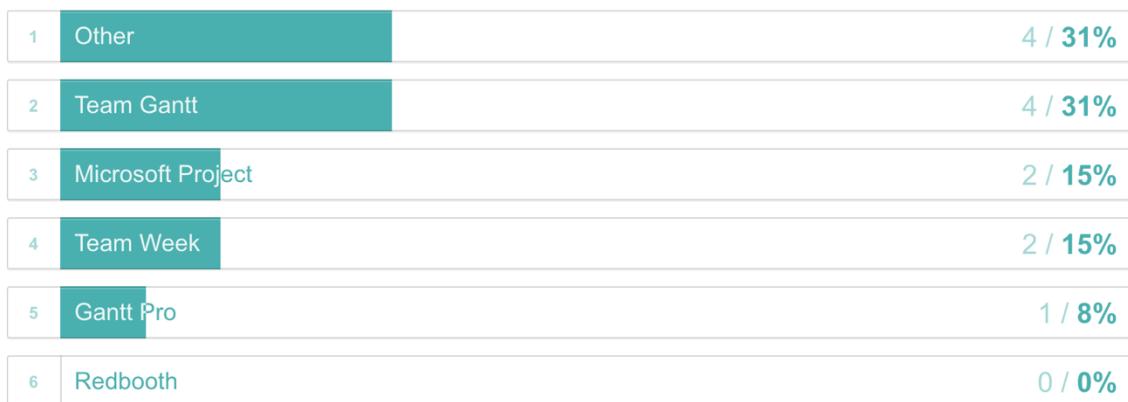
Do you use Gantt charts to plan projects?

20 out of 20 people answered this question



If so, what Gantt chart software do you use?

13 out of 20 people answered this question



What apps do you use to communicate with internal team members?

20 out of 20 people answered this question

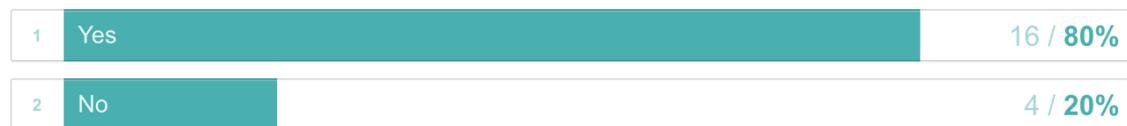


What are the main features / functionalities you require to successfully project manage a creative team?

22.- What are the mai... ↴	Method of kicking them up the arse to get on with work	Project analysis, easy scheduling and movement of tasks between individuals, access for any freelance or external resource
Dependencies, commenting, filtering and styling (colours for different projects)	Low friction, fast operation, flexibility, web-based, easy to integrate with other systems (API)	Clarity on what needs to be done and when
Tracking requirements Estimating durations of workload Logging and assigning issues/bugs	Basic timing functionality, the tool should be quick and unobtrusive so as to not restrict use.	File sharing , update and goals
I need to be able to assign tasks with time-periods to individual team-members, and I see to be able to see an overview to effectively plan.	Time & task dependency management	Collaboration. Hard to get across in software.
Automated standups . Easy ability to group chat and group video call . Emojis to describe feelings	Face to Face time	
Team gannt is great for a single project, but it's not good to schedule time between a team across several projects	Organizing Cards like in Trello.	
	Kanban Board Task management Integration with source control	

Do you feel there is a gap in the market for project management software, specifically for creative teams?

20 out of 20 people answered this question



Appendix G - User Interviews

User Interview - Male, Front End Developer

Me: So how do you feel about having to follow a project plan?

Interviewee: Umm, yeah, I make sure I know what I'm doing before the day or the week. So I think project plans are very important just as your daily schedule.

Me: Cool, and what do you think makes it a good experience or a bad experience?

Interviewee: So that's when everything is thought through and you have a got a lot of things planned out in advanced. And so you have a clear cause of action.

Me: Cool, and do you feel that having a project management tool that works responsively is necessary, and if so why?

Interviewee: Yeah completely, it's got to work on all screen sizes because you might check it on your phone in the morning or your watch when you're out and about. Or you might pop it up on your iPad or the big screen.

Me: And do you think that being able to integrate apps with the tool will be useful? And what apps do you think would be valuable.

Interviewee: Yeah, um if it could integrate with services that people use I mean definitely. It's got to work with things like calendars, Google calendars is a great one. And maybe stuff like emails and messaging services like Slack. Then you could get daily updates and things which is perfect.

Me: Cool, and what tool do you currently use for your projects?

Interviewee: At the moment we're using Teamweek, which is cool. That at the moment integrates with Slack and emails and things as well.

Me: And what features do you like and dislike about the tool?

Interviewee: It's nice and easy to use. It's got a couple of different views, so you can go down and see what your schedule is or more of an overview or like a month view. So you can check out different projects and time ranges.

Me: Yeah, but you can't have dependencies can you? So I guess that's something its lacking?

Interviewee: Yeah Teamweek is very focused on a person kind of view. So it's not a typical Gantt kind of thing.

Me: Are there any features that you feel should be a part of a new project management tool that's being designed, specifically for creative teams?

Interviewee: Specifically, for creative teams?

Me: That would be like small to medium sized teams as well

Interviewee: Yeah, I think a good thing there is applying details such as time tracking because that's very important in I'd say the smaller industry at the moment, so that you can relay that back to clients. Other than time-tracking, I'd say just integrating with the services that teams use to communicate.

That's about it really for me.

User Interview - Male, Full Stack Developer

Me: How do you feel about having to follow a project plan? Do you find they become quickly outdated?

Interviewee: When you say ‘follow a project plan’ do you mean as a developer or someone managing a project?

Me: As a developer

Interviewee: It’s super useful to have one, especially for bigger projects. We always have some form of plan for a project, even if it’s just a conversation in the office (for smaller jobs). They remove some of the stress of having to deliver a project on time as it’s often broken down ahead of time with sensible deadlines. As long as I hit those, I don’t need to worry about the impact of other projects on scheduling.

Me: Yeah, that makes sense. Have you had any experiences where a project’s plan has gone really bad and impacted significantly on other projects in the pipeline?

Interviewee: Yes. That’s normally due to underestimating how long something will take and not the fault of the project plan directly. We had a project run 2x longer than it should have. Was difficult delivery all of the other projects we promised.

Me: Do you feel that having a project management tool that works responsively is necessary?

Interviewee: Responsively as in media queries or automatically pushed projects back?

Me: As in media queries. So being able to access project schedules on mobile / tablet devices.

Interviewee: I would say there is a use-case for it. Whether it needs exactly the same functionality is a different question. I don’t do this, but it might be that Joe or Susan are with a client and they ask “When can we expect this done by?”. Being able to look at the schedule on your phone or iPad may be useful.

Realistically, we would probably just get back to them later. But we should be able to view at least some of the information on mobile in my opinion.

Me: Yes, so I've got the idea of having full functionality to create / edit project schedules on desktop and laptop devices, but only provide overviews of schedules on tablet / mobile. So it's great to hear what you think on that. The next question is about having the ability to integrate apps with a project management tool. This could be anything from time tracking software to Slack. Do you think this is beneficial and what apps do you think would be essential?

Interviewee: It's a bonus being able to do those things. I'd probably avoid time tracking tools as I think they will be unrepresentative of how much work has been done or is left to do. Especially as estimates are never 100% accurate. For example, on a current project I've spent 155 hours of 210 hours. The project management tool then thinks "Oh, we are 74% complete" but realistically I have another 70 hours left on it. We find it easier putting in high level progress percentages, which is given from the developer. So in this case, I'd say we are 60% done. Slack could be a good integration. Maybe ping a message to a project specific channel with messages like "X deadline in 14 days or X task completed ahead of schedule".

Me: Cool, what tools do you currently use to manage your projects? And what do you like / dislike about them?

Interviewee: That is a question for Susan, as she actually does a lot of that now. We don't have access to it, because I don't think we need access to it.

Me: Okay cool, that's interesting. So you don't even see an overview of a project timeline or anything? How do you know your schedule?

Interviewee: Nope! My brain doesn't need to be filled with that information as it doesn't gain anything. I can't do anything else as a developer. My job is to deliver work on time. I shouldn't have to know about all the projects we have on, including ones that I am not involved in. We have a catch up in the office where Susan outlines what she would like people to work on. If things start to get behind, then she can see the impact of that and manage client

expectations. A typical conversation is “Adam, you’re on project X for 2.5 days and project Y for 2.5 days. Joe we need A, B and C done this week. Do them in any order that suits you but we need them done. Tom, you’re doing designs this week for X client.”

Me: That makes sense! I hate knowing the ins and outs of every project. Especially when you aren’t involved at all.

Interviewee: Yeah, one person needs to. And that person also needs to know what expectations have been set with the clients.

Me: Last question. Are there any features that you think should be part of a project management tool specifically for creative teams?

Interviewee: Do the actual work for them too? Again might be a question for Susan as she uses it more. But being able to set hours-per-day (per resource). We work 7.5 hours a day. But we might have someone else on the team who works half a day (like an intern). Maybe being able to list the skills required to complete a task in a project. Might make it easier to assign resource to it for a bigger team.

User Interview - Male, Project Manager

Me: So how do you feel about having to organize and follow project plans?

Interviewee: Organising and following project plans are essential to ensuring a projects success, without a plan the project would essentially be a nebula amount of work that needs to be completed but there's no expectations of when or how it'll be done.

Me: What makes this a good or bad experience?

Interviewee: Undoubtedly the software that you use will result in a good or bad experience, using no software and relying on scraps of paper is almost definitely going to end badly. Good software on the other hand can speed up the process and give clarity to all involved in the project. That said it does rely on all involved in the project to be onboard with the software, otherwise it's just another point of failure.

Me: Do you feel having a project tool that works on tablet and mobile devices is necessary? If so, why?

Interviewee: Definitely from a from high-level, I'd want to be able to look at tasks or add notes on a mobile or tablet device. Otherwise these small tasks will need to wait until I'm at a desk or force me into pinch, zoom and drag hell assuming the tool isn't mobile friendly.

Me: Would you find value in being able to integrate apps into a project management tool useful? And if so, what apps would be valuable?

Interviewee: Absolutely. Where possible we'd like the tool to integrate with all the other software we use to communicate as a team. For us the most important integrations would be Slack and FreeAgent.

Me: What current tools are you using for your project plans?

Interviewee: Right now we use Teamwork, previously we used Trello but moved away from it because it became a big soup of projects with no real clarity as to what needed to be done per project without forcing you to dive into a particular project.

Me: What features do you like and dislike about these tools?

Interviewee: As of yesterday Teamwork released Boards within projects which gives us the same flow as Trello. This is really important to us as we are now able to visualize progress to a client without producing old school Gantt charts (which it will produce for you as well). We love this tool and can't think of any functionality we dislike.

Me: Are there any features you feel should be part of a new project management tool that's specifically for small - medium sized creative teams?

Interviewee: Aside from the integrations mentioned above Teamwork does everything we need it to do for us right now.

User Interview - Female, Project Manager

Me: So the first question is about how do you feel about having to plan projects for a team and what makes it a good or bad experience?

Interviewee: Good things is that you know what's happening in the near future and who is working on what and when. You can see what projects are on track and on budget. It also helps to plan future work and update clients on the progress of their project. Bad things would be when you hit a couple of problems and a project overruns. Or when a team member is unwell, you then need to find solutions and rework the schedule. This can be stressful.

Me: Cool. Do you think that having a project management tool that works on mobile and tablet devices would be useful? It may not have the same functionality as the desktop site but just provide an overview of schedules.

Interviewee: Yes definitely. Especially when having a meeting with a client and you're out of the office. Can answer any scheduling queries there and then.

Me: Would being able to integrate apps into the project management tool be useful? This could be anything from time tracking to Slack.

Interviewee: Yes, I think so. Slack especially. What I'd love is an all in one tool. Instead of having 4 - 5 different applications that you have to pay for and jump between.

Me: Yeah definitely! Makes it all easier to maintain. What current tools are you using? And what do you like / dislike about them?

Interviewee: So I currently use Slack, Flow, Pipedrive, Hub Planner, Toggl and Team Gantt. Slack is used to talk to the team and send links etc. I like that its quick to communicate and share files and I dislike threads. These sometimes hide content, which means I miss it. Flow is what I use for my to do list. I can set reminders for future dates and make sure I finish my checklist for the current day. I like that it allows me brain dump all my jobs I need to do for the day. I can set recurring weekly / monthly / annual to do's so I never forget tasks. This tool is only really suitable for small reminders. Sometimes I need notes with the task, but limited by the word count. Pipedrive is where sales

leads and records of meeting notes or important points from calls. A CRM that has all contact details and project updates. So if I'm away Joe can see where we are with each project and last contact etc. I like that it is easy to find projects and update their statuses. I dislike that sometimes it's hard to find previous emails attached to a client. It can take a while to find what I need to reference. Hub Planner is used to schedule all the work and assign to each team member. It's great to see an overview of what projects we're working on and when. I can also easily move things around. Allows me to see if we have capacity to take on another project. I dislike that there is a limit on how much detail you can add to the phases. Hence why Team Gantt is needed to break these down further. Toggl is what we use for time management. It allows me to see how much time has been spent and keep an eye on budgets. I like how I can see detailed reports for each project and their various tasks. Although the summary report is lacking and usually wrong. I always have to go to the detail report to get the correct data. And we also use Team Gantt for Gantt charts with milestones and detailed proposed timelines for each element of a project. I like how it allows you to break down all phases into tasks and add dependencies based on previous tasks. You can put percentages on each one for their completion status. The design is outdated and horrible to use though.

Me: This is really helpful. The last question is what features do you feel should be part of a new project management tool that's aimed at small - medium sized creative teams?

Interviewee: What I'd love is an all in one piece of software that does the following. Be an easy, flexible planner for ongoing projects, provide an overview that shows what projects are booked in and scheduled. This should then offer a more detailed plan (Gantt chart) for the project. Having channels for each project that allows for quick file sharing / chats to the team. A to do list would also be good so that you can add to any date and recur if necessary. Being able to integrate with the CRM to see client details and all correspondence. The ability to manage time like Toggl. This would show what

time has been logged against each project. So, not much! I hope that helps and let me know if you find a solution.

User Interview - Male, Project Manager and Designer

Me: How do you feel about having to organise and maintain project schedules?

Interviewee: I feel great. It's a core part of running a team. It's not an easy task, especially in client services.

Me: Awesome, what makes this a good or bad experience?

Interviewee: The tools play a huge part in this. The user experience, including performance of the tools we use make such a big difference.

Me: Do you feel that having a project management tool that works on mobile and tablet devices is necessary? And if so, why?

Interviewee: Yes! Schedules change all the time and we need the tools to be able to adapt whenever we need to. It's not essential that a planning tool doesn't work on mobile but it can help.

Me: Would you find value in being able to integrate apps into a project management tool useful? And if so, what apps would be valuable?

Interviewee: Yes! I'd love this! I'd love to be able to integrate with our staff holiday app (timetastic). Also Basecamp (our PM / Project Comms app) and also Slack (our team internal chat tool).

Me: Cool. What current tool(s) do you use to plan projects?

Interviewee: Apple Calendar, Teamweek and Basecamp.

Me: What features do you like and dislike about these tools?

Interviewee: Teamweek is okay but would prefer something which can provide greater integration, bigger picture views and an understanding on billing and missed plans.

Me: Are there any features you feel should be part of a new project management tool that's specifically for small - medium sized teams.

Interviewee: Project filtering is important. Understanding a difference between planned commitments and also TBC commitments. That would be sweet.

Appendix H - Personas

Anna Smith



Age: 25
Work: UX / UI Designer
Family: Single
Location: Brighton, UK

Bio

Anna works in a small agency in the heart of Brighton. She is one of two designers on the team, so there is always the need to juggle different projects. As Anna is constantly working on different projects it is important that she understands her day to day schedule. If the schedule is too ambitious then it would be good for her to be able to suggest changes to the project manager. Due to working as part of a small team it is nice for Anna to be able to see what her co-workers are working on as well.

Motivations

Motivation	Score
Incentive	High
Fear	Medium
Achievement	High
Growth	Medium
Power	Low
Social	High

Personality

Characteristic	Score
Introvert	Low
Extrovert	High
Analytical	Low
Creative	High
Conservative	Low
Liberal	High
Passive	Low
Active	High

Goals

- Become a freelancer one day
- Start a family whilst maintaining a career
- Start an Etsy store selling illustration pieces
- Travel around Australia and New Zealand

Frustrations

- Being under pressure
- Having a creative block
- Working on too many projects at once
- Not having enough hours in the day

Tom Bay

Xtensio



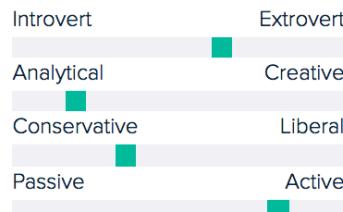
Age: 26

Work: Full Stack Developer

Family: Engaged

Location: Southampton, UK

Personality



Bio

Tom is a Full Stack Developer working for a small team in a Southampton based agency. He spends most of his days working to launch new projects and maintaining retainer clients. Whilst Tom feels it's essential to know his work schedule on a weekly basis, he finds it really frustrating and pointless knowing everyone else's agenda. To keep himself at ease he doesn't have any interaction with the project management tools used to schedule projects. Instead he relies on morning stand-ups to be given an overview of his working week. In order to manage client expectations, Tom has a good relationship with the in-house Project Manager. So he updates them on his assigned tasks and if he is running ahead or behind schedule. He finds this method works well and allows him to concentrate on his work load only.

Goals

- To complete work on time.
- Finish projects under budget.
- Continue to make time to help students studying in the web industry.
- Continue to post blogs online.

Frustrations

- Being made aware of other team members schedules and work loads.
- Not having a clear schedule for current projects.

Motivation

Incentive

Fear

Achievement

Growth

Power

Social

Preferred Channels

Traditional Ads

Online & Social Media

Referral

Guerrilla Efforts & PR

David Elswood

Xtensio



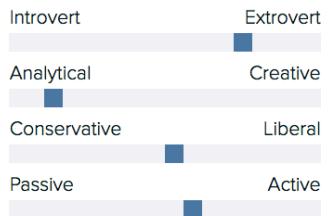
Age: 38

Work: Co-Founder / Developer

Family: Married

Location: Brighton, UK

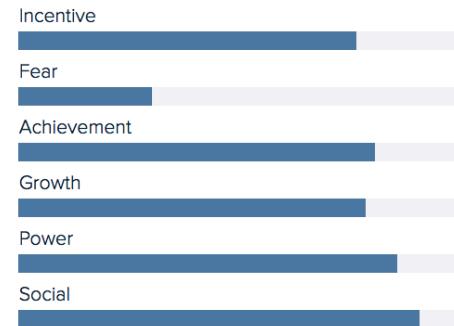
Personality



Bio

David is the Co-Founder of a small web agency in Brighton. He spends the majority of his time sorting out schedules for his team members and making sure that everything is on track. David has tried and tested all of the project management tools available and finds them all very frustrating. He longs for a simple interface with the capabilities of managing creative teams effectively. David wants a tool that has minimal upkeep so that he can spend more time on the development side of things.

Motivations



Goals

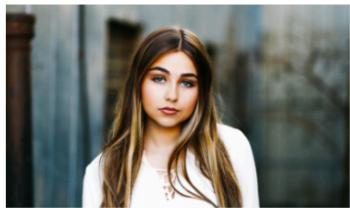
- Expand the agency
- Increase profits
- Take on more ambitious projects
- Start a family

Frustrations

- Gantt chart software that is poorly designed
- Browser testing on IE
- People not sticking to schedules
- Spending too much time on project management

Daisy Jameson

Xtensio



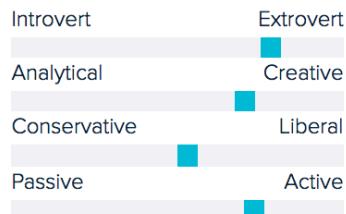
Age: 32

Work: Studio Manager

Family: Married

Location: Southampton, UK

Personality



Bio

Daisy is the Studio Manager of a medium sized design agency on the coast. She spends her working day managing client expectations and creating project plans for employees. Daisy loves making sure that plans are in place for employees. However, she finds this job challenging due to juggling 4 - 5 different project management tools. She longs for the day where an all-in-one tool comes to the market. Daisy's biggest wishes is for a quick and easy scheduling tool that can be easily created and updated.

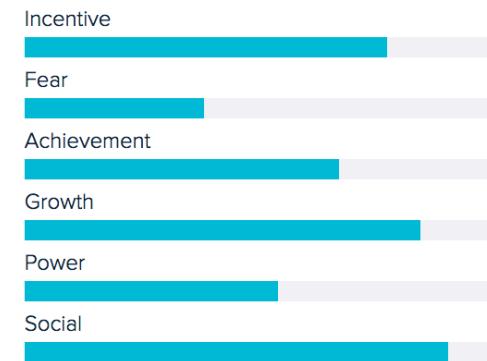
Goals

- Find the ultimate project management tool that quick and easy to maintain.
- Deliver a high quality service to clients.
- Manage expectations well.
- Get more involved in the design process at work.

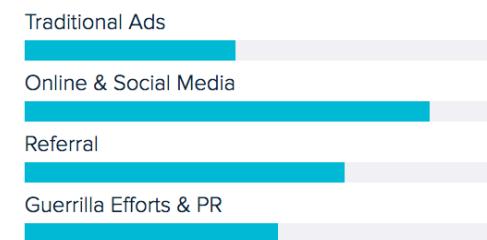
Frustrations

- Having to juggle a variety of different scheduling tools.
- When project plans don't go to plan and rescheduling is needed.
- Being told the wrong time scales for tasks in a deadline.

Motivation



Preferred Channels



Appendix I - Competitor's Analysis Teamweek

Strengths	Weaknesses
<ul style="list-style-type: none"> • Teamweek is a collaborative tool • Ability to add tasks • Free software • Everything lives in a single interface • Ability to view by teams or groups • Admin and team member user profiles • Shareable URL to timeline view • Integrates with Slack, GitHub and iCal • Personal app integrations can be set up • View by agenda, week, month and 3 months • Add flexible working hours for individual team members • Add milestones 	<ul style="list-style-type: none"> • There is no way to add dependencies between tasks • Limited colour options to add to tasks • No ability to view by individual team member
Opportunities	Threats
<ul style="list-style-type: none"> • There is the opportunity to introduce payment plans • Could include more features on bigger screens • Responsive considerations • Commenting features could be introduced 	<ul style="list-style-type: none"> • New competitors could enter the market • A software product that offers dependencies and other features that are not available in Teamweek

Appendix J - Competitor's Analysis Team Gantt

Strengths	Weaknesses
<ul style="list-style-type: none"> • Collaborative tool • Ability to assign tasks • Can create dependencies between tasks • Users are able to comment on tasks • 30 day free trial • Users can print to PDF overview of timelines • Documents can be attached • Time tracking functionality • Refine by days, progress status and users • Groups of tasks can be created • Easy to rearrange and alter task timings / durations 	<ul style="list-style-type: none"> • Separate Gantt charts are need for different projects • Users only get one project in the free plan • Limited colour palette available to add to tasks
Opportunities	Threats
<ul style="list-style-type: none"> • When separate Gantt charts are used for projects it could be beneficial to have an overview of all projects • Ability to extend trial for users if the user is not sure on investing in a monthly payment • Include more features on bigger screens • Responsive considerations 	<ul style="list-style-type: none"> • Pricing of accounts could be too high and so it could be cheaper to use another tool • A product that provides an all in one view of project timings • New competitors enter the market • A more modern and minimal design could be considered

Appendix K - Competitor's Analysis Roadmap

Strengths	Weaknesses
<ul style="list-style-type: none"> Roadmap is a collaborative tool Users can assign tasks 30 day free trial exists In beta release so new updates are rolling out frequently Ability to see actual vs estimates of project forecasts Users can see the history of a project Year view of all projects can be viewed Admin and team member profiles Users can add milestones to projects Integrates with Slack 	<ul style="list-style-type: none"> There is no way to add dependencies between tasks Users can not rearrange tasks so if they are input in the incorrect order there is nothing that can be done easily No responsive consideration No option to group tasks Charging users even though the product still lacks core functionality UX of the software is not the best Icons used do not always reflect the action that occurs Users have to right click on the timeline to change the colour of tasks. This is not how it is typically done
Opportunities	Threats
<ul style="list-style-type: none"> Improve the navigation to support users being able to easily jump between projects and teams Responsive considerations Allow the yearly overview to be broken down into 3 / 6 / 9 month views 	<ul style="list-style-type: none"> Users may want to stick to tried and tested trusted companies who are already established New competitors enter the market Charging even though it is still in beta

Appendix L - Meeting with 3drops

Location: Taunton

Date: 21/02/2017

Time: 4pm

Attendees:

1. Natasha Hockey - UX Designer at The Idea Bureau
2. Shane Griffiths - Co-founder / Designer at The Idea Bureau
3. Farzad Ban - Founder / Creative Director at 3drops
4. Marcus Brynolf Pedersen - Project Manager at 3drops

Agenda:

- Discuss Roadmap
- Current / new features
- Who works on it?
- How long has it been worked on?
- What is planned for the future?

Notes:

- 3drops have been working on the progression of Roadmap for over a year now
- In the beta version there are currently 1500 members
- Roadmaps opens up to the public in a month's time
- There is currently 1 full-time developer and 2 part-time designers working on the production and maintenance of Roadmap
- The paying beta members are already covering the expenses of employees

Future Features

- Dependencies
- Daily time spent between different projects
- Ability to jump between projects
- Time tracking
- Time off / showing weekends
- Milestones
- Creating two user profiles
 - Agencies and product users
- Responsive features

Appendix M - Comparing Mood Board Tools

InVision Boards	Dropmark	Hypershoot
Ability to add colour swatches ¹ Users can add font files to get a preview of fonts ² Commenting features allow users to have conversations on specific images added to the board ³ Responsive features meaning that users can view the board on mobile and tablet devices easily ⁴	Collaborative tool that allows users to document inspiration ⁵ Ability to share collections made ⁶ Users can add whole websites, small screenshots or videos ⁷ Browser extension which makes it easier to add inspiration to collections ⁸ Collections can be made to keep things organised ⁹	Known for being Pinterest's equivalent but for designers ¹⁰ Websites can easily be pinned to a project folder ¹¹ Stores website URL and preview of site ¹² Ability to search for inspiration through different feeds e.g. Popular ¹³ Browser extension exists however it is temperamental ¹⁴

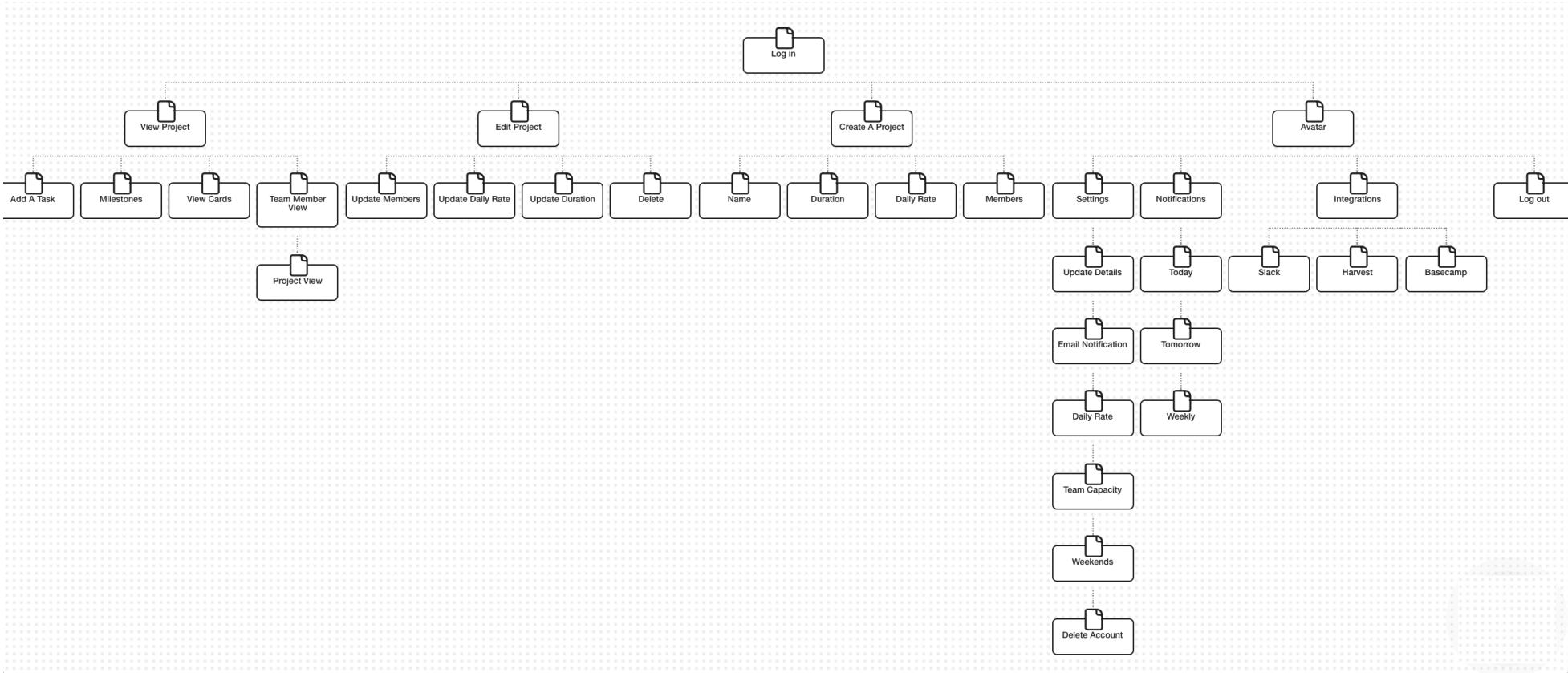
1, 2, 3 & 4 BYRD, C., 2015. *Subscribe* [viewed 4 February 2017]. Available from: <http://blog.invisionapp.com/boards-share-design-inspiration-assets/>

5, 6, 7 & 8 DACHIS, A., 2012. *Dropmark is a super simple collaborative sharing tool that can create presentations from your files and web content* [viewed 4 February 2017]. Available from: <http://lifehacker.com/5889681/dropmark-is-a-super-simple-collaborative-sharing-tool-that-can-create-presentations-from-your-files-and-web-content>

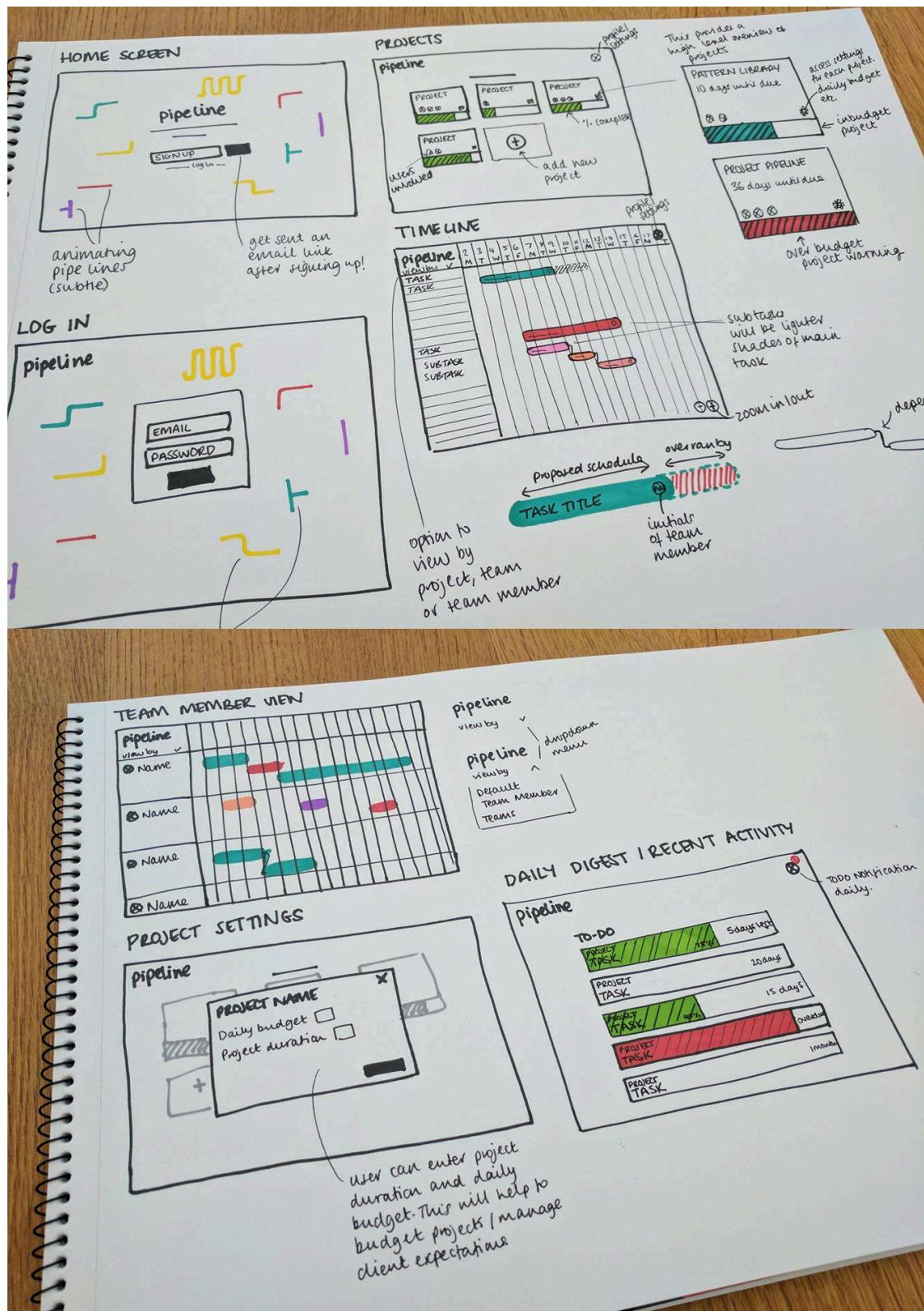
9 COUCH, A., 2013. *Dropmark - the easiest way to share files and collaborate with anyone [Web & Mac]* [viewed 4 February 2017]. Available from: <http://www.makeuseof.com/tag/dropmark-the-easiest-way-to-share-files-and-collaborate-with-anyone-web-mac/>

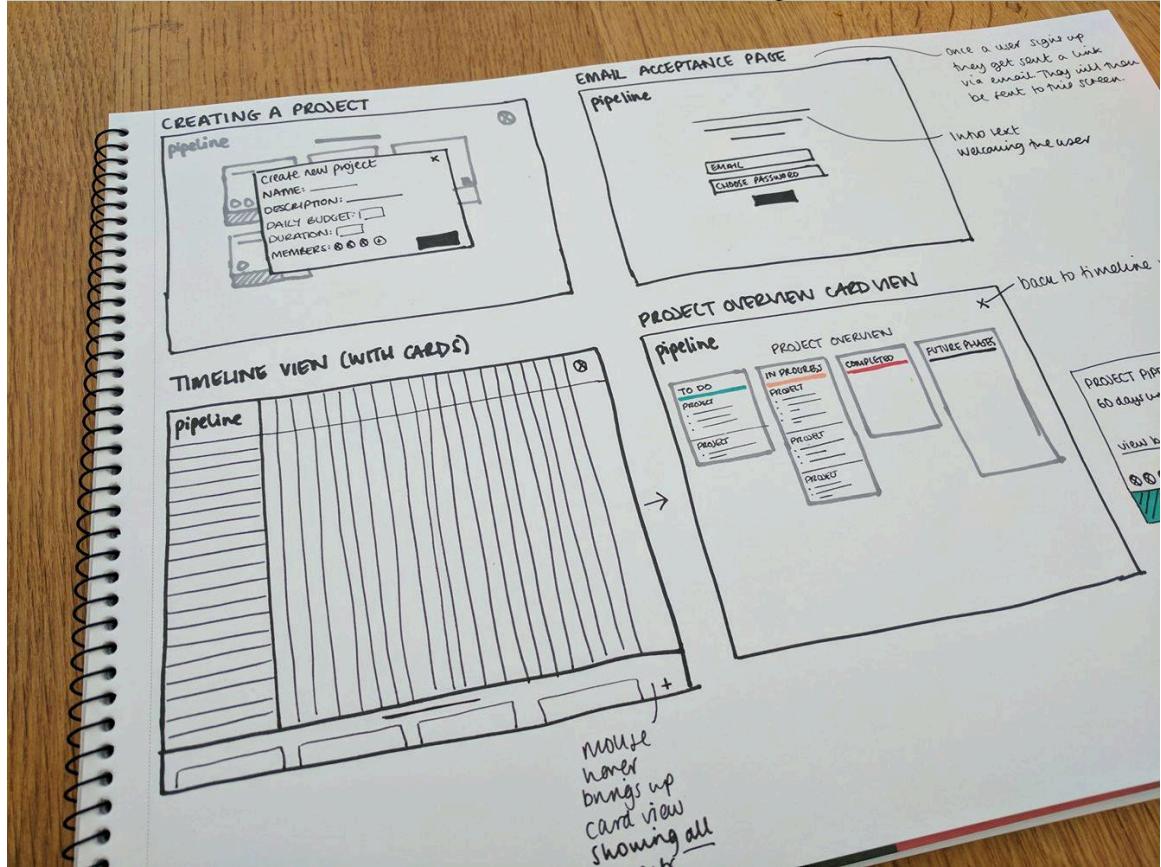
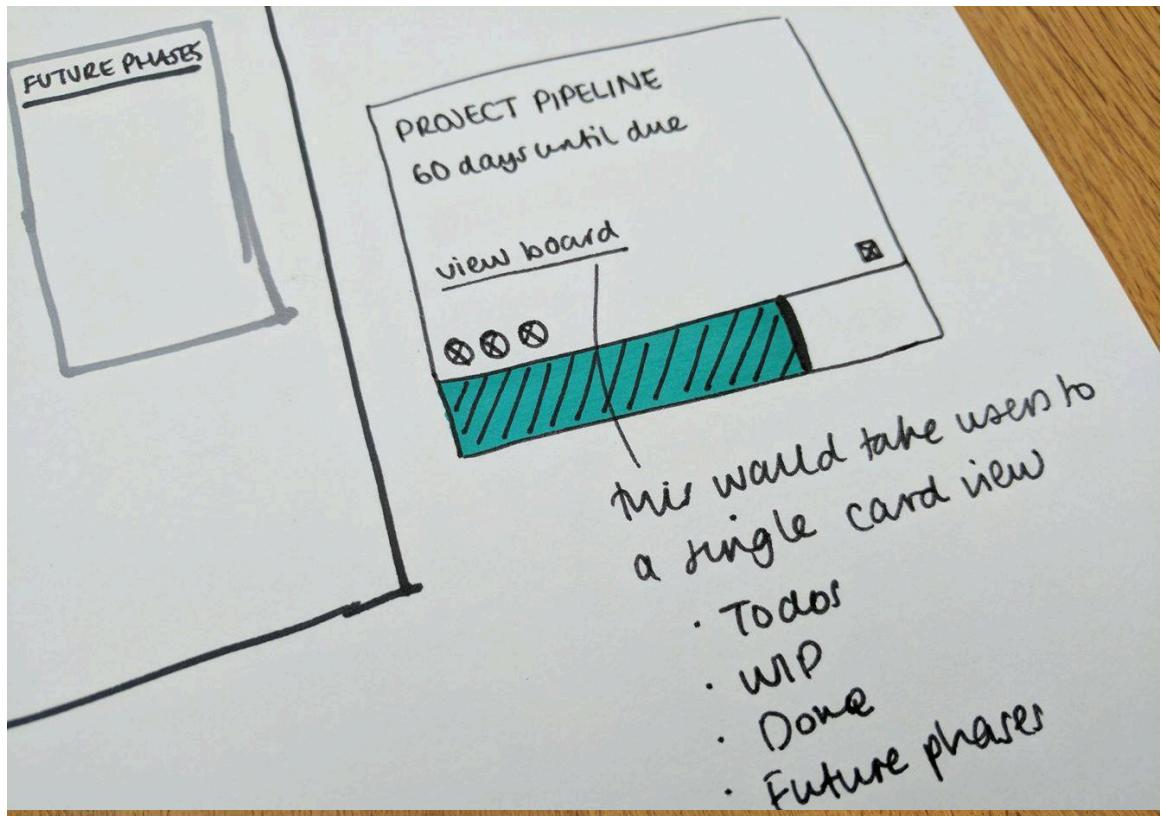
10, 11, 12, 13 & 14 WOODS, B., 2016. *Hypershoot is a Pinterest-like bookmarking tool for designers* [viewed 4 February 2017]. Available from: <https://thenextweb.com/dd/2016/01/29/hypershoot-is-a-pinterest-like-bookmarking-tool-for-designers/>

Appendix N - Site Map



Appendix O - Low Fidelity Wireframes





Appendix P - Medium Fidelity Wireframes

Pipeline

Email Address

Password

[Large Black Button]

Pipeline

Block of text explaining Project Pipeline to users.

Email Address

[Large Black Button]

Already got an account? [Log In](#)

Pipeline

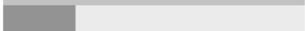


Projects

Project Name
Due in 16 days
[View board](#)



Project Name
Due in 32 days
[View board](#)



Project Name
Overdue by 3 days
[View board](#)





Pipeline

Projects

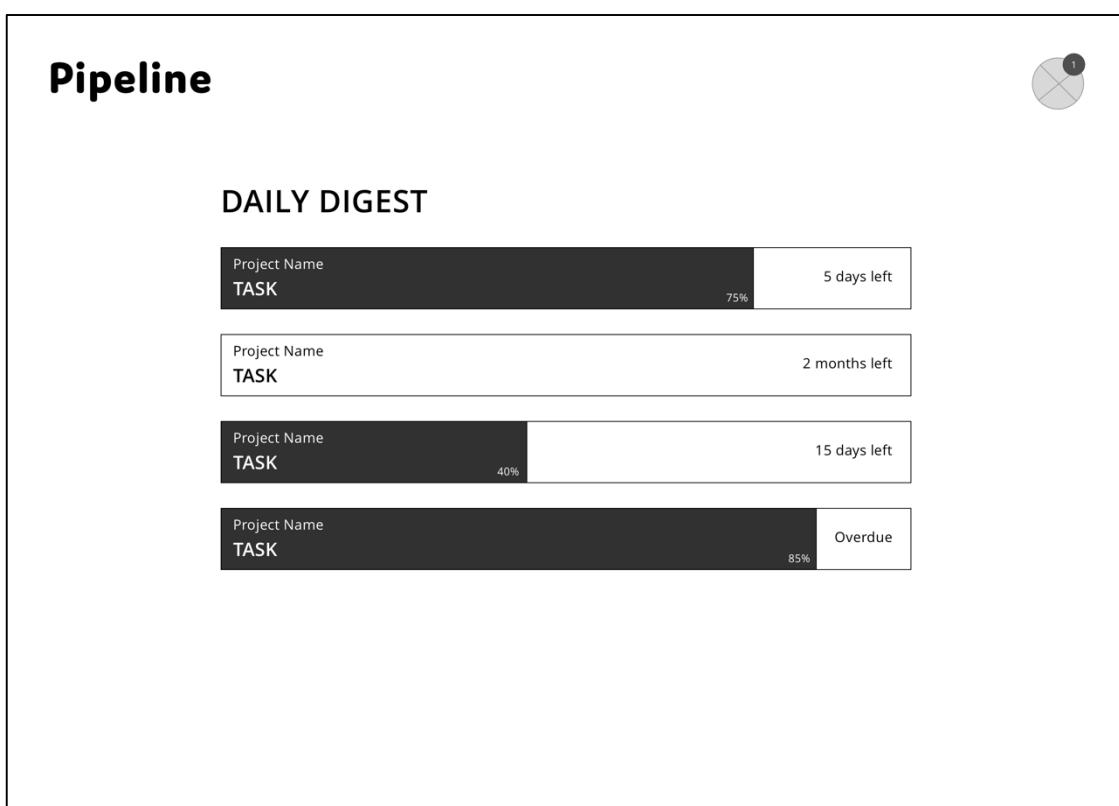
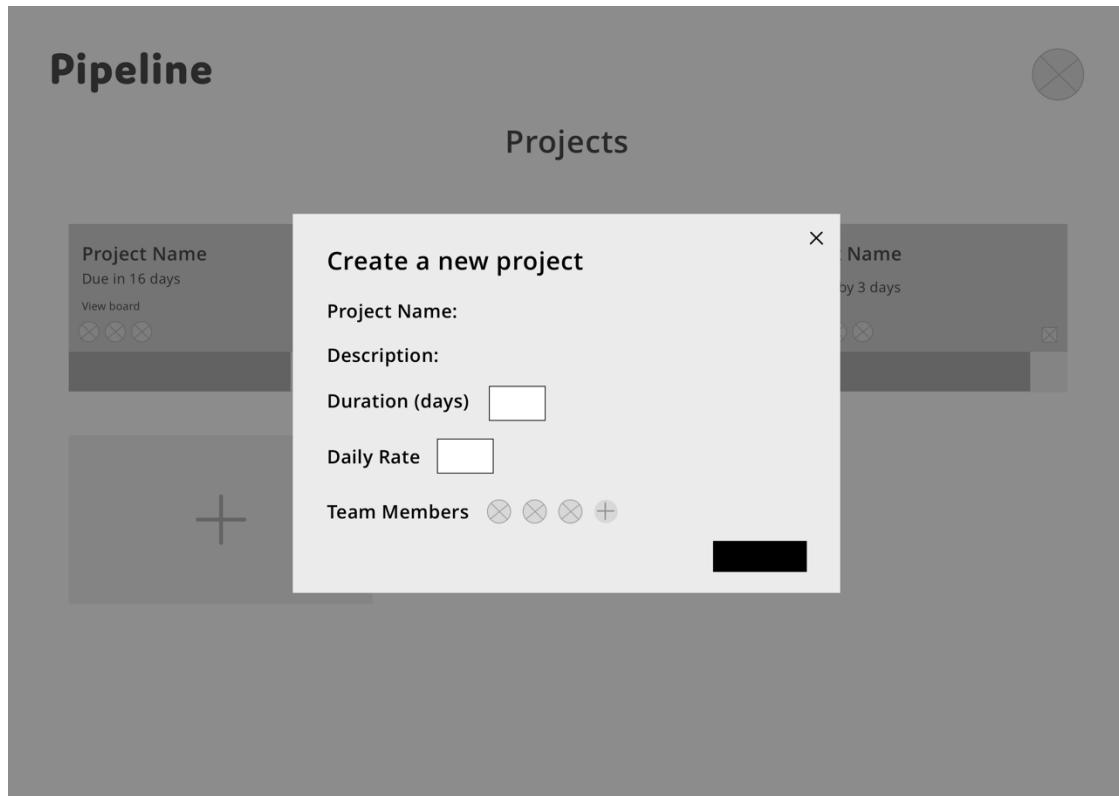
Project Name
Due in 16 days
View board

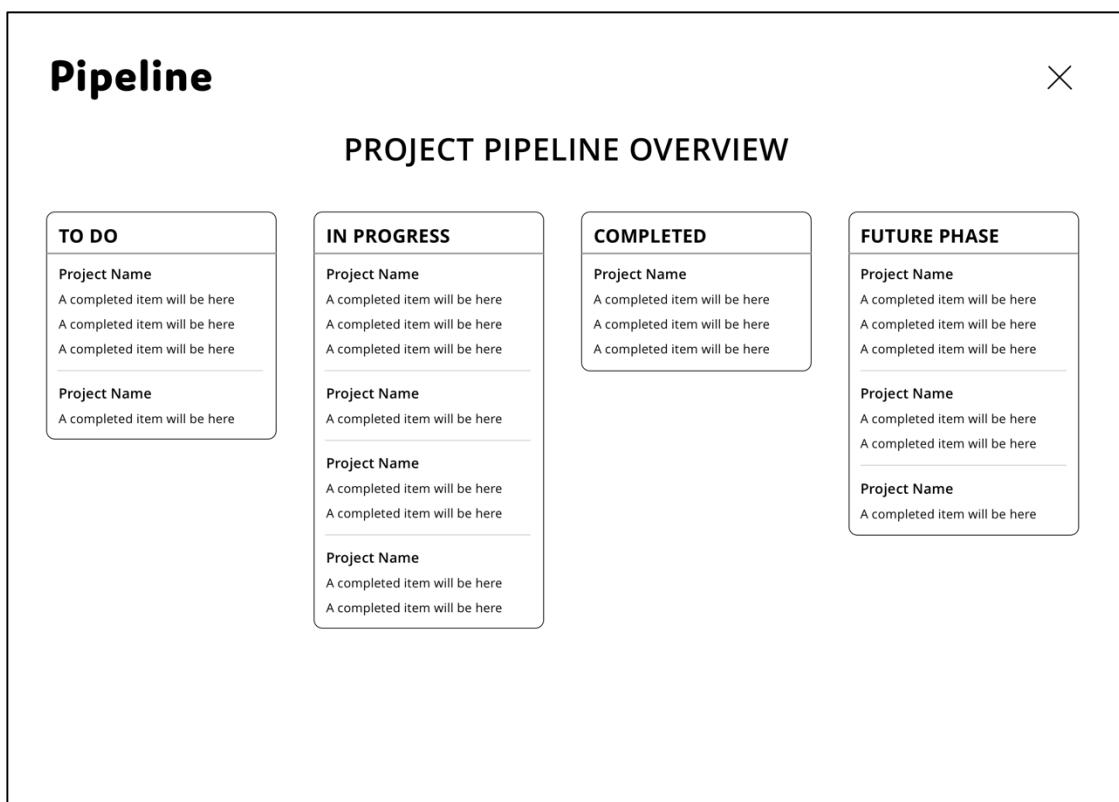
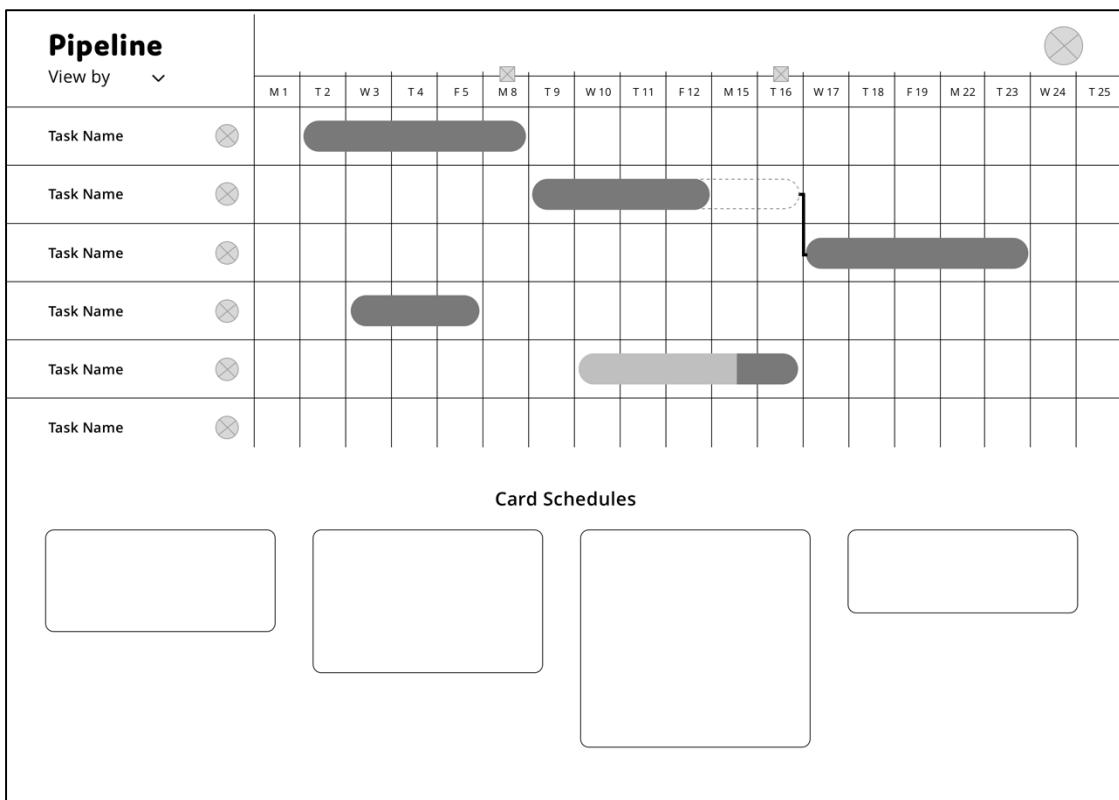
Project Name
Duration (days)
Daily Rate

Team Members +

Project Name
Due in 16 days
View board

Project Name
Due in 3 days
View board





Pipeline

Block of text thanking users
for signing up to the new tool.

Email Address

Choose a password



Pipeline



Option 1

Project Name:

Option 2

Description:

Option 3

Duration (days)

Option 4

Daily Rate



Appendix Q - Comparison of Design Software

	Advantages	Disadvantages
Sketch	<ul style="list-style-type: none"> • \$99 a year which includes regular updates. Comparing this to Adobe products it is really well priced¹ • Pages can be used inside Sketch files so that users can design an entire website in one organised file² • Responsive resizing features are good • Large variety of export options³ • There are hundreds of plugins that can be added to Sketch to make it a more powerful tool⁴ • InVision and Sketch have paired up to create Craft a really powerful tool to enhance workflows⁵ • Sketch Mirror is available to users who want to preview designs on tablet and mobile devices⁶ 	<ul style="list-style-type: none"> • Only available on Mac so it means that Windows users are left out⁷ • There is no version control features⁸ • Users can not collaborate in a Sketch file⁹
Figma	<ul style="list-style-type: none"> • Available in the browser, which means that it is accessible to anyone on any device¹⁰ • Due to the fact that it is in the browser there is no installation required¹¹ • The software is free to use at the moment. However, this is set to change later this year¹² • Real time collaboration feature known as multiplayer¹³ • Shareable URL to send to users for feedback¹⁴ • Sketch files can be imported into Figma • Large variety of export options¹⁵ • Version history is easily accessible for users¹⁶ 	<ul style="list-style-type: none"> • Collaboration feature could lead to issues in design teams¹⁷ • There is no ability to have pages inside Figma documents¹⁸ • Desktop app is not very good¹⁹

1, 2, 3, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18 & 19 KRAMMER CHRISTIAN, 2017. Sketch vs Figma: The Showdown [viewed 23/04/ 2017]. Available from: <https://www.smashingmagazine.com/2017/03/sketch-figma-showdown/>

4, 5 & 16TO MENG, 2016. Figma VS Sketch [viewed 23/04/ 2017]. Available from: <https://medium.com/@mengto/figma-vs-sketch-c01e5e74eddd>

6 HEATH, A. 2014. A Design App Called Sketch 3 IS At The Top Of The Mac App Store, And Here's Why [online] [viewed 23 April 2017]. Available from: <http://www.cultofmac.com/274580/design-app-called-sketch-3-top-mac-app-store-heres/>

Appendix R - Sketch Plugins

Plugin	Description
Nudg it	Nudg it allows users to set different spacing rules to the default ones in Sketch. This is particularly helpful when working to an 8px grid. In this instance the small nudge would be set to 1px and the large to 8px. This works really well and is hassle free.
Swatches	This plugin provides users with colour swatches of multiple different collections. There are Pantone swatches along with Material Design. This is a simple tool that prevents users from having to look online for these colour swatches. These can easily be added to global or document colours within a Sketch file.
Craft	<p>Craft is a tool created by InVision to make Sketch more powerful. It adds multiple features:</p> <p>InVision Sync allows users to upload all or selected artboards directly into InVision projects. This enables the Inspect feature to be used by developers. Inspect provides insights into layout padding, margins etc.</p> <p>There is the ability to create libraries of styles. These can be shared with other team members working on the same project.</p> <p>Craft allows users to use real content within designs. This can be anything from photography to copy.</p> <p>There is a duplicate feature that allows designers to duplicate layer groups. This could be helpful for a design that has multiple blog post objects.</p>

	Freehand is a new tool that has been released. This allows users to share artboards with collaborators and comment / draw to present feedback on designs. Ability to add photographs to artboards from Unsplash.
Auto Layout	Auto Layout helps to create responsive designs in Sketch It helps designers to stop designing for mobile, tablet and desktop devices and to think about the view port sizes in between. Although Project Pipeline is not a responsive design this tool has been used in preparation for future design work.

Appendix S - Colour Theory



Description	
<p>Colour theory relates to how users perceive colours. This relates strongly to how brands and websites are designed¹. When deciding on the colours from project pipeline it was important to research and understand the theory behind colours. Below is a breakdown of the main colours used in Project Pipeline and the meaning behind them.</p>	
Purple	Purple is a combination of red and blue so it combines the meanings of these colours as well as being associated with imagination and creativity. Dark purples are known to create a sense of luxury in designs ²
Grey	As grey is considered a neutral colour it brings calm and balance to designs. It is seen as quite formal and modern ³
Green	Green is known for representing growth and creating peace. Research shows that green has some of the same calming effects as the colour blue ⁴
Orange	Orange is known for being a bright colour with positive connotations (friendly and cheerful). Some people even associate orange as representing change ⁵
Red	Although the colour red can be associated with danger it also signifies importance and being bold and powerful. Red can have physical effects on users resulting in enhancing blood pressure and metabolism ⁶

1 CAO JERRY, 2015. Web design colour theory: how to create the right emotions with color in web design [viewed 23/04/ 2017]. Available from: https://thenextweb.com/dd/2015/04/07/how-to-create-the-right-emotions-with-color-in-web-design/#.tnw_NtkanzOL

2, 3, 4, 5 & 6 CHAPMAN CAMERON, 2010. Color Theory for Designers, Part 1: The Meaning of Color [viewed 23/04/ 2017]. Available from: <https://www.smashingmagazine.com/2010/01/color-theory-for-designers-part-1-the-meaning-of-color/>

Appendix T - Style Guide

Colour

Brand Colours

	Yellow #FDD835		Pink #D81B60		Purple #BE24AA		Green #8ECD4B
	Orange #FB8CC0		Red #E53935		Blue #3949AB		Turquoise #00897B

UI Colours

	Light Grey #E1E1E1		Mid Grey #9A9A9A		Dark Grey #545454		Charcoal Grey #333333
--	--------------------	--	------------------	--	-------------------	--	-----------------------

Type Colours

	White #FFFFFF		Type Body #333333
--	---------------	--	-------------------

Typography

H1 Ingra 32px

H2 Ingra 24px

H3 Ingra 20px

H4 Ingra 16px

H5 Ingra 14px

H6 Ingra 12px

Button

Default Active Hover Focused Disabled

Forms

Default Active Hover

Email address

Focused Disabled

Email address

Error

Email address

* Error message displayed here

Icons

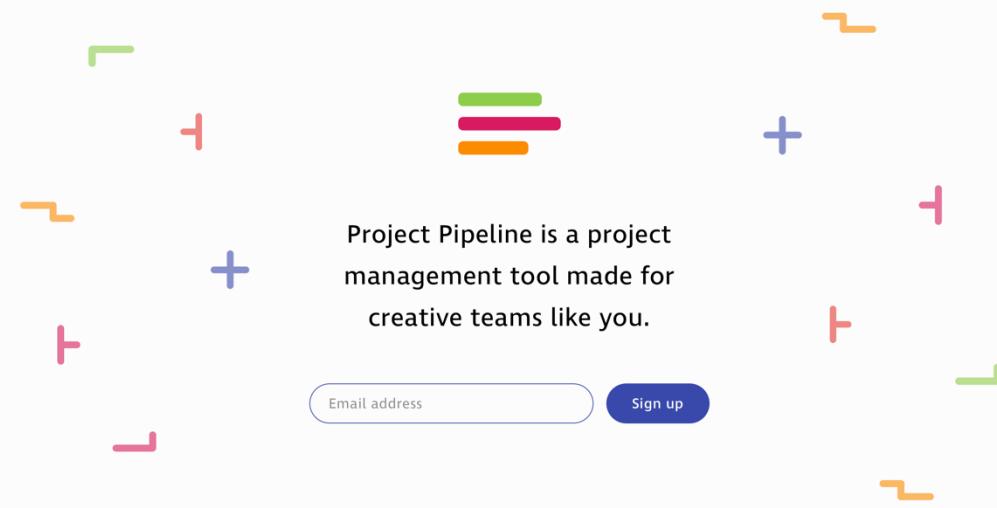
Appendix U - Design Features

Feature	Description
Creating A Project	Users can create new projects to start building up project schedules. There is the option to add duration dates, daily rates, members and a title.
Editing A Project	Once a project has been created it can be edited. This gives users the opportunity to update duration, daily rates, members, titles and deleting a project.
Adding A Task	Tasks can be added in project schedule views. Once tasks have been added they can be rearranged using drag and drop functionality.
Dependencies	Dependencies can be created between tasks. This means that if one task overruns then it will effect the rest of the timeline.
Task History	If a task overruns, then this can be clearly seen in the timeline. This is useful information that will help to plan projects better in future.
Schedule Notifications	Users receive notifications daily about tasks that are in the pipeline. This can be toggled between a today, tomorrow and weekly view.
Card View	Each project has a card view where users can document to-do's, in progress, completed and future phase work.
Integrate Apps	Users can integrate apps such as Harvest, Slack and Basecamp.
Milestones	Milestones can be added to project timelines in order to show billing deadlines and project deadlines.

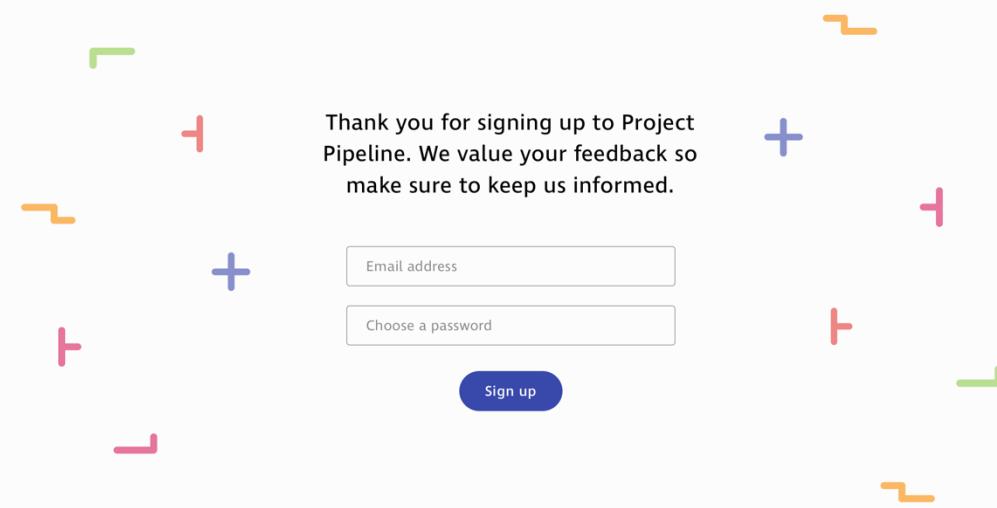
Project View	A project view exists as the default view when creating new projects.
Team Member View	A team member view shows members availability and any scheduling conflicts that occur.
Weekends (On / Off)	Ability to toggle weekends on and off.
Email Notifications	Set up daily email notifications to see latest activity.
Budgeting	Set daily budgets so that users can be made aware when projects are running over or under budget.

Appendix V - High Fidelity Designs

Pipeline 

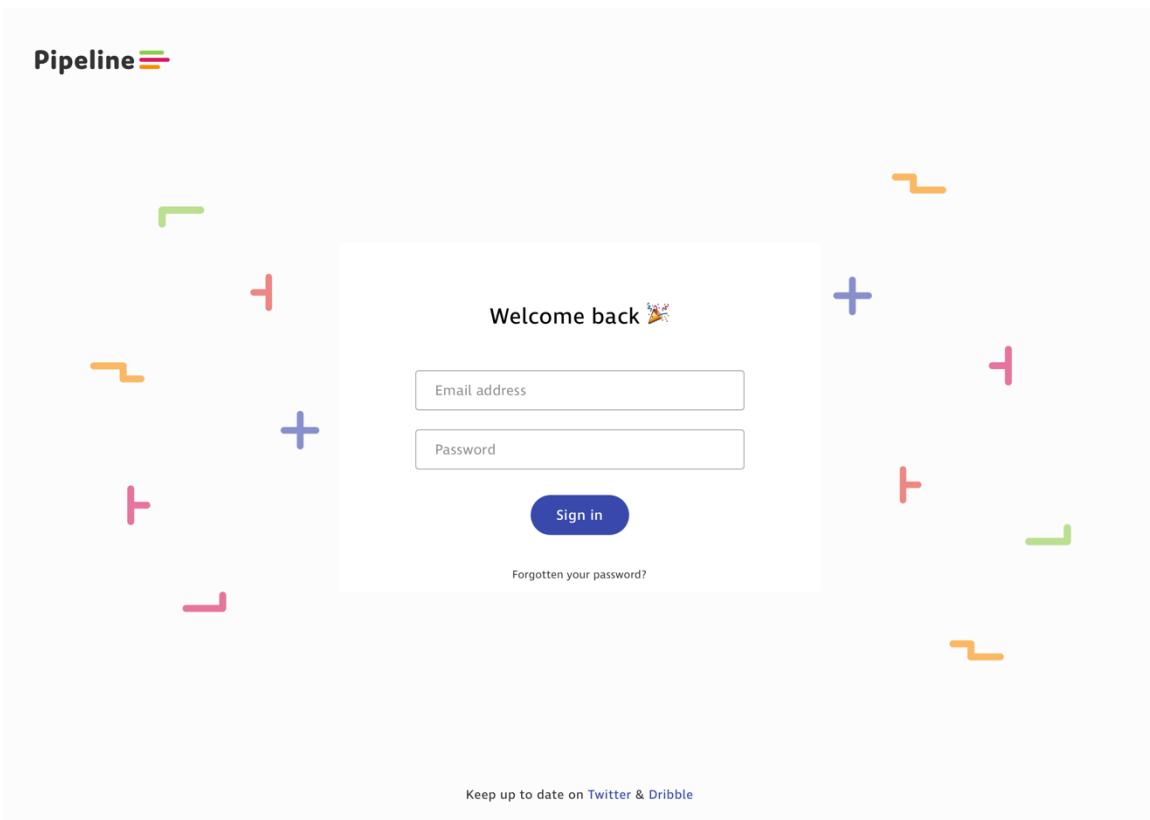


Pipeline 



Keep up to date on [Twitter](#) & [Dribble](#)

Pipeline



Pipeline

1
TH

Projects

Sample Project
Due in 9 days

+

Projects

Pattern Library
Due in 10 days
View board TH SG AE CR

Survivor Stories Redesign
Due in 32 days
View board TH SG

One Eighty Light UX Phase
Due 3 days ago
View board TH SG CR

Projects

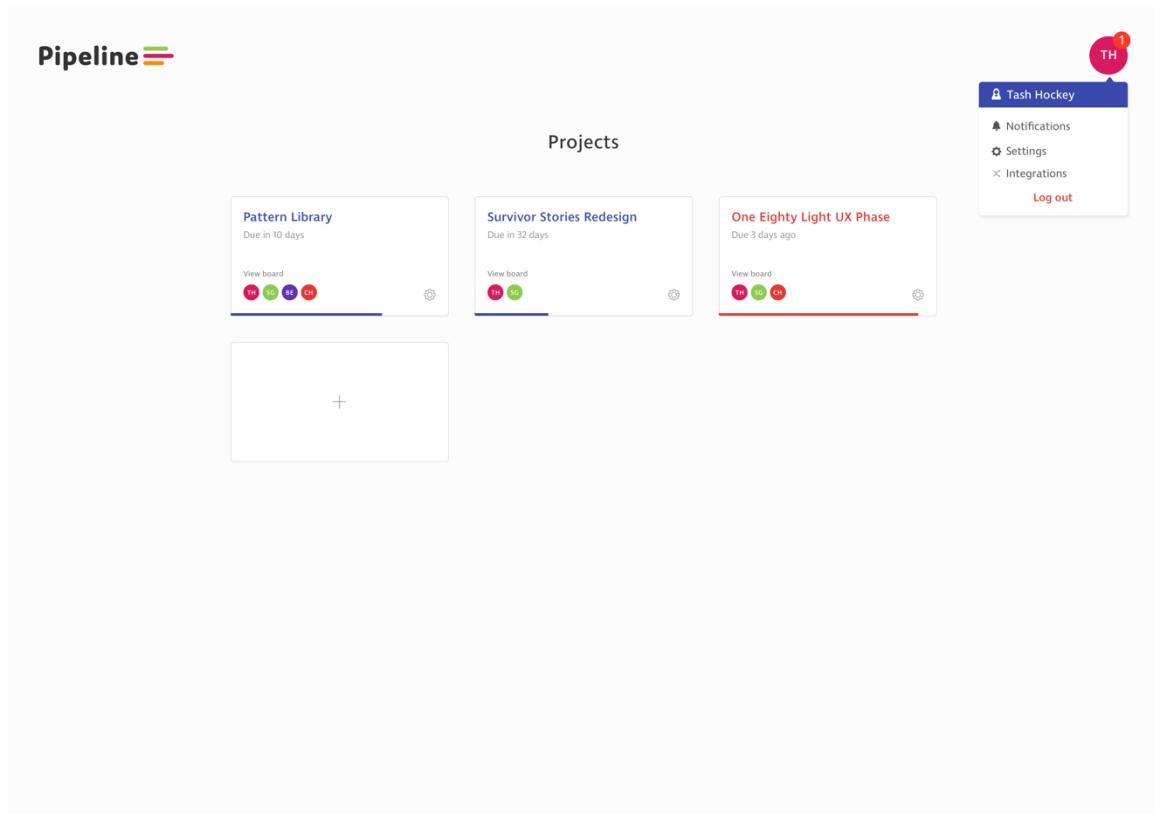
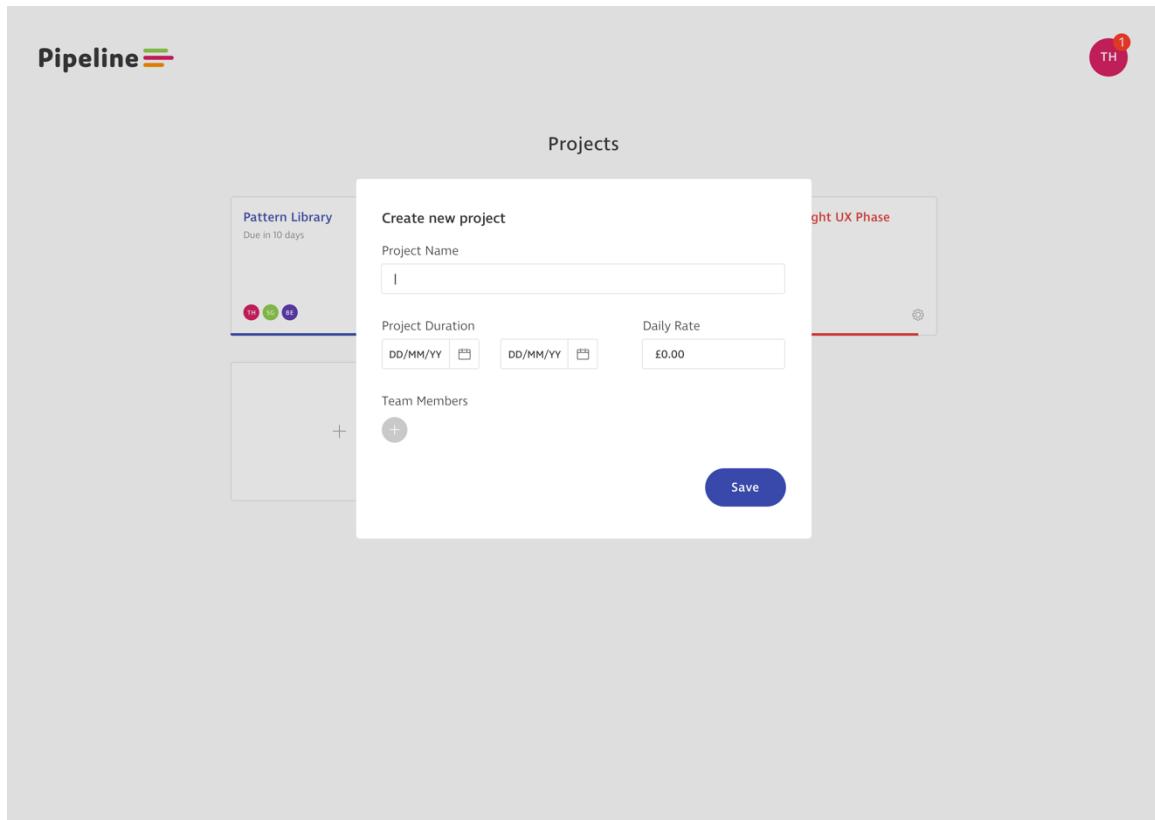
Project Name
Pattern Library

Project Duration
13/02/17 29/04/17

Daily Rate
£560.00

Team Members
TH SG +

Save





TH

What's on your plate

Today Tomorrow Weekly

Pattern Library UI DESIGN	Due in 10 days
Survivor Stories Redesign WIREFRAMES	Due in 32 days



TH

What's on your plate

Today **Tomorrow** Weekly

One Eighty Light UX Phase UX RESEARCH	Due 3 days ago
---	----------------

Pipeline

TH

What's on your plate

Today Tomorrow **Weekly**

Mon	Pattern Library UI DESIGN	Due in 10 days
Mon	Survivor Stories Redesign WIREFRAMES	Due in 32 days
Tues	One Eighty Light UX Phase UX RESEARCH	Due 3 days ago
Weds	Pattern Library CLICKABLE PROTOTYPE	Due in 10 days
Thurs	Survivor Stories Redesign UI DESIGN	Due in 32 days
Fri	Survivor Stories Redesign UI DESIGN	Due in 32 days
Fri	Pattern Library IMPLEMENT DESIGN FEEDBACK	Due in 10 days

Pipeline

Pipeline Overview

TO DO	IN PROGRESS	COMPLETED	FUTURE PHASE
Pattern Library <ul style="list-style-type: none"> <input type="checkbox"/> Front end development <input type="checkbox"/> Back end development <input type="checkbox"/> Browser testing <input type="checkbox"/> Push live Survivor Stories Redesign <ul style="list-style-type: none"> <input type="checkbox"/> UI design <input type="checkbox"/> Front end development <input type="checkbox"/> Back end development <input type="checkbox"/> Browser testing <input type="checkbox"/> Push live One Eighty Light UX Phase <ul style="list-style-type: none"> <input type="checkbox"/> Competitor's analysis <input type="checkbox"/> User research <input type="checkbox"/> Personas <input type="checkbox"/> Analytics review <input type="checkbox"/> User journey's <input type="checkbox"/> Red routes 	Pattern Library <ul style="list-style-type: none"> <input type="checkbox"/> UI design Survivor Stories Redesign <ul style="list-style-type: none"> <input type="checkbox"/> Medium - fi wireframes One Eighty Light UX Phase <ul style="list-style-type: none"> <input type="checkbox"/> Collecting design inspiration 	Pattern Library <ul style="list-style-type: none"> <input type="checkbox"/> Initial research <input type="checkbox"/> Collecting design inspiration <input type="checkbox"/> User research <input type="checkbox"/> Competitor's analysis <input type="checkbox"/> Personas <input type="checkbox"/> Low - fi wireframes <input type="checkbox"/> Medium - fi wireframes Survivor Stories Redesign <ul style="list-style-type: none"> <input type="checkbox"/> Collecting design inspiration <input type="checkbox"/> Low - fi wireframes One Eighty Light UX Phase <ul style="list-style-type: none"> <input type="checkbox"/> Initial research 	Pattern Library <ul style="list-style-type: none"> <input type="checkbox"/> Search functionality <input type="checkbox"/> Version 2.0 Survivor Stories Redesign <ul style="list-style-type: none"> <input type="checkbox"/> Interactive features

Pipeline

TH

Pattern Library Overview

TO DO	IN PROGRESS	COMPLETED	FUTURE PHASE
<ul style="list-style-type: none"><input type="checkbox"/> Front end development<input type="checkbox"/> Back end development<input type="checkbox"/> Browser Testing<input type="checkbox"/> Push live	<ul style="list-style-type: none"><input type="checkbox"/> UI design	<ul style="list-style-type: none"><input type="checkbox"/> Initial research<input type="checkbox"/> Collecting design inspiration<input type="checkbox"/> User research<input type="checkbox"/> Competitor's analysis<input type="checkbox"/> Personas<input type="checkbox"/> Low - Fi wireframes<input type="checkbox"/> Medium - Fi wireframes	<ul style="list-style-type: none"><input type="checkbox"/> Search functionality<input type="checkbox"/> Version 2.0

Pipeline

TH

Survivor Stories Redesign Overview

TO DO	IN PROGRESS	COMPLETED	FUTURE PHASE
<ul style="list-style-type: none"><input type="checkbox"/> UI design<input type="checkbox"/> Front end development<input type="checkbox"/> Back end development<input type="checkbox"/> Browser testing<input type="checkbox"/> Push live	<ul style="list-style-type: none"><input type="checkbox"/> Medium - fi wireframes	<ul style="list-style-type: none"><input type="checkbox"/> Collecting design inspiration<input type="checkbox"/> Low - fi wireframes	<ul style="list-style-type: none"><input type="checkbox"/> Interactive features

One Eighty Light UX Phase Overview

TO DO	IN PROGRESS	COMPLETED	FUTURE PHASE
<input type="checkbox"/> Competitors analysis <input type="checkbox"/> User research <input type="checkbox"/> Personas <input type="checkbox"/> Analytics review <input type="checkbox"/> User journey's <input type="checkbox"/> Red routes	<input type="checkbox"/> Collecting design inspiration	<input type="checkbox"/> Initial research	

 Notifications Settings Integrations

Personal Details

First Name

Tash

Email

natasha@theideabureau.co

Last Name

Hockey

Password

Update

Daily Email Update

Time

9:00am

Time Zone

9:00am

Daily Rate

Rate

£560.00

Team Member Capacity

Default

37 hours per week

Show weekends

[Delete Account](#)

Save

[Log out](#)



What's on your plate

[Today](#) [Tomorrow](#) [Weekly](#)

Pattern Library UI DESIGN	Due in 10 days
Survivor Stories Redesign WIREFRAMES	Due in 32 days



Notifications

Settings

Integrations

[Slack](#) [Harvest](#) [Basecamp](#)



Receive notifications when timeline changes

Get notifications sent to specific Slack channels when timeline changes have been made by all members in a project.

[Set up](#)



Receive notifications when assigned new to-dos

Notifications can be sent to you when you or other team members assign to-dos. This will help to keep an eye on what's on your plate.

[Set up](#)

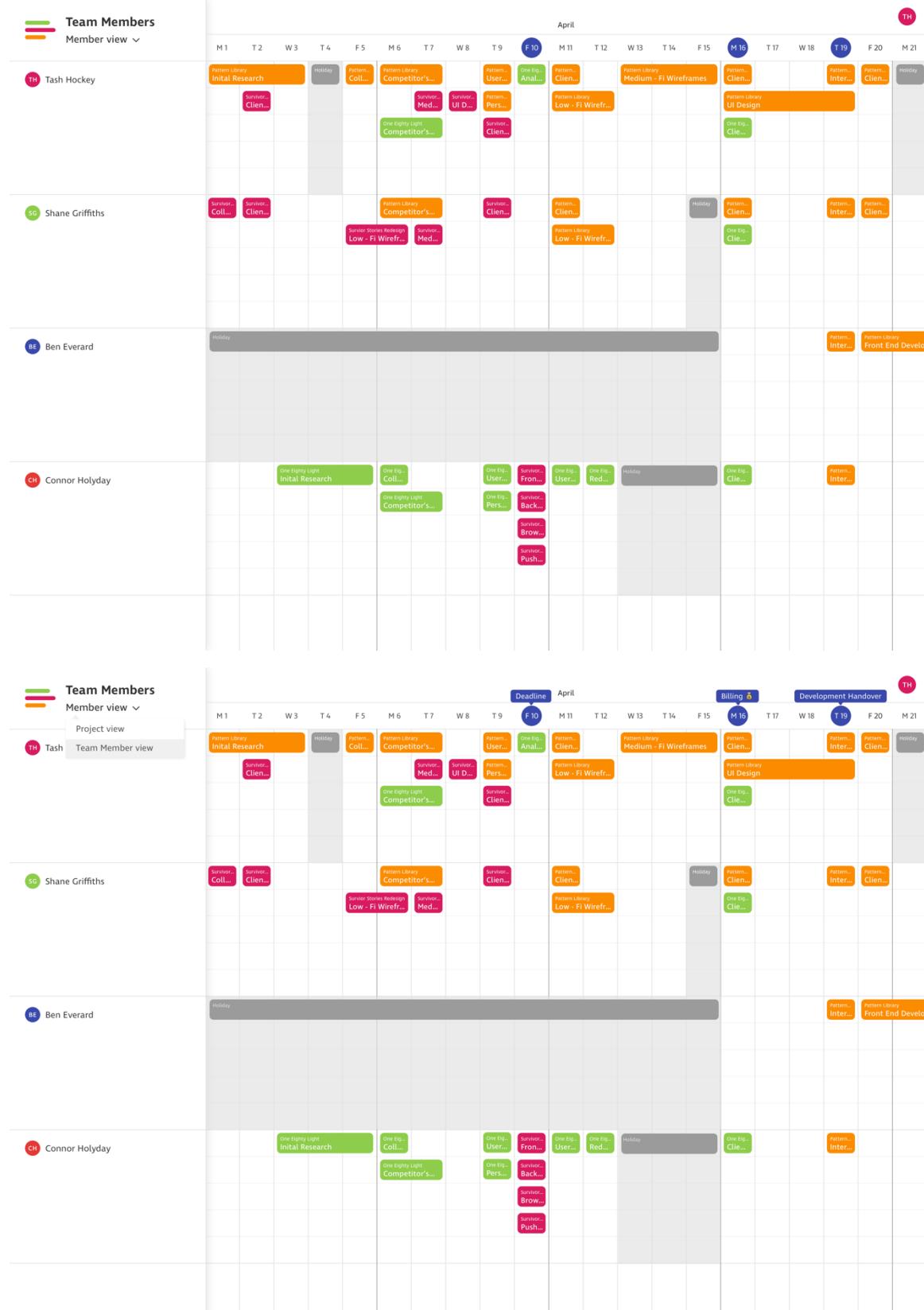


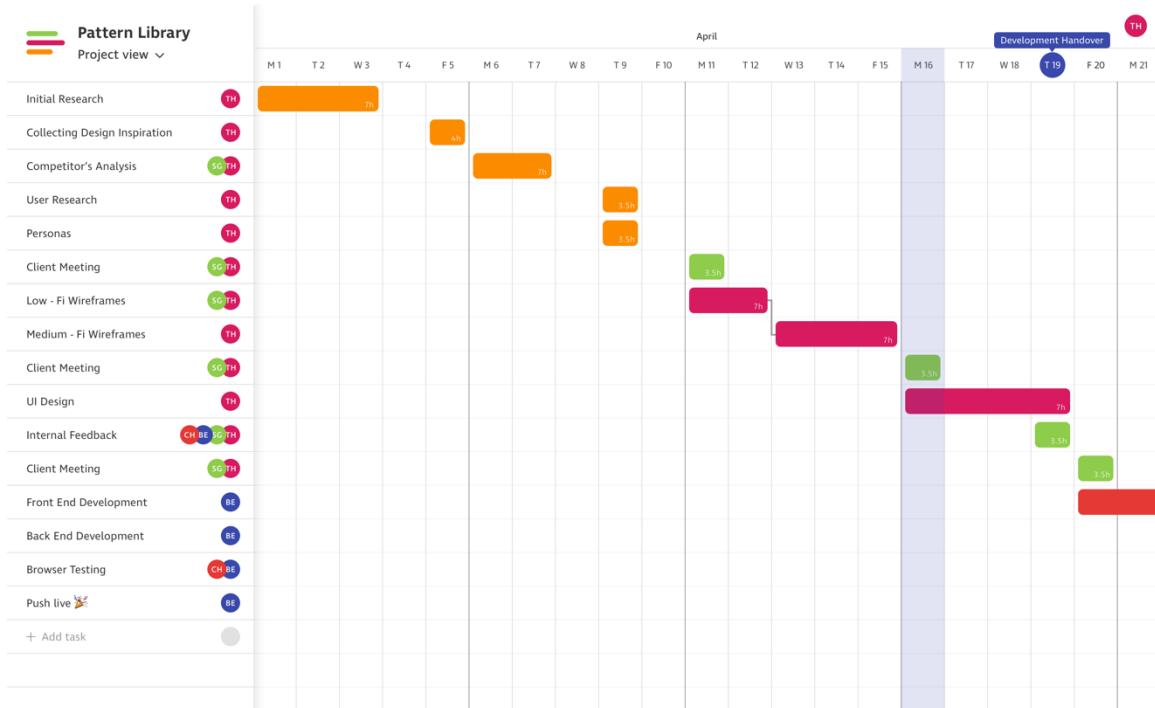
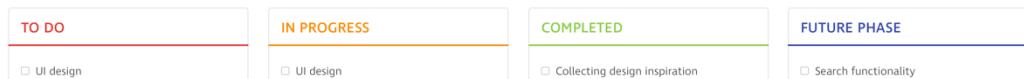
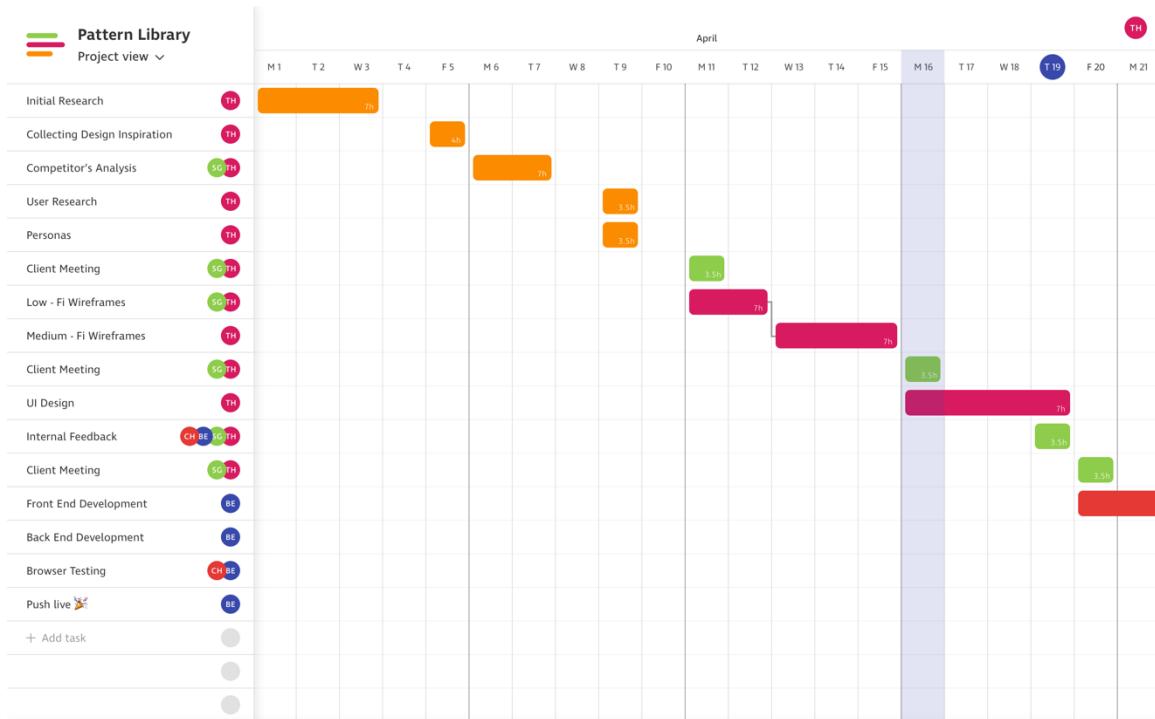
Receive notifications for a daily digest

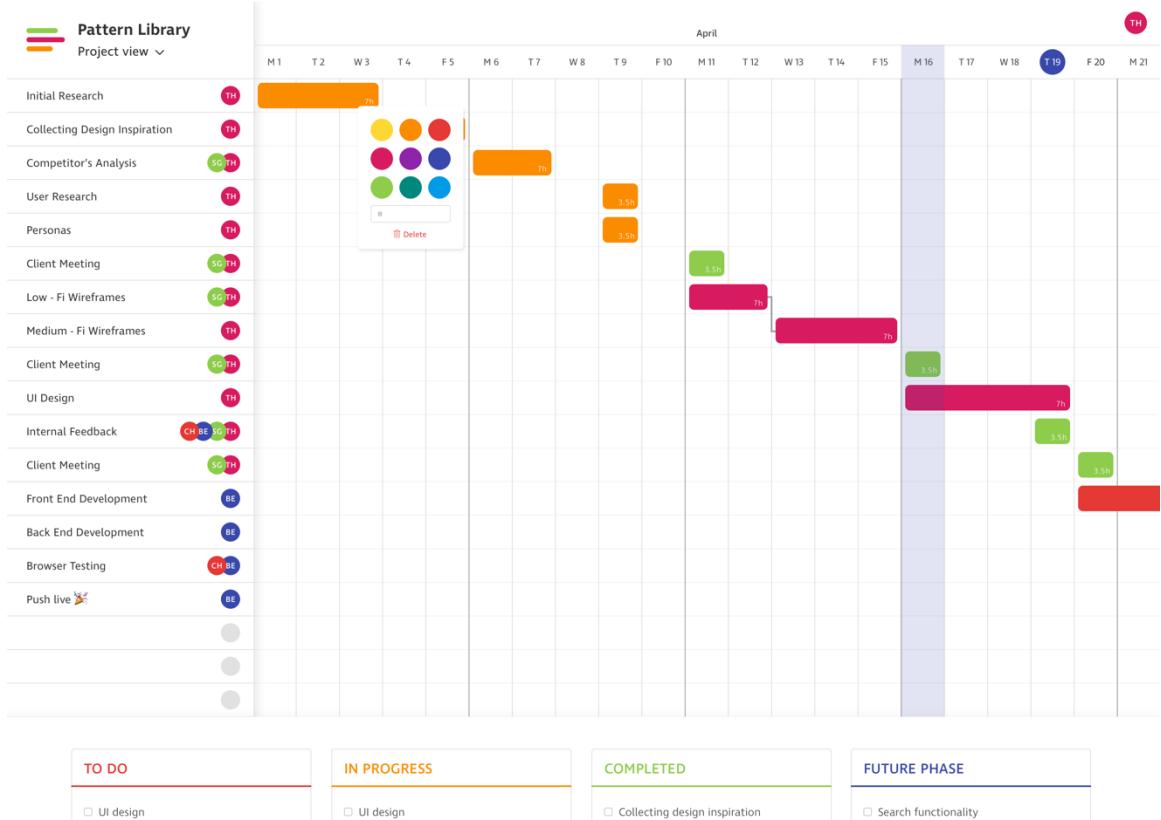
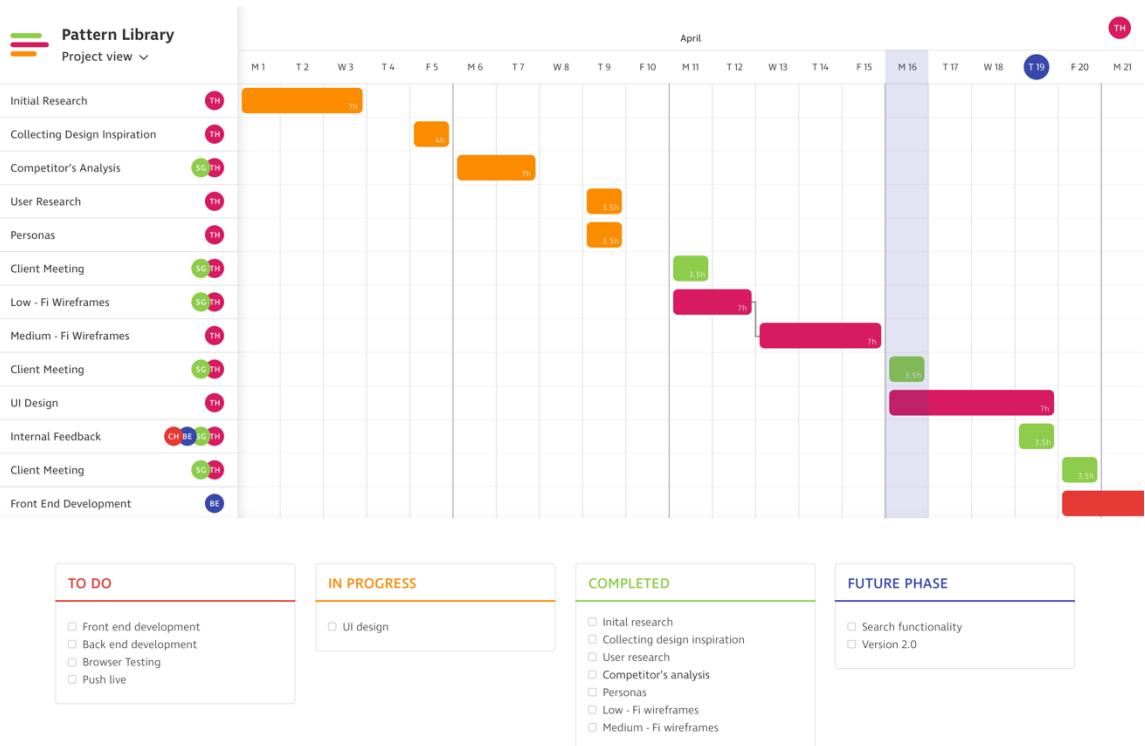
Receive a daily digest at 9:00am every morning in project specific channels of team members commitments for that day. You will also be able to see when the deadline is due and if it is under or over budget.

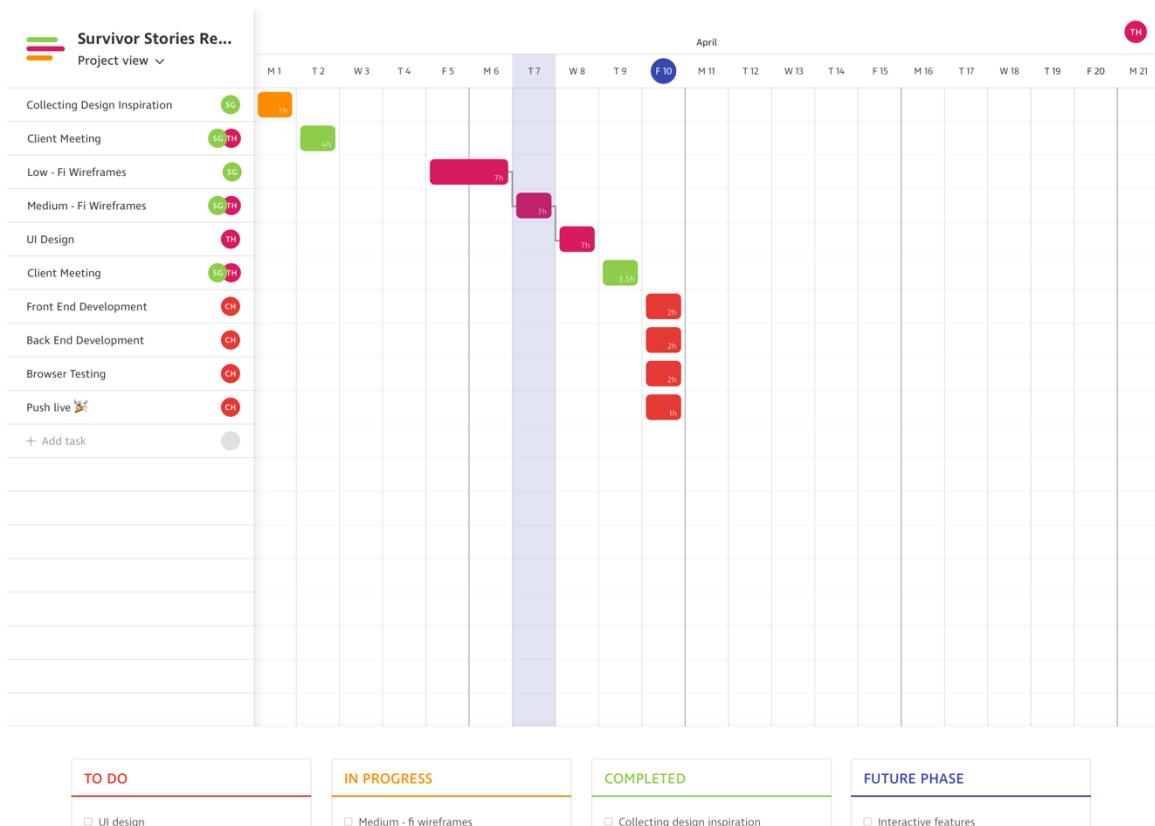
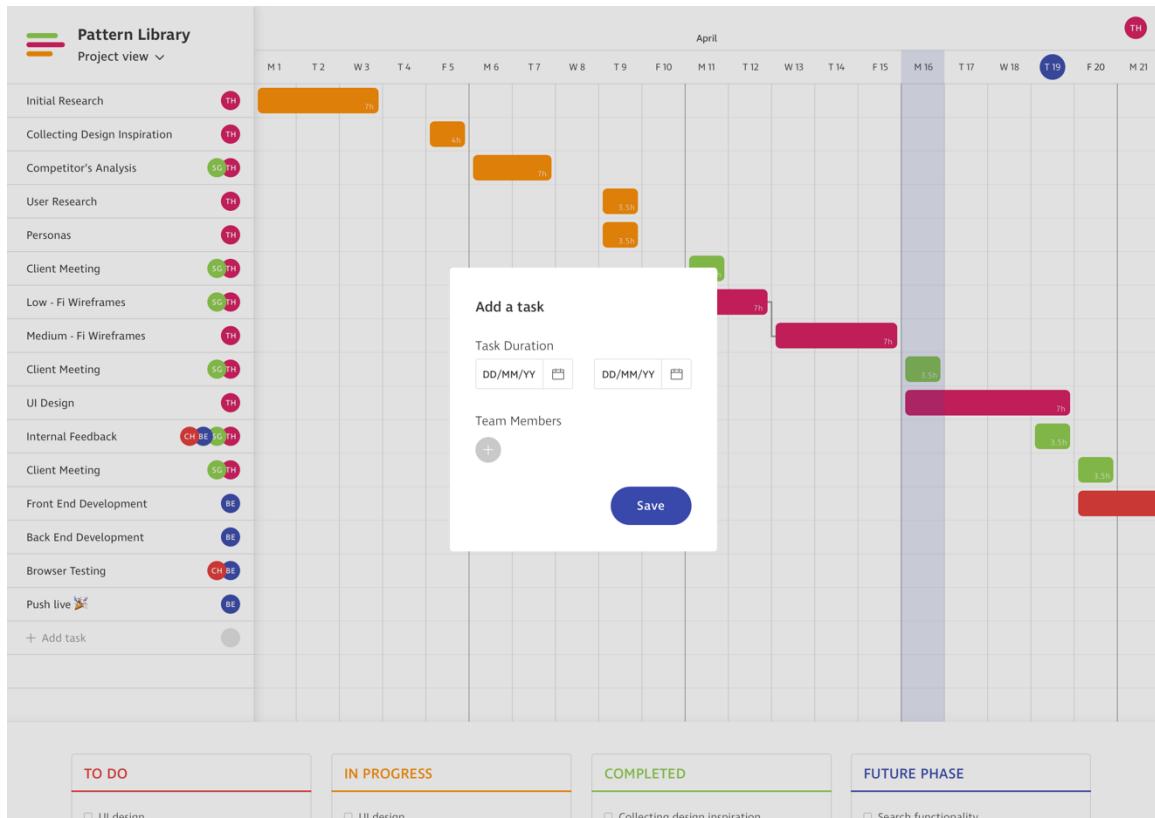
[Set up](#)

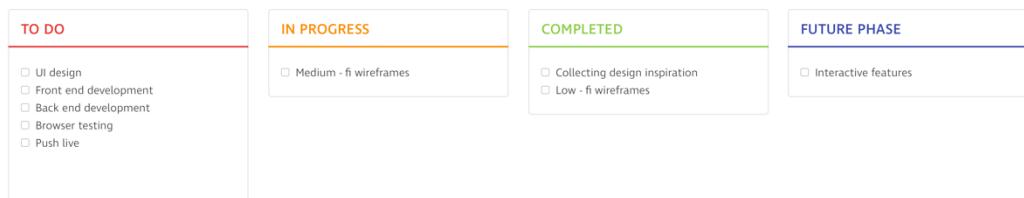
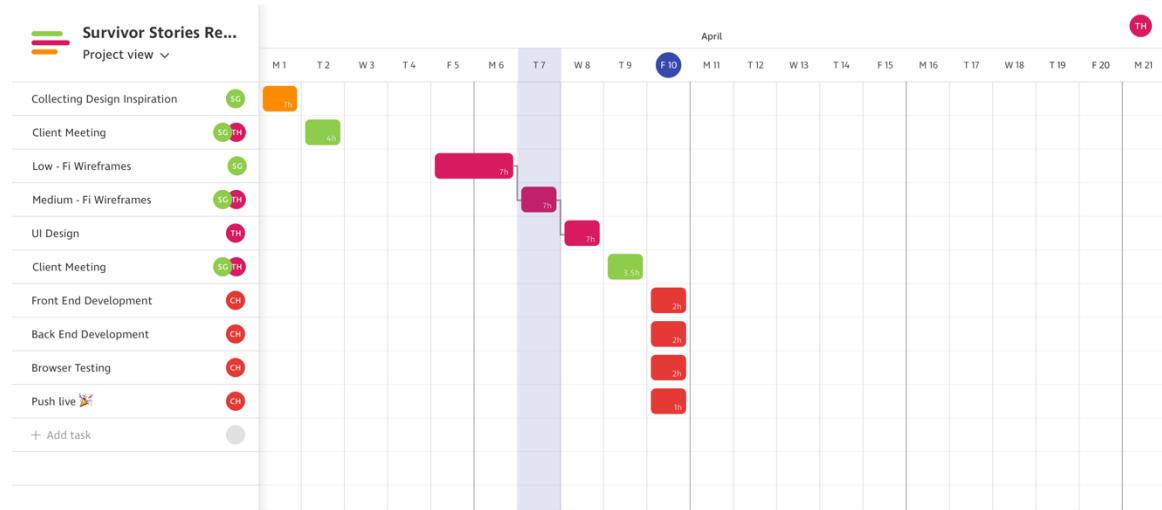
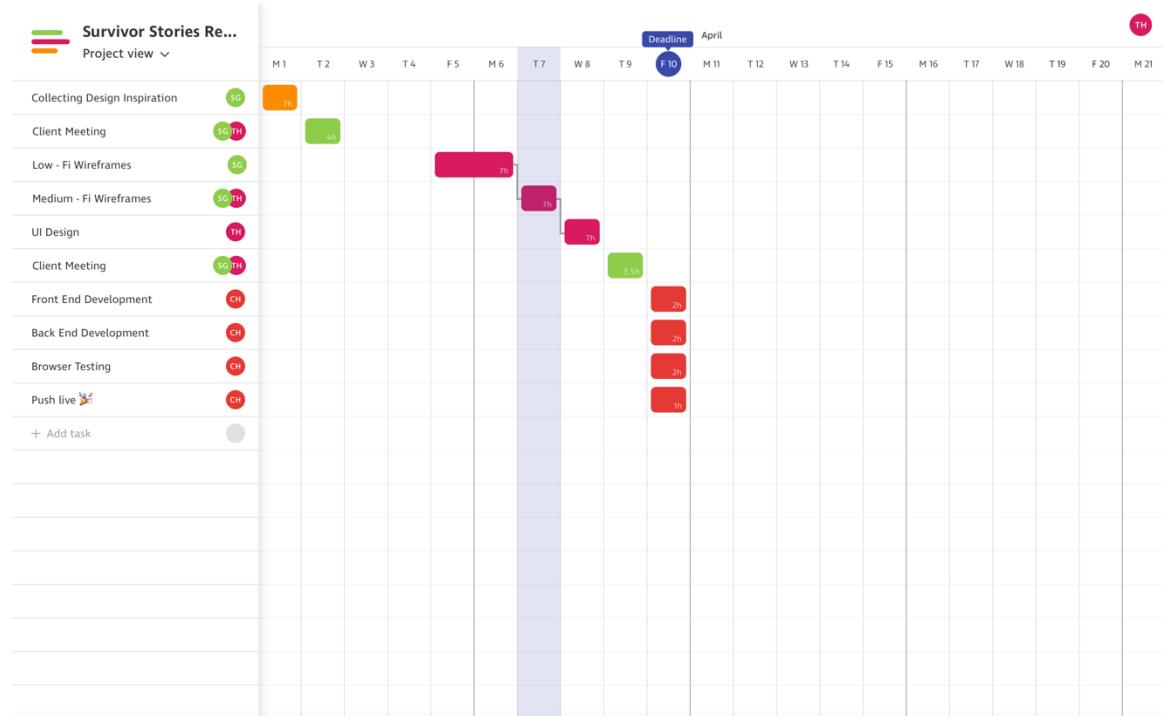
[Log out](#)

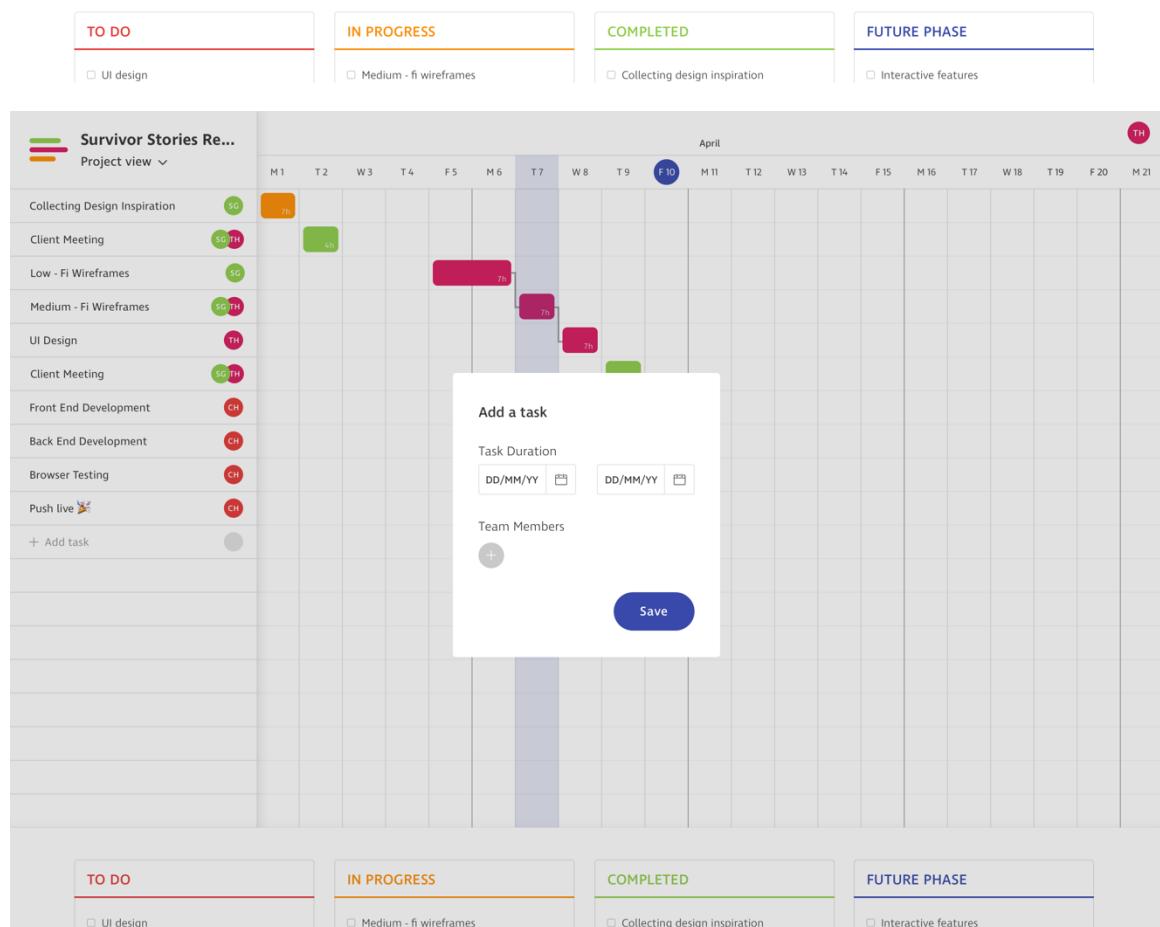
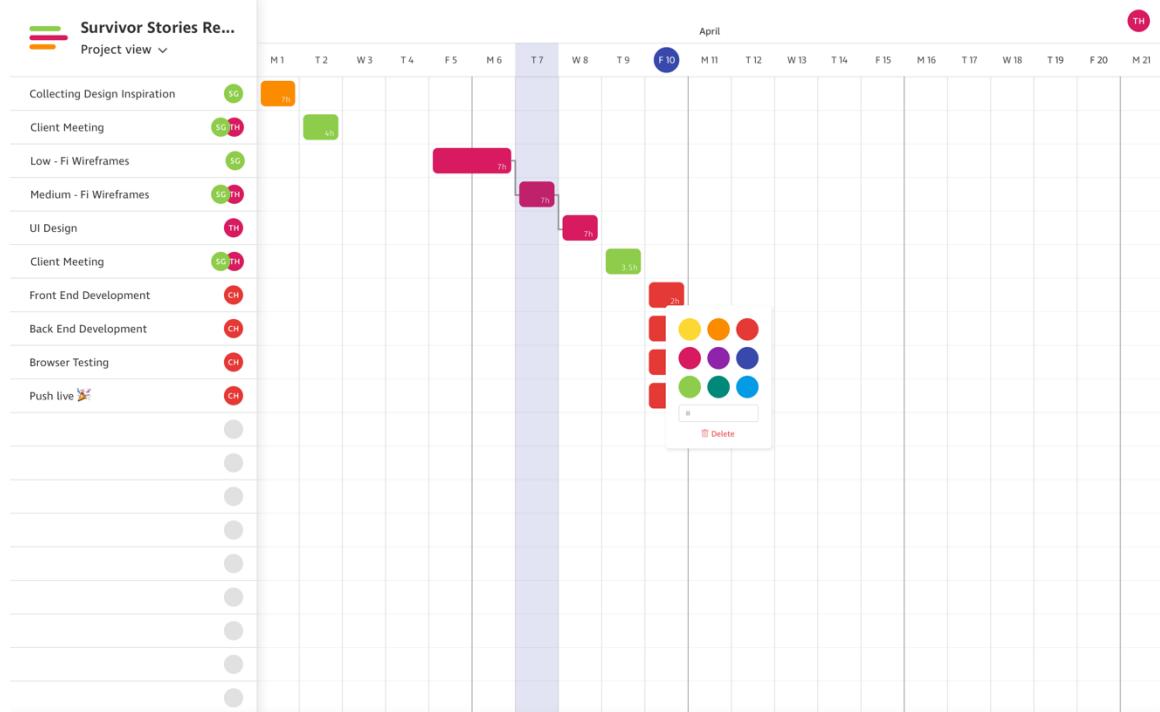


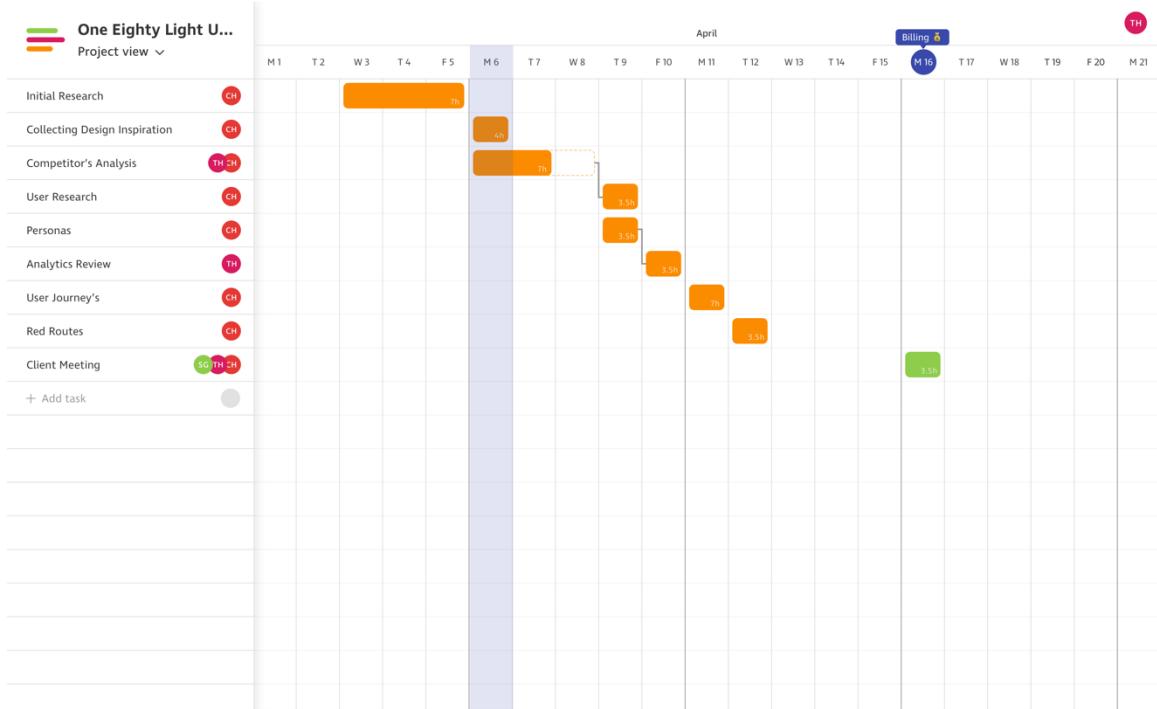
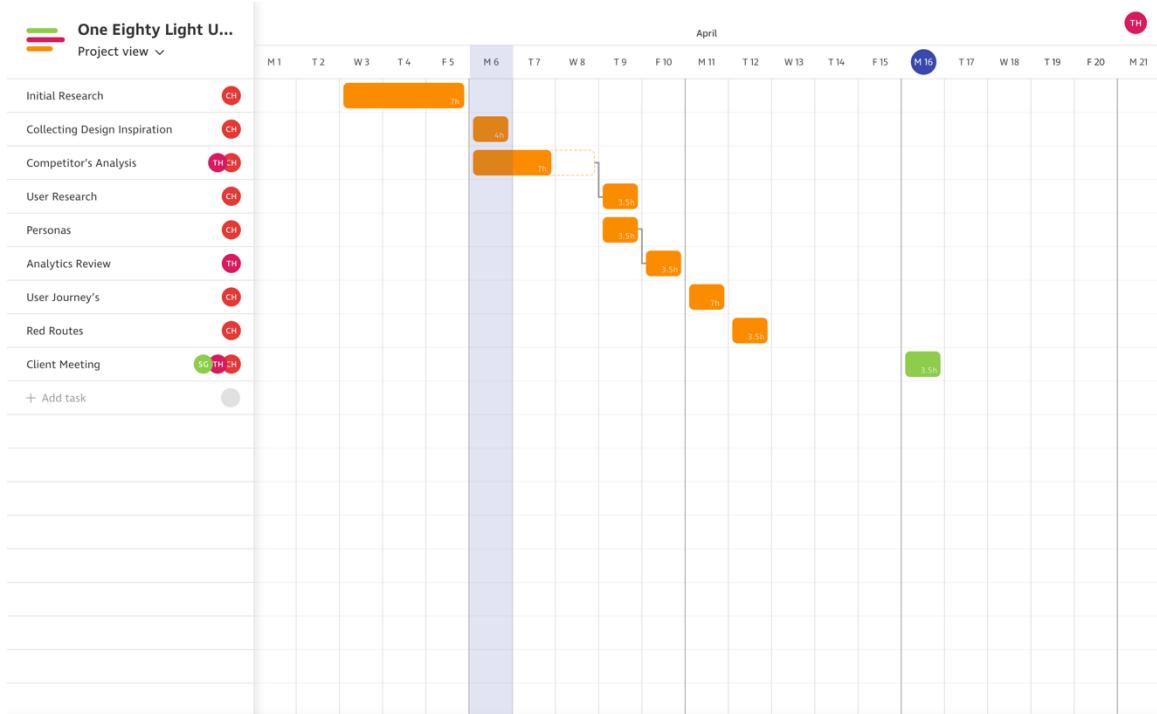


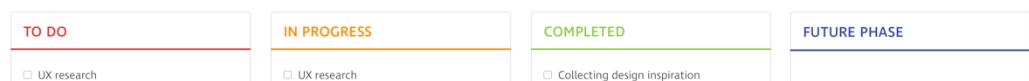
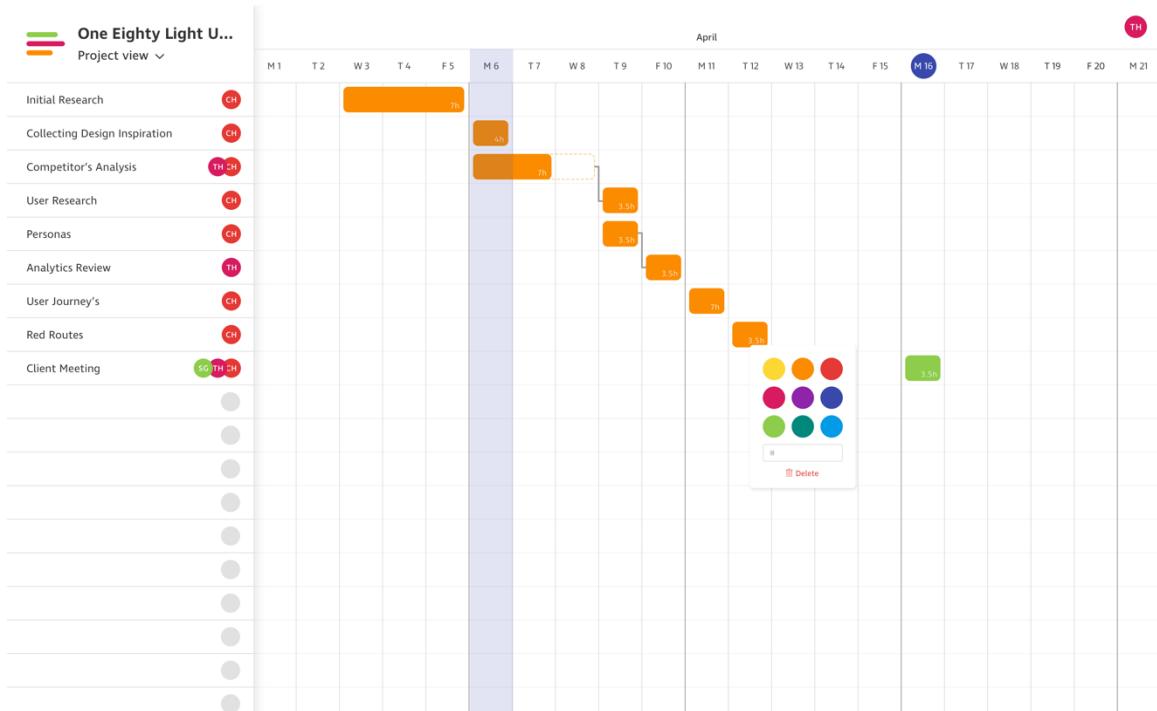
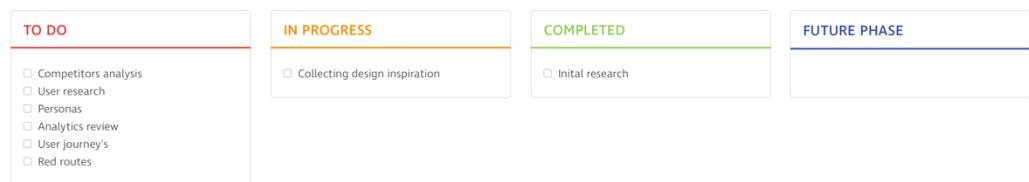
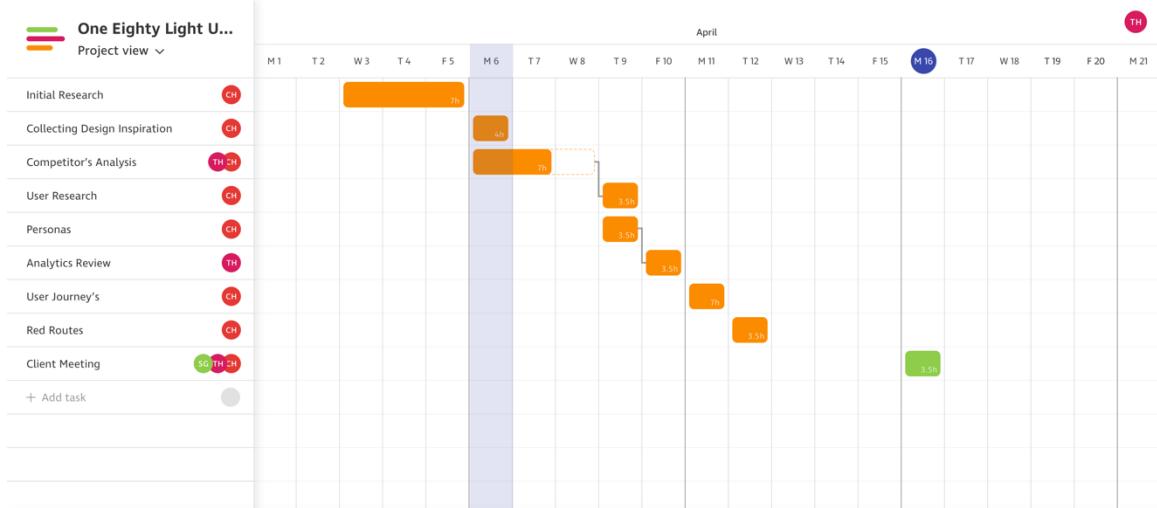


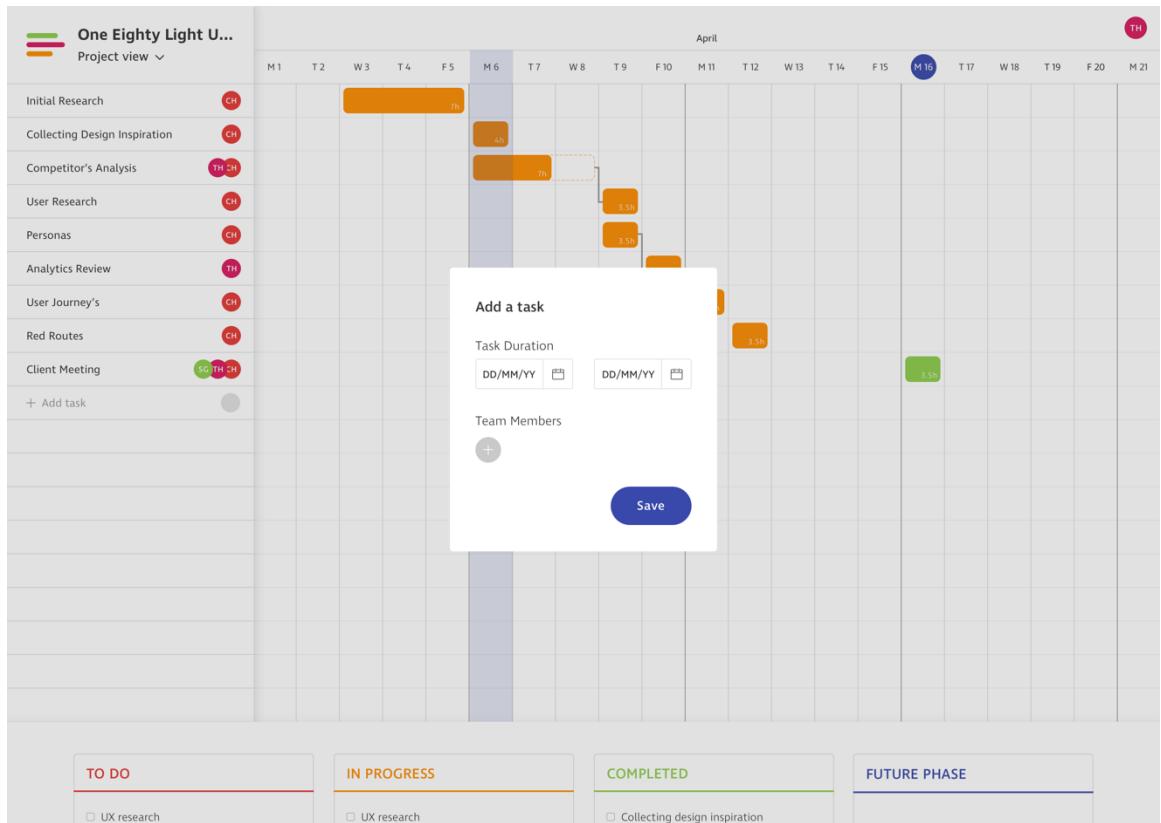












Appendix W - Comparison of Prototyping Tools

	Advantages	Disadvantages
InVision	<ul style="list-style-type: none"> InVision provides support for a variety of responsive interface types. This includes desktop, tablet, mobile and watches¹ Support for mobile and tablet touch gesture² Prototypes can be shared and feedback can be collected directly in InVision³ Integration with Slack. This means that when screens are uploaded to a project the project channel in Slack is notified. Also when a link is shared to the screens it shows who views the prototype and for how long⁴ Labels can be added to screens to show if they are in progress or completed⁵ 	<ul style="list-style-type: none"> It is only really suitable for polished designs and not for making quick prototypes with sketched wireframes⁶ PDF support has some issues. When loading in screens vectors are rendered at a low quality⁷ The accompanying viewer app can only be used with iOS devices (iPad and iPhone) meaning that Android users are left out⁸
Marvel	<ul style="list-style-type: none"> No coding is required to create prototypes⁹ Users can turn basic sketches in prototypes¹⁰ 3D touch can be enabled in prototypes¹¹ Drag and drop file upload¹² 	<ul style="list-style-type: none"> Limited screen transitions and animations¹³ Users can only download a prototype if accounts are upgraded to a paid for version¹⁴ Free account limitations¹⁵
Adobe XD	<ul style="list-style-type: none"> Designs and prototypes can be created in a single interface¹⁶ Seamless integration between Photoshop and Illustrator making it easy to import artboards¹⁷ Artboards designed in Sketch can be exported / imported¹⁸ 	<ul style="list-style-type: none"> Steep learning curve¹⁹

- 1 & 2 RUSAKOV, A, 2015 David Dockx [viewed 23 March 2017] Available from:
<http://www.slideshare.net/airrus/prototyping-invision-vs-axure-48858273>
- 3 MESZAROS, S, 2015. Prototyping Tools [viewed 23 January 2017]. Available from:
<http://stephenmeszaros.com/posts/prototyping-tools.html#invision>
- 4 SLACK, n.d. InVision App [viewed 23 January 2017]. Available from:
<https://slack.com/apps/A08N434LS-invision-app>
- 5 LIN, S, 2015. Which Prototyping tool should you use? Forum One [viewed 23 January 2017]. Available from: <http://forumone.com/blog/which-prototyping-tool-should-you-use/>
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- 7 ARNOLD CHRIS, 2016. Let's talk about InVision...and the alternatives [viewed 23/04/ 2017]. Available from: <https://www.designernews.co/stories/56084-lets-talk-about-invision-and-alternatives>
- 8 THOMPSON RUSSELL, 2016. InVision Review 2016 [viewed 23/04/ 2017]. Available from: <https://www.comparakeet.com/best-wireframing-tools/invision-review/>
- 9, 10 & 11 CALIMIMI, A, 2015. Marvel at the new features in version 5.0 of this popular prototyping app [viewed 23 April 2017]. Available from:
<http://appadvice.com/appnn/2015/12/marvel-at-the-new-features-in-version-5-0-of-this-popular-prototyping-app>
- 12, 13, 14 & 15 GOSHA GABRIELLE, 2015. 3 Prototyping Tools Compared: InVision, Marvel & Just In Mind [viewed 23/04/ 2017]. Available from:
<https://www.sitepoint.com/invision-marvel-justinmind-prototyping-tools-compared/>
- 16, 17, 18 & 19 BUSCHE, L, 2016. Sketch beware, here comes adobe experience design CC [viewed 23 April 2017]. Available from:
<https://creativemarket.com/blog/2016/03/14/sketch-beware-here-comes-adobe-experience-design-cc>

Appendix X - User Testing Questions

1 → What are your first impressions when visiting Project Pipeline?*

2 → Were you able to add a new project easily?*

<input type="checkbox"/> Y	Yes
<input type="checkbox"/> N	No

3 → Were you able to navigate to the Survivor Stories Redesign project schedule?*

<input type="checkbox"/> Y	Yes
<input type="checkbox"/> N	No

4 → Do you find adding a new task easy?*

5 → What are your thoughts on the design of the interface?*

6 → Any other comments...

Appendix Y - User Testing Results

1 → What are your first impressions when visiting Project Pipeline?*

It's a lively platform	Clean graphics and simple
The interface looks very clean and simple to understand. I am very impressed with your design	Un-cluttered and minimalistic design
Very nice design and great usability.	
Beautiful logo. I know straight away I am using project management tool. Easy to get started with project straight away.	It's very clean, minimal, it's nice and easy to navigate - I got to where I wanted nice and easily.
Wasn't quite sure how to use it	
Simple. Clearly indicates what it is, and how it can benefit me.	
It's neat - surely something I'd see benefitting a small-med sized business which works on such projects 😊 It's super handy to see what everyone is working on and how long they have to do it so the company remains profitable ✓	

Were you able to add a new project easily?

10 out of 10 people answered this question



Were you able to navigate to the Survivor Stories Redesign project schedule?

10 out of 10 people answered this question



4 → Do you find adding a new task easy?*

Yes	Yes
Yes, it is very easy. The other things you can add is how urgency of the task and maybe you can add urgent flags	Yes it's very simple and finding your way around is easy
Yeah, simple and stands out	
I find it easy, however, I would suggest to put "+ Add Task" near the top of page. The only reason is that user don't have to scroll down to add tasks if there is lets say 50 of them. But I assume it will look nicer under those tasks.	Yeah, it's nice and straightforward, exactly where I expected it to be.
Yes	
Yes	
Yes - I can only assume tasks can be dragged and dropped for rearranging. Otherwise you better have your fingers crossed you don't forget anything while adding them! □	

5 → What are your thoughts on the design of the interface?*

Clean and easy to use	
It looks very clean to understand and i will recommend this management tool to others.	It's clean 🍊 but has it's drawbacks, specifically with colours and typographic hierarchy. I was missing a key for colours 🎨 On the chart green means 'one eighty light' but on the member view it's 'Shane Griffiths'.. Also, in the overview pages, green means 'completed'...and again, in the logo the colours aren't in a traffic light arrangement like they are on the overview page.. Little confusing 😕 The type was a little.. quiet. Some stronger use of other cuts from the same font family could create a super strong hierarchy ☀️ Variation in font weights to provide attention or allow features into the background could be very helpful. It was a bit of a guessing game knowing where to click, if it wasn't for inVision showing me along (and I'd assumed every click had been mapped) I would have spent a few clicks aimlessly 😞
Really clean, modern design. Love the patterns on the signup page.	
It is very pretty minimalist design. Easy to understand and use. I love the bright colors. Makes your app stand out.	
Straightforward, uses very minimal content, bright and colourful	
Clean, simple, easy to understand.	
I would change the position of the day info, I would put the day name over the day number, it looks like battleship right now :D	
I like that the colours aren't distracting and the text is all easy to read. It obvious which areas are interactive.	
It's all very clearly laid out and you can see exactly where you're going. It's uncluttered, and the controls are easy to find. Everything seems to be right where you need it to be!	

6 → Any other comments...

Nice work!!	Like the flat design and the simplicity of design.
It would be cool to be able to share a project in a read-only view	Export the whole project chart as students will needed.
The Kanban section at the bottom is a nice touch, peaking but unobtrusive. Could use some on-boarding or helpful popup to introduce it. I like all the integrations with other apps - having it work with Slack is a nice touch.	On the home page - dashboard. Is it possible to organize projects into categories? Folders etc. What happens if you have lets say 100 project tiles. How do you get them organised? Should be there search option?
	I think the boxes could be a tad larger as the member tags beneath "view board" are rather small and it's hard to read the initials
	Overall a great looking project which would be useful to use.

Appendix Z - Criteria for Success

Has a clickable prototype been created using InVision?	Yes	No
Does a style guide exist? (colour, typography)	Yes	No
Is there the ability to add tasks?	Yes	No
Can tasks have dependencies?	Yes	No
Can projects have milestones?	Yes	No
Have budget constraints been considered?	Yes	No
Can apps be integrated?	Yes	No