



B.Sc. in Computer Science

Project Nuggets

Requirement Analysis Report

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1 Introduction

This report includes an analysis of systems that are similar to the one to be developed. It includes an introduction about the application and a discussion about the database, backend, and frontend choices. It also includes a description of user groups and a focused analysis going over the problem, impact, cost of delay, data, and solution ideas. Lastly, it includes a hypothesis generation and a discovery phase that includes mapping, writing an outcome-focused requirement list, lightning demos, and the four step sketch process.

1.1 About the application

The project entails atomizing and democratizing UX research within CCP. The system allows the CCP employees to search this database with ease for atomized bites or "nuggets" of information. Each "nugget" is tagged and processed to make sense for the development process within CCP. Gathering all these facts, insights, and results will immensely aid in the process of forming hypotheses about UX without personal bias. It will offer insights into not only statistics regarding UX research within CCP but emotions as well.

1.1.1 Database

For the database, the team decided to use Airtable.

Airtable is a spreadsheet-database hybrid, with the features of a database but applied to a spreadsheet. The fields in an Airtable table are similar to cells in a spreadsheet, but have types such as 'checkbox', 'phone number', and 'drop-down list', and can reference file attachments like images. Users can create a database, set up column types, add records, link tables to one another, collaborate, sort records and publish views to external websites [1].

The Polaris system from WeWork uses Airtable. After some research on Airtable, it seemed a good fit for this project. Airtable has a very easy-to-use API (Application Programming Interface) that will easily be integrated with any backend and frontend.

1.1.2 Backend and Frontend

One of the goals was for CCP to be able to maintain the system and keep adding features as necessary. After seeking advice from experienced developers and talking to the contacts from CCP, the team decided that React + Typescript would be a good fit for the frontend of the system. Typescript is a language that builds on top of JavaScript, and React is a JavaScript library to build user interfaces. React + Typescript is becoming more and more popular in web development. Team members have some experience with React and JavaScript, and CCP's web programmers also have experience with this combination. Typescript also helps with avoiding bugs that you can easily run into using JavaScript by type-checking the code. React is popular for its reusable user interface components, where you can change data without reloading the page. React is fast, scalable and the code is very readable. The team decided to use Node + Express for the backend, after they agreed on the frontend. Node + Express is easy to use, and there was no need for a complex backend, so this decision worked fine.

2 Similar Products

This project is primarily inspired by the company WeWork. WeWork wanted to understand their members better and focus their energy where it mattered. To do that, they built the system Polaris. Polaris is a database where they document experiences of their members to answer fundamental questions better, such as, "Why do people join us?", "What do members value the most?", "Why do members leave?", and so on. As can be seen in figure 1 the Polaris website has a search bar where users can search for specific units and add other filters to the search. The team used their design of the search bar as inspiration for the first initial interface design process. Another clever design feature shown in figure 2 is a sidebar to the right. When looking at a specific nugget, users get related nuggets that they can scroll through. The design is aesthetically pleasing and does not look complicated to use.

Glean.ly is another company that was used for inspiration. They provide businesses with a system that they can use to upload their user research data similar to what this project entails. Their focus is to present all kinds of knowledge (e.g., user interviews, survey results,

qualitative, quantitative) and make it accessible and understandable for everybody within the organization, not just the researchers themselves. They also timestamp their data so users can choose which time period is relevant to their needs. However, they are still getting their system ready for a public beta release and will be prepared after a few months.

Other companies, e.g., UX Studio, have been using Airtable as well for their UX research management. They have however, been working with it directly, that is, not through a frontend. This approach was not found optimal since the goal was to make the system very simple and easily searchable for the CCP employees. Setting it up in a more approachable environment was deemed the better option.

The final company that was analyzed was Aurelius Lab. They offer a powerful UX research system with JIRA integration, in-system note-taking, which can be seen in figure 3 and more features. However, the monthly cost of the system would accumulate quickly in contrast to CCP having a system of their own. Looking at reviews from companies that have used Aurelius Lab’s system, many people describe the system as a great start but find that it lacks some features that would be optimal for them to have. An important thing that came to light was that the filtering option was not satisfactory for some customers [2].

After thorough research of other systems, it was clear that in order to reach the specified goals set by the CCP UX department, it was optimal to design and implement a system from scratch that would be tailored to their needs. Additionally, it was decided, much like other companies had decided before, that Airtable would be the perfect database for this system for reasons that have already been made clear in the tech-stack discussion.

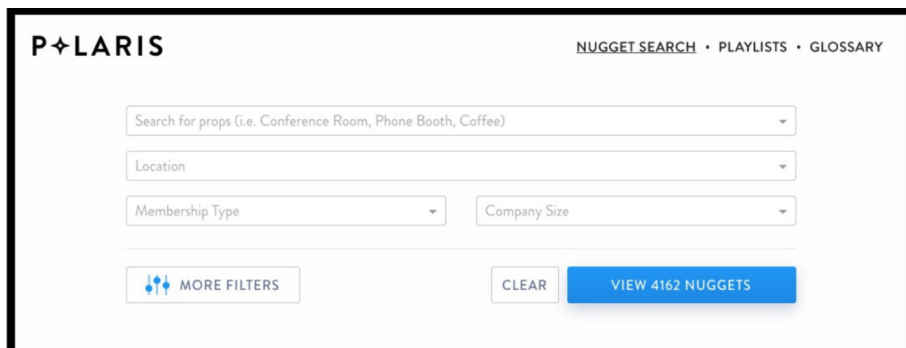


Figure 1: Search options on Polaris website

Conference rooms cause tension between members

Double bookings, back-to-back meetings, and 'squatting' frustrate members who have booked conference rooms for important meetings.

13
BUGGETS

7:03
TOTAL DURATION

PLAYER LIST TAGS

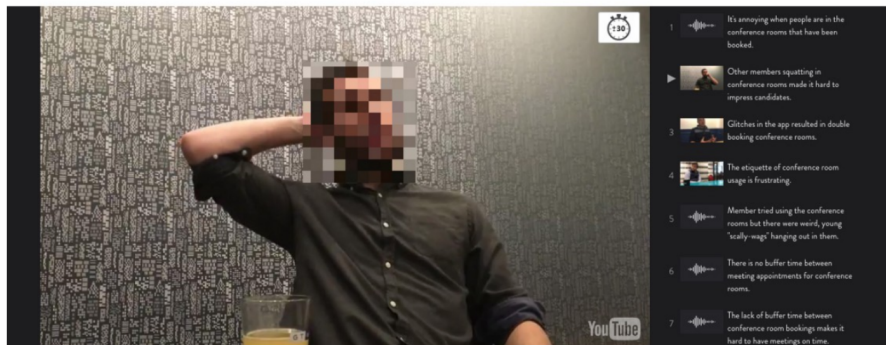


Figure 2: Player and playlist seen on Polaris website

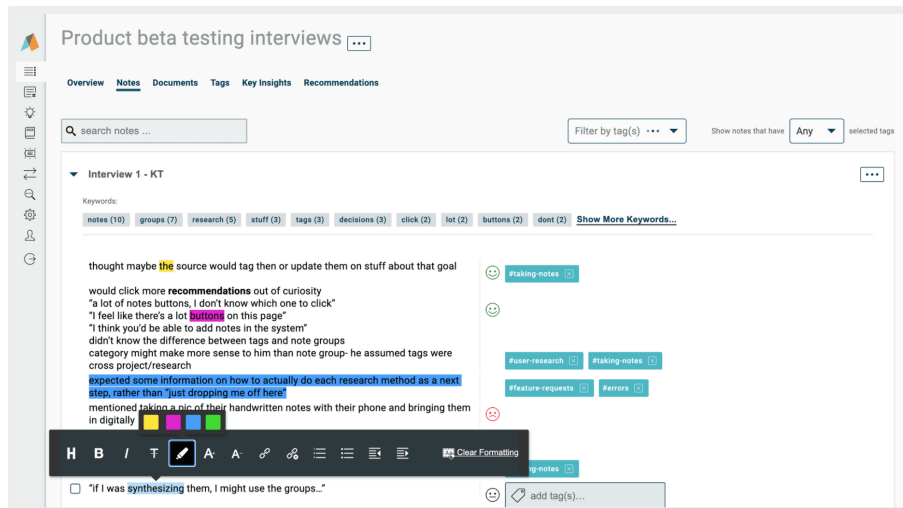


Figure 3: The note taking feature in Aurelius Lab's product

3 Description of User Groups

As of now, CCP has around 330 employees across all offices, approximately 275 in Reykjavík, working on EVE Online Western, 25 in Shanghai working on EVE Online China and EVE Echos, and 30 people working in London. The team decided to focus less on demographic data and more on the departments and employees within the appropriate departments. Within CCP, there are different development teams; QA (Quality Assurance), programmers, designers, and producers. There are also departments handling publishing, data analysis, law, finance, and art. Whenever there is a problem, the producer delegates that to a designer who comes up with a solution. When finding a solution, information is vital. The designer delivers the solution to the programmer, and together they turn it into a working solution. This system would be used when working on this solution or when identifying a problem to solve. The working solution is then turned into a product that goes to QA and then to launch. This makes it clear that the primary users are going to be producers, designers, and developers. However, publishing employees and managers might also want to stay informed. This makes the core user group of the project producers, designers, and developers, but the system has to be designed for the possibility of use throughout all departments. An analysis of the major groups can be seen in figure 4.

| Nafn hópsins/Name of the user group | Producers | Designers | Developers |
|---|---|--|--|
| HVERJIR: Bakgrunnur/ WHO: background | Producers working at CCP | Designers working at CCP | Developers working at CCP |
| Aldur/age | 18-70 | 18-70 | 18-70 |
| Kyn/gender | All genders | All genders | All genders |
| Menntun/Education | Most likely university degree | Varies | Varies |
| Hæfni, vanhæfni/Abilities, disabilities | Nothing special | Nothing special | Nothing special |
| Tölvufærni/General computer skills | Very good | Very good | Professional |
| Fjöldi notenda/Number of users | 66* | 99* | 99* |
| AF HVERJU: Helstu notendamarkmið/ WHY: main user goals | Finding problems to solve, finding solutions to said problems, analyzing what has gone well | Finding solutions to problems | Finding solutions to problems |
| HVAÐ: Tæknilegt umhverfi/ WHAT: Technical environment | Good equipment and internet connection | Good equipment and internet connection | Good equipment and internet connection |
| HVAR: Raunverulegt umhverfi/ WHERE: The usage environment | At CCP headquarters or at home | At CCP headquarters or at home | At CCP headquarters or at home |
| HVENÆR: Notkun kerfis/ WHEN: Usage of the software | Mostly during office hours, no specific time of year | Mostly during office hours, no specific time of year | Mostly during office hours, no specific time of year |
| Hversu oft/how often | Can vary from few times a day to few times a month | Can vary from few times a day to few times a month | Can vary from few times a day to few times a month |
| Hversu lengi/for how long | 10-20 minutes | 10-20 minutes | 10-20 minutes |
| Færni notenda/user skills | User uses the system regularly and becomes skilled in using it | User uses the system regularly and becomes skilled in using it | User uses the system regularly and becomes skilled in using it |
| HVERSU: Mikilvægur er hópurinn?/ HOW: Important is this user group? | All groups very important, this group first most important | All groups very important, this group second most important | All groups very important, this group third most important |
| * These numbers are approximated by assuming producers make up of 20% of employees, and designers and developers 30% each. The total number of employees at CCP is around 330 | | | |

Figure 4: Analysis of user groups

4 Focus Analysis

Focus analysis involves identifying the problem at hand, the possible solution's impact, and the cost of delay. It also involves gathering data to support the parts mentioned above and finally defining the solution idea.

4.1 Problem

Valuable information and data regarding user experiences are not utilized to their full potential or gets lost within the company. When gathering data for some implementation, employees are often reluctant to read long research reports, especially if they only need a small bit of information from that research. The researchers often do not remember every detail of their former research from some years ago, which results in companies sometimes

repeating the same research, which costs both time and money. Consequently, data from user research is not carried between teams and departments, which means that valuable qualitative research knowledge is not utilized to its fullest potential. When conducting research on a specific feature, other unexpected important information usually comes up. Even if that information is not essential for the particular research, it can be valuable for another team and department. This information is especially at risk of getting lost and has to be documented in a comfortable and accessible manner. Given the problem at hand, there is an opportunity to find a solution where everyone can work together towards a common goal by democratizing UX research, that is, to make UX research more open, accessible, and collaborative.

4.2 Impact

The players will not be directly affected by the project; however, optimizing the UX research process will pay off in regards to applying changes in the game's development and maintenance. That will hopefully help CCP employees make better-informed decisions, resulting in better experiences for the player. CCP as a business will gain from this project by having an entirely new way of democratizing and consuming results from qualitative UX research within the company. This will mean that UX research results will be more readily available to every employee within CCP, regardless of department and team. As stated above, this matters not only because it costs the company time and money to repeat similar research to get the same information twice, but it also costs money to lose players due to a bad UX experience that could have been easily prevented.

4.3 Cost of Delay

If nothing is done to address this problem, it will most likely cost CCP time, money, and information getting lost. As it is now, every feedback and comment is in various reports or overviews. Therefore it takes time to locate every comment. If everyone starts using the product, there will be no need to read through many reports in the hope of finding useful feedback. The time and information loss factors will vanish over time because the solution is very time-saving, and all of the information is assembled in one place. User Interviews

state that developers spend 50% of their time on avoidable rework [3]. By democratizing UX research as this project entails and CCP employees start using this system to their advantage when making design decisions, this percentage will hopefully be minimized within CCP.

4.4 Data

A fair amount of studies have been conducted indicating that user experience is an integral factor in successful development. It is not enough to be only good at making video games and all the programming involved with that. If you don't have user research, then you don't know what the users like, dislike, or what they think should be improved. As stated by UserZoom, 70% of enterprise CEO's see UX as a competitive differentiator. However, 53% of consumers feel that their experience standards are not being met [4]. With the gaming industry driving annual revenue of over 100 billion dollars [5] businesses can't afford to lose customers due to bad UX and therefore need to have a system that aids them in the UX research process.

4.5 Solution Ideas

The solution is to put every feedback/comment or other valuable information from user research into one nugget each in a database and create a website around it. A nugget is a searchable atomic unit of a research insight. It is something learned during research; it can be an audio or video snippet or a small text of a user describing their experience. A nugget makes the information accessible, and searching for a specific nugget is easy. Every nugget will have information about it, what emotion it connects to (positive/negative), and some tags. Every UX research done within CCP will be uploaded to the website. This way, no vital information will get lost, even the data the researcher did not intend to find but could perhaps benefit other teams. The website must be easy to use, so uploading data on it will become an integrated part of the company's research processes and not feel like a chore. Subsequently, the solution will make discovering trends within UX research easy, and it gives employees of CCP the chance to make research hypotheses for future research without any bias.

5 Hypothesis Generation

To state the hypothesis the following form was used:

- We bet that [these players or customers] have [this problem or need], and
- If we build [this solution/feature/capability] they will [observable and ideally measurable behavior],
- Resulting in [measurable business benefit].

The user groups were all within CCP. There are different developer teams; producers, QA, programmers, and designers. The main focus here was put on producers, designers, and programmers. The product will also be targeted towards the publishing teams since they will benefit significantly from this project's user insights. The hypothesis is stated below.

We bet that **CCP developers and publishing team members are unable to quickly find and digest user research results during the sensing and discovery phases of development because said results are often 'buried' in lengthy reports and scattered across databases, and if we build a searchable 'research nugget' database with bite-sized, digestible research insights they will integrate using user research insights into their development processes, resulting in less duplicate research undertakings, more democratized access to research insights, and cross-departmental collaboration, ultimately leading to better decision making and more customer value.**

6 Discovery

The discovery involves mapping out the problem from beginning to end goal, creating a requirement list, and various ways to get an insight for possible designs of the system such as lightning demos and four-step sketches.

6.1 Map

The team identified the most important activities of the system and mapped them out as can be seen in figure 5. The map shows the flow of three activities, “Search Nuggets”, “Create Nuggets”, and “Curate Nuggets”. The project scope though, is limited to the ‘Search Nugget’s” part. The purpose of the map was to provide a structure for the solutions sketches and prototypes. The map helps get everyone on the same page regarding the flow of the system, and team members can always revisit the map to freshen their memory regarding keeping track of how everything fits together. The map’s purpose is to keep it simple; it doesn’t have to capture every detail and nuance. It only requires to have the major steps for users to move from the beginning to the end goal, in this case, from CCP employees going to Confluence/Slack or some other company platform to having searched and consumed, created, or curated nuggets. The map is inspired by the book *Sprint: How to Solve Big Problems and Test New Ideas in Just Five Days* [6].

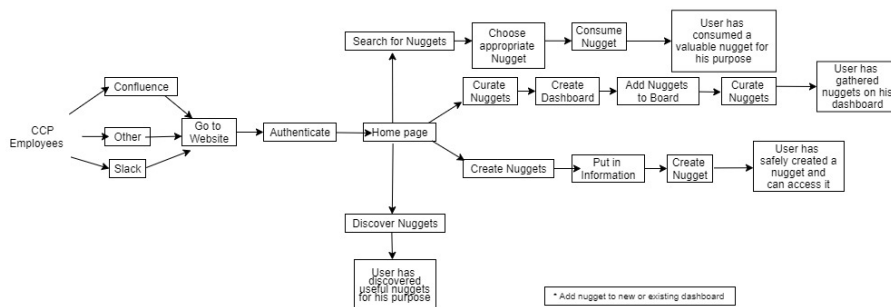


Figure 5: Map of the system functions

6.2 Outcome Focused Requirement List

Below is a list of Job stories or Jobs-to-be-done, an alternate way of making user stories. According to this solution method, the problem should be solved by looking at how to help users/customers address their jobs to be done rather than trying to sell them products and services. This method gives the opportunity to ask “why” a user would want to perform a certain task instead of making an assumption, which is sometimes the problem with the more common user story format (As a [person/role], I want to [action], so that [outcome/benefit]). The job stories format is less prescriptive and should give more meaningful information to the team members to build the system. Instead of building on assumptions on why the user is doing a specific task, the job stories focus on why a user is doing the task to get a better feeling of the users’ viewpoint [7].

Job-to-be-done format: **When** [situation] **I want to** [motivation] **So I can** [Expected outcome].

The Job Stories encapsulate consume, create, and curate nuggets functionality part of the website. Consume refers to a user being able to search for specific nuggets of interest. Create refers to a user being able to upload data of nuggets to the website straightforwardly. Curate refers to being able to gather together nuggets of interest in one place, so they are easily accessible. Although create and consume are not part of the project’s scope, the team thought it was essential to address these stories, so they are considered when building the system if CCP would later want to add those features.

Table 1: Outcome Focused Requirement List - Job Stories

| Number | Job Story |
|--------|---|
| 1 | <p>When I as a Product Manager am deciding whether one project is more important than another one I want to base my decision on insightful player data rather than gut feeling So I can take decisions that lead more often than not to better experiences for our players</p> |
| 2 | <p>When I as a Player researcher are preparing for a requested player research study I want to have context of past player insights gathered for that study So I can upfront understand players experience and behaviors with regards to the subject, which leads to more targeted research.</p> |
| 3 | <p>When I as an employee (Player Researcher, Product Managers, Teams, Directors, etc.) are engaging with or observing our players and I learn something about them I want to document my insight right away So I can safely store it for myself and anyone else in the company</p> |
| 4 | <p>When I as a Product Manager have consumed a set of insights (nuggets) on a subject of interest I want to be able to share it easily with my team So I can deepen our conversations as a team about enhancing the players experiences</p> |
| 5 | <p>When I as a Player Researcher have completed a player study I want to compile a curated list of all insights generated from the study So I can deliver my study “report” in a more atomic way, where teams and others can conveniently browse through each of the insight (nuggets)</p> |

6.3 Lightning Demos

The lightning demos are all about repurposing old ideas. Each team member prepared a list of products or companies that they then reviewed to get inspiration for the solution. After gathering ideas, each member represented their finding to the other team members [6].

6.4 Four Step Sketches

The four-step sketch process involved first note-taking, which each team member did in private, about similar products and specific design ideas about the system’s setup that could be taken inspiration from. Similar products were found during the lightning demos. Then idea sketching where each team member jotted down some rough ideas for the system. The third step should have been what’s called Crazy 8’s, but the team decided to skip that step and go straight to the solution sketching due to time constraints. The solution sketching involved taking two 30-45 minute time intervals in private and drawing a solution sketch to a requirement [6]. The group chose to take requirements 1 and 4 from the requirements above. Sample sketches can be seen in figures 6 and 7.

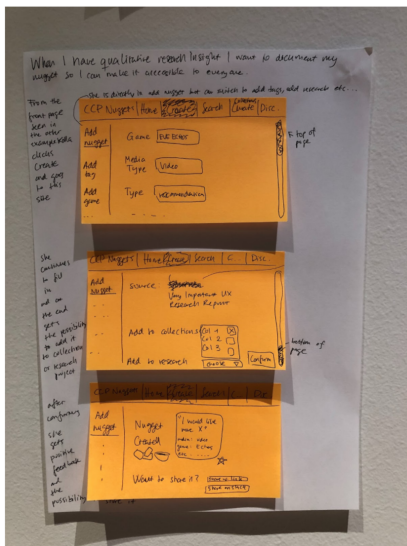


Figure 6: An example sketch from the four step sketch process

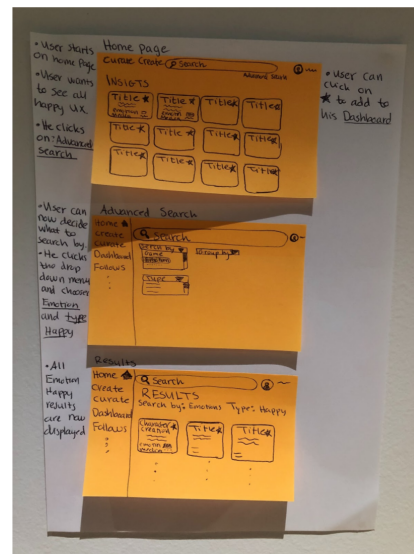


Figure 7: Another example of sketches from the four step sketch process

7 Conclusion

Going over similar products, user group analysis, and identifying the problem at hand, what impact the solution could have, and the cost of inaction was very informative and gave a much clearer picture of the system that the team would be designing. After making assumptions about the system's usage, making a map of the system, forming a requirement list, and lightning demos and four-step sketches, the design preparation was well on it's way. The next steps in the process were wireframe and mediate designs and drawing them up in Figma. The designs can be seen in *Project Nuggets - Design Report* [8]. Then prototype user tests were performed for necessary feedback to enhance the system design further. The test results can be seen in *Project Nuggets - Prototype Testing Report* [9].

References

- [1] Wikipedia, “Airtable — Wikipedia, the free encyclopedia,” <https://en.wikipedia.org/wiki/Airtable>, 2020, [Online; accessed 20 October 2020].
- [2] Capterra, “Aurelius reviews,” <https://www.capterra.com/p/180688/Aurelius/reviews>, 2020, [Online; accessed 25 November 2020].
- [3] C. Boyd, “15 user experience research statistics to win over stakeholders,” <https://www.userinterviews.com/blog/15-user-experience-research-statistics-to-win-over-stakeholders-in-2020>, 2020, [Online; accessed 17 September 2020].
- [4] Ratcliff, Christopher, “12 fascinating ux and user research stats to help your business case,” <https://www.userzoom.com/blog/fascinating-stats-about-ux-and-usability-testing-to-help-your-business-case/>, 2019, [Online; accessed 18 September 2020].
- [5] Oxford Academic, “The future of user research in games,” <https://medium.com/science-uncovered/the-future-of-user-research-in-games-2096954916ae>, 2018, [Online; accessed 17 September 2020].
- [6] Z. J. Knapp, J. and B. Kowitz, *Sprint: How to Solve Big Problems and Test New Ideas in Just Five Days*. Simon Schuster, 2016.
- [7] Dolfing, Henrico, “No more user stories! there are jobs to be done,” <https://medium.com/swlh/no-more-user-stories-there-are-jobs-to-be-done-80d301a2b0e0>, 2010, [Online; accessed 18 September 2020].
- [8] B. Sigurjónsdóttir, K. S. Ingvarsdóttir, and S. B. Arnarsdóttir, “Project nuggets - design report,” 2020.
- [9] —, “Project nuggets - prototype testing report,” 2020.