

Huddle: An Interactive Presentation Platform

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Problem

When it comes to making a presentation, a typical user would gravitate towards the offline version of Microsoft PowerPoint or the online collaborative Google Slides. While numerous other offerings exist, including an online version of PowerPoint and aesthetically pleasing presentation tools, there are no offerings that focus on changing how information is displayed aside from animations and embedded media. If presentations can be made as interactive as a full-fledged website while requiring a low level of technical background, it can empower people to share their ideas to their fullest extent.

Value Proposition

Huddle is an interactive presentation creation tool. It is an online platform where users can bring their ideas to life. For individuals in both academic and corporate settings, Huddle can showcase your ideas in action through customizable interactions between presentation elements. By encoding predetermined interactions into your presentation, the audience can explore how the ideas are connected at any time. Imagine a computer graphics class where the Huddle presentation offers the students knobs to turn on variables and be able to see the result of a complex matrix transformation of a 3D shape in real-time. Huddle would enable users to create and share activities within their presentation that anyone can participate in during or long after the presentation. Presentations would no longer just be a glorified word document sliced into bite-size pieces where the only moving parts are slide transitions and embedded YouTube videos. With Huddle, you can your ideas closer to your audience.

Technical Implementation

Huddle is a real-time web application built using Vue.js for the frontend client, Flask for the server backend, and the WebSocket protocol as the intermediary between the two. The application is deployed via Amazon Web Services's Amplify framework and Heroku. The crux of the application architecture involves designing a modular Widget system that enables the core interactive functionality. A Widget is a single visual presentation element on the app, such as a textbox or image, that has Signals that it can emit based on user events and Slots where Signals from other Widgets can connect to form interactive components. From the frontend implementation of dynamically generating HTML 5 elements to parametrically altering and continuously synchronizing changes across clients, Huddle can now easily expand its Widget functionalities to meet general and specialized business needs.

Stakeholders

The primary stakeholders for Huddle are the users and collaborators. User sentiment will help guide the direction of development that Huddle will take, whether it be focusing on functionality, user experience (UX), etc. Due to the nature of Huddle's value proposition, its aim is not just to be a presentation tool, but a medium that would help users better convey their ideas from their mind to digital form. Thus feature prioritizations would rely on community feedback to cater toward both general use cases to scale and specialized use cases for profit generation

down the line via targeting specific user segments like corporations and academia. On the other hand, potential external collaborators would help scale the functionality by offloading the implementations of the variety of interactive presentation elements that users can integrate into their presentation. This would include open-sourced libraries like D3.js for data visualization and public application programming interfaces (APIs) like Kahoot and Poll Everywhere for audience polling. By working with external collaborators, Huddle will be able to cater to specific customer segments like K-12 educators by targeting external collaborators that offer solutions that the customers needs.

Market Research

There are two major segments of the presentation software industry, online and offline presentation software, with Microsoft's PowerPoint taking 95% share of the presentation software market in 2013 with its online and offline offering. Online alternatives either aim to assimilate with the dominant player's offering into their own ecosystem like Google Slides capable of opening PowerPoint files in its Google Drive ecosystem, or take a specific niche such as Prezi's unique presentation style. PowerPoint has its own set of complex interaction features that are not present in any online alternatives called animations. A third segment outside of the consumer software industry to consider is the programming libraries/frameworks that enable programmatic elements for presentations like Slithy. While Huddle would not directly compete with PowerPoint, it can enter the niche presentation market like Prezi did as there is an opportunity for an online presentation offering that offers similar complex interaction features like PowerPoint and Slithy while providing users a low barrier of entry with an intuitive programmatic UI for implementing the interactions.

Customer Segments

The customer segments are separated into casual users and power users that vary in their needs and willingness to learn a new tool for their purpose. Casual users may occasionally use our platform to address a specific need they need, thus viewing Huddle as a specialized and situational tool in their toolbox. Power users are willing to adopt Huddle into their daily workflow as it fits into their jobs functions, hence will be leveraging all the functions Huddle has a standard presentation software and an interactive platform.

Market Segment Size and Growth

There are around 126 million users in the presentation industry in 2013, calculated by proxy of the estimated Microsoft PowerPoint 95% market share (120 million users) in the presentation software market. In 2017, it is estimated that there are over 500 million PowerPoint users. Assuming uniform and linear growth of the industry and market segments, 95 million users enter the presentation industry on an annual basis. The remaining 5% of online and offline offerings have been consistently growing as online offerings become more competitive and the need for online collaboration increases with international teams and online learning.

Competitions

The primary competitors are the market leaders like PowerPoint and Google Slides, while the niche market is filled with products like Prezi. The market leaders tackle the problem of interactive presentation differently as PowerPoint offers step-by-step animations as a way to add movements to the slides while Google Slides has a limited set of transition features and mostly relies on third-party add-ons for additional features. On the other hand, by the nature of the niche market, existing products do not directly tackle the problem of interactive presentation as their focus is elsewhere. Huddle will aim to target the niche segment with the key differentiating feature being the programmatic UI for easy programming of interactive presentations. Huddle will not be directly competing with the market leaders as it does not aim to cater to the general presentation software consumer segment. However, Huddle can establish a niche market segment by capturing consumers that are unsatisfied with the current offerings via our value proposition. Huddle's value creation for its users will attest to its success by focusing on a niche market.

Cost

The cost of developing Huddle will scale with the development effort and adoption rate. The cost will include the cost of hiring a team of software developers which can range from \$60,000 to \$120,000 annually based on the cost of living of the city in which the business will reside. A starting team of a minimum of 2 developers will be sufficient to keep up with the various infrastructure and domain expertise required to develop such a specialized product. Deploying the product will incur costs related to hosting, web domains, and database, which can incur a monthly cost of \$200-500 given a user pool of 1000 users. Thus the starting annual cost will be approximately \$180,000 if using an average estimate of the various cost items.

Revenue Model

The primary revenue model for Huddle will be a freemium, subscription-based model with enterprise plans for institutions and corporations. The freemium model will allow early user adoptions and enable an early user feedback loop to enhance development focus. A tiered subscription will enable customer segmentation and allow the product to optimize for customer segments by prioritizing specific features. And lastly, an enterprise-tier plan will allow for localized network effect by providing secured access to a concentrated group of users with specific business needs or use cases.