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Cloudflare Product Management Internship Application

Wherever latency is a concern, edge computing will play a key role. In the gaming industry, performance is crucial in providing the ultimate gaming experience. With the rise of edge computing, Cloudflare Workers can be leveraged across industries, including gaming to save resources, development time and cost, without compensating the gamer's experience. To bring Cloudflare Workers to the gaming industry, we will emphasize the Worker's performance capabilities, and demonstrate how Workers can be used to provide device agnostics and various value-added services such as user notifications, user personalization and capturing user behavior to drive statistics, analytics and insights. We will look into adding technical features to improve the compatibility of Workers and optimize the existing data storage capabilities. Lastly, we will build a community of Worker developers to create code that can be leveraged by teams across industries and assess our solution.

RESEARCHING THE MARKET

Before implementing changes to the product, we need to understand our internal and external drivers of change. We will identify the internal drivers by understanding the current deficiencies within our Workers product, including technical capabilities and business services that can be added on. For this, we can reach out to our existing customers to understand their business needs and potential enhancements. As for our external drivers, we can conduct market research to understand the focus of our competitors and the gaming industry so that we can be ahead of the curve in the market.

We will gage what problems the game industry is facing and what value-added services Cloudflare can provide to address the need in the market. To achieve this, we can survey game developers to understand what components of the job are suboptimal and where improvement is needed. We can ask questions such as "Are there any requests that hit your server which can otherwise be dealt with on the edge to improve performance? How is your game and consequently the end-user impacted by the system's performance? How much more time does it take to maintain the infrastructure and what should that ideal value be for you?" By gaging what matters to game developers, we can introduce our product in a way that helps them deliver flawless gaming experiences.

HIGHLIGHTED FEATURES

With gaming clouds on the rise, what we bring to the table by reducing the response time through edge computing, can add lots of value to the gaming industry. When everything is in the cloud, you don't want to hit servers with each request. We will emphasize that our technology allows you to create custom code to determine what reaches the server and what is handled on the edge. This will ultimately eliminate cost and the need for many resources--without compensating the end-user's experience.

In terms of use-cases for the gaming industry, Workers can be used to personalize a gamer's experiences. Through Workers, developers can offer many ways to choose characters, color themes, and other such factors for gamers to own their game. This will simplify how game developers can meet the creative needs of their user base.

The gaming industry would also benefit from using Workers to provide notifications in games. For actions that can be directed without talking to the server, developers can deploy Workers to provide those notifications, thus decreasing the load on the server. For instance, a Worker can be built to notify if an action is illegal. That way, everytime an illegal action occurs it is dealt with on the edge.

We can relay to game developers that Workers can be leveraged to create customized code that can gather statistics around gamers. For example, game developers can acquire the following: "How are users responding to particular levels or obstacles in the game? Are there certain features that are less popular than others?" Acquiring

customized data based on incoming requests will empower game developers to understand the users and their preferences.

PRODUCT ADDITIONS & POTENTIAL RISKS

While Cloudflare Workers currently adhere to developers' needs and optimize their product's performances, there's always room for improvement. To appeal to the gaming industry, we can work to optimize WorkersKV to address our developers data storage needs. Right now, KV has an efficient read time through Workers, but it requires that DB writes are done through other channels, such as the REST API and Wrangler CLI. Even though Cloudflare Workers are able to interact with SQL databases through an Argo tunnel, this often requires a fair amount of setup for the job. Game developers are left to deal with convincing their organizations that choosing Cloudflare Workers will ultimately save time and resources, as opposed to what it may originally seem. Optimizing KV so that they are fully integrated within workers would remove the need for developers to spend time interacting with various tools or through a handful of channels, thus allowing development teams to create their Worker code and leave the rest to Cloudflare.

One potential risk of optimizing KV to be the primary data storage for Workers, is the extensive efforts required to transition to a new data storage. Since most game developers will likely be using an existing database for their game, it could pose as an additional step to adopting a Workers solution. Consequently, this may seem like a larger effort than it is. Thus to address this, we should focus on making sure that adopting KV as a data storage solution for Workers is as seamless as possible.

In addition to optimizing our KV data storage solution, bringing edge computing to desktop and mobile applications will empower Cloudflare to leap into the gaming industry. With Apple's new mobile gaming service known as Arcade, more game developers are shifting towards developing mobile games. In order to make our space in this realm, we can try to go beyond browser based applications to allow Workers to be utilized to intercept at the edge, regardless of the platform. Through WASM, game developers can wrap their C/C++ code and store at the edge. Providing Workers for mobile applications opens a new door within gaming. This initiative will likely require a lot of time and effort, thus Cloudflare should first focus on creating and releasing a Worker for iOS applications that serves to put customized JS code on the edge. Once this is achieved, the team can focus on the next platform such as Android, to make sure we are mindful of our time to market.

MEASURING SUCCESS

With the use of CI/CD pipeline, we will continuously develop, test and release our features on a regular basis. We will conduct user surveys to ask our clients for feedback on the functionality and usability of the tool and if the features served as enhancements. We will gage if any part of the feature was less than optimal. This will allow us to assess the short term success of our newly added features.

To understand how Workers are serving our customers' needs in the long run, we will foster a developer community where customized Workers can be verified and released. Developers will be able to share their solutions, which can be QA'd and categorized by one of our teams to help the entire Cloudflare Worker community. This way, all our clients can utilize all the capabilities discovered. By leveraging this crowdsourcing trend for rapid development and improvising the product by building a community, we will be able to assess our solution and how well its scales when it is applied to specific use-cases.

This summarizes an approach to bring Cloudflare Workers into the gaming industry. Thank you for your time.