CloudFlare Product Management Internship Assignment
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Executive Summary

As decentralized hosting solutions become more economically viable, more companies are looking to solutions such as CloudFlare (CF) to alleviate scaling and infrastructure concerns. With this paradigm shift comes the challenge of optimizing products such as CloudFlare Workers (CW) for nascent markets such as video games, which demand low-latency, elastic scalability, and flawless uptime.
Since CW does not have the luxury of being first to market, leveraging CF's existing product offerings and its agility as a smaller and more focused organization could be paramount if CloudFlare Workers for Gaming (CWG) is to succeed in this highly competitive vertical. By developing new features and functionality with developer pain-points in mind, CWG has the potential to poach market share from competitors. This could buy time to build out additional functionality, and cement CWG as a force in this market.

Market Research

In order to become more familiar with the gaming market, I researched the following areas in hopes they would provide the most accurate information regarding the use of decentralized computing in this vertical:

- Game developers that are heavily reliant on robust networking infrastructure (Massive-Multiplayer Online games)
- Established competitors in the Cloud Hosting for Video Games space (Azure Gaming, AWS Game Tech)

By researching massive-multiplayer online games, which represent one of the most extreme use cases for decentralized computing within this market, I hoped to understand the core and supplemental functionality these games utilized to bring their visions to life. I chose to research the platforms that these development teams currently leverage, AWS and Azure, as they are highly profitable cloud hosting companies that have likely studied the market from many angles, building their platforms around highly sought-after functionality.
By analyzing this market from the perspectives of suppliers and consumers, I am able to identify functionality that is critical to building a successful online gaming environment. Additionally, I am able to identify opportunities where existing CF product offerings can fill feature gaps in competing products.

Product Changes

After researching key functionality of game development infrastructure and decentralized computing competitors within the gaming market, it became evident that CW may be in a good position to capitalize on this market by leveraging existing product offerings. I came to this conclusion after realizing that much of the core functionality offered by competing products is hinged on the following underlying functionality:

- Scalability – Ease of new code deployment following unit or QA testing to be distributed to remote computing clusters

- Latency – Distributed computing clusters allow users to achieve unparalleled response time regardless of geographical location
- Security – Utilizing firewalls and decentralized Content Delivery Networks to mitigate cybersecurity threats and ensure load-balancing in the event of a DDoS attack

With these core product offerings already established by CF, it seems logical to develop CWG around them. Utilizing CF's existing infrastructure, we can bring to market the following additional features which would capitalize on CF's agility as a smaller company, while focusing on major developer pain-points:

- Cloud Gaming - Remove hardware barriers by utilizing CF's low-latency networking environment to allow low-end hardware users to stream container-based games
- Performance A/B Testing - Quickly identify unoptimized code, memory leaks, and security vulnerabilities by comparing newly deployed code with baseline performance

Feature Validation
As with the development of any new product or feature, there is a concern of achieving product/market fit. In order to ensure we've successfully solved a problem that users in our market actually have, we'll make use of developer interviews, as well as a platform beta release for AAA game developers. This will serve a dual purpose, as we'll both identify flaws and bugs in our product functionality before launch, while also building excitement for the platform's release. By taking feedback from developers, we'll be able to create a more centered product based on their recommendations and interview feedback.

Success Criteria
Though there are a number of metrics that can be used to track the growth and success of CWG as a platform, I believe it would be wise to initially focus on developer adoption and retention. Convincing developers to abandon established platforms such as Azure and AWS will likely be a formidable challenge. While many game developers are familiar with CF as a DDoS and CDN service, they likely have no first-hand development experience with the platform, and convincing them to switch will require well executed features and unparalleled reliability.

Risks
The largest risks I can perceive in the launch of this platform involve the suboptimal execution of our additional features, as they could likely determine the initial draw and success of the platform as a whole. While this is a bit of an early risk factor, there also is the possibility of lack of long-term user adoption. This would render the initiative cash flow negative, as the cost of development teams and server hosting would become a money bleed for CF.