Nithin Anumala

Cloudflare Workers for Gaming

Market Research

Identifying Needs:

The most optimal way of uncovering the true needs of the market are to speak with individuals who are directly involved in the game development industry. For instance, doing independent research while speaking to companies that Cloudflare already works with such as, Hypixel, Turtle Entertainment Online, or Curse will allow us to gain the purest insights about the problems game development is facing. Two key needs are presented below:
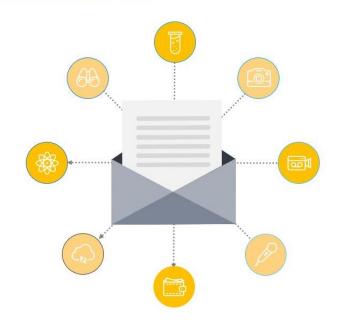
Latency

The latency from the server to the time the player perceives actions and changes made to the game must be as reduced as possible to ensure an effortless and satisfying experience for the client.

Scalability and Reach

The ability to scale quickly to thousands of players around the world is essential in the video game industry.

Cloudflare Workers for Gaming will address both of these issues by leveraging Cloudflare's Edge Network to decrease latency while allowing developers to push code with ease through the serverless WASM execution environment, allowing game development companies to scale quickly while offering an amazing experience for their clients.

Firstly, gaming companies would moving their code onto the Cloudflare Edge Network opens up a wide array of possibilities. Regarding the latency issues, if gaming servers were moved to this network, players would be able to connect to the servers that are closest to them geographically, thus minimizing latency. In terms of scalability, having a serverless execution environment allows developers to push code easier and faster to thousands of gamers around the world without having to worry about server deployment/maintenance. Having a lot of users will allow game developers to essentially have a much wider audience to conduct their alpha and beta testing. With more users, more bugs and inadequacies in the game can be uncovered, and with the serverless WASM execution environment, developers can push patches to their games deftly. From a business standpoint, a game development company can find it beneficial to own its own server infrastructure, but it is ultimately very hard to predict how many servers/scale of the infrastructure is needed for an upcoming game which could result in under preparedness or even huge capital losses. Allowing Cloudflare to handle all the server infrastructure not only mitigates many risks but also lets a game development company manage their computing costs effectively while saving immense time. An addition to Cloudflare Workers for Gaming would be a cloud gaming service described below.

Cloud Gaming Service

Developers want everyone to play their game, even those who don't have the proper hardware or machines to do so!

Allow Cloudflare Workers for Gaming to do all the computing for you! With Cloudflare's Edge Network constantly growing, the addition of more advanced machines in these locations that would contain GPUs can establish Cloudflare as a pioneer in cloud gaming. Combining these GPU's with a cross-platform API such as OpenGL (open graphics library) would allow us to utilize Cloudflare's Edge network to stream games, thus allowing users to play their favorite games on any of their devices! Game Development companies could opt into this service, enabling them to tap into a whole new userbase while expanding their reach in the gaming industry.

FEATURE DESCRIPTION	Cloudflare Workers for Gaming	Google Stadia	Microsoft xCloud	Nvidia GeForce Now
Platform Independent	🟡	⚪	⚪	🔵
Serverless Execution Environment for Gaming	🟡	🔵	🔵	⚪
Isolate Model	🟡	⚪	⚪	⚪

Cloudflare Workers for Gaming offers an intuitive platform independent model that is B2B while key competitors are directly targetting the gamer. Moreover, competitors do offer serverless execution but Cloudflare Workers implements an isolate model, eliminating the overhead and cold starts present in a virtual machine model, thus giving us a competitive advantage. A free trial/demo of this service could be provided to game development companies to get accalmated to Cloudflare Workers and its encompassing tools. This would enable users to report feedback about any issues with our offering, thus improving our product. In addition, AB testing could be conducted to see how to effectively present the offering. Lastly, in house peer review would also be beneficial; having multiple minds give opinions and evaluate an offering can improve the overall quality of a product greatly. To analyze the success of our offering, KPIs (key performance indicators) could be used. For instance, customer acquisition and conversion rates, the number of requests made to the Cloudflare servers, and the number of active users could all be used to assess the success. Our goal should be to have atleast 2 game development companies using Cloudflare Workers for Gaming about 2 months after lauch to truly gain insights about our product. One major risk of our offering would be the shere amount of requests that Cloudflare servers would have to tackle since there are thousands of users of a single game and we would need to process their input and output the results of their input in a very effieicent and timely manner. Ultimately, Cloudflare Workers for Gaming will be a revolutionary product.