

## Cloudflare Product Management Internship Application Exercise

*The following brief is a possible path for Cloudflare to break into the gaming market. Given the nature of this exercise, I make several assumptions about Cloudflare, Cloudflare Workers, and the gaming market.*

My working understanding of Cloudflare Workers is that they are functions triggered by a specified event which run on Cloudflare's Edge Network acting as interceptors between the client requests and the servers. Customers implement these Workers into their own infrastructure and pay based on usage.

**Target market:** Cloudflare has an opportunity to expand into the booming gaming industry by creating a Cloudflare Workers for Gaming offering, providing service to independent, or indie, game developers. A hypothesis for this brief is that large game development companies have both the manpower and resources to handle their computing needs. Manpower for indie development teams is most valuable for nuanced aspects like story, gameplay, and art. Their time and computing power is not best utilized waiting for lengthy renders or processing large sequences of animation.

- [Market analysis](#) shows the global gaming market will grow to \$196.0 billion by 2022, with a compound annual growth rate of 9%.
- According to an [article](#) from a community of professional 3D rendering artists, "Speed is everything in the 3D rendering business... it should go without saying [that] rendering takes a lot of time and resources." Even highly specialized computers can take long amounts of time to render a scene or character fully.
- A very common pain point for game developers is art and animation rendering. Creating characters and environments, while integral to development, can be a hefty and lengthy computing task. A modern day artist states in [an interview](#) that using simple 2D art styles is the most feasible solution to long render times for indie game developers. Employing any other art style is simply infeasible.

**Product proposal:** Add support for the rendering of art and animation in commonly used and readily available animation and rendering programs such as Maya, Blender, and Asperite. This would allow users to send their render off to Cloudflare's Edge Network and free up computing power for more valuable use.

### Further research needed:

- Validate the hypothesis that indie game developers would want to and benefit from offloading their render tasks
- Understand the working environment, available tools and resource levels of varied indie game development teams to help inform further product features
- Identify other common pain points for indie game development teams that could be opportunities for further product offerings

### Potential add-on features:

- Additional support for different engines, programs, and languages
- Render progress alerts and logs to track render progress

- Pre-made and -packaged Workers to handle common occurrences like crashes due to high logon traffic or microtransactions

**Risks:**

- Teams are hyper individualized. This may make it difficult to abstract away helpful tools and services.
- New programs and engines for coding and rendering crop up quickly. It is difficult to keep up with the rapidly changing tools and environments used in this industry.
- If there is a crash or a render issue, a developer may not be able to address it as quickly as if it were on their own equipment.

**Success measures & goals:**

*\*Specific numeric goals would be set based on company needs*

- User satisfaction
  - Measure: Satisfaction survey
  - Goals:
    - xx% of users report high satisfaction with tools
    - xx% of users report high value add of tools
- Number of users
  - Measure: Total users, weekly active users
  - Goal:
    - Increase total number of customers
    - Show above xx% customer retention rate
- Usage
  - Measure: Usage of Workers on Cloudflare Workers for Gaming infrastructure
  - Goal: High usage

**Pre-release quality improvement plan:** In addition to the team's existing QA process, release a beta launch to pilot with one or several small development teams. Embed with the team during game development to identify issues with the current offering to identify new pain points that could be addressed. Track the success of this beta launch through user satisfaction surveys.

**[Appendix] Links referenced:**

- <https://dzone.com/articles/5-best-video-game-development-tools-for-indie-game>
- <https://www.slant.co/topics/1561/~best-2d-animation-tools-for-game-development>
- <https://www.gamesradar.com/its-just-impossible-devs-explain-why-big-online-games-always-seem-to-break-at-launch/>
- <https://whatpixel.com/pixel-art-industry/>
- <https://www.easyrender.com/3d-rendering/3d-rendering-costs-overview-what-you-need-to-invest-to-create-a-competent-team>
- <https://newzoo.com/insights/articles/the-global-games-market-will-generate-152-1-billion-in-2019-as-the-u-s-overtakes-china-as-the-biggest-market/>