Hello, My name is Mark Scarsi and I am a Junior studying Computer Science and Business Administration at the University of Southern California. I have some ideas as to how Cloudflare Worker can tap into the gaming industry, valued at hundreds of billions of dollars. The strategy combines creating new developments not too far off from what Cloudflare has already done for distributed applications and emphasizing what Cloudflare already does so well, global connectability.

Cloudflare has to address several problems that developers face not only while in the initial development stage, but also implementing changes and maintenance over time. Games also need to be able to function globally, even after rapid growth overnight. Games are like websites in their need for standardization during creation to ease the stress of the development team, but unlike most web applications in that online games are incredibly dynamic. After research, three main areas that Cloudflare Workers Games can focus on in order to corner the Game Development market are creating game standardization through easy to use game creation templates, implementing processes to continually update games while the game is online, and reassuring game developers of Cloudflare's commitment to making the gaming application reachable to users around the world within milliseconds without interruptions.

Standardization is at the core of what Cloudflare already specializes in, so it should be easy to incorporate this vertical into what Cloudflare provides from gaming. Cloudflare knows the importance of standardization and set protocols. Without set internet protocols for requests and exceptions, for example, Cloudflare would not be able to exist, because it would be impossible to generalize web applications. Game developers are not afforded this luxury. For example, content for hosting created by hosts by World of Warcraft is used by the World of Warcraft Domain. Even though Lord of the Rings and World of Warcraft are basically using the same world and the same storyline, Lord of the Rings needs to create their own software for game hosting and game creation. There are no shared resources or shared techniques between the two. Not only does this take longer to develop, it makes it incredibly difficult to translate a game or a technique to another domain. If I wanted to host a small game, and say WoW wanted to purchase a concept, transitioning my game to their host would be incredibly difficult.

The solution, instead of attempting to make middleware standards for all of gaming, Cloudflare needs to redouble the efforts into making templates for gaming systems, much like preexisting templates for A/B testing and redirecting requests based on country codes. Knowing that many games reproduce similar code to do the same thing, it should not be too complicated which specific functions are needed by various game genres (role player, single shooter, etc).

Not only do these functions entice designers to use the Cloudflare platform, but also once enough developers are using these templates, it creates its own kind of "standard" in the gaming developing community. Knowing that popular games are built using templates from Cloudflare Worker, more developers will start to use Cloudflare Worker as they are developing their games in a hope that they would be compatible with the vast other games, and that they could reuse some code in an attempt to follow industry standard.

Because of this, my first round of research would be meeting with several big game developers, and asking them about their core functionalities. By meeting with several different game designers in several different genres, we can assess which core functionalities they have in common to serve as jumping off points for our future templates. This feature will fail if we do not take adequate time researching what commonalities these genres of games possess.

The second issue that many game developers think about during their launch is reliability and accessibility, which are two giant components of the User Experience. Upon researching, I found that because of the rapid rise of the competitive online gaming market, not only is the actual game-play important, but users will not respond to a game with a less than perfect user experience, despite maybe an amazing game storyline. In fact Jim Waldo, the CTO of Harvard University, pointed out that games are different challenges than other distributed applications because of their focus on scalability and correctness of execution. Game developers need assurance that there are not going to be any accessibility issues with users playing across the world. People from all over the world need to be able to connect to the game, and rise in user growth over a short period of time should not impact game speeds.

Thankfully, Cloudflare does not need to do more development on this issue in particular because of Cloudflare's guarantee of being able to run your code "seamlessly around the world." The "world" is especially important to gaming developers as these video games transcend region and geography; a successful game is enjoyed by all around the world. When advertising Cloudflare Worker Games, Cloudflare has to make sure that they are emphasizing reliability all over the world, because even a small lapse in service can create a rippling domino effect to turn users off the game.

A final crucial problem that many developers face happens once the game is launched. The game needs to keep users engaged, and by doing that it needs to be constantly evolving. The issue is even small changes, adding an extra piece of a map for example, while continuing to support regular game play, is an absolute headache for developers as oftentimes the worlds are incredibly intertwined. Because of this, Cloudflare needs to offer support for rule engines for applications hosted by Cloudflare. These rule engines can rule out a lot of the headache for software developers, as a change in the value of a resource for example, starts a process of changing other aspects of the game automatically to achieve an equilibrium in the game. By creating an interface on Cloudflare where developers can easily create ans visualize a rule engine, the post-production development process will require much less man-hours, and will be able to ensure that a change in a resource doesn't throw off the wealth disparity within a universe. This feature will be especially attractive to developers, as less time developing changes leads to quicker changes, which attracts more user retention, which leads to more in-game/subscription purchases. A leg of research I would conduct would be figuring out classically how changes ripple through games, and what exact reactions need to happen to balance the game back out to keep users happy.