

Shadow Q&A: A cloud gaming company's views on 5G and edge

There is still debate in the industry about how important 5G and edge are for cloud gaming. That's why we spoke to Shadow - a cloud gaming company that allows gamers to stream a fully featured gaming PC from the cloud. Our Q&A with Shadow seeks to dispel the myths...

Interview with Barnabas Cleave, UK Partnerships at Shadow

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Introduction

There is a huge amount of excitement and hope on cloud gaming being the "killer use case" for 5G (and edge computing). 5G and edge computing are two key technologies that will enhance the user experience in gaming. However, it is a misunderstood market that needs careful evaluation by companies looking to invest and offer services in this space. We interviewed Barnabas Cleave, UK Partnerships at Shadow - a cloud gaming company created in 2015 to cloudify gaming by leveraging high-speed internet and moving processing power to datacentres. Below are highlights from the interview, the insights of which will also feature in an upcoming STL Partners report on the role of 5G and edge computing in cloud gaming.

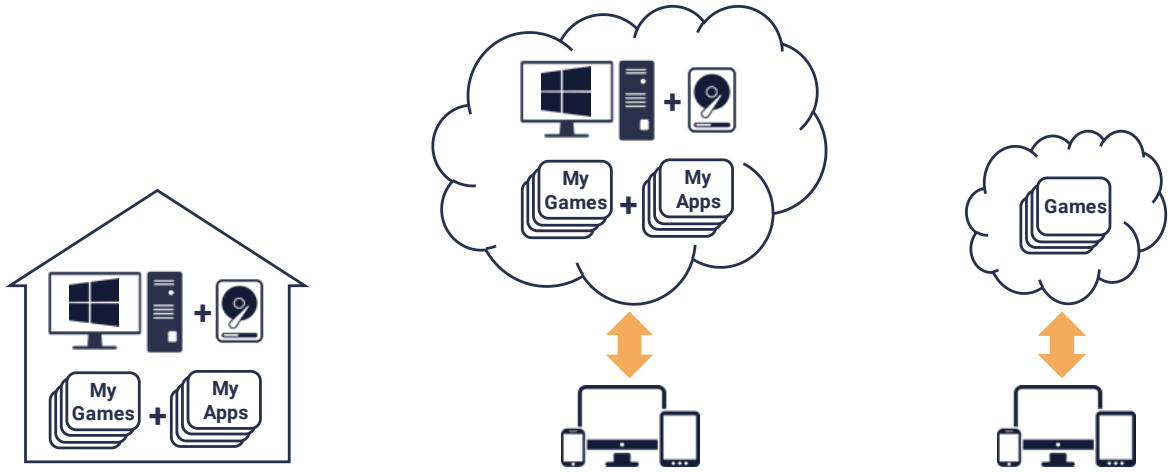
Q&A

How would you describe the cloud gaming market?

There does seem to be an emerging pattern where cloud gaming can mean one of two things.

Firstly, it can be a way for people to consume games directly. By that I mean that the cloud gaming platforms have the games already pre-installed – the games are pre-bundled together with the infrastructure. So instead of having two separate elements [content and infrastructure], you have your games delivered through a single service. This is the "Netflix for games" models that lots of companies are trying to follow. [Google] Stadia is an example of that launching with 22 games.

Different types of gaming: PC, cloud and cloud PC



PC Gaming	Cloud PC Gaming	Cloud Gaming
High-end gaming PC with Windows 10 able to run any PC applications and the player's existing games library from every PC stores inc: Steam, Epic & EA Origin at home	High-end gaming PC with Windows 10 able to run any PC applications and the player's existing games library from every PC stores inc: Steam, Epic & EA Origin from many devices	Play a predefined limited number of games that have been ported to a bespoke platform from many devices

Source: Shadow

The second way of looking at [cloud gaming] is cloud compute getting to the point where you can't tell the difference between a local or remote PC, i.e. accessing cloud infrastructure, without the game bundled in. It has happened in the B2B sector: because of public cloud providers like AWS, businesses [increasingly] don't

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host servers internally on-site. Their servers are now in the cloud. Similarly, in the consumer space, this is akin to renting a PC like you would potentially from Dell. The nice thing about doing it digitally is that there is no physical hardware that needs to be delivered to the consumer, which means they are not locked in for X number of months. They could rent the computer for one month or they can rent for 12 months, and they can carry on accessing the remote computer on those loans.

What does Shadow do?

Shadow is very much PC-first. We have a straightforward experience where consumers can access a remote computer and you can't really tell the difference between that and running the PC game locally at home. We offer a Windows 10 PC, starting with 250 GB worth of hard disk storage, and then it's up to the consumer to install the content they already own, whether that's games or applications. That's different to something where it's a "Netflix for games", because the consumer has the access and freedom to put whatever games they want; whether that's Fortnite, League of Legends or anything from Valve's PC game store Steam, that carries over 30,000 titles … It isn't "what has already been whitelisted", it's "anything that will work on a PC."

Telcos and others are hoping they can crack cloud gaming to become the "Netflix for games", what are some of the misunderstandings when it comes to the gaming market?

From a games point of view, it's more akin to music. Video streaming [where Netflix plays] is different; people will often watch a TV series or film once, whereas you want to be able to access music to be able to listen to different songs and albums continually over time. This is similar to gaming, where gamers want to own the game and play it over a long time. If someone went to a music store which had 10 albums, that looks pretty poor. It's quite difficult to place a bet on a handful of "killer" games titles, just like a music platform provider would fail if they tried to predict the upcoming 10 "killer" albums and offer only these. There are some tens of thousands of albums already on iTunes. The 'media' is therefore quite different and so are the business models. Many gamers have a library with over a decade's worth of content, that they want to continue playing. Games 'media' is consumed uniquely in that a wider range of games are played longer than typical consumption of music or movies.

Another way of looking at it is that games are already available and there are already established players with established distribution models (e.g. online stores). Therefore, anyone who tries to establish a Netflix-style model has to compete with this existing model. This means potentially competing on two fronts: with the console players (e.g. Microsoft Xbox, Sony PlayStation, Nintendo) and/or PC (e.g. Valve, EA, Ubisoft).

For example, during the first three months of the Stadia launch, Google included eight games with the $119 Founders bundle. At the same time, Epic gave away thirty-two PC games, four times as many titles for free, including one of the eight games included in the Stadia Founders bundle.

Telcos can include an off the shelf "Netflix for games" consumer bundle. However, the question then becomes what value is the telco adding, compared to the customer buying it direct? An alternative strategy is to provide a wide PC foundation, able to play all PC games, plus layered on top a bespoke PC game rental service, that's defined and owned by the telco.

Where does edge computing play a role?

Cloud providers typically have servers on the west coast and the east coast (in the US) to deliver one off content at around 100 milliseconds. That's not good enough when you're continuously streaming games with no caching; you need to have a data centre or some edge compute within a few hundred miles. And that's quite quickly where the telcos are going to win, because they have local base nodes, and they have a more regional based infrastructure.

The way that Shadow works is that it tries to get as close to the infrastructure backbone as possible because then there are only a few hops [to the user]. The ideal circumstances for Shadow would be to be inside the

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telco's network. In fact, that makes it a better offering for the telco because they can defend it and it makes a better offering to the consumer because it reduces latency.

And where does 5G fit?

Although 5G does allow you to simply download more, the real benefit is reducing ping and also jitter. Ping refers to how quickly you connect, but jitter measures the variance of ping over time. Although Shadow does work over a 4G network, it is not an optimal experience when you're connecting from mast to mast [e.g. when you are accessing content in a train or any moving vehicle.] One of the great things about 5G is that you can connect to more than one mast at a time and avoid taking this leap of faith, where you risk dropping calls or data.

Another thing 5G will do is make it more accessible to have access to high bandwidth networks [through 5G fixed wireless access[1]], which are necessary to play most PC/hardcore games. Fibre is nice, but not many people can access fibre to the home. Even if there is fibre to a building, it is then shared by each apartment, which means each home has access to a relatively small portion of the overall bandwidth available.

What will be interesting is how quickly the 5G radio network is rolled out and its effect on consumer behaviour. Will customers swap their home broadband for 5G? Will thin clients such as lightweight laptops, tablets with keyboards or large phones with pens become more widely used for work and play, if they have the power of high-end desktop computers. It's going to be an exciting year for 5G.

Special thanks to Barn for this interview:

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www.stlpartners.com/edge-computing

[1] STL Partners has covered 5G FWA in a previous report

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