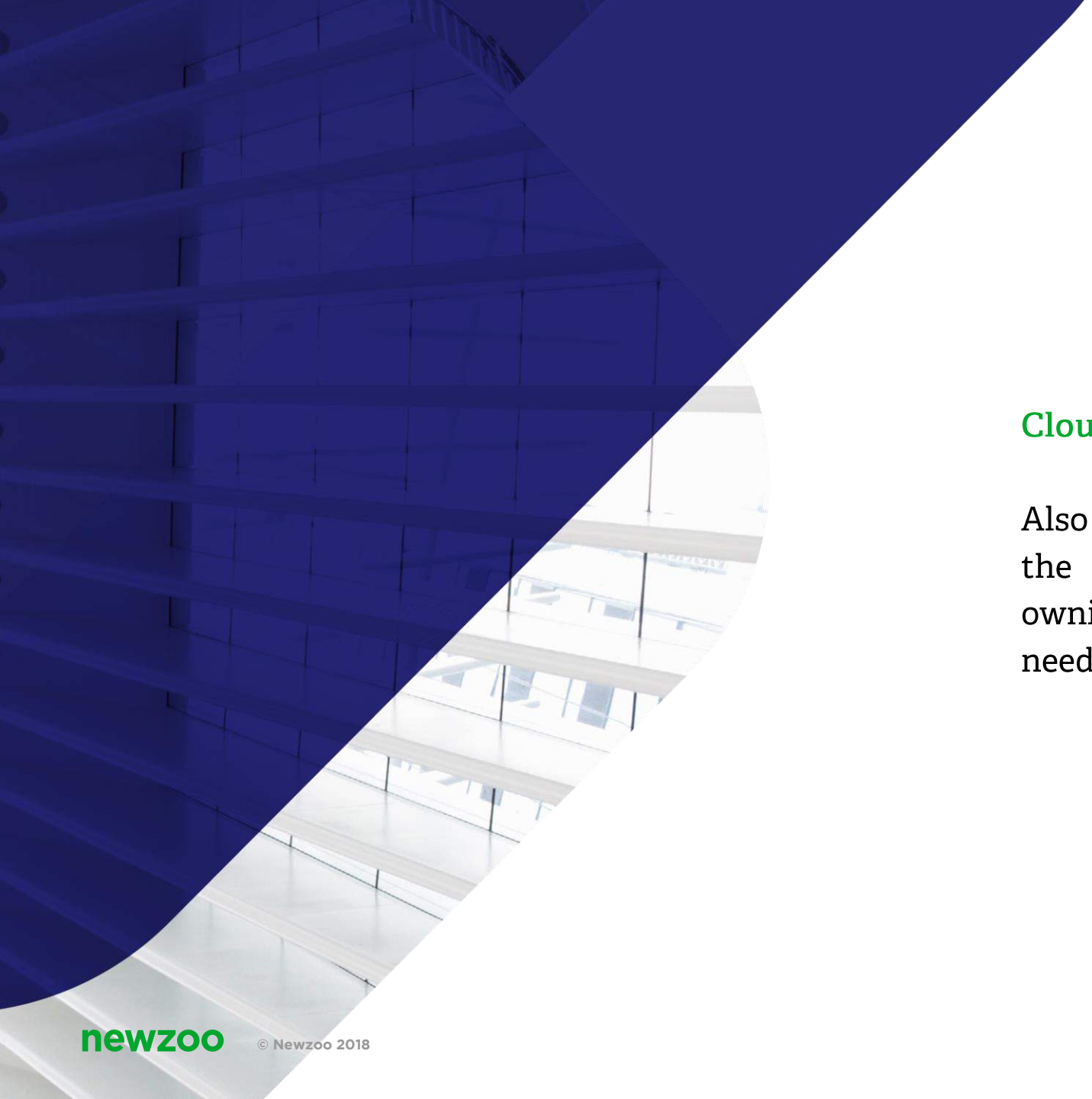
NEWZOO TREND REPORT

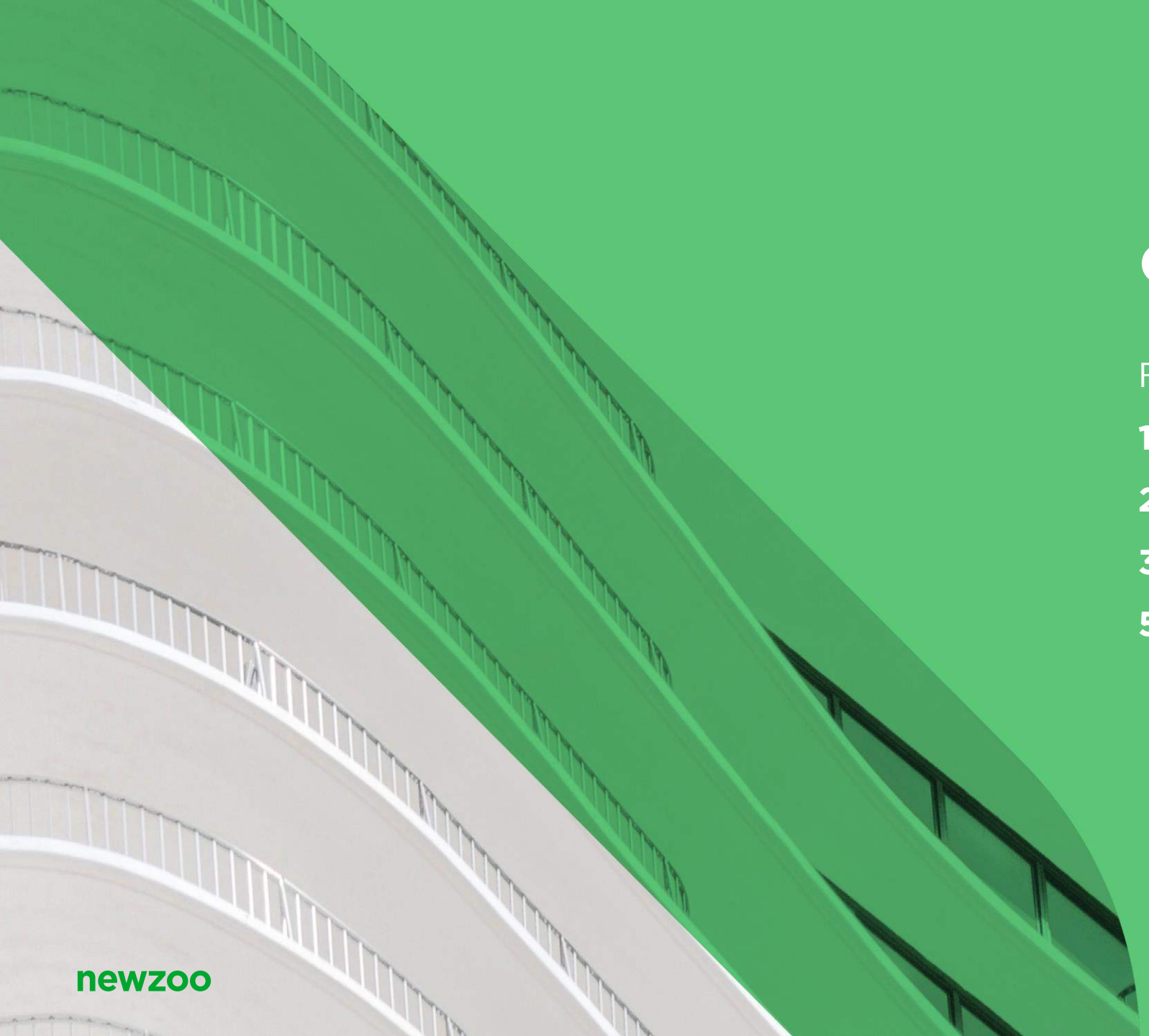
CLOUD GAMING: THE PERFECT STORM

newzoo



Cloud gaming

Also referred to as **gaming on demand**, cloud gaming is the ability to play a game on any device without owning the physical hardware required to process it or needing a local copy of the game itself.



CONTENTS

"Cloud gaming is a generic term used in different ways by those that stand to gain from it. Ultimately, consumers have the power and will determine the uptake and commercialization of new technologies behind the hype. As with many innovations, the use cases for cloud gaming are not as much about substitution as they are about the expansion of possibilities."

-Peter Warman, CEO Newzoo

THE NEXT ERA OF GAMING IS IN THE CLOUDS

Foreword

The gaming world is poised to undergo a transformation not seen since the introduction of mobile gaming.

Just as mobile gaming has expanded the market by making games accessible to billions of people across the globe via smartphones and tablets, cloud gaming has the potential to expand the market for premium games beyond the current console and PC audience by making them accessible to anyone on any device.

The concept of cloud gaming (as cloud computing) has been around for decades, but the first implementation of a dedicated cloud-gaming service was launched by G-cluster in 2004 for the Japanese market. The United States saw its first service in 2010 when OnLive launched. However, its uptake was held back by a number of factors, primarily internet speed and latency. Faced with instability and mixed reviews, OnLive sold most of its technology to Sony (which then shut it down) after just two years on the market. Sony also purchased similar service Gaikai in 2012 and used the technology for its own streaming products.

The year is now **2018** and internet speeds have improved since OnLive. According to Akamai, we have gone from an average of **4.7 Mbps** internet connection speed in the United States in 2010 to **18.7 Mbps** in 2017. We have gone from iPhone 4 to iPhone XS and from the first-generation iPad to the sixth. We are within reach of 5G, which will enable high-bandwidth, low-latency mobile connections, though there are still multiple hurdles to clear before it can reach its true potential.

As the tech continues to improve and cloud gaming grows, we expect an increase in the overall demand for games as new consumer groups enter the ecosystem. We also expect to see challenges and innovations in business models, game development, content discovery, engagement options, and even shakeups to gameplay itself. In this report, we take a look at the state of the industry and explore the potential impacts across the ecosystem.

CANDICE MUDRICK
Sr. Market Analyst

40M

Lapsed gamers represent approximately 4% of a population comprising 1Bn active online (urban) users.

1. DEFINITIONS AND SCOPE

newzoo

DEFINITIONS

Cloud gaming or **gaming on demand:** The ability to play a game on any device without owning the physical hardware required to process it or needing a local copy of the game itself.

Cloud computing: Using centralized remote servers to process data rather than a local device.

Edge computing: Similar to cloud computing, but processing nodes are more widely distributed and physically closer to users than a remote cloud.

Games as a Service: Providing game content or access to games on a continuous revenue model, for example a game subscription service or a season/battle pass.

Gaming Rig: High-powered console or PC used primarily for gaming.

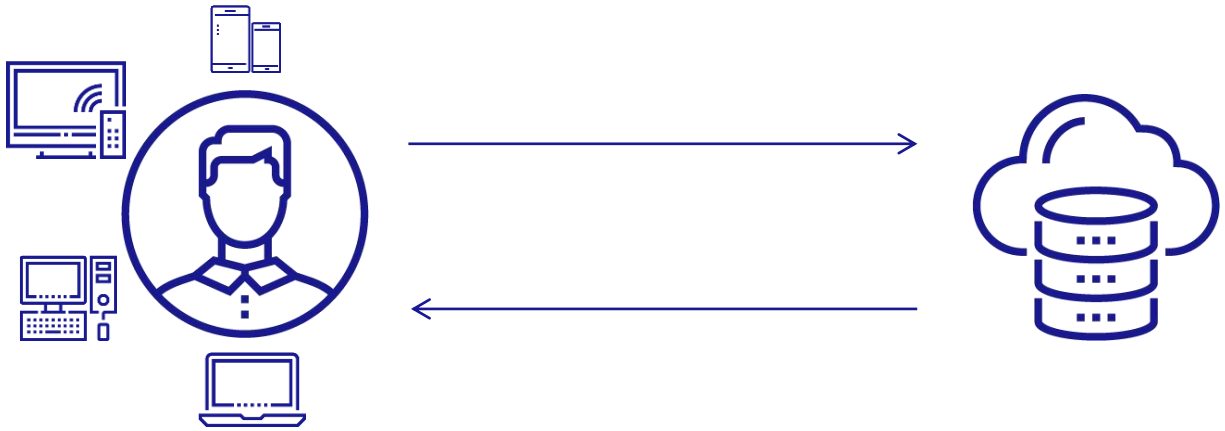
MORE THAN JUST THE “NETFLIX OF GAMING”

But equally appealing

GAMES AS A SERVICE COMBINED WITH COMPUTING AS A SERVICE

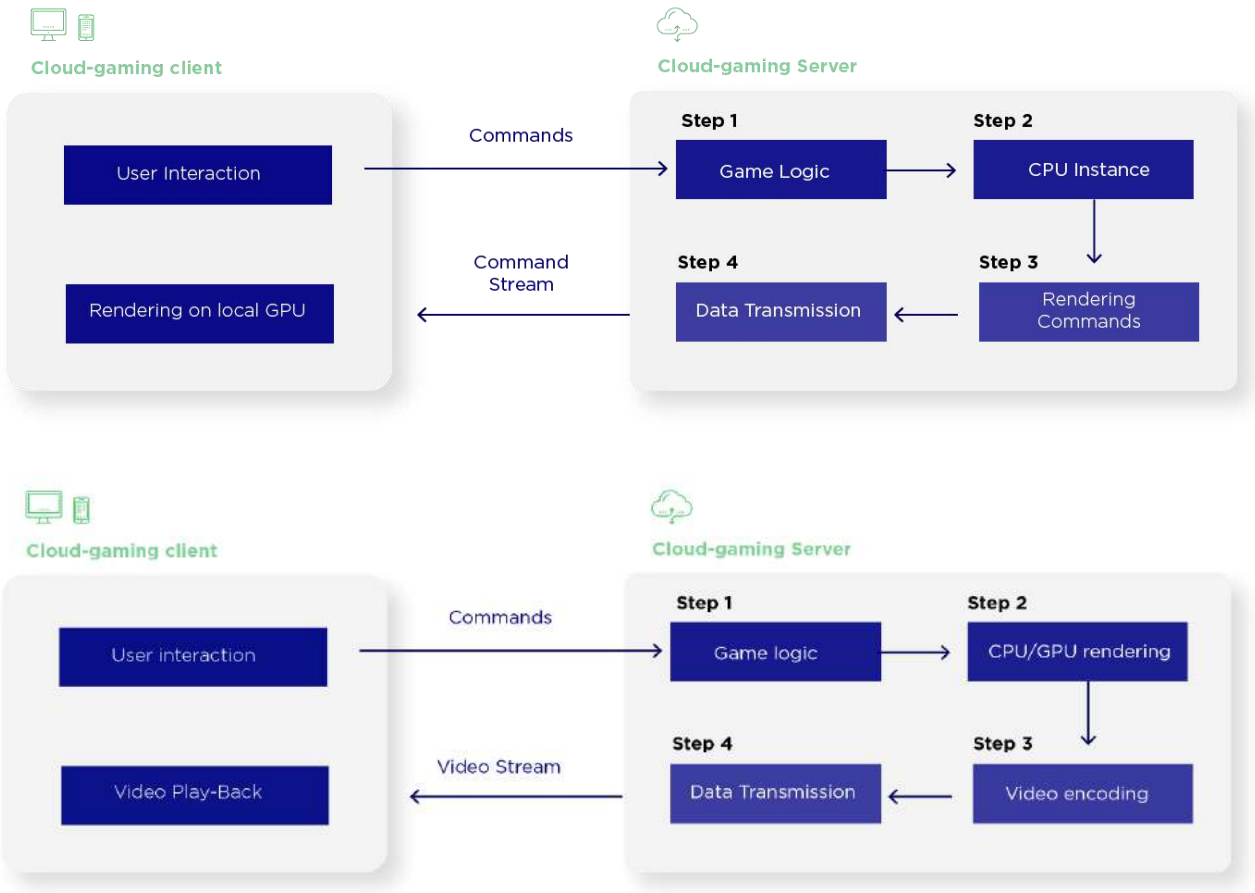
Some have confused the concept of cloud gaming with purely subscription-based, gaming-download services like the Xbox Game Pass. Those services give users access to a range of titles, which are then downloaded to the users’ hard drives. Everything is processed by the local hardware, not in the cloud. Cloud gaming, on the other hand, is primarily about streaming game content to consumers. The most prominent services are a combination of a cloud-computing and a game-streaming subscription, presenting a consumer-friendly way to instantly play the most demanding titles. Cloud computing effectively removes the need to own hardware, while a games subscription removes the need to own software.

However, unlike cloud computing, the technical requirements for latency are much stricter; a delay in collision detection can mean the difference between in-game life and death, and high-speed competitive gamers require split-second reaction times. And, unlike Netflix, there is no possibility to buffer the content; a game is interactive and requires real-time input control processing. However, there are plenty of use cases outside of top-tier, competitive multiplayer games that cloud gaming is perfect for – and plenty of consumers ready to try them.



CLOUD GAMING ARCHITECTURE OPTIONS

Trade-offs between command streaming and video streaming*



COMMAND STREAMING

Game logic and graphics commands are processed in the cloud, while graphics rendering happens locally on the device GPU. In contrast to video streaming, this approach lowers the bandwidth usage (sending commands requires less bandwidth than video) and latency (no encoding/ decoding of the video stream), but the quality of graphics is limited to local GPU capabilities.

VIDEO STREAMING

All rendering and game logic is processed in the cloud on remote CPUs/GPUs. The video is streamed to the user and decoded locally, much like a streamed Netflix video. This approach requires more bandwidth and processing time but can utilize higher-powered GPUs than the local device.

*Other architecture options also exist (e.g., combinations of the two models), but detailed explanations are beyond the scope of this report.

THE RAINBOW ROAD TO CLOUD ADOPTION

Consumers will experience different adoption rates depending on region, need, and network capabilities

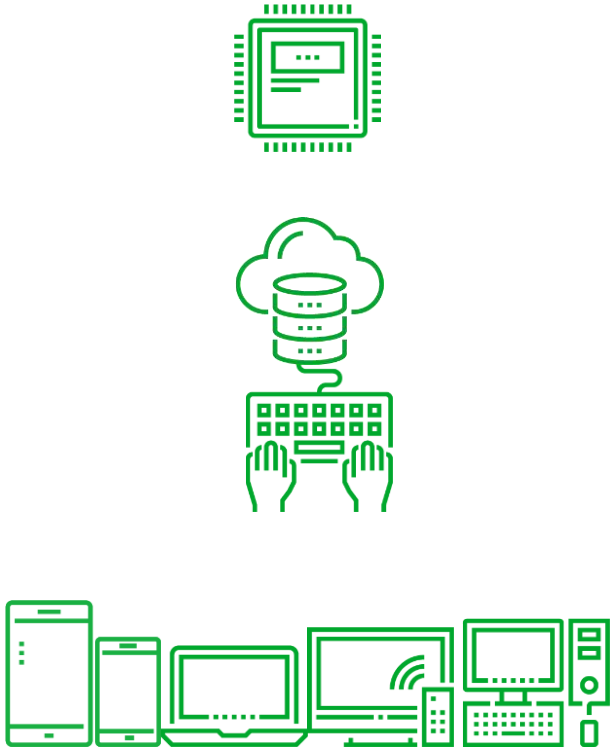
5G IS THE MOST IMPORTANT FACTOR FOR SERVICE QUALITY

For the foreseeable future, remote gaming will be more limited by the readiness of the overall network than the hardware capabilities of the client or server. For cloud gaming to reach its greatest potential, a significant number of consumers worldwide will have to have access to an affordable and robust 5G subscription. 5G technology will greatly reduce latency and increase bandwidth (10–100 times more data per second, compared to 4G), which is essential for sending high-definition and, eventually, 4K renders. It is likely that we are at least 10 years away from peak 5G, when portable cloud gaming will not only be feasible but potentially compare to high-end experiences currently only seen on cutting-edge hardware. At that stage, you will be able to start a game on your PC only to pick it up on-the-go on your smartphone and feel no difference in the quality of experience.

WHO WILL BENEFIT FIRST?

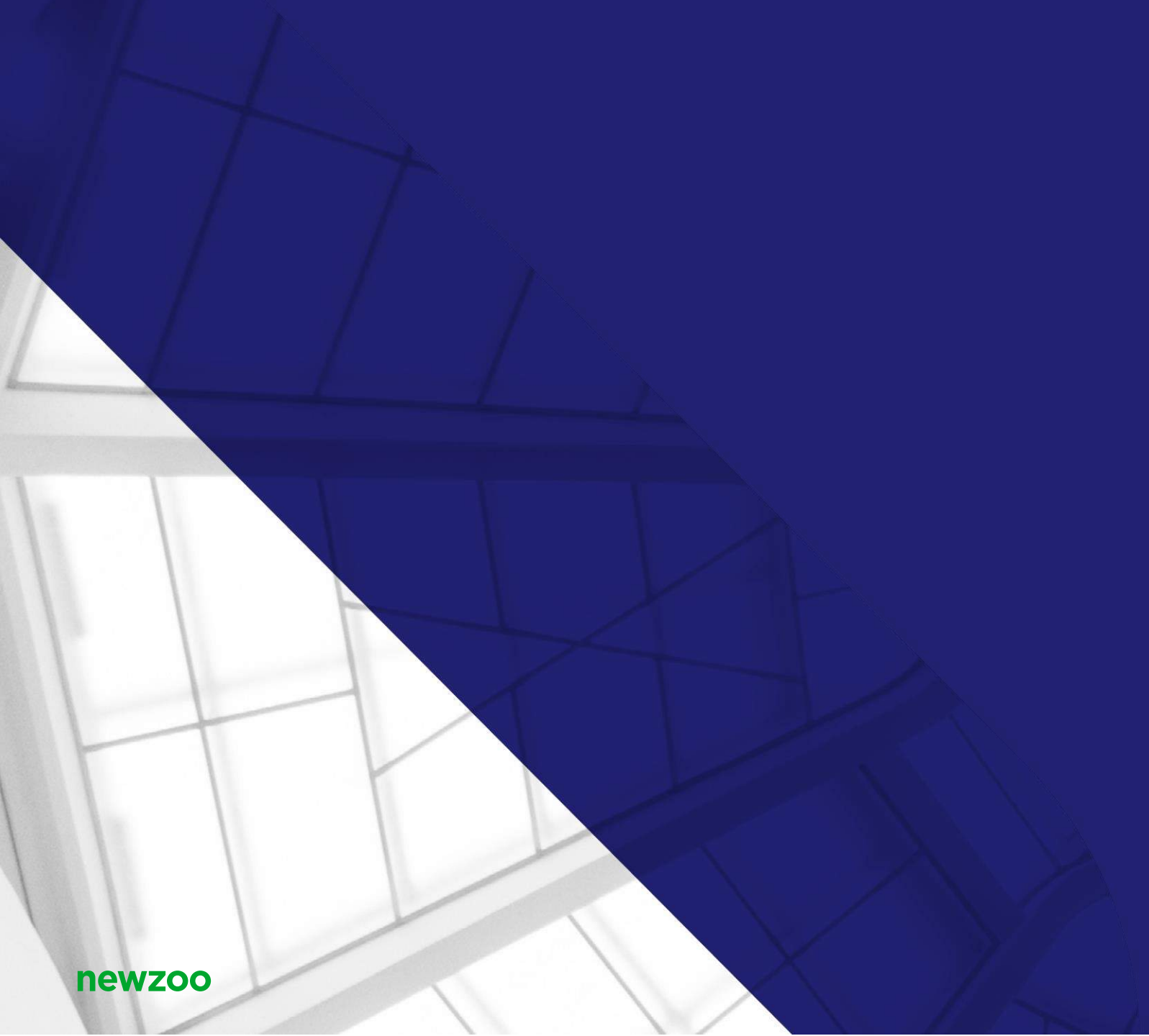
In remote processing, a seamless experience requires the access device to be within range of a stable, fast access point and within acceptable range of the cloud cluster. Thus, in the short term, the most premium game experiences will still be restricted to living rooms in countries with a high average internet speed (and close to cloud servers). For example, Shadow EU servers are located in Amsterdam and Paris and currently serve the United Kingdom, Germany, Belgium, Luxembourg, France, and Switzerland. However, gamers who live in rural communities may prefer local hardware to remote processing, as their network delay may be too high for seamless experiences.

Mobile-first countries where traditional console hardware is out of reach for the average consumer are also prime candidates for adoption once 5G networks are ready.

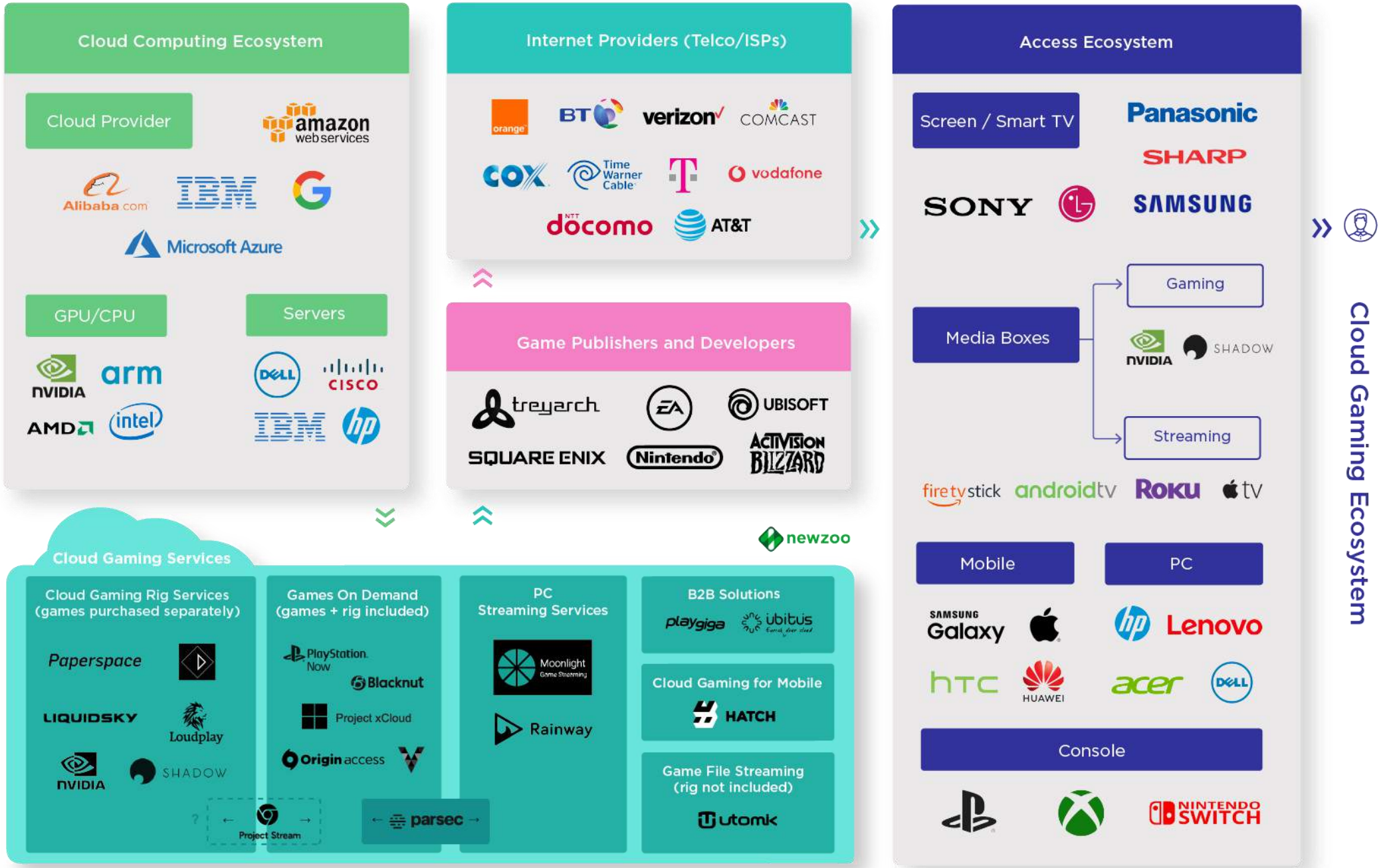


"Cloud gaming is revolutionizing the gaming market in the same way Netflix changed the video market. Now, no one will need a powerful gaming PC to have the best gaming experience. The change is good not only for the gamers but for game developers too. Free-to-play games are earning much more than copies sold in stores and in the same way, games from the cloud will have a chance to reach broader audiences."

Radosław Zawartko, Co-Founder Vortex



2. ACTORS AND VALUE CHAIN


Cloud Computing Ecosystem
Cloud Provider
amazon web services
Alibaba.com
IBM
Microsoft Azure
GPU/CPU
NVIDIA
arm
AMD
intel
Servers
DELL
CISCO
IBM
hp
Internet Providers (Telco/ISPs)
orange
BT
verizon
COMCAST
COX
Time Warner Cable
T
vodafone
docomo
AT&T
Game Publishers and Developers
treyarch
EA
UBISOFT
SQUARE ENIX
Nintendo
ACTIVISION BLIZZARD
Access Ecosystem
Screen / Smart TV
Panasonic
SHARP
SONY
SAMSUNG
Media Boxes
Gaming
NVIDIA
SHADOW
Streaming
firetvstick
androidtv
Roku
tv
Mobile
PC
SAMSUNG Galaxy
Lenovo
HTC
HUAWEI
acer
DELL
Console
NINTENDO SWITCH
Cloud Gaming Ecosystem
newzoo
Cloud Gaming Services
Cloud Gaming Rig Services (games purchased separately)
Paperspace
LIQUIDSKY
Loudplay
NVIDIA
SHADOW
Project Stream
Games On Demand (games + rig included)
PlayStation Now
Blacknut
Project xCloud
Origin access
parsec
PC Streaming Services
Moonlight Game Streaming
Rainway
B2B Solutions
playgiga
ubitus
Cloud Gaming for Mobile
HATCH
Game File Streaming (rig not included)
utomik

CLOUD ACCESS POINTS

Cloud gaming is platform-agnostic: play any game on any device

MEDIA BOXES AND OTHER CONNECTED DEVICES

Having a specialized thin client at the user location that can do some of the processing locally will likely give users a more stable experience than those relying solely on the cloud. This solution is best for gamers who prioritize gameplay over mobility, as the user will be limited to playing within range of their access point. Additionally, media boxes (e.g., Roku) and smart TVs could also be access points. **Examples:** Shadow Ghost, NVIDIA SHIELD

CONSOLES

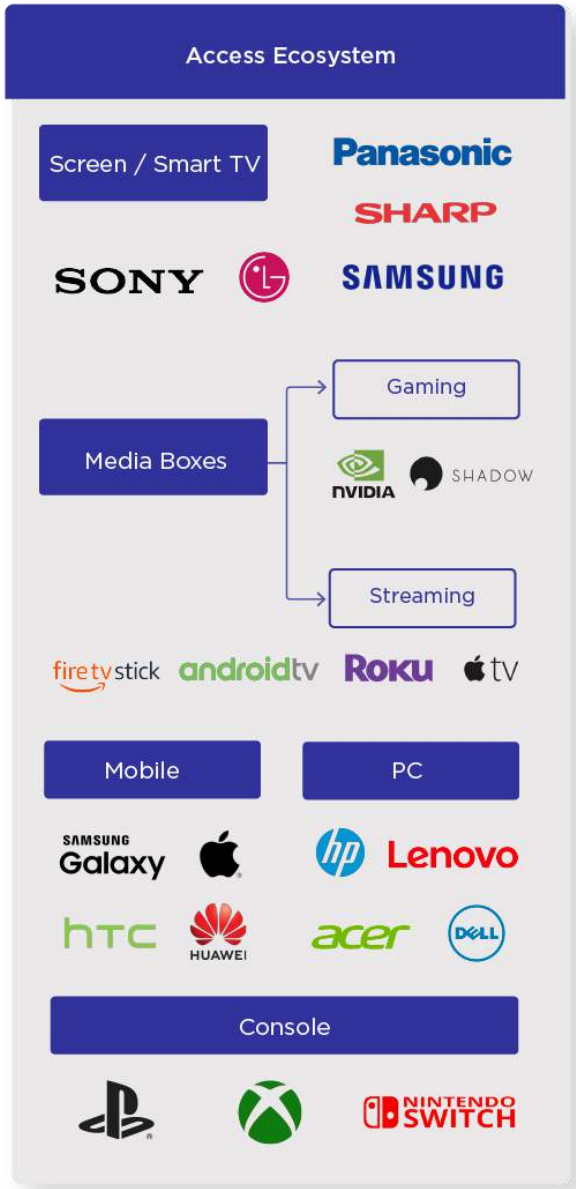
Game streaming via console can allow consumers to play titles not normally available to them – notably, Assassin's Creed Odyssey and Resident Evil 7 for Nintendo Switch, which are not natively compatible on the console. **Examples:** PlayStation Now, Nintendo Switch, Xbox (Rumored thin console which may have some local processing)

PC/MAC

Using a standard home PC or laptop may be the natural choice for many to try cloud gaming. Mac owners can particularly rejoice that they no longer need a dual boot solution to try the full spectrum of games. With services like Google's Project Stream, all you need is a browser tab, while others (GeForce Now) require a separate program. **Examples:** GeForce Now, Project Stream (beta), Moonlight, Rainway, Parsec, Shadow

MOBILE

When we reach the advent of 5G, the idea of graphically intense experiences everywhere you go will no longer be a dream, further supported by ever-increasing hardware specs. Even today, premium games are possible on 4G LTE mobile (with a good enough connection). Mobile services don't need to be limited to intensive titles – Hatch focuses on other features such as discovery and the ability to play single-player games as multiplayer. **Examples:** Hatch, Shadow, Parsec, Microsoft xCloud (launch date TBD)



CLOUD COMPUTING

CLOUD PROVIDER

The back-end cloud infrastructure can either be a proprietary gaming cloud (e.g., NVIDIA and Shadow) or through a typical cloud provider such as Amazon Web Services (AWS), Google Cloud, Microsoft Azure, IBM, and Alibaba Cloud. As an example, the streaming service Parsec is powered by AWS and Paperspace.

The cloud providers may take on the role of ISPs in the future and provide access to cloud or edge clusters directly to the consumer. Cloud providers frequently have their own private fiber networks in place and could work on expanding infrastructure to offer consumers services directly (Google already offers fiber in some American cities).

SERVERS, CPUS/GPUS, AND OTHER COMPONENTS

At the heart of the “clouds” themselves are the servers, which are either custom-made by the cloud provider or built by companies such as HP, Dell, Cisco, IBM, and Lenovo. These server farms are in turn powered by the internal components, chiefly GPUs and CPUs made and designed by NVIDIA, AMD, Intel, and Arm. Notably, Intel is making moves in the GPU industry by developing its own discrete gaming GPU to be launched in 2020.

CLOUD GAMING SERVICES

PC STREAMING

The user can simply stream existing PC games to any other device, such as another laptop, tablet, etc. Parsec also allows you to use your PC as a host for others to join. **Requires: Both PC and games.** Examples: Rainway, Moonlight, Parsec.

FILE STREAMING

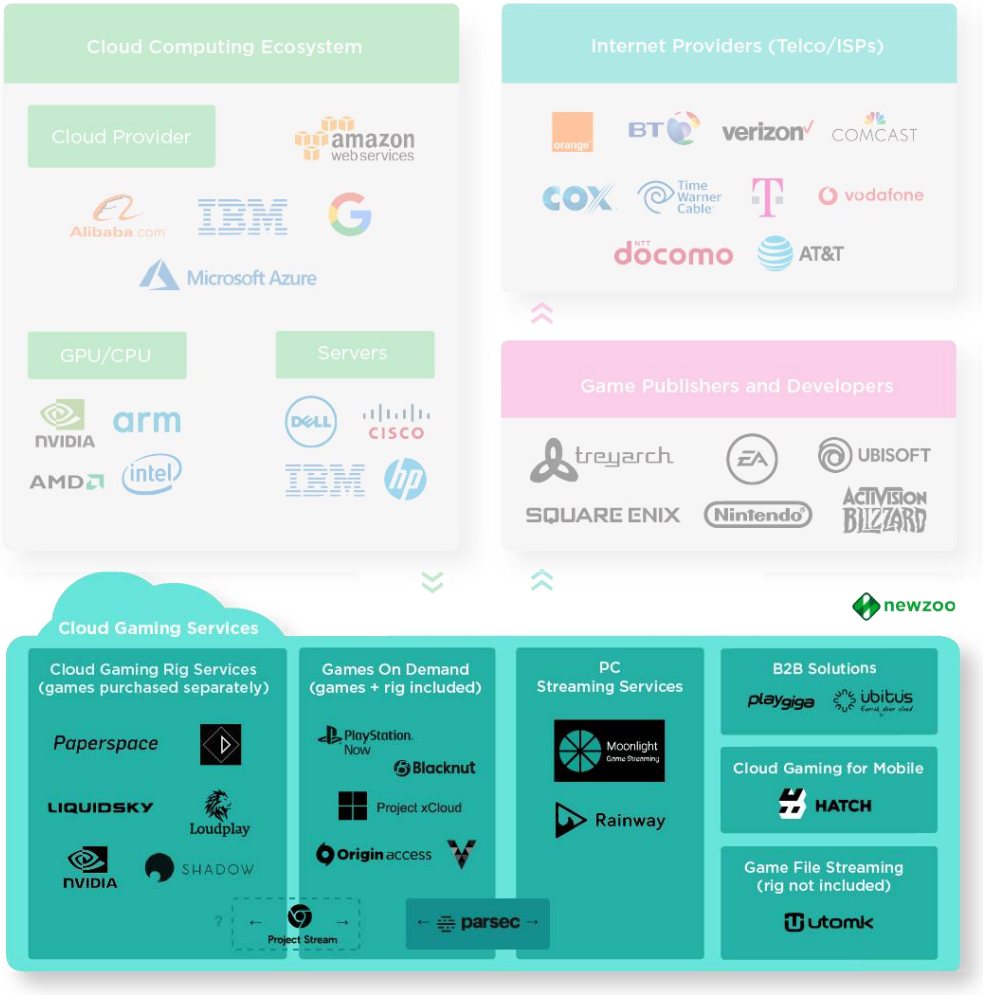
While not technically cloud gaming, the user can start playing almost immediately as a small part of the game downloads first. The remaining game continues to download in the background, but ultimately the full game is saved on the local device, meaning the user is still burdened by hardware requirements. **Requires: Capable PC with enough storage space.** Examples: Utomik.

GAMING ON DEMAND:

Offered by third parties, publishers, or console-makers. Typically offered as a subscription, both games and the gaming rig are included in a single service. When the subscription is cancelled, the user can no longer access previously saved games. **Requires: Access device.** Examples: Project xCloud (upcoming), Blacknut, Vortex, Origin Access (upcoming), Project Stream (TBD)

CLOUD RIG RENTAL:

Similar to cloud computing, these services effectively allow the user to rent a remote, high-powered PC or console. In some cases, you can use the PC for other applications. However, you must already own the games in order to play them. **Requires: Game ownership/license.** Examples: Shadow, GeForceNOW, Paperspace.



PRODUCTS AND PROVIDERS

ISP

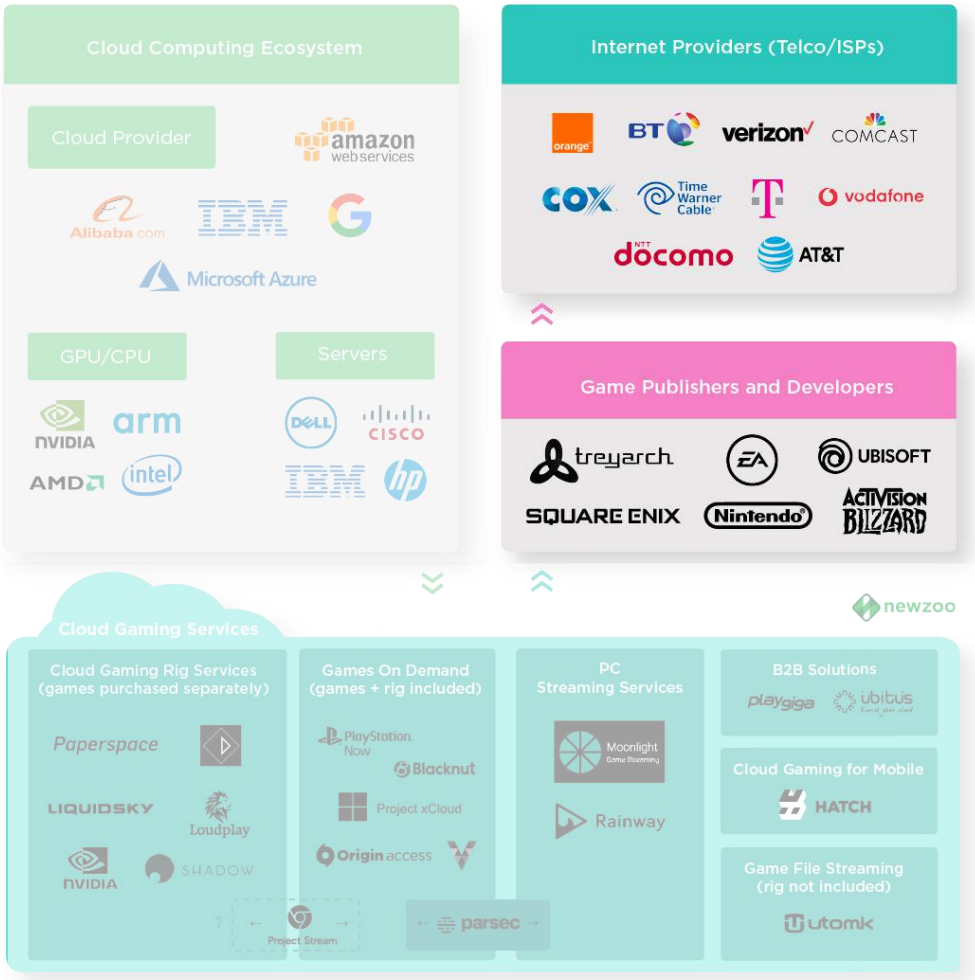
ISPs are the gatekeepers of the internet and, thus, also of cloud gaming (for now). All consumer internet traffic passes through these providers and data caps can be implemented for high-bandwidth services such as Netflix, indicating the same could be applied to cloud gaming (even more bandwidth-intensive). Depending on adoption rate, cloud gaming has the potential to become one of the largest consumers of data. Many ISPs are conglomerate media companies that also provide content (e.g., ATT/Warner Media). Adding game streaming to their list of services can encourage subscription growth.

TELCO

Much like ISPs, telcos will be the gatekeepers of cloud gaming on mobile devices. With a fast enough 4G connection (minimum 10Mbps+ and low enough latency), many consumers are already equipped to try cloud gaming on their mobile devices with only 4G LTE. Deutsche Telekom is already advertising specialized plans with unlimited data for certain games like Fortnite. However, the full advent of 5G will help cloud gaming scale and greatly improve the quality of service for gamers on the go. Much infrastructure work is still needed to bring 5G online in many regions, with initial services to be launched between 2018 and 2020.

GAME PUBLISHERS AND DEVELOPERS

Content remains king in the gaming world, but cloud gaming changes the traditional business models as it lends itself best as a subscription service. It remains to be seen how publishers will manage the challenges to their established models, though we already see some of the largest publishers experimenting with their own cloud gaming services, such as EA's Origin Access. Additionally, instant game demos may rapidly increase the rate at which a popular game is adopted (or avoided). Faster, more frequent game churn is also possible as it becomes easier to switch games.



SERVICES YOU CAN TRY RIGHT NOW

Taking you from ground zero to cloud nine

HATCH

Features: 100+ full games, competitions and casual esports events, no in-app purchases, shared single-player on every game (i.e., play single-player games with friends).

Cost: Free with ads or paid subscription.

Internet requirement: 2-3 Mbps.

Platforms: Android.

SHADOW

Features: GTX 1080 or P5000, Intel Xeon (8 threads) @ 3.2GHz, 12GB RAM DDR4, 256GB HD (or get an extra TB for $2.95/mo). Comes with Windows 10 license and can be used for other PC applications. Hardware GPUs, CPUs, and RAM continually updated to be top of the line. Full resolution ranges supported including 4Kp60 and 1080p144.

Cost: US:$34.95/mo, UK: £26.95/mo, FR&DE: €29.95-€44.95/mo depending on subscription length.

Internet requirement: 15 Mbps.

Platforms: Windows 7/8/10, macOS, Android, Linux (beta), iOS (beta), Shadow Ghost.

VORTEX

Features: 80+ games (either F2P or game license required), Intel Xeon (8 threads), up to Nvidia Titan X GPU, adaptive bandwidth technology.

Cost: $9.99/mo.

Internet requirement: 3Mbps minimum with best experience at 15 Mbps.

Platforms: Windows 7/8/10 (& Windows store application), macOS, Chrome, Android.

SERVICES YOU CAN TRY RIGHT NOW

Taking you from ground zero to cloud nine

NVIDIA GEFORCE NOW™

Features: 400+ supported PC games (separate license required), GTX 1080, Discord Rich Presence, unlimited game storage, available in NA and Western EU.

Cost: Free (while in beta).

Internet requirement: 10 Mbps, available in NA and Western Europe .

Platforms: PC, macOS, SHIELD Android TV.

parsec

Features: Multiplayer streaming (play co-op games in real-time with friends), matchmaking through Party Finder to play games with new people in the Parsec Community, host games on any gaming PC in the cloud or at home.

Cost: Free for hosting your own PC. $.50/hr to play games on cloud arcade.

Internet requirement: 10 Mbps.

Platforms: Windows, macOS, Android, Linux, Raspberry Pi, Chrome. Host on any PC running Windows 8.1+ with AMD, Nvidia, or Intel GPU.

LIQUIDSKY

Features: Specs depend on package chosen. Separate game license required.

Cost: $14.99-$29.99/mo depending on PC specs, hours of gameplay, and gaming storage.

Internet requirement: 5 Mbps minimum with best experience at 20 Mbps.

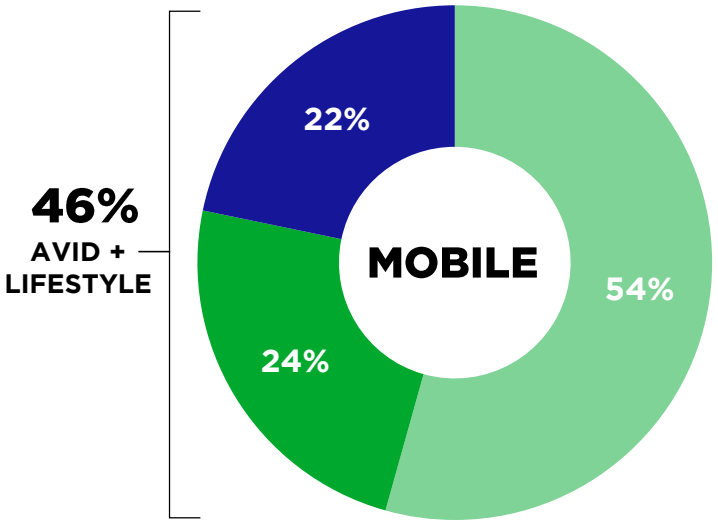
Platforms: Windows, Android.

3. IMPACT TO CONSUMERS

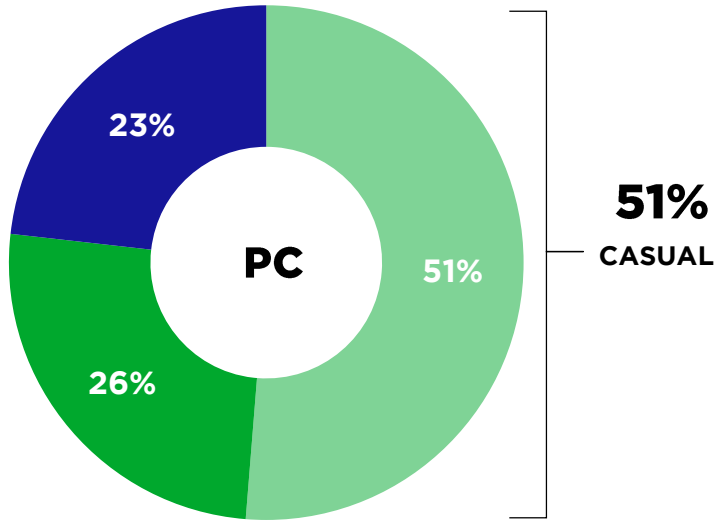
CASUAL PC/CONSOLE GAMERS MAY BE FIRST TO TRY

Casual PC/Console gamers and Avid/Lifestyle mobile gamers are an ideal audience

PLAYER SEGMENTATION FOR MOBILE PLAYERS



PLAYER SEGMENTATION FOR PC / CONSOLE PLAYERS



Casual Gamers Avid Gamers Lifestyle Gamers

Globally, a majority of PC/console players consider themselves **casual gamers**. This group could be the first to be motivated by cloud gaming; whereas avid and lifestyle gamers have higher requirements for their gaming experience (and spend enough hours to justify the investment), casual gamers are more likely to make tradeoffs for the convenience and cost savings of cloud gaming. At about $400 per console and $60 per game, a casual gamer who buys three games can subscribe to a $100/year service for almost six years before their total cost equals what they would have spent on physical formats.

Additionally, **avid and lifestyle mobile gamers** are increasingly exposed to mobile mid-core and core titles, and cloud gaming is the perfect introduction to premium titles never before possible on mobile devices.

BUT THEY WON'T BE THE ONLY ONES

Cloud gaming can appeal to the masses

FLOODING THE GAMING POOL

Aside from the segments mentioned previously, cloud gaming can appeal to a broad assortment of consumer profiles. Note that the list below is not an exhaustive one.

WHAT CONSUMER PROFILES WILL GROW THE DEMAND FOR GAMES?

Lapsed gamers. Defined as those who used to enjoy core gaming but no longer have the hardware or time to play because of a change in priorities, lapsed gamers might be the first in line for cloud gaming services.

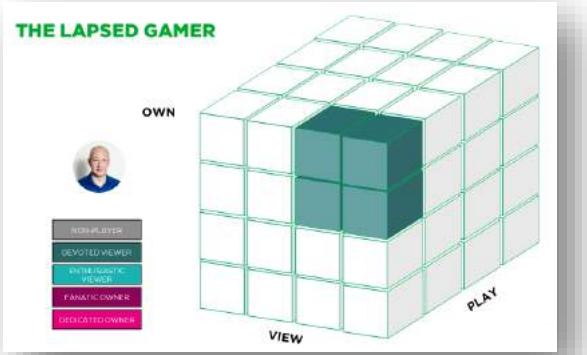
Mobile gamers. As larger screen sizes further penetrate the market, mobile-first gamers will be able to visually appreciate titles with premium graphics. The developers will need to be creative when it comes to mapping controls to a touchscreen device, though we have already seen multiple successful attempts at porting PC/console games to mobile, such as Fortnite or PUBG. The rise in game complexity may also drive the growth of mobile control peripherals or add-ons, as seen in the iPhone-compatible Gamevice (pictured right) or Huawei Mate 20X joystick. Furthermore, subscriptions (alongside app stores) enable content discovery.

Families. It's easy to imagine families adding a gaming subscription to their Netflix subscription, making gaming affordable and accessible for the whole family. Depending on how many concurrent seats are included in the subscription, the family can choose to play together or Mom can try out Hearthstone while the kids play Call of Duty.

Female gamers. Mobile gaming generally has the most female gamers, at least in part due to a lack of gender stigma against playing mobile games compared to PC/console. Similarly, by abstracting the games away from hardware that is traditionally marketed more toward men, cloud gaming could be more inclusive for women.

Viewing enthusiasts. Those who only watch streamers play on Twitch or YouTube but never try the games themselves may be tempted to play in a world where it is much easier to do so.

And more!



© Newzoo 2018 | The Lapsed Gamer:
1 of 7 Newzoo Consumer Segmentation Profiles

BENEFITS TO CONSUMERS

Cloud gaming improves efficiency of resources across the ecosystem

GAMING NOW AS EASY AS WATCHING GAME OF THRONES

As Google's Project Stream beta has shown, the future of gaming can be as easy as opening a new Chrome tab to play the latest Assassin's Creed. Cloud gaming provides an accessible gateway into gaming – giving access to old and new games alike. But there are more reasons for consumers to jump in:

GAMING ON DEMAND CAN SAVE YOU TIME AND MONEY

- Eliminates need to download or install games.
- No costly, up-front hardware investment, and no hardware upgrades required.
- No time investment for researching/setting up/upgrading your console or PC, and no debug time
- No physical or virtual space needed to store games.
- Adaptive pricing depending on time played and computing needs.
- Platform agnostic – PC games can finally be played on a Mac, console owners can play titles traditionally exclusive to other systems.
- Ultra premium game development – developers can build games that require the processing power of multiple GPUs.
- Reduced power consumption at the consumer end (and save battery life).
- Possibility to play traditionally single-player games as multiplayer (run the same gaming instance on multiple devices, as seen in HATCH mobile cloud gaming).

EXAMPLE SERVICES

SHADOW

NVIDIA GEFORCE NOW™

parsec

HATCH

IMPACT OF NEW BUSINESS MODELS

Monetization models can change the way we pay and play

WILL PUBLISHERS BE THE NEW RECORD LABELS?

The TV and music industries have both gone through a significant shift in consumer behavior to subscription and stream-based services (as is the general trend in recent years). Game publishers look to be impacted as much as record labels have been in the past, although a key comparison difference is that game publishers are often also game developers. Can publishers remain profitable in an all-you-can-play model? How will the consumer subscription fee be split up by content owners (flat license flat fee, gameplay time, or sessions)? Future gameplay design is likely to be impacted as the monetization model can incentivize different metrics, similar to how F2P monetization has shaped mobile game development. Will the $60 premium single-player campaign games remain?

BEYOND THE BOX – NEW MODELS AND NEW SERVICES

- Time-based and processing-based cost and microtransactions (pay per hour, pay per graphics detail).
- Games as a service direct from publishers.
- Bring your own games and play them on a rented cloud rig.
- Rent both rig and games in one subscription from a third party.
- Dedicated, lightweight peripherals for cloud gaming.
- Cost add-ons to play on other devices.
- Cloud VR services.
- Rent your neighbor's PC (P2P cloud streaming).
- Interact with Twitch/YouTube streams as if you are playing a game opens up new monetization. possibilities (e.g., pay $1 to be able to push the button and add a random element to the streamer's game).

NEW CONTENT AND ENGAGEMENT POSSIBILITIES

Cloud game development equally impactful

1. Ultra Premium games that require the processing power of multiple computers – why use one GPU when you can use 10?
2. Impact the in-game environment while watching a streamer via a shared game instance.
3. Turn local single or multiplayer titles into online games to play with friends across the globe.
4. Play instant trials of any game before purchasing (if the service is not a subscription).
5. Connectivity and interactions with other services (watch Game of Thrones on Netflix, then start a Game of Thrones game based on where you were in the series, stream external radios in GTA5).
6. Broader multiplayer and esports viewership possibilities, including joining or watching multiple games at the same time and multiple camera views.

"For game streaming and cloud gaming to take off, game developers and platforms need to embrace building new experiences that are only possible via streaming – only when these experiences exist will we see a mass transition to the technology."

Benjy Boxer, Co-Founder Parsec

4. WHAT'S NEXT?

newzoo

STEPS TO IMPLEMENTATION

5G is the key

WHAT ARE WE WAITING FOR?

Is cloud gaming ready for prime time? While multiple services and beta tests are up and running, there are still a few stepping stones to widespread adoption.

WHAT MIGHT RAIN ON THE PARADE?

Infrastructure. Not all nations have the fiber backbone to support the bandwidth requirements, and massive infrastructure improvements will be necessary to fully realize 5G. A recent Deloitte study estimated the cost of 5G nationwide fiber upgrades at over $130 billion.

5G limitations. 5G millimeter-wave radio signals have a short range and are more easily blocked by obstacles such as walls, challenging engineers to provide uninterrupted mobile service (especially indoor).

Latency. The cloud clusters must be located within an acceptable range of the user to minimize latency. For example, a person in the U.S. will not have a good experience from a service with clouds located in Asia. Edge or P2P computing, as opposed to remote computing, could enable a better experience. Network latency dependencies include local ISPs/telco networks, distance from the cloud, WiFi connection, router, etc.

Bandwidth competition. Bandwidth requirements have been increasing exponentially over the past 30 years. According to Cisco, from 2000 to 2014, the total amount of internet traffic increased by 564 times, and mobile data traffic alone is expected to triple from 2018 to 2021. Gaming won't be the only application with rising data demands on the network. It remains to be seen whether the quality of service can be maintained for massive multiple, concurrent users (i.e., upon release of a AAA title during prime-time usage hours).

Rising ISP costs. Game streaming generally requires significantly more bandwidth than Netflix, and it's not certain how ISPs will react to the new demands. Widespread adoption will put pressure on the networks, and it's feasible that extra bandwidth consumption costs could offset some of the savings seen with cloud gaming. Netflix states a speed requirement of 5Mbps for HD quality, but Nvidia's GeForce Now requires a minimum of 10 Mbps to work at all (and 50 Mbps for 1080p at 60fps, with no buffering option due to game inputs).

Sustaining business model. 5G ground investments have been partially slowed due to the popularity and profitability of mobile subscriptions. Will consumers be ready to pay a premium for 5G? It also remains to be seen whether publishers and providers can be profitable in a subscription world, and how much consumers are willing to pay for the service.

OTHER IMPACTS AND OPPORTUNITIES

It’s not all sunshine, but you can’t have rainbows without a few raincloud

As with almost anything, there are upsides and downsides to cloud gaming. Aside from the technical concerns, we forecast some of the risks and opportunities heading our way:

LET’S GET OUR HEADS OUT OF THE SAND

- Cloud malfunctions and vulnerability – when a cloud is down, it’s down for everyone. Failures are widespread as opposed to a single malfunction. Also, large-scale services become a target for hackers and DDoS attacks.
- Data/privacy concerns - your personal data will be stored by a 3rd party where it may be compromised
- Tech support will require potentially much longer time for issue resolution.
- User-generated content – much of the gamer ecosystem thrives on homegrown efforts, from modifying games to streaming and more (some of the most popular titles such as Dota2 started out as user mods). If the user does not have access to system files, it could limit community creativity.
- Inability to access or transfer a saved game file when subscription ends.

AND INTO THE CLOUDS

- Widen the gaming market by attracting lapsed gamers, mobile-only gamers, Mac owners, etc.
- Cloud game development (collaboration opportunities and more – enough to fill up a separate report).
- New forms of playing and new forms of engagement (also a consequence of cloud game development).
- Greater efficiency of resources – think of all currently unused consoles/PCs: fewer machines may be needed to serve the same market. Tailor processing usage to the game demands (e.g., use PS2 instead of PS4).
- Decreased cost of production for software companies (no hard copies of a game need to be made – with downside impact to retailers). Reduce resources used for porting to multiple platforms.
- Alternative uses for GPU clouds – AI is another significant area of growth, and AI tasks are best suited for GPU processors. Gaming clouds are likely to be dual-purposed for alternative markets.

THE LONG VIEW

Will cloud gaming fully replace consoles, PCs, and gaming app stores?

With new technologies, consumers tend to find new applications rather than substitute what is already there. The iPad didn't replace laptops, laptops didn't replace PCs, Airbnb hasn't replaced hotels, and cloud gaming won't fully replace local gaming.

If we look at the history of gaming, the market has made room for each introduction: Gameboy, PlayStation, Xbox, etc. Mobile gaming didn't replace other games but massively expanded the overall games market instead. What truly matters is the consumer experience; beyond removing platform limitations, cloud gaming will also open up entirely new ways to play games and interact with the games community. We believe that this is the most exciting aspect of cloud gaming and are eager to see how the community leverages the technology to create innovative entertainment experiences.

Local gaming will still have a place as long as consumers perceive value in it, particularly for gamers who need the absolute fastest reaction times, for VR, and for those who find true passion in building their own gaming computers. From a technical standpoint, much depends on the advancement of technology backbones (e.g., 5G) to enable a mass adoption scenario for the use case of playing seamless AAA titles remotely.

As requirements for bandwidth scale not just for gaming but for all applications, it remains to be seen how networks will handle the demands (especially for mobile, given the finite spectrum).

Over the next 10 years, cloud gaming is likely to coexist alongside PC and console gaming and bring new gamers into the fold, with different regions undergoing diverse adoption curves depending on internet and network capabilities. Similarly, cloud gaming will not yet replace the traditional gaming app store but offer value in parallel with different types of content, experience, and pricing.

But what will happen when the younger generation has never known anything but cloud experiences? Much like how an interest in cars can stem from car ownership and curiosity in how they work (is Uber/Lyft diminishing car culture?), in a society without PC or console ownership, we may see additional changes in cultural engagement levels with hardware.

CANDICE MUDICK
Sr. Market Analyst

Market intelligence on games, esports, and mobile.

newzoo

www.newzoo.com

newzoo

The current pace of change in consumer behavior, media, and technology requires a new type of intelligence firm that is agile, innovative, truly global, and ahead of the curve. We are the firm.

As the number one provider of games, esports, and mobile intelligence in the world, we empower people to explore change, create unique strategies, and optimize their daily business.

OUR USE CASES (SOLUTIONS)

EXPLORE

- Trends
- Industries
- Markets
- Forecasts

CREATE

- Strategies
- Business plans
- New products
- Target groups

OPTIMIZE

- Marketing
- Investments
- Product dev
- Local efforts

OUR EXPERTISE

CONSUMER INSIGHTS

Understand your most valued consumers' drivers, attitudes, and behavior. Segment your audience across 28 countries/ markets using more than 200 variables.

TRACKING DATA

Metrics that come straight from the source. Track your market and optimize marketing and product development while keeping an eye out for blue-ocean opportunities.

MARKET FORECASTS

Our landmark reports. In-depth market forecasts and trends ensure you never miss an opportunity. Includes quarterly updates and access to our forecast dashboards.

CANDICE MUDRICK
Sr. Market Analyst
candice@newzoo.com

Contact us or visit our website for more information and inspiration.

www.newzoo.com