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This Friday, the Gaming CSA has our biannual Strategy Review with this team. We will focus our discussion on accelerating Xbox Game Pass growth beyond console, on Windows 10 and on mobile (iOS, Android) specifically.

To make the most of our time together, I am sharing our pre-read (attached), which is intended to both frame that discussion and provide relevant background information.

Let me know if you have questions, otherwise, I look forward to a great discussion on Friday.

Thanks,

Phil

A screenshot from the game Minecraft showing a group of player avatars and a chest on a stone platform. The background features a large, complex structure made of stone and wood blocks, set against a blue sky with white clouds. The terrain is composed of various blocks, including dirt, grass, and stone.

Gaming CSA: Strategy Review

Accelerating Xbox Game Pass Across Devices

By the Gaming Leadership Team | April 2020

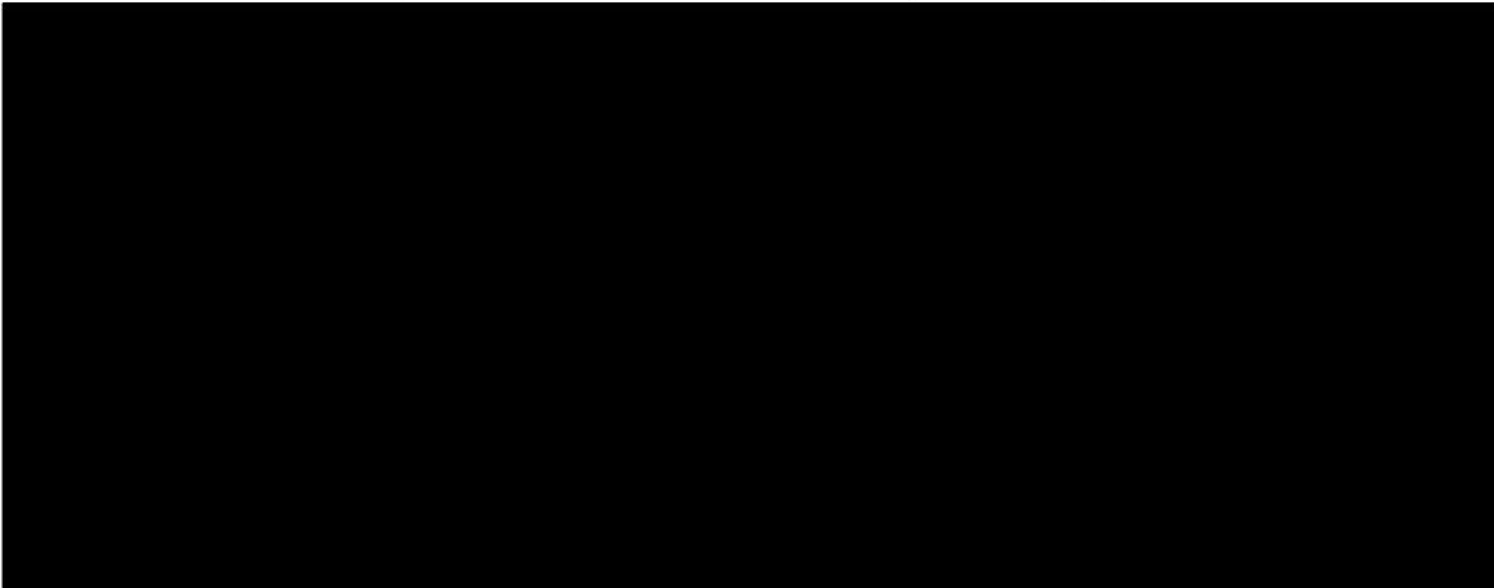
1 | STATE OF THE CSA

1.1. | Purpose of this Document

The Gaming CSA's April 2020 Strategy Review with the SLT will focus on accelerating the trajectory of Xbox Game Pass as we extend the platform across devices. This paper aims to provide context for that session, including an update of our recent performance, an overview of the game industry and our long-term strategic thesis, and a framing of opportunities to realize nonlinear growth for Xbox Game Pass across Windows 10 and mobile devices, for discussion with the SLT.

1.2. | Business Update

Fiscal Year 2020 will show significant growth in overall engagement on the platform with record Xbox Game Pass Subscribers, Xbox Live Monthly Active Users, and Content & Services revenue. However, [REDACTED], and as we approach the end of the Xbox One generation, where hardware revenue will be [REDACTED]. To summarize:



1.3. | Industry Context

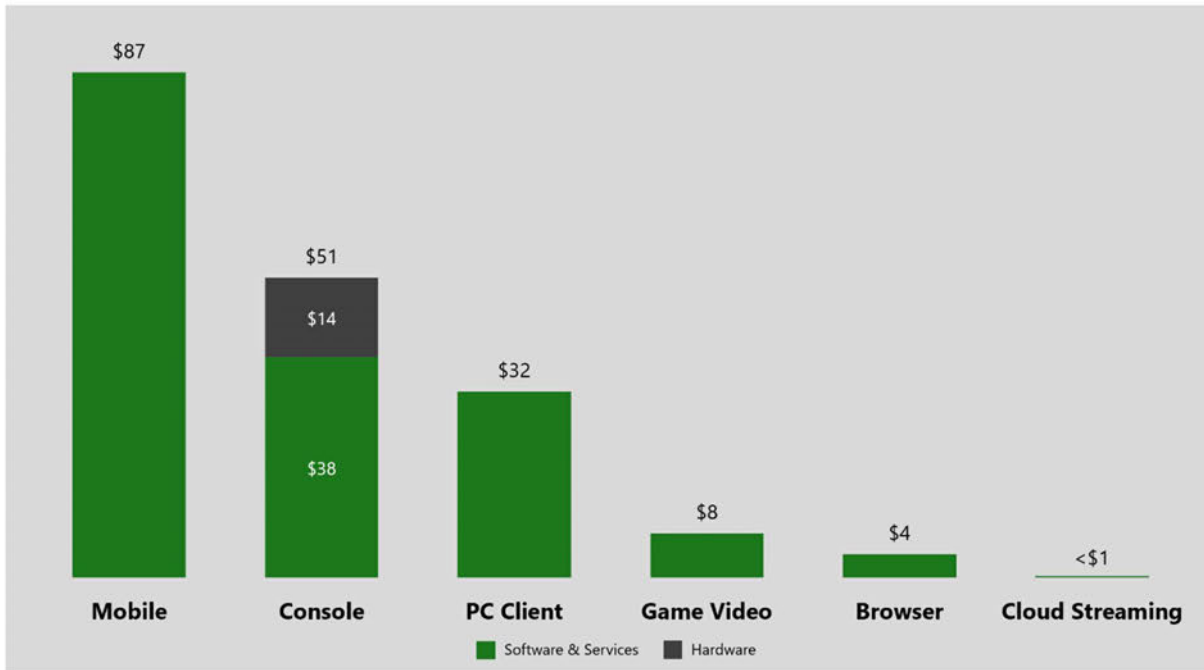
In 2019, the game industry was \$182 billion¹ in total revenue, larger than the global home video (\$51 billion), movie box office (\$49 billion), and music industry (\$47 billion) combined². Software & services revenue, the primary measure of industry health and >90% of total industry revenue, has seen steady

¹ Consensus analyst estimates, public financial disclosures, internal analysis ("CY2019 Game Industry Sizing").

² PricewaterhouseCoopers ("Global Entertainment and Media Outlook, 2016-2020"). Home video includes DVDs, video-on-demand, streaming services. Music includes CDs, digital purchases, subscription services, ticket sales.

growth, nearly 10% annually, from 2017-2022¹. Console remains a key driver of software & services revenue (\$38 billion) along with Mobile (\$87 billion) and PC Client (\$32 billion)¹. To summarize:

Figure 2: 2019 Game Industry Revenue (USD billions)



Today, 1 in 3 people in the world plays games, 2.6 billion³ in total. In the next decade, we estimate that the number of players worldwide will grow to exceed 4 billion. Player growth is projected to outpace global population growth, driven by demographic shifts and the continued proliferation of devices and connectivity. Further, players increasingly play on multiple devices, with mobile devices seeing near ubiquitous adoption. Continued device proliferation will magnify this dynamic over time. Finally, players increasingly expect ubiquitous access to their content. In other media categories, access across devices is standard. For example, the average Netflix account accesses the same content and service on 3.9⁴ devices. Games on the other hand, are often bound to certain device categories, a byproduct of legacy relationships and technical limitations. The multidevice success of *Minecraft* and *Fortnite* illustrate the latent demand for more fluid access to games.

Today, Microsoft captures roughly 6%⁵ of total game industry revenue, implying significant headroom for growth. Further, the industry sees minimal consolidation; Tencent, the global leader, captures just 11%⁶ of total industry revenue.

³ Analyst estimates, internal analysis ("CY2019 Gamer Value").

⁴ Netflix public disclosure, CNET March 2018.

⁵ Public financial disclosures, internal analysis ("CY2019 Game Industry Profit Pools").

1.4. | Strategic Thesis

Microsoft's opportunity is to expand its share of an at-scale and growing industry. Our perspective on growth remains unchanged and is grounded in our worldview:

Today, the game industry is largely organized around devices and platforms. This structure runs counter to the desires and motivations of both players and publishers. Based on the premises noted in Section 1.3, we believe the industry will reorganize, moving from a device-centric paradigm to one that orients around the player. Our opportunity is to expand our presence in a large and growing industry by powering this transformation, including establishing relationships with more players on more endpoints in more geographies. Our underlying strategic thesis also remains constant—Xbox is the best place to play, empowering people to play the games they want, with the people they want, anywhere they want. As our ecosystem evolves, membership, in our services across devices, becomes our platform. This requires:

- **Content:** to attract & engage players
- **Community:** to create an ecosystem for discovery, purchase, and engagement
- **Cloud:** to provide ubiquitous content access and consistent experience across devices

Beyond the opportunity to lead in a large and growing industry, gaming accrues strategic value to Microsoft via relevance with consumers, as an installed base of latent intelligent edge compute in the home with Xbox consoles, and as an onramp for valuable Azure workloads⁶.

1.5. | Extending Xbox Game Pass Across Devices

Providing ubiquitous access to Xbox Game Pass across devices is at the heart of our strategy. This includes frictionless access to content with a consistent user experience, both of which are fundamental to the Xbox Game Pass customer promise. Microsoft, with our combination of intelligent edge and intelligent cloud assets, is uniquely positioned to realize this vision on a global scale.

We have been deliberate in how we sequence our expansion across devices, based on opportunity scale and addressability. We can summarize that sequencing in this way:

- **Horizon 1 (FY20):** Console
- **Horizon 2 (FY21-23):** Windows 10 (download & stream) + Mobile (companion & initial xCloud)
- **Horizon 3+ (FY23+):** Ubiquitous global access across devices

Horizon 1: Console

Our path forward with Xbox Game Pass on console is well understood. Xbox is our primary acquisition engine for high-fidelity games and developers. The console provides game developers an at-scale

⁶ In addition to the financial opportunity noted in Figure 2, gaming is also computationally intensive and accounts for roughly █████ of non-browser time on Windows 10 machines, per Windows 10 telemetry.

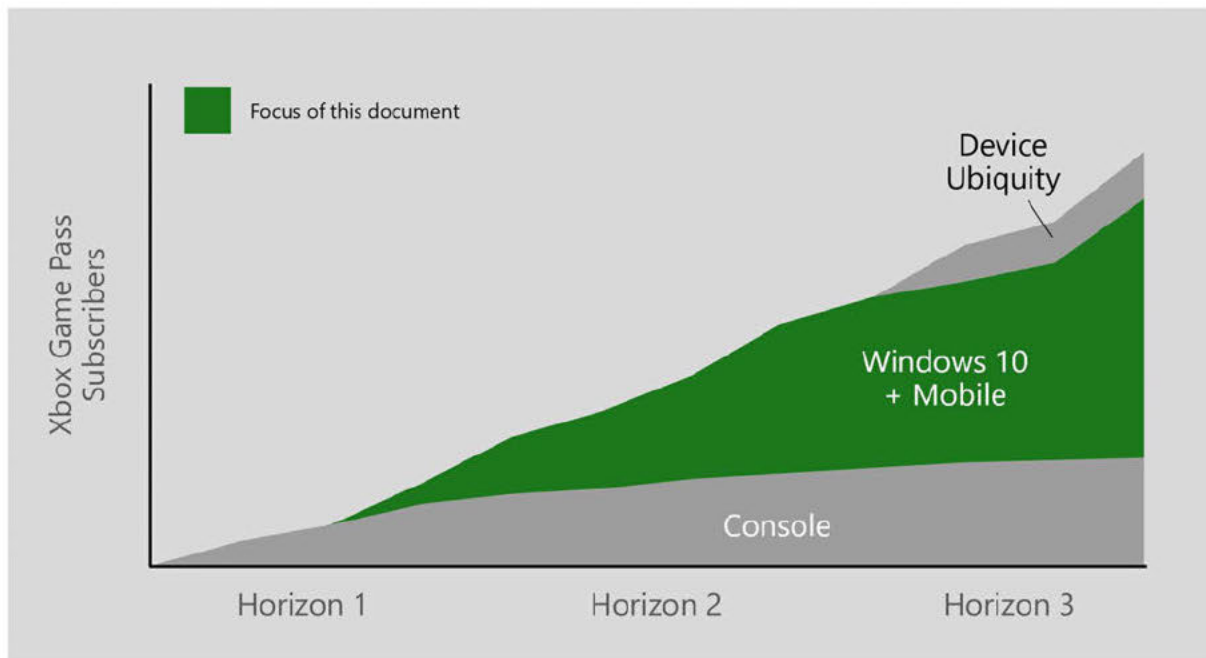
installed base of users, naturally incenting them to write for our platform. Having invested in a unified architecture across devices, games written for Xbox Series X are also natively Windows and xCloud enabled, creating a vital content pathway for Xbox Game Pass across devices.

Console is also a proven subscriber onramp for Xbox Game Pass, accounting for a significant majority of the more than [REDACTED] unique life-to-date Xbox Game Pass players. Further, we believe there is additional headroom for growth on console from the roughly [REDACTED] lapsed Xbox Game Pass members and the more than [REDACTED] active consoles that have yet to try Xbox Game Pass⁷. From this we conclude that console remains a viable growth vector for the next 2-3 years, but also, that growing beyond console remains an imperative to achieve our long-term subscriber aspirations.

Horizon 2: Windows 10 + Mobile

Windows, with [REDACTED] devices globally, and mobile, with [REDACTED] devices globally, are our next frontiers. Our ability to distribute and optimize the Xbox Game Pass experience on those devices effectively represents a key lever in our ability to realize nonlinear growth. More specifically, we believe these devices will drive significant member growth for Xbox Game Pass across Horizons 2 and 3, as illustrated in Figure 3:

Figure 3: Illustrative Xbox Game Pass Subscriber Growth



Sections 2 and 3 of this paper focus on the opportunities and strategies for Windows 10 and mobile, and are the primary areas for discussion with the SLT.

⁷ Xbox telemetry, January 2020.

2 | Windows 10

2.

2.1. | Unlocking Nonlinear Growth via Windows 10

The more than [REDACTED] Windows 10 monthly active devices (MAD) represent an ideal onramp to acquire, engage, and retain Xbox Game Pass subscribers. Understanding our opportunity with Windows begins with a diagnostic review of the current Windows 10 MAD base. At the start of April 2020, there were just over [REDACTED] Windows 10 MAD with a PC or tablet form factor, including [REDACTED] [REDACTED] of total, consumer devices⁸. Those devices come in a range of configurations, shown in Figure 4 by approximate console computational equivalence⁹, with different levels of gaming penetration¹⁰.

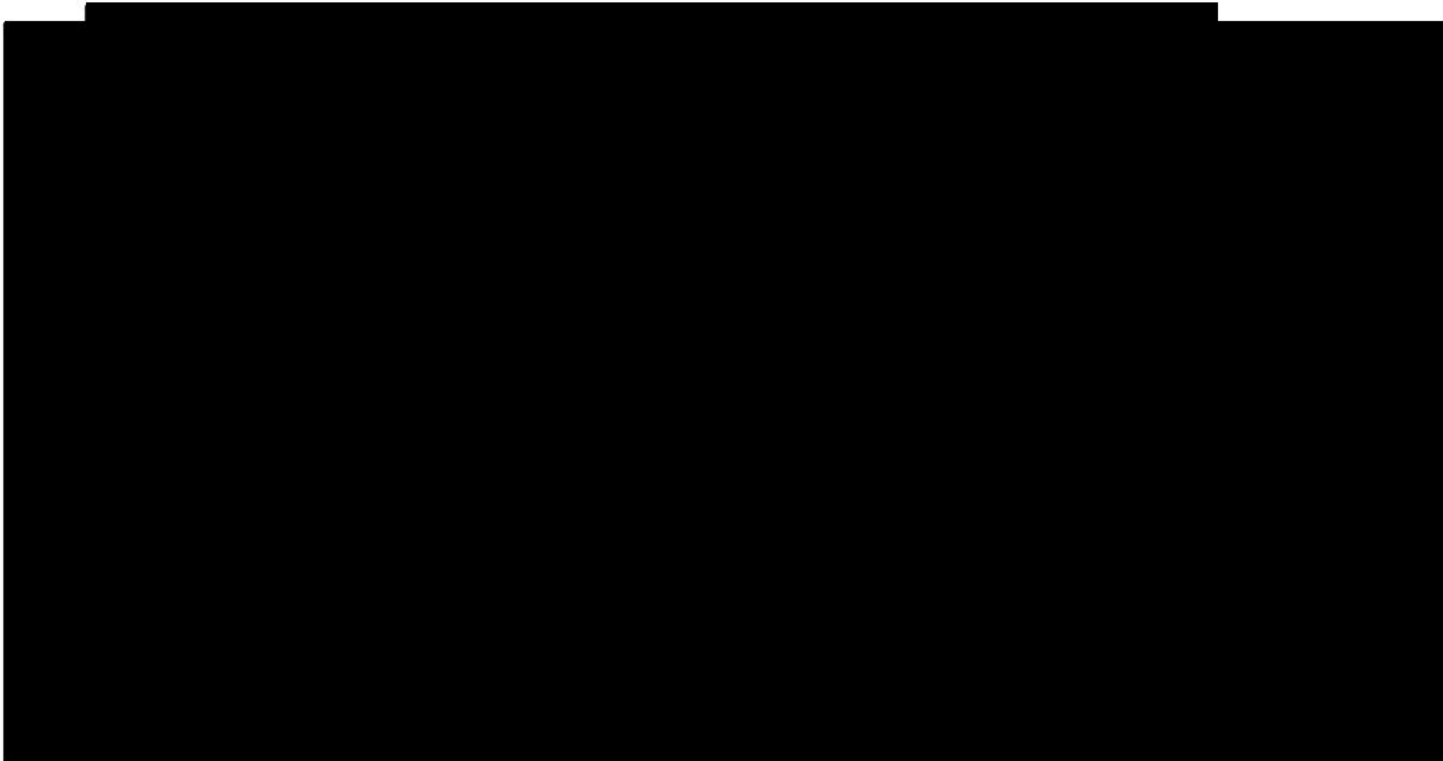


Figure 4 yields several important insights:

- There are nearly [REDACTED] Windows 10 MAD capable of playing high-fidelity games (i.e. Xbox One equivalent configurations and above) with high gaming penetration. Those machines see significant monthly gaming activity. Given the scale of the opportunity, the engagement

⁸ Totals per Windows 10 telemetry, April 10, 2020. Excludes console, IOT, phone, wearable, collaborative, and server form factors.

⁹ Allocation based on observed Q4 CY2019 cohort. Assumes unobserved devices have equivalent distribution.

¹⁰ Gaming penetration indicates that a device has executed at least one gaming executable ("EXE"), including games (e.g., *League of Legends*) and gaming services (e.g., Steam), in the prior 12 months.

profile of these devices, and the favorable economics of download-to-play, we believe addressing this base with download-to-play remains our proximate opportunity for Xbox Game Pass on Windows.

- There are more than [REDACTED] Windows 10 MAD with less robust machine configurations that are incapable of playing high-fidelity games at recommended settings. Gaming penetration and engagement are both lower for this base, a function of device limitations and differing customer preferences. For this audience, we hypothesize that there is latent gaming demand, best addressed through cloud streaming for the [REDACTED] machines with a less than Xbox 360 computational configuration, and through a mix of cloud streaming and download-to-play, of lower-fidelity games, of the [REDACTED] machines with an Xbox 360 computational configuration.

2.2. | For Discussion with the SLT: Our Windows 10 Plan for Xbox Game Pass

As discussed in our March 2019 Strategy Review with the SLT, our initial forays into PC gaming floundered because the services and experiences we delivered created problems for players instead of solving them. Memorably, this led to Microsoft being simultaneously “ubiquitous and irrelevant in PC gaming.” Conversely, Xbox Game Pass for PC creates value for players, by helping ease game discovery¹¹ and by providing an excellent cost-to-value exchange. Further, we have enhanced the PC player experience with innovations like Game Bar, which ease navigation and system control.

Xbox Game Pass launched on Windows in beta in June 2019 and currently enjoys more than 1 million monthly active users¹². The sentiment of our subscriber base is strong and strengthening, corroborating our product thesis. With this signal, we are marching toward general availability (GA) of Xbox Game Pass for PC, and we believe that Windows 10 can accelerate our growth, across both download-to-play and streaming. To summarize our plan:

Reach GA of Xbox Game Pass for PC

We are on-path to transition from beta to GA this year¹³. Doing so requires continued investment in:

- Content Onboarding. To reduce friction for developers porting their games from other platforms (e.g., Steam) to our own.
- Content Portfolio. To continue to bring game experiences relevant to PC players.
- Xbox Application. To improve performance by moving to React Native for Windows, remediate top customer issues (e.g., game installation times and reliability), and launch key engagement features (e.g., “Coming Soon/Leaving Soon”).

¹¹ To illustrate, Steam, the leading PC gaming store, has more than 20,000 titles with roughly 2/3 of revenue concentrated in just 5% of those games.

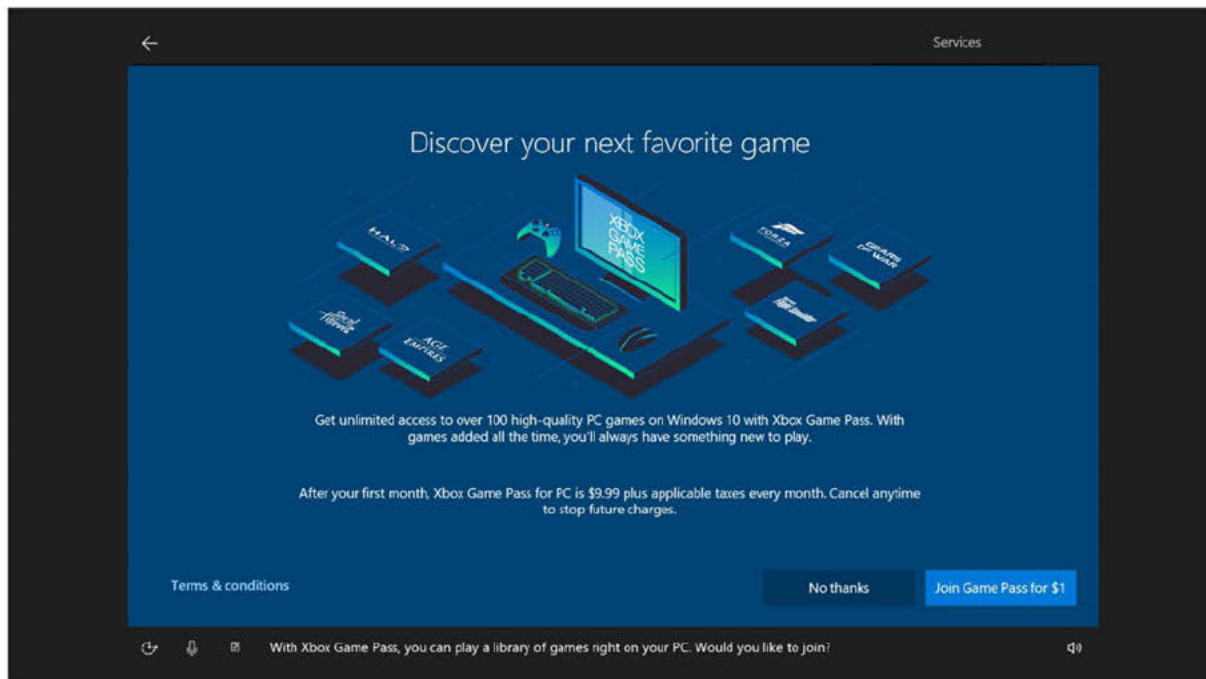
¹² Includes both PC-only members and Ultimate members, who play on PC.

Accelerate Xbox Game Pass When a Windows 10 Device is Purchased

With roughly [REDACTED] consumer Windows 10 machines sold annually by more than 500 OEM partners, device purchase and setup provide natural opportunities to accelerate Xbox Game Pass:

- OEM Bundling. Bundling Xbox Game Pass with a newly purchased Windows 10 device is logical and is analogous to our O365 motion. We currently have partnerships with 50+ OEM partners to bundle Xbox Game Pass.
- Out-of-Box-Experience (OOBE). PC players typically install several gaming-specific applications and services (e.g., Steam, Discord) after they complete the set-up of a Windows 10 machine. By giving users the opportunity to signal their intent to play games on their new machine, we can ease device set-up by including the option to install popular gaming applications during the Windows 10 OOBE. This both builds credibility with PC players and creates an onramp for Xbox Game Pass. Figure 5 illustrates a potential implementation.

Figure 5: Illustrative OOBE Implementation with Xbox Game Pass



Accelerate Xbox Game Pass Over a Windows 10 Device's Life

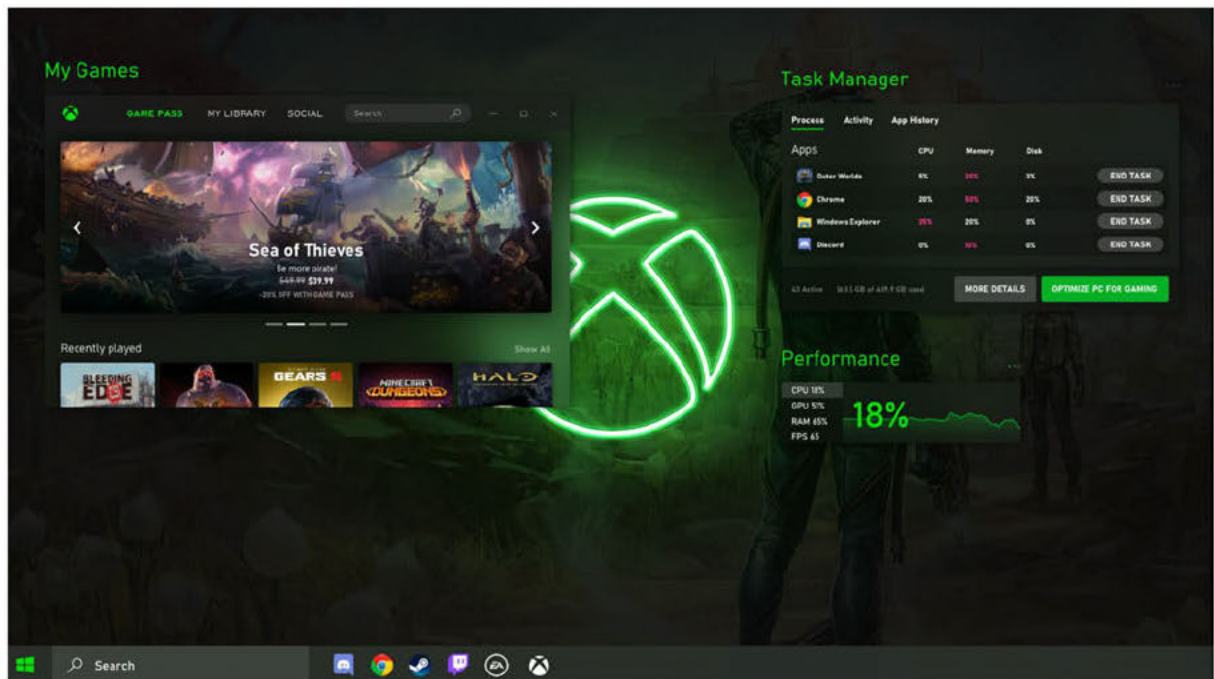
The active MAD base of Windows 10 devices also creates ongoing onramps for Xbox Game Pass:

- Personalization & Discovery (Telemetry). PC game stores are fragmented, requiring players to purchase games across multiple storefronts. Game discovery, particularly of longtail content, can be challenging. With Windows 10 telemetry, Microsoft is uniquely positioned to understand the individual gaming preferences of each player and recommend interesting content to them via Xbox Game Pass, including notifications directly from the Xbox

application. This is analogous to Netflix's well documented "Top Picks for You" recommendation motion. Telemetry opt-in is particularly important in this scenario.

- Broad Awareness (UX Defaults). The Windows UX provides multiple surface areas—including Start, Lock Screen, Wallpaper, etc.—to drive general awareness for Xbox Game Pass, especially when a user specifies their intent to use a device for gaming during the OOBE. To illustrate, Mixer was featured on Windows Spotlight for the month of March 2019, resulting in [REDACTED] viewers from Spotlight, roughly [REDACTED] of Mixer viewers that month.
- Windows Game Bar. An instance of Windows optimized for gaming has long been discussed. This is attractive to players because it more easily optimizes their hardware, creating a better gameplay experience. In this scenario, Game Bar is the natural navigation hub for players across games and services, creating valuable real estate for Xbox Game Pass. Figure 6 illustrates a potential implementation.

Figure 6: Illustrative Game Bar Implementation with Xbox Game Pass



Across each of these opportunities, we will continue to focus on creating value for PC players while also accelerating Xbox Game Pass.

3 | MOBILE

3.

3.1. | Unlocking Nonlinear Growth via iOS & Android

Mobile devices represent a significant growth vector for Xbox Game Pass, led by Apple and Google, which collectively control access to 4+ billion mobile endpoints with \$65+ billion¹⁴ in annual consumer spend on gaming in their mobile stores. To summarize:

Figure 7: iOS and Android Mobile Overview

	Mobile Device Installed Base ¹⁵	Consumer Spend on Gaming in Mobile Stores ¹⁶	Recognized Gaming Revenue by Mobile Stores	Gaming Share of Total Mobile Store Revenue
iOS	773 million	\$39 billion	\$12 billion	69%
Android	3,462 million	\$27 billion	\$8 billion	85%

Our initial approach for iOS and Android centered on a native application distributed through each platform's mobile store, as is typical. However, Apple and Google clearly recognize the financial and ecosystem importance of gaming and have put policies¹⁷ in place that impair our ability to distribute and operate xCloud via a native application in their mobile stores. Despite continued dialog, a resolution through commercial negotiations, or otherwise, does not appear imminent.

Beyond store impediments, we have found a native application to be suboptimal for several reasons:

- Challenging Economics. The 30% platform fee charged by both Apple and Google is particularly problematic in gaming, where more than 70%¹⁸ of industry revenues occur after a game is acquired (post-sale monetization, PSM). PSM is a critical component of Xbox Game Pass economics, made more difficult by platform fees.
- Fragmented User Experience: Each mobile ecosystem has slightly different characteristics, often compounded by different releases of the same OS. This makes delivering on Xbox

¹⁴ Note: the remaining Mobile software & services revenue in Figure 2 flows through stores not owned by Apple or Google, typically on Android devices. Example: Tencent's store in China.

¹⁵ Internal Microsoft estimates, Device Market Intelligence Team.

¹⁶ 2019, App Annie.

¹⁷ Both Apple and Google prohibit applications offering in-app purchases, requesting that every transaction take place over their store. Apple further limits the ability to offer games as part of a subscription and over cloud streaming.

¹⁸ Consensus analyst estimates and internal Microsoft analysis ("CY2019 Game Industry Sizing").

Game Pass' promise of a unified experience across devices challenging, particularly as we scale to non-application devices (e.g., set-top boxes).

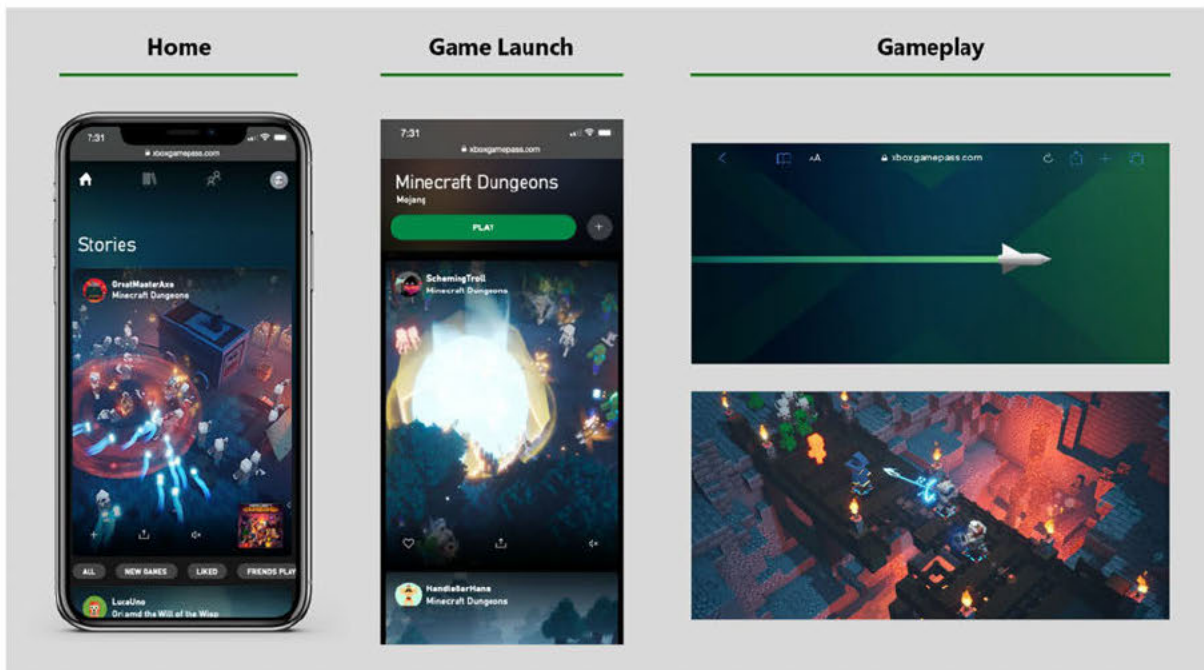
- Gated Distribution. The benefit of mobile store distribution is that it is a conditioned consumer behavior. However, the challenge with store is that it represents a single point of distribution and discovery is difficult given the sea of games available to players, especially when platform owners promote their own, competing offers.

For all these reasons, we have shifted our focus to delivering Xbox Game Pass as a unified browser-based application on iOS and Android, and beyond.

3.2. | For Discussion with the SLT: Our iOS & Android Plan for Xbox Game Pass

Our core thesis is that a browser-based experience closely approximates an application-based experience, and that the weight of our content portfolio is ultimately what attracts and engages players. This is certainly true on Windows, where several PC gaming stores operate at-scale due to the pull of their content. To illustrate a browser-based experience:

Figure 8: Illustrative Browser-based Experience on a Mobile Device



Beyond those points, a browser-based implementation is also advantageous because it addresses the challenges noted in Section 3.1, including:

- Improved economics, due to the inclusion of PSM with a more attractive marginal profile
- Consistent user experience across devices, including for the [REDACTED] Windows 10 machines with less robust configurations noted in Section 2.1

- Multi-pronged distribution, via owned and partner channels (e.g., Facebook)

Given the points above, we are focused on accelerating our browser-based efforts across multiple fronts, including:

- Distribution & Customer Acquisition. The advantage of a browser-based approach is that it opens new distribution channels and customer acquisition vehicles relative to an application distributed through a mobile store. Notably, we are in active discussions with mobile operators, mobile handset manufacturers, and social media firms on this topic.
- Accelerated Time-to-Market via M&A. We are actively investigating ways to accelerate our time-to-market via inorganic investments. Specifically, we are exploring the acquisition of Rainway, a technology-provider that would improve and expedite the delivery of a browser-based streaming service across devices.
- Network Effects in Gaming. Finally, network effects are pronounced in gaming, due to the inherently social nature of multiplayer gameplay¹⁹. Our success with Xbox Game Pass in other ecosystems, namely Xbox and Windows 10, will accrue value back to our efforts on mobile.

As a principle, we will continue to explore alternative means to bring Xbox Game Pass to iOS and Android devices, including through a native application distributed through a platform-owned mobile store, provided that we can deliver the complete Xbox Game Pass experience.

In parting, we believe that Microsoft's myriad of web properties (e.g., MSN, Bing, Edge, etc.) and first party hardware (Surface) provide meaningful opportunities to accelerate our browser-based strategy, both on mobile devices and beyond.

¹⁹ Gamers with friends are ~40% more likely to join multiplayer games than single-player games, based on Xbox data on Live users playing *Fortnite* and *Assassin's Creed: Odyssey* in the first 10 month after release. More generally, applications focused on allowing deep and sustained social interaction between users have been shown to exhibit strong network effects; for example, in the way gross revenues grow with the number of users. See research on the application of Metcalfe's law to the value of Facebook and Tencent: Zhang XZ, Liu JJ, Xu ZW, "Tencent and Facebook data validate Metcalfe's law", *Journal of Computer Science and Technology*, March 2015.

4 | CONCLUSION

4.

In summary, scaling Xbox Game Pass across devices is both core to our strategy and a primary opportunity for the Gaming CSA to realize nonlinear growth. Achieving our membership objectives requires that we succeed on devices beyond the console. We are convicted in our path forward and are focused on execution and acceleration. Further, we believe that being part of Microsoft uniquely positions us to succeed.

We look forward to discussing our Xbox Game Pass strategy for Windows 10, iOS, and Android—including how Microsoft can accelerate our ambition—with the SLT.