

EXHIBIT

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icrosoft has always been a PC software vendor since **1972**, but in **2001** they also released their first console. They joined the console market at a pretty rough period, being around some high competition against **Sony**, **Sega**, and **Nintendo**.

Despite the everlasting competition and several drawbacks, the Xbox brand managed to become a household name in gaming, worldwide. Microsoft has **sold over 150 million consoles** since.

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Xbox (2001)



CPU: Intel Pentium III – 733 MHz
GPU: NVIDIA NV2A – 233 MHz
Memory: 64 MB DDR SDRAM
Hard Drive: 8 GB HDD
Optical Drive: CD Rom, DVD Rom
Video Output: S-Video, SCART (RGB)
Network: Fast Ethernet
Audio: 5.1 Surround Sound, Stereo

Release Date: November 15, 2001
Code Name: DirectX Box
Generation: First
Status: Discontinued
Release Price: \$299
Units Sold: 24+ million (as of May 10, 2006)
Best-selling Game: Halo 2. 8 million

You can still buy the original Xbox from Amazon.

The original Xbox, Microsoft debuted in the home console gaming market, with a characteristic big size in black and green colors, was released on **November 15, 2001**. At the time, the sixth-generation console market was overwhelmed by **PlayStation 2**, **GameCube** and **Dreamcast**, leading Microsoft to rise through a very competitive marketplace, and people were wondering if the Xbox console would be an expensive mistake. They proved everyone wrong by **selling 550,000 units of hardware in its first week**.

The console's prototype was put together at first as a side project, using **Dell** laptop parts and then Microsoft decided to redesign it. This led Xbox to use the **PC's x86 architecture**, a build that was very rare for a console at the time. Microsoft engineers originally called the console "**DirectX Box**", named after the **DirectX graphics technology**, that was developed for PC gaming and later was shortened to Xbox.

Xbox was the first console to have a **built-in Ethernet port**, combined with a **broadband connection**. It was the time were Xbox Live launched and Microsoft offered to players a unique, steady and reliable online experience, but only with a subscription.

One of the biggest hits for Xbox was **Halo**, a science fiction first-person shooter game, developed by **Bungie**, with smooth and balanced gameplay followed with its sequel in 2004 were more-than-enough reasons to buy an Xbox. Many other exclusive titles followed like **Ninja Gaiden**, **Fable** and **Tom Clancy's Splinter Cell: Chaos Theory**, which helped a lot the franchise to succeed.

Xbox 360 (2005)



CPU: Microsoft XCPU (Xenon), 3 cores – 500 MHz

GPU: R500, Xenos chip by ATI – 500 MHz

Memory: 512 MB GDDR3 RAM

Hard Drive: 250 GB HDD

Optical Drive: 12x DVD

Video Output: HDMI 1.2a in/out

Network: Ethernet, IEEE 802.11 b/g/n Wi-Fi

Audio: Multichannel 5.1 Surround Sound

Release Date: November 22, 2005

Code Name: Xenon

Generation: Second

Status: Discontinued

Release Price: \$399

Units Sold: 84 million (as of June 9, 2014)

Best-selling Game: Call of Duty: Modern Warfare 3, 14.23 million

You can still buy the original Xbox 360 from Amazon.

The seventh-generation came in **2005**, with Sega out of the hardware market, and now the market is all about the-all-known-three companies, Sony, Nintendo, and Microsoft. Each company released their consoles based on various strategies to attract the gamer.

The early builds of the **Xbox 360** had many hardware failures caused by **overheating**. The three flashing red lights and the well known **Red Ring of Death** was a common inconvenience for the owners. These early models forced Microsoft to repair and replace every system and even extend the consoles' warranties for all of the issues.

A series of massive exclusive hit titles like *Crackdown*, *Gears of War*, *Dead Rising* and *Mass Effect* helped to keep the people loyal on the console. The Xbox Live service and its subscription were expanded, redesigned and contained most of the Xbox 360's console bundles, but the prices were aggressively high. That was a big disadvantage for Microsoft, especially when Sony announced that their players can enjoy the online experience without paying any subscription.

Microsoft redesigned Xbox 360's hardware several times, alongside it with a bunch of peripherals like the **redesigned wireless controller and headset** followed by one of the biggest Microsoft's releases, the **Kinect**. A device that is based on the webcam-style add-on peripheral, enabling users to control and interact with their console using gestures and voice commands.

Xbox 360 S (2010)



CPU/GPU: Custom ATI-designed, combo single chip

Memory: 512 MB of GDDR3 RAM

Hard Drive: 250 GB HDD

Optical Drive: DVD

Video Output: HDMI 1.2a in/out

Network: 802.11b/g/n, Fast Ethernet

Audio: 5.1 Channel Surround Sound

Release Date: June 14, 2010

Generation: Second

Status: Discontinued

Release Price: \$299

On June 14, 2010, Microsoft released a new and redesigned slim model of **Xbox 360**. A slim, lighter and freshly looking design with a glossy black finish and a smaller power brick were more than enough for players to give a second chance on the Xbox 360 brand.

The S model was built with a more powerful processor and motherboard in order to **reduce the hardware failures** and thermals issues that the original Xbox 360 had. The console was replaced

with physical power and eject buttons with touch-system and offered **HD-DVD drive, Ethernet, WiFi connection and two additional USB ports.**

Xbox 360 E (2013)



CPU: IBM custom designed Xenon – 3 cores

GPU: ATI Xenos – 10 MB eDRAM

Memory: 512 MB GDDR3 RAM

Hard Drive: 250 GB HDD 2.5' SATA

Optical Drive: HD DVD

Video Output: HDMI, Up to 1080p

Network: 802.11b/g/n, Fast Ethernet

Audio: Dolby Digital 5.1 Surround Sound

Release Date: June 10, 2013

Generation: Second

Status: Discontinued

Release Price: \$199

You can still buy Xbox 360 E from Amazon.

The last version of Xbox 360 was released by Microsoft on **June 10 of 2013**. The **Xbox 360 E** was slightly smaller, lighter and quieter than the S model, and it was built for players who were unwilling to spend money for the upcoming Xbox One. The design is similar to the Xbox One console with its inter-cooler design, the black matte color, and the gloss finish.

The designers rolled back to the physical power and eject buttons and removed the **AV connector** making it an **HDMI** only video connection. The Xbox 360 E model also offered **two USB ports**, **Ethernet**, **WiFi** support and a **Kinect port**.

Xbox One (2013)



CPU: AMD 8 Core APU – 1.75 GHz
GPU: AMD RadeonGCN architecture, 853 MHz
Memory: 8 GB DDR3
Hard Drive: 500 GB HDD
Optical Drive: Blu-Ray/DVD
Video Output: HDMI 1.4 in/out, 4K support
Network: Gigabit Ethernet, WiFi
Audio: 7,1 Surround Sound

Release Date: November 22, 2013

Code Name: Durango

Generation: Third

Status: Discontinued

Release Price: \$499

Units Sold: 39.1 million (as of March, 2018)

Best-selling Game: Call of Duty: Black Ops III, 7.24 million (as of October 16, 2016)

You can still buy the original Xbox One from Amazon.

On **November 22 of 2013**, Microsoft released the next Xbox console that introduced us to the next generation. The **Xbox One** was promoted by Microsoft with an increasing emphasis on the Kinect system, and television integration within the built-in apps and voice commands.

The Xbox One rolled back to the *PC's x86* architecture set, using **AMD'S custom Jaguar accelerated processing unit**, which features two quad-core modules capped at *1.75GHz*. The system uses **AMD's Radeon HD 7000** series graphics card in order to be capable of running at *4K* resolution with *7.1* surround sound. The console is also able to monitor internal temperatures and adjusting the cooling where necessary.

In **June 2015**, Microsoft offered to the players backward compatibility with numerous Xbox 360 titles via software emulation. As of the Xbox original titles, in **2017** at **E3 Microsoft** announced that the Xbox One will support them as well.

Some of the best exclusive titles of Xbox One that kept the sale numbers high at the time was *Titanfall*, *Dead Rising 3* and *Forza Motorsport 5*. As of today, the Xbox One is still second in place with **40 million** consoles sold behind Sony's PS4, which has shipped over **90 million** consoles worldwide.

Xbox One S (2016)



CPU: AMD 8-core APU (2 quad-core Jaguar modules)

GPU: AMD Radeon 914 MHz

Memory: 8 GB DDR3

Hard Drive: 1TB HDD

Optical Drive: UHD Blu-ray, DVD

Video Output: HDMI 2.0 in/out, 4K support

Network: Wi-Fi, IEEE 802.11n, Ethernet

Audio: 7.1 Surround Sound

Release Date: August 2, 2016

Generation: Third

Status: Released

Release Price: \$299

Units Sold: N/A

You can buy Xbox One S from Amazon.

The **Xbox One S** was released on **August 2, 2016**. The console was redesigned to be 40% smaller than any previous model without having a power brick. With a white aesthetic look coupled with

minimal black accents, physical power, and eject buttons.

The Xbox One S adds the high-dynamic range (**HDR**) support in the system for TV streaming and not for gaming along with a **4K Blu-ray drive**. The console runs the games up-scaled to 4K but it's not giving the true 4K detailed experience as the **Xbox One X** does. The console's GPU received a 70% boost up to *914MHz* and hard drive sizes moved up to *1* and *2TB*.

A new controller came with the release of the Xbox One S console with a new extended **Bluetooth** support and a textured grip for comfy handle. In **2017** the Xbox Design Lab came up on the Xbox official site which allows you to create and customize a controller with the design and colors of your own taste.

While the Kinect made a huge success on the Xbox 360 consoles, the numbers fell down dramatically over the years. Microsoft decided to stop manufacturing Kinect back in **October of 2017**.

Xbox One X (2017)



CPU: AMD 8-core APU – 2.3 GHz

GPU: AMD RadeonGCN architecture 1.172 GHz

Memory: 12 GB GDDR5

Hard Drive: 2TB HDD

Optical Drive: UHD Blu-ray, DVD
Video Output: HDMI 2.0b in/out, 4K support
Network: Wi-Fi IEEE 802.11n, Ethernet
Audio: 7.1 Surround Sound

Release Date: November 7, 2017
Code name: Scorpio
Generation: Third
Release Price: \$499
Status: Released
Units Sold: N/A

You can buy Xbox One X from Amazon.

The **Xbox One X** was released on **November 7 of 2017**. This is the first Xbox console that offers a realistic *4K* gaming, running on *60 FPS*, being capable of delivering six teraflops of performance and still run the same games and software as the already existing Xbox One systems do.

In terms of design, the Xbox One X has a slick minimal design with pure matte black color, looking similar to the Xbox One S but a lot smaller making it the smallest Xbox console ever released. The console uses an **8 core AMD processor** at *2.3GHz* and a *12GB* of shared **GDDR5 Ram**. As for its *GPU*, **AMD's Radeon** graphics card is used again with the **Polaris** architecture, capped at *1172MHz*.

The console was made for *4K* enthusiasts, with its high-end specs and what's its capable of, but Microsoft made it clear that the Xbox One X is able to expand gaming for those who don't own ultra high definition displays too. The console has also backward compatibility with all the Xbox One titles ever released.