



Apple – continues to sharpen the strength of ecosystem

Figure 1: major launches at WWDC2015-2020

	2015	2016	2017	2018	2019	2020
Software	iOS 9 OS X watchOS 2	iOS 10 macOS Sierra watchOS 3 tvOS 10	iOS 11 macOS High Sierra watchOS 4 tvOS 11	iOS 12 macOS Mojave watchOS 5 tvOS 12	iOS 13 New iPadOS 13 macOS Catalina watchOS 6 tvOS 13	iOS 14 iPadOS 14 macOS Big Sur watchOS 7 tvOS 14
Hardware			New macs HomePod		New Mac Pro	Apple Silicon Chips
Applications	Apple Music	Open Siri to 3 rd parties SmartHome		ARKit2.0	ARKit3.0 iTunes spun out into Music, TV, and Podcasts	

Source: WWDC, AMTD Research

AMTD views: Beginning in 1987, the Apple WWDC is a conference annually held to showcase its new software and technologies. WWDC 2020 (22 June to 26 June) was held online for the first-time due to the COVID-19 pandemic. Apart from regular new software releases for its devices, including iPhone, iPad, Apple Watch, TV, and Mac, the major milestone was Apple's announcement of switch to ARM-based Macs. Since ARM has been successfully used in iPad Pro to meet demands of CPU-/GPU-intensive workloads, Apple can scale-up ARM to meet the same or more intensive workloads on Macs. In addition, ARM also allows Macs to run apps seamlessly from iPhone & iPad platforms, which cannot be realized in an INTC/x86-based PC system. Apple's move to ARM-based Macs is motivated by its long-term desire to fully integrate the entire software and hardware ecosystem, which is Apple's key competitive edge over other PC/smartphone/software competitors, in our view.

AMTD Research
Brian Li
 +852 3163-3384
 brian.li@amtdgroup.com



AMTD Research
Halsey Wu
 +852 3163-3220
 halsey.wu@amtdgroup.com

Smartphone

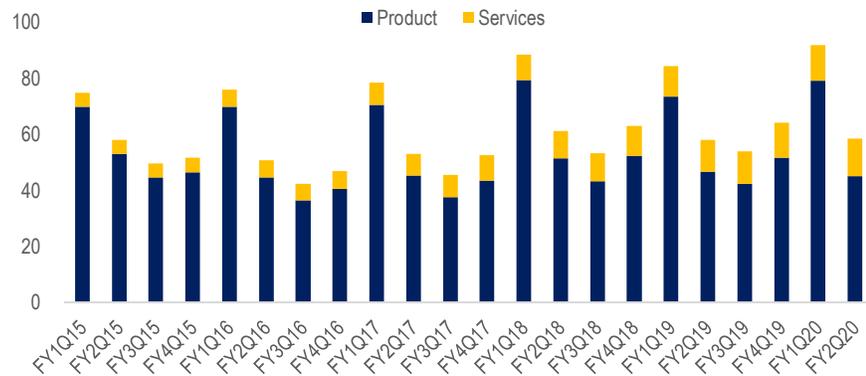
Apple

Expected to meet its long-standing goal of doubling FY16 Services revenue in FY20

Apple's services revenue reached a new all-time record of US\$13.3bn in FY2Q20, up 17% YoY. App Store revenue grew by double digits, thanks to robust customer demand for both in-app purchases and subscriptions. Apple Music and cloud services both set all-time revenue records, and Apple Care set a March quarter record. Paid subscriptions for all three of these services were up double digits. We believe Apple is on track to accomplish its long-standing goal of doubling FY16 services revenue of US\$24.3bn in FY20.

For App Store, according to the data released by Apple on 8 Jan 2020, Apple has paid approximately US\$155bn to developers since 2008, up from US\$120bn disclosed in Jan 2019. Assuming 30% of take rate, App store generated about US\$15bn in revenue for Apple, accounting for approximately 30% of Apple's service revenue of US\$46.2bn in FY19. In addition, revenue from games is still main source of App store revenue and revenues from China market and US market are roughly equal.

Figure 2: Apple's revenue (US\$ bn) breakdown by type

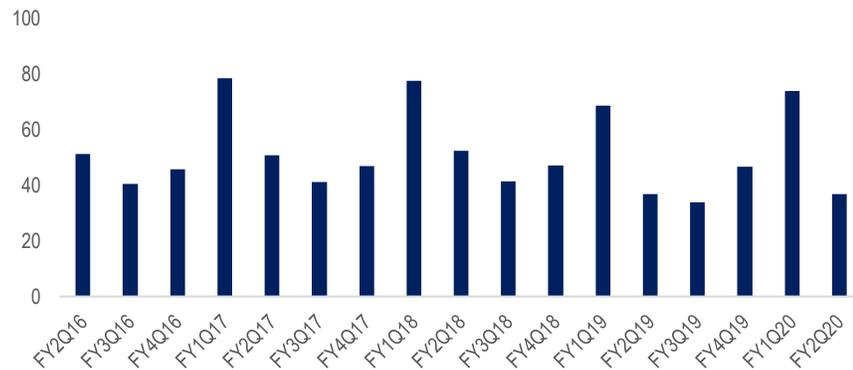


Source: Apple, AMTD Research

Large and growing iPhone installed base fuels the development of Apple ecosystem

Since shipment reached a record high of 231mn units in 2015, iPhone shipment growth has been hovering at a low level. According to IDC, iPhone shipment was 36.7mn units in FY2Q20 (CY1Q20), flat YoY. The introduction of the lower-priced iPhone SE and modest pricing strategy offset the impact of COVID-19. Based on the data of iPhone installed base of 900mn units released by CFO Luca Maestri in Jan 2019, we estimate that as of now, the number of iPhone installed base may be close to 1bn units. Despite slowing shipment growth, the large and growing installed base has led to increasing traffic to Apple's app store, which laid the foundation for its ecosystem development.

Figure 3: iPhone's shipment (mn units)



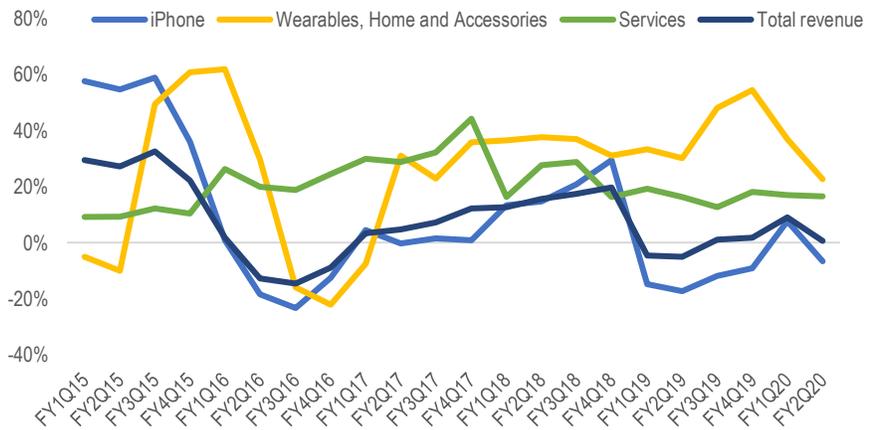
Source: Apple, AMTD Research

Evolving H/W & S/W will continue to sharpen the strength of Apple ecosystem

Apple continues its effort in developing new hardware, namely Apple Watch in 2015, AirPods in 2016, HomePod in 2017, and new technologies, namely Apple Pay in 2014, Siri in 2016, AR in 2017, new iPadOS in 2019, to drive the innovation in different application fields, including health, smart home, autonomous.

For example, Wearables, Home and Accessories achieved a new record in FY2Q20, with revenue of US\$6.3bn, up 23% YoY. Apple Watch continues to extend its reach as over 75% of the customers purchasing Apple Watch during the quarter were new buyers. According to Strategy Analysis, Apple Watch shipment accounted for 55.5% of total global smart watch shipment in CY1Q20. In addition, as production capabilities have largely returned to normal given that COVID-19 was under the control, Apple is expected to launch its first 5G smartphone as planned this fall. Today, Apple has transformed from a traditional hardware company to a hardware-based service ecosystem company and services has become a major driver for its long-term growth, in our view.

Figure 4: Apple's revenue growth, YoY, by segment



Source: Apple, AMTD Research

News update

24 June 2020

Cloud/IaaS

Amazon

AWS launched Amazon Honeycode for code-free app building

AWS announced Honeycode, a service that helps customers to build apps quickly without worries about any coding. Honeycode includes a visual interface that people can use to build applications for a variety of purposes, including scheduling managing tasks and tracking customers. The idea is to enable more and more businesses to build and access cloud-based services to help navigate a more digital future. (Source: [Amazon](#))

24 June 2020

5G

China Big 3

China Big 3 reduced 5G tariffs, priced starting at RMB69 per month

Prices have been coming down fast, with China Mobile now selling its entry level 5G package for just RMB69 a month. As more people choose to use 5G packages, the Chinese market may witness the first wave of 5G consumption, which will stimulate more developers to launch 5G applications and speed up maturity of 5G industrial chain. (Source: [Aastock](#))

23 June 2020

AI/Automated Driving

NVIDIA

Mercedes-Benz and NVIDIA to be reinventing automotive business model

Mercedes-Benz and NVIDIA planned to enter into a cooperation to create a revolutionary in-vehicle computing system and AI computing infrastructure. Starting in 2024, this will be rolled out across the fleet of next-generation Mercedes-Benz vehicles, enabling them with upgradable automated driving functions. (Source: [Nvidia](#))

22 June 2020

Cloud/IaaS

Tencent/Inspur

Tencent Cloud to launch the first 4-way "Star Lake" server

Tencent Cloud will launch the first 4-way "Star Lake" server, which is self-designed by Tencent and is jointly developed with Inspur. The server will be equipped with four latest-generation Cooper Lake CPUs that are deeply customized by Tencent Cloud and Intel, which will increase the density of cloud server instances by 116%, meeting users' demand in different application scenarios. (Source: [TencentCloud](#))

22 June 2020

Semiconductor

TSMC

TSMC has increased Nanke 18 plant's capacity of 5 nm to 60,000 pieces/m

Qualcomm's most advanced Snapdragon 875 and X60 5G modem were officially put into production at TSMCs No. 18 plant, which uses 5nm. Therefore, TSMC has increased its production capacity of 5nm of Nanke No.18 plant to 60,000 pieces per month. Based on the investment schedule, the two latest chips are expected to be delivered in September. (Source: [Techweb](#))

19 June 2020

Cloud/IaaS

Baidu

Baidu to expect to have more than 5 million intelligent cloud servers by 2030

Baidu announced massive plans to increase its investment in AI, cloud computing, data centers and chips over the next decade. A major goal of Baidu's plan is expected to have more than 5 million intelligent cloud servers by 2030, by which time China aims to become a global leader in AI. Baidu also plans to train 5 million AI experts in the next five years. (Source: [Baidu](#))

19 June 2020

Cloud/AI

Microsoft/ADRM

Microsoft acquired data model provider ADRM

Microsoft announced the acquisition of ADRM Software, a leading provider of large-scale industry data models, which are used by large companies worldwide as information blueprints. ADRM's robust industry data models have been built and refined over decades for business-critical analytics. (Source: [Microsoft](#))

19 June 2020

Semiconductor

TSMC

TSMC to start A14 chip production for next-gen iPhones

TSMC will enter production using 5nm process technology later in June for Apple's custom-designed A14 processor and Qualcomm's Snapdragon X60 modem, with both set to power the upcoming 5G iPhones to be launch later in 2020. The Snapdragon X60 is the world's first 5G FDD-TDD sub-6 carrier aggregation solution, supporting both millimeter wave and Sub-6. (Source: [Digitimes](#))

18 June 2020

Devices

Huawei

Honor Router 3 topped in 6.18 online shopping festival

The sales of Honor router products exceeded 10,000 in 45 seconds. Honor Router 3 ranked the first among JD, Tmall and Suning during 6.18 online shopping festival. As the brand's first Wi-Fi 6+ router, Honor Router 3 is only priced at RMB199. (Source: [Honor](#))

17 June 2020

Semiconductor

Qualcomm

Qualcomm launched world's first 5G and AI-enabled robotics platform – RB5

Qualcomm announced the Qualcomm® Robotics RB5 platform. Building on the successful Qualcomm® Robotics RB3 platform and its broad adoption in a wide array of robotics and drone products available today, the Qualcomm Robotics RB5 platform is comprised of an extensive set of hardware, software and development tools. The platform's Qualcomm QRB5165 processor, customized for robotics applications, offers a powerful heterogeneous computing architecture for running complex AI and deep learning workloads. (Source: [Qualcomm](#))

17 June 2020

Smartwatch

Worldwide smartwatch shipments grew 12% YoY to 14.3 million in CY1Q20

Worldwide smartwatch shipments reached 14.3 million units in 1Q20, up 12% YoY. Apple and Huawei took the first and second place, shipping 5.2 million and 2.1 million units respectively. China smartwatch shipments grew 66% YOY in Q120. China is expected to be a huge driver in smartwatch shipment growth for the rest of 2020, as the country improves its nationwide eSIM coverage. (Source: [Canalys](#))

17 June 2020

Smartphone

Apple

Apple App Store spurred US\$519 billion in sales last year

Apple announced its App Store facilitated sales of US\$519 billion last year. According to Analysis Group, the estimate included US\$413 billion worth of physical goods and services such as apps for buying clothes, food, ride-sharing and travel. China and USA ranked first and second with US\$246 billion and US\$137 billion, respectively. (Source: [EEworld](#))

16 June 2020

Semiconductor

Qualcomm

Qualcomm launched new Snapdragon 690 processor

Qualcomm launched its next 5G chipset, the Snapdragon 690, the first product in its 6-series chipset. The new chipset, adopted 8nm process and delivered X51 modem, is considered a successor to Snapdragon 675. The 690 chips will be put into smartphones that will sell for a lower price. Devices based on Snapdragon 690 are expected to be commercially available in the second half of 2020. (Source: [Qualcomm](#))

15 June 2020

Cloud/AI

Microsoft/SAS

SAS and Microsoft partnered to integrate AI and analytics

Microsoft and SAS, the privately held enterprise data management and analytics company, announced a far-reaching partnership that will see Microsoft's Azure become SAS's preferred cloud, and deep integrations of SAS's various products into Microsoft's cloud portfolio, ranging from Azure to Dynamics 365 and PowerBI. The two companies also plan to launch new joint solutions for their customers. (Source: [Microsoft](#))

15 June 2020

Cloud

Tencent/Unity

Unity partnered with Tencent Cloud to launch Unity Connected Games

Tencent Cloud and Unity launched Unity Connected Games, an online game development platform providing online game services, multiplayer networking services and developer services. Unity Connected Games will help game developers quickly build and iterate multiplayer games, as well as optimize player experience by offering a professional colocation centre and in-game voice services. (Source: [Pandaily](#))

15 June 2020

Semiconductor

Nokia/Broadcom

Nokia expanded 5G ReefShark chipset portfolio with Broadcom collaboration

Nokia and Broadcom announced that they were collaborating on the development of advanced semiconductor technologies, including new custom system-on-chip (SoC) processors, which will be integrated into Nokia's "5G Powered by ReefShark" portfolio. The collaboration further expanded the range of Nokia ReefShark chipsets available for 5G solutions and will improve both the system performance and energy footprint of 5G networks. (Source: [Nokia](#))

10 June 2020

Semiconductor

Intel

Intel launched Lakefield hybrid CPUs with Foveros 3D stacking

Intel launched Intel® Core™ processors with Intel® Hybrid Technology, code-named "Lakefield." Leveraging Intel's Foveros 3D packaging technology and featuring a hybrid CPU architecture for power and performance scalability, Lakefield processors are the smallest to deliver Intel Core performance and full Windows compatibility. Besides, both CPUs, a Core i5 and Core i3, have a 10nm single Sunny Cove core for heavier workloads and four low-power Tremont cores for background tasks that are less intensive. (Source: [Intel](#))

10 June 2020

Smartphone

Apple

Apple is exploring plans for a foldable iPhone

Apple is said to work on a foldable iPhone prototype that features two separate display panels that are connected by a hinge and while there is no notch, Apple has added a "tiny forehead" that houses Face ID. Besides, GaAs wafer foundry Win Semiconductors reportedly has landed orders for processing VCSEL chips since June to support 3D sensors and ToF (time of flight) camera solutions for the new iPhone devices. (Source: [Patently Apple](#))

IMPORTANT DISCLOSURES

Analyst Certification

We, Brian Li and Halsey Wu, hereby certify that (i) all of the views expressed in this research report reflect accurately our personal views about the subject companies and their securities; and (ii) no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed by us in this research report, nor is it tied to any specific investment banking transactions performed by AMTD Global Markets Limited.

As of the date the report is published, Brian Li holds financial interest in the securities of Amazon mentioned in the report.

AMTD Global Markets Limited

Address: 23/F - 25/F, Nexxus Building, 41 Connaught Road Central, Hong Kong

Tel: (852) 3163-3288 **Fax:** (852) 3163-3289

GENERAL DISCLOSURES

The research report is prepared by AMTD Global Markets Limited and is distributed to its selected clients.

This research report provides general information only and is not to be construed as an offer to sell or a solicitation of an offer to buy any security in any jurisdiction where such offer or solicitation would be illegal. It does not (i) constitute a personal advice or recommendation, including but not limited to accounting, legal or tax advice, or investment recommendations; or (ii) take into account any specific clients' particular needs, investment objectives and financial situation. AMTD does not act as an adviser and it accepts no fiduciary responsibility or liability for any financial or other consequences. This research report should not be taken in substitution for judgment to be exercised by clients. Clients should consider if any information, advice or recommendation in this research report is suitable for their particular circumstances and seek legal or professional advice, if appropriate.

This research report is based on information from sources that we considered reliable. We do not warrant its completeness or accuracy except with respect to any disclosures relative to AMTD and/or its affiliates. The value or price of investments referred to in this research report and the return from them may fluctuate. Past performance is not reliable indicator to future performance. Future returns are not guaranteed and a loss of original capital may occur.

The facts, estimates, opinions, forecasts and any other information contained in the research report are as of the date hereof and are subject to change without prior notification. AMTD, its group companies, or any of its or their directors or employees ("AMTD Group") do not represent or warrant, expressly or impliedly, that the information contained in the research report is correct, accurate or complete and it should not be relied upon. AMTD Group will accept no responsibilities or liabilities whatsoever for any use of or reliance upon the research report and its contents.

This research report may contain information from third parties, such as credit ratings from credit ratings agencies. The reproduction and redistribution of the third party content in any form by any mean is forbidden except with prior written consent from the relevant third party. Third party content providers do not guarantee the timeliness, completeness, accuracy or availability of any information. They are not responsible for any errors or omissions, regardless of the cause, or for the results obtained from the use of such content. Third party content providers give no express or implied warranties, including, but not limited to, any warranties of merchantability of fitness for a particular purpose or use. Third party content providers shall not be liable for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including lost income or profits and opportunity costs) in connection with any use of their content. Credit ratings are statements of opinions and are not statements of fact or recommendations to purchase, hold or sell securities. They do not address the suitability of securities for investment purposes, and should not be relied on as investment advice.

To the extent allowed by relevant and applicable law and/or regulation: (i) AMTD, and/or its directors and employees may deal as principal or agent, or buy or sell, or have long or short positions in, the securities or other instruments based thereon, of issuers or securities mentioned herein; (ii) AMTD may take part or make investment in financing transactions with, or provide other services to or solicit business from issuer(s) of the securities mentioned in the research report; (iii) AMTD may make a market in the securities in respect of the issuer mentioned in the research report; (iv) AMTD may have served as manager or co-manager of a public offering of securities for, or currently may make a primary market in issues of, any or all of the entities mentioned in this research report or may be providing, or have provided within the previous 12 months, other investment banking services, or investment services in relation to the investment concerned or a related investment.

AMTD controls information flow and manages conflicts of interest through its compliance policies and procedures (such as, Chinese Wall maintenance and staff dealing monitoring).

The research report is strictly confidential to the recipient. No part of this research report may be reproduced or redistributed in any form by any mean to any other person without the prior written consent of AMTD Global Markets Limited.