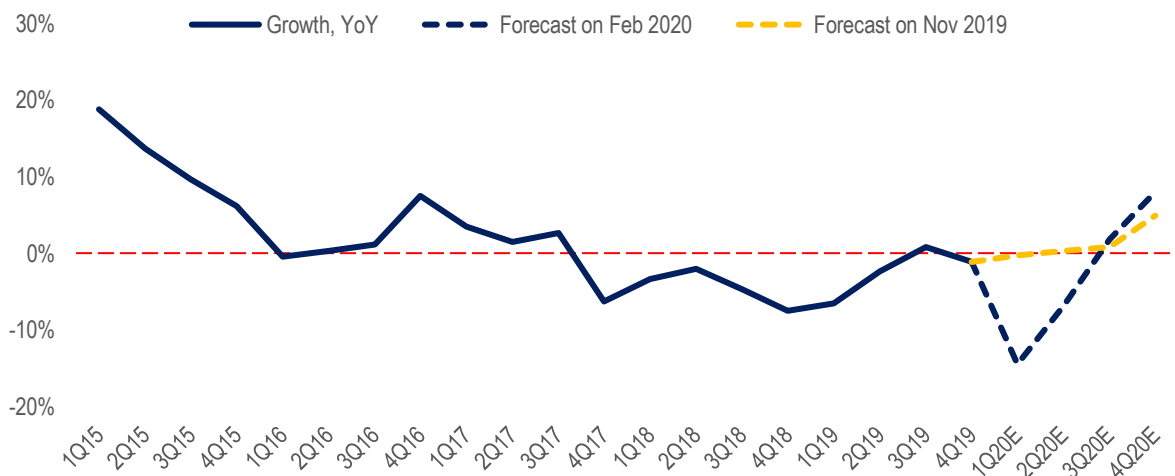




Smartphone – weaker demand becomes a new concern after supply chain disruption

Figure 1: shipment forecast adjustment to COVID-19 outbreak by IDC



Source: IDC, AMTD Research

AMTD views: According to the latest forecast from IDC on Feb 2020, the global smartphone shipment was expected to decline by 14.5% YoY and 2.3% in Q1 2020 and full year of 2020, respectively. Although this forecast has been significantly lower than its previous one on Nov 2019, we are still relatively cautious about this forecast. Before March, people focused on the impact on smartphone supply chain due to the outbreak in China, but now, global demand weakening could be another concern as this epidemic broke out outside China and more countries and regions have adopted strict travel restrictions. Although supply chain has begun to recover slowly, the rebound in sales could come later than previously expected, which will inevitably dampen the outlook for global smartphone shipment this year. If the virus will be contained in March/April, we expect the global smartphone shipment would down 5% YoY this year, but if the epidemic goes beyond April/May, the shipment could decline even more, in our view.

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Smartphone

Shipment

iPhone – new products launches may be delayed

One month ago, Apple said it would miss F2Q20 revenue target due to COVID-19 impact. In fact, the previous wider second quarter revenue guidance of US\$63-67bn did take the virus impact into account, however, the recent announcement hinted the impact might be deeper than expected. The launch of its new and more affordable iPhone (SE2) would be delayed to next quarter and new 5G iPhone scheduled for Sep might be delayed slightly as well due to production ramp-up after COVID-19 outbreak. In general, we still cautiously optimistic about the outlook for iPhone sales this year, as Chinese brands' price attractions are fading, Apple's unique ecosystem will attract its loyal customers to replace their old iPhones with new offerings. Separately, due to the COVID-19 impact, Apple announced on 13 March that it will shift WWDC 2020 to online.

Samsung – production activities returned to normal

Samsung led the global smartphone shipment in 2019. But entering 2020, Samsung has been inevitably affected by COVID-19 as well. Its employees confirmed infected with coronavirus led to the factory shutdown in South Korea, and Vietnam's travel ban also disrupted its supply chain and production. Samsung launched Galaxy S20 and Z Flip under shadow of coronavirus last month, and the S20 sales was just 70k units on the first day of launch, half that of its predecessor S10. Disappointed S20 sales blamed on coronavirus and steep increase in prices, but the highlight was that for the first time ever for a Samsung flagship smartphone, every device in the Galaxy S20 series comes equipped with the latest 5G technology. As coronavirus has peaked and been under control in South Korea, the production activities have returned to normal while demand risks are emerging.

Huawei – focus on inventory reduction

According to The Information, Huawei projected its full year smartphone shipments will decline 20% in 2020, mainly due to GSM sanctions. Since the fourth quarter of last year, Huawei cut prices for its smartphone given the softened sales, in particular, in overseas market. In addition, coupled with COVID-19 impact this quarter, Huawei's inventory pressure was piling up, which also raised concerns about order cut risks for TSMC. In response to sanctions, Huawei has introduced HMS (Huawei Mobile Services) last month in hope of replacing GSM. HMS will come with its new flagship P40, which will be launched online on 26 March due to COVID-19 impact.

Xiaomi – led by 5G

According to IDC, Xiaomi smartphone shipment was 32.8mn units in 4Q19, up 31.1% YoY, the strongest quarter since Q2 2018. Xiaomi continues to see demand strength in overseas market, in particular, in Europe. In India, in response to stiff competition from Realme and Samsung, Xiaomi announced in Jan to spin-off POCO as an independent brand, hoping to seize more market share. In 5G market, Xiaomi had launched the most affordable 5G smartphone last Dec and just launched 5G version in its flagship Mi10. Given that more 5G models will be launched this year, we expect total revenue from smartphone will grow by 18-20%, among which about 10% growth will come from ASP hike. On the other hand, as COVID-19 has hit the global market, uncertainties are still around. Nevertheless, Xiaomi's production is gradually ramping up and strength of online sale channels could mitigate the impact from the epidemic, in our view.

News update

13 Mar 2020

SaaS

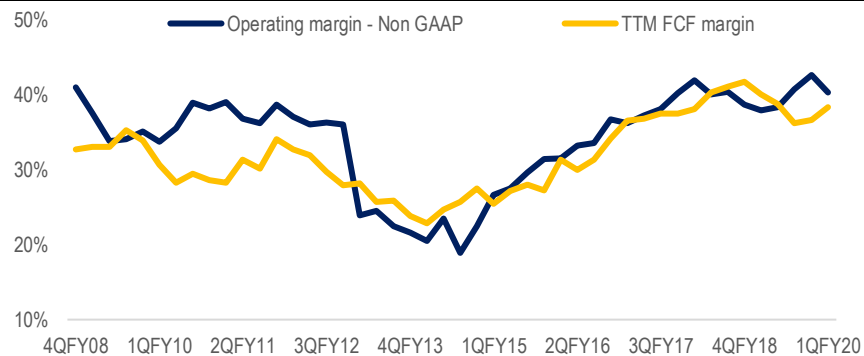
Adobe

Strong Q1 results but weak Q2 outlook on COVID-19 impact

Adobe reported strong Q1 results. Total revenue grew by 18.4% YoY to a record US\$3.09bn. Subscription (recurring) revenue continued to drive the Adobe's overall revenue growth. In terms of segment: 1) Digital Media remained the main contributor and its revenue reached US\$2.17bn, up 22.1% YoY; 2) Digital Experience reported revenue of US\$858mn, up 15.4% YoY. Operating margin expanded 240bps from 37.9% in 1QFY19 to 40.3% this quarter with TTM FCF margin reached 38.3% in Q1. Adobe's non-GAAP net income and EPS came in at US\$1.11bn and US\$2.27 this quarter, respectively. COVID-19 could bring impact on its Digital Experience segment, while little impact on Digital Media. For next quarter, total revenue was guided to US\$3.175bn and Digital Media and Digital Experience revenues were expected to grow by 19% and 12% YoY, respectively. (Source: [Adobe](#))

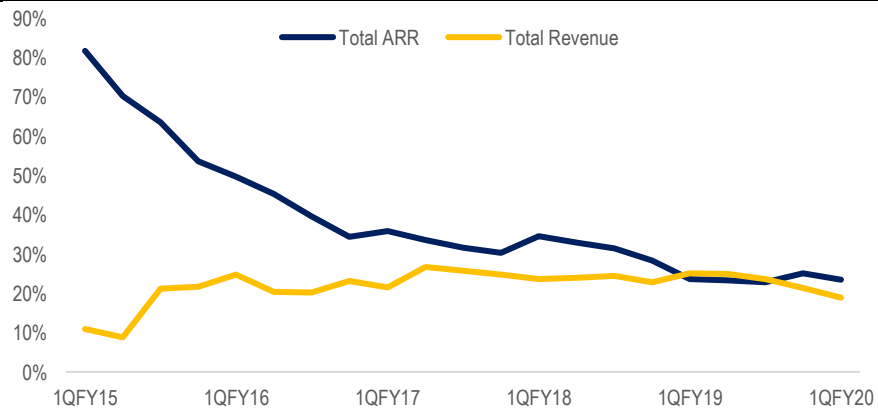
AMTD views: The addition of US\$400mn net new Digital Media ARR was a record for Q1, among which Creative ARR increased by US\$329mn. Strong new user growth, continued focus on retention, and single app adoption strategy helped achieve strong growth momentum in this segment. On the other hand, unlike the direct-to-consumer business model of Digital Media, Adobe saw the potential impact of COVID-19 on Digital Experience segment as large enterprises may delay deals. In addition, Adobe repurchased approximately 2.4m shares at a cost of \$795mn Q1.

Figure 2: Adobe's operating margin (Non-GAAP) and TTM free cash flow (FCF) margin



Source: Company data, AMTD Research; Note: Q1FY20 ended 28 Feb 2020

Figure 3: Adobe's total ARR and revenue growth, YoY



Source: Company data, AMTD Research; Note: Q1FY20 ended 28 Feb 2020

12 Mar 2020

Samsung starts investing in 5nm chip production lines

Semiconductor

Samsung

Samsung has started the construction of 5nm EUV (Extreme Ultraviolet) production lines. It is being expected that the company will be ready with its 5nm line by the end of June 2020, and mass-produce 5nm chips by the end of this year or early next year. Besides, the company has received orders from Qualcomm for the production of its 5nm EUV-based Snapdragon X60 5G modem chipset. (Source: [Sammobile](#))

12 Mar 2020

5G to account for 20% of global connections by 2025

5G

By 2025, 5G will account for 20 percent of global connections, with take-up particularly strong across developed Asia, North America and Europe, according to a report released Tuesday by the GSM Association (GSMA) and GTI, a global TD-LTE and 5G cooperation platform initiated by China Mobile. To support this growth, operators are expected to invest around \$1.1 trillion worldwide over the next five years in mobile capex, roughly 80 percent of which will be in 5G networks, said the report. (Source: [GSMA](#))

11 Mar 2020

Intel expects to release its first 5nm GAA chips in 2023

Semiconductor

Intel

Intel has already announced a 7-nm process for 2021, its first product will be the Ponte Vecchio graphics card designed for use in data centers. 5nm process is expected to evolve from FinFET transistors to GAA wide gate transistors. Intel forecasts commercial availability of 5nm GAA chips in 2023. (Source: [Optoctyptio](#))

11 Mar 2020

Realme 6 will be on sale for the first time in India

Smartphone

OPPO

The new Realme smartphone was launched alongside the Realme 6 Pro last week and its key highlights include a 90Hz display, hole-punch cutout, and 30W Flash Charge. The dual-SIM (Nano) Realme 6 runs Android 10 with Realme UI on top and features a 6.5-inch full-HD+ (1,080x2,400 pixels), Ultra Smooth display with 90Hz refresh rate, 20:9 aspect ratio, 90.5 percent screen-to-body ratio, and Corning Gorilla Glass 3 protection. The phone is powered by the octa-core MediaTek Helio G90T SoC, paired with up to 8GB of LPDDR4x RAM. The Realme 6 price in India has been set at Rs. 12,999 (Rmb 1,200) for the 4GB + 64GB variant, while its 6GB + 64GB option is priced at Rs. 14,999 (Rmb 1,400) and the top-of-the-line 8GB + 128GB configuration carries a price tag of Rs. 15,999 ((Rmb 1,500). (Source: [Gadgets](#))

10 Mar 2020

TSMC revenue reached NT\$ 93.39bn in Feb and start production of 5 nm chips

Semiconductor

TSMC

TSMC reported February revenue of about NT\$93.39bn (~US\$3.1bn), -9.9% M/M, +53.4% Y/Y. It is the lowest revenue among seven consecutive months. TSMC's first-quarter results benefited from full 7nm orders and robust demand for 5G smartphones. Revenue over January-March is expected to reach \$10.2 billion-\$10.3 billion, a 0.9%-1.8% quarter-on-quarter decline, but it was still the first quarter with the largest number of orders.

TSMC also said, the 5nm process was progressing smoothly and would be mass-produced in the first half of this year. The production capacity of TSMC's 5nm process in 2H20 was full as well. Although TSMC would begin volume production of 5nm-based A14 chips for iPhone 12 models in April, iPhone 12 could be delayed due to Coronavirus. (Source: [TSMC](#))

10 Mar 2020

Youzan released two mini-program live streaming solutions

SaaS/e-commerce

Youzan

On March 10, Youzan officially released two mini-program-based live streaming solutions: One is "Guang.com" based on the mini-program live streaming platform, the other is "mini-program livestreaming plug-in", which supports merchants to embed the livestreaming function in their own mini-programs, to form a closed loop of live streaming and product sales in the mini-program. (Source: [BJnews](#))

10 Mar 2020

Google Cloud joins Lloyd's digital transformation project

Cloud

Google

Lloyds Banking Group has agreed on a five-year partnership with Google Cloud to further push its digital transformation work. The deal comes under Lloyd's £3 billion internal investment to upgrade its IT systems to compete in the increasingly digitised world of finance. The UK-based bank, which serves 26 million customers, will collaborate with Google Cloud to help drive its overall cloud transformation programme and streamline its operations. The five-year "strategic collaboration" will see Lloyds use a number of Google Cloud services to help modernise and improve its customer experience. (Source: [Cloudpro](#))

10 Mar 2020

Vivo NEX 3S 5G arrives with Snapdragon 865, UFS 3.1 storage

Smartphone

Vivo

Vivo launched its flagship phone, the NEX 3S 5G which is priced at Rmb4,998 for the '8GB + 256GB' set and Rmb4,998 for the '12GB + 256GB' set. NEX 3S comes with a Snapdragon 865 chipset employing the 5G-capable Snapdragon X55 modem supporting NSA + SA. The memory is now LPDDR5 instead of LPDDR4X offering a 29% increase in bandwidth while the storage inside goes up to 256GB and is of the UFS 3.1 kind offering even better performance than the current UFS 3.0-powered smartphones. Some of the other major highlights include a 4,500mAh battery with 44W fast charging, an AK4377A Hi-Fi DAC, Wi-Fi 6 support, and an optical in-display fingerprint sensor. (Source: [Gsmarena](#))

10 Mar 2020

IDC released the latest data concerning the global wearables

Wearable market

Xiaomi

The International Data Corporation (IDC) released the latest data concerning the global wearable market and shipments of 2019. Apple led the market with 106.5 million units shipped in 2019 thanks to its refreshed AirPods, AirPods Pro, and Apple Watch as well as its Beats products. Xiaomi ranked second shipping 41.7 million wearables of which majority were wristbands. Samsung finished in third place with shipments of 30.9 million. Huawei grew its wearable device shipments 148.8% YoY with overall shipments of 27.9 million. Fitbit rounded out the top five with 15.9 million units shipped. (Source: [IDC](#))

9 Mar 2020

Smartphone shipments in China fell in the first quarter of 2020

Smartphone

In the first two months of 2020, smartphone shipments in China were 34.355 million units, only accounting for 44.9% of smartphone shipments in the first quarter of last year which were 76.47 million according to China Academy of Information and Communications Technology ('CAICT'). This suggests a sharp drop in shipments in the first quarter this year. In the face of great pressure, OPPO and Vivo, two mobile phone companies, have reduced their 4G phones prices to a new record low. If the COVID-19 outbreak spreads and the Chinese smartphone market continues to slump in the second quarter, Chinese mobile phone companies will further reduce the price of 4G phones. (Source: [CAICT](#))

9 Mar 2020

IoT

Xiaomi

Xiaomi Mi TV 5 Pro 75-inch edition will go on sale on March 13 in China

75-inch Xiaomi Mi TV 5 Pro and non-Pro edition will go on sale on March 13 in the home market. The 75-inch Xiaomi Mi TV 5 is priced at 7,999 Yuan (~\$1,512) and the 75-inch Mi TV 5 Pro costs 9,999 Yuan (~\$1,440). The Xiaomi Mi TV Pro 75-inch edition features a 4K quantum dot screen with support for 106 percent NTSC color gamut. It can playback 8K content. The HDR10+ complaint is equipped with a MEMC chip and it has 4 GB of RAM and 65 GB of storage. The Pro model promises a screen-to-body ratio of 97 percent and it comes with a metal body that has a thickness of only 10.9mm. The 12nm processor powers the Mi TV 5 Pro 75-inch model and it is equipped with fair-field voice recognition along with support for Xiao AI voice-assistant. The big TV can as a smart home control center and it features AI driven PatchWall interface. (Source: [cnTechPost](#))

9 Mar 2020

Smartphone

OPPO

OPPO Launches All-round 5G Flagship Find X2 Series

OPPO has unveiled its Find X2 series – a flagship lineup of 5G devices featuring a range of cutting-edge technologies. The Find X2 Pro wide-angle camera (main camera) adopts customized Sony sensor IMX689 combined with dual native ISO technology and f/1.7 large aperture. The smartphone is equipped with a 120Hz QHD+ AMOLED screen, an all-around ultra-vision-camera system, the industry's fastest 65W SuperVOOC 2.0 flash charging technology and the most advanced 5G mobile platform—Snapdragon 865. The Find X2 Pro is also the first smartphone to support all-pixel omnidirectional focus and up to 12bit color photo capturing. (Source: [PRNewswire](#))

9 Mar 2020

5G

Huawei

Winner of China mobile's 2020-2021 SPN equipment construction project

On March 9, the winning candidate of China mobile's 2020-2021 SPN equipment construction project was announced, and Huawei, FiberHome and ZTE took all the shares of 26 provinces and cities. Among them, Huawei won the bid with a share of 50% or more.

China Mobile's new SPN equipment projects covering 28 provinces, cities and autonomous regions will start intensive procurement at the end of 2019, with an estimated total purchase volume of 145,663 and total amount of about RMB9.2 billion (excluding tax). (Source: [Chinanews](#))

8 Mar 2020

5G

China will have completed 550,000 5G base stations by 2020

By the end of February, China had more than 80,000 base stations and 10 million 5G users. China Mobile's goal of "building 300,000 5G base stations to cover all prefecture-level cities" this year remains unchanged. China Telecom and China Unicom said they aim to jointly build 100,000 5G base stations in 47 prefectures and cities in the first half of 2020, with China Unicom aiming to achieve 5G coverage in all prefectures and cities by 2020. At present, China Telecom and China Unicom have launched 5G co-construction and sharing schemes in 31 provinces, and 5G has been officially commercialized in more than 50 cities in China. (Source: [Sina](#))

7 Mar 2020

Module

Huawei

Huawei P40 Pro will use Sony IMX 700 CMOS sensor and periscope lens

According to latest leaked news, The Huawei P40 Pro is claimed to come with a 52MP Sony IMX700 sensor with 1/1.28inch RYYB. This sensor on the device helps the main sensor pass more light for brighter images whenever camera performance is needed, such as low light. In addition to the main camera, the device is claimed to have an IMX650 ultra-wide angle camera with a resolution of 40 MP and 1/1.5inch RGGB, a periscope telephoto camera with 10X optical zoom, a 3x telephoto camera and a ToF sensor. Besides these five sensors, P40 Pro camera includes color temperature sensor, LED and microphone. Huawei P40 Pro phone is confirmed to release in Paris, France on March 26. (Source: [Huawei](#))

6 Mar 2020

IoT

OPPO

OPPO Watch with calling functionality and ECG sensor launched

OPPO's first-ever smartwatch has been officially unveiled and will be available in China from March 24th. The OPPO Watch has been priced at RMB 1,499 for the 41mm model, RMB 1,999 for the 46mm variant and RMB 2,499 for the Stainless Steel Edition. The smartwatch runs on Google WearOS with the company's ColorOS Watch custom skin overlaid on top and has support for a wide variety of apps and watch faces. It is powered by the Qualcomm Snapdragon Wear 2500 chipset alongside the Apollo 3 co-processor and is equipped with 1GB RAM and 8GB internal storage. The OPPO smartwatch can track sleeping habits, heart rate, and can also perform an electrocardiogram (ECG). The Stainless Steel Edition and 46mm models pack 430mAh battery, while the 41mm variant has a relatively smaller 300mAh unit. OPPO's VOOC fast-charging solution found its way to Watch as well and is claimed to top up completely in just 75 minutes. It has support for Breeno voice assistant and NFC for payments. (Source: [OPPO](#))

6 Mar 2020

Semiconductor

AMD

AMD: Ryzen processor shipped 97 million units

At the FAD 2020 analyst conference, AMD officially announced its 7nm Zen 3 architecture, 5nm Zen 4 architecture, and mentioned that the Ryzen processor 2017-2019 cumulative shipments of 97 million, these three years are 23 million, 31 million, 43 million, 2018, 2019 growth rate of 35%, 39%. AMD said this was mainly a powerful driver for the third-generation Ryzen 3000 Series desktop processor and the second-generation Ryzen Mobile 3000U Series processor. On the market side, AMD said its share of consumer processors was only 9% in 2017, 13% in 2018 and 17% in 2019. (Source: [Smalltechnews](#))

6 Mar 2020

Semiconductor

NVIDIA

Nvidia acquires data storage and management platform SwiftStack

Nvidia announced that it has acquired SwiftStack, a software-centric data storage and management platform that supports public cloud, on-premises and edge deployments. SwiftStack was founded in November 2011 and raised \$23.6 million in total. The company is primarily known for its SwiftStack 7, 1space, ProxyFS, Swift, and the Controller products. After it is integrated as a part of NVIDIA, SwiftStack will continue to develop, support, and enhance its programs. Meanwhile, the key mission of the team will be to work on NVIDIA's GPU-powered AI infrastructure and accelerate large scale AI DL pipelines. (Source: [Techcrunch](#))

5 Mar 2020

Infineon collaborates with Qualcomm to enable high-quality standard solution for 3D authentication

Semiconductor

Infineon/Qualcomm

Infineon worked with Qualcomm to develop a reference design for 3D authentication based on the Qualcomm® Snapdragon™ 865 Mobile Platform. The reference design uses the REAL3™ 3D Time-of-Flight (ToF) sensor and enables a standardized, cost-effective and easy-to-design integration for smartphone manufacturers. Starting in March 2020, Infineon's REAL3 ToF sensor will enable the video bokeh function for the first time in a 5G-capable smartphone for optimal image effects even in moving images. (Source: [Infineon](#))

5 Mar 2020

iPhone SE 2 reaches final verification stage but launch will be delayed to Q2

Smartphone

Apple

According to DigiTimes, iPhone SE 2 has now reached the final stage of verification but the launch will still be indeed delayed. Apple has asked its Taiwan-based PCB suppliers in the supply chain to defer pending shipments for what is believed to be the company's next low-cost iPhone, iPhone SE2, to the second quarter of the year. This has evidently led to the delay of the iPhone SE 2 launch which was supposed to take place on March 31. (Source: [DigiTimes](#))

5 Mar 2020

MediaTek, Samsung introduces world's first Wi-Fi 6 8K TV

Semiconductor

MediaTek/Samsung

MediaTek and Samsung on Thursday introduced the world's first 8K QLED TV equipped with custom Wi-Fi 6 chipset, the Samsung 8K QLED Y20 model (Q950, Q900). According to the company, the flagship TV is the only 8K TV worldwide supporting Wi-Fi 6 connectivity, and will offer consumers a more seamless entertainment experience with smoother streaming and gaming, as well as unconstrained internet access. (Source: [MediaTek](#))

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