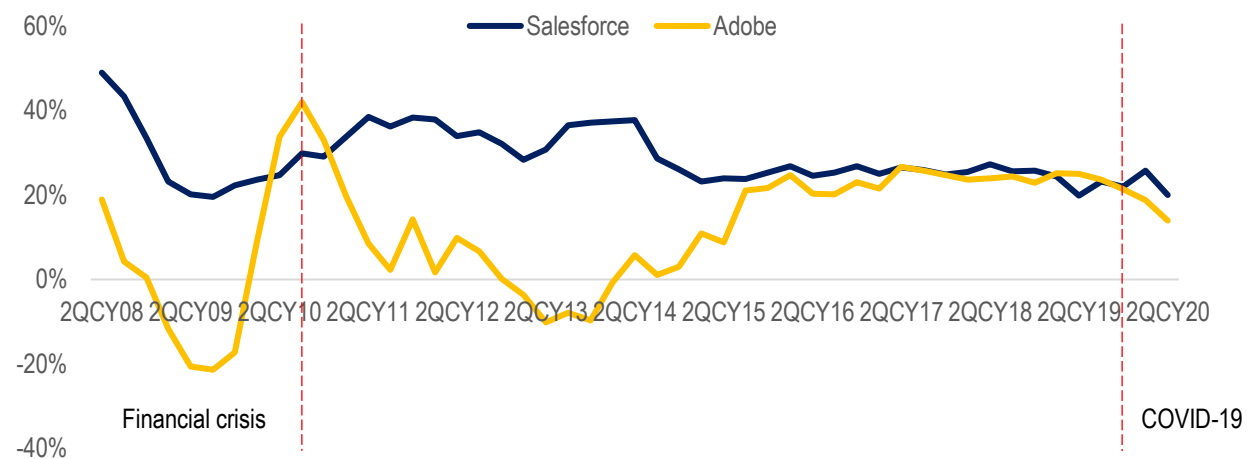




SaaS – outperformed in the downturn

Figure 1: revenue growth, YoY



Source: company data, AMTD Research, 2QFY21 of Salesforce ended 31 July 2020, 2QFY20 of Adobe ended 29 May 2020

AMTD views: SaaS companies are very attractive to investors because of their inherent annuity streams, which can generate more recurring income for stable growth. By comparing two software companies with more than 15 years of history, we found that during the financial crisis in 2008-09, Salesforce with a SaaS model had lower revenue growth volatility than Adobe, which had not yet moved to SaaS model at the time. As Salesforce's SaaS model is evolving and Adobe has successfully shifted to cloud, their revenue growth volatilities are significantly lower in recent far-reaching COVID-19 pandemic than in financial crisis 12 years ago. Without a shadow of a doubt, the pandemic is pushing the migration of business from offline to online, which subsequently drives the growth of online businesses, in particular, cloud-based businesses. Still, we believe, the defensive character or the strength during the downturn is mainly coming from the essence of SaaS business – recurring income generated by flexible subscription model. In addition, thanks to declining expenses during the downturn, operating leverage has been improved under stable revenue growth as well.

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SaaS

Revenue growth

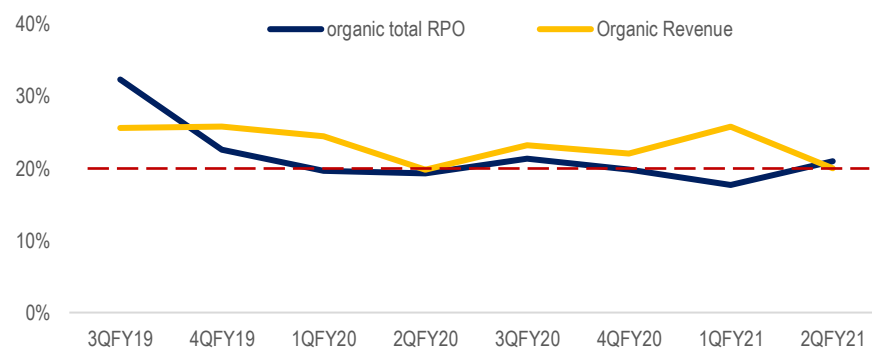
Stable revenue growth – led by RPO, an off-BS item served as a cushion

Now most of SaaS companies have been disclosing Remaining Performance Obligation (RPO). RPO equals backlog plus Deferred Revenue. Backlog, an off-balance sheet item, is the future performance obligations, which have not been invoiced, and represents the commitment of a customer with the company and will be translated into revenue in the coming quarters. Over the long run, revenue growth is roughly in-line with RPO growth. Thus, RPO is good leading indicator of the company's future performance, at the same time, RPO serves as a cushion for revenue and stabilized the revenue growth as well. During the COVID-19 pandemic, the SaaS companies we tracked outperformed as the RPO and the recurring revenue helped offset the impact amid the headwinds.

Salesforce

To fuel the future growth, the company has made several strategic investments in different areas. Thus, organic growth is a better way to track its underlying performance. In 2QFY21, total RPO reached US\$30.6bn, up 21% YoY. CRPO, which was expected to be recognized as revenue in next 12 months, was approx. US\$15.2bn, up 26% YoY (org 19% YoY). The outperformance was driven by: 1) strong new business, which was less impacted by COVID-19, thanks to its flexible subscription model; 2) a large telecom transaction (AT&T) from last quarter; and 3) favorable FX.

Figure 2: Salesforce's org RPO growth vs org revenue growth, YoY

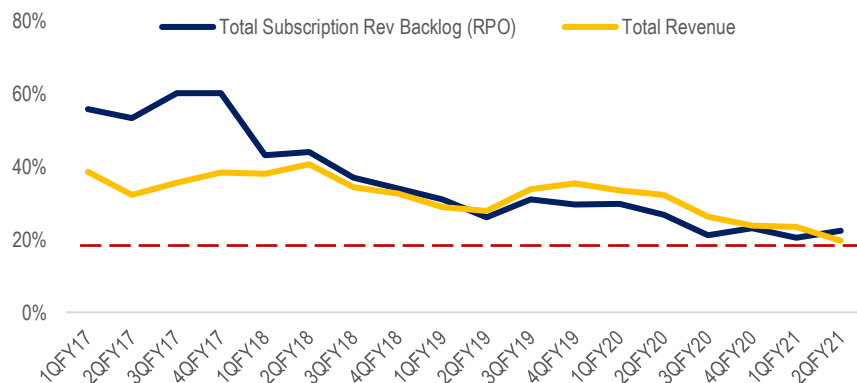


Source: Company data, AMTD Research, 2QFY21 of Salesforce ended 31 July 2020

Workday

Subscription revenue backlog grew by 22% YoY to US\$8.6bn in 2QFY21, among which US\$5.78bn would be recognized within the next 24 months, up 21% YoY. The backlog performance was driven by strong new ACV bookings across both net new and add-on business.

Figure 3: Workday's RPO growth vs revenue growth, YoY

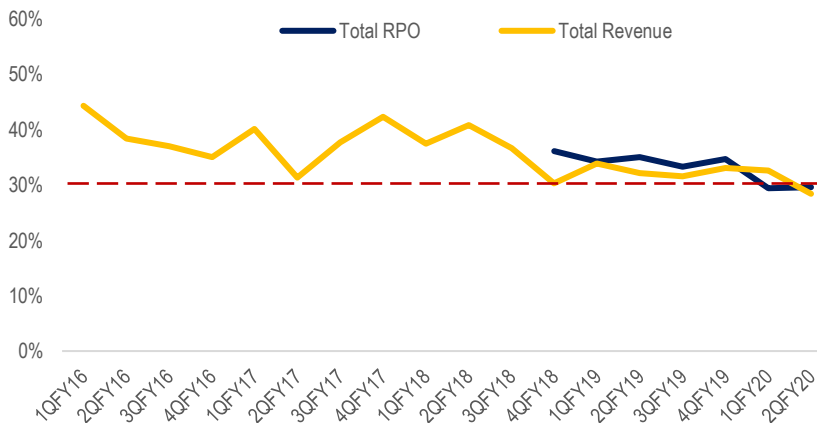


Source: Company data, AMTD Research, 2QFY21 of Workday ended 31 July 2020

ServiceNow

RPO ended 2QFY20 at approx. US\$7bn, up 31% YoY, and current RPO was approx. US\$3.5bn, up 32% YoY. The company generated 80% of its new business from existing customers. Robust backlog will support future growth of revenue.

Figure 4: ServiceNow's RPO growth vs revenue growth, YoY

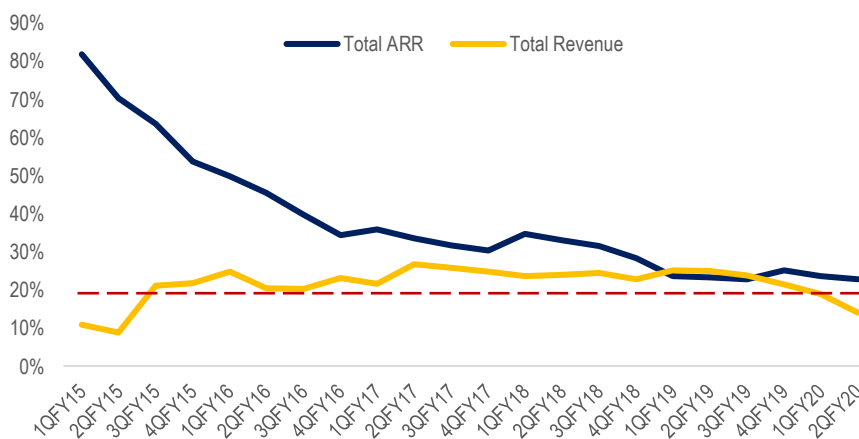


Source: Company data, AMTD Research, 2QFY20 of ServiceNow ended 30 June 2020

Adobe

As Adobe's 2QFY20 was at the peak of pandemic, its Digital Experience reported 3.7% sequential decline in revenue in 2QFY20 due to the delayed spending of the enterprises. However, thanks to its successful cloud transition, its Media business still achieved a steady growth. Net new Digital Media ARR was US\$443mn and total Digital Media ARR exiting Q2 grew to US\$9.17bn. In addition, in Q2, the company saw historic highs in Adobe.com traffic across both Creative Cloud and Document Cloud as customers moved online, including students and business users.

Figure 5: Adobe's total ARR growth vs revenue growth, YoY

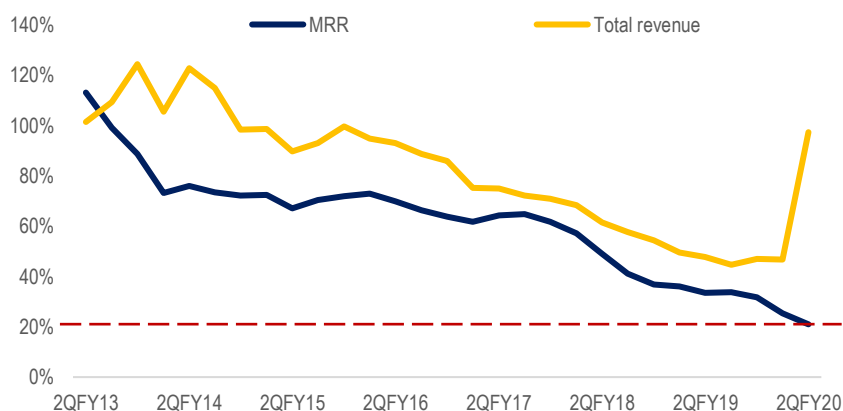


Source: Company data, AMTD Research, 2QFY20 of Adobe ended 28 May 2020

Shopify

Shopify has a different story from other SaaS companies. Apart from generating revenue from subscription services, Shopify began to boost revenue by providing value-added services, such as payment and fulfillment. After several years of high growth, MRR growth decelerated to 21.0% YoY in 2QFY20, partially due to the COVID-19 and partially due to 90-day free trial promotion. On the revenue side, impressive growth was attributed to a spike in GMV as consumers shifted their spending from offline to online caused by COVID-19.

Figure 6: Shopify's MRR growth vs revenue growth, YoY



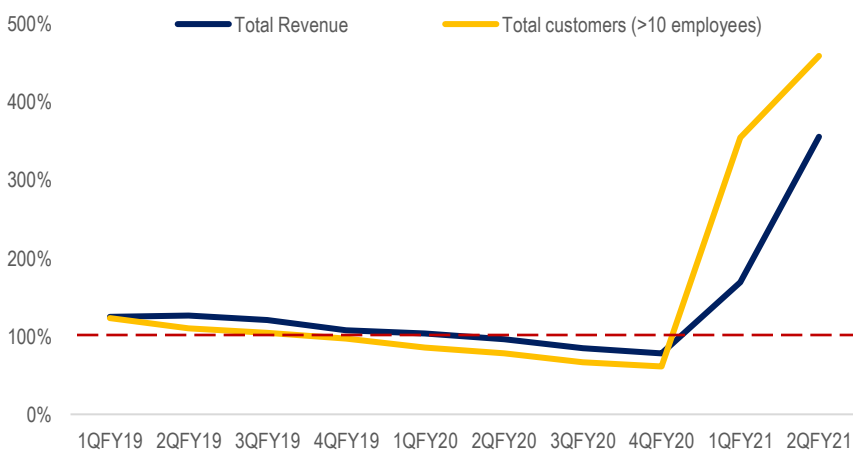
Source: Company data, AMTD Research, 2QFY20 of Shopify ended 30 June 2020

Zoom – hyper growth indicates even-larger TAM

As a leading video-first unified communication platform, Zoom did benefit from accelerated trends of remote work caused by COVID-19. At the same time, being supported by SaaS business model, the company has moved beyond addressing immediate business continuity needs to actively redefine and embraced new approaches to support future work needs. Zoom's hyper-growth indicates the even-larger TAM the company could tap, in our view.

Zoom reported extraordinary growth of 458% YoY and 355% YoY in the total No. of customers (>10 employees) and revenue in 2QFY21, respectively, with a TTM net dollar expansion rate greater than 130%. RPO ended 2QFY21 at approx. US\$1.4bn, up 209% YoY, among which 72% was expected to recognize as revenue in next 12 months.

Figure 7: Zoom's No. of customers (>10 employees) growth vs revenue growth, YoY



Source: Company data, AMTD Research, 2QFY21 of Zoom ended 31 July 2020

SaaS

Operating leverage

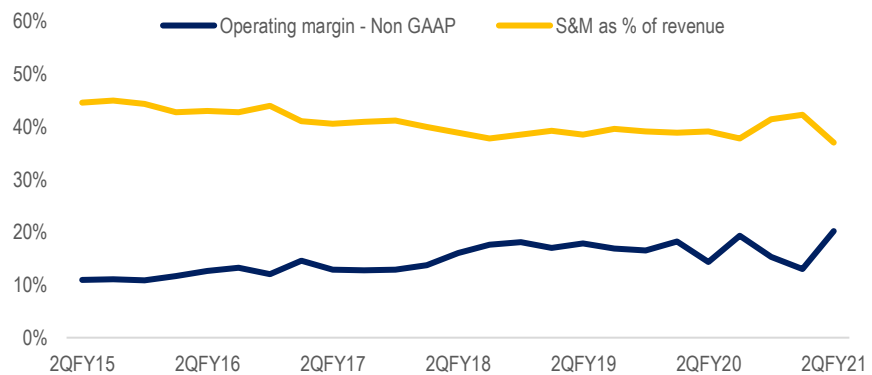
Operating leverage improved – helped by stable revenue and savings in expenses

The operating leverage of SaaS company comes primarily from sales & marketing. The rising customer retention rate and subscription renewal rate will save a lot of S&M expenses over the long run. On the other hand, since S&M expenses account for the largest proportion of expense and are recognized up front while revenue is deferred over multiple periods, S&M expenses are the key factor to realize operating leverage. However, we believe that during this COVID-19 pandemic, the substantial savings in T&E, promotion, and events cancellation under a stable revenue growth were the main reasons for the great improvement in operating leverage of those SaaS companies.

Salesforce

The company achieved the highest operating margin ever, over 20%, in 2QFY21, helped by T&E savings, and WFH (54,000 remote employees working at home started in 2Q) caused by COVID-19. In addition, there is no Dreamforce in 2020 but only virtual ones. It is hard to say at moment whether those kinds of savings are one-off or would be long-lasting. On the business fundamental side, the 63% increase in seven-figure deals from a year ago did help improve operating margin as well.

Figure 8: Salesforce's operating margin vs S&M revenue ratio

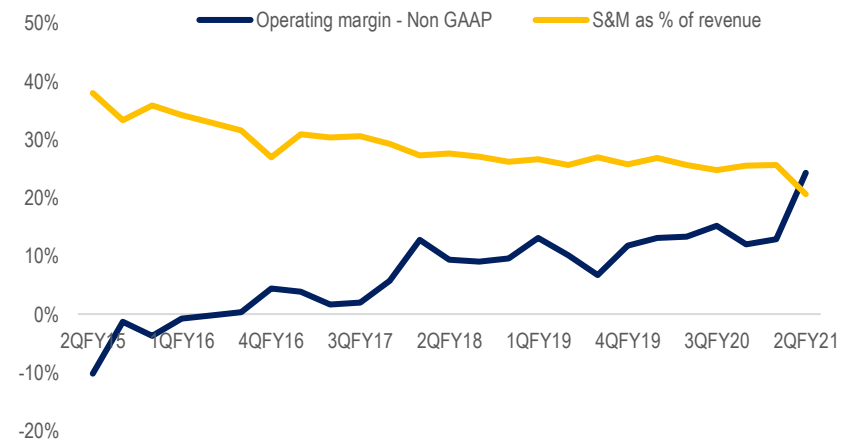


Source: Company data, AMTD Research, 2QFY21 of Salesforce ended 31 July 2020

Workday

The company's non-GAAP operating margin was 24% in 2QFY21, almost double expansion from 1Q. The outperformance was driven by a combination of top-line overachievement, slower hiring, savings in T&E and marketing and some canceled events.

Figure 9: Workday's operating margin vs S&M revenue ratio

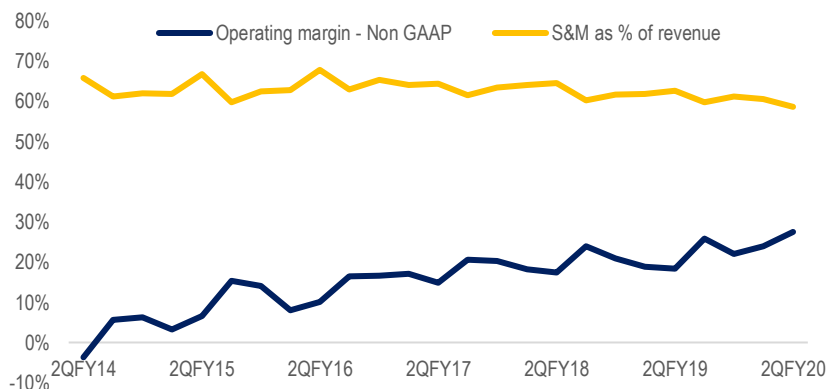


Source: Company data, AMTD Research, 2QFY21 of Workday ended 31 July 2020

ServiceNow

The company's operating margin was 28%, up more than 900bps YoY in 2QFY20, driven by subscription revenue outperformance as well as lower expenses due to COVID-19 including approx. 2% of savings of Knowledge 2020 moving to a digital-only format.

Figure 10: ServiceNow's operating margin vs S&M revenue ratio

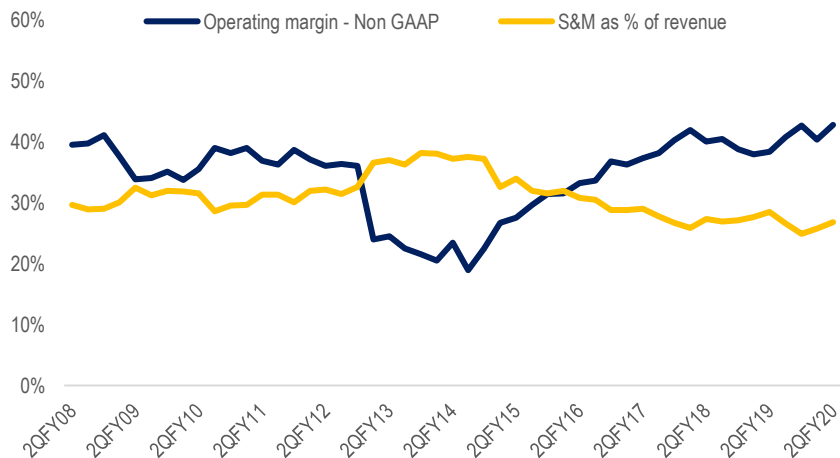


Source: Company data, AMTD Research, 2QFY20 of ServiceNow ended 30 June 2020

Adobe

The company's operating margin continued to expand, reaching 44.3% in 2QFY20 compared to 41.6% last quarter, thanks to cost savings from travel and shifting to virtual conference. The company successfully transitioned Adobe Summit to an exclusively digital event in May.

Figure 11: Adobe's operating margin vs S&M revenue ratio

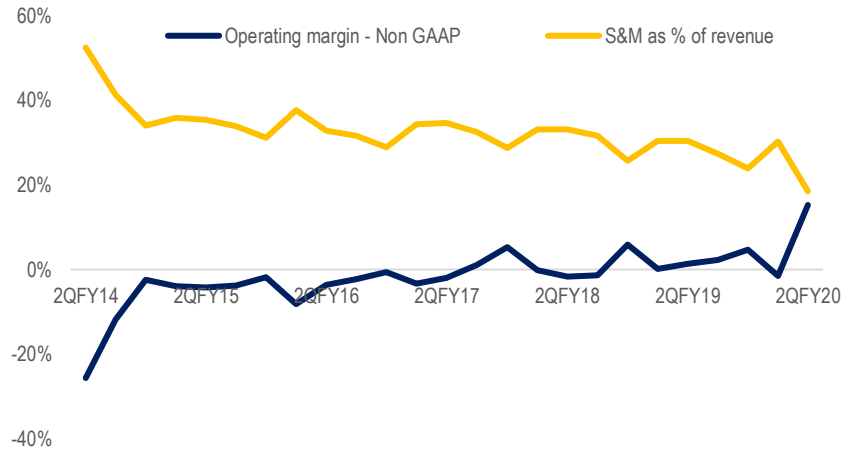


Source: Company data, AMTD Research, 2QFY20 of Adobe ended 28 May 2020

Shopify

The company's adjusted operating income turned profit in 2QFY20 with non-GAAP OM of 15.2%, reflecting its strong revenue performance helped by impressive GMV this quarter. In the meanwhile, the company's decision in May to work remotely permanently would be accretive to margin over the long run, in our view.

Figure 12: Shopify's operating margin vs S&M revenue ratio

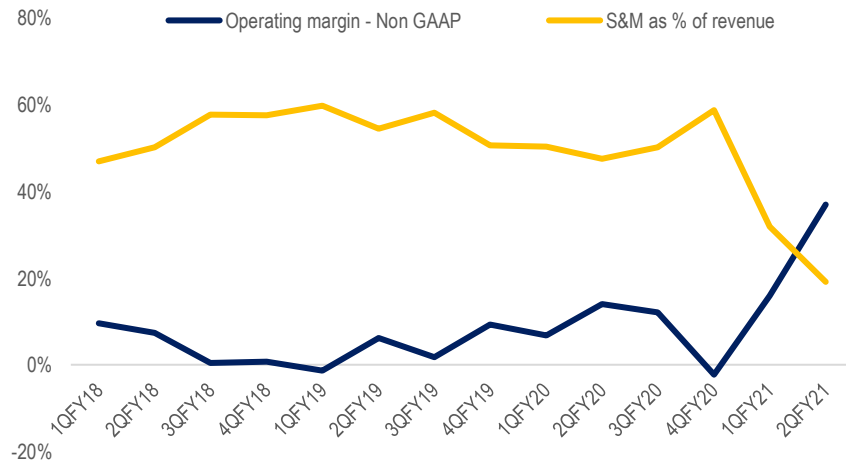


Source: Company data, AMTD Research, 2QFY20 of Shopify ended 30 June 2020

Zoom

Hyper-growth in revenue boosted non-GAAP operating income tenfold from same quarter last year, and non-GAAP operating margin expanded to 37%. According to management on earnings call, operating margin was expected to decrease from the peak in 2QFY21 over the balance of this year as the company's hiring and spending catch up was much greater than the scale of business in the rest of this year.

Figure 13: Zoom's operating margin vs S&M revenue ratio



Source: Company data, AMTD Research, 2QFY21 of Zoom ended 31 July 2020

News update

8 Sep 2020

Smartphone

Samsung

Samsung is developing a fully transparent smartphone with an OLED display

According to the patents from the USPTO and the WIPO, Samsung is developing a transparent smartphone. The OLED screen is equipped with a transparent luminous display panel through which light can shine. Also, the advanced technology could also be applicable to other consumer electronics products, such as a TV, monitor, laptop, game console and / or camera. Xiaomi launched its world's first transparent TV – Mi TV LUX Transparent Edition before. (Source: [LetsGoDigital](#))

8 Sep 2020

Smartphone

Xiaomi/Qualcomm

Qualcomm launched Snapdragon 732G, firstly adopted by Xiaomi POCO X3

Qualcomm announced the Snapdragon 732G mobile platform with Samsung 8nm LPP process. Xiaomi's sub-brand POCO X3 NFC was the first model to adopt this 4G SoC. Apart from that, the 6.67-inch Android phone has high-end features like a 120Hz refresh rate display and a quad camera array on the back, priced starting from €199 (roughly RMB1,500). (Source: [TheVerge](#))

3 Sep 2020

Semiconductor

Qualcomm

Qualcomm released Snapdragon 4-series products and 8cx Gen2 5G platform

Qualcomm announced its plans to accelerate 5G global commercialization at scale by expanding its portfolio of 5G mobile platforms to the Qualcomm® Snapdragon™ 4-series in early 2021. This next budget chips will bring the 5G smartphones prices down to RMB1,500 or even cheaper, and now Xiaomi, Oppo and Motorola are among the major vendors that will adopt the new Snapdragon 4-series chipset. In addition, Qualcomm also launched the new Qualcomm Snapdragon 8cx Gen 2 5G compute platform, with the support of both sub-6 GHz and mmWave, 5G and Wi-Fi 6 connectivity. The Acer Spin 7 is the world's first notebook powered by the Snapdragon™ 8cx Gen 2 5G compute platform. (Source: [Qualcomm](#))

3 Sep 2020

Semiconductor

MediaTek

MediaTek launched new T750 5G chipset and 4G gaming-focused Helio G95

MediaTek announced its T750 5G chipset to power next generation 5G CPE wireless products. The highly integrated, 7nm compact chip design came with an integrated 5G radio and quad-core Arm CPU. Currently, MediaTek T750 has been sent to some manufacturers for trials. MediaTek also announced its latest mid-range gaming-oriented SoC, the Helio G95. The Helio G95 offers two high-performance ARM Cortex-A76 cores clocked at up to 2.05 GHz, aided by six Cortex-A55 cores. On the GPU side of things is also ARM's Mali-G76 MC4, clocked at up to 900 MHz. (Source: [MediaTek](#))

3 Sep 2020

Wearable Device

Wireless earphone

China's wireless headsets shipped 42.56mn units in 1H20, up 24% YoY

According to IDC, in 2Q20, China's total wearable device market shipments were 26.58mn units, up 4.1%YoY. The top 5 wearable device manufacturers were Huawei, Xiaomi, Apple, BBK and Qihoo 360, with a total market share of 29.9%, 21.3%, 19.1%, 3.9% and 1.8%, respectively. Total shipments of wireless headsets in China in 1H20 reached 42.56mn units, up 24% YoY. True wireless earphones accounted for 64% in total shipment, representing a 49% YoY growth. The leading brands for wireless headsets in China included Apple, Huawei, Xiaomi, Amoi, and Meander, accounting for 18.1%, 10.1%, 8.3%, 8.3% and 5.6% of total market, respectively. (Source: [IDC](#))

3 Sep 2020

Semiconductor

Arm

Arm announced Cortex-R82, the first 64-bit real time processor

Arm introduced the new Cortex-R82, representing the company's first 64-bit Armv8-R architecture processor IP, meaning it's the first 64-bit real-time processor from the company. The new Cortex-R82 was designed specifically with computational storage. It enhanced the core to enable up to a 2x performance improvement over the R8, uses a wider physical address space up to 1TB. (Source: [Anandtech](#))

2 Sep 2020

Smartphone

Apple/Samsung/Xiaomi

iPhone 11 was the best-selling smartphone in 1H20 with 37.7mn units globally

iPhone 11 was the best-selling smartphone in first half of 2020, according to Omdia, with a total 37.7mn units. Samsung Galaxy A51 was a very distant second best, reaching 11.4mn units, and Samsung only had a single entry in the top 10 list. Here was the best-selling smartphone list: (Source: [Omdia](#))

Rank	Model	OEM	Unit (million)
1	iPhone 11	Apple	37.7
2	Galaxy A51	Samsung	11.4
3	Redmi Note 8	Xiaomi	11.0
4	Redmi Note 8 Pro	Xiaomi	10.2
5	iPhone SE (2020)	Apple	8.7
6	iPhone XR	Apple	8.0
7	iPhone 11 Pro Max	Apple	7.7
8	Redmi 8A	Xiaomi	7.3
9	Redmi 8	Xiaomi	6.8
10	iPhone 11 Pro	Apple	6.7

2 Sep 2020

Semiconductor

Nvidia

Nvidia officially announced GeForce RTX 30 Series with Samsung 8nm node

Nvidia has officially announced that Nvidia GeForce RTX 30 Series of GPUs based on latest Ampere architecture. The second-generation RTX chips were all built on Samsung 8nm process, and were said to close to 2x the performance-per-Watt capabilities of the 2018 RTX 20 range. The series included US\$499 RTX 3070, US\$699 RTX 3080 and hyper-expensive US\$1,499 RTX3090. (Source: [Nvidia](#))

1 Sep 2020

Smartphone

OPPO/Samsung

OPPO beat Samsung in Q2 as top vendor in SEA smartphone market

The number of smartphones sold in Southeast Asia (SEA) market in 2Q20 only reached 24 million units, down 22% YoY, according to Counterpoint. Among the top 5 vendors, Oppo overtook Samsung in SEA smartphone market with a total share of 20.3% in 2Q20, while Samsung dropped to a second place with a market share of 19.5%. In addition, Oppo's sub-brand Realme' market share rose from 7.3% to 12.8% in a quarter, currently ranking fifth. Vivo, Xiaomi accounted for 17.9% and 14.0%, respectively. (Source: [Counterpoint](#))

30 Aug 2020

Smart TV

Xiaomi

Xiaomi to launch two 82-inch Mi TVs with 8K and 4K resolutions

Two new Xiaomi TVs are reported to have been appeared on the net, with 82-inch LG Display screens. The models are L82M6-8K and L82M6-4K. These should correspond to 8K and 4K resolution versions. (Source: [EEworld](#))

28 Aug 2020

Semiconductor

MediaTek/Huawei

MediaTek applied for permission from US to supply chips to Huawei

MediaTek said it had applied to the U.S. government for permission to continue supplying China's Huawei after new U.S. curbs take effect in mid-September amid rising China-U.S. tensions. MediaTek has mentioned that U.S. restrictions have no significant impact on its short-term operations and estimated its third-quarter 2020 revenues will reach NT\$82.5-87.9 billion (US\$2.75-2.79billion) for a 22%-30% sequential growth, however, there is still a lot of uncertainty in the long-term business. (Source: [Reuters](#))

26 Aug 2020

Game

Apple/Google

Apple App Store netted US\$22.2bn in gaming revenue in 1H20, up 23%YoY

Apple managed a record US\$22.2bn in revenue from gaming apps in the App Store in 1H20, representing a nearly 23% YoY growth. In 2Q20, Apple earned a whopping US\$11.6 bn in gaming revenue while Google's Play Store managed US\$7.7bn. However, Google managed to outpace Apple in terms of total mobile game downloads category with 22.8 bn installs in 1H20 compared to 5.7bn on the App Store. According to SensorTower, PUBG Mobile and Honor of Kings were the two top-grossing games during the first half of 2020 with both games earning over US\$1bn in revenue for the period. (Source: [Gsmarena](#))

25 Aug 2020

Cloud/5G

Tencent

Tencent Cloud released new 5G products;will build 300 edge-computing centers

Tencent Cloud announced its latest efforts in the new 5G infrastructure, as China's first cloud vendor to build a comprehensive 5G product matrix surrounding "cloud, edge, network and port" services. Tencent Cloud will complete the construction of 300 edge-computing centers by the end of year to fully support developments in industrial application, parks, energy, education, smart vehicle, cloud gaming, 4/8k livestream and other 5G services such as robotics. (Source: [Tencent](#))

25 Aug 2020

Semiconductor

TSMC

TSMC to build its 2nm and 3nm wafer fab, Capex will reach NT\$1.2 trillion

TSMC planned to build 2nm and 3nm wafer fab, and future capital expenditures is expected to reach about NT\$1.2 trillion (RMB282.2 billion). The first to third phases of Nanke Fab 18 were 5nm production bases while the fourth to sixth phases of Nanke Fab 18 are the future 3nm production bases, which is expected to achieve mass production in second half of 2022. Besides, R1 R&D fab is expected to be a R&D base for 2nm and more advanced process in Zhuku factory. At the same time, TSMC is expected to build a 2nm ultra-large fab in Zhuke Baoshan.(Source: [Techweb](#))

24 Aug 2020

OLED

Smartphone

Smartphone OLED panel shipments reached 87mn units in 2Q, down 23%YoY

According to UBI Research, total OLED shipments in 2Q20 were 107 mn units, down 13.4%QoQ/16.6%YoY. This is because sales of OLED set devices decreased due to the aftermath of COVID-19. OLED shipments for smartphones in 2Q20 were 87 mn units, down 17.0%QoQ/23.1%YoY. Compared to the decline in overall OLED shipments, the decline in OLED shipments for smartphones is even greater. (Source: [UBI Research](#))

20 Aug 2020

Semiconductor

TSMC

TSMC' 6nm process in mass production, 7nm chips shipment reached 1bn

TSMC announced that 6nm process has been put into mass production. Theoretically, the density of the chip, using extreme ultraviolet lithography, will increase by nearly 20%. Intel placed an order for 180,000 6nm wafers with TSMC. In addition, TSMC has managed to manufacture over 1 billion 7nm chips as of July this year, which means that TSMC ships more than 37 million 7nm chips on average per month. The company has manufactured 7 nm chips for over 100 products and dozens of different customers. (Source: [TSMC](#))

20 Aug 2020

AR/VR

Apple

Apple acquired two AR companies - Spaces and Camerai

Apple has acquired an AR technology startup Spaces, a former project of DreamWorks Animation and an Israeli AR and computer vision company Camerai, formerly Tipit. These two acquisitions were integrated with the company's strategy to develop two head-worn products, including a combination AR/VR headset for release in 2022 and "full-fledged" AR glasses for release by 2023. (Source: [Techcrunch](#))

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