AMTD 尚乘

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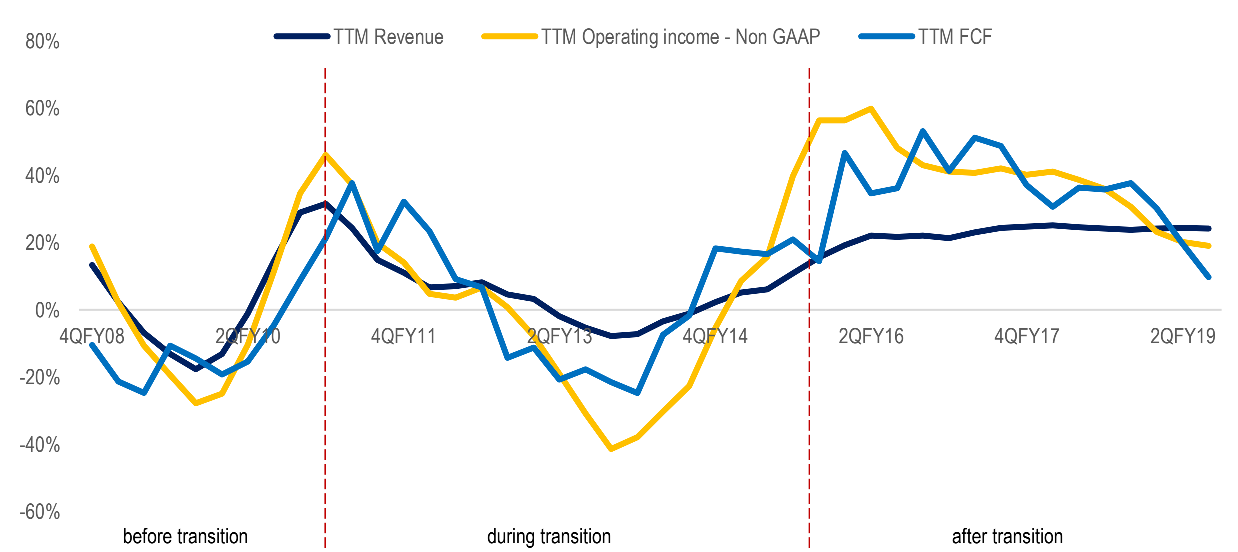
Adobe – the benchmark of cloud transition (SaaS)

Figure 1: Major financial metrics (TTM revenue, TTM operating income, and TTM FCF growth, YoY) to trace the changes of Adobe's cloud transition



Source: Company data, AMTD Research

In this issue, we will discuss the changes that cloud transition brought to traditional software company from a financial and valuation perspective. AMTD views: different from cloud native company, traditional software company normally adopts perpetual licensing model, under which the revenue is vulnerable to the fluctuation of economy and the change of major customers. Thus, more and more software companies are moving their business to cloud based subscription model (SaaS) to reduce business risks and improve operating efficiency. Today, Adobe, the benchmark of cloud transition, had recovered from falling profit in the transition, and has now achieved a quite stable revenue growth with the help of stronger cash flow.

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Cloud/SaaS

Adobe – the benchmark of cloud transition

Adobe is one of the world largest software companies. It has historically focused upon the creation of multimedia and creativity software products. From PostScript to PDF, Illustrator to Photoshop, Adobe has developed industry standard for editing software from graphic and photos to web and videos. Over the past decade, Adobe has revived itself as cloud (SaaS) company. It no longer offers physical packed software, such as Creative Suite, under a perpetual license; rather, it now offers a lot of Apps in Desktop/Mobile versions, which can be subscribed through Creative Cloud. Given its dedicated software business and successful transformation to SaaS, Adobe is the benchmark of cloud transition.

In the following sections, we will briefly discuss Adobe's full-scale business transformation in four aspects below:

1) Business considerations behind the transition to cloud

- To meet fast-changing demand by enhancing business agility
- To grow client base by serving untapped long tail market
- To stabilize growth by generating more recurring revenue

2) Impacts on financials during the transition to cloud

- Revenue stagnated when customers started moving to subscription model
- Capex increased to build up cloud infrastructure at early stage
- G&A and R&D expenses growth picked up accordingly

3) Financial performance after the transition to cloud

- Revenue growth stabilized and converged to ARR growth as proportion of recurring revenue increased
- Margin recovered to the level before transition while cash flow was strengthened

4) Valuation discussion

- EV/FCF multiple would be a better valuation measure given the nature of its business
- The stock was now trading at 25.4x FY20E (consensus) FCF, implying 1.1x EV/FCF/FY20 YoY growth
- The stock was now trading at 28.0x FY20E (consensus) P/E, implying 1.2x PEG on FY20E YoY growth

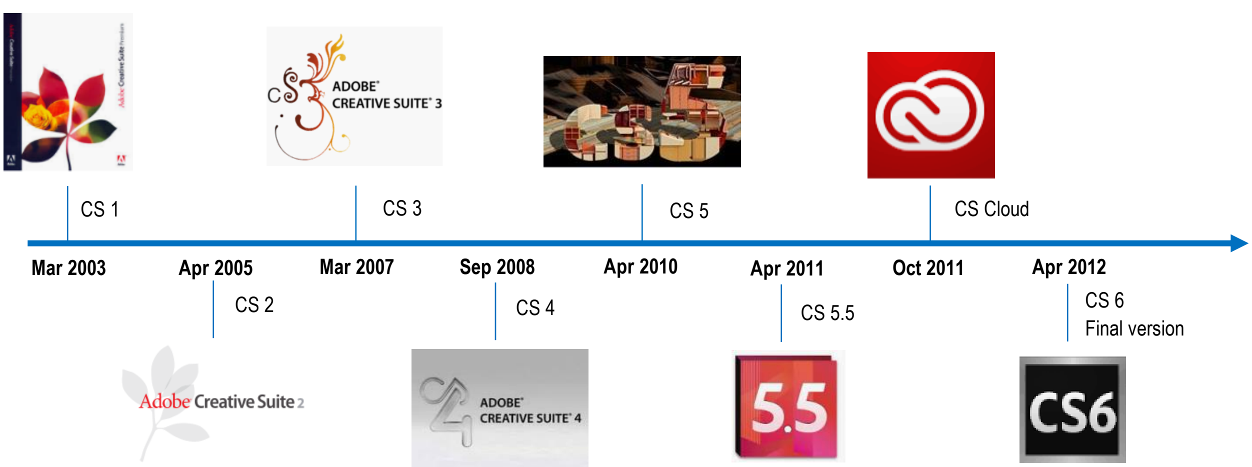
Business considerations behind the transition to cloud

To meet fast-changing demand by enhancing business agility

Driven by internet and telecom technology, digital transformation was accelerating across different industries. Customer requirements were changing much faster with advances in devices, browsers, mobile apps, and the instant message. However, Adobe had delivered major products updates only 18 or 24 months when it was adopting the traditional perpetual-licensing model, which actually did limit its capability in delivering new innovations and capabilities to customers in a timely manner.

Adobe first announced the Creative Cloud in October 2011, and on May 6, 2013, Adobe announced that they would not release new versions of the Creative Suite and that future versions of its software would be available only through the Creative Cloud. Today, with an agile development model based on cloud, Adobe can get feedback from customers easily, revise, test and roll out updates to customers quickly.

Figure 2: launch timeline of Adobe Creative Suite & Creative Cloud

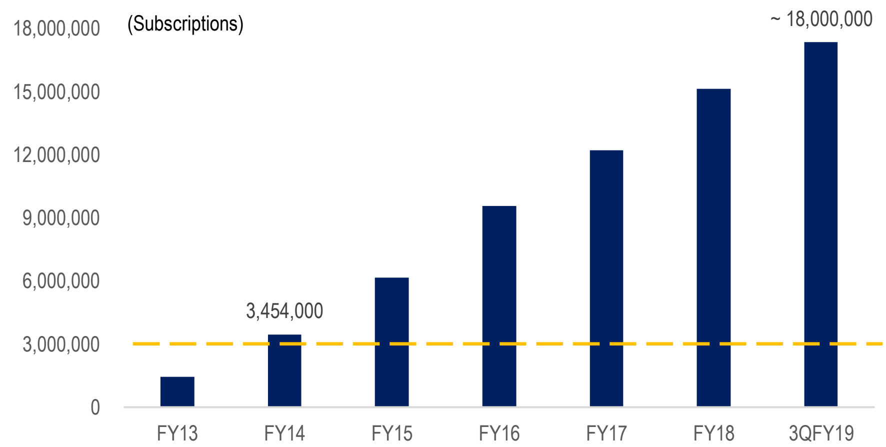


Source: Company data, AMTD Research

To grow client base by serving untapped long tail market

Under perpetual-licensing model, taking Creative Suite 6 for example, Adobe only offered 4 different versions, namely, Design Standard, Design & Web Premium, Production Premium, and Master Collection, being priced at US$1,299, US$1,899, US$1,899, and US$2,599, respectively. Higher starting price and limited choices made the company unable to serve a large number of long tail customers, who normally desired a diversified and flexible product or service. Under the old perpetual licensing model, Adobe shipped approximately 3 million units per year and that number remained flat for a long term. However, just the third year after full-scale launch of Creative Cloud, the total paid subscriptions were more than 3 million, and reached approximately 18 million by the end of August 2019, representing a 5-year CAGR of 40% since FY14. Hyper subscription growth was mainly due to offering more diversified products and services portfolio with flexible pricing and billing based on customer usage. All of this was brought by transition to cloud.

Figure 3: Adobe Creative Cloud paid subscriptions, as at period end

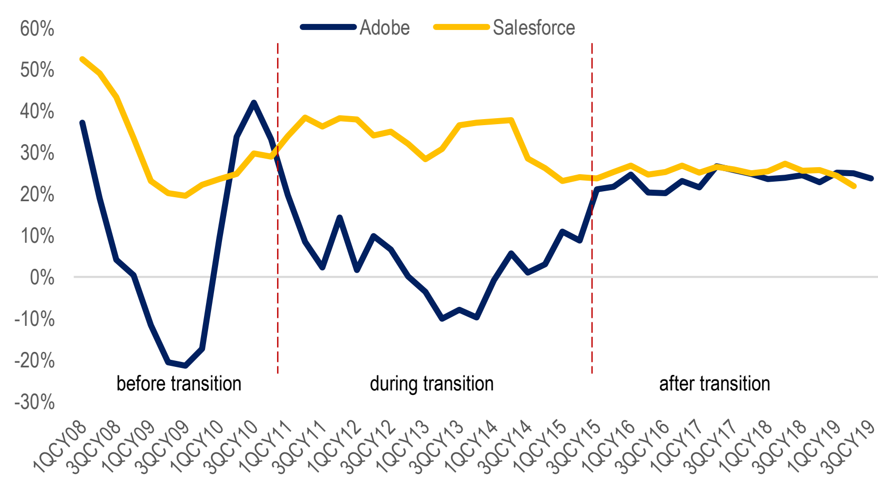


Source: Company data, AMTD Research estimates

To stabilize growth by generating more recurring revenue

Thanks to successful launch of Creative Suite 5 and low base in 2009, Adobe achieved record revenue growth in 2QFY10. However, during the downturn in 2008 and 2009, Adobe's revenue suffered more than that of cloud native companies, such as Salesforce. It was no surprise that those software or SaaS companies with high proportion of recurring revenue can help shield from market volatility. Under the old perpetual licensing model, smaller proportion of recurring revenue made the company vulnerable to economic downturn; in the meanwhile, longer product update/launch cycle, normally more than one period of fiscal year, let the company take too much risks on certain product. Thus, transition to cloud with subscription model could offset the volatility and stabilize the revenue growth in a long run.

Figure 4: Total quarterly revenue growth, YoY

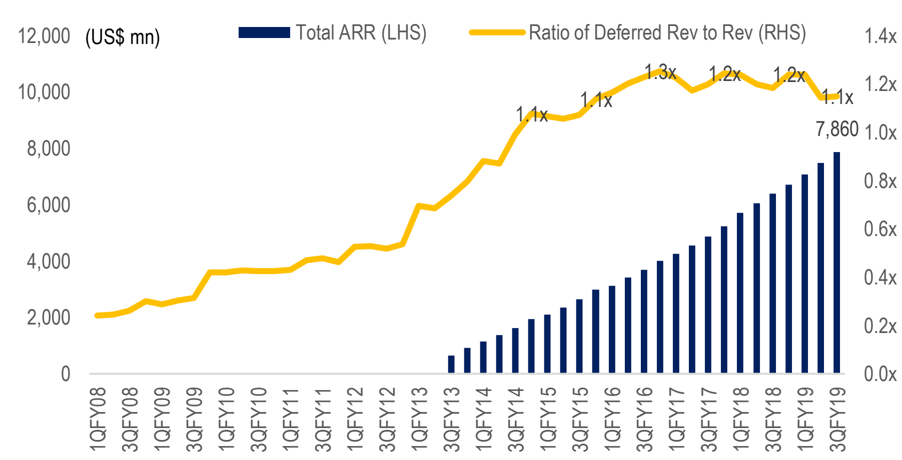


Source: Company data, AMTD Research

*Note: 1) Adobe's fiscal Q1, Q2, Q3, and Q4 end at Feb, May, Aug, and Nov, respectively; and 2) Salesforce's fiscal Q1, Q2, Q3, and Q4 end at Apr, Jul, Oct, and Jan next year, respectively; thus, 1QCY19 represents 1QFY19 for Adobe and 1QFY20 for Salesforce

After launch of cloud transition in 2011, Adobe recurring revenue grew strongly. In 3QFY19, its Digital Media Annualized Recurring Revenue ("ARR") reached US$7.86bn, among which Creative ARR grew to US$6.87bn and Document Cloud ARR grew to US$993mn, respectively. On the other hand, since 4QFY14, deferred revenue on balance sheet stayed above 1.1x of the revenue in the same quarter, indicating a healthy financial buffer of the company. We can clearly see that Adobe's revenue growth has been stable at around 23% since 2016 after cloud transition.

Figure 5: Adobe Creative Cloud's total ARR (LHS) and Ratio of Deferred revenue to total revenue (RHS)



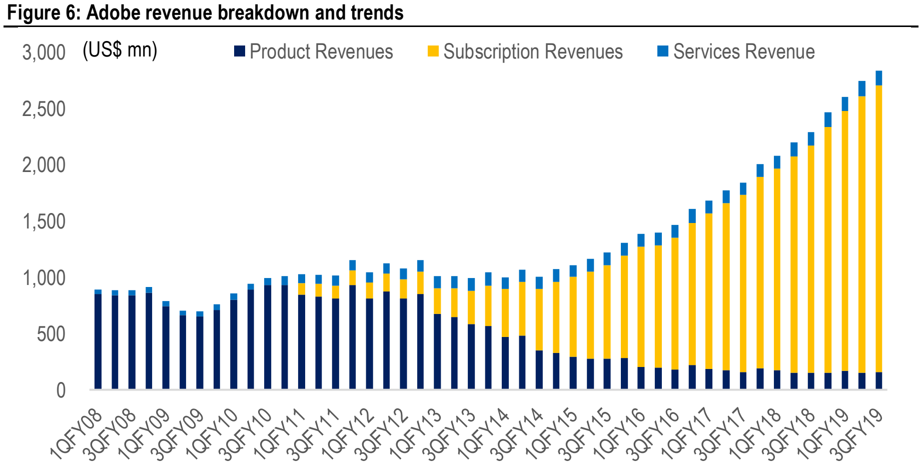
Source: Company data, AMTD Research estimates

Impacts on financials during the transition to cloud

Revenue stagnated when customers started moving to subscription model

Adobe launched Creative Cloud in Nov 2011 and after that the final version of Creative Suite 6 was launched in Apr 2012. During that period, Adobe offered, side by side, similar products under both a subscription model and traditional perpetual-licensing model. On the one hand, it was experimenting with subscription models; on the other hand, it tried to keep revenue from falling sharply, because subscription model had a lower entry price and subscription base was small at the very beginning. As a result, the revenue stagnated or even declined slightly during the transition period from 2011 to 2013. When subscription revenues exceeded product revenues in 2014, cannibalization effect was fading and its revenue was getting back on growth track.

Figure 6: Adobe revenue breakdown and trends

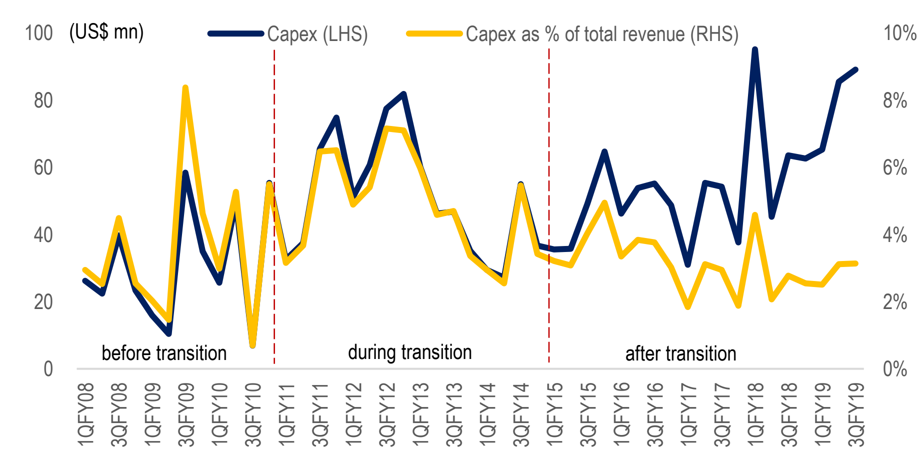


Source: Company data, AMTD Research

Capex increased to build up cloud infrastructure at early stage

For a traditional software company which was moving to the cloud, it need to invest in cloud-based technology and infrastructure that would allow customers to download new products and updates from the company website or server in a seamless way. In order to build up those capabilities, Adobe more than doubled its Capex from 32.4mn in 1QFY11 to US$81.8mn in 4QFY12 during the early stage of transition.

Figure 7: Adobe's Capex (LHS) and Capex as % of total revenue (RHS)

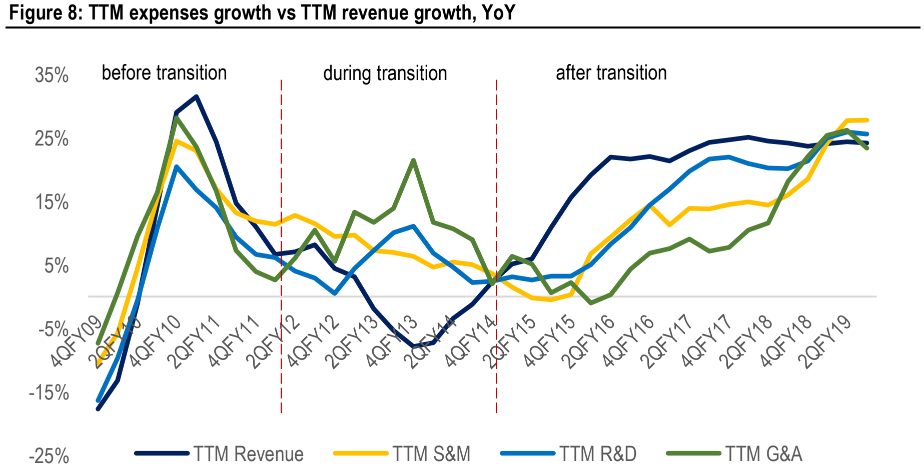


Source: Company data, AMTD Research

G&A and R&D expenses growth picked up accordingly

Accordingly, G&A and R&D expenses growth picked up as well. It reflected increasing investment in development talents and efforts to rebuild its business processes. For example, given the increasing services request from mobile terminals, the company need to develop protocols which can connect apps, desktop, and servers with each other in a secure and reliable way. Different from traditional licensing model, subscription model based on cloud (SaaS, Software as a Service) are more service-oriented, the company need to rebuild new service-oriented architecture (SOA) business processes.

Figure 8: TTM expenses growth vs TTM revenue growth, YoY



Source: Company data, AMTD Research

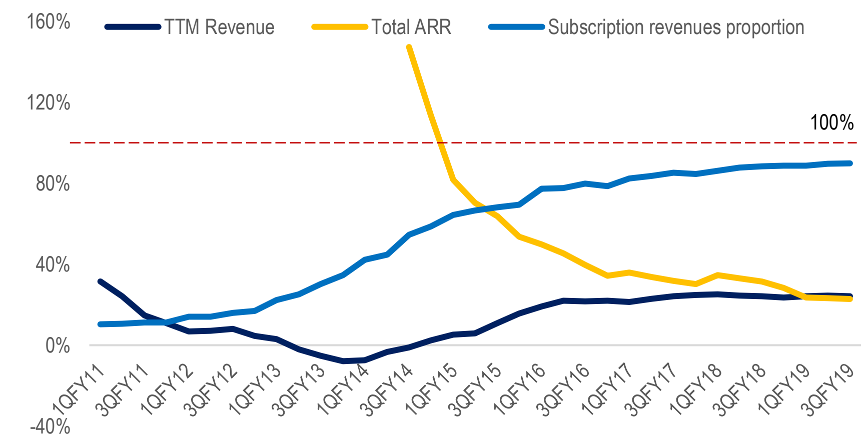
Although built most of these capabilities in-house, Adobe was looking for external opportunities as well. Adobe acquired Behance in 2012, a social network for creative professionals, to get feedback from and better serve its customers via a popular way on internet. Moreover, Adobe also partnered with Microsoft Azure for IaaS platform in 2016.

Financial performance after the transition

Revenue growth stabilized and converged to ARR growth as proportion of recurring revenue increased

Annualized Recurring Revenue (ARR), frequently used in subscription model, shows the money that comes in every year for the life of a subscription (or contract), and it is the value of the recurring revenue normalized for a single calendar year. For Adobe, the phenomenal high growth of ARR over the past five years after its transition to cloud has successfully boost the revenue growth. On the one hand, ARR growth has slowed down due to the expanding scale; on the other hand, as the proportion of recurring revenue has reached over 90%, revenue growth converged up to ARR growth and has stabilized at around 23% in 2019.

Figure 9: Adobe total ARR growth and TTM revenue growth, YoY, and subscription revenues proportion

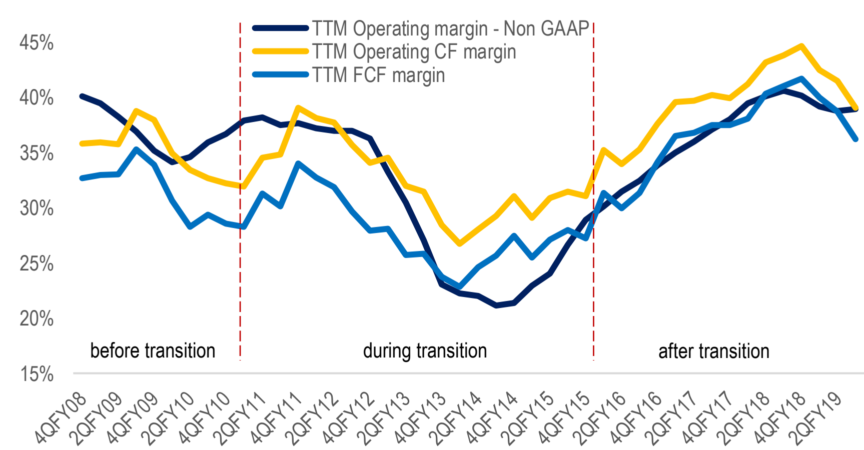


Source: Company data, AMTD Research

Margin recovered to the level before transition and cash flow was strengthened

Apart from stabilizing revenue growth and reducing earnings risks, cloud model also helps improve cash flow. For Adobe, before the cloud transition, its non-GAAP margin was higher than operating cash flow margin. However, after the cloud transition, its operating cash flow margin was higher than non-GAAP margin, mainly due to the declining effective tax rate and improving working capital, in our view. In addition, with less capex expenditure, its free cash flow margin improved to the same level of non-GAAP margin.

Figure 10: comparison of Non-GAAP operating margin, operating cash flow, and free cash flow, TTM



Source: Company data, AMTD Research

Valuation discussion

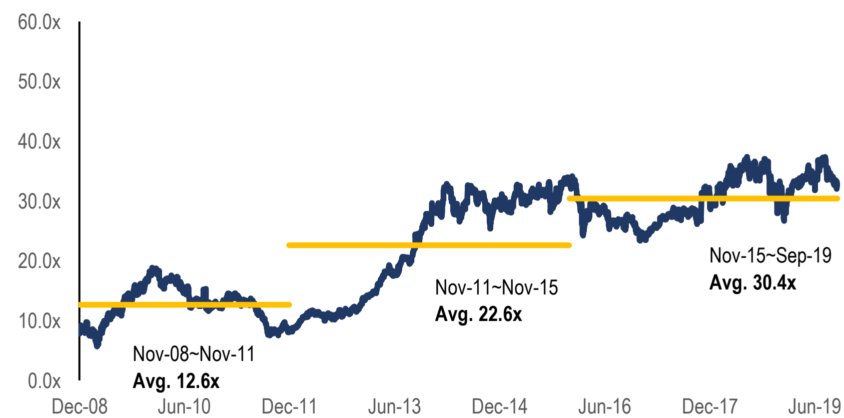
EV/FCF multiple would be a better valuation measure given the nature of its business

Regarding Adobe's valuation, EV/FCF is more stable and consistent multiple than P/E over the past decade, in our view. Since Adobe began cloud transition in 2011, both EV/FCF and P/E had rose significantly, indicating investors' confidence in its new business model. More specifically, EV/FCF had risen from 7.7x in Sep 2011 to 32.5x in Dec 2014, while P/E had jumped nearly sixfold from 10.9x to 57.4x during the same period. In general, P/E multiple was more volatile than EV/FCF multiple was, because cloud model or subscription model is more like annuity streams and its cash flow is more stable than the earnings. Thus, EV/FCF multiple would be a better valuation measure, in our view.

EV/FCF

Adobe's TTM FCF growth was 9.6% YoY in 3QFY19, and according to consensus, it was expected to grow by 12.3% and 23.2% in full year of FY19 and FY20, respectively. Its stock was trading at 25.4x FY20E (consensus) FCF, implying 1.1x EV/FCF/FY20 YoY growth.

Figure 11: One year forward EV/FCF over the past decade

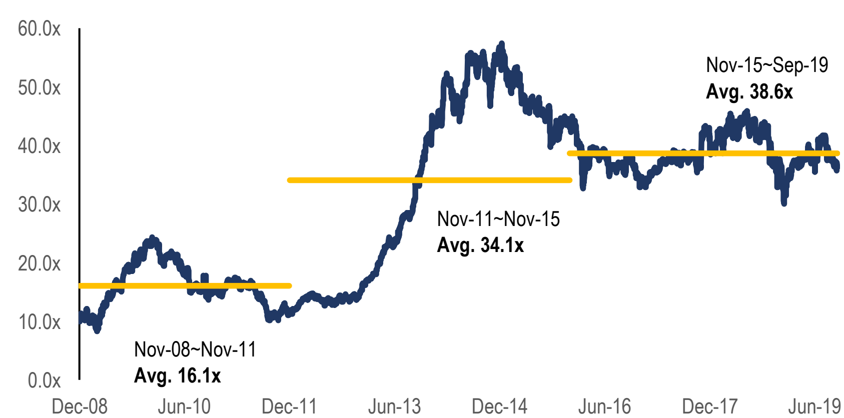


Source: Company data, Bloomberg, price as of 3/10/2019, AMTD Research

P/E

Adobe reports non-GAAP net income of US$1.01bn and adj. EPS of US$2.05 in 3QFY19, up 18.4% YoY. According to consensus, adj. EPS was expected to grow by 16.0% to US$7.84 in full year of FY19 and 23.7% in full year of FY20. Now its stock was trading at 28.0x FY20E (consensus) P/E, implying 1.2x PEG on FY20E YoY growth.

Figure 12: One year forward P/E over the past decade



Source: Company data, Bloomberg, price as of 3/10/2019, AMTD Research

News updates

27 Sept 2019

IoT

Alibaba

Alibaba Cloud unveiled AIoT operating system AliOS Things 3.0

Alibaba released AliOS Things 3.0, the 3rd-gen AIoT operating system. It is in microkernel architecture with Pingtouge's latest chip design. AliOS Things 3.0 has a brand new app development mode and other features, which enables it to detect bugs for smart devices in seconds. Such debugging efficiency is 80% higher than the traditional one-step breakpoint debugging. AliOS Things 3.0 is also equipped with an AI module for voice interaction. It could be used in smart speakers, smart door locks, logistics PDA and other devices. (Source: Sina)

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25 Sept 2019

Semiconductor

Alibaba

Alibaba launched latest AI chip Hanguang 800

On Sept 25th, at the Alibaba Cloud Apsara Conference 2019, Alibaba unveiled its first self-developed AI processor, Hanguang 800, for cloud-based large-scale AI inferencing, as well as medical treatment and ADAS. Given an inference image classification benchmark test on ResNet-50, Hanguang 800's peak performance is 78,563 images per second (IPS), which is 4 times that of the best AI chip in industry. The chip's peak efficiency is 500 IPS/W and is 3.3 times that of the No. 2. The new AI cloud service based on Hanguang 800 is now available, which is 100% more cost-effective than traditional GPUs. (Source: CNBC)

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25 Sept 2019

AI

Amazon

Amazon introduced an array of new devices with Alexa

Amazon unveiled several new Echo devices and Alexa features. There are two categories of new products: personal electronic products and appliance. For personal electronics, there are three smart speakers: Echo Studio, New Echo and Echo Dot with clock; a smart display device Echo Show 8, a night light Echo Glow, the smart ring Echo Loop, an AirPods competitor Echo Buds, prescription glasses supporting Alexa Echo Frames, and a small device to extend Alexa into every room of the house Echo Flex. For appliance, the company launched a US$249 smart oven. Users can also scan hundreds of packaged food items from the Alexa app, which will trigger the oven to start cooking. (Source: Amazon)

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25 Sept 2019

AI

GM/Amazon

General Motors to bring Amazon Alexa to its cars in 2020

General Motors plans to integrate Amazon Alexa to its cars in 1H20. Through Alexa, drivers could get navigation, play music, make phone calls, control smart home devices and so on. The update will be carried out on the 2018 or newer Cadillac, GMC, Buick, and Chevrolet vehicles, which already feature 4G LTE connectivity and app framework. Owners of older vehicles could also enjoy the services by purchasing Echo Auto, a credit card-sized device for US$50. (Source: General Motors)

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24 Sept 2019

AI

Facebook

Facebook buys 'mind-reading wristband' firm CTRL-Labs

Facebook has announced to acquire neural interface startup CTRL-Labs. This start-up company is developing a wristband capable of detecting electrical signals from the wrist, transmitting the signals emitted by brain into computer. The deal is worth US$500mn-1bn, according to Bloomberg, and is the most substantial acquisition made by Facebook in the last half decade. (Source: BBC)

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24 Sept 2019

Smartphone

Xiaomi

Xiaomi launched the Mi MIX Alpha concept smartphone

Xiaomi unveiled its Mi MIX Alpha concept smartphone. It features the world's first 108MP main camera, whose sensor is 389% larger than that of the 48MP camera. Mi MIX Alpha has an unprecedented Surround Screen with a screen-to-body ratio of more than 180.6%. The screen is produced by China's Visionox, and could only realize small scale trial production now. Mi MIX Alpha is expected to be available at the end of this December and sell at RMB19,999. (Source: Xiaomi)

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24 Sept 2019

Smartphone

Xiaomi

Xiaomi launched the Mi 9 Pro 5G with the latest MIUI 11

Xiaomi announced its second 5G mobile phone, Mi 9 Pro 5G. The Mi 9 Pro 5G features Snapdragon 855+, and supports 40W fast wired charging as well as 30W fast wireless charging. It is embedded with the latest MIUI 11, and have new features like Mi Work, Mi Go, etc. Mi 9 Pro 5G provides full coverage on the mainstream 5G bands in mainland China, including N41, N78 and N79 bands. The phone is available now starting from RMB3,699. (Source: Xiaomi)

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23 Sept 2019

Wearables

Xiaomi/Google

Xiaomi may be working on a Google Wear OS smartwatch

According to 9to5Google, Xiaomi could be working on a smartwatch running on the Wear OS platform from Google. In a report from IDC, Xiaomi has shipped 5.9 million wearables in the second quarter of 2019, with a 17.3% market share. If Xiaomi does release a Wear OS smartwatch, it could be quite helpful in increasing the popularity of Google's Wear OS. (Source: 9to5google)

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23 Sept 2019

Smartphone

Google

Google launched apps and game subscription service Play Pass

Google introduced a new app subscription service Play Pass. It grants users access to over 350 apps and games, all free of ads or any payments (including in-app purchases). Google will add in new apps and games every month. The service costs US$4.99 per month, or only US$1.99 per month for the first year if signing up before Oct 10. There is also a 10-day free trial period. Compared to Apple's Arcade, users will find all of the apps already available on Google Play, while Arcade only contains apps exclusive to the service – you could only acquire those apps by subscribing Arcade. (Source: Google)

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23 Sept 2019

Smartphone

Xiaomi

The Redmi 8A was unveiled in India on 25th Sept

Xiaomi launched the Redmi 8A in India on Sept 25. This new smart phone comes with a 6.217'' 720x1520 waterdrop display and a large 5,000mAh battery. For optics, the smartphone has a dual rear camera setup with 12MP primary sensor. For selfies, the phone will feature an 8MP selfie camera. The price in India is INR6,499. (Source: Telecomtalk)

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20 Sept 2019

Cloud

Google

Google to invest EUR3bn to expand European data centers

Google plans to invest additional EUR3bn in expanding its European data centers over the next two years. The company will spend EUR600mn in the existing Hamina data center in Finland, bringing the total investment there to EUR2bn. Since 2007, Google has invested EUR15bn in European digital infrastructure. Its other European data centers are located in the Netherlands, Ireland, Belgium and Denmark. (Source: Reuters)

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20 Sept 2019

TV

Xiaomi

Xiaomi TV pro will come with the most advanced 12nm chip

Xiaomi has officially confirmed that Xiaomi TV Pro will come with an Amlogic T792 chip, which is made jointly by Xiaomi and Amlogic. This chip adopts 12nm process technology, and is the most advanced process for TV. The overall performance will be 63% higher and the power consumption is reduced by 55%. In addition, with the new chip, Xiaomi TV Pro will support 8K decoding and playback. The Xiaomi TV Pro will come in 43 inches, 55 inches and 65 inches three sizes, and the price will range from RMB1,499 to RMB 3,399. (Source: Gizmochina)

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19 Sept 2019

Smartphone

Huawei

Huawei officially launched its flagship Mate 30 series with 5G version

Huawei officially unveiled its Mate 30 and Mate 30 Pro, the latter with 4G and 5G versions. The Mate 30 sells from RMB3,999, while the flagship Mate 30 Pro starts from RMB5,799. The Mate 30 series runs on EMUI 10, an operating system based on Android 10. It has some updated features like a dark mode and gesture control. Huawei also launched its brand new Huawei Vision smart TV powered by Harmony OS on the same event. (Source: Verge)

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19 Sept 2019

Devices

Sony

Sony launched a new IP67-rated smart speaker

Sony has recently launched a new speaker SRS-XB402M, which is Sony's first smart speaker supporting Amazon Alexa. This speaker is also equipped with the most advanced AI chip made jointly by Sony and MediaTek. In addition, the speaker is IP67-rated so it is waterproof, dustproof, rustproof. The speaker also features bluetooth and Wi-Fi. This speaker was launched in India at INR24,990. (Source: Digit)

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18 Sept 2019

Devices

Apple

The upcoming iPad Pro might be equipped with 3D ToF camera

Media reported that the upcoming iPad Pro will have a multiple camera setup. The setup will give the device "AR eyes", meaning that iPad Pro will support some new functions like 3D mapping. The new iPad will come out in March 2020 and LG will provide the ToF sensors. (Source: Macrumors)

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18 Sept 2019

Smartphone

Samsung

Samsung launched Galaxy M30s, M10s in India

Samsung has launched the new Galaxy M30s and M10s in India. Galaxy M30s is equipped with a leading 6,000 mAh battery, triple rear cameras and AI Game Booster to improve gaming experience. Galaxy M10s features a 6.4" Infinity V Super AMOLED display, dual rear cameras and a 4,000 mAh battery. The phones will be available on Sept 29, with prices starting from INR13,999 and INR8,999 for Galaxy M30s and M10s, respectively. (Source: Samsung)

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17 Sept 2019

Microsoft

Microsoft initiated a US$40bn share buyback program

Microsoft announced a quarterly dividend of US$0.51 per share, implying a US$0.05 or 11% increase over the previous quarter's dividend. The board of directors also approved a new share repurchase program authorizing up to US$40bn in share repurchases. The new share repurchase program has no expiration date, which means it may be terminated at any time. (Source: Techcrunch)

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17 Sept 2019

Semiconductor

Bitmain

Bitmain announced the 3rd gen AI chip BM1684

Bitmain announced the 3rd-gen cloud-based AI chip BM1684. The chip features TSMC's 12nm process, and has low power consumption with a high performance. BM1684 is integrated with HD decoding and encoding algorithm, and can be used for autonomous cars, city brain, smart government, security, medical treatment and other AI applications. BM1684 will first be used in Fuzhou City Brain project. (Source: Sina)

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17 Sept 2019

Cloud

China

China's cloud market up 58% YoY 2Q19 as local competition heats up

According to Canalys, China's cloud infrastructure services (IaaS) market's total spending reached US$2.3bn in 2Q19, up 58% YoY. Alibaba Cloud still dominated the market with a market share of 43%, more than the sum value of the next four companies. Tencent Cloud was the second largest cloud service provider, followed by Amazon Web Services (AWS) and Baidu Cloud. Tencent Cloud and Baidu Cloud both showed a strong growth of 88% and 92%, respectively, in this quarter. (Source: Canalys)

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17 Sept 2019

Cloud

Salesforce

Salesforce launched Manufacturing Cloud and Consumer Goods Cloud

Salesforce launched Manufacturing Cloud and Consumer Goods Cloud, targeting the traditional manufacturing and consumer goods companies, respectively. The two new industry products are designed to unify market data from different sources, and help clients to drive revenue growth and improve customer satisfaction. They are part of the Salesforce Customer 360 Platform. Salesforce has been keeping an eye on companies from traditional industries which are making their cloud transition. It has introduced industry-specific cloud products for other verticals including finance, healthcare, media, nonprofits and retail. (Source: Salesforce)

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16 Sept 2019

Cloud

Oracle/VMware

Oracle and VMware partnered to enhance customers' hybrid cloud experience

Oracle and VMware have expanded their existing partnership to enhance hybrid cloud experience. Oracle will launch Oracle Cloud VMware Solution, a new service that enables customers to run VMware workloads on Oracle Cloud infrastructure. Oracle will also offer technical support for its products that run on VMware virtualized environments, both in customer on-premise data centers and Oracle-certified cloud environments. The service will probably be available in 1H20. (Source: Oracle)

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16 Sept 2019

Smartphone

Vivo

Vivo NEX 3 with 5G has come out

Vivo NEX 3 is officially launched. The NEX 3 came in 4G and 5G versions, both of which feature Qualcomm's Snapdragon 855 Plus processor and have a vapor chamber cooling system. The battery capacity is 4,500mAh and supports Super FlashCharge 44W fast charging. The price for 4G version is RMB4,998 and the price for 5G version starts from RMB5,698. (Source: Engadget)

IMPORTANT DISCLOSURES

Analyst Certification

We, Brian Li and Michelle Li, 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.

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