Global Technology IPO Review Q2 2017



Global tech IPO market has best quarter in two years based on volume: 28 IPOs – Including four Unicorns – In Q2 2017



Raman Chitkara
Partner and Global Technology
Industry Leader
PricewaterhouseCoopers LLP
raman.chitkara@us.pwc.com

*Issue size greater than US\$40 million (includes overallotment) and based on trade date; See Methodology Welcome to the Q2 2017 issue of PwC's Global Technology IPO Review. It was the best quarter for technology initial public offerings (IPOs) in two years as the upbeat mood in the capital markets increased the appetite of investors for new public offerings. In the second quarter, 28 technology companies completed IPOs for total proceeds of US\$5.1 billion. This is the most technology IPOs since Q2 2015 when there were 36.

The improvement of economic fundamentals in the major developed economies, continued rallies in many equity markets and the backlog of tech companies waiting to go public led to the increased volume.

While four Unicorns completed their IPOs, the big names continued to stay on the sidelines. The pace of Unicorn IPOs in the remainder of calendar 2017 is likely to be influenced by the post-IPO performance of Unicorns that completed their IPOs in the first half.

Geographically, China continued to show robust growth in the technology IPO market with 16 companies raising a total of US\$1.2 billion. Chinese IPOs were favorably impacted by the efforts of the China Securities Regulatory Commission (CSRC) to speed up the approval process. South Korea had a strong quarter with two IPOs, raising US\$2.405 billion, including the largest IPO of Q2—Netmarble Games Corp. with proceeds of US\$2.356 billion.

The US had six IPOs with total proceeds of less than a billion, a 50% improvement over the preceding quarter, though significantly below comparable historical levels achieved during strong IPO cycles. After a drought of five quarters, the UK had one technology IPO in Q2 2017, raising US\$324 million. Rounding out Q2, Belgium, Canada and Israel had one IPO each.

In a rare turn of events, Internet Software & Services shared first place for volume with another subsector—Semiconductors. Each had eight IPOs in Q2 2107. As for total proceeds, Internet Software & Services raised US\$3.5 billion, and Semiconductors a more modest US\$832 million. Internet Software & Services benefitted from Netmarble's proceeds. Semiconductors benefitted from IPOs by five Chinese companies. It was the first time Semiconductors had eight or more IPOs since Q4 2010, when it had 12.

Looking ahead, we expect the second half of 2017 to continue the positive momentum of the first half. However, any significant decline or increase in volatility in the capital markets has the potential to change investor sentiment in a hurry. Factors to watch include Chinese regulatory developments; the tone, tenor and timing of US budget, debt ceiling and tax reform deliberations, and the continuity of overall global economic progress without inflationary pressures. Lastly, gaps between private company valuations in the recent past and the valuations investors are willing to give public companies will influence how many and which Unicorns test the capital markets in the second half of 2017.

Sincerely,

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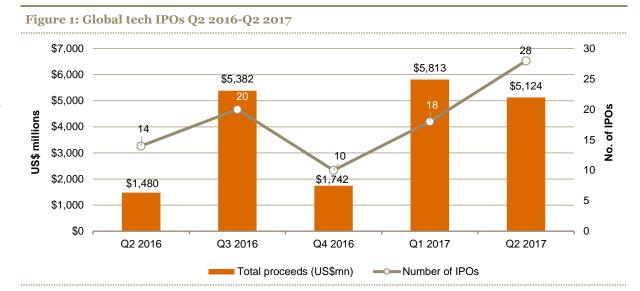
Q2 2017 Global tech IPO summary

Tech IPOs continue to ride high on positive investor sentiment

After a positive start to the year, Q2 2017 saw an increase in technology IPOs. Deal volume increased significantly as 28 IPOs raised a total of US\$5.1 billion in the second quarter; the number of listings rose 56% quarter over quarter and 100% year over year. Proceeds declined 12% from the previous quarter, but increased 246% year over year.

Chinese technology companies led with 16 IPOs raising US\$1.2 billion. South Korea had two IPOs that raised more than US\$2.4 billion. The US had six tech IPOs with total proceeds of US\$764 million.

Technology IPOs included four Unicorns, twice the number in Q1. All were in the Internet Software & Services subsector: Netmarble Games Corp of South Korea (proceeds of US\$2.4 billion), China Rapid Finance Ltd of China (US\$69 million), Okta Inc (US\$187 million) and Cloudera Inc (US\$259 million) of the US. While Netmarble and Okta were priced above pre-IPO valuations, the other two were priced lower than pre-IPO valuations.



Source: S&P Capital IQ with analysis by PwC



"Looking ahead, we expect the second half of 2017 to continue the positive momentum of the first half. However, investor sentiment could change in a hurry as a result of a significant negative political development or increased volatility in the capital markets."

Raman Chitkara

Global Technology Industry Leader

First-half 2017 average proceeds are higher than first-half 2015 and 2016 – Led by six Unicorn listings

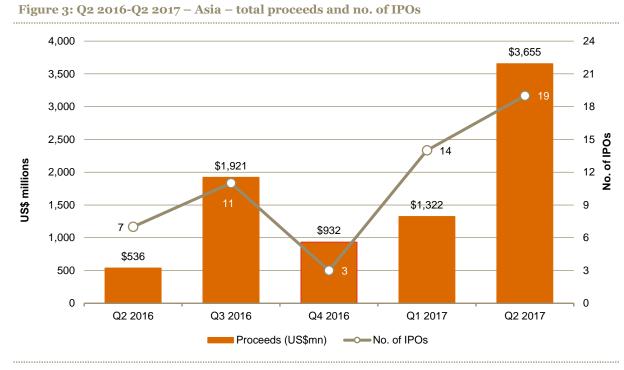
Two Unicorns in particular, Netmarble (Q2) and Snap (Q1), raised total proceeds disproportionately and acted as positive outliers in the Q2 and Q1 2017 IPO environments. As for average proceeds, H1 2017 was higher than the previous two first-half periods at US\$238 million. H1 2015 had average proceeds of US\$207 million and H1 2016 had US\$94 million.

However, although the volume of tech IPOs rose substantially in Q2, average proceeds declined from US\$323 in Q1 to US\$183 in Q2 owing to smaller offerings including three of the four Unicorns garnering less than US\$600 million in aggregate.

Figure 2: H1 2010-H1 2017 total proceeds, average proceeds and no. of IPOs \$25,000 75 \$20,817 59 \$18,955 \$20,000 60 50 46 No. of IPOs \$15,000 \$10,000 \$12,225 \$10.937 27 \$8,710 30 \$4,588 \$5,000 15 \$2,249 \$287 \$158 \$164 \$416 \$238 \$170 \$207 \$94 \$0 H1 2010 H1 2011 H1 2012 H1 2013 H1 2014 H1 2015 H1 2016 H1 2017 ■ Total proceeds (US\$mn) Avg proceeds (US\$mn) No. of IPOs

The Asian tech IPO market takes center stage this quarter

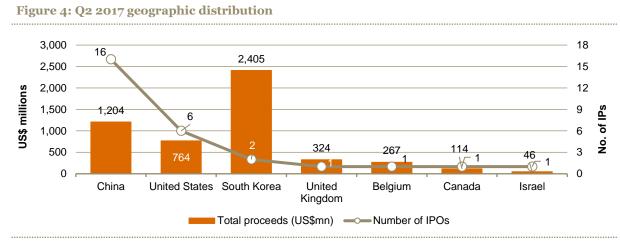
Asia reported 19 technology IPOs, the highest for any region in Q2, with total proceeds of US\$3.7 billion. China led with 16 IPOs, followed by South Korea with two and Israel with one. South Korea's Netmarble was the biggest IPO in the Asian market and the largest tech IPO of the quarter, raising just under US\$2.4 billion. China raised US\$1.2 billion, and Israel had proceeds of US\$46 million.



Tech IPOs in Q2 2017 have wider geographic spread than the previous quarter

Q2 2017 had a wider geographic distribution than the prior two quarters with seven countries reporting technology IPOs. China led with 16, followed by the US with six and South Korea with two. The UK, Canada, Belgium and Israel had one IPO each. China accounted for 57% of IPOs in Q2 while South Korea had 47% of IPO proceeds.

The UK reported one technology IPO after five quarters of none. That's progress, but lingering uncertainty about the impact of Brexit continues to hinder UK and European IPO activity.

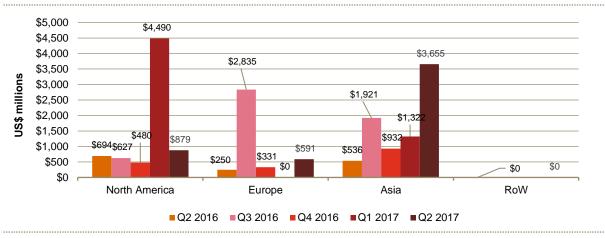


Global macroeconomic conditions improve as Asia gains strength; political challenges continue in the US and Europe

Europe had two IPOs, one each from Belgium and the UK, together raising US\$591 million in Q2 2017. Nonetheless, it continued to lag behind Asia and North America with the fallout from Brexit still putting a damper on enthusiasm.

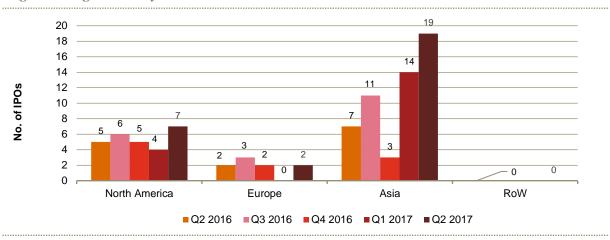
Asia was at full throttle with 19 IPOs raising US\$3.7 billion. In North America, the US had six IPOs and Canada had one. The valuation gap is still a concern for technology companies in the US, with private placements valuing them at much higher multiples compared to their likely IPO valuations.

Figure 5: Regional analysis of IPO proceeds



Source: S&P Capital IQ with analysis by PwC

Figure 6: Regional analysis of number of IPOs



Semiconductor surprise: Subsector shares top spot for number of IPOs with Internet Software & Services

The Semiconductor subsector matched Internet Software & Services – the perennial tech IPO leader – with eight IPOs in Q2 2107. Between them they had 16, more than half the total.

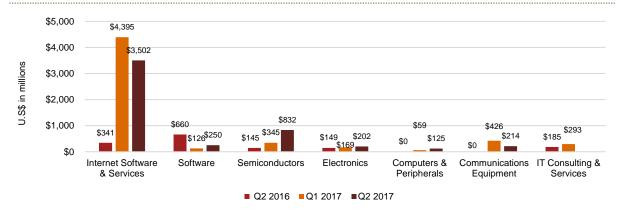
The two subsectors also had the top proceeds. Internet Software & Services raised US\$3.5 billion and Semiconductors had US\$832 million. All four Unicorns in the quarter were in the Internet Software & Services subsector, impacting those total proceeds.

Internet Software & Services proceeds actually declined by 20% from the previous quarter although the number of IPOs was up by 60%. Semiconductors witnessed a sharp increase of 167% sequentially in the number of IPOs with proceeds increasing by 142% from the previous quarter.

Of the eight Semiconductor IPOs, five were from China and one each from South Korea, Belgium and the US. Clearances issued by China regulatory authorities led to the upsurge in Semiconductor IPOs this quarter.

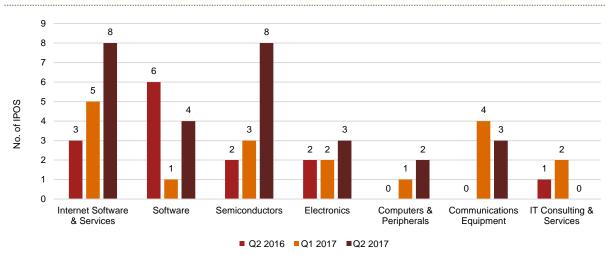
The Software subsector was a distant third in Q2 with four IPOs raising a total of US\$250 million.

Figure 7: Subsector distribution showing total proceeds



Source: S&P Capital IQ with analysis by PwC

Figure 8: Subsector distribution showing number of IPOs



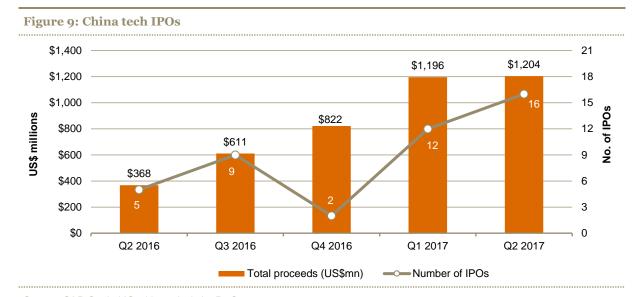
Country and stock exchange detail

China

The Chinese tech IPO market continues its momentum with 16 IPOs in Q2 2017, or 57% of the total

With 16 IPOs, China had the largest piece of the tech IPO market in Q2, with proceeds of US\$1.2 billion. With this, China topped its numbers of the last five quarters.

Significantly, only one of the 16 Chinese IPOs was listed on the NYSE; the others were on the Chinese exchanges. The biggest IPO in China this quarter was Olympic Circuit Technology, which raised US\$195 million. The increasing participation of companies from mainland China was due to the attraction of the relatively higher PE ratio for companies on Chinese exchanges compared to the US and European exchanges, and the acceleration of the IPO approval process by the regulatory authorities (CSRC).



Source: S&P Capital IQ with analysis by PwC



"Though Chinese tech IPOs continued their escalating trend in Q2 2017, there have been signs that China regulatory authorities (CSRC) may slowdown the IPO approval process in the second half of 2017. In spite of this, number of Chinese tech IPOs is still expected to reach a historical high in 2017, due to the increase of small to medium sized deals."

Jianbin Gao

Technology Industry Leader, PwC China

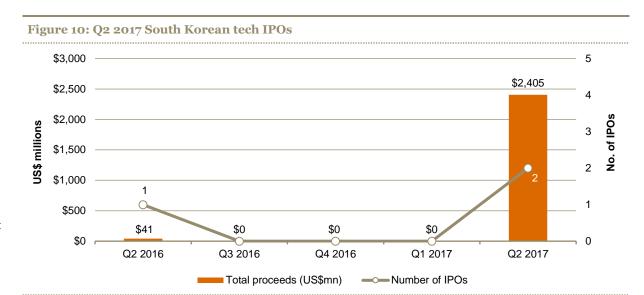
South Korea

South Korea shines in the Q2 2017 tech IPO market with the high-profile listing of Netmarble

After three quarters of no IPOs, South Korea's Netmarble raised the highest tech IPO proceeds globally in Q2 2017.

Investors are now more comfortable with recent political developments in South Korea. Investor confidence in the economy has improved with exports becoming more robust and stronger-than-expected GDP figures reported for Q1 2017. The Korean currency has grown stronger along with stock prices reaching an all-time high as investors continued to buy technology stocks on the back of their promising outlooks, led by the South Korean tech giant Samsung Electronics with its record breaking Q2 earnings.

The IPO market is also expected to receive a boost from the new rules introduced at the beginning of the year. These rules allow start-ups without net income to list; earlier laws allowed only listings by companies with reported net income. However, the IPO market in H2 2017 may slow down somewhat as a result of certain companies postponing their IPO plans and any further escalating tension with North Korea could also curtail enthusiasm.



Source: S&P Capital IQ with analysis by PwC



"While favorable market factors led to an excellent second quarter for tech IPOs in South Korea, the second half of 2017 may not prove as robust due to several major companies postponing their listings."

Steven Kang

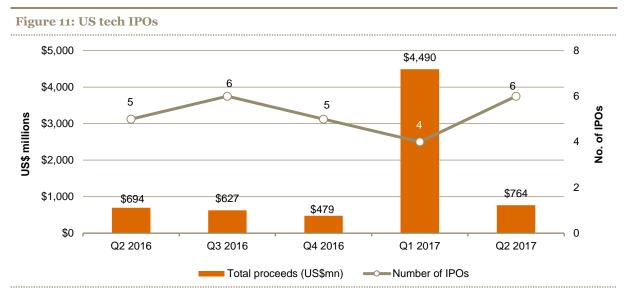
 $Technology\ Industry\ Leader, PwC\ South\ Korea$

US

Two Unicorns supported the US tech IPO market, although with much lower average proceeds

The US reported six tech IPOs with proceeds of US\$764 million, much lower than last quarter's US\$4.5 billion, most of which was from the Snap IPO. The average proceeds in Q2 were US\$127 million.

The two US Unicorns—Cloudera and Okta—listed this quarter. It is worth noting that Cloudera's post-IPO valuation was lower than its pre-IPO valuation: US\$2.3 billion versus US\$4.1 billion. Okta's post-IPO valuation was slightly higher than its pre-IPO valuation: US\$1.5 billion against US\$1.2 billion.



Source: S&P Capital IQ with analysis by PwC



"Six tech IPOs raised \$764 million representing a 50% increase in volume from Q1 despite several "down round" IPO valuations. The buy side took advantage of a buoyant US Tech IPO market as it outperformed the broader US IPO market with returns averaging 20%, almost double the 11% return* of the broader IPO market."

Alan Jones

 ${\it Technology Deals Partner, PwC US}$

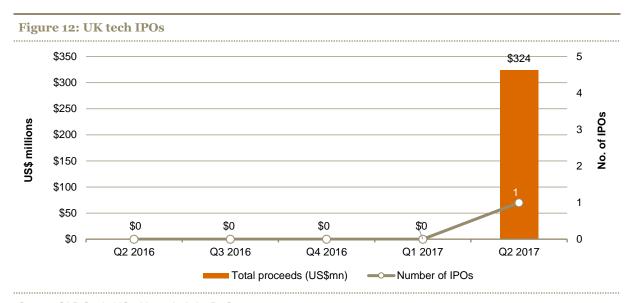
^{*}PwC Deals Insights: https://www.pwc.com/us/en/deals/publications/technology-deals-insights.html

UK

The UK technology IPO market finally opens up after a persistent drought of five straight quarters

With one IPO in Q2, the UK broke its long drought. But does one IPO suggest the UK market is regaining the momentum it lost due to last year's Brexit vote?

It remains to be seen. Much will depend on how well the "divorce" negotiations with the EU proceed in the coming months. The appetite for IPOs could return as the Brexit election shock subsides and investors start to get a clearer picture of the new landscape. Pent up demand could also give the market a push.

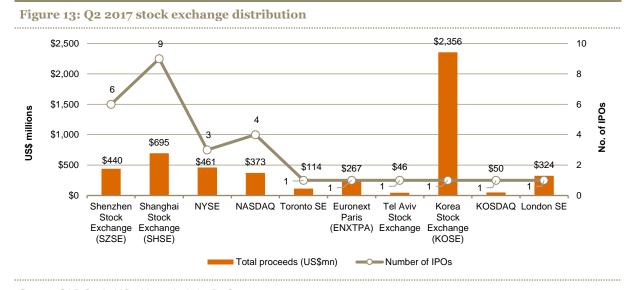


Stock exchange distribution

Q2 2017 saw an increase in stock exchange participation. China's exchanges led with 15 listings total whereas the Korean exchange dominated in proceeds with just one IPO.

The US exchanges had seven listings in Q2 2017, one more than Q2 2016. However, numbers for China's exchanges increased by 11 IPO listings and proceeds by US\$832 million.

Shanghai Stock Exchange had 32% of the total listings, whereas Korea Stock Exchange had 46% of the total proceeds—the result of the biggest IPO of the quarter, Netmarble.



Q2 2017 tech IPOs – Offering details

Table 1: Q2 2017 tech IPOs - By highest proceeds

Issue date	Company	Subsector	Proceeds (US\$ millions)	Primary exchange	Domicile nation
Q2					
05/02/2017	Netmarble Games Corporation	Internet Software & Services	2355.75	Korea Stock Exchange (KOSE)	South Korea
05/26/2017	Alfa Financial Software Holdings PLC	Internet Software & Services	324.11	London Stock Exchange (LSE)	United Kingdom
04/05/2017	X-FAB Silicon Foundries SE	Semiconductors	266.58	Euronext Paris (ENXTPA)	Belgium
04/27/2017	Cloudera Inc	Internet Software & Services	258.75	New York Stock Exchange (NYSE)	United States
04/17/2017	Olympic Circuit Technology Co Ltd	Semiconductors	194.69	Shanghai Stock Exchange (SHSE)	China
04/06/2017	Okta Inc	Internet Software & Services	187.00	NASDAQ Global Select (NQGS)	United States
04/12/2017	Yext Inc	Internet Software & Services	132.83	New York Stock Exchange (NYSE)	United States
05/05/2017	Real Matters Inc	Internet Software & Services	114.38	Toronto Stock Exchange (TSX)	Canada
04/11/2017	Raisecom Technology Co Ltd	Communications Equipment	113.10	Shanghai Stock Exchange (SHSE)	China
04/06/2017	Zhejiang Jiemei Electronic and Technology Co Ltd	Semiconductors	110.57	Shenzhen Stock Exchange (SZSE)	China
05/12/2017	Shenzhen Genvict Technologies Co Ltd	Electronics	93.28	Shenzhen Stock Exchange (SZSE)	China
06/28/2017	Fujian Raynen Technology Co Ltd	Software	76.26	Shanghai Stock Exchange (SHSE)	China
05/24/2017	Appian Corporation	Software	75.00	NASDAQ Global Market (NQGS)	United States
04/25/2017	Jiangsu Transimage Technology Co Ltd	Computers & Peripherals	69.89	Shenzhen Stock Exchange (SZSE)	China
04/27/2017	China Rapid Finance Limited	Internet Software & Services	69.00	New York Stock Exchange (NYSE)	China

Table 1: Q2 2017 tech IPOs – By highest proceeds

Issue date	Company	Subsector	Proceeds (US\$ millions)	Primary exchange	Domicile nation
06/05/2017	SG Micro Corp	Semiconductors	65.74	Shenzhen Stock Exchange (SZSE)	China
06/14/2017	Suzhou Etron Technologies Co Ltd	Electronics	62.91	Shanghai Stock Exchange (SHSE)	China
06/29/2017	Tintri Inc	Internet Software & Services	60.00	NASDAQ Global Market (NQGS)	United States
05/12/2017	Fujian Apex Software Co Ltd	Software	58.12	Shanghai Stock Exchange (SHSE)	China
05/23/2017	Nanjing Huamai Technology Co Ltd	Communications Equipment	55.58	Shanghai Stock Exchange (SHSE)	China
05/24/2017	Shenzhen Sunnypol Optoelectronics Co Ltd	Computers & Peripherals	55.51	Shenzhen Stock Exchange (SZSE)	China
05/26/2017	EmbedWay Technologies (Shanghai) Corporation	Semiconductors	51.57	Shanghai Stock Exchange (SHSE)	China
05/23/2017	SMART Global Holdings Inc	Semiconductors	50.55	NASDAQ Global Select (NQGS)	United States
05/29/2017	Philoptics Co Ltd	Semiconductors	49.65	KOSDAQ (KOSDAQ)	South Korea
05/29/2017	Telrad Networks Ltd	Communications Equipment	45.66	Tel Aviv Stock Exchange	Israel
06/26/2017	Shenzhen JingQuanHua Electronics Co Ltd	Electronics	45.42	Shenzhen Stock Exchange (SZSE)	China
04/23/2017	Will Semiconductor Co Ltd Shanghai	Semiconductors	42.42	Shanghai Stock Exchange (SHSE)	China
04/17/2017	Shanghai Koal Software Co Ltd	Software	40.13	Shanghai Stock Exchange (SHSE)	China

Key financials – Q2 2017

Three-fourths (21) of the technology companies that listed IPOs in Q2 2017 reported net income for their last twelve months (LTM); their LTM net income average was US\$23 million. The other seven companies reported net losses that lowered the overall LTM net income average to US\$7 million. The average for the previous quarter was a net loss.

The tech IPO companies' average LTM revenue for Q2 2017 was US\$219 million, a 38% decline from the previous quarter. The average LTM EBIDTA for Q2 2017 was US\$8 million, a 38% change over the US\$13 million LTM EBIDTA in Q1 2017.

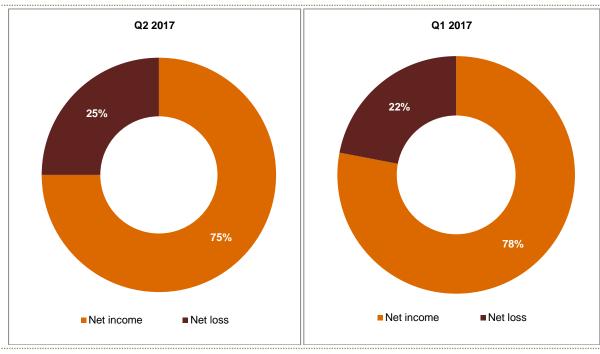
Six of the Q2 companies that reported LTM net losses were from the Internet Software & Services subsector, of which five listed on a US stock exchange. One of Q2's four Unicorns, Cloudera, from the Internet Software & Services subsector, reported the highest LTM net loss at US\$366 million.

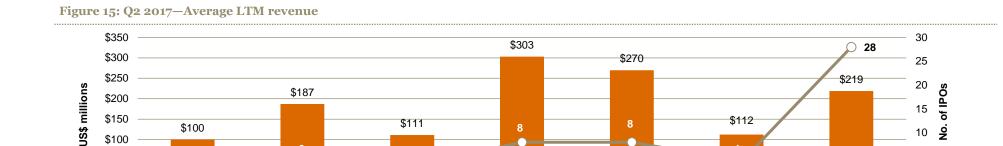
As noted, the overall average LTM revenue for Q2 2017 was US\$219 million. The average LTM revenue for Asia, including China, was US\$191 million. Netmarble from the Internet Software & Services subsector raised the Asian average. It had the highest LTM revenue of any Q2 IPO company at US\$1,246 million.

The Internet Software & Services subsector, with eight IPOs, reported the highest average LTM revenue at US\$303 million and the highest EV/LTM revenue at 8.2x. However, the subsector also reported the highest average LTM net loss—US\$63 million.

The eight IPOs from the Semiconductors subsector, which raised total proceeds of US\$832 million, reported the second highest average LTM revenue at US\$270 million. At US\$304 million, Will Semiconductor Co Ltd from the Semiconductors subsector reported the second highest LTM revenue of the Q2 IPO companies.

Figure 14: Q2 2017 and Q1 2017 tech IPOs – Net income





Internet Software &

Services

Semiconductors

No. of IPOs

Software

Source: S&P Capital IQ with analysis by PwC

\$50 \$0

Figure 16: Q2 2017 —Average LTM EBITDA

Computers &

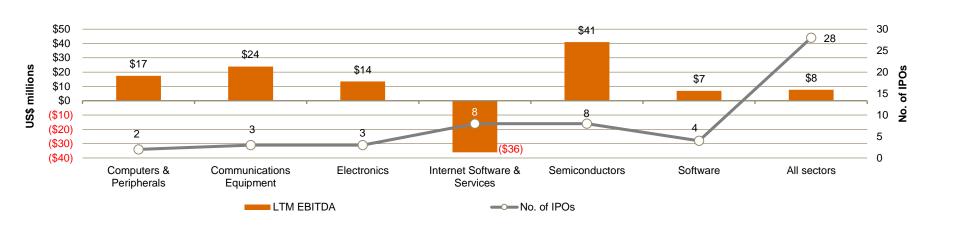
Peripherals

Communications

Equipment

LTM revenue

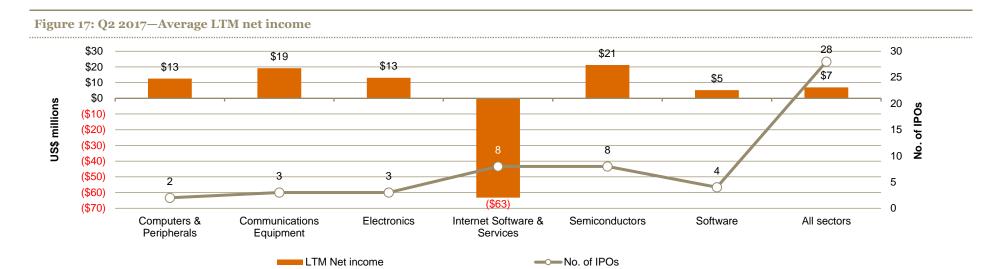
Electronics

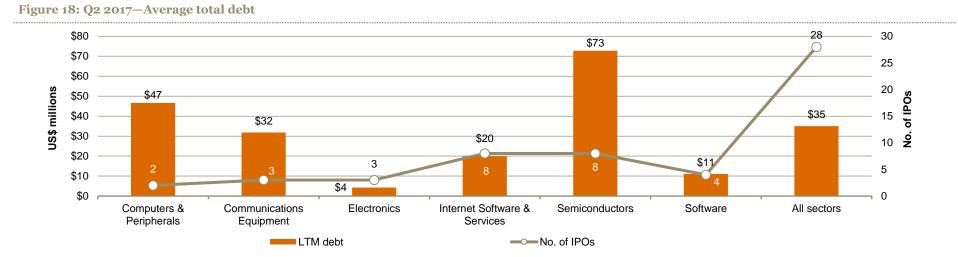


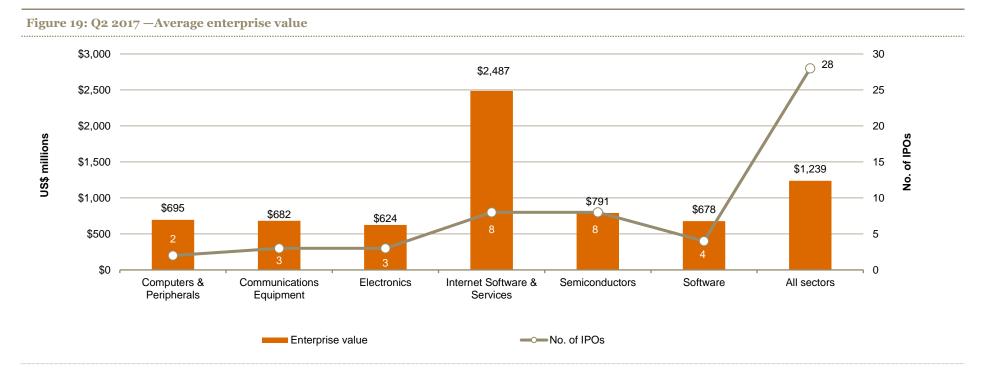
Source: S&P Capital IQ with analysis by PwC

5

All sectors





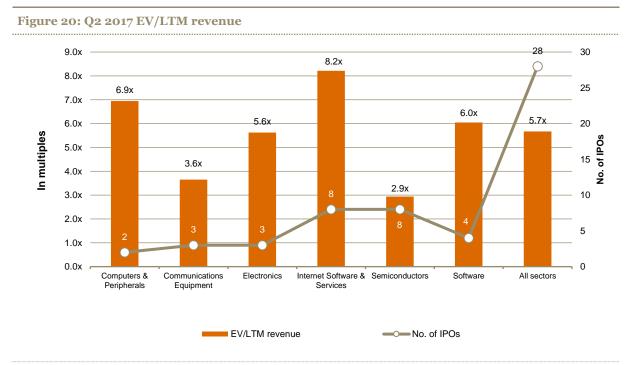


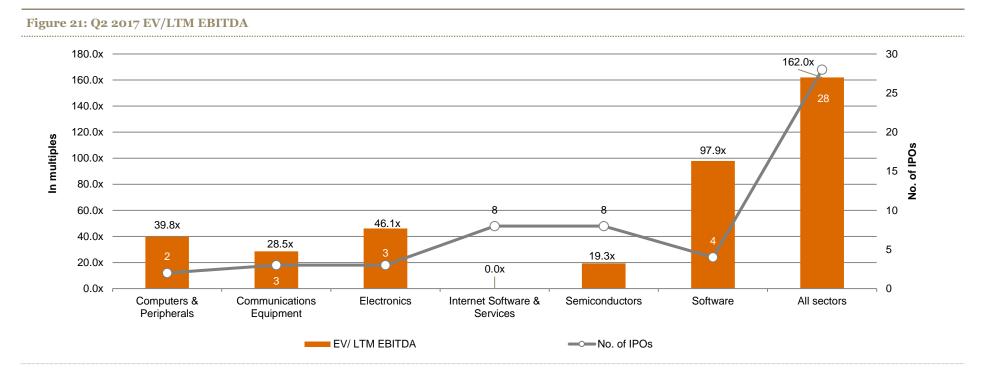
Q2 2017 Technology IPO listings: Valuation metrics

Despite having 28 IPO listings in the quarter, the EV/LTM metrics in Q2 2017 failed to match previous quarters.

In Q2, the technology sector's average EV/LTM revenue multiple was 5.7x, down from 8.0x in Q1 2017 and 8.5x in Q2 2016.

The EV/LTM EBIDTA metric was 162.0x, lower than the 222.1x in Q1 2017. The lower valuation was driven predominantly by companies in the Internet Software & Services subsector. The rush for private funding at extremely high valuations is over and the market has discounted the valuation of loss, making start-ups perform at a more reasonable level.





Top three subsectors in Q2 2017

Internet Software & Services

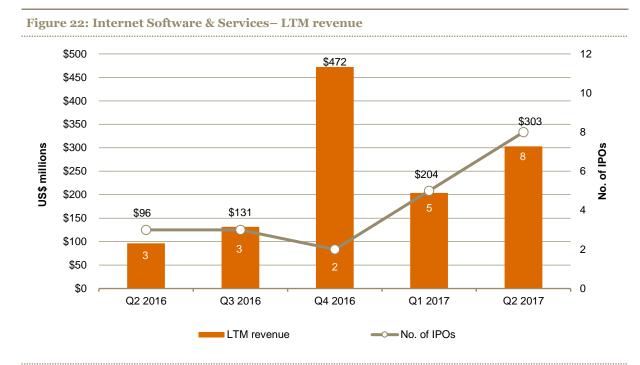
The eight listings in the Internet Software & Services subsector reported the highest average LTM revenue at US\$303 million.

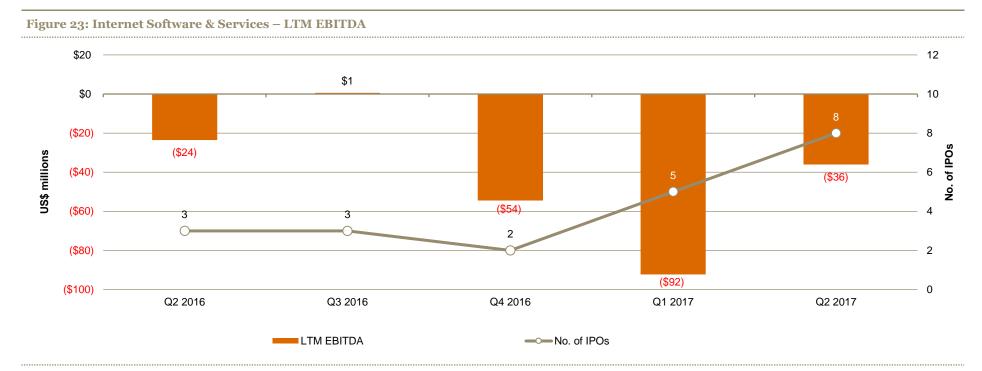
The average LTM revenue increased by 49% quarter on quarter and by 214% year on year.

The subsector had eight deals in Q2 2017, up from five deals in Q1 2017 and three deals in Q2 2016.

The subsector's average LTM EBIDTA (US\$36 million) and average LTM net loss (US\$63 million) were pulled down by significant LTM net losses reported by Cloudera and Tintri.

The subsector's EV/LTM revenue decreased significantly to 8.2x in Q2 from 27.9x in Q1 2017.





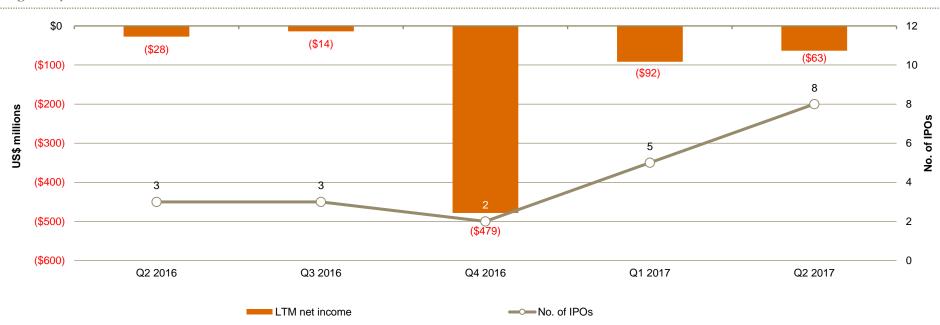
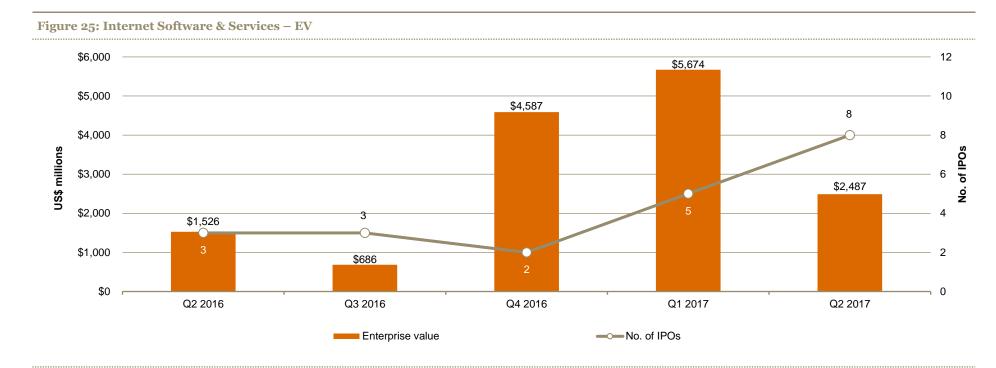
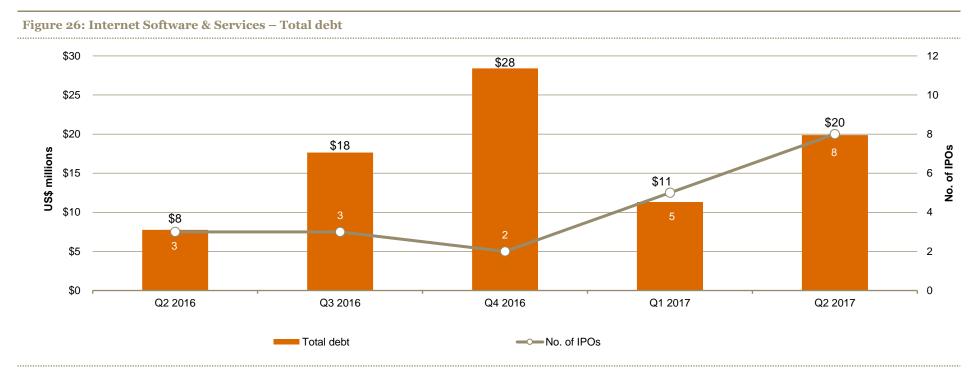
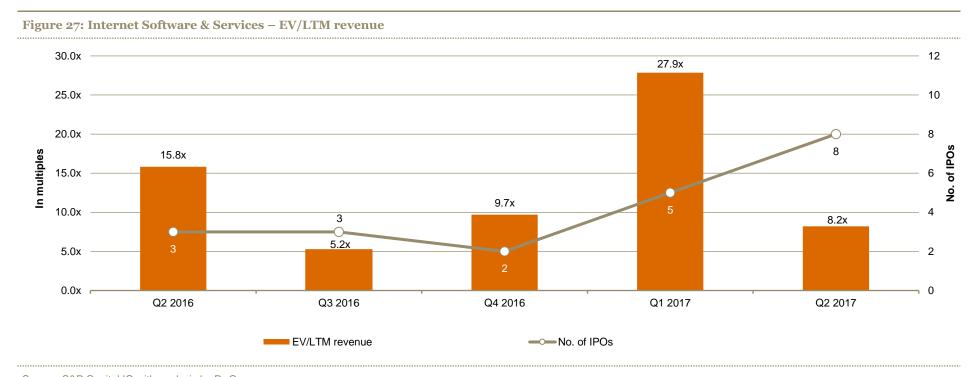
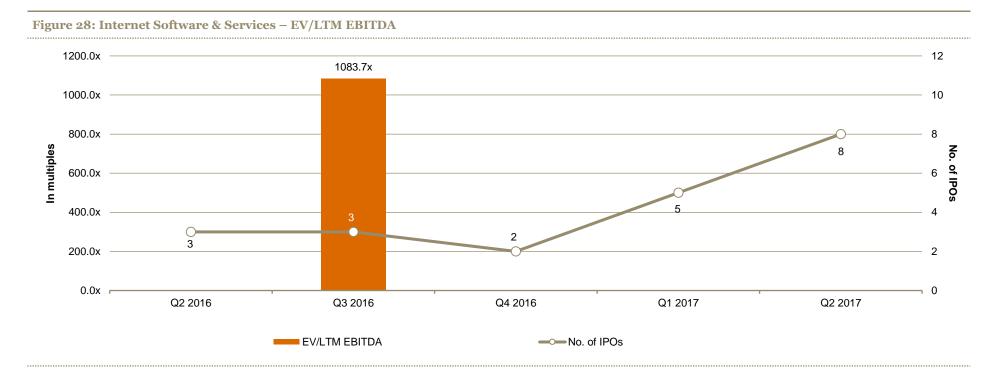


Figure 24: Internet Software & Services – LTM net income









Semiconductors

The Semiconductors subsector has maintained its position among the top three subsectors continuously for three quarters as measured by number of deals. The average proceeds increased by 49% quarter on quarter.

The subsector reported the second highest average LTM revenue for Q2 2017, US\$270 million, a 49% increase quarter on quarter. Still, the subsector had the lowest EV/LTM revenue of 2.9x for Q2 2017. The EV/LTM EBITDA for Q2 2017 was 19.3x.

The number of IPOs increased year over year by 300% whereas the quarter-over-quarter increase was 167%.

The total debt for the quarter increased by 284% over Q1 2017.

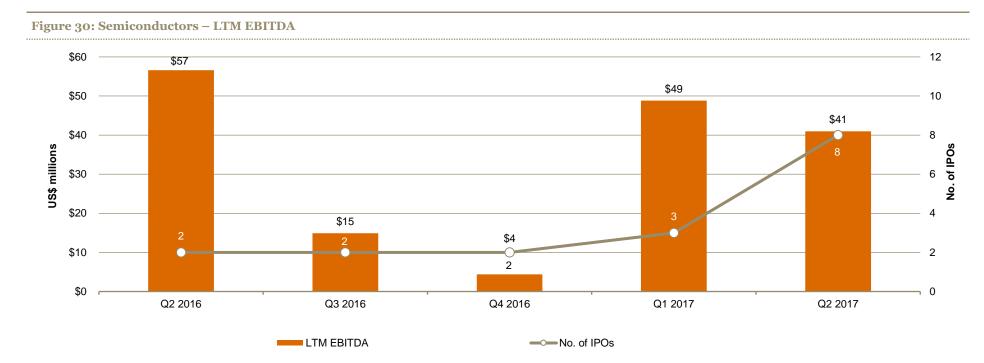
\$300 \$276 \$270 \$250 10 \$200 \$183 \$181 US\$ millions \$147 \$150 \$100 \$50 \$0 Q2 2016 Q3 2016 Q4 2016 Q1 2017 Q2 2017

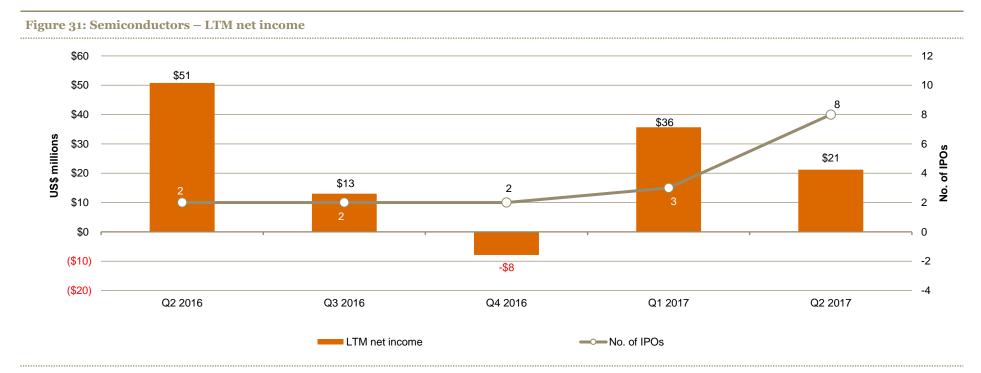
No. of IPOs

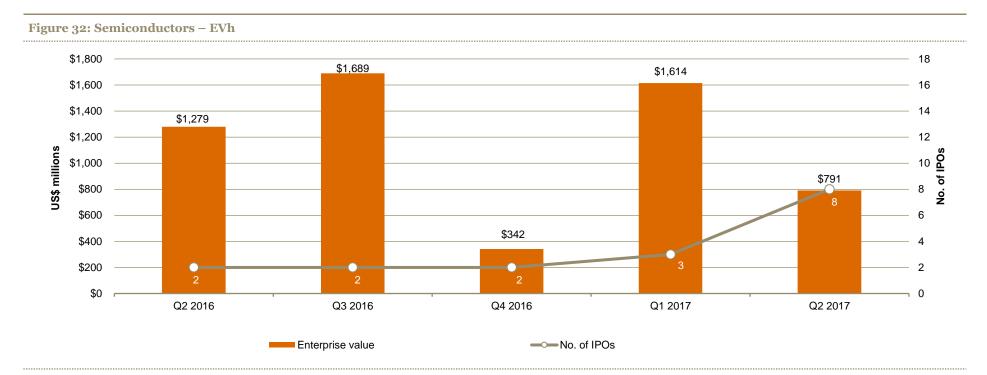
LTM revenue

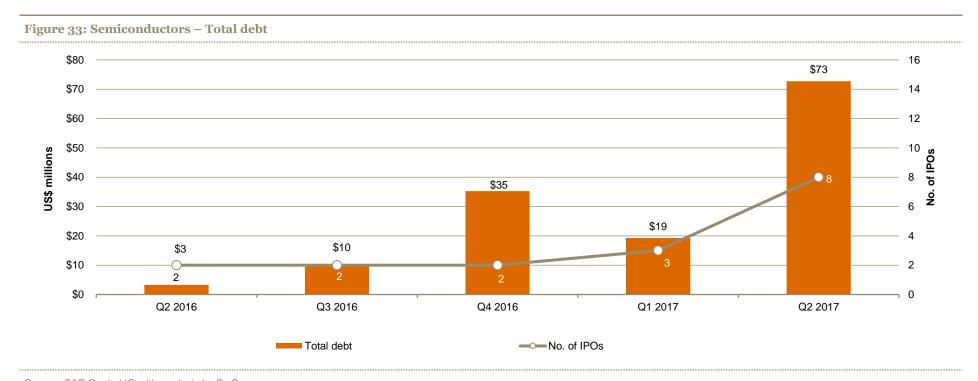
Source: S&P Capital IQ with analysis by PwC

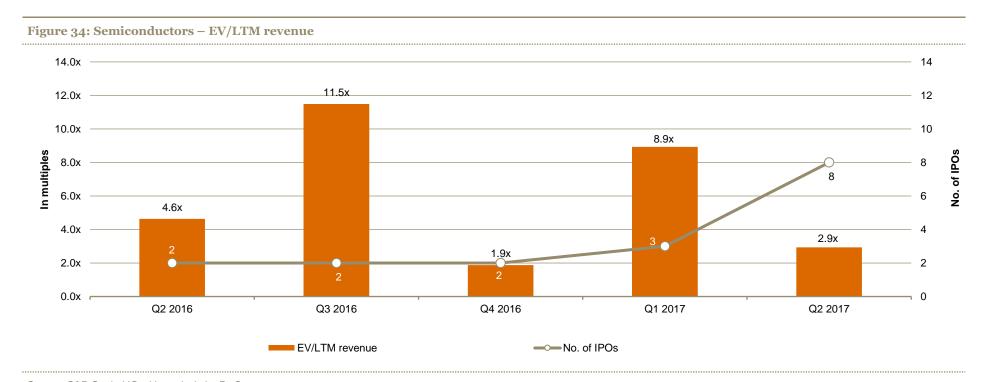
Figure 29: Semiconductors – LTM revenue

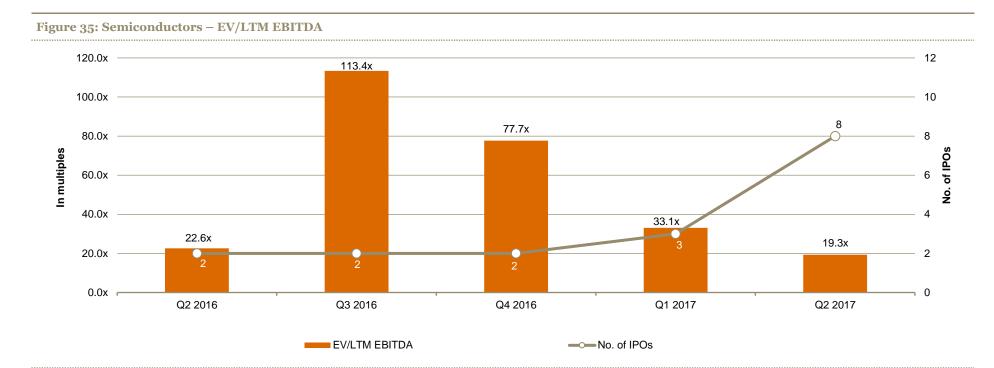












Software

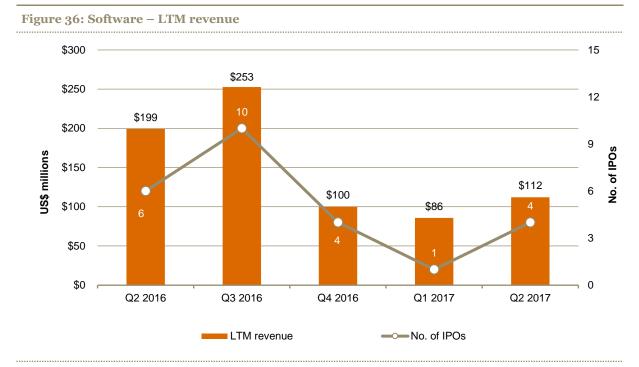
After just one IPO in Q1, the Software subsector made a comeback in Q2 2017 with four IPOs, enough to place it back among the top three subsectors.

The quarter-over-quarter numbers increased 300%, although the year-over-year number was a 33% decline.

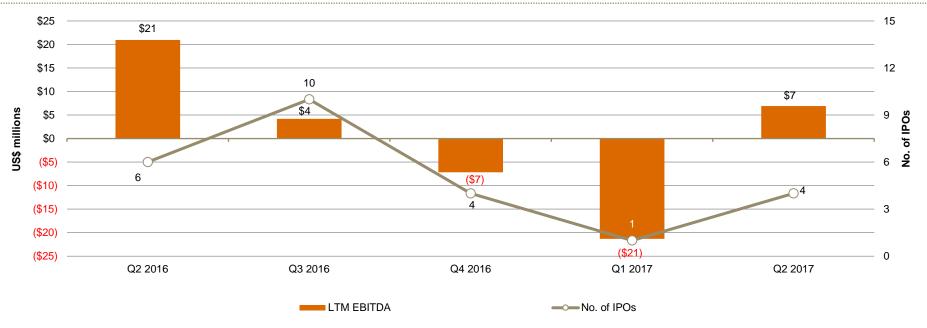
The average LTM revenue, which was US\$112 million in Q2, increased by 31% quarter over quarter. The average LTM EBIDTA of US\$7 million and the average LTM net income of US\$5 million were declines of 133% and 121%, respectively.

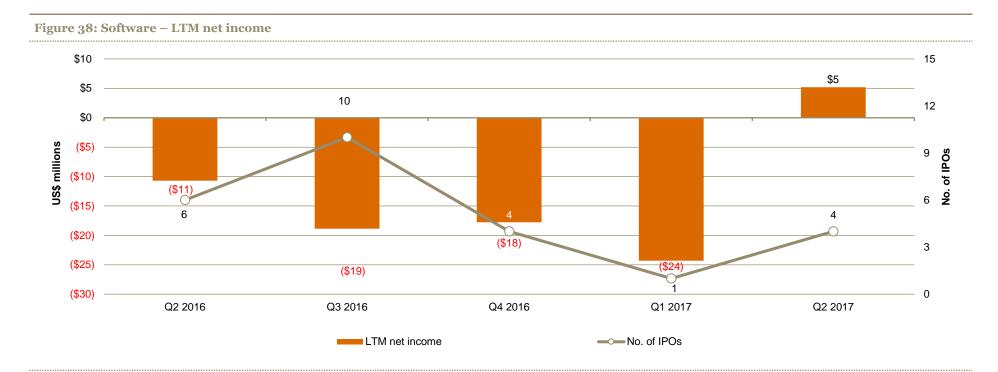
The highest deal value for the subsector was US\$76 million by China-based Fujian Raynen Technology. The subsector had three of the four technology IPO listings on the Shanghai Stock Exchange (SHSE) in Q2.

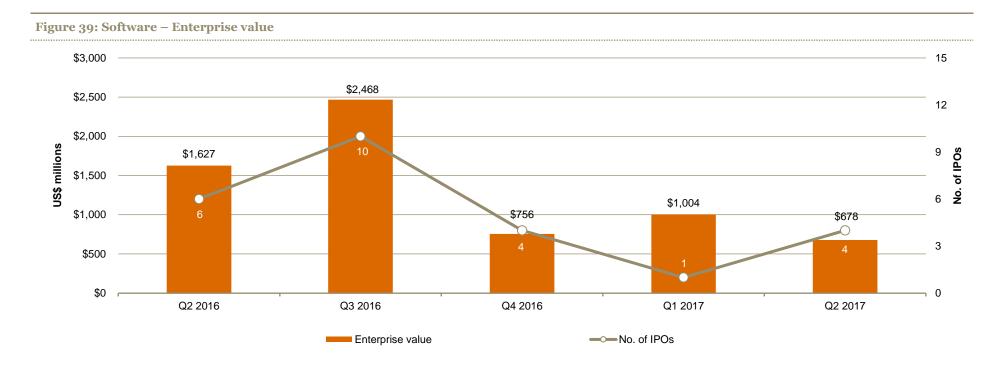
The subsector had the highest EV/LTM EBITDA of 97.9x for the quarter. However, EV/LTM revenue decreased to 6.0x from 11.7x in Q1 2017.



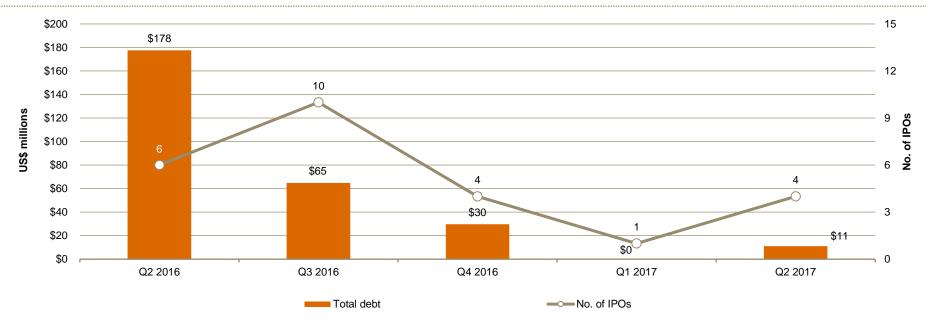


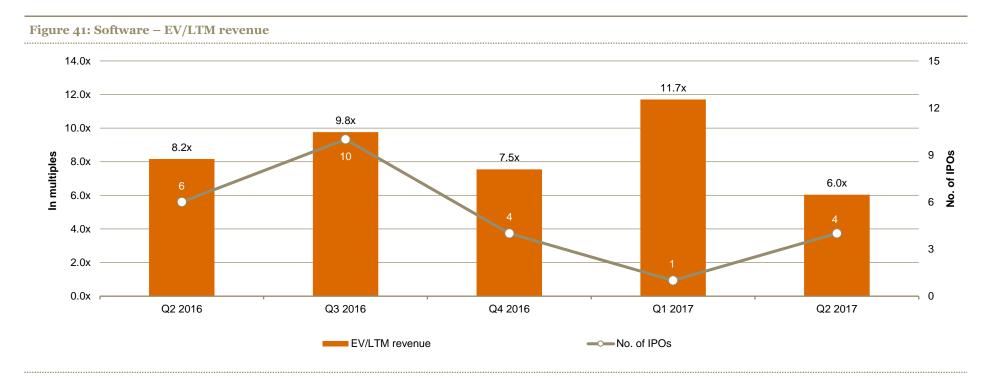


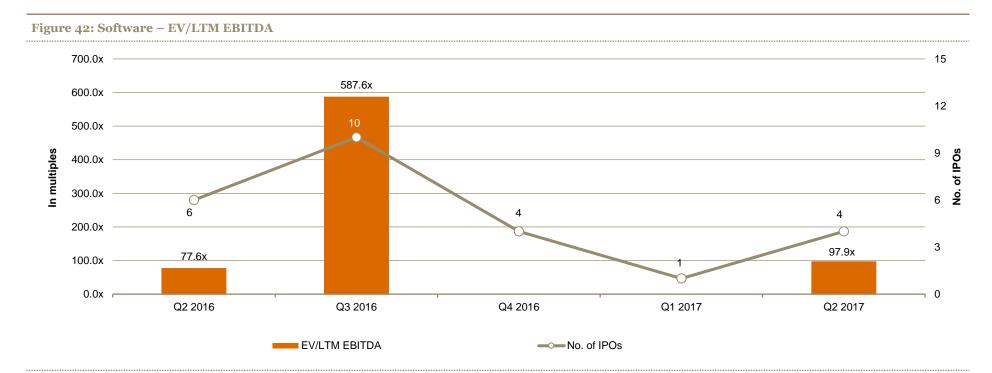












Methodology

The Global Technology IPO Review for Q2 2017 is based on PwC's analysis of transaction data extracted from S&P Capital IQ. The analysis considers IPOs across all countries worldwide during the period 1 April 2017 to 30 June 2017 (Q2), financial data was also obtained from S&P Capital IQ.

The definition of the Technology sector is based on the S&P Capital IQ database industry classifications and includes the following subsectors:

- Internet Software & Services
- IT Consulting & Services
- Professional Services (e.g., Application Software, Software Solutions)
- Semiconductors
- Software
- Computers & Peripherals
 - Computers, Computers Peripheral Equipment
 - Computers, Storage Device Manufacturing
- Electronic Computer Manufacturing ("Electronics")
- Communications Equipment

Only IPOs with issue size greater than US\$40 million were included in the analysis.

All monetary amounts are in US dollars unless otherwise indicated.

LTM - Last 12 months

Most figures are rounded to one decimal, except were comparisons require more.



If you would like to discuss how these findings might impact your business or your future strategy, please reach out to any of our technology industry leaders listed below.

Raman Chitkara

Global Technology Leader

Phone: 1 408 817 3746

Email: <u>raman.chitkara@us.pwc.com</u>

Rod Dring - Australia

Phone: 61 2 8266 7865

Email: <u>rod.dring@au.pwc.com</u>

Estela Vieira - Brazil

Phone: 55 1 3674 3802

Email: estela.vieira@br.pwc.com

Christopher Dulny - Canada

Phone: 1 416 869 2355

Email: <u>christopher.dulny@ca.pwc.com</u>

Jianbin Gao – China

Phone: 86 21 2323 3362

Email: qao.jianbin@cn.pwc.com

Pierre Marty – France

Phone: 33 1 5657 58 15

Email: <u>pierre.marty@fr.pwc.com</u>

Werner Ballhaus – Germany

Phone: 49 211 981 5848

Email: werner.ballhaus@de.pwc.com

Sandeep Ladda – India

Phone: 91 22 6689 1444

Email: sandeep.ladda@in.pwc.com

Masahiro Ozaki – Japan

Phone: 81 3 5326 9090

Email: masahiro.ozaki@jp.pwc.com

Steven Kang – Korea

Phone: 82 2 709 0201

Email: <u>steven.c.kang@kr.pwc.com</u>

Ilja Linnemeijer – The Netherlands

Phone: 31 88 792 4956

Email: <u>ilja.linnemeijer@nl.pwc.com</u>

Yury Pukha - Russia

Phone: 7 495 223 5177

Email: yury.pukha@ru.pwc.com

Mark Jansen – Singapore

Phone: 65 6236 7388

Email: mark.jansen@sg.pwc.com

Jass Sarai – UK

Phone: 44 0 1895 52 2206 Email: <u>jass.sarai@uk.pwc.com</u>

Mark McCaffrey - US

Phone: 1 408 817 4199

Email: mark.mccaffrey@pwc.com

Alan Jones – US (Deals partner)

Phone: 1 415 498 7398

Email: <u>alan.jones@us.pwc.com</u>



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