

Global

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| Spotlight on IT

INSIDE

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Focus on
South Korea

Asia's venturing
options

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in Silicon Valley

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Global Corporate Venturing

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EDITORIAL

Teamwork scores for the innovation ecosystem

James Mawson, editor-in-chief



With the football World Cup under way, it seems appropriate to take stock of just how international and cosmopolitan the corporate venturing industry has become and how it continues to grow within the overall innovation capital ecosystem.

As the first half of 2018 ended, subject to some amendment as deals emerge that closed in the period, GCV Analytics found deal values involving corporations were up 20% from the previous highest period, the second half of last year. Corporate venturers have been involved in more than \$150bn of deals in the past 12 months even as deal volumes have remained broadly flat.

Last month Ant Financial, an electronic payments service company affiliated with Alibaba, raised \$14bn in what was technically a series C round. It was the largest venture funding round in history, according to data provider Crunchbase. The Ant deal alone helped drive June's deal values to \$26.75bn – up almost four times over the \$6.94bn in June 2017 – with deal volumes of corporate-backed rounds at 256, considerably up from the 222 funding rounds from the same month last year.

And whereas China over the past few years has been the largest market by value for corporate venturing deals, it has continued to add to its dominance. For the first time, China was the unrivalled leader in receipt of corporate venture capital in the first half of the year, hauling in more than the rest of the world combined.

And in a reflection of CVC importance to the overall venture capital ecosystem, this has translated into China becoming the largest market by deal values. Crunchbase in its provisional second-quarter figures found Chinese startups raised 47% of all money invested, which eclipsed US and Canadian companies' 35% share – the first time the US and Canada have lost leadership.

As Crunchbase noted: "Chinese corporations like Tencent and Alibaba are committing hundreds of millions of dollars to venture investments, state-sponsored venture firms are investing in China and abroad, and horizontal mergers are forming formidable players in the on-demand services and transportation sectors. With no immediate signs of slowing, the Chinese tech and venture capital ecosystem is positioned to maintain its current momentum and loom ever larger in the global investment landscape."

Naturally, such a dramatic swing in innovation capital from US as leader since the 1940s until this decade has caught people's attention and will be a point of discussion at our GCV Asia Congress in Hong Kong on September 20 after our August break from publication.

Harvard Business School is "launching a project looking at the controversial topic of investments in Silicon Valley by foreign corporations and corporate venture groups during the past four decades and their impact on knowledge flows", while other leading academics at Stanford University are also using GCV Analytics to help their research into performance, following the unique Harvard, Chicago and Stanford business schools collaboration with GCV on the industry in our annual survey published last year.

But while the data shows the rapid shift from a unipolar to bipolar world in innovation capital, the bigger picture is more nuanced as the innovation and knowledge transfers cross almost all borders and reach into all sectors. The opportunities created through crosspollination of ideas and capital have been transformative in making the world richer and healthier. While there are concerns about how open to be – India is in the crosshairs of a debate on whether to protect domestic startups from US and Chinese investors – there is plenty to be done to encourage domestic CVC and innovation capacity before or beyond protectionist barriers.

And the returns for those that time the market and set up well-run professional CVC units can be large if they can translate it into greater investment firepower.

Telstra Ventures, the corporate venturing arm of Australia-based telecoms company Telstra, channelled its activities into a partnership with private equity firm HarbourVest at the start of this month. Founded in 2011, Telstra Ventures runs offices in Australia, the US and China and targets deals in sectors such as mobile internet, media, cloud computing, machine learning and cybersecurity.

Telstra Ventures' exits include Snapchat owner Snap, digital signature technology provider DocuSign and file-sharing platform Box, which raised a combined total of more than \$4.2bn in their initial public offerings, and online video platform Ooyala, which Telstra bought for \$270m. The winners from Telstra Ventures' leveraging resources through HarbourVest are, ultimately, the entrepreneurial businesses and parent companies that benefit from the money and insights shared.

And just as the accolades in the World Cup largely and deservedly go to the winners, the real value is created from bringing all together and letting the skills shine, which seems an appropriate metaphor for the innovation capital world. ♦

“Chinese tech and venture capital ecosystem is positioned to maintain its current momentum and loom ever larger in the global investment landscape”



NEWS

Chao bids goodbye to Applied Ventures

Tony Chao has left his position as senior investment director and general manager at Applied Ventures, semiconductor maker Applied Materials' corporate venturing unit, to assume a new role at venture capital firm Tyche Partners.

"After a decade in CVC and at Applied Ventures, I have accepted a partner position with Tyche Partners," Chao said.

Featured in Global Corporate Venturing's Powerlist in 2017 and 2018, Chao joined Applied Ventures in 2007 and had been senior investment director and general manager there since 2015. He led the charge for Applied Ventures into Asia, first by serving as an expatriate in Shanghai and then opening operations in Singapore and finally launching a Korea fund. He is being succeeded by Rajesh Swaminathan, an investment director who has been at Applied Ventures since 2009.

Chao has also played a leadership role in the CVC world as chairman of the corporate venture group of trade body the National Venture Capital Association. Before joining Applied Ventures, Chao was an investment associate at Shanghai-based Mustang Ventures and the technical lead for the engineering team at Cymfony, which provides market influence analytics by scanning and interpreting voices on social and traditional media.

Tyche Partners invests in disruptive technologies such as cloud and enterprise data storage, 3D printing, robotics, semiconductors and internet-of-things and wearable devices.



Chao

Arora resurfaces at Palo Alto Networks...

Nikesh Arora, who left Japan-based internet and telecoms group SoftBank where he spearheaded its corporate venturing strategy as company president and chief operating officer in 2016, has become CEO and chairman of cybersecurity company Palo Alto Networks. He replaces Mark McLaughlin, who will become vice-chairman of Palo Alto Networks.

Arora joined SoftBank in late 2014 from Google where he had served as chief business officer, and directed SoftBank, a significant corporate venturing participant, to lean more towards larger investments, notably in his home country of India. Arora was handpicked to succeed Son as head of the company, but Son decided he would stay on for five to 10 years and Arora said on Twitter that development had led to his departure.



Arora

...as SoftBank grabs Ramsey and promotes others

Ramzi Ramsey has joined SoftBank Investment Advisers, the unit that oversees telecoms group SoftBank's Vision Fund, as an investment director.

SoftBank hired Ramsey from growth equity firm Technology Crossover Ventures (TCV), where he was a vice-president having joined in 2014. He was a co-founder of children's Arabic book retailer Araboh in 2010.

During his stint at TCV, Ramsey was a board observer at Awo, the legal marketplace acquired by Internet Brands in January 2018, event ticketing sales platform SeatGeek and online tutoring service Varsity Tutors.

SoftBank has meanwhile made its own moves on succession to its founder and chief executive, Masayoshi Son. It said its new chief strategy officer and executive vice-president would be Katsunori Sago. SoftBank is also promoting both chief operating officer Marcelo Claure and Vision Fund head Rajeev Misra to executive vice-president.

Misra was ranked first in the GCV Powerlist 2017. Sago had spent more than 20 years at investment bank Goldman Sachs before leaving to manage Japan Post Bank's \$1.9 trillion portfolio.

Skoda drives into Workday Ventures

Brittany Skoda has become vice-president of investments at Workday Ventures, the strategic investment arm of human resources and finance management software provider Workday. She will be expected to lead Workday's investments and help drive growth for the corporate's portfolio companies.

Skoda had worked at investment bank Goldman Sachs for almost a decade, starting as an analyst in technology investment banking in 2008 before rising through the ranks to become senior vice-president in the same field.

During her time there, she gave investment advice to corporates including e-commerce firm Amazon, electric vehicle manufacturer Tesla and internet company Google, part of technology conglomerate Alphabet. She was also credited with helping to create Goldman Sachs's middle markets leveraged finance business in New York.



Skoda



NEWS

Binance finances \$1bn fund

China-based cryptocurrency exchange Binance has announced a \$1bn fund to invest in blockchain and cryptocurrency startups, TechCrunch has reported. The Community Influence fund will be denominated in Binance's own cryptocurrency, BNB, and will invest both directly and through other funds.

Rather than invest in existing funds, however, Binance will seek out experienced fund managers – defined by the company as those who have managed at least \$100m in assets – to create new funds. The company also hopes

to launch a Binance Ecosystem Fund with 20 as yet unnamed partners.

Binance has already backed startups through its social impact fund Labs and is working on creating an incubator. Its first portfolio company for the incubator will be Dache Chain, a China-based ride-hailing service that will exploit blockchain technology. Dache Chain has been co-founded by Chen Weixing, who previously founded Kuaidi Dache, the ride-sharing service that has since become Didi Chuxing.

Pfizer injects \$600m into CVC operation

Pharmaceuticals firm Pfizer has revealed plans to invest \$600m in biotech and other emerging technologies through the new corporate venturing division Pfizer Ventures. Early-stage neuroscience companies will be a key focus, with about \$150m allocated to such startups. Initial areas of interest will include neuro-degeneration, neuro-inflammation and neuro-metabolic disorders.

The \$600m comes as part of a restructuring effort that combines Pfizer Venture Investments, the company's existing corporate venturing arm, with research and development equity investment vehicle R&D Innovate.

Pfizer Venture Investments, founded in 2004, has grown to a portfolio of more than 40 companies. It has invested approximately \$500m to date, bringing the size of Pfizer's corporate venturing efforts to more than \$1bn.

Pfizer Ventures already has six neuroscience-focused startups in its portfolio – Aquinnah, Autifony, Cortexyme, Mind-Immune, Mission Therapeutics and Neuronetics – and is one of several healthcare corporates to have backed the \$190m Dementia Discovery Fund in 2015 (see below).

As part of the restructuring and larger fund size, Pfizer Ventures has added existing Pfizer executives Denis Patrick, Laszlo Kiss, Margi McLoughlin, Chris O'Donnell and Nikola Trbovic to its team, which will continue to be led by senior managing partner Barbara Dalton.

Dementia Discovery Fund delivers \$350m close

Dementia Discovery Fund (DDF), a strategic investment fund backed by pharmaceutical firms Biogen, GlaxoSmithKline (GSK), Johnson & Johnson, Eli Lilly, Otsuka, Pfizer and Takeda, has reached a \$350m final close. The completion of the fund came through a \$60m commitment from senior citizen's lobbying group AARP.

DDF also named care provider UnitedHealth, insurance supplier Aegon, diagnostic testing services firm Quest Diagnostics and the UK government-owned British Patient Capital as new backers. In addition to the corporates, the fund's limited partners include labour organisation the NFL Players Association, the UK Department of Health and Social Care, Alzheimer's Research UK, investment firm Woodford Investment Management and entrepreneur Bill Gates.

DDF is managed by venture capital firm SV Life Sciences and was launched in 2015 to invest in research for dementia treatments. The final close was announced alongside the appointment of Angus Grant as chief executive. Grant was previously vice-president of business development at pharmaceutical firm Celgene.

Corporates hike HGTF's third fund to \$370m

Corporates Bayer, Wilh, Werhahn and Boehringer Ingelheim have backed the third fund of German public-private partnership High-Tech Gründerfonds, bringing the vehicle's second close to more than €316m (\$370m).

Pharmaceutical firm Boehringer Ingelheim committed the capital through its corporate venturing arm, Boehringer Ingelheim Venture Fund, and was joined by pharmaceuticals and chemicals producer Bayer, maritime industry group Wilh and conglomerate Werhahn.

HTGF makes seed-stage investments, usually providing up to \$3.5m per portfolio company, though it can supply more if it deems the opportunity especially worthwhile. Startups must be no more than three years old, but the terms of the investment are negotiable.

HTGF III has been investing since September after an initial \$275m close in March 2017, and originally had a final target of \$360m. Its limited partners include 32 corporates, state-owned development bank KfW and the Federal Ministry for Economic Affairs and Energy. Corporate backers include Dräger, EWE, RWE, Evonik, Lanxess, Altana, BASF, Wacker, Büfa, B Braun, Robert Bosch, Cewe, Deutsche Post DHL, Drillisch, Hettich, Knaut, Phoenix Contact, Postbank, SAP, Schufa, Qiagen, Franz Haniel, Körber Group and Media & More Venture.



NEWS

Lockheed Martin lifts CVC fund to \$200m

Aerospace and defence company Lockheed Martin has doubled the level of funding its corporate venturing arm Lockheed Martin Ventures has under management to \$200m.

The additional \$100m follows recent tax legislation in the US and will primarily go to early-stage startups in the areas of sensor technologies, autonomy, artificial intelligence and cyberotechnology.

Concurrently, Lockheed Martin Ventures revealed it had invested an undisclosed sum in NTopology, a US-based developer of computer-aided design software that previously closed a \$76m series A round in November 2017. The series A round was co-led by Data Collective and Root Ventures, with participation from CrunchFund, Haystack, Pathbreaker and 1517.

The increased funding for the corporate venturing division forms part of a \$460m commitment that Lockheed Martin is making across its business operations. This includes \$10m towards the launch of the Lockheed Martin Innovation Prize competition.

White Star rises with \$180m fund

Early-stage venture capital firm White Star Capital has closed its second fund at \$180m with commitments from utility Veolia, insurance provider La Capitale and airport operator ADP, TechCrunch reported. Video game publisher Ubisoft and IT company Unisys, through its corporate venturing arm Canal Ventures, are among the limited partners.

Other investors are several government-backed entities, including Caisse de dépôt et placement du Québec, Fonds de solidarité FTQ, Business Development Bank of Canada, Korea Venture Investment Corporation and Investissement Québec, plus Arkea Group, Mizuho Securities, Swen Capital Partners, Isomer Capital, Walter Financial, Clerville Investment Management, Tamaris Capital, Simone Investments and Portag3 Ventures.

White Star Capital, which already operates in London, New York and Montreal, will open offices in Paris and Tokyo as part of the latest fundraising effort. Matthieu Lattes has been hired to lead the Paris office, while Shun Nagao will lead the Tokyo office. The fund had an initial target of \$140m.

The firm will invest in approximately 20 companies, providing between \$1m and \$6m to each. It will focus on businesses gearing up to expand with a particular interest in fintech, disruptive commerce, algorithms and sensors.

PartnerRe and Exor launch \$100m fund

Reinsurance company PartnerRe and its parent group, holding firm Exor, have joined forces to establish a \$100m fund to invest in technology startups, according to FinSMEs.

Both partners have committed \$50m to Exor Seeds, which will be led by managing director Noam Ohana. He was previously managing partner of Conegliano Ventures and a co-founder and partner of BeaconLight Capital.

Exor Seeds will take a long-term view on investments. It has already invested a total of \$20m in 11 US-based startups. They include business-to-business financial plat-

form Brex, elderly people-focused financial services firm True Link, autonomous vehicle manufacturer Saildrone and breast cancer detection technology developer Kheiron Medical. The portfolio also includes Life, Reflexion, Privacy, Hexanow, Tekion, Cover and Smallhold, though details about these companies could not be confirmed.

Exor acquired PartnerRe for \$6.9bn in August 2015. Last month, reports emerged in Italian media that Exor was seeking ways to reinforce the value of PartnerRe, though it is not clear if Exor Seeds is a result of these ambitions.

FirstMinute times \$100m fund

UK-based venture capital fund FirstMinute Capital has achieved a \$100m close of its debut fund with chemical and consumer goods producer Henkel joining the limited partners, TechCrunch reported.

Private bank Lombard Odier also joined the fund's backers. Internet group Tencent and property developer Nan Fung previously supported an \$85m second close in September 2017 alongside entrepreneurs Cheung Chung-Kiu, Frederic Mazzella and Wes Nichols.

FirstMinute Capital was launched in June 2017 with a cornerstone investment from Atomico and contributions from 30 entrepreneurs that have founded unicorn startups. Limited partners include the family offices of JCDecaux, Baron Davies of Abersoch, Paul Ruddock and Alex de Carvalho.

The fund focuses on Europe-based startups and will be sector agnostic, though it will favour companies in robotics, artificial intelligence verticals, health technology, blockchain, software-as-a-service, cyberotechnology, gaming and direct-to-consumer. FirstMinute will have the flexibility to follow local leads to the US and Israel. It will typically provide \$1m to seed-stage businesses. The fund is managed by three partners, Brent Hoberman, Spencer Crawley and Henry Lane-Fox.



NEWS

Samsung lines up Q Fund

Samsung Next, an early-stage technology investment fund launched by Korea-based electronics producer Samsung, has launched a vehicle aimed at the artificial intelligence (AI) sector. The Q Fund will have no investment cap and will tap into the existing \$150m allocated to Samsung Next when it was launched in January 2017.

The initiative will focus on seed and series A-stage startups, collaborating closely with academic researchers and other innovators to gain a broad exposure to AI technologies. Areas of interest include intuitive physics, robot control, human-computer interaction and automated machine learning.

Samsung Next revealed it had recently invested Covariant.AI, a US-based robotics developer spun out from University of California Berkeley formerly known as Embodied Intelligence.

Chevron to shake up investment with \$100m fund

Chevron Technology Ventures (CTV), the strategic investment arm of oil and gas producer Chevron, has launched a \$100m fund called Future Energy Fund to back energy transition technology.

CTV was founded in 1999 and targets developers of technologies such as emerging materials, power sys-

tems, water management, IT, and oil and gas production improvement. It also provides capital to strategically relevant venture capital funds. Future Energy Fund will concentrate on energy generation technologies that generate lower carbon emissions or reduce emissions from oil and gas production.

Visa pays \$100m into fund

US-based payment processing firm Visa has launched two initiatives geared towards Europe-based fintech developers, including a \$100m investment fund. The vehicle will target areas such as open banking and emerging technologies with the potential to create new secure shopping experiences. The company has already invested in three fintechs in Europe – Klarna, SolarisBank and Payworks.

Additionally, the corporate has introduced a fast-track onboarding program that will enable fintech startups in Europe to access Visa's global network in as little as four weeks and at reduced fees. The program will begin next month and will initially focus on the UK.

The corporate is already collaborating with alternative bank Contis, digital bank Revolut, IT services provider Evry, digital credit card provider Jaja and financial services firm Wirecard.

JLL sparks \$100m CVC arm...

Real estate developer and property manager Jones Lang LaSalle (JLL) has revealed corporate venturing arm JLL Spark. It was founded in 2017 and focuses on the property technology sector, investing in startups developing products and services around real estate development, management, leasing, investing and improving tenant experiences.

Portfolio companies will receive access to JLL's expertise and will benefit from the corporate's business lines and clients for feedback and distribution. The fund is led by co-chief executives Mihir Shah and Yishai Lerner. The unit will generally invest between hundreds of thousands of dollars to a few million at seed and series A stage, but may also consider later-stage opportunities or other initiatives.

In fact, JLL Spark's first two investments are real estate technology-focused accelerator program Metaprop and real estate technology-focused late-stage investor Navitas Capital.

...and joins Lendlease to home in on accelerator

Real estate firms JLL and Lendlease have launched Singapore-based property technology accelerator Propell Asia with co-working space District6 and creative design incubator MeshMinds.

Propell Asia will select five startups from the region to enter a 10-week accelerator program. They will each be eligible for a S\$20,000 (\$14,600) grant.

JLL's technology innovation arm, JLL Spark, created a \$100m global corporate venture capital fund earlier this month and will contribute to the pool of grant funding. Anuj Nangpal, lead in Asia-Pacific for JLL Spark, will be one of the mentors to Propell startups., which are expected to have products applicable to property management, real estate transactions, construction management or data collection, science and analysis.



NEWS

Bayer debates Monsanto Growth Ventures future

Germany-based life sciences company Bayer acquired US-based agrochemical producer Monsanto for \$63bn and is now debating what to do with the latter's corporate venture capital unit, according to Agfunder.

The success of Monsanto Growth Ventures (MGV) has been lauded by Liam Condon, chief executive of Bayer Crop Science, a seed and food security subsidiary of Bayer, but he refused to commit his company to maintaining the unit.

Bayer has traditionally favoured larger investments through its Leap program, establishing joint ventures such as the \$100m Joyn Bio with biotech developer Ginkgo Bioworks.

The decision is complicated by the legal terms of Bayer's merger with Monsanto, which stipulate that for the next 10 years the corporate must inform the US Department of Justice 30 days in advance of any investment it intends to make in a digital agriculture company or vendor of soybean, cotton, canola, corn seeds or traits.

The same terms apply to acquisitions. During the 30-day period, the government may demand additional information, potentially delaying any deals and forcing MGVC to forego follow-on rounds where timing can be restricted.

Naver to widen venture capital commitments

Internet group Naver intends to provide capital for funds run by telecoms firm SoftBank and venture capital firm Sequoia Capital, Korea Economic Daily reported.

The funds in question are a China-based fund co-managed by SoftBank, which already runs the China-focused SBCVC unit, and private equity group TPG; and Sequoia's Global Growth Fund III, which requires a minimum commitment of \$250m from each limited partner.

The moves are intended to diversify Naver's holdings. The corporate had about \$1.8bn in cashable assets at the end of March, it has revealed, and has partnered both firms before. SoftBank and Sequoia China paid a combined \$50m for a 20% stake in Naver's social photo app, Snow, in January this year, and Naver has already supplied a total of roughly \$78m for two funds raised by SoftBank's now shuttered SoftBank Ventures unit, in 2014 and 2016.

Huobi and Kiwoom launch \$93m fund

South Korea-based online brokerage firm Kiwoom Securities, Singapore-based cryptocurrency exchange Huobi and China-based investment firm NewMargin Capital have launched a \$93m investment fund, China Money Network reported. The fund will focus on blockchain

companies in South Korea and China, with the aim of encouraging cooperation on projects between the two countries. Limited partners in the fund include Korea Development Bank, Industrial Bank of Korea and Mirae Asset Financial Group.

Sintef sets up \$61m seed fund

Norway-based research organisation Sintef has launched Nkr500m (\$61m) seed fund Venture V to help commercialise local research. Sintef put up \$13.5m through its venture capital arm, Sintef Venture. The EU-owned European Investment Fund committed \$19m and Norway's municipal pension fund Kommunal Landspensjonskasse provided \$9.3m.

The fund's other backers include Reitan Kapital, the corporate venturing arm of retail group Reitan, diversified conglomerate Orkla, financial services firm SpareBank1 SMN's Invest subsidiary, pension fund manager MP Pensjon and charitable foundations Gjensidigestiftelsen and Sparebankstiftelsen.

Venture V will invest in early-stage spinouts from Sintef and its partner, Norwegian University of Science and Technology. The vehicle will be managed by Sintef TTO, the research agency's tech transfer office, and will focus on sectors such as life sciences, clean energy and information and communication technology.

Speedinvest spies corporates for \$58m fund

Austria-based venture capital firm Speedinvest has secured €50m (\$58m) from limited partners including financial services firm Raiffeisen and insurance provider Uniqa for early-stage fund Speedinvest F.

Founded in 2012, Speedinvest backs Europe-based financial technology developers in subsectors such as alternative lending, investments, payments, insurance and personal finance technology in addition to data, compliance and infrastructure technology startups.

The firm had previously invested out of a €25m fund called Speedinvest X, supplying up to \$500,000 in seed funding for startups. Speedinvest F will expand that brief, making first investments in late seed and series A and B rounds with a ticket size of €1m to €4m.



NEWS

Luge races towards \$58m fund

Canada-based venture capital fund Luge Capital has raised C\$75m (\$58m) for its debut fund from investors including insurance providers Sun Life Financial and La Capitale, the Globe and Mail reported. Quebec government-owned development capital organisation Fonds de solidarité FTQ also contributed to the latest C\$25m tranche.

The fund was launched in October last year with a C\$25m commitment each from financial services group Desjardins and state-owned pension manager Caisse de dépôt et placement du Québec. Luge may seek an additional C\$25m in the coming months.

Luge is the brainchild of Pierre Miron, executive vice-president and chief operations and IT officer at Caisse de dépôt. Apart from cash, the limited partners will provide Luge's portfolio with access to their data. The vehicle will invest in early-stage fintech companies, supplying between C\$250,000 and C\$2m. The fund is being led by David Nault, former principal at VC firm iNovia Capital, and Karim Gillani, former head of corporate development at Xoom, an international remittance company that floated in 2013 before being acquired by its peer PayPal two years later.

Luge's partners also include iNovia, whose managing partner Chris Arsenault helped recruit both Nault and Gillani. The firm will provide operational, back-office, legal and reporting support in return for an investment gains.

Snap clicks for media startups

US-listed messaging service Snap has set up an accelerator to invest in startups or creators building media projects for mobile devices. The accelerator, Yellow, will invest \$150,000 in 10 creators or startups in return for an equity stake of undisclosed size. Snap will not require accelerator participants to work with the company exclusively, according to news provider Recode.

The company has already done this with at least one startup, Recode said. Vertical Networks, a content company majority-owned by Elisabeth Murdoch, daughter of 21st Century Fox chairman Rupert Murdoch, publishes brands like Brother and shows like Phone Swap on Snapchat's Discover section.

Unilever Brazil starts accelerator

Unilever Brazil, a local subsidiary of Netherlands-based consumer goods maker Unilever, has launched Lever Up as the company's first worldwide startup acceleration program.

Lever Up will be led by venture capital firm Liga Ventures' Corporate Accelerator Alternate Ventures, targeting startups in the IT, supply chain, e-commerce, home care and food sectors. Those selected to participate will undergo a four-month acceleration period, with access to Unilever professionals from various sectors and expertise.

Liga was created in 2015 and has 8,000 startups in its database. The firm has also worked with companies such as Porto Seguro, Embraer, Mercedes-Benz and AES Brasil.

Koch has confidence in Trust fund

US-based venture capital firm Trust Ventures has raised an initial \$35m for its debut fund from investors including Koch Disruptive Technologies, an investment arm of conglomerate Koch Industries.

Additionally, the public affairs division of the conglomerate's lobbying arm Koch Companies Public Sector will offer consulting services to Trust Ventures and its portfolio companies.

Trust Ventures Fund I will focus on startups in sectors where legacy public policy is a hurdle to innovation, such as transport, energy, financial, insurance and healthcare. The firm is led by Salen Churi and Brian Tochman. It has not disclosed a target size for the fund.

Gumi sets up \$30m blockchain fund

Japan-based mobile games maker Gumi has launched a \$30m corporate venture capital fund with limited partners including entertainment company Voyage Group and game developer YJM Games.

The fund, Gumi Cryptos, will invest in cryptocurrency and blockchain technology companies, with its portfolio already including Theta, Wax, Robot Cache, Basis, Pryze and Origin.

Hironao Kunimitsu, founder and CEO of Gumi, which listed in late 2014 after corporate venture backing from peer Gree among others, and Miko Matsumura, founder of virtual currency exchange Evercoin, are leading Gumi Cryptos.

Japan was the first country to legalize Bitcoin, but has seen local companies, such as Mt Gox and Coincheck, hacked and lose hundreds of millions of dollars in user crypto-holdings.



NEWS

Grab to hold on to startups

Singapore-based ride-sharing firm Grab has launched investment arm Grab Ventures to invest in eight to 10 startups over the next two years, TechCrunch reported. The company will also operate an accelerator program – Velocity – targeting growth-stage businesses, in addition to incubating new services from within Grab. Velocity will accept four to six companies per cohort, with the inaugural class expected to join before the end of this year.

Grab has recruited Singapore government agencies Info-communications Media Development Authority of Singapore and Enterprise SG as partners. Chris Yeo has been appointed head of Grab Ventures, which will invest across Southeast Asia.

Henkel hands funding to China Materialia

Chemical and consumer goods producer Henkel has agreed to supply €5m (\$5.9m) for the second fund to be raised by China-based open innovation specialist China Materialia.

China Materialia's Investment Fund II will invest in developers of new materials and energy, environmental and advanced manufacturing technology in addition to products that will help digitise the industrial sector. Henkel made the investment through €150m corporate venturing subsidiary Henkel Ventures. Other funds backed by the company as a limited partner include Emerald Technology Ventures and Pangaea Ventures.

Crooz reaches VC investment stage

Crooz, the Japan-based owner of fashion e-commerce platform Shoplist, has formed investment arm Seven Woods Investment for which it plans to raise ¥2bn (\$18m), the Bridge reported.

The company plans to commit funding but will also

tap external investors. Each deal will be structured as an investment partnership but Crooz intends to provide ¥10m to ¥30m for each deal. Reo Kasai, founder and formerly managing partner of venture capital fund IF Angel, will oversee the unit's investments.

Agorai arranges artificial intelligence accelerator

Agorai, a UK-based operator of a marketplace for artificial intelligence (AI) tools, has formed an accelerator to invest in developers of AI-powered technology. In addition to securing capital, participants will be able to meet business people and AI experts, and will receive licences allowing them to develop and operate their software on Agorai's platform. The initiative is part of a drive by Agorai to invest £20m (\$26.4m) in the UK's AI sector. The company also plans to fund education and research as well as promoting access to the technology for small and medium-sized businesses.

EDP powers up \$8m Brazilian fund

Portugal-based energy utility EDP has formed a corporate venturing unit with about €7m (\$8.1m) of capital to focus on investments in Brazil. EDP Ventures Brasil will look to fund Brazil-based startups developing technologies in areas such as digital innovation, renewable energy, energy storage, intelligent networks and customer service, at seed and series A stage. The unit is also open to backing pilot energy projects and will offer access to its parent company's business in 14 countries in the region.

Wayra and Edinburgh combine for AI accelerator

Wayra UK, a subsidiary of telecoms firm Telefónica, has joined University of Edinburgh to form a UK-based artificial intelligence (AI) and blockchain accelerator.

The initiative will be Wayra's first in Scotland and will receive assistance from state-owned economic development agency Scottish Enterprise. It will be open to spinouts and startups, and will accept 20 local businesses a year from September 2018.

Founded in 2012, Wayra UK currently consists of five accelerators training approximately 50 portfolio companies a year. Participants in the Edinburgh accelerator will have access to Telefónica's UK and global businesses to improve the chances of scaling their businesses. More than 200 UK and Ireland-based startups have so far taken part in Wayra UK and have raised more than \$198m in funding among them.



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Ze Box and PSA Unboxed ship innovation

France-based container transportation and shipping company CMA CGM has partnered Singapore-based port operator PSA International to collaborate on digitisation and innovation in the shipping and supply chain sectors. The two signed the memorandum of understanding through their respective corporate venturing units, Ze Box and PSA Unboxed.

They will collaborate on growing each other's ecosystem by pooling resources, addressing industry problems through their corporate innovation programs and support each other's mentoring programs. Ze Box will open a satellite office in PSA Unboxed's premises. One of the partnership's goals will be to test ideas, improve operational efficiency and leverage each other's capabilities and market exposure.

Scor Global Life enters CVC space

France-based life reinsurance provider Scor Global Life has launched corporate venturing unit Scor Life and Health Ventures. The unit will focus on the life insurance sector, targeting startups that add strategic value to the corporate's offering. The size of its fund has not been disclosed.

Scor Global Life forms part of Scor, a reinsurance group that includes property and casualty reinsurance business Scor Global P&C and asset management firm Scor Global Investments.

Scor Life and Health Ventures's first investment is iBeat, a US-based health technology producer that has created a smartwatch which continually monitors a wearer's heart activity and alerts the user, family and emergency services if a life-threatening situation arises. The smartwatch includes an emergency button. Financial terms of the iBeat deal have not been revealed.

Comment: Ant's crawl to \$14bn round signals bipolar world

James Mawson, editor-in-chief

There is an unbelievable-if-it-wasn't-true chart in Mary Meeker's annual internet trends presentation showing China mobile payments volume growing 209% year-on-year to almost \$16 trillion by the end of last year.

The near-doubling in growth rates – not volume – has seen two clear winners in the world's most advanced and largest mobile fintech market – Tencent's WeChat Pay, and AliPay by Alibaba's Ant Financial. Venture capitalist Meeker's presentation, based on data prepared by local firm Hillhouse Capital, shows AliPay at 54% of China's mobile payment share and WeChat Pay at 38%.

Ant Financial, the China-based financial services affiliate of e-commerce group Alibaba, last month said it had raised about \$14bn in a series C round backed by a who's who of international financiers as well as local leaders.

Singapore's sovereign wealth funds GIC and Temasek backed the US dollar-denominated tranche, which was also backed by Warburg Pincus, Canada Pension Plan Investment Board, Silver Lake and General Atlantic.

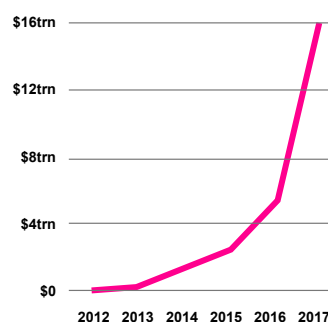
Carlyle Group, Janchor Partners, Discovery Capital Management,

Baillie Gifford, Primavera Capital and funds and accounts advised by T Rowe Price Associates have also provided capital to Ant, as has Malaysian sovereign wealth fund Khazanah Nasional. Sequoia Capital China and BlackRock were reported as participating in the round. The renminbi-denominated tranche was largely provided by existing unnamed investors.

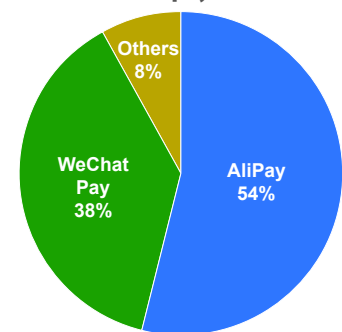
The equity round, the largest yet raised by a private company, will allow Ant Financial to accelerate the global expansion of AliPay, with an initial focus on India, Thailand, Korea, the Philippines, Indonesia, Hong Kong, Malaysia, Pakistan and Bangladesh. The cash will also go towards the development of new technology, with a key focus on blockchain, artificial intelligence, the internet of things and security.

Ant's valuation has not been confirmed but has been reported to be \$150bn, compared with \$60bn in 2016 when it raised \$4.5bn from investors including postal service China Post and insurance provider China Life.

China mobile payment volume



China mobile payment share



Source: Kleiner Perkins, Hillhouse Capital



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Meeker, in her identification of the top 20 worldwide internet leaders today, also said Ant was worth \$150bn, making it ninth on the list. Of these leaders, nine were effectively non-existent five years ago, but the rise in all 20's aggregate market value has been more than \$4.3 trillion in this period, reflecting investors' attention to growth as the driver of value in this part of the economic cycle.

Nine of the 20 are from China, with the remainder in the US. The market for scaleable global champions has clearly bifurcated in the past five years – from primarily US champions with a smattering from other regions to a bipolar innovation capital world of America and China, although the US still retains the top five spots for now.

How these two innovation centres work with or in competition with each other could have geopolitical ramifications given the companies are effectively the size and resources of fairly large states and almost all are active corporate venturers. ♦

The GCV Asia Congress is being held in Hong Kong on September 20 with leaders from Alibaba and Tencent's corporate venturing funds

Comment: Animal spirits soar in innovation capital

James Mawson, editor-in-chief

The recent flotation of flea market app operator Mercari and e-commerce company Rakuten's acquisition of US-based peer Curbside feel seismic for the Japanese innovation capital ecosystem. They also reflect the wider catch-up by M&A and public markets to the burgeoning prices paid in private capital markets, validating those later-stage investors who paid up to delay these exits and reap rewards.

Mercari's initial public offering (IPO) is set to raise up to \$1.2bn having been priced above the top of its range in Japan's biggest such share sale so far this year. The offering will fuel the company's push into the US and other international markets. Curbside, backed by pharmacy chain CVS Health, mobile chipmaker Qualcomm and media firm O'Reilly Media, has been acquired by Rakuten for an undisclosed amount.

The size of Mercari's IPO and Rakuten's purchase of an international peer signals that the cultural change required to deliver on Japan's innovation and entrepreneurial potential has started to take effect. For context, the median flotation in Japan in 2015 was \$3.5m, according to Stanford's review of the ecosystem.

The international dealmaking comes with an international push since Japan's prime minister, Abe, visited Silicon Valley in 2015 and reflects a broader push into supporting entrepreneurs and innovation capital through his Abenomics three arrows strategy.

And while Mercari and Rakuten represent a wave of internet-related entrepreneurs, the country's deep tech innovation is starting to draw attention and global links.

In April's innovative region analysis for Global Corporate Venturing, Ken Yasunaga, managing director at the public-private investment fund Innovation Network Corporation of Japan, said: "Initially, internet services were the strongest and biggest source of entrepreneurs on the Japanese market.

"We have now started seeing new kinds of opportunities, including in the life sciences space – mostly dedicated to drug discovery – and in IT and software. But most of all, it is the internet of things, artificial intelligence and robotics that always top the list these days."

In a Financial Times supplement on Japan's heartland, Kansai – the region that is home to Kyoto, Osaka and Kobe cities – Yutaka Teranishi, who leads the Innovation Hub Kyoto at Kyoto University's Graduate School of Medicine, said: "Since the advance of medical science absolutely must be global, we are building this centre on the assumption that we must deepen international co-operation."

The facility, opened in September last year, has sprung up between the structures of a teaching hospital and long-term care units, and hosts medical startups while they explore new avenues of research and find their feet as companies. There is an atmosphere of urgency, the FT said.

Teranishi argued in the supplement that Japan's reluctance to treat its research ambitions as global projects had for too long held academia back from investing in facilities like this.

Kyoto has built the Innovation Hub around an area of research in which it has achieved global recognition, stem cells and regenerative medicine, according to the FT.

Shinya Yamanaka, the Nobel laureate whose discovery of induced pluripotent stem cells – mature cells that can be reprogrammed to an embryo-like state – in 2006 led him to found the Centre for iPS Cell Research and Application, an organisation devoted to regenerative medicine research.

Japanese startups and listed companies in this field include Megakaryon, PeptiDream, Sosei Group and Healios. They →



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“The bull market powers on, and money continues to flow into the innovation economy”

have been aided by longer-established corporations, such as Takeda’s invigorated corporate venturing approach – a move replicated in other fields from electronics and media (Sony) to chips (Tokyo Electron) to communications (KDDI and NTT) and, above all, SoftBank, in any area it chooses.

More broadly, Japan-based startups raised ¥280bn (\$2.6bn) in 2017 across just more than 1,100 companies, according to Japan Venture Research published by the FT.

In March, the Ministry of Economy, Trade and Industry said the number of startups founded to commercialise university research had risen 13% in the 2017 financial year to a record 2,093, led by Tokyo University with 245 and Kyoto’s 140, as reported by Global University Venturing in March.

The pulling together of the corporate, university and government support network to venture capital, angel investors and startups has seen a fresh hope that the world’s third-largest economy can play a more important leadership role in the industry.

But the animal spirits are hardly confined to Japan.

In total, 434 startups raised \$9.9bn via initial coin offerings so far this year, according to a post by Anuj Khanna, chief executive of consultancy Peak State Consulting.

Tomasz Tunguz, venture capitalist at Redpoint, noted in a blog that 2018 has been a “blockbuster” year for M&A multiples in software, with prices relative to their revenues surpassing any of those in the past seven years.

He said: “Billion-dollar plus acquisitions in 2018 [such as Microsoft’s purchase of GitHub, Salesforce’s of Mulesoft and Workday’s of Adaptive Insights] have commanded a median 17.7-times trailing enterprise value to revenue multiple. Nothing in the past seven years is close. In fact, there is not a single acquisition in that range.

“I expect substantially more acquisitions of the scale and at these multiples through 2018 – the corporate tax holiday, the growing sizes of the software market, the desire for continuing growth, the pace of innovation within software, the increasing competition among incumbents – a vibrant public market that is continuing to price companies aggressively. Forward software multiples have reached eight-year highs at 8.5-times enterprise value to next 12 months’ revenues.

“It is a great time to sell a fast growing billion-dollar company.”

Or, more broadly, as Silicon Valley Bank put in its second quarter review: “The bull market powers on, and money continues to flow into the innovation economy.”

Mary Meeker, partner at VC firm Kleiner Perkins Caufield & Byers, in her annual review of the internet market, noted the \$4bn-plus rise in market valuation of the top 20 internet companies over the past five years. At more than \$5bn now, these 20 companies alone are worth more than Japan’s gross domestic product. Whether these prices reflect an unwarranted sense of perfect future performance is harder to tell, but the country is certainly more diverse. ♦

Big deal: QuantumScape fuels up on VW cash

Thierry Heles, editor

If you are looking for proof that the university innovation ecosystem finds itself in an outstanding place at the moment, you may want to consider the fact that last month saw news about three initial public offerings.

Aptinix, a US-based neurologic disorder drug developer that emerged out of Northwestern University spinout Naurex, raised \$102m when it floated on Nasdaq.

Autolus, a UK-based cancer-focused biopharmaceutical spinout from University College London, went public by putting \$150m in its coffers – a whopping \$50m more than the company had originally targeted.

And Forty Seven, a US-based oncology therapy developer spun out from Stanford University, filed for a \$115m initial public offering earlier in the month that will ensure the current IPO bonanza is going to continue.

Forty Seven is unusual in that the company raised a \$34.1m series A round only two years ago and closed a \$75m series B just eight months ago – an incredibly fast turnaround from early-stage funding to exit, particularly for a healthcare company.

But IPOs are just part of the story and Forty Seven is merely one of the latest success stories for Stanford. Another one is QuantumScape, a US-based developer of solid-state battery technology for long-range electric vehicles.

QuantumScape raised \$100m in funding last month from carmaker Volkswagen (VW) and established a joint venture with the corporate to produce solid-state batteries at an industrial scale. One of the joint venture’s long-term goals is to create a production line by 2025.

The investment, once it closes following regulatory approval, will make VW the largest automotive shareholder in Quan-



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tumScape. VW purchased a 5% stake in 2014 for an undisclosed amount, following a collaboration agreement signed in 2012.

Founded in 2010, QuantumScape is working on solid-state battery technology. Such batteries are expected to be smaller and cheaper than current liquid lithium-ion batteries, while boasting higher capacity, faster charging and longer lifespans.

The technology could prove transformational for electric vehicles – the VW e-Golf model currently manages up to 300 kilometres on a single charge, but a solid-state battery would theoretically boost that distance to nearly 750 kilometres.

QuantumScape holds approximately 200 patents related to the technology. The spinout is being led by chief executive Jagdeep Singh, who has an MSc in computer science from Stanford University.

Singh said: "Volkswagen is the world's largest automotive manufacturer and leads the industry in its commitment to electrification of its fleet. We are thrilled to be chosen by Volkswagen to power this transition.

"We think the higher range, faster charge times and inherent safety of QuantumScape's solid-state technology will be a key enabler for the next generation of electrified powertrains."

However, the technology, while promising, has remained out of reach so far. Advances have been difficult to attain – car producer Toyota admitted in October 2017 that battery life had been a particular challenge in its own efforts to develop the technology.

But VW and QuantumScape seem to be further ahead than others, as the corporate has already successfully tested early-stage sample cells developed by QuantumScape at automotive rates of power in an industry first.

Axel Heinrich, head of VW Group Research, will join QuantumScape's board. He said: "The solid-state battery will mark a turning point for e-mobility. By increasing our stake in QuantumScape and forming the joint venture we strengthen and deepen our strategic cooperation with an innovative partner and secure access to the promising QuantumScape battery technology for Volkswagen.

"We want to accelerate the commercialisation of QuantumScape's solid-state batteries. And we combine forces to leverage Volkswagen's experience as a production specialist and QuantumScape technology leadership. Volkswagen is thus taking another step toward a sustainable zero-emission mobility for our customers in the future." ♦

Big deal: Adaptive Insights purchased for \$1.55bn

Kaloyan Andonov, reporter, GCV Analytics

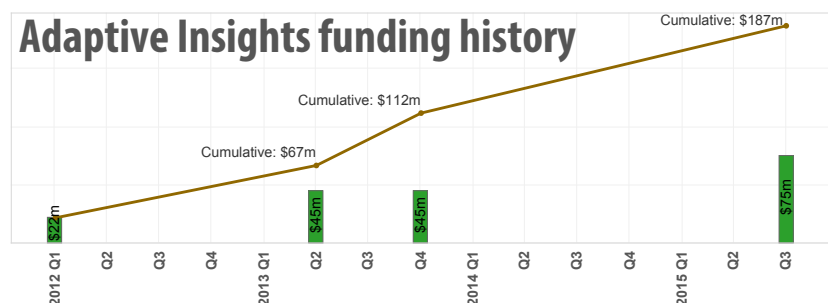
US-based business planning enterprise software developer Adaptive Insights, which counts software producer Salesforce and Wells Fargo's Norwest Venture Partners among its backers, agreed to be acquired by cloud-based human resources management platform Workday for \$1.55bn.

Workday plans to integrate Adaptive Insights' platform into its own suite of applications. The transaction, which is subject to customary closing conditions, was announced three weeks after Adaptive Insights had filed for a \$100m initial public offering.

Founded in 2003 as Adaptive Planning, Adaptive Insights runs a software-as-a-service cloud-based platform which enables businesses to build models of their operations and collaborate on planning while analysing performance data.

The company raised various corporate-backer rounds to date, as shown on the GCV Analytics chart.

Previous transactions included a \$45m corporate-backed round featuring Salesforce in 2013 as well as a \$75m round in 2015, which featured Norwest Venture Partners, the venture capital firm managing funds for financial services firm Wells Fargo. The company's recent IPO filing revealed that Norwest Venture Partners and Salesforce held respective 16.5% and 5% stakes. ♦



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Big deal: Tiantianpaiche raises \$100m

Kaloyan Andonov, reporter, GCV Analytics

Online automobile platform Autohome committed \$100m to China-based online used car auction service Tiantianpaiche. In addition to providing the funding, Autohome obtained an option to invest up to \$65m in convertible note. The funding will, reportedly, be used to finance the company's expansion across China and developing new services, such as used car retail and financing.

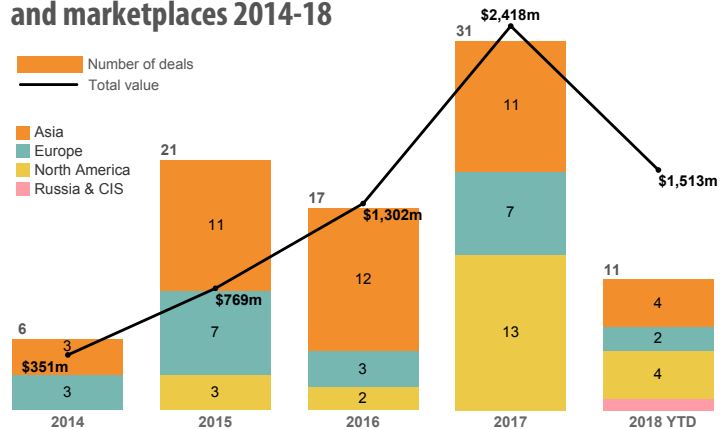
Tiantianpaiche runs an online auction platform for used car transactions. It also operates numerous dealerships in Shanghai, Beijing and Guangzhou and is aiming to sell a million vehicles annually by 2020.

Tiantianpaiche had already raised rounds involving other domestic and international corporate backers, such as internet company Tencent, automotive e-commerce portal Bitauto, telecoms group SoftBank's SB China Capital and trading and technology firm Susquehanna International Group's local unit SIG Asia Investments.

The company is part of the vehicles marketplaces and platform space, whose relatively large rounds have attracted the attention of corporate investors over the past few years, as the historical bar chart from GCV Analytics shows.

A considerable number of corporate deals in that space were conducted in Asia. In particular, in places like China, the rise of the country's middle class has gone hand in hand with higher demand for automobiles, whether new or used. ♦

Corporate-backed deals in vehicle platforms and marketplaces 2014-18



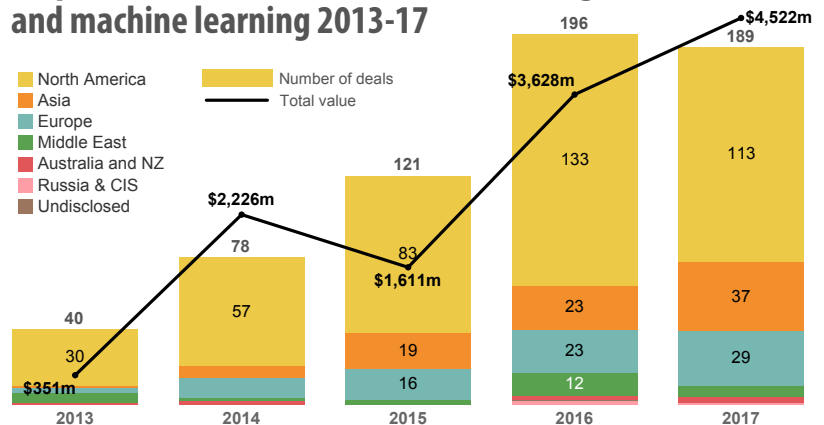
Big deal: SenseTime feels a \$620m round

Kaloyan Andonov, reporter, GCV Analytics

China-based artificial intelligence (AI) technology company SenseTime completed a series C-plus round at \$620m. The round included Qualcomm Ventures, the corporate venture capital unit of the mobile semiconductor manufacturer, as well financial services group Fidelity International, among others. The transaction reportedly valued the company at over \$4.5bn.

SenseTime has received significant corporate backing in rounds whose total adds up to over \$1.6bn to date. The C-plus round took place weeks after the company completed a \$600m series C round led by e-commerce group Alibaba, which also featured retailer Suning and Singaporean state-owned investment firm Temasek. Qualcomm is a repeat investor, as its China Venture Fund committed an undisclosed sum to SenseTime in November 2017. Property development group Dalian Wanda took part in its series B round which closed at \$410m.

Corporate-backed deals in artificial intelligence and machine learning 2013-17



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Founded in 2014, SenseTime develops deep learning technology that relies on computer vision to facilitate applications such as facial recognition, image processing, language recognition and vehicle recognition. The company claims it achieved profitability in 2017 as well as a 400% year-on-year growth rate over the past three years.

The field of core AI and machine learning has received much attention from corporate investors, as the historical bar chart from GCV Analytics illustrates. Most such rounds were raised by businesses based in North America, primarily the US, but the Asia-based AI and machine learning developers have been also gaining momentum. ♦

Big deal: Google Invests \$550m in JD.com

Hans Tung, managing partner, GGV Capital

Google will invest \$550m in China's second-largest e-commerce company, JD.com as part of a strategic partnership, the two companies announced.

The partnership could help Google expand its presence in fast-growing Asian markets and battle global rivals like Amazon. The Google-Amazon battle is intensifying, especially in the area of home assistants.

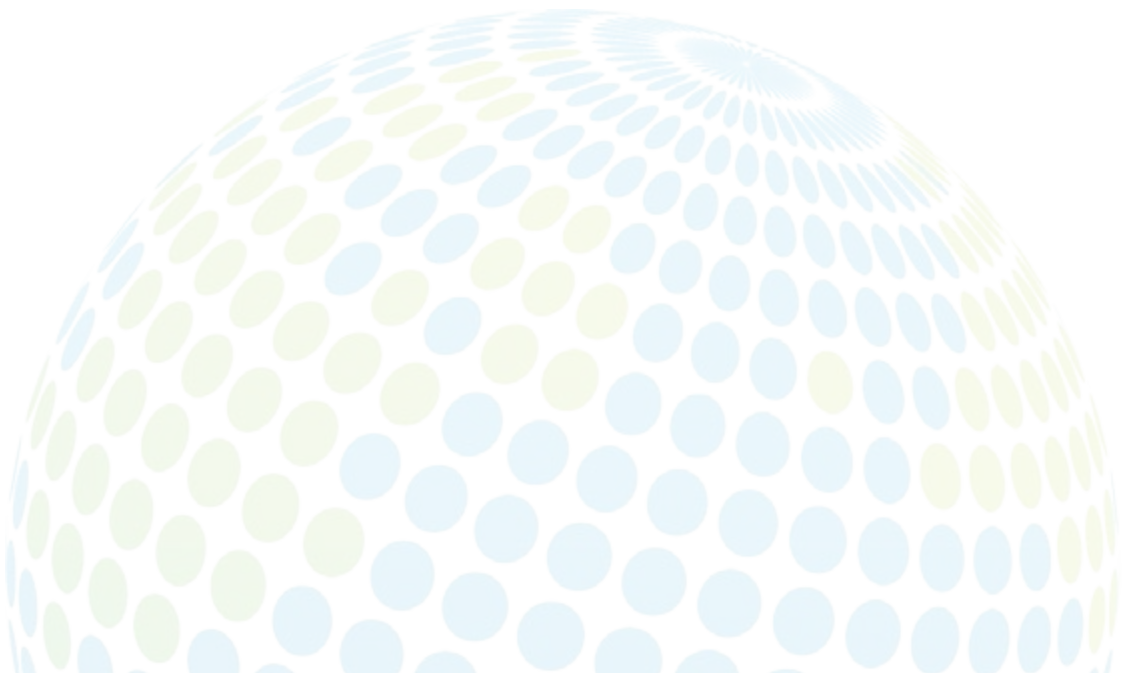
By partnering JD.com, Google could further tighten its relationship with Walmart, an exiting investor and one of the largest shareholders of JD.com. For JD.com, the Google deal helps the Chinese company build global alliances as it seeks to counter Alibaba worldwide. Together, Google and JD.com could challenge the dominance of Amazon and Alibaba in key markets around the world, analysts said.

The deal also signals JD.com's commitment to integrating cutting-edge technologies such as artificial intelligence and robotics with its retail offerings. According to JD.com's latest financial report, the company spent \$400m on "technology and content" in the first quarter of 2018 – a 87.2% year-on-year increase – as a result of the company's "continual investment in top R&D talent and technology infrastructure". JD.com has hired industry experts such as He Xiaodong, former principal researcher at Microsoft Research's artificial intelligence unit.

Recently, Google has stepped up its involvement in China, where most of its services continue to be banned. It struck a patent licensing partnership with Tencent, set up an artificial intelligence lab in Beijing, and invested in game-streaming startup Chushou.

The announcement of the partnership came on June 18 – "618", JD.com's annual shopping festival equivalent of Alibaba's "Singles Day", November 11. JD.com initiated by 618 in 2010 to celebrate the company's founding on that date. For this year's 618, JD.com reported revenue of nearly RMB160bn (\$24.9bn), a 37% increase from last year. In comparison, Alibaba's Singles Day in 2017 raked in \$25.3bn.

Disclosure: Chushou is a GGV Capital portfolio company. GGV was an early investor in Alibaba in 2003.



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Activity in IT cools down for another year

Kaloyan Andonov, reporter, GCV Analytics



Technological advances in the IT sector today extend far beyond the realms of the sector itself, having significant spill-over effects across a wide range of industries undergoing digitisation.

One of the fundamental characteristics of the increasingly digitised world is the generation of large amounts of data. Big data, as this phenomenon is dubbed, is becoming ever more ubiquitous. A 2017 study by the Dresner Advisory Services found that big data adoption in businesses had reached 53% in 2017 for all companies surveyed, up from 17% in 2015, where reporting, dashboards, advanced visualisation “self-service” and data warehousing were the top five technologies in business intelligence. According to the report, data warehouse optimisation were the top use cases for big data, followed by customer and social media analysis, along with predictive maintenance.

Artificial intelligence (AI), machine learning and deep learning have been also among the hottest buzzwords in the world of innovation over the past few years. AI is the broader term, referring to any involvement of a machine performing tasks characteristic of human intelligence – from recognising objects and images through speaking languages to problem-solving. Machine learning is one way to achieve AI by having a machine learn to perform a task without having being explicitly programmed to do it. Deep learning is one of the approaches to machine learning, inspired by the functioning of neural networks in the human brain.

The hype around those terms has been anything but a passing fad. The McKinsey Global Institute estimated that AI-driven entrepreneurial activities attracted between \$26bn and \$39bn of investment during 2016, most of it coming from digital natives like e-commerce company Amazon or internet companies Baidu and Google. This finding is consistent with what Global Corporate Venturing has been reporting across various industries where AI is being adopted.

Most interesting and controversial are the questions raised about the impact of AI on the economy. There are also some who feel alarmed by the possibility of AI equivalent to or greater than human intelligence taking over in the long run. The world, however, is perhaps still far from such an Asimovian robot-dominated stage of development. AI as a means to augment human productivity may well turn out to be a positive force in the coming decades. A PwC report – The macroeconomic impact of AI – estimated that AI could account for an additional 14% of expected global GDP growth by 2030, through AI-enhanced services and products, on the consumer side, and a labour force armed with AI tools that will drive up productivity.

While AI-empowered products and services may be beneficial for the consumer, a major societal concern about AI remains job losses. The PwC report estimated that 326 million jobs would “come to depend on and be heavily impacted by AI” by 2030. Most of these were likely to be low-skilled positions. Skilled jobs, on the other hand, would “be more positively impacted, supporting a bias towards skilled labour”, the report stated.

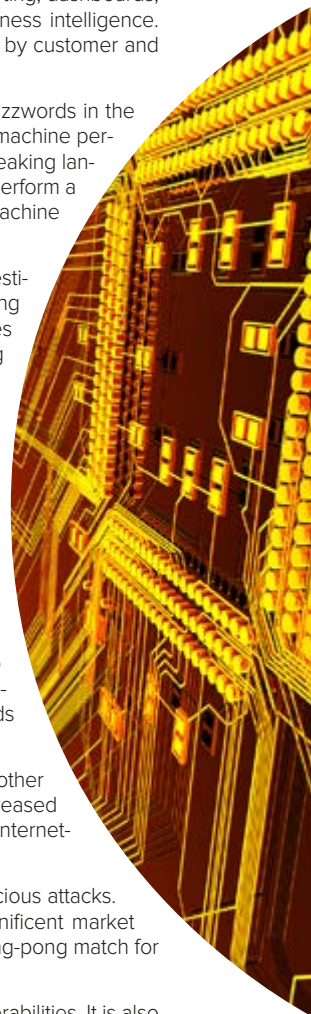
Aside from destruction of jobs, the unceasing digitisation of the world brings threats addressed by another important subsector of the IT industry – cybersecurity. This market has gained momentum due to increased adoption of digital technologies across a wide range of industries as well as the greater use of internet-connected mobile technologies by consumers.

Cybersecurity technology faces the never-ending task of protecting users and enterprises from malicious attacks. As analyst Steve Duplessie, founder of Enterprise Strategy Group, put it: “Cybersecurity is a magnificent market because the problem can never be solved entirely. Fix one hole, the bad guys find another. It is a ping-pong match for hackers.”

It is not simply the increased use of Internet on mobile devices that may lead to serious security vulnerabilities. It is also the internet of things (IoT) that is likely to present such problems. A Ponemon Institute survey found that 94% of security leaders thought IoT constituted a security concern that could result in “a catastrophic incident”, as cited in the Cybersecurity Market Outlook: 2018 Industry Trends and Insights report.

Today's digital world, with its burgeoning data and connectivity, would be unthinkable without cloud technology and cloud infrastructure. Many data-driven and data-dependent businesses have either moved operations completely to the cloud or reduced their operational expenses with private data centres. In fact, a McKinsey analysis – IT as a service: from build to consume – from 2016 predicted that cloud providers would make up nearly 80% of shipped server and

GCV Analytics defines the IT sector as encompassing general artificial intelligence applications, big data and analytics, virtual and augmented reality technologies, semiconductors and microchips, cybersecurity, enterprise and other software as well as other IT businesses.



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storage capacity by the end of this year.

Cloud technologies and data are inextricably linked to the rise of the IoT, which some have already dubbed the “fourth industrial revolution”. While IoT may mean smarter homes and cities to consumers, most of the value it is expected to bring is likely to stay within the realm of business-to-business applications. According to the 2017 Enterprise IoT Executive Survey, conducted by McKinsey, 96% of companies anticipated IoT spending increases over the next three years and planned to dedicate a quarter of IT budgets to IoT-related capabilities. The same study also concluded that the growth of enterprise IoT would drive demand for the compute-and-storage infrastructure as well as IoT-specific solutions. The latter creates a virtuous cycle for emerging businesses in this area.

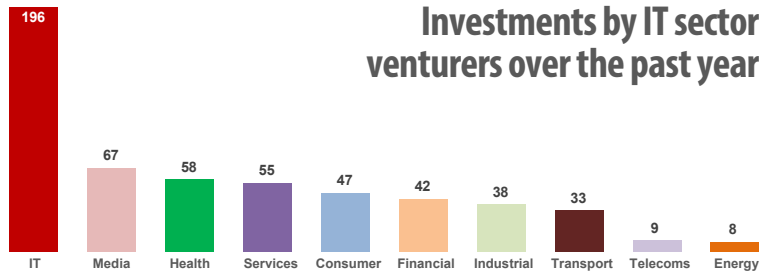
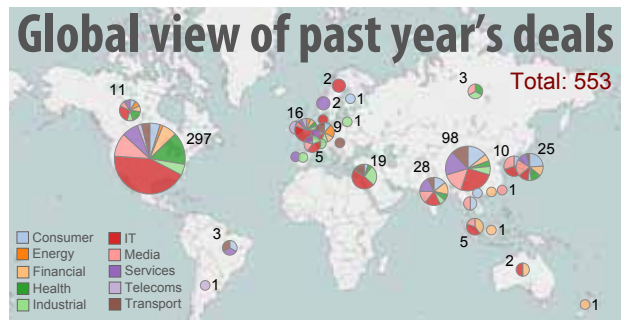
While business operations are migrated to the cloud, individual consumers are now also moving to a new digital reality, enabled by virtual reality (VR) and augmented reality (AR) technologies. A report on VR and AR devices by global analyst company CCS Insight predicted that 22 million VR and AR headsets and glasses will be sold in 2018, with fivefold growth prospects to 121 million units by 2022, largely due to expected sales of smartphone-enabled VR headsets. Despite the wide range of applications for VR tech, the report cites gaming as the primary reason for sales of VR devices, noting that this is unlikely to change. In the case of AR glasses, in spite of limited adoption by businesses to date, the report predicts a much wider deployment in coming years.

While wide adoption of AR glasses technologies at the enterprise level may not yet have materialised, what businesses never cease to purchase is software. The Global Enterprise Software Market and Forecast to 2022 – an Orbis Research report – said the enterprise software market would grow to more than \$500bn over the next four years, with customer relationship management, enterprise resource planning, business intelligence and supply chain management being the leading application segments. The report also identifies the top three areas for enterprise software – banking and securities, communications and media, and manufacturing and natural resources. GCV has recorded numerous cases of telecoms companies, such as SoftBank, investing in such emerging companies.

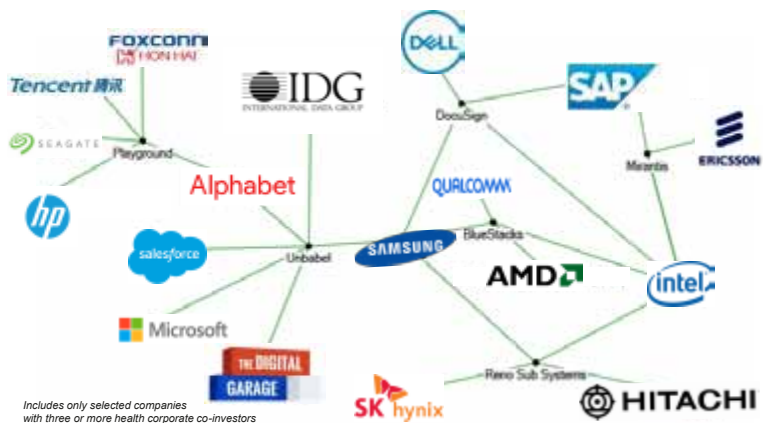
Chips and semiconductors enable sufficient computing power for all these developments. According to a report by researcher Technavio – Global Flip Chip Market 2018-2022 – the market for electronic chips is expected to grow at a compound annual growth rate of 6.22% between 2018 and 2022, fuelled mostly by increasing demand for high-functionality devices. In particular, the surging use of semiconductors in automobiles for infotainment and navigation systems, in both autonomous and connected car projects, was found to account for a significant part of this growth. GCV has recorded a rise of corporate-backed investments in connected and autonomous vehicle technologies.

For the period June 2017 to May 2018, we reported 553 venturing rounds involving corporate investors from the IT sector. Most (297) took place in the US, while 98 were hosted by China and 28 by India.

A large number of those commitments (196) went to emerging enterprises from the same sector, with the remainder going to a few companies developing technologies tangentially related – 67 deals in media (gaming, social media, digital advertising and adtech as well as AR & VR content), 58 in health (pharmaceuticals,



Co-investments of IT sector venturers 2014-18



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medical devices, healthcare IT and administration) and services (mostly, business services, human resources management and edtech), among others.

The chart showing the co-investments of IT corporates illustrates that the sector's incumbents have often invested together in a variety of software businesses (DocuSign, BlueStacks) as well as radio frequency matching networks developers (Reno Sub Systems) and AI applications (Unbabel), among others.

On a calendar year-on-year basis total capital raised in corporate-backed investment rounds dropped 10% from \$34.58bn in 2016 to \$31.1bn in 2017. The deal count fell 6% from 556 deals in 2016 to 523 in 2017.

The 10 largest investments by corporate venturers from the IT sector were spread across other industries.

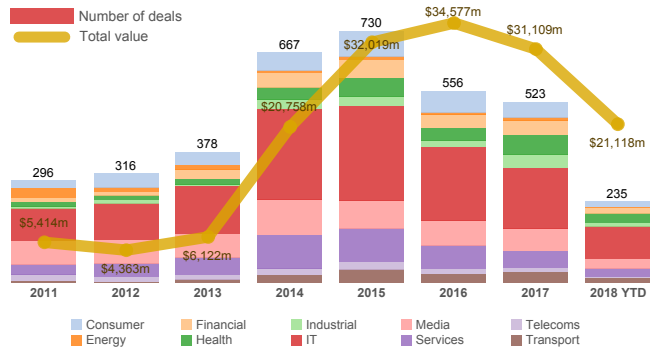
The leading corporate investors from the IT sector were diversified digital conglomerate Alphabet, internet company Tencent and semiconductor manufacturer Intel. The list of IT corporates committing capital in the largest rounds was topped also by Tencent and Alphabet, along with research company International Data Group.

The most active corporate venture investors in the emerging IT companies were again Intel and Alphabet along with enterprise cloud software provider Salesforce, electronic manufacturers Samsung and Dell. The presence of industrial conglomerate Robert Bosch, and telecoms firms SoftBank and NTT Docomo in this list is unsurprising, as they aim for diverse holdings in their portfolios and emerging IT technologies are strategically important to their businesses.

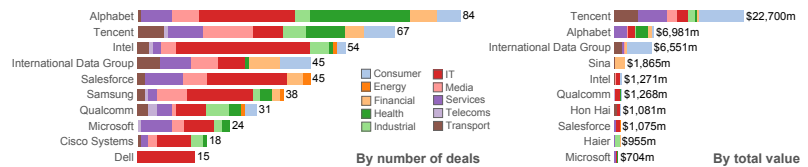
The rising IT businesses in the portfolio of these non-traditional investors were varied, encompassing anything from hardware and electronics to AR technology, AI to enterprise software, as the diagram of co-investments in such companies illustrates.

Overall, corporate investment in emerging IT-focused enterprises went down from 2016 to 2017 in terms of both deal volume, while estimated total dollar went up slightly. According to our data, \$13.38bn were invested over 428 rounds in 2017, compared to the \$9.84bn invested over 383 deals in 2016.

Deals by IT investors 2011-18



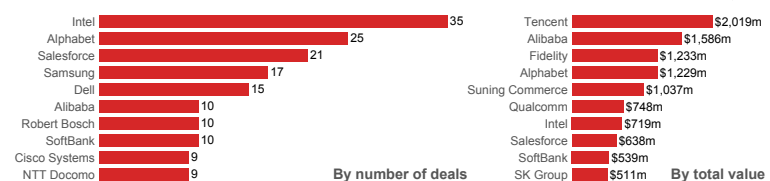
Top IT sector investors over the past year



Corporate co-investments in IT enterprises 2014-18

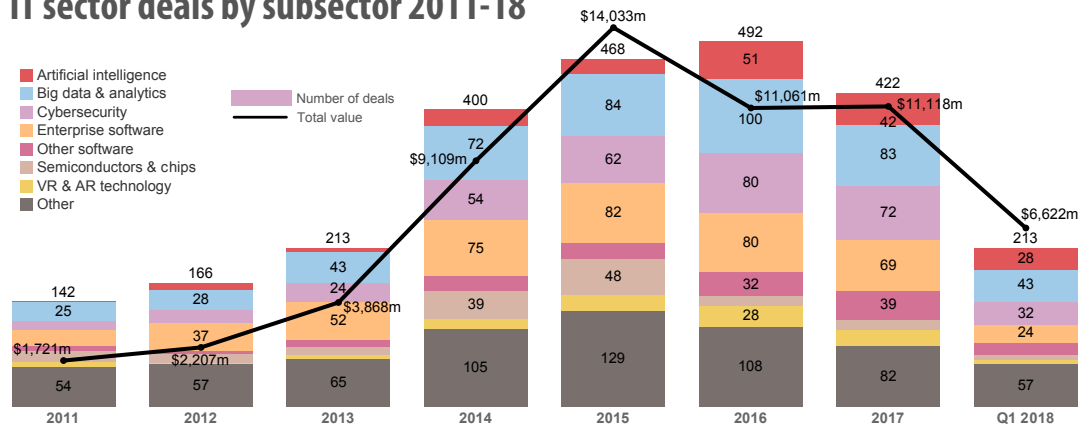


Top investors in IT enterprises over the past year



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IT sector deals by subsector 2011-18



Deals

IT sector corporates invested in a number of large rounds, raised by a range of enterprises, primarily from other sectors, such as transport, consumer and services. Eight of the top 10 rounds were above \$1bn. Most of them featured Tencent as an investor.

Tencent led a \$4bn round for China-based online services provider Meituan-Dianping, which valued the latter at \$30bn. Travel services provider Priceline Group also participated in the round, as did IDG Capital, a subsidiary of International Data Group. Meituan-Dianping runs a local services and e-commerce platform that processes about 21 million orders a day, for items such as food, event tickets and flights, connecting 280 million customers annually with a network of some 5 million local businesses.

China-based online group buying platform Pinduoduo closed a \$3bn funding round led by Tencent. Venture capital firm Sequoia Capital reportedly also participated in the round, which valued Pinduoduo at \$15bn. Founded in 2015, Pinduoduo operates an e-commerce offering that allows users to utilise social media platforms such as messaging service WeChat to share details of products they want to buy, and to form purchasing groups to secure discounts of up to 90%. The platform offers products across a wide range of categories, such as food, cosmetics and baby care.

JD Logistics, the logistics spinoff of China-based e-commerce firm JD.com, agreed funding from investors including Tencent and insurer China Life for a round that closed at \$2.5bn. JD Logistics was formed by its parent company in 2017 out of a logistics operation it had been running for a decade. It has seven fulfilment centres and more than 400 warehouses, which it claims represents the largest fulfilment infrastructure of any China-based e-commerce firm. The company's services cover delivery in addition to cold chain logistics, business-to-business items, cross-border delivery and a crowdsourced service.

Top 10 deals by IT sector corporate investors over the past year

Company	Location	Sector	Round	Size	Investors
Meituan-Dianping	China	Consumer	-	\$4bn	Canada Pension Plan Investment Board China-UAE Investment Cooperation Fund Coatue GIC International Data Group Priceline Sequoia Capital Tencent Tiger Global Management TrustBridge Partners
Pinduoduo	China	Consumer	-	\$3000m	Sequoia Capital Tencent
JD Logistics	China	Services	-	\$2.5bn	China Development Bank China Life Insurance China Merchants Group China Structural Reform Fund Hillhouse Capital Management ICBC International Sequoia Capital Tencent undisclosed investors
Manbang Group	China	Services	-	\$1.9bn	Alphabet China Reform Holding GSR Ventures Sequoia Capital SoftBank Tencent Ward Ferry
MassMutual Asia	Hong Kong	Financial services	Stake purchase	\$1.7bn	Ant Financial City-Scape Pte Sina Yunfeng Capital
Ola	India	Transport	-	\$1.1bn	RNT Capital SoftBank Tencent undisclosed investors
Nio	China	Transport	-	\$1bn	Baillie Gifford Citic Lone Pine Tencent
Kuaishou	China	IT	-	\$1bn	Sequoia Capital Tencent
UBtech	China	Industrial	C	\$820m	CDH Investments CreditEase Haier Industrial and Commercial Bank of China Minsheng Securities Shenzhen Green Pine Capital Partners Telstra Tencent
Semma Therapeutics	US	Health	B	\$114m	6 Dimensions Capital Arch Venture Partners Cowen Healthcare Royalty Partners Eight Roads Ventures F-Prime Capital Partners Frontline BioVentures JDRF T1D Medtronic MPM Capital Novartis ORI Healthcare Fund Sinopharm Wu Capital Wuxi PharmaTech



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China-based trucking services marketplace Manbang Group raised \$1.9bn in a round featuring Tencent along with subsidiaries of Alphabet and SoftBank. The round reportedly valued the company at \$6.5bn. Alphabet's investment came through its CapitalG unit while SoftBank took part through the SoftBank Vision Fund. Formerly known as Full Truck Alliance Group, Manbang runs an online platform where customers looking to ship goods can contact truckers with surplus space in their vehicles. It was formed by the November 2017 merger of rivals Huochebang and Yunmanman. The company's platform uses artificial intelligence to help forge connections based on routes and space.

China-based Ant Financial, a financial affiliate of e-commerce firm Alibaba, acquired a minority stake in Hong Kong-based financial services firm MassMutual Asia along with Yungfeng Capital, the family office investment firm of Alibaba founder Jack Ma, which acquired a 60% stake. The other 40% was acquired by Ant Financial and a host of other investors, including media group Sina. The total size of the transaction was \$1.7bn – \$1bn in cash and \$700m in shares. MassMutual Asia manages general insurance as well as a Mandatory Provident Fund, a compulsory pension plan for Hong Kong residents.

India-based on-demand ride-provider Ola raised \$1.1bn in a funding round led by Tencent. SoftBank also participated in the round, as did undisclosed US-based investors. Ola is in talks with additional parties in a bid to add another \$1bn, taking the size of the round above \$2bn. Founded in 2011 as Olacabs, Ola has built an app-based ride-hailing service offering various categories from luxury cars and taxis to auto rickshaws and shuttle buses. The company operates in 110 Indian cities.

China-based smart electric vehicle developer Nio secured more than \$1bn in a round led by Tencent. The round, which valued the company at about \$5bn, included hedge fund Lone Pine Capital, among other investors. Founded as NextEV, Nio is working on an electric autonomous car equipped with a personalised digital assistant that it aims to bring to market by 2020. It has already created a supercar called the EP9, which is said to be the fastest electric vehicle in the world.

Tencent led a \$1bn round for China-based social media app Kuaishou. The transaction valued the company at \$18bn. The round's other investors included venture capital firm Sequoia Capital China. Kuaishou's mobile app enables users to upload and share photos and videos as well as livestream videos to their followers, who can reward them with virtual gifts. The company has 100 million active users but aims to triple that figure.

China-based robotics technology producer UBtech Robotics closed a \$400m series C round led by Tencent. The deal reportedly valued UBtech at about \$4bn. Founded in 2012, UBtech produces family-friendly humanoid robots for a range of applications. Its products include educational kits for children to build and program their own robot, in addition to a services robot that provides information in hotels and airports.

Tencent and asset manager Phoenix Capital co-led a RMB1.5bn (\$227m) series C round for China-based online game-streaming platform Douyu TV. The round included private equity firm Shenzhen Capital Group and the Chinese state-backed National SME Development Fund. Founded in 2013, Douyu runs an online platform for livestreaming gaming exploits, operating similarly to US-based Twitch.

There were other interesting deals in emerging IT-focused businesses that received financial backing from corporate investors from other sectors.

China-based AI technology provider SenseTime closed a series C-plus round at \$620m. The round featured Qualcomm Ventures, the corporate venture capital subsidiary of the mobile semiconductor technology producer. Investment and financial services group Fidelity International also participated in the round, which reportedly valued SenseTime at more than \$4.5bn. SenseTime supplies computer vision and deep learning technology based on its supercomputing platform, powering functions such as facial and textual character recognition, video analysis and autonomous driving software. This round came shortly after Alibaba had led a \$600m series C round for SenseTime. Retail group Suning and Singa-

Top 10 investments in emerging IT sector enterprises over the past year

Company	Location	Round	Size	Investors
Kuaishou	China	–	\$1bn	Sequoia Capital Tencent
SenseTime	China	C-plus	\$620m	Fidelity Hopu Investments Qualcomm Silver Lake Tiger Global Management undisclosed investors
SenseTime	China	C	\$600m	Alibaba Suning Commerce Temasek
Magic Leap	US	D	\$502m	Alibaba Alphabet EDBI Fidelity Grupo Globo Janus Henderson Investors T Rowe Price Temasek
Megvii Technology (Face-plus-plus)	China	C	\$460m	Hon Hai Russia-China Investment Fund SK Group Sunshine Insurance Group
Kakao Mobility	South Korea	Seed	\$437m	Kakao TPG
New Leshi Smart Home	China	–	\$437m	Evergrande Group JD.com Lenovo Sunac China Holdings Suning Commerce TCL Group Tencent
Kingsoft Cloud	China	D	\$300m	China Minsheng Investments Kingsoft Liyue Investment
Snowflake Computing	US	–	\$263m	Altimeter Capital Management Capital One Iconiq Capital Madrona Venture Group Redpoint Ventures Sequoia Capital Sutter Hill Ventures Wing Ventures
Orbbec	US	D	\$200m	Ant Financial Fosun Group SAIF Shenzhen Green Pine Capital Partners Tianlangxing Capital



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porean government-owned investment firm Temasek also participated in that round, which the company claimed to be the largest raised by an AI technology developer.

US-based AR technology producer Magic Leap raised \$502m in a series D round featuring Alphabet, Alibaba and media company Grupo Globo. Temasek led the round. Founded in 2011, Magic Leap has operated mostly in stealth mode, though details that have emerged suggest it is developing an AR headset that superimposes virtual objects on physical surroundings.

Megvii, a China-based facial recognition technology developer also known as Face-plus-plus, secured about \$460m in a round featuring diversified conglomerate SK Group and contract electronics manufacturer Foxconn. The round also featured Ant Financial. Megvii supplies facial scanning and recognition technology to electronics and internet companies including Ant Financial, and its systems draw on identification files the Chinese government holds on its citizens.

South Korea-based internet company Kakao partnered private equity group TPG to launch subsidiary Kakao Mobility with ₩500bn (\$437m) in funding. TPG led the round, though other investors were not identified. Kakao Mobility will operate a range of the firm's existing brands, including ride-sharing app Kakao Driver, taxi service Kakao Taxi and navigation app Kakao Navi. The spinout is expected to introduce additional products, such as a parking service. The company plans to introduce a corporate version of Kakao Taxi and will integrate automatic payment through payment processing platform Kakao Pay.

New Leshi Smart Home, an affiliate of China-based consumer electronics producer LeEco, raised RMB3bn from investors including several corporates. Tencent, retailer Suning, real estate developer Sunac China and JD.com provided about \$318m of the funding and the rest came from convertible note financing. Formerly known as Leshi Zhixin Electronic Technology, New Leshi Smart Home produces smart internet-connected televisions under the brand name LeTV Super TV.

Kingsoft Cloud, a China-based cloud storage services provider spun out from office software producer Kingsoft, raised \$300m in a series D round that included its parent company. Kingsoft provided \$150m of the funding while private equity firm Liyue Investment invested \$100m and investment group China Minsheng supplied \$50m. Founded in 2012, Kingsoft Cloud provides data storage services in China and North America, operating data centres and supplying network infrastructure services to enterprises.

US-based data warehousing software provider Snowflake Computing completed a \$263m growth round, featuring Capital One Growth Ventures, a corporate venture capital vehicle for financial services provider Capital One. The round was closed at a \$1.5bn pre-money valuation. Snowflake has created a cloud-based data warehousing software product that can store and rapidly analyse large amounts of data in a single place. It runs on the Amazon Web Services platform and is scalable so more data, users and workloads can always be added.

US-based motion sensor developer Orbbec raised more than \$200m in a series D round, led by Ant Financial. The round included diversified conglomerate Fosun, which invested through its Fosun RZ Capital unit. Orbbec develops 3D motion sensors for products such as mobile devices, robotics and smart home devices to facilitate local geospatial mapping as well as face, body and gesture recognition.

Exits

Corporate venturers from the IT sector completed 86 exits between June last year and May this year, including 60 acquisitions, 19 initial public offerings (IPOs), four mergers and three other transactions. On a calendar year-on-year basis, there was a considerable drop to 69 exits in 2017, down from the 95 tracked in 2016. The estimated exited capital also decreased drastically to \$8.82bn in 2017, down from the \$21.36bn in 2016 – a 59% fall.

Big-box retailer Walmart agreed to pay \$16bn for a 77% stake in India-based e-commerce marketplace Flipkart, giving several corporates billion-dollar exits, including software producer Microsoft and Tencent, both of which retain shares in the company. The purchase was the largest M&A transaction in the venture capital space since Facebook's \$19bn acquisition of WhatsApp in early 2014. The SoftBank Vision Fund scored the biggest exit in the deal, receiving just over \$4bn, having paid \$2.5bn for a stake of about 20% in August 2017. E-commerce and media company Naspers, an investor in Flipkart since 2012, sold its 11.2% stake for \$2.2bn, which it said represented a 32% internal rate of return. Founded in 2007 as a book specialist, Flipkart has built a diversified e-commerce platform that sells products in more than 80 categories.

Local services platform Meituan-Dianping agreed to buy China-based bike-rental service Mobike for \$2.7bn. The transaction was reportedly brokered by Pony Ma, chief executive of Tencent, which also owns a stake in Meituan-Dianping. Earlier investors in Mobike included Foxconn and media group Bertelsmann. Founded in 2015, Mobike operates an app-based, dockless bike-sharing service that has attracted hundreds of millions of registered users. The company entered



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Top 10 exits by IT sector corporate investors over the past year

Company	Location	Sector	Exit type	Acquirer	Size	Investors
FlipKart	India	Consumer	Acquisition	Walmart	\$16bn	Accel Partners Baillie Gifford Bennett Coleman & Company DST Global GIC Greenoaks Capital Iconiq Capital International Data Group Morgan Stanley Naspers Qatar Investment Authority Sofina SoftBank Steadview Capital T Rowe Price Tiger Global Management
Mobike	China	Transport	Acquisition	Meituan-Dianping	\$2.7bn	Bertelsmann Bocom International Ctrip.com Farallon Capital Management Hillhouse Capital Management Hon Hai Huazhu Hotels Group ICBC International Joy Capital Panda Capital Qiming Venture Partners Sequoia Capital Temasek Tencent TPG Warburg Pincus private investors
izettle	Sweden	Financial services	Acquisition	PayPal	\$2.2bn	American Express Creandum Dawn Capital Fourth Swedish National Pension Fund Greylock Partners Hasso Plattner Ventures Index Ventures Intel Mastercard Northzone Santander SEB undisclosed investors Victory Park Capital Zouk Capital
Flatiron Health	US	Health	Acquisition	Roche	\$1.9bn	Allen & Company Alphabet Baillie Gifford Casdin Capital First Round Capital Great Oaks Venture Capital IA Ventures Laboratory Corporation of America Social&Capital SV Angel
ZhongAn Online Property and Casualty Insurance	China	Financial services	IPO	–	\$1.5bn	Ant Financial CDH Investments China International Capital Corporation Keywise Capital Management Morgan Stanley Ping An Insurance SoftBank Tencent
Glassdoor	US	Services	Acquisition	Recruit Holdings	\$1.2bn	Alphabet Battery Ventures Benchmark DAG Ventures Dragoner Investment Group Sutter Hill Ventures T Rowe Price Tiger Global Management
Dropbox	US	IT	IPO	–	\$869m	Accel Partners angel investors Baillie Gifford Benchmark BlackRock Fidelity Foundation Capital G Squared Goldman Sachs Kaiser Permanente Mark Cuban Mass Mutual Salesforce Wellington Partners Y Combinator
Yixin Group	China	Transport	IPO	–	\$867m	Baidu Bitauto China Orient AMC International JD.com Tencent private investors
Pivotal	US	IT	IPO	–	\$638m	Dell Ford Motor General Electric Silver Lake VMware
DocuSign	US	IT	IPO	–	\$629m	Accel Partners Alphabet Bain Capital BBVA Brookside Capital ClearBridge Investments Comcast Cross Creek Advisors Dell Deutsche Telekom EDBI Frazier Technology Ventures Generation Investment Management Ignition Partners Intel Kleiner Perkins Caufield & Byers Mitsui NTT Docomo Recruit Holdings Salesforce Samsung Sands Capital SAP [Sapphire Ventures] Scale Venture Partners Second Century Ventures Sigma Partners Telstra Visa Wasatch Advisors Wellington Management WestRiver Capital

its 200th market in January 2018 when it launched a service in Paris.

Online payment platform PayPal agreed to acquire Sweden-based mobile payment technology developer iZettle for \$2.2bn, allowing a host of corporate investors to exit – Intel, which invested through its venturing subsidiary Intel Capital, payment companies Mastercard and American Express as well as financial services firm Santander. Founded in 2010, iZettle offers a compact card reader that enables small businesses to accept contactless and mobile payments, as well as software allowing them to take payments using smartphones, and e-commerce tools helping users create and run an online store.

Pharmaceutical firm Roche agreed to acquire cancer research technology provider and portfolio company Flatiron Health, paying \$1.9bn for the remainder of the company's shares. Roche already owned a 12.6% stake, implying the company was valued at about \$2.15bn. GV, the early-stage corporate venturing unit of Alphabet, exited. Founded in 2012, Flatiron has developed electronic health record software configured for oncology research, as well as technology that can manage and develop cancer research data.

SoftBank invested \$500m in China-based online insurance platform ZhongAn Online Property and Casualty Insurance as part of the latter's \$1.5bn IPO. ZhongAn issued about 199 million shares on the Hong Kong Stock Exchange at HK\$59.70 (\$7.64) each, at the top of the HK\$53.70 to HK\$59.70 range it had set. SoftBank acquired a stake of just under 5%. Tencent, insurance firm Ping An and Ant Financial exited. ZhongAn's online platform provides more than 300 specialised insurance packages, its most popular being the option to append insurance to e-commerce purchases to cover the cost



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of returning the goods.

Human resources firm Recruit agreed to acquire online recruitment and employment assessment platform Glassdoor for \$1.2bn, giving CapitalG, Alphabet's growth equity arm, an exit. Glassdoor has built an online platform for employees to leave anonymous feedback on the companies for which they work while also accessing new positions. The company had 59 million monthly active users and reviews of more than 770,000 businesses by the beginning of this year.

Dropbox, a US-based file-storage platform backed by Salesforce, closed its IPO at \$869m after its underwriters took up the IPO's overallotment option. The company issued an initial 26.8 million shares at \$21 each, adding to almost 9.2 million shares sold by existing investors, while Salesforce paid \$100m for nearly 4.8 million shares through a private placement. Investors bought a further 5.4 million shares at the IPO price. Dropbox has built a cloud-based data storage and collaboration platform with more than 500 million registered users. It recorded a \$112m loss in 2017 from more than \$1.1bn in revenue, and had raised about \$600m in pre-IPO funding.

Yixin Group, a China-based e-commerce marketplace operator spun out of automotive transaction services provider BitAuto, raised HK\$6.77bn in an IPO. The company, with Tencent, Baidu and JD.com as investors, issued almost 879 million shares on the Hong Kong Stock Exchange priced at the top of the IPO's HK\$6.60 to HK\$7.70 range. Its stock opened at HK\$10 and briefly reached HK\$10.18 before closing at HK\$8.12, giving it a market cap of about \$6.54bn. Yixin runs an online marketplace for vehicles and a financial services operation providing leasing and financing for car purchases.

Pivotal Software, a US-based software development services provider spun out of software producer EMC, closed its IPO at just over \$638m, after underwriters bought 5.5 million additional shares. The IPO consisted initially of 33.1 million shares at \$15 each, in addition to almost 3.9 million shares sold by industrial technology and appliance manufacturer General Electric. Pivotal supplies software development technology and expertise to clients looking to create customised applications.

US-based digital signature technology provider DocuSign floated in a \$629m IPO in which Alphabet and mass media group Comcast sold shares. The shares were priced at \$29, above the \$24 to \$26 range the company had set earlier, giving DocuSign a market capitalisation of more than \$4.4bn. The company issued just over 16 million shares on the Nasdaq Global Select Market, yielding almost \$466m. Existing shareholders sold almost \$164m of shares in the offering. DocuSign has developed an e-signature platform it claims has hundreds of millions of users, including some 370,000 businesses.

GCV also reported exits from emerging IT-related enterprises that involved corporate investors from other sectors.

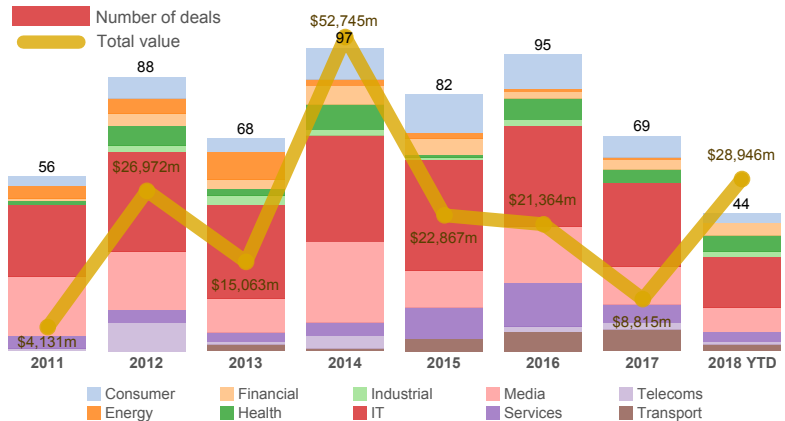
Intel, industrial manufacturer Siemens and software provider Red Hat exited US-based software management technology provider Black Duck Software, which agreed to an acquisition by electronic design software producer Synopsys for \$565m. Black Duck provides technology that automates the process of securing and managing open-source software by identifying the software code and finding security or licence compliance issues.

Weebly, a US-based website-creation platform backed by Tencent, agreed to an acquisition by payment processing firm Square for \$365m in a mix of cash and shares. Square will integrate Weebly's offering into its suite of products and will use the company's international customer base to accelerate its overseas expansion. Founded in 2007, Weebly operates an online platform enabling users to build and host websites as well as e-commerce stores.

Enterprise software provider SAP acquired US-based customer management platform Gigya in a deal that enabled Intel, software provider Adobe and media group Advance Publications to exit. Founded in 2006, Gigya has developed a customer identity management platform that helps businesses register customers, manage their details and maintain relationships with them, with the option to provide them with specialised services.

Cybersecurity software producer Symantec acquired Israel-based mobile threat detection platform Skycure for a reported \$250m, allowing insurance firm New York Life to exit. Skycure has created an AI and machine learning-equipped software platform that combines crowdsourced threat intelligence with device and server-based analysis to predict and combat cyberthreats to mobile devices. The technology will be incorporated into Symantec's enterprise and consumer mobility products.

Exits by IT investors 2011-18



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Top 10 exits from IT enterprises over the past year

Company	Location	Exit type	Acquirer	Size	Investors
Dropbox	US	IPO	–	\$869m	Accel Partners Baillie Gifford Benchmark BlackRock Fidelity Foundation Capital G Squared Goldman Sachs Kaiser Permanente Mark Cuban Mass Mutual Salesforce Wellington Partners Y Combinator angel investors
Pivotal	US	IPO	–	\$638m	Dell Ford Motor General Electric Silver Lake VMWare
DocuSign	US	IPO	–	\$629m	Accel Partners Alphabet Bain Capital BBVA Brookside Capital ClearBridge Investments Comcast Cross Creek Advisors Dell Deutsche Telekom EDBI Frazier Technology Ventures Generation Investment Management Ignition Partners Intel Kleiner Perkins Caufield & Byers Mitsui NTT Docomo Recruit Holdings Salesforce Samsung Sands Capital SAP Scale Venture Partners Second Century Ventures Sigma Partners Telstra Visa Wasatch Advisors Wellington Management WestRiver Capital
Black Duck Software	US	Acquisition	Synopsys	\$565m	Fidelity Flagship Ventures Focus Ventures General Catalyst Partners Intel Red Hat SAP Siemens Split Rock Partners
Weebly	US	Acquisition	Square	\$365m	Baseline Ventures Felicis Ventures Maples Investments Sequoia Capital Tencent
Gigya	US	Acquisition	SAP	\$350m	Adobe Advance Publications Benchmark Common Fund Capital DAG Ventures Greenspring Associates Intel Mayfield Fund Vintage Investment Partners
Evident.io	US	Acquisition	Palo Alto Networks	\$300m	Alphabet Bain Capital True Ventures VenRock
Skycure	Israel	Acquisition	Symantec	\$250m	Foundation Capital New York Life Insurance Pitango private investors Shasta Ventures
CoreOS	US	Acquisition	Red Hat	\$250m	Accel Partners Alphabet Fuel Capital Intel Kleiner Perkins Caufield & Byers Work-Bench Y Combinator
MongoDB	US	IPO	–	\$192m	Dell Flybridge Capital Future Fund In-Q-Tel Intel New Enterprise Associates Red Hat Salesforce Sequoia Capital Union Square Ventures

Red Hat agreed to acquire US-based IT infrastructure automation software producer CoreOS for \$250m, giving exits to Intel and Alphabet. Red Hat will integrate the acquisition with its open-source automation system Kubernetes and container-based offering. Founded in 2013, CoreOS has developed open-source software that helps automate functions for cloud infrastructure such as installing software updates, updating and patching servers as well as tackling issues such as machine failures or networking outages.

MongoDB, a US-based database software producer backed by several corporate investors – Intel, Dell, Red Hat and Salesforce – raised \$192m when it floated on the Nasdaq Global Market. The company priced 8 million shares at \$24 each, well above the \$18 to \$20 range it had set earlier, valuing the company at \$1.17bn. MongoDB has a subscription-based database software platform with more than 4,300 customers.

Funds

Between June 2017 and May 2018, corporate venturers and corporate-backed VC firms investing in the IT sector secured over \$8.45bn in capital via 81 funding initiatives, which included 53 corporate-backed VC funds, nine newly-launched venturing units, eight accelerators, three incubators and eight other initiatives.

On a calendar year-to-year basis, funding initiatives registered a considerable decrease in number– from 144 in 2016 down to 102 last year. Total estimated capital also went down from \$122bn in 2016 (including the \$97.5bn SoftBank Vision Fund) to \$25.7bn in 2017.

China Life and Baidu announced a R87bn (\$1.05bn) private equity fund partnership. China Life put up as much as RMB5.6bn of the capital for the fund, dubbed the Baidu Fund Partnership, while Baidu provided up to RMB1.4bn. The two China-based corporates will each invest 30% of those figures initially. The Baidu Fund Partnership will target mid and late-stage investments in internet-focused companies, including mobile internet, artificial intelligence and online finance technology companies, with a “significant association” with China.

China-based consumer electronics producer Xiaomi announced its intention to invest up to \$1bn in 100 India-based startups over the next five years. Xiaomi joined forces with its venture capital affiliate Shunwei Capital, as it seeks to build an ecosystem of mobile apps around its smartphones. Its investments will focus on manufacturing, entertainment content, fintech and hyperlocal services such as phone repairs. The corporate, which entered India in 2014, hopes the investments will help create more loyalty among Indian users who, research has indicated, have been driven by a wish to own the most up-to-date, popular devices, regardless of brand.

Baidu has formed a \$500m growth-stage fund called Changcheng Investment Partners to back internet and artificial intelligence (AI) technology developers. The \$500m figure represents the fund’s first phase, though the firm did not



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Top IT sector funding initiatives over the past year					
Funding initiative	Type	Funds raised	Location	Investors	Focus
Baidu Fund Partnership	VC fund	\$1bn	China	Baidu China Life Insurance	Mid and late-stage investments in mobile internet, AI and online finance technology companies, with a "significant association" with China
Unnamed Xiaomi India fund	VC fund	\$1bn	India	Shunwei Capital Xiaomi	Manufacturing, entertainment content, fintech and hyperlocal services such as phone repairs
Changcheng Investment Partners	VC fund	\$500m	China	Baidu	Internet and AI technology developers
Baidu Ventures III	VC fund	\$318m	China	Baidu	AI and big data technology developers
AlphaX Partners I	VC fund	\$313m	China	AlphaX Partners CreditEase Focus Media Qihoo360 Technology Zero2IPO Group	China-based high-growth companies developing technologies in the online, consumer, enterprise software, AI, sports and culture sectors
Ring Capital I	VC fund	\$172m	France	AG2R La Mondiale Bpifrance Bred Banque Populaire Danone Ring Capital	Europe-based digital and internet technology companies
Qihoo 360 Beijing Fund	VC fund	\$156m	China	Municipal government of Beijing Qihoo360 Technology	Early and growth-stage companies in the internet and cultural sectors, entertainment and new media information
ST Engineering Ventures	CVC unit	\$150m	Singapore	ST Engineering	Robotics, autonomous technology, data analytics and cybersecurity
Capnamic Ventures Fund	VC fund	\$150m	Germany	Axa Capnamic Ventures Cisco Systems European Investment Fund Formuesforvaltning KfW NRW Bank Rheinische Post Mediengruppe Sparkassen	Business-to-business, digital infrastructure and digital transformation technology startups in German-speaking regions.
Canada Trailblazer Fund	VC fund	\$100m	Canada	Salesforce	Canada-based cloud services startups
Rabo Food and Agri Innovation Fund	VC fund	-	Netherlands	-	Early-stage food and agriculture technology developers
Tyson-Plug and Play incubator	Incubator	-	US	-	Early-stage companies operating near Silicon Valley-based Plug and Play and Chicago-based 1871

reveal any plans for a final close, nor whether Baidu is providing the entirety of the capital. Li Xinzhe, Baidu's former chief financial officer, will run the fund as chief executive.

Baidu Ventures, the corporate venturing subsidiary of Baidu, closed its second renminbi-denominated fund after raising almost RMB2bn (\$318m). In addition to capital from Baidu itself, the fund has secured commitments from external limited partners. Although their identities have not been disclosed, they include industrial firms and a government-owned entity. Baidu Ventures focuses on artificial intelligence and big data technology developers, generally investing between seed and series B stage in China and the US.

China-based venture capital firm AlphaX Partners closed its first fund at RMB2bn (\$313m) with backing from software producer Qihoo 360, lending platform CreditEase and outdoor advertising agency Focus Media. Startup services provider Zero2IPO Group and government guidance fund CICC were also among the fund's limited partners. The fund is dual dollar and renminbi-denominated, and its LPs also include undisclosed institutional investors from Europe and the US as well as Chinese entrepreneurs. Founded in 2016, AlphaX targets domestically-based, high-growth companies developing technologies in the online, consumer, enterprise software, artificial intelligence, sports and culture sectors.

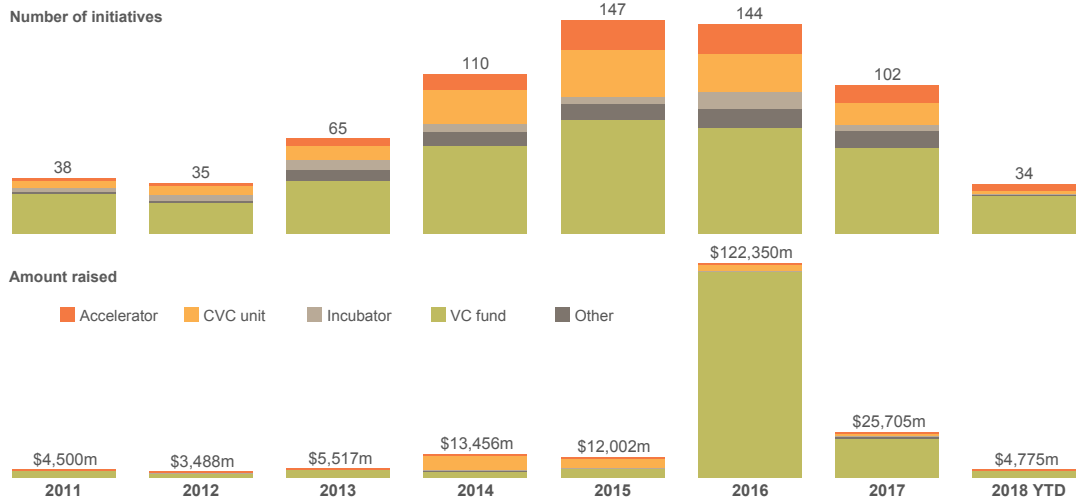
France-based venture capital firm Ring Capital launched with €140m (\$172m) of capital, supplied by food producer Danone and insurance provider AG2R La Mondiale, among other investors. Financial services firm Bred and state-owned investment bank Bpifrance are also among Ring Capital's LPs. Ring Capital will make growth-stage investments in Europe-based digital and internet technology companies, providing between €1m and €15m for investments that can either be stake purchases or made as part of larger funding rounds sized between €3m and €30m.

Qihoo 360 Technology partnered the municipal government-owned Beijing Cultural Center Fund to set up a RMB1bn



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Funding initiatives in the IT sector 2011-18



(\$156m) investment fund. The fund will target early and growth-stage companies in the internet and cultural sectors, including businesses focusing on the areas of entertainment and new media information. The Beijing Cultural Center Fund was set up in 2012 to bolster the city of Beijing’s creative and cultural industries by providing a wide range of financing options such as guarantees and micro-loans.

Singapore-based integrated engineering and industrial product manufacturer ST Engineering launched a corporate venturing subsidiary, called ST Engineering Ventures, armed with \$150m in funding. ST produces a range of aerospace, defence, electronics and marine products. The unit will seek opportunities in sectors relevant to ST’s long-term growth, such as robotics, autonomous technology, data analytics and cybersecurity, and will initially operate out of offices in Singapore, Israel and the US.

Germany-based venture capital firm Capnamic Ventures reached a €115m (\$130m) final close for its latest fund, securing contributions from several corporate limited partners. The LPs include networking equipment producer Cisco, insurance provider Axa Germany, media companies including Rheinische Post Media Group as well as financial services group Sparkassen. The fund also secured capital from wealth manager Formuesforvaltning, the multilateral European Investment Fund and development banks KfW and NRW.Bank. Capnamic Ventures invests in business-to-business, digital infrastructure and digital transformation technology startups operating in German speaking regions.

Salesforce Ventures, the corporate venturing arm of Salesforce, launched a \$100m vehicle called Canada Trailblazer Fund that will focus on cloud services startups. The news followed a commitment by Salesforce to invest \$2bn in Canada over the next five years. The fund will provide between €500,000 and €3m per first investment, with extra capital reserved for follow-on rounds.

People

Nikesh Arora left SoftBank, where he had spearheaded its corporate venturing strategy as company president and chief operating officer in 2016, to become CEO and chairman of cybersecurity company Palo Alto Networks. Arora replaced long-time CEO Mark McLaughlin, who will become vice chairman of Palo Alto Networks. Arora joined SoftBank in late 2014 from Google where he had served as chief business officer, and directed SoftBank to lean more towards larger investments, notably in his home country of India.



Arora

Gareth Keane, an investment manager at Qualcomm Ventures left to join venture capital firm Promus Ventures. Keane had been at Qualcomm Ventures for nearly six years having joined in 2012 after Texas Instruments’ acquisition of National Semiconductor the year before. He is leaving following a shake-up of Qualcomm Ventures’ Americas teams.

Erik Jorgensen left Intel Capital to become managing director of Macquarie Capital’s European principal investment business. Macquarie Capital is the corporate advisory, capital markets and principal investment arm of Australia-based investment and banking firm Macquarie Group. Reporting to Hugh Briggs, a senior managing director and head of Macquarie Capital’s principal investment business in Europe, Jorgensen will focus on investments in infrastructure technology (infotech), covering areas such as energy and renewables, utilities, transportation, smart cities and grids, batteries and other energy storage technologies.



Jorgensen



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Dong-Su Kim, one of Samsung's most experienced corporate venturers in the US, joined electronics producer LG to set up a new venture fund. As general manager of Samsung Ventures America, Kim had led deals for Samsung in more than 20 companies, including Pure Storage and Netlist, which were floated on the New York and Nasdaq stock exchanges respectively.

Frédéric Rombaut, formerly managing director of corporate venturing funds for Cisco and Qualcomm, joined UK-based venture capital firm Seraphim Capital as general partner. A previous GCV Rising Star, Rombaut was managing director of Cisco Investment International. He left in early 2016 to focus more on personal investments through his FR Development vehicle, with Jon Koplin replacing him as UK-based managing director of Cisco Investments.



Rombaut

George Ugras left his position as head of US-listed computing technology provider IBM's corporate venturing unit, IBM Ventures, and is looking to launch a venture capital fund. Ugras replaced Claudia Fan Munce as head of IBM Ventures two years ago.



Ugras

Avid Larizadeh Duggan left her general partner role at GV for an executive role at music publisher and royalty collection service Kobalt. She is now Kobalt's chief strategy and business officer and an executive vice-president. Duggan joined GV in 2014, from Boticca, the luxury fashion e-commerce platform she co-founded in 2010 and where she was chief operating officer. She was an associate at VC firm Accel between 2006 and 2009.



Duggan

Aymerik Renard, formerly a director at disk drive producer Western Digital's corporate venturing subsidiary, Western Digital Capital, joined US-based venture capital firm Hardware Club as a general partner. Hardware Club makes investments in US, Europe, Asia and Israel-based consumer, industrial and enterprise-focused startups at seed and series A stage. Renard was a director at SanDisk Ventures, the corporate venturing arm of data storage technology provider SanDisk, from early 2014 before joining Western Digital Capital in 2016 after its parent company acquired SanDisk.



Renard

Alex Lin, formerly head of ecosystem development at Singapore government innovation agency SGInnovate, joined integrated engineering group ST Engineering. Lin will head corporate venturing unit ST Engineering Ventures, which is deploying \$150m of funds. The division is expected to invest in sectors relevant to the corporate's long-term growth, such as autonomous driving, cybersecurity, data analytics and robotics.

Yusuf Bashir, managing director of corporate venturing unit Infosys Innovation Fund, left the fund and its parent company. Infosys hired Bashir in March 2015 to run the \$500m fund, which invests in software developers based in India, the US, Europe and Israel. Although a reason for Bashir's departure was not given, he reportedly made the move within days of the resignation of Ritika Suri, executive vice-president of corporate development and ventures, to whom he reported.

Pratik Bose, formerly director for VC and private equity investments, M&A and strategy at Cisco Corporate Development, joined the Indian Angel Network. Bose will be the network's managing partner in charge of its maiden fund, an early-stage sector-agnostic vehicle that finished a first close at Rs1.75bn (\$27.2m). Bose was a director at Cisco for just under 10 years, having taken the position in August 2007.

Karthee Madasamy, managing director at Qualcomm Ventures based in Bangalore, India, left to set up a venture capital fund in the US. He was replaced by Varsha Tagare as head of Qualcomm Ventures India and its \$50m fund. Tagare joined Qualcomm Ventures in February 2013 after five years as a director at corporate venturing peer Intel Capital in India.

Jessica Verrilli has left social media company Twitter to return to GV. Verrilli first joined Twitter in 2009, rising through the ranks to become director of corporate development and strategy in 2014. She then joined GV, but returned to Twitter within six months. She left Twitter again in December last year. Verrilli will be GV's only female investing partner, concentrating on consumer technology with an interest in emerging technologies such as cryptocurrencies.



Verrilli

Sebastian Schüller moved from a position working with startups at internet technology provider Google to an investment manager role at Capnamic Ventures. Schüller worked with Germany-based technology startups as a digital growth strategist at Google for almost 18 months, having previously worked at Capnamic from 2014 to 2016.

Timur Davis left Samsung Ventures to become principal at Canapi, a financial technology-focused investment arm of banking group Live Oak Bancshares. Davis will oversee work on investment and incubation strategies that further Canapi's ambitions to innovate in banking. Davis had been a senior investment manager at Samsung Ventures since 2015, leading eight deals worth a combined \$19m in sectors including AI, big data, e-commerce and digital health.

Intel Capital hired Chiara Sommer as an investment director. Sommer comes from High-Tech Gründerfonds (HTGF), the German state-mandated venture capital firm that has dozens domestic corporates as limited partners. There she was a senior investment director. Before joining HTGF at the start of 2014, Sommer was founder and CEO of expertise network service Pickagenius.

Pankaj Mitra, a founding team member at Infosys Ventures, became a US-based director at Cisco. Mitra will focus on



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investments and mergers and acquisitions for Cisco in India, the former through its corporate venture capital arm, Cisco Investments. Before joining Infosys in 2015, Mitra spent two years as senior manager for new products at cloud technology producer VMware, developing its hosted cloud services and subscription-based business lines.

Laurence “Lo” Toney, a partner at GV announced his intention to leave the unit once he has finished raising a separate fund. The US-based fund in question, Plexo Capital, will back venture capital funds with women or underrepresented ethnic minorities as limited partners. It also plans to make direct investments in portfolio companies of funds to which it has provided capital.



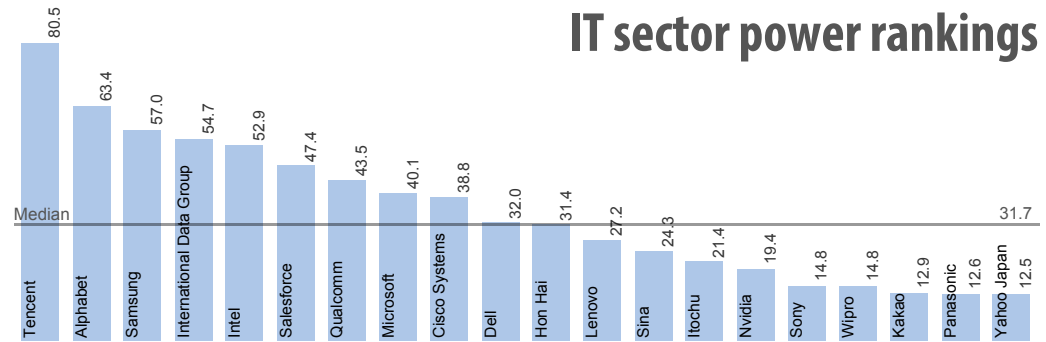
Toney



Fang

Yimin “Peter” Fang, senior director of corporate investment and mergers and acquisitions at Baidu, rejoined former colleague Kai-Fu Lee at venture capital firm Sinovation Ventures. Fang joined Baidu in 2014 after a few months at financial services group Fidelity’s Asian corporate venturing unit, Fidelity Growth Partners Asia. Fang worked under US-based internet technology provider Google’s first China president, Kai-Fu Lee, as an investment director at Innovation Works, a China-based investment firm since rebranded as Sinovation, from 2011 to 2014.

Astasia Myers left Cisco Investments to join US-based venture capital firm Redpoint Ventures as an associate. During her time at Cisco Investments, Myers focused on cloud infrastructure, and was involved in investments and M&A deals. Prior to Cisco, she spent two years as an equity research analyst at financial services firm Robert W Baird. ♦



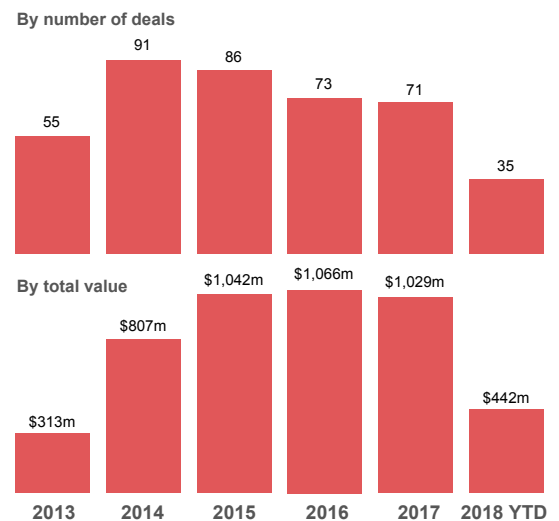
University and government backing for IT businesses

Over the past 12 months, there were many commitments to university spinouts in the IT sector reported by our sister publication, Global University Venturing. In 2017, we covered 71 such deals, comparable to the 73 reported in 2016. The level of estimated total capital deployed in such rounds, however, decreased slightly to \$1.03bn, from \$1.06bn in 2016.

China-based AI chipset developer Cambricon Technologies raised \$100m in a series A round featuring CAS Investment, the investment arm of the Chinese Academy of Sciences (CAS). The round was led by SDIC Chuangye Investment Management, part of the Chinese government’s State Development & Investment Corp, and included Alibaba and Lenovo Capital, among others. Founded in 2016 by Prof Chen Tianshi as a spinout from the Institute Of Computing Technology at CAS, the company has created a processor called Cambricon-AI that brings deep learning to commercially produced electronics.

Petuum, a US-based machine learning spinout from Carnegie Mellon University (CMU), closed a series B round at \$93m, led by an unnamed subsidiary of telecoms group SoftBank. Petuum was spun out from CMU’s machine learning department in 2016 by Eric Xing, Qirong Ho and Ning Li. The company has developed an operating system that AI intelligence developers collate data from varied sources,

Deals in university spinouts 2013-18



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such as electronic health records or social media. The platform is intended to allow easy integration with hardware, for example data farms or IoT technology.

Darktrace, a UK-based cybersecurity software developer based on research by a group of mathematicians at University of Cambridge, raised \$75m in a series D round. The transaction was led by venture capital firm Insight Venture Partners, while VC firm TenEleven Ventures and investment firms Summit Partners and KKR also participated. Darktrace was reportedly valued at \$825m. Darktrace has created an enterprise cybersecurity platform it calls Enterprise Immune System that is equipped with machine learning algorithms.

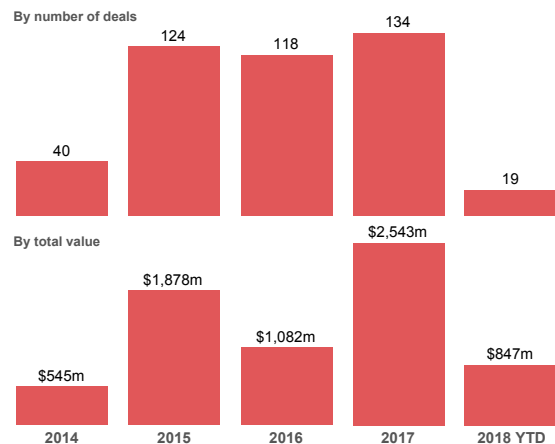
Government investments in IT enterprises, reported by our sister publication Global Government Venturing, registered an uptick. Last year, governments and government-backed investors participated in 134 rounds, up from the 118 tracked in 2016. The total estimated capital in those rounds was \$2.54bn, up from the \$1.08bn in 2016.

Koch Disruptive Technologies, a corporate venturing subsidiary of manufacturing and chemicals conglomerate Koch Industries, co-led a \$125m series D round for US-based digital conversion technology provider Mesosphere. The round also featured the Qatar Investment Authority and enterprise technology producer and existing backer Hewlett Packard Enterprise. Founded in 2013, Mesosphere produces software for data centre operating systems that enables users to automate their hybrid cloud network infrastructures.

Canada-based Element AI secured \$102m in the largest yet series A round for an AI technology developer, featuring BDC Capital, the investment arm of state-owned Business Development Bank of Canada. The round, which included undisclosed sovereign wealth funds, also featured Tencent, Hanwha Investment, Intel Capital, Microsoft Ventures and Nvidia GPU Ventures, respective subsidiaries of conglomerate Hanwha, Intel, Microsoft and graphics technology provider Nvidia. Element AI is developing AI technology for use by businesses in sectors such as cybersecurity, finance, manufacturing, robotics, logistics and transportation that will link to and enhance the insights from data.

US-based cybersecurity technology developer Claroty obtained \$60m in a series B round, which was led by Singaporean state-owned investment firm Temasek. The round featured industrial automation company Rockwell Automation and Next47, the investment arm of industrial conglomerate Siemens, as well as multi-corporate venturing firm Aster Capital, among others. Founded in 2014, Claroty has developed a cybersecurity platform for remotely access and monitoring of industrial networks in sectors such as utilities, oil and gas, mining, real estate and food and beverage. ♦

Government-backed IT investments 2014-18



Interview: Quinn Li, Qualcomm Ventures

Quinn Li, vice-president and global head of Qualcomm Ventures, spoke to Robin Brinkworth about the unit's success in generating unicorns – companies worth at least \$1bn – what it is like to operate as a mature corporate venturing unit, and how it leverages the parent company to deliver value.

Qualcomm Ventures is, compared with most corporate venture capital units, mature. Set up in 2000, the unit has successfully weathered the 2008 crash, CEO changes, and head of unit changes. How does it operate and maintain success?

Li said: "We have been in business for 18 years. We have been very consistent with our strategy over a long period of time, as well as through ups and downs in the marketplace. We started investing in the US, and we slowly expanded internationally.

"There is a lot of interest in corporate venture right now, with many companies setting up venture groups. It is very important to have very strong executive support, and we have strong support all the way through to the CEO. The other thing to keep in mind is that the venture business is a very long-term business. Many companies may enter, and a few years later, they get out. There was a wave around 2000, and many of them did not stick around. It is not something where you will get instantaneous returns. You need to have a much longer horizon, and [at Qualcomm] there is support from senior management.

"Over time, we have obviously seen change. The venture market has become more and more competitive, especially with a lot of new players entering the ecosystem. Thus, for us it is important to continually look at ways to improve how



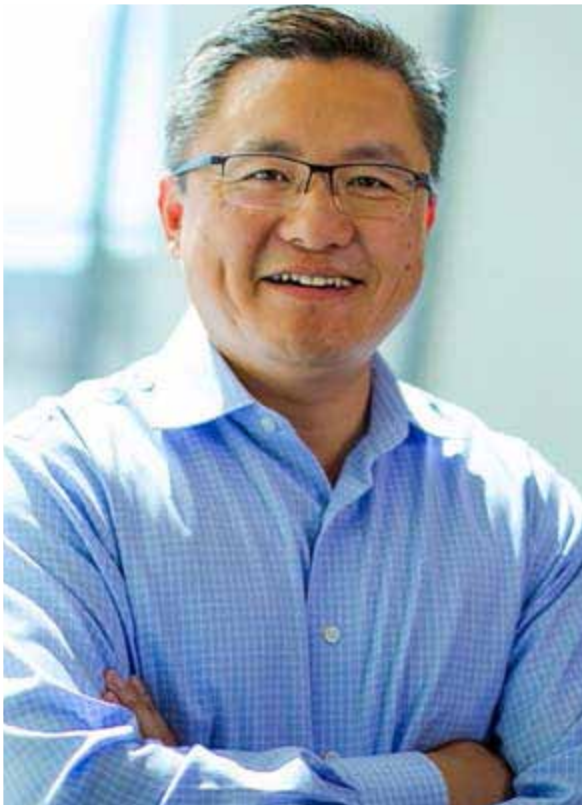
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we operate, the speed at which we move, as well as to improve the value that we can add to portfolio companies. Our support goes beyond just funding. We can serve as a conduit for startups to work with a large company like Qualcomm, providing access to technology expertise and our ecosystem, which we have found to be of great value to startups.”

A consistent approach is one thing, but what does that look like in practice? What is the investment thesis?

“We are known as a mobile and wireless technology company, but the company has evolved. We have a big focus on the internet of things (IoT), on automotive, artificial intelligence and verticals the company is actively pursuing. What we are trying to do is to take the technology we developed for mobile and figure out a way to leverage these technologies and apply them to different verticals.

“Our primary objective is to invest in companies in the broader Qualcomm ecosystem, so that could be customers or partners of ours that help us learn from the marketplace, or it could be companies that we can potentially sell products to, or companies that we can partner to go to market together.”



Those verticals are where Quinn, and Qualcomm, see potential growth for the company – 5G, IoT, automotive, digital health and mobile.

“I will highlight two areas. The first being IoT, where we are targeting certain verticals including consumer devices or enterprise. We look for devices that have a clear value proposition, and where it is a company we can work with to help them from a technology development standpoint. One example is a [home security] consumer device company we invested in a few years back, called Ring, which was recently acquired by Amazon. They have done a good job at executing the product, the price point is right, the value proposition is clear, and it is very easy to install from a consumer standpoint. We have worked with them over the years trying to explore ways to incorporate our technology into their product.

“In the enterprise IoT market, we invested in a company called RetailNext, which provides analytics for physical retail stores. They leverage a variety of sensors, cameras and wifi access point data, to provide a dashboard of where people are spending time, a heatmap of the store, and how long the checkout line is. They use computer vision and camera technologies to do this, and initially they were using a third-party camera. Over time they decided to develop their own camera, and we were able to work with them and help them with that effort. Today, all the cameras they deploy in stores include [Qualcomm’s] Snapdragon processor. The video processing, the computer vision, the recognition of the merchandise within stores, is all done locally on this camera.”

Digital health is another area in which Qualcomm seeks innovation. What are they looking at, given that e-health has such a broad spectrum?

“Our company’s background is not primarily in healthcare, so we go back to where we are strong, which is mobile. Thus, we focus on healthcare IoT and how we enable connectivity of devices, either as [professionally-administered] devices, or the devices patients use at home. For example, we have an investment in AliveCor, a company making a device which allows you, in conjunction with your phone, to measure your electrocardiographic signals. The other area is IT. Here we look at how to use technology to improve the efficiency of the healthcare system. An example of that is Doctor on Demand, which is providing a telemedicine service, so you can consult a doctor over your mobile devices.”

Quinn is thinking strategically for Qualcomm, with a clear mandate. Yet with such a large unit, and such a large fund – \$1bn – how is the approach tailored for each portfolio company? What is being offered above competitors?

“One is the technology expertise we have. We have deep mobile and wireless expertise, and we can really help portfolio companies as they develop products and leverage that technology for their end product. In the example of Ring, they needed help on the technology front with determining what technology to use, which are areas we can really guide them in.

“The second area would be the vast customer or partner network Qualcomm has in the wireless ecosystem. We sell all around the world, we sell to many IoT-device companies, we sell into the automotive market, and we work with mobile operators globally. We leverage the network that we have, whether it is a customer or the partner, to help companies



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grow their business. If the company needs an introduction to an operator, or maybe a company is looking to expand internationally, we leverage the parent to help those companies grow both their market and their presence.

“Last, having boots on the ground in seven regions across the globe allows companies to leverage our global network. This allows us to provide a different level of support to our portfolio companies, such as providing guidance and insights into other markets and the nuances of doing business in those markets.”

Quinn is also backed by an impressive track record.

“We have had nine unicorn exits over the past eight years. Just this year alone we had three big exits – 99, a ride-sharing company in Brazil that was acquired by Didi; Ring, bought by Amazon; and more recently we had [Chinese bike-rental business] Mobike acquired by Meituan. We have had three unicorn exits this year so far. When Xioami goes public this year, we will have another unicorn, so it has been a great year for us from an exit standpoint. I am very excited for these companies and to see them grow to be mature.

While his work speaks for itself, Quinn is confident – “We have been farming unicorns at Qualcomm Ventures.”

With those successes in the bag, and more success likely to come, how does the next year look for Qualcomm Ventures? Li said: “I see us continuing our focus on key areas such as automotive, IoT, and artificial intelligence and will also continue to be active globally.” ♦

Interview: Leo de Luna, M12

Leo de Luna, M12's Managing Director, spoke to GCV's Robin Brinkworth about how diversity strengthens venture capital, and how M12 is going its own way.

Formerly principal at Split Rock Partners before coming on board at what was then Microsoft Ventures in 2016 – now M12 – Leo de Luna has a wealth of venture capital experience. That experience serves him well at M12, which unlike many corporate venturing units, is solely financially driven.

He said: “I have been in venture since 1999, in traditional funds. The thing about my team is that we all came from outside Microsoft. We came with pre-existing relationships, and importantly, an ethos of: ‘Let’s generate great returns, first and foremost.’”

For de Luna, working under Peggy Johnson, Microsoft’s executive vice-president of business development, is the perfect arrangement for a venturing unit. Investing off the balance sheet, with lots of flexibility for size of their initial cheque, M12 is looking at series A through to series C investments.

“We take the long-term view of things and this is a very long-term relationship business. We, and I personally, have had many relationships with VCs. Coming to Microsoft and helping start this, we bring those relationships and then see the additional dealflow. That is carried through to how active we have been.

“It has been a little over two years, and we have done over 60 investments. We are now on to our second and third investments with the same venture capital firms, like Emergence Capital, General Catalyst, Kleiner Perkins, Lightspeed. These are high-quality firms that said: ‘We are going to give you a shot, based on the relationship.’ The second and third opportunity comes because we are going to deliver.”

How does M12 deliver? De Luna’s pitch to portfolio companies is about as straightforward as it gets.

“If I walk into a room, particularly in a conference setting where there are many VCs trying to pitch to an entrepreneur, I always say to them: ‘You as a great entrepreneur can pick your partner, and I think we may be the right partner for you, because we will get you unfair access to the best business-to-business assets in the world.’ No one else can make that proposition.”

De Luna views the initial cheque as the beginning of the relationship, while Microsoft’s wealth brings advantages of its own.

“We want to be a capital partner through the life of the relationship. Unlike some other corporates where you only get one shot, we support companies through their lifecycle. We might go higher in later-stage deals, where there is an opportunity to build ownership.

“Potential portfolio companies know we are a capital partner that has strong reserves, and we are patient capital, because we do not have to force an exit at certain points in time. That gives the entrepreneur the sense that we are aligned for the long term.”

Despite its relative youth, M12 has a clear focus and charter. While other CVCs often focus on information-gathering and building networks first, M12 made internal and external outreach a priority.

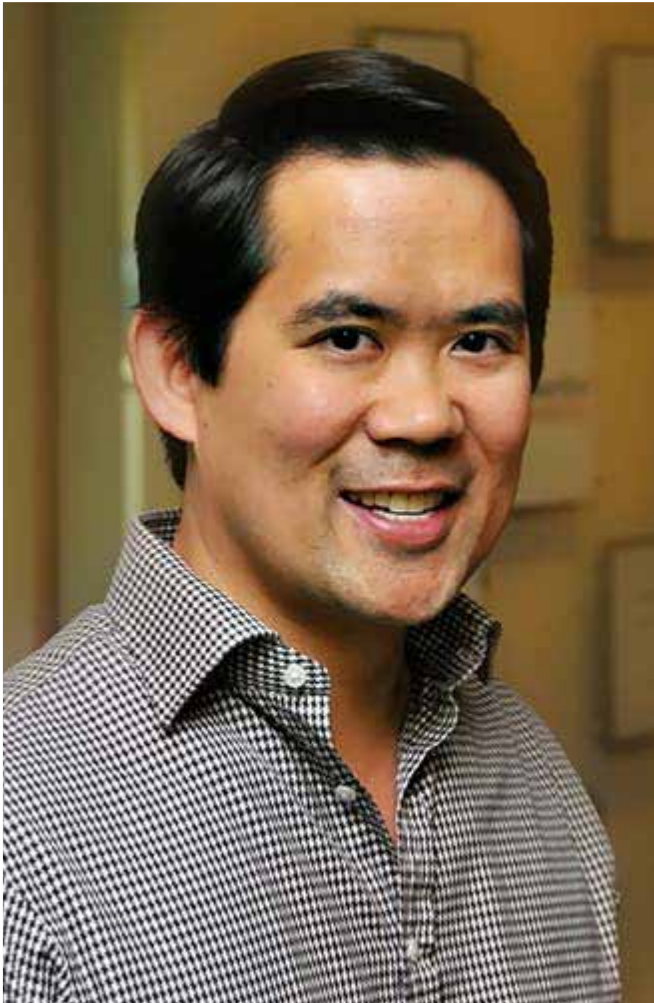


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"When the team hit critical mass, at five or six people, we went to Redmond [Microsoft's headquarters] and did 35 meetings in two days with every senior person we could find, to let them know we existed. Externally, we had to be very focused on branding and getting the word out. We were doing roadshows with other VCs, saying: 'This is the team, this is what we do, give us a shot.'"

De Luna is confident about what M12 brings to the table, highlighting how the approach benefits all stakeholders, not just Microsoft's balance sheet.

"Not only do we have an investment team, but we have two other important teams under the M12 umbrella. We have portfolio development, led by Lisa Nelson, who also leads our VC engagement team. We call portfolio development



our secret weapon – that is truly our value-add piece. Once a portfolio company joins our family, they get matched to a portfolio development manager. It is a one-to-one relationship, where all she or he thinks about 24-7 is 'How do I make my company successful within Microsoft?' We want to do this programmatically of course, but it is things like integrations with software packages Dynamics or Office.

"The other thing portfolio companies really care about is: 'Can you add revenue to my top line?' We have this unique program called Co-Sell. We have 40,000 sellers in the field. How do we tap that? We have given our field the following incentives – they will get quota retirement or 10% of the total contract value of the deal, paid by Microsoft. When we put our companies on this plan, they say: 'Wow, this is phenomenal, I get this free large go-to-market channel!'"

That improves the revenue of the portfolio company, which improves its value, which improves value for M12 and its co-investors, meaning M12 gets the call next time a co-investor has a lead deal. I would rather not compete with everyone on Sand Hill [the Silicon Valley home of many VCs] trying to get that lead position. Invariably there is a percentage of ownership left over that they want to call someone for, and now they are calling us first.

"Our VC engagement team brings Microsoft executives and engineers out to Silicon Valley and centres of excellence to get exposure to innovation. Part of the reason I got excited about joining Microsoft, was Satya [Nadella, CEO] taking the leadership position. He has changed the culture of the company. It is an awareness that pervades all of Redmond, that innovation does not come from Redmond necessarily, so let's get outside of these four walls."

Being founder-friendly is key to M12, with the entire organisation dedicated to financial returns through maintaining good relationships with all stakeholders.

"One of the ways it manifests is in our investment terms. We try to do a 180 from what most corporates are doing, where our founders have found out, [corporates] will ask for rights of first refusal, rights of first notification, things that are just unproductive in our view. We do not ask for any of those things, because they just cause conflict and a divergence of interests down the road."

In fact, M12 is going a step further. As a frequent co-investor, M12 reaches out to strategic CVCs over these terms. "We have tried to ask them to say: 'This does not feel right, maybe we should rethink that.'"

Given that M12 is financially-driven, and the breadth of Microsoft's areas of interest, where does M12 choose to invest, and how does it choose to invest in those areas?

"Once an investment meets all the parameters, I ask: 'Do I think that this would be a good venture investment?' Number two, and it is a little more nuanced, is: 'Do I think that this would be a fantastic venture investment if Microsoft got involved, and we did our job right?' It has got to be more than just the money."

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“Some really great investments have come from investments that were highly controversial within the partnership”

“We have focused on seven areas that align with where Microsoft is going strategically, investing in alliances with the engineering teams that are heads down and wanting to build. One is software-as-a-service, and then we have got AI and machine learning, which we have basically reworked the company around. Adjacent to that is big data and analytics. We go full stack on the enterprise side, so we also look at infrastructure, even down to the silicon level. We do look at frontier as well – we have a couple of drone investments – and then, because we are a productivity company, we have a specific category around the future of work, which is what I focus on. Last is security which is foundational. Within our team, we have hired for diversity of thought and diversity of experience, along those areas.”

De Luna is part of a team that is both culturally and racially diverse, not just in terms of subject matter expertise and professional experience. As a founding member, that was deliberate. “It is one of the benefits when you create a new platform. You get to decide what the values should be.”

How does the combination of professional and personal diversity inform the work that he and M12 does?

“As a venture capitalist, ultimately you are a partner with the founder. The earlier you can get that collaboration going the better. It starts at that first meeting. If we bring a company into our office and they see faces they can align with, with experiences they can resonate with, that collaboration of trust can start being nurtured faster.”

With diversity of experience comes diversity of opinion. How do those differences of opinion add to M12, and how is it leveraged to generate success?

“That is the value of our team, that we do have differences of opinion. We are respectful, because that is one of our core values, but it is an intellectually honest team, because it is the responsibility of the team member to speak up if they disagree. If you track some really great investments within the industry, they have come from investments that were highly controversial within the partnership.”

“We have a much more defined efficient deal process – how we vote on decisions and decide to invest – and as folks understand the process and grow more confident, they are more willing to speak up and challenge existing assumptions. Lately, we have had really great discussions about companies that went through the process. As a result of those spirited conversations, what was exposed was blind spots to focus on post-investment.”

What excites de Luna?

“We have made a couple of investments where we are excited around the future of work and productivity, around automation and helping augment the knowledge worker, like an AI exoskeleton. One company is called Voicera. Voicera is basically saying: “Meetings suck.” They are unproductive, and their enterprise voice assistant, Eva, will listen into your meetings, take notes and transcribe them, and will assign action items. The bigger vision is this – we all have email inboxes, and if you believe that voice input as a medium is pervasive, in the future you will have a conversations inbox. Voicera wants to manage that inbox.

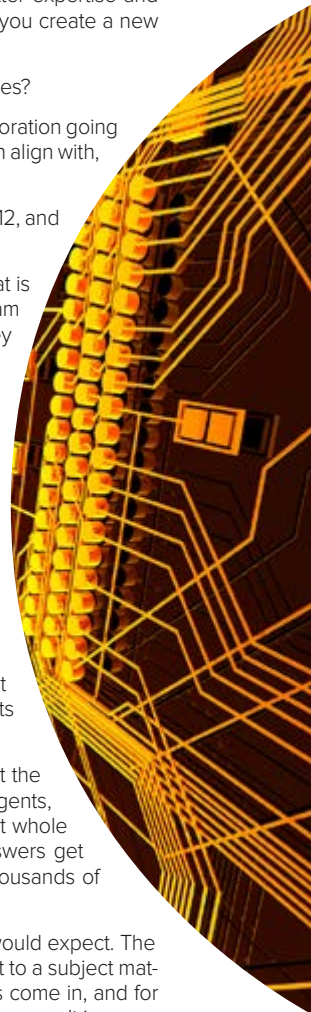
“The other company is called Directly. It is trying to make customer service better, and its view is that the best customer service agent is actually the customer. Directly makes your power customers your agents, where with every successful resolution, that customer agent will get a reward. Directly manages that whole process, skill-testing and verifying agents, funnelling them the tickets and questions. The best answers get upvoted, so the best agents will always get the answers. You now have agents who are earning thousands of dollars a week in supplementary income.

“Customer satisfaction, response time and cost to serve are an order of magnitude better than you would expect. The other cool thing is the automation. They see clusters forming around specific topics, they will send that to a subject matter expert, and they can write an automated answer. They send that automated answer as questions come in, and for every answer that is served, the agent receives a residual. When they are sleeping, they are earning money. It is a very humane way of winning with a chatbot.”

What does the future hold for M12? De Luna clearly has enthusiasm for the mission of M12, beyond the technology and the money, into the wider VC ecosystem itself.

“We want to be in this business for decades, and we are trying to set a foundation in our early years, so that we set up an institution that will outlast me and the existing team. We want M12 to be here for a long time.”

“Our industry is going through an important long-overdue change, which is about diversity. We have embraced it, we are excited to see other firms embrace it. We have been purposeful about how it is manifested in our team. We are by no means perfect. Now we are trying to help our companies adopt it. Anything we can do to help move that along from a CVC standpoint is something we are happy to do.” ♦





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Our second annual Houston conference, hosted by Global Corporate Venturing (GCV) and Global University Venturing (GUV), will see concurrent tracks debate the convergence of digital, decarbonisation and centralisation on the energy sector by the main corporate venturing units and their portfolio companies while, in partnership with the National Council for Entrepreneurial Tech Transfer (NCET2), the main US and international universities will gather to develop best practices for their venturing and startup approaches in parallel through the GUV Leadership Society and its Powerlist 100.

Last year's inaugural conclave championed the resilience of the Houston-based and broader Texan venture capital and innovation industries. It came on the day the Houston Astros won their first World Series, and the world will once again turn to the city for inspiration.



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INTERVIEW

Where small changes can have large consequences

Reporter Robin Brinkworth talked to George Gogolev, head of Russian steel behemoth Severstal's new venture unit, Severstal Ventures, about the new unit, its goals, and his own experience

George Gogolev brings a wealth of venture capital experience to Severstal Ventures, having come from the ecosystem-focused Russian Venture Company (RVC), the state fund of funds that backs innovation across the country. There, he was the director of corporate innovation and technology transfer, before he joined Severstal as its head of disruptive innovation in February.

According to Gogolev, Severstal is "the most efficient steel company in the world". That efficiency means further improvements are incremental for the parent company. Gogolev also highlighted the strong competition within the steel market, pointing to overproduction in most regions, and political obstacles.

He said: "Nowadays, you are going back to pre-World War Two conditions, where countries are raising import barriers and tariffs. That is why the World Trade Organisation's predecessor was created. Severstal understands it needs to innovate on a bigger scale and engage with external invasions.

"The company decided to create this unit first of all to look for radical innovations, not to miss any huge opportunities or huge threats. We classify opportunities and threats as anything that can take away or generate 5% in any of our major sectors. Our major sectors are energy – piping and stuff for oil and gas – and construction. A 5% move in either of those markets is billions of dollars."

Gogolev does not change his strategy in addressing either opportunities or threats – the latter should be turned into opportunities. "It depends on the business case and on the company. If it is a company with which we could engage, say, to produce goods for the Commonwealth of Independent States and Russian markets, to scaffold them, to do a joint venture, then it is no longer a threat. You turn a threat into an opportunity."

Severstal Ventures has to be part of that process. "We want to do something around five deals a year, and I think we are going to start doing direct deals towards the end of this year, once we figure out the pain points and clarify the strategy within the company. We do not want any unpredicted strategic changes – when corporates abandon their investments it ruins the reputation of the corporate. We are doing a major strategic initiative within the corporation, talking to all the units, the middle managers, the senior managers."

That exercise will inform Severstal Ventures' decision-making process, from technologies to capital deployment. "We do not have a set fund size. When we have an asset, we are going to deploy \$20m to \$25m a year, but once we complete the strategy exercise we might adjust this.

"Some of the very disruptive technologies the units do not really care about or understand, so those decisions we are going to be taking independently. But if those technologies fall into current business lines, then they have to cover certain pain points, or if they have to be scaled, then we need buy-in from the unit."

What are the business lines they are looking at? "Pillar one is materials, because we are a materials company. Bulk materials, materials for construction industries, for energy industries, for automotive and machines. The second focus is coatings, because there is a lot you can do with steel by employing different coatings. There are a lot of startups around the world developing coatings."

Gogolev is also looking at production technologies, "especially large-scale steel 3D printing for construction".

Severstal Ventures is also keeping a keen eye on technologies for mining and making steel. "If we could dramatically change the way steel is made, if we could take coal out of it, make it more environmental, that would be great. We look at companies that could deal with our waste streams, because any resource-producing company has major waste streams. They could be commercialised and cleaned up."



INTERVIEW

What is Severstal Ventures not looking at? “We are not looking at IT. We are a very digitally advanced company in Russia. We are large clients of SAP for example, we have a chief digital officer, and we have the largest data lake in Russia. We are very conscious of collecting all the data, even that which we cannot analyse right now. We are very active in adopting various IT solutions, but usually we see no reason to invest in those sorts of companies.

“We are all very focused on delivering better returns to our shareholders, so my key performance indicators are financial. Whichever partnerships and joint ventures I bring, they have to create a sizeable cashflow.”

This is not straightforward given the typically long maturation period for materials startups. “A lot of companies I see have been spun out of universities and research labs, 15 or 20 years ago, and they are just getting into early revenue. For us, investing at the seed stage and waiting 20 years is too long. The early revenue companies on the other hand, you can scale fast, the technologies being proven and tested. We can deploy it on the market, with our manufacturing expertise and our marketing channels, and that way we can deliver a lot of value.”

At Severstal, things moved quickly, Gogolev said. “You would think that in such a large corporation it is impossible to get a decision through, but we did our first deal within two and half months of me coming into the company. Approvals take less than a week. We are extremely efficient in terms of making decisions.” For Gogolev, Severstal’s speed is a key feature to attract a potential startup. “There is no direct value to startups, but we hope to be lean and efficient, which makes interaction with us easier and faster. Our target is to create a culture of speed.”

It is easy to see why that efficiency is attractive to Gogolev, and why it is a recurrent theme for him. Softly-spoken and confident, he said his decision to leave RVC came as “I was tired of government work”. He added: “I wanted to do something practical. I personally invest as an angel. I like material stuff, anything hard. I have a drone investment and two materials investments, intellectual property-heavy things.

“Governments are extremely inefficient. Even though I worked for a government corporation, which is fairly independent of government, you occasionally hit certain political issues which you have to take up the command chain. That gets slower, especially if the government is trying to change a strategy that impacts what government corporations are doing. They are sometimes stranded and waiting for certain decisions from the government.

“It was not a tough transition because I worked in business before, but most of the companies I worked for were fairly small inefficient companies. This company has 50,000 employees and is huge. There are certain issues. You have to learn a company, you have to know who to communicate with, and where to send the right opportunities. I am still going through that learning curve. Severstal gave me a guy who was inside for a couple of years, so he knows the company very well. That is a huge help.”

That said, Gogolev is not as free to act as he might like. “We actually check off everything with our CEO and the chairman.” Would he like more autonomy? “I would prefer it if I had some autonomy, but the culture at Severstal is very centralised, and all major decisions are taken by the CEO and the chairman.” Despite that constraint, Gogolev is happy. “Originally, I thought being at Severstal Ventures would be very scary, when you go into a deal and you cannot get meetings for months, but that is not the case for this company.”

Gogolev is also excited. “I get paid to talk to a lot of smart people, which is great. We can discuss business models, help them grow, so that is a lot of fun. Plus scale – if you tweak a little thing within that corporation, that is millions of dollars, because the material and capital flows are so huge.”

Gogolev’s vision is not limited to Russia. Is he looking to tap into top universities like many other funds? “I am looking globally. There is a lot of interesting dealflow we are getting which is not originally connected to top universities, surprisingly. It is pretty decentralised in terms of materials science. In smaller countries, of course, you could go to top universities, but there is stuff you miss out on if you work only with them. Naturally, we try to establish connections with [good materials science] schools, but stuff coming out of universities is usually very early stage.”

Not every startup is as receptive as Gogolev might like. “Some people are now allergic to money from Russia, while some people, if not allergic, are cautious. All the deals we are discussing, everyone is running know-your-customer on us, so we disclose all the structures of all our companies. We are pretty transparent because we are a public company in the UK, and the majority of non-floated stock is owned by the chairman, Alexei Mordashov. He is a public figure, and he is not on any sanctions lists.”

With universities too much work for his small team, and Russian money held in suspicion, how is Gogolev building a network? He said: “Right now, we are going with a simple lane strategy. We are taking a number of fund positions, especially in funds which focus on materials. These guys have been on the market for 15 or 20 years, so they are known by startups, they have their own networks, and they source deals from all over the place. Pangaea Ventures, which is based in Canada, sees deals from Australia, so it is a small and transparent world.” ♦

“If you tweak a little thing within that corporation, that is millions of dollars, because the material and capital flows are so huge”



COMMENT



How large firms can innovate by collaborating with startups



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Corporate venturing, the term used for when established firms collaborate with startups – whether through corporate venture capital, scouting missions, hackathons or excubators, to name just some examples – is not a new practice. Large companies such as Intel, Siemens, Xerox, General Electric, IBM, Lucent and Merck have employed them for years.

However, due to the explosion of technology in the past two decades, there has been a spike in firms starting and expanding their corporate venturing units to keep pace with the evolution of technology and its ubiquitous adoption across industries. Between 2010 and 2016 in fact, the use of corporate incubators and corporate accelerators among the 30 largest companies in the world rose from just 2% to 44%.

How should large firms best approach corporate venturing? Based on interviews conducted with chief innovation officers and related roles at 44 large firms for a *new study*, we identify the challenges, opportunities and best practices for how large corporations can innovate by collaborating with startups.

This is an edited version of an article that appeared in Forbes magazine. Read the study published by IESE Business School and Opinno – *Open innovation: Building, scaling and consolidating your firms' corporate venturing unit*.



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Why startups?

It is not surprising that more and more corporations are looking to work with startups. The business landscape is changing quickly, making it hard for large firms to innovate quickly enough to thrive in this new context.

Take hospitality company Hilton. It has been in existence for almost 100 years and it has around 850,000 rooms in 105 countries and a market capitalisation of \$25.8bn. However, in just 10 years, starting from scratch, Airbnb has surpassed Hilton's market cap, with four times the number of managed rooms. In parallel, without owning a single car, in nine years Uber has exceeded the market cap of BMW, which began 102 years ago.

Large corporations are like big slow ocean liners – difficult to steer at the pace the market requires when it comes to innovation. Standardised processes, bureaucratic management, risk aversion and lack of creativity are some of the reasons for this. In contrast, startups desire to challenge the status quo, have potential for rapid growth and the capacity for a continuous flow of new ideas. Corporate venturing is a promising solution for sourcing innovation opportunities at speed. In exchange for these innovation advantages, corporations can in turn offer startups what they lack – capital, workforce, facilities, network and so on.

Getting started in three steps

To kick off a corporate venturing endeavour, companies should, first, determine the strengths and weaknesses of their current internal innovation efforts, second, identify the areas of the company's business that are more vulnerable to disruption, and last, define the nature of the opportunities the company is looking for and then select the areas that offer the most attractive growth.

Once the strategy is defined, the next move is to select the right mechanisms for collaboration, bearing in mind the desired level of innovation required at the firm, the time available, and the human and financial resources allocated. Typical mechanisms include:

- **Scouting mission** – the activity of seeking innovations through meetings with startups, inventors or university researchers in exchange for network and business opportunities.
- **Hackathon** – a workshop in which software developers collaborate to find technological solutions to a company's challenge, in exchange for business opportunities and recognition.
- **Sharing resources** – a way of facilitating the exchange of data, work spaces, lessons and so on.
- **Challenge prize** – an open competition to solve a specific issue in exchange of monetary reward and outreach.
- **Corporate accelerators** – a highly-structured program established to speed up the business development process of a startup by a few months. It includes offering mentoring, training and investment, sometimes in exchange for a share of equity.
- **Corporate incubators** – similar to a corporate accelerator, this program aims to provide viability and commercialisation to promising innovation.
- **Excubator** – a corporation's external venture builder aimed at generating a minimum viable product outside the regular structure of the corporation.
- **Corporate venture capital** – direct equity investment in startups of strategic interest beyond a purely financial return.
- **Strategic partnerships** – an alliance between corporations and startups to develop innovative solutions.
- **Venture client** – a specific type of strategic partnership in which corporations purchase the first unit of a startup's product, becoming its first client, and learning from emerging developments.
- **Acquisitions** – the purchase of startups by corporations in order to access their commercial-ready products and talent.

It is crucial to take a mid to long-term view when deciding which opportunities to go for and also to make sure they align with the firm's objectives and culture. This should not be taken as a given. When we asked chief innovation officers which factors they considered most important when choosing the corporate venturing mechanisms to launch, we found that 36% of them based their selection on the expected level of required innovation. However, when prioritising their opportunities in each mechanism, 40% of them were focused only on short-term returns, which could see them miss out on lucrative long-term gains.

Also, companies should consider that different mechanisms may be more appropriate depending on the different phases of the corporate venturing unit's maturity. In the building phase, we found that the most-utilised mechanisms were scouting missions. When looking to scale, adding corporate incubators and corporate venturing capital were the most popular. Finally, when looking to consolidate, corporate accelerators were the most used.

By taking these factors into account, corporate venturing can allow corporations and startups to develop disruptive ideas at lower costs and at a higher speed. ♦

It is crucial to take a mid to long-term view when deciding which opportunities to go for



COMMENT

Corporate venturing for Asian corporations



Jay Eum, co-founder and managing director, TransLink Capital, and co-chairman, GCV Asia Congress, September 20



Corporate Venturing has long been considered one of the widely used methods to implement open innovation. Open innovation simply states that, in this rapidly evolving information age, companies cannot rely solely on internal research and development (R&D) efforts. They need to collaborate with external parties to maintain competitiveness.

Any level of collaboration between an established company and a startup has always been challenging, but even more so for Asian corporations trying to collaborate with early-stage US technology startups. Many of the factors that have made the Asian corporations successful, such as top-down management and discipline, make collaboration with nimble and aggressive US startups even more difficult. Geopolitical risks and threats of trade wars and intellectual property protection are adding to the challenges.

Asian corporations have been developing their corporate venturing efforts since the late 1990s. Early entrants included the Japanese trading companies and Korean conglomerates. Those efforts were led by expatriates parachuted in from corporate HQ. Looking to partner the local VC community and startups, they would initially “commute” from HQ to Silicon Valley. Over time, they would gradually establish local offices.

However, most of these efforts were not sustained. Many expatriates who were stationed locally would be called back to HQ after three to five years, and whatever network they had built would have to be re-established by their replacement. Furthermore, many of the expatriates lacked experience in working with and investing in the US and US startups, resulting in a slow learning curve.

Samsung and SoftBank breakthrough

After 20 years, we have now seen a few cases of success from a few leading Asian corporations such as Samsung and SoftBank.

Samsung started its corporate venturing efforts in 1999, establishing Samsung Venture Investment Corporation. In 2003, the firm opened its US office in Silicon Valley, Samsung Ventures America. Since then it has launched two more early-



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stage funds, Samsung Catalyst and Samsung Next. Samsung Ventures is now considered one of the most active corporate venture groups globally.

SoftBank, even before creating the \$100bn SoftBank Vision Fund, has been active in venture capital in the US since 1997 when it established SoftBank Venture Capital. SoftBank also created the SoftBank Asia Infrastructure Fund in collaboration with Cisco Systems and has continued to be an active investor globally. The SoftBank Vision Fund is considered a game changer for the entire industry.

These corporations have demonstrated that despite being based in Asia, their persistent presence, local adaptation and active deal-making have made them leading corporate investors globally.

Alternative approaches to consider

The reality, however, is that not every Asian corporation can operate its own team and funds locally in the US. From our experience prior to TransLink – where each of our partners led the corporate venturing activities for Samsung, SoftBank, Foxconn, Hiraki Tsushin and UMC – the effort and resources it requires to operate dedicated teams in the US is non-trivial and expensive.

Hiring experienced local talent is challenging and retaining talent is even more difficult. Most experienced investors would prefer to work in traditional venture capital firms or US-based corporate venture firms rather than the US venture arm of an Asian corporation. The cost of operating a local team in Silicon Valley is also substantially more expensive than most other locations – annual budgets for even a bare-bones team can easily exceed \$1m a year.

For any Asian Corporation looking to establish corporate venturing activities in Silicon Valley, there are three alternatives to choose from:

- 1 Build your own full team – for example Samsung, SoftBank.
- 2 Collaborate with a local venture capital firm with your own smaller team – for example Hyundai Motors, Sampo.
- 3 Outsource front-end sourcing to a local venture capital firm and focus your own team on backend partnership development – for example KT, Naver.

There are pros and cons to each approach. If it is not the right time for option 1, to build your own full team, options 2 and 3 are viable alternatives to consider from a focus and resource allocation perspective.

Collaboration with a local VC

If options 2 and 3 are under consideration, the key is to find the right local VC firm to partner. Most established VC firms prefer to accept capital from traditional funding sources such as pension funds, endowments and funds of funds. However, as corporate venturing has become more prevalent there has been more corporate interest in funds for predominantly strategic and occasionally financial reasons.

Traditional venture capital is optimised for generating capital gain. Thus, any strategic requests from corporates for access or dealflow is typically not a focus. Therefore, if access to the general partners' perspectives, and sourcing relevant dealflow are the objectives, then traditional VC firms may not be the optimal partner for collaboration.

Key criteria for consideration:

- Strong reputation and stable team.
- Compatibility in stage and sector interest.
- Open access to partners and portfolio companies.
- Systematic dealflow sharing.
- Corporate investment background. ◆

Case study: collaborative venture model with TransLink

Hyundai Motors launched Hyundai Ventures in 2011 in Silicon Valley with a small team of auto industry experts and also invested in TransLink as an IT industry-focused venture capital partner. KT invested exclusively in TransLink as their Silicon Valley partner for front-end deal-sourcing while focusing its internal resources on backend partnership development.

Both partnerships have resulted in multiple co-investments with TransLink, such as SoundHound, a voice-enabled artificial intelligence company. SoundHound has raised capital from Hyundai Motors and KT as well as numerous other strategic investors including Samsung, Nvidia, HTC, Naver, Line, Nomura, Sampo, Recruit, Tencent, Daimler, Midea and Orange.



COMMENT

Get the Most from your new presence in Silicon Valley

Georges Nahon, CEO, Orange Silicon Valley



Silicon Valley demands answers from the C-suite executives who visit the region from their home offices elsewhere in the US and across the world. The tech giants and startups that dot the landscape around San Jose and San Francisco move at hungry paces that challenge Fortune 500 veterans to compete, defend and partner. Corporations react by establishing beachheads, setting up antennae and building outposts with multiple goals in mind – but knowing what to do with a permanent presence in or around San Francisco requires a series of crucial steps and decisions.

For more than a decade I have been CEO of Orange Silicon Valley (OSV), the San Francisco Bay area presence for Orange, one of the world's largest telecoms operators. We came to Silicon Valley with multiple goals in mind – and those goals evolved over time. We tackled intercontinental challenges and formed new, lasting and mutually beneficial relationships with a rising generation of US technology companies, all the while adapting to expand and improve how we work with those companies and leverage our connections to serve Orange.

Corporate partners and startups at various stages have different goals, after all. So we developed a dynamic portfolio of strategies and programs in response. Today, OSV has more than 40 engineers and business analysts, and our team has worked with more than 500 companies annually through our programs, which have included Orange Fab, Fab Force and Orange Institute, all of which have allowed us to create business and knowledge-sharing relationships with key leaders and innovators in tech.

During my time at OSV, we have hosted hundreds of executives representing the world's largest corporations. When they visit our offices and ask about the secrets behind our success, I offer a framework for success that reflects the accomplishments and community of relationships that made OSV what it is today. I call it the Most Framework, because it provides corporations with a guide to getting the most out of a Silicon Valley presence.

The Most Framework was designed to help corporations operating in Silicon Valley to answer strategic questions, operate effectively, plan, and ultimately bring back new ideas, tech and business models to their larger organisations. Those organisations' commitments are likely to correspond to one of four different modalities identified in the framework:

- **M**ixed
- **O**ppportunistic
- **S**trategic
- **T**tactical

The framework provides paths that in turn point to corresponding outcomes. What follows is a guide for corporations that have already decided to establish themselves in the Bay area and Silicon Valley world.

Identify the motivations

The Most Framework outlines four prominent motivations we have observed, based on our conversations with scores of CEOs and their teams over the years. The first – mixed approach – is quite common, as it is a composite of the other three – opportunistic, strategic and tactical.

Often, an organisation's C-suite will tour Silicon Valley on a learning expedition, and after just a few days the teams will feel that digital tech innovation is moving too fast here to be monitored remotely. Moreover, they begin to grasp the importance of connecting in person with the right influencers and thought leaders. The underlying rationale is to get closer to Silicon Valley, to get a better understanding of what is really going on, and not to rely solely on customised scouting reports and external consulting services. In a nutshell, it is about learning, sourcing and investing.

But the definition of what form this learning should take is unclear, the calls to action are manifold, and all of them seem urgent – influence the strategy, spot a tactical or opportunistic move, acquire, partner, invest, hire or some combination of these. After the excitement and the buzz clears, assertive decisions are required.

There are different kinds of corporations interested in connecting with Silicon Valley. Tech and non-tech, product, manufacturing and service businesses, market research and consulting firms, and even government agencies from around the world. Their respective motivations are different and sometimes overlap, as represented in the mixed model. Many companies and government agencies, for example, also want to invest in Silicon Valley companies. Some companies, mostly industrial, can create, or acquire, production capabilities, delivering new products with local talents, or via cooperation with startups and universities.



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The path from discovering Silicon Valley to operating a successful presence there will not always be a straight line

What is often an issue is the distance between the motivations and the expected results. Often what characterises the relationships between a subsidiary in Silicon Valley and the company's HQ is tension between the forces of push and pull, prescribe or execute, persuade or be told, lead or follow, and urgency or patience.

The Most Framework structures how decisions can be made depending on the desired outcome and impact. Before presenting the framework, we can address the questions decision-makers ask – and should reflect on – based on our many conversations.

Select the leadership and team

Designating the individual who will be responsible for creating a corporation's Silicon Valley affiliate involves a critical choice. It is essential to appoint a senior executive who is well connected inside the company, well respected, and who has experience in dealing with both customers and partners. It does not work well when the core team is made only of juniors or interns – and assembling this type of staff can externally signal a lack of commitment and resources. Since this leader will represent the corporation, he or she must be trusted and come from within the company, not the outside.

The other members of the team should include a healthy complement of locals who have either studied or worked in Silicon Valley. They will bring with them not only their experience, but also their network of friends and professional acquaintances. The management team should stay no less than three to five years to acquire the right knowledge and connections.

The reporting line should be with a member of the corporate executive committee who has influence and decision power relative to strategy and investment. A board of stakeholders at the HQ will ensure that initiatives are steered properly and regularly. A meeting each quarter is a good tempo. Weekly reports that reflect what is happening on the ground will help to keep the HQ informed, engaged and involved. These reports are also a key vehicle for new initiatives recommended by the affiliate, such as sourcing inside the mother company and investment activities in Silicon Valley.

Adjust size according to desired outcomes

A baseline of five to 10 people is required to meet the expectation of learning *in situ* and reporting back to HQ with intelligence. Assume that a few good connections will already be established. Also, plan to leverage or augment existing relationships with vendors and major platforms. Even at a modest scale, expect that many corporate tech tours will need to be organised, reinforcing the team's need for local knowledge and networks.

The next level of scale selected will be relevant to service providers and manufacturers with a heavy technology quotient in their supply chain. These companies want to gain early access to disruptive products and services for testing and analysis. The best practice here is to have a number of engineers directly proportionate to the number of topics being considered. In Silicon Valley, a "two pizza" team – or about five engineers per project – is ideal. If the corporate parent has deep interest in an average of six to seven topics at any one time, then an appropriate size for the entire team would be 35 to 60 people.

The path from discovering Silicon Valley to operating a successful presence there will not always be a straight line. Cautionary voices may argue for a gradual deployment initially – "Let's start small and we'll grow as needed". But small will remain small unless local leadership forcefully makes the point that more outcomes demand more resources. Staying small sends a message to HQ and to Silicon Valley that an organisation's office is not aligned with the parent company. VCs and startups will smell this and avoid the outpost.

A multi-pronged approach for generating deliverables throughout the parent company requires the robust scale mentioned above. Those deliverables range from investment pipeline ideas to full-blown term sheets, as well as vendor evaluations and alternative or supplemental sources to existing vendors. Additionally, companies may want to participate in advancing cutting-edge industrial standards or gaining market intel and leading learning expeditions. Those outcomes can be matched to C-suites, corporate development and investment, business unit heads, strategic project heads and operations.

Importantly, OSV's conversations with VCs tell us that having this enterprise-wide connectivity to stakeholders can make a company an attractive co-investor, assuming corporate venture capital is part of the multi-pronged approach. That is because the local office can act as a conduit to connect co-investment startups, helping them to learn and scale.

Build trust in Silicon Valley – and at HQ – through investment

More and more we have seen an influx of investment capital, not just from tech but from non-tech companies, driving a need to perform both financial and technical due diligence when contemplating startup investments or opportunistic acquisitions. This is not necessarily – but can be – a scale issue so much as it is a skills challenge, since it calls for a special set of finance and strategy talents.

A company can parachute in or, better yet, hire locally, but either strategy must deliver the requisite investment acumen to do deals in Silicon Valley. Even then, there will be larger questions of autonomy. HQ's desire to retain the final say-so



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on investments of any size is to be expected. To acquiesce to this can mean exasperation at best, and at worst extinction. This is not black and white, and at OSV we have argued for strict accountability. Traditional VCs have the unfair advantage of not being measured on their failures, only their successes, while their CVC counterparts are accountable to chief financial officers who will measure both.

Understand the power and pitfalls of POCs

Sooner or later – and it is usually sooner – any debate concerning how to tap into Silicon Valley innovation will highlight the proof-of-concept (POC) as a possible outcome, as well as a channel for HQ impact. While it seems reasonable to focus on the POC as a shiny object, it is easy to lose sight of how others perceive POCs.

While the leadership of a local affiliate may pin big hopes on their team's POC work as a means of persuasion, they need to consider the framing back at HQ. It is all too easy for that frame – especially among stakeholders threatened by the disruption – to settle at "it's just a POC". The point of caution here is to not overestimate the impact of a POC to the C-suite. It may be more advantageous to consider these opportunities as a form of exposure.

On the other hand, if HQ stakeholders come to the local affiliate with requirements and a request to find and validate something, then the POC may be on firmer ground. But even in these cases it should be asked whether a strong demo from a third-party Silicon Valley source might deliver more value and effect more change. Ultimately, the surest test for green-lighting POCs should be identifying whether there is a clear path to deployment.

Lead tech tours and learning expeditions

Learning expeditions are now part of the DNA at Silicon Valley affiliates. They are table stakes. And they are both good and challenging things to do. However, they are good only insofar as they create friendly relationships at the highest levels of the company. Also, note that even as they open the eyes of HQ delegations to Silicon Valley trends, learning expeditions can strategically help propagate the usefulness and relevance of the affiliate, creating valuable goodwill.

It can be easy from the HQ to believe that its teams at Silicon Valley affiliates are having a great time, free from the worries of everyday business operations. Cultivating relevance to many internal business and operational units is the best antidote against this perception, so it is important to push topical learning expeditions to targeted special interest groups within the company. This approach allows the local team to customise and optimise meetings around specific themes, and the process fosters intimate business relationships between the visitors and the visited.

The interests of both visitors and the visited need to be nurtured. Learning expeditions can stress and sometimes jeopardise relationships at the local level. It is a hard truth that after all the excitement of the meeting in San Francisco, Palo Alto or Mountain View, follow-ups often fail to materialise when the visitors return home. Bridges built locally with care over time with great people and companies alike can be impoverished or burned with one visit that smacks of pure techno-tourism.

Preparation and planning must address delegates' quality and professionalism. A key best practice is to be clear with the local hosts, setting expectations properly and honestly. Clearly, not all visitors will have the power or responsibility to decide on a business opportunity, and one of the less pleasant aspects of the job is informing such colleagues that their lack of decision-making ability is why a given company refused to take a meeting. Nevertheless, for Silicon Valley companies, where there is a commercial relationship, it can be practical to connect with VIPs from the visiting company at a marginal cost to build goodwill.

All forms of techno-tourism, however, will be unwelcome and bring collateral damage that can be hard to repair.

Deal with antibodies at the HQ

Earlier, I mentioned the risk that comes with perception at an HQ that an affiliate presence in Silicon Valley is free from everyday business concerns, perhaps nothing more than a Club Med. What is missing in that scope of understanding is a direct experience of Silicon Valley's rapid, sometimes brutal, pace of innovation, and this knowledge gap will need proactive correction.

The best practice here is for the affiliate constantly to be launching initiatives relevant to many different stakeholders in the company – marketing, human resources, finance, strategy, technology, R&D, IT and, yes, operations. Think of it as becoming a moving target – giving a hard time to naysayers and sceptics who cannot question what you do, as you are doing many different good things for many stakeholders.

Applying the Most Framework

If you can accomplish the list of missions I mentioned above, you will find answers to the most frequent questions that arise when setting up a corporate affiliate in Silicon Valley. You will also be ready to turn your attention to the objectives you have in mind and situate yourself in the Most Framework, which is designed to avoid dead ends and enable your company to chart its path to a successful outcome. The principal behind this framework is simple. Identify your motiva-

A key best practice is to be clear with the local hosts, setting expectations properly and honestly



COMMENT

tions, and this will be your guide for moving forward.

The Most Framework: a guide to shaping a Silicon Valley affiliate

Mixed: the multi-pronged approach – Mixed motivations combine elements of the three categories that follow – opportunistic, tactical and strategic – in this framework. Accordingly, choosing this path out of the gate can be risky. It will be necessary to avoid competing objectives, conflicts that arise from multiple stakeholders, and concurrent learning curves. As a result, the affiliate's format will probably necessitate a substantial a ramp-up period.

In articulating the three discrete motivations individually, we include the most immediate secondary motivations that can be efficiently served at the same time. We also provide examples of industries adopting these organisational design patterns.

Opportunistic: focus on sourcing – We have seen this motivation drive a number of smaller observatory-type affiliates that lack fixed objectives beyond a general expectation of sourcing innovative solutions for their corporations. If these units are scaled too small, they usually wither. The sourcing objective is achieved by working locally with a multi-tier partner ecosystem that usually includes university connections, a mature startup, a major industrial player or existing supplier, or all of these. This motive includes some level of technical diligence, as well as business development and maintaining a proper medium-sized team.

A good alternative to consider is joining an existing local affiliate of a peer interested in similar topics but not a direct competitor. This helps the new affiliate to get up to speed faster and minimise the challenges of an underdimensioned budget for a while. Some companies decide to work with professional startup incubators and accelerators, or send someone as an expert in residence with firms – like a VC – when this arrangement is possible. We think it can only be a transitory format that can be used to define what the viable motivations should be in the end. But once validated, this option is important to the implementation of the original grand vision.

The nearest adjacent objective is Investing, when a startup or earlier-stage university-connected trend shows promise for the company's supply chain or roadmap.

An increasing number of car companies, for instance, are pursuing this opportunistic model in Silicon Valley, as machine learning and digital experiences infiltrate their industry faster than others.

Strategic: always be learning – The strategic motivation is about complementing the HQ's R&D and product innovation groups by exposing them to Silicon Valley's disruption of their domain. This is a learning objective, and for it to be relevant, the local affiliate's leadership must be strongly aligned with the HQ strategy and technology roadmap.

This alignment needs to be fulfilled in Silicon Valley by technical experts who can connect with peers back home and with local innovators. Thus, a large operation is required to be effective with the strategic model. The adjacent objective is obviously sourcing products that the company's traditional suppliers cannot offer. This sourcing activity in turn may drive opportunistic M&A or supportive investments – again, scale is required.

According to metrics maintained by the telecoms trade group Global System for Mobile Communications (GSMA), the telecoms operator industry controlled the majority of the first \$1 trillion in industry revenues in the 1990s, but it has ceded control of the next trillion in revenue to Silicon Valley. Despite this seismic shift, we have found many telco affiliates in Silicon Valley to be undersized relative to this impact, and therefore not well positioned to serve as a strategic partner for HQ.

Tactical: prioritise investment – The tactical motivation involves non-organic growth and speculative moves in adjacent business territories. While the convention among professional VCs is to refer to their corporate counterparts as "strategic investors", our experience shows corporate venture capital and M&A to be a tactical approach to serving the objective of investment. This is where the main purpose of the affiliate is to spot disruptive technologies the mother company will want to experiment with as soon as possible, or find great companies that the HQ can start deploying a new business with – M&A.

We have previously *published a complementary framework* covering corporate investments, which classifies intents and outcomes as the three N's – now, new, next. We cannot overemphasise the strategic importance of autonomy for the local office in its investment activity, given the expectation of pushback. It is worth reiterating that accountability is the best argument for autonomy.

Within the tech sector, such tactical offices can complement existing solutions used for billing, marketing, human resources or in house IT systems, making the adjacent objective one of sourcing. We also find a preponderance of non-tech offices conforming to this model in the pharma, food and public sectors.

As more companies gravitate to Silicon Valley, our understanding of the various permutations by type of business continues to deepen. The perspective taken here with the Most Framework is that of a services organisation with a high quotient of technology in its infrastructure, operations, and products. That said, we intuit that the levelling effect of software and digitisation makes the lessons we have learned relevant to our new neighbors arriving in the Bay area and Silicon Valley. ♦

We cannot overemphasise the strategic importance of autonomy for the local office in its investment activity





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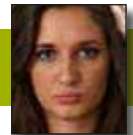


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INNOVATIVE REGION

Challenging the dominance of South Korea's chaebols

Alice Tchernookova, features editor



◆ Government's innovation plan has encouraged entrepreneurialism

◆ A new breed of local CVCs is keen to step up dealmaking

◆ The shadow of China and Japan forces greater collaboration

Surrounded by the Yellow Sea to the west, the East China Sea to the south, and the Sea of Japan to the east, South Korea forms the southern part of the Korean peninsula, just south of its controversial North Korean neighbour after the nation's sundering in the 1950s Korean War. With a land area of just over 100,000 square kilometres, including 3,300 mostly desert islands, more than 60% of its territory is covered by forest.

Despite the forest cover, and similarly to Japan, South Korea has become one of the world's high-tech hubs, having birthed conglomerates, called chaebols – literally “wealth cliques” – in the form of Samsung, LG and Hyundai Motor. With most of its wealth coming from manufacturing and services, South Korea was recently classified as the third-largest exporter in Asia after China and Japan, and the seventh worldwide, with top exports including computers, smartphones and cars.

Over the past few decades, South Korea has played an increasingly major role on the international stage, and significantly increased its weight in the global economy. Established as a standalone nation only 70 years ago, South Korea is currently considered East Asia's most developed country, and stands as an example of fast economic expansion.

With a GDP in the region of \$1.5 trillion, and a GDP per capita at around \$32,000, according to International Monetary Fund (IMF) estimates, South Korea is the 11th-largest economy worldwide – an impressive rank considering the country is ranked only 107th in terms of size, with a population of just over 51 million.

Hicheon Kim, professor of strategy and organisation and director of the Korea University Business School (KUBS) Startup Institute, said: “Few economies in the world have matched the phenomenal economic development of Korea in terms of industrialisation and technological progress.”

South Korea's industrialisation kicked off in the 1960s, following the military coup orchestrated by Park Chung-hee that led him to become the country's president. In power for 16 years, Park launched a series of five-year developments to drive the country's economic growth, starting with the agriculture and energy sectors. The most famous of these was the



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first five-year plan, implemented between 1962 and 1966.

Jay Eum, co-founder and managing director at Palo Alto-based early-stage venture capital firm TransLink Capital, for which he oversees South Korean activities, distinguishes two periods in the country's economic development. He said: "After the Korean War economic blow [after 1953], the government worked closely with selected corporations to undertake major projects often financed by government-backed loans, laying down the basics of an industrial breakthrough.

"Each company would focus on a specific industry – Hyundai Motors was, for example, in charge of automotive, LG and Samsung of electronics, Korea Oil Corporation [now SK Innovation, a branch of the SK Group conglomerate] of chemicals and refining activities.

"From the 1990s, the government focused on putting the initial infrastructure for mobile and broadband in place, supporting telecoms companies such as Korea Telecom, now KT, and SK Telecom."

Since 2005, South Korea has also been leading the world's transition to high-speed internet access. According to the Organisation for Economic Co-operation and Development (OECD), it now has the world's fastest average internet connection, as well as the highest 4G availability and a broadband penetration of 41.13 per 100 inhabitants.

By 1996, the country's 30 largest chaebols – including Samsung, Hyundai, LG and the now-defunct car manufacturer Daewoo – accounted for 40% of Korea's total output, according to Kim.

Their hegemony over the national economy was first called into question in the aftermath of the 1997 Asian financial crisis. The crisis, which hit the entire region, saw South Korea's GDP fall by 5.8% while its currency faced a sharp decline of 54% against the US dollar. As the situation continued to escalate and an estimated million jobs had been lost, the country had no choice but to resort to a \$58bn bailout from the IMF.

Kim said: "The perception of these large and diverse business groups changed dramatically as Korea suffered its worst economic crisis. The Korean economy was described as being hopelessly squeezed by two giants – Japan, equipped with advanced technological capabilities, and China, equipped with low wages.

"Many of the largest business groups in the nation that were once credited with phenomenal growth of the Korean economy ultimately failed [about half of the 30 largest chaebols in 1996 underwent bankruptcy proceedings or bank-sponsored restructuring programs], with the chaebols being blamed for causing the nation's worst and most humiliating economic crisis."

Eum said: "After three decades of fantastic development, the crisis acted as a massive wake-up call for the entire country. Up to that point, South Korea had been predominantly dependent on the chaebol, but as the entire economy was shaken up, it turned out that some of them were not sustainable."

That realisation began to change the national psyche, Eum added, so much so that when President Kim Dae-jung took over in 1998, a major push was made to reduce the country's dependence on conglomerates and to support startups and entrepreneurial development.

A first wave of change hit the country at the turn of the century, with the government introducing tax incentives for the VC industry, reducing VC firms' taxes on profits to much lower levels and making certain VCs eligible for government help in the form of long-term low-interest loans and equity funding.

A new stock exchange modelled on Nasdaq was established to facilitate the listing of entrepreneurial ventures. Soon enough, South Korea witnessed its first "startup boom", to quote Hicheon Kim. Between 1997 and 2000, the number of active VC firms jumped from fewer than 50 to 150, while 261 limited partnerships were created in 2000 alone, totalling around \$1.9bn of investable funds, according to Kim.

Fast-forward to a dozen years later, and a second government-sponsored movement of support towards venture and innovation took birth under the rule of Park Geun-hye – South Korea's first female president from 2013 until her impeachment in 2017, and incidentally the daughter of former head of state Park Chung-hee.

Launched in 2013, Park's Creative Economy Action Plan was presented to the nation as a project that would help it achieve a "second miracle on the Han river", as referenced by Robyn Klingler-Vidra and Ramon Pacheco Pardo, professors at King's College London, in an academic paper – An Evolving Developmental State: What is the perceived impact of South Korea's Creative Economy Action Plan on Entrepreneurial Activity? The plan also came as a response to the employment crisis hitting college graduates in particular, with goals to boost their hiring by new startups.

According to Klingler-Vidra and Pacheco Pardo, as part of the plan, 18 centres for creative economy and innovation were opened, each of them partnering a chaebol. A series of funding initiatives followed to provide more diverse financing opportunities for entrepreneurs, while new tax incentives were introduced to stimulate angel investment and reinvestment by successful entrepreneurs.

The government also committed to investing \$3bn annually in the startup ecosystem, as well as to increasing basic research funding by 40%. It also promised to redirect 18% of publicly-funded research and development towards small and medium-sized enterprises.

Other investment initiatives arose in the years to follow. A \$1.5bn investment from the Ministry of Science, Information 

"The chaebols were blamed for causing the nation's worst and most humiliating economic crisis"



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and Communications Technology and Future Planning was, for instance, dedicated to local telecoms companies, aiming to boost their progress on 5G mobile network technology.

In 2015, Korea's Institute for Startup and Entrepreneurship Development was also launched, aiming to support 50 Korean startups through three-month immersion programs overseas. And a year later, the global accelerator program K-Startup Grand Challenge was set up to attract foreign entrepreneurial teams to Seoul's Pangyo Techno Valley, offering them help with visas and mentoring, and facilitating their introduction to relevant chaebols.

These are just a few examples of the many measures implemented by the South Korean government to expand the local ecosystem. Klingler-Vidra said: "Broadly speaking, in South Korea the government has a much more parental role than in other more developed ecosystems. Historically, the Korean economy represents the archetypal development state where the government is central to helping firms grow by providing funding, access to equity, professional tax treatment and so on."

Looking back on the country's economic development in recent years, she said: "If you were to ask me what has been driving activity and growth over the past few years in Korea, I would say the plan probably had a key role. First of all because it has helped normalise the ideas of entrepreneurship, of being creative, of taking risks, which are now all part of everyday conversations. Somehow, it has become much more okay – and even desirable – to be an entrepreneur in Korea than it used to be. Today, if you drive around Seoul, you see venture-related ads on billboards all around the city."

According to the Korean Venture Capital Association, startup funding has been consistently on the rise under the Park plan, growing successively from with ₩1.6bn (\$1.4bn) in 2014 to \$1.9bn in 2015, to reach roughly \$2bn in 2016. A total of 901, 1,045 and 1,191 startups were funded respectively in those years.

The rise of South Korean corporate venturing

As they witnessed the rise of a new kind of activity in the country, South Korean corporates were forced to respond. As Kim wrote in one of his papers: "The growth of these new ventures placed further pressure on large business groups as they not only faced a declining domestic market, but also numerous new competitors attracting key personnel."

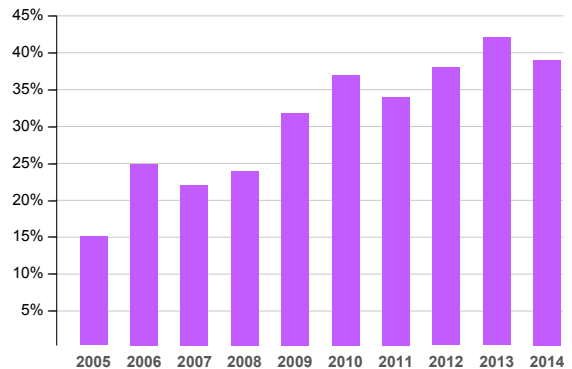
By 2014, a California-based seed fund for Korean entrepreneurs, Strong Ventures, had already identified as many as 10 unicorns – companies worth at least \$1bn – which it referred to as the "Korean Unicorn Club". More recent unicorns include Yello, which received a \$100m commitment from VC firm Formation 8, and was valued at an estimated \$4bn as of 2016.

One of the country's most famous successes is web company Naver, known as "the Google of South Korea", famous for developing the Japanese instant messaging app Line, which floated on the New York and Tokyo stock exchanges in 2016 and was valued at more than \$9bn after the first day's trading. Currently valued at \$22.1bn, both Naver and Line have been active corporate venturers in South Korea.

After Line's initial public offering raised \$1.1bn in July 2016, Naver joined Japan-based telecoms group SoftBank to launch a \$43m vehicle, SB Next Media Innovation Fund, to invest in startups and technologies with synergies with Naver-incubated Snow, a Snapchat clone, and Webtoon, a digital comic company.

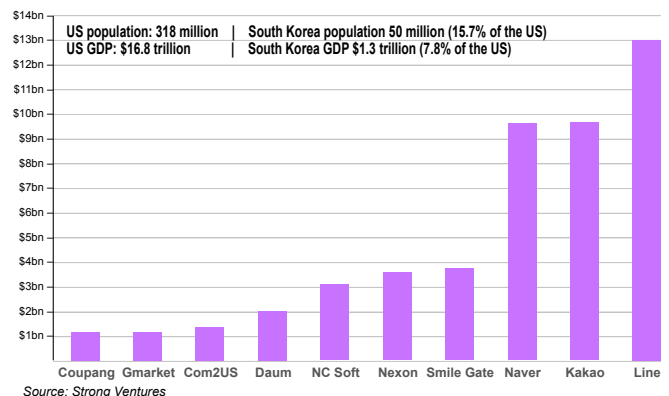
Naver invested around \$90m in Korean entertainment company YG Entertainment last year, and has backed food delivery app Woowa Brothers' \$32m series F round and online logistics company Mesh Korea's \$31m series D round. Recent reports spoke of the group's intention to make a limited partner contribution to US-based VC Sequoia Capital's latest

The Korean government's share of VC financing annually 2005-14



Sources: Korean Venture Capital Association; Korea Capital Market Institute

South Korean unicorns – companies valued at over \$1bn



Source: Strong Ventures



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Top 10 corporate-backed deals in South Korea

Company	Sector	Round	Size	Investors
Coupage	Consumer	Stake purchase	\$1bn	SoftBank
CJ E&M	Media	Stake purchase	\$500m	Tencent
Kakao Mobility	IT	Seed	\$437m	Kakao TPG
Kakao Pay Corp	Financial services	-	\$200m	Ant Financial
Kakao Games	Media	-	\$130m	Actozsoft Bluehole Netmarble Games Premier Growth Tencent
Tmon	Consumer	-	\$115m	Simone Investment Managers undisclosed investors
4:33 Creative Lab	Media	Stake purchase	\$110m	Line Tencent
YG Entertainment	Media	-	\$85m	Beijing Weiyang Technology Tencent
Kakao Talk	Media	Stake purchase	\$80m	CyberAgent Tencent Wemade Entertainment
Unison	Energy	Stake purchase	\$71m	Toshiba

venture capital global fund targeting \$6bn. Naver is also a limited partner in Golden Gate Ventures' \$60m fund for Southeast Asia.

Line, after its 2016 IPO, committed to two VC firms, US-based DAG Ventures and France-based Korelya Capital. Line and Naver committed €50m (\$66m) each to Korelya Capital's K-Fund 1.

Kakao, the internet services group that in 2010 launched instant messaging app KakaoTalk, now reportedly used by 40 million people worldwide, is another landmark on the Korean startup scene, with a valuation currently peaking at \$7bn.

The group, which counts the Chinese investment holding Tencent among its early investors, secured another \$1bn of funding earlier this year and has been an active investor itself.

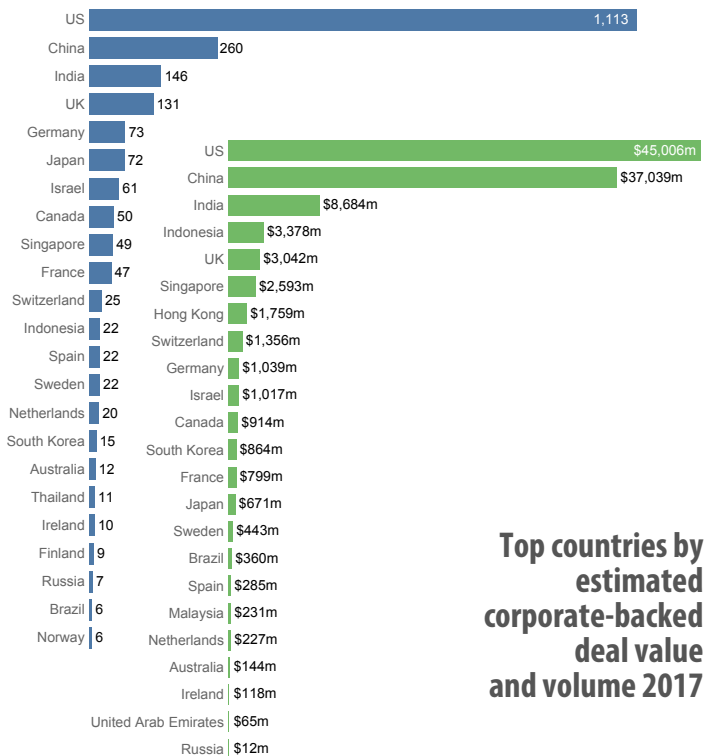
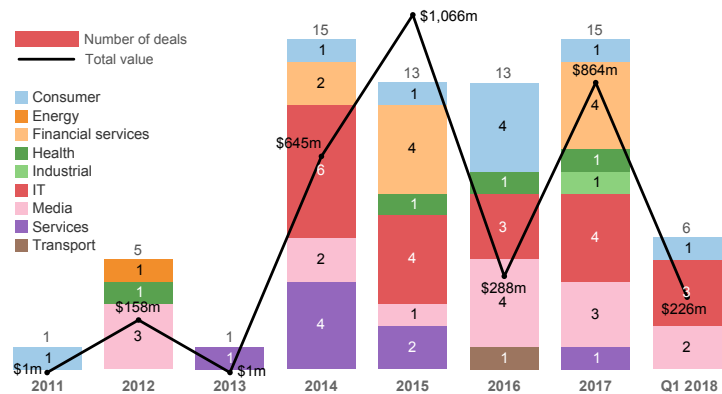
In March, South Korea-based artificial intelligence (AI) technology developer Skelter Labs raised ₩10bn (\$9.2m) in a round featuring subsidiaries of internet group Kakao and diversified conglomerate Lotte Group. Kakao invested through its AI-focused KakaoBrain division and venture capital vehicle K Cube Ventures

Similarly, South Korea-based unicorn CJ Games and e-commerce company Coupang, often referred to as "the Amazon of Korea", have attracted international investment. Currently valued at \$5bn, Coupang raised a total \$1.4bn, receiving a \$1bn investment from SoftBank, \$100m from Sequoia Capital and \$300m from US-headquartered investment management firm BlackRock.

Chinese peer Tencent acquired a 28% stake in CJ Games for \$500m in 2014 in the second-largest corporate-backed deal in Korea so far this decade.

The country's total deal value brought it to 12th position last year, before France (\$799m) and after Canada (\$914m), while it ranked 16th in terms of deal volume, sandwiched between the Netherlands (20 deals) and Australia (12 deals).

Deals in South Korea 2011-18



Top countries by estimated corporate-backed deal value and volume 2017



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A distinctive feature of South Korean startups, some local players said, was their capacity to reach a high valuation within their domestic boundaries before setting foot overseas. For TransLink's Eum, this can be linked largely to the nature of South Korea's consumer base.

He said: "Thanks to the advanced mobile and broadband infrastructure that was pushed by the government over the years, the public became very familiar with high-speed internet and smartphone technology.

"If you compare it to other markets, South Korea's per capita spending on technology and tech-related products is relatively high. Equally, if you look at country rankings on the App Store or on Google Play, the country systematically appears in the top four right behind China, the US and Japan in terms of gross spending, which evidences the existence of very tech-savvy consumers."

Last year, South Korea was ranked sixth worldwide for smartphone penetration, with a rate set to reach 77.7% this year, just before the US (75.6%) and after Hong Kong (84.7%). "If you can succeed in becoming a leader in your sector domestically, then you can create a billion-dollar business model," Eum continued. "That is how some of South Korea's leading companies have already attracted foreign capital from landmark foreign investors such as SoftBank, Sequoia, Tencent, Qualcomm and Intel Capital.

All have been investing both on the basis of advanced local technologies and a tech-hungry national consumer base."

A growing number of foreign corporates have already set foot in South Korea. One of them is semiconductor and display equipment maker Applied Materials and its venture arm Applied Ventures. Last year, the unit established a new vehicle – Applied Ventures Innovation Fund I, targeting \$40m – alongside government-backed fund of funds Korea Venture Investment Corporation. The fund targets Korean startups operating primarily in semiconductors, display technology, robotics, healthcare and energy storage.

While Applied Materials has been implanted in South Korea for about 30 years, its venture arm started looking at local opportunities only recently. Joseph Jeong, an investment director managing all Applied Ventures' investments in Asia, said: "Although we made our first investment here in 2012, we had started taking an interest South Korea a couple of years before that. One of the main reasons we established a regional fund was that we noticed an increasing dealflow in our core sectors and were seeing, and still see, the country as a fertile ground for innovation and technology."

Since the group closed its first deal in 2012, a new investment opportunity has arisen almost every year. "Our current pipeline tells us it should not be too hard to maintain, or even accelerate, our local investment pace," Jeong added. "South Korea is a very attractive market in that it has an extremely highly-educated workforce, with high-end manufacturing capabilities and very advanced technologies in the semiconductor and display spaces – two of our core businesses.

"From a purely financial point of view, while China and the US are still the prime places of investment these days, getting good valuations there is increasingly hard because of the high concentration of investors. The same dollar will always go a little bit further in Korea than it does in those places."

South Korea's biggest foreign investor is SoftBank, with a total of 14 deals recorded in 2017 alone, according to GCV data. And the activity, as well as deals such as that with Naver to develop a joint fund, has seen Greg Moon effectively promoted from country head of SoftBank Ventures to a partner on the near-\$100bn SoftBank Vision Fund.

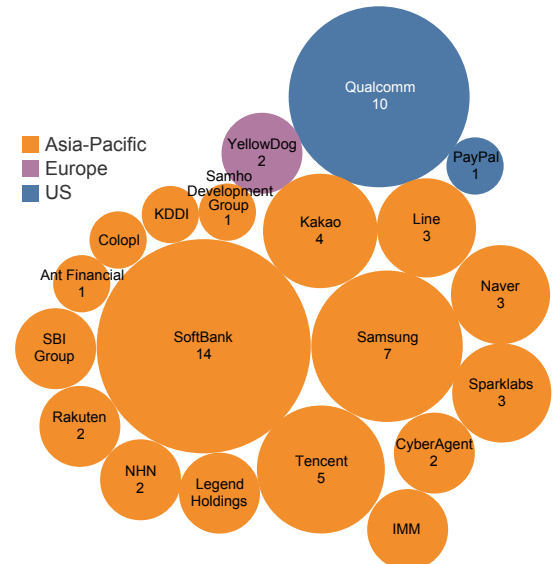
After SoftBank, US-based semiconductor and telecoms equipment maker Qualcomm has conducted 10 deals. Tencent closed five deals and SparkLabs Ventures, a Korea-focused \$50m fund focusing on early-stage startups launched by investment holding SparkLabs Group last year, closed three.

Japan seems to be spreading its wings quickly over its neighbour's territory, as media company CyberAgent, financial services provider SBI Group, e-commerce and internet company Rakuten, telecoms group KDDI, and game developer Colopl – all Japanese groups – all closed at least one deal each in 2017.

Chaebol response

The chaebols, of which there are around 45, still have a relative monopoly over the domestic market, with the five largest conglomerates – LG, Hyundai, SK, Samsung and Lotte – currently accounting for half the Korean stock index, and Samsung accounting for 30% of it alone, according to Bloomberg. The top 10 chaebols, meanwhile, own more than 27% of all national business assets.

Top corporate investors in South Korea by number of deals 2011-Q1 2018



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Despite some significant changes implemented by the government both at legal and institutional levels, Korea's conglomerates have so far managed to maintain their competitive advantage over startups. Hicheon Kim said: "Chaebols have unique advantages in financial resources, specialised manufacturing capability, access to distribution channels, service networks, and complementary technologies that are necessary to commercialise and profit from an innovation. That is why, to a large extent, startups in Korea often gain much more by deciding to partner the chaebols than by going it alone."

In other words, South Korean startups are not quite ready to be fully independent from chaebols. In a recent paper – Only beyond the chaebol? The social purpose of entrepreneurship promotion in South Korea – Klingler-Vidra explained: "Policymakers in South Korea have conceptualised entrepreneurship promotion as embedded in, rather than alternative to chaebol-led economic output and employment. Instead, [they should] continue supporting chaebol innovation alongside job creation and economic diversification."

Of the big five chaebols, Lotte's Skelter Labs deal was its first reported, and it has been the slowest to develop corporate venturing. In the past quarter, SK Telecom has invested in a \$65m round for ID Quantique, a Switzerland-based quantum cryptography technology spinout from University of Geneva, a \$50.6m series C round for SiFive, a US-based fabless provider of customised semiconductors, and a \$104m D round for US-based vehicle-sharing platform Turo.

And in relatively rare personnel changes, Dong-Su Kim, one of South Korea-based electronics conglomerate Samsung's most experienced corporate venturers in the US, has joined electronics producer LG to set up a new venture fund, LG Technology Ventures.

As general manager of Samsung Ventures America, Kim led deals for Samsung in more than 20 companies, including Pure Storage and Netlist, which were floated on the New York and Nasdaq stock exchanges respectively. Henry Chung is managing director of LG Innovation Ventures, a separate fund, while the chaebol's subsidiaries, such as LG Electronics, also invest directly, as in last month's Bossa Nova's \$29m round to develop robots to look at on-shelf product data for the retail industry.

Car maker Hyundai has also stepped up activity this year, investing an undisclosed amount in Singapore-based ride-hailing service Grab, and participating in US-based voice intelligence technology developer SoundHound's \$100m round in May.

As well as being the biggest chaebol, Samsung has been the country's most active CVC, but one undergoing changes. Samsung Venture Investment Corporation (SVIC), its corporate venturing unit, appointed Yong-bae Jeon, senior vice-president of Samsung Fire & Marine Insurance Company, as its new head, a role he took up in April this year. Jeon replaced Sungjong Lee, who had been president of SVIC since 2013.

Founded in 1999, SVIC bases most of its team in Korea, including its investment committee, but it is understood about 80% of its deals by value came from the US.

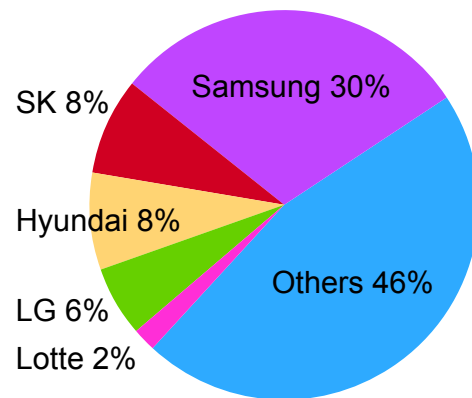
The economic shadows of China and Japan are looming, forcing chaebols to collaborate more with other businesses and universities and to be more open to innovation.

Canada-based artificial intelligence developer Element.AI was recently chosen as the independent partner of a corporate-backed fund bringing together three South Korean chaebols as limited partners. Speaking at the Intel Capital Summit in May, Jean-François Gagné, CEO of Element.AI, said it had set up a corporate venturing fund to focus on its "main area of business but do more stuff and take some upside".

He added: "Hanwha was a shareholder in Element.AI but did not want to cover all the fund, so within two weeks we had added Hyundai and SK at \$50m each to do 10 to 15 deals."

The legitimacy of chaebols has been called into question many times in recent years, especially with regards to the close relationship they tend to have with the government. The controversy around this issue peaked in 2017, when Samsung's vice-chairman and de facto head Jay Y Lee received a prison sentence – subsequently reduced and suspended – following accusations that he had given up to \$36m to a friend of former president Park Geun-hye to win government favour. Park was subsequently impeached and sentenced to 24 years in prison over allegations of bribery, coercion, abuse of power and leaking state secrets, while Lotte's chairman Shin Dong-bin, also found guilty of bribery, received a two-and-a-half-year sentence.

The five biggest chaebols comprise more than half the Korean stock index



Weightings in the benchmark KOSPI index of listed companies belonging to the five conglomerates as of April 2018. Source: BloombergQuickTake



INNOVATIVE REGION

Next steps

These blows to the reputation of the chaebols may give South Korea's startups a chance to take over the national economy. Klingler-Vidra commented: "Korea has come a long way in making startup and entrepreneurial culture part of its economic development, but some key drivers still need to be worked on to make it a fully functional and blooming ecosystem." Among those drivers are the need for a more transparent regulatory environment in which entrepreneurs – local and foreign – can operate safely, and a relaxation of migration laws and easier access to the country.

The lecturer added that the country should take advantage of its experienced middle-aged entrepreneurial basis. "Entrepreneurs here are not your typical 'fresh out of college Mark Zuckerberg' kind of guy. They tend to be experienced workers in their 30s or 40s, many of whom have spent years working for a big chaebol. As the notion of lifetime employment recedes, these technically-inclined entrepreneurs have the potential to lead disruptive startups in Korea."

Jay Eum, meanwhile, believes government support will continue to be key for the ecosystem's development in the near future. He said: "In markets like Korea, where startup culture was originally non-existent, it makes sense for the government to intervene. However, it is all about pace. It takes time to encourage and nurture a startup ecosystem, and so there should always be a sense of continuation from one government to the next. Administrations should be orientated towards long-term rather than short-term results."

All these elements are, however, not sufficient to blunt Hicheon Kim's unwavering positive outlook, or his faith in the potential of Korean entrepreneurs. He said: "We now have a number of very successful startup models that can appeal to potential entrepreneurs and their families. I do believe South Koreans have some sort of entrepreneurial spirit in their DNA, which means that all we need to do is keep improving the ecosystem. It will be interesting to observe what happens over the next four to five years."

"One thing I would particularly love to see is more entrepreneurs among the younger generation. Elsewhere, the excitement around CVC first emerged around the year 2012. In Korea, it is happening now, with more and more corporates progressively changing their attitude and engaging in VC activity."

"The scene is definitely picking up momentum right now in South Korea – and once Koreans move, they move fast."

In a recent Techcrunch interview Tim Chae, a partner at venture fund and seed accelerator 500 Startups and founder and general partner of 500 Startups Korea, analysed the current situation in the following way. "There will be a Silicon Valley type of hub in Asia within the next five years, it is certain, outside of China which stands as another planet completely. Will it be Hong Kong, Singapore, Seoul?"

"Regionally, the support from the government, combined with the pali-pali ["hurry up"] culture and the first-of-its-kind mobile and internet infrastructure all help differentiate from nearby markets. Japan still has stronger brands, although they have been sidelined for a while, and China is strong both on prices and now on innovation. Will South Korea be able to step up and become the convergence capital of the world, acting both as a test-bed for the future of mobile and a launchpad for Asia?" ♦



University venturing in South Korea

An estimated 60 corporate-backed accelerators are currently active in the country, including Naver's D2 Startup Factory, investing in artificial intelligence (AI), machine learning and the internet of things, Kakao's AI-focused Startup Nomad, and pharmaceutical group Bayer Korea's Grants4Apps, founded in partnership with the Korea Trade-Investment Promotion Agency.

In 2015, Google opened its first Asian campus, Campus Seoul, offering local startups a space to work and expand, along with perks and free or low-cost services. In 2015, Samsung launched its in-house startup incubation program Samsung Creative Lab, which has supported around 34 projects to date, including three AI companies – Toonsquare, Aurora and Gadget – earlier this year.

FuturePlay is one of the country's landmark incubators, working in collaboration with public research university Korea Advanced Institute of Science and Technology (KAIST) and some of the country's top chaebols.

South Korea's overall venture ecosystem is boosted by world-class universities. According to the Organisation for Economic Co-operation and Development's most recent ranking, Korea is the fourth most-educated country worldwide behind Canada, Japan and Israel – 46.86% of people aged 25 to 64 have completed tertiary education in the form of a two to four-year degree, or a vocational program. →



INNOVATIVE REGION

In the Times Higher Education World University Rankings 2018, Seoul National University, KAIST, Sungkyunkwan University and Pohang University of Science and Technology were designated the country's top four higher education institutions. Korea University, Ulsan National Institute of Science and Technology and Yonsei University were all in fifth position.

Graduates of these universities are frequently recruited by the country's top chaebols, some of them taking an entrepreneurial path later in their career. For example, of the 10 unicorns identified by Strong Ventures in 2014, five had founders who were graduates of either Seoul National University or KAIST.

Hicheon Kim, in a recent article published by Global University Venturing, said the government had recognised the importance of the role played by universities in expanding the ecosystem, and had relaxed regulations and introduced new initiatives to facilitate the creation and funding of university spinouts. Kim said that over the past four years, the number of entrepreneurship courses in Korea had more than doubled, while the number of student entrepreneurship clubs had increased more than fivefold.

At Korea University Business School in Seoul, the KUBS Startup Institute incubator was launched in 2016 and has since helped incubate 20 new businesses, all of which are still active. Kim said much funding was being provided by university alumni willing to support young entrepreneurs. He said: "Students in South Korea have traditionally been quite risk-averse, preferring to work for big enterprises or conglomerates. This seems to have changed in recent years, with many students now showing an interest in becoming entrepreneurs."

Ten years ago, Kim said, the government changed the law to allow universities to create technology holding companies to commercialise their technology and research, thereby also facilitating the formation of university spinouts. As a result, in 2008 Seoul National, Hanyang and Sahmyook universities all launched their own holding companies, taking as their examples University of Oxford's tech transfer office Oxford University Innovation and Stanford University's research institute SRI International. As of 2016, 48 university holding companies owned as many as 435 subsidiaries in South Korea.

Until recently, universities were allowed to invest in spinouts only through holding companies and were required to own stakes of at least 20% in them – obligations that have since been lifted. Universities are now able to raise venture funds and own accelerators, some of which may qualify for government help.

"More should be done than deregulation and funding initiatives," Kim said. "The supply of money and the amount of quality startup companies cannot grow dramatically overnight. That is why the role of universities should be expanded, and universities themselves should try to increase the number of startups created within their walls. They should try to promote innovation, and at the moment, I am not sure they have that mindset."

TransLink Capital's Jay Eum added: "Universities and colleges should really provide entrepreneurial courses and internship opportunities, so that students know what they are getting themselves into should they decide to go down the entrepreneurial path."

"Some universities in Singapore and the US have already adopted this, which to me makes complete sense and benefits the ecosystem as a whole, as it gives students a chance to graduate as fully-educated entrepreneurs."

Although university venturing has taken its first steps in South Korea, a shared feeling among local players seems to be that higher education institutions could make more effort to adapt to the growing venturing space and try to contribute more to the ecosystem's development. ◆



UNIVERSITY CORNER



How science can bring about a eureka moment for Indian startups

Tarun Khanna, professor at Harvard Business School, and K Vijay Raghavan, principal scientific adviser to the government of India



Over the past three years, India's science and technology-focused startup movement has seen steady improvement in quality and in numbers. Today, new Indian companies are becoming pioneers in a range of domains, like computer science, engineering, medicine, drug discovery and agriculture. They are moving smartly beyond their comfort zone of e-commerce ventures.

Policy initiatives that give tax breaks and stimulate intellectual property development are an important impetus for their growth. In addition, the Atal Innovation Mission – the Indian government's flagship initiative to promote innovation and entrepreneurship – has strengthened the incubators supported by various government science agencies and has also invested in new ones.

There is marked progress on the curation of ideas for entrepreneurs to choose from, mentoring the teams implementing these ideas through early stages, and helping enterprises succeed by navigating the inevitable challenges in a nascent startup ecosystem.

Now one significant lacuna is also getting attention – the flow of scientific input to fuel startups. Science must inform the innovative process. Without that, our startup ecosystem will be competing globally with its hands tied behind its back. Our innovations will be restricted to reverse-engineering, reverse-innovating and so on. Jugaad – “band-aid” creativity in an infrastructure-deficit ecosystem – may be a first step, but it is simply insufficient to get our ecosystem to compete globally on more encompassing fronts.



UNIVERSITY CORNER

Fortunately, India's scientific institutions can deliver, built as they are on robust foundations. Despite legitimate concerns about median quality, there is no question that people of extraordinary talent do graduate from our institutions in significant numbers across numerous scientific fields. This has resulted in pockets of high-quality research in our best universities and research institutions. Institutions like the Indian Space Research Organisation and the Department of Atomic Energy have built impressive indigenous capacity in complex areas.

Science funding

Financial support for science has also grown steadily over the past four years. While science funding as a percentage of GDP is at 0.7 %, the 2018 Economic Survey argues for substantial increases and for taking on major missions in basic science. Missions in artificial intelligence, cyber-physical systems, supercomputing and biopharma have been started, and others like deep ocean exploration are in the offing.

Yet for basic science itself to be constantly invigorated, and to invigorate the entrepreneurial ecosystem, two major chasms need to be bridged. First, industry must invest much more in R&D and connect to the startup ecosystem. The cumulative R&D spend of consumer technology producer Apple, e-commerce firm Amazon, social media company Facebook and software developer Microsoft in 2017 was about \$60bn. This is comparable to the entire US federal government expenditure on all non-defence-related scientific research.

India may not be able to leap to this level directly. But we must start by fostering links ultimately to eliminate the mutual incomprehension between science and industry in India. The link of startups to the industrial ecosystem also requires serious attention to the risk capital deficit in India. Ultimately, the government will likely have to backstop the ability of the private sector in a way that makes the risk-return trade-off more attractive to the latter.

Community of scientists

The second chasm has to do with India's community of academic scientists. They must now embrace the responsibility of connecting much more to society, industry and the startup ecosystem. The resulting connectivity will help provide the energy to our entrepreneurs and, in turn, to the scientists themselves.

There has been a self-organisation of such connectivity in some locations – Bengaluru, Chennai, Hyderabad, Pune, the National Capital Region and Kanpur. The bonding and the networking involving academic institutions, industry and entrepreneurs have to grow speedily and by orders of magnitude.

Indian Institute of Technology (IIT) Madras shows that the task is not impossible. Its research park has grown from a sparsely occupied shell to a huge venture bubbling with interactions. Only a very small part of the major resources for its growth has come from government funds.

Bengaluru is strong in IT and biotech, Hyderabad in chemistry, Pune and Chennai in manufacturing. These must be leveraged as links within the ecosystem are strengthened. The extraordinary synergy in IIT Madras on solar power and electric mobility with national missions and with the automotive industry again provides an example.

As an immediate starting point, India must make it far easier for global talent to work in, and with, Indian institutions and scientists. One of us currently finds it incomparably easier to work in Chinese and European research institutions than in India's best. Both of us aim to help change this speedily. Well-chosen international institutional partnerships, driven locally, will further facilitate the growth of industry and the economy.

Leaders should be further liberated from regulatory mandates and be held accountable for the use of these new freedoms. The government's announced Institutions of Excellence program, designed to identify public and private universities capable of reaching global pre-eminence in the mid-term, is one such measure that will help.

India has made rudimentary, but important, strides in linking science to startups, using the instruments available to policymakers and industrialists. Triggering bottom-up scientific creativity through these efforts can pay major dividends over the next decades. ♦

This is an edited version of an article first published by Economic Times

Academic scientists must now embrace the responsibility of connecting much more to society, industry and the startup ecosystem



SPECIAL REPORT

Bulgaria – a budding rose of innovation

Kaloyan Andonov, reporter



Last month marked the end of Bulgaria's first presidency of the Council of the EU, an institution that rotates among the 28 member states every six months. This placed the country, known for its roses and yoghurt, as well as the entire region under the spotlight during the first half of this year. It also gave the local innovation scene some much-needed publicity.

The most notable innovation-related events hosted in the Bulgarian capital, Sofia, last month took place over two consecutive days – TechTour Eastern Europe, which featured a session in Warsaw the previous day, and Innovative Enterprise Week Sofia 2018.

The former involved 15 local entrepreneurs showcasing their technologies to local and international investors. The latter served as a meeting point for institutional stakeholders, such as the European Investment Bank, the European Investment Fund and Bulgaria's Ministry of Science and Education, among others. They discussed opportunities and the need for financial instruments to foster research and innovation. They also met local entrepreneurs.

Bulgaria shares common traits, in terms of innovation opportunities and challenges, with the rest of southeast Europe. One of the interactive sessions on TechTour Eastern Europe event focused on them.



Sasha Bezuhanova

The chairwoman and moderator of the session, Sasha Bezuhanova, a former long-time regional executive at electronics firm HP turned-entrepreneur and angel investor, itemised some of the common challenges in the region – a lack of scale among local startups, limited attention to innovation issues at the policy level, a huge brain drain of talented people who choose to develop technologies in western Europe or the US.

While the outflow of potential entrepreneurs cannot be stemmed in the context of free movement of human and financial capital across the continent, tackling the other two issues remains feasible through proper institutional engagement.

Local and regional startups are small and lack the scale to grow globally. Public funding and support for innovation have been instrumental in building the local ecosystems and could help promising enterprises grow in coming years.

There are some differences when it comes to the availability of support. The ecosystems of states like Bulgaria and Romania have benefited greatly from European funding – over €600m (\$700m) of EU-provided funding for innovation has been deployed to date in Bulgaria alone.

Other countries in the region, outside EU borders, have not had access to such resources but the role of government support has been critical. For example, Dragan Pejčić, of consulting and auditing firm BDO, highlighted the role of public funds in neighbouring Serbia through the government-backed Serbian Innovation Fund, which runs a matching grant program for micro-companies and small and medium-sized enterprises (SMEs), as well as a

mini-grant program for companies that have been around for less than three years.

Acquainting the audience with the situation of startups in Serbia, Pejčić identified IT as the “hottest sector”, citing the success story of Nordeus, a Serbia-based company that has developed a popular mobile game, Football Manager.

Even the government of North Macedonia has joined the innovation race. Clarisse Molad, a US consultant, advises Macedonia's €90m government fund for innovation and technology development. She defines the fund as “quite pivotal” for a small country. Most of the funding available to startups is structured as grants. The main goal of the fund is to encourage the development of an innovative ecosystem.

While such financial support has spurred local startup communities and will continue to play a major role in helping companies to scale up, there are policy-level deficiencies that work against them. Umur Goekce, head of the Organisation for Economic Co-operation and Development's southeast Europe division, cited a study conducted by his organisation that involved the preparation of an SME policy index. It found that local legislation in southeast Europe often does not



SPECIAL REPORT



Svilen Rangelov, co-founder of Bulgaria-based logistics drone developer Dronamics, presents a prototype to Jean-Eric Paquet, director-general for research and innovation at the European Commission (in grey suit)

Picture courtesy TechTour

“There have been more than €400m in technology company exits in Bulgaria”

differentiate between honest and dishonest company bankruptcies, thus failing to give “a second chance” to startups that could generate disruptive innovation.

Few participants at the conference spoke of any competitive advantages and opportunities the region could offer, factors that could attract much-needed private capital from western Europe, the US or Asia to aid local startups in going global.

Among the most important advantages of Bulgaria and the region as a whole is, undoubtedly, the lower cost of running a business compared with the US and western Europe. More than 30% of founders of local startups are said to be non-Bulgarian, despite the level of education attained by locals. According to the latest census data, about one in five Bulgarians has a university degree, and the country ranks third in the world by number of certified IT professionals per capita.

This talent pool has not gone unnoticed by global IT brands. HP, SAP, IBM, Microsoft, Oracle and VMware have been outsourcing operations there. While such developments may not necessarily turn Bulgaria into a Silicon Valley for south-eastern Europe, they make it fertile ground for cultivating a culture of entrepreneurship and tech innovation.

Notably, Bulgaria fares better than European counterparts in its engagement of women in the technology sector. During the conference, Bezuhanova noted that a significant percentage of IT professionals in Bulgaria are female. This has the potential to make Bulgaria and its startups more attractive to international venturing funds whose thesis includes supporting female-led innovation.

The Bulgarian tech scene

Many technology developers from countries in the region pitched to investors at the East Europe TechTour event, including Ukraine-based agtech crop protection drones developer Kray Protection, Serbia-based online real estate agency Cityexpert, Serbia-based electric car developer Aqos Technologies and Slovenia-based energy services value chain solutions provider Resalta.

Other technologies developed by Bulgaria-based startups spanned various sectors and applications – drones for search and rescue (FragaX) or logistics and shipping (Dronamics), cloud-based app building platforms like CloudFaces, athlete performance tracking wearables (Barin Sports), smart kitchen app streamlining consumers’ shopping lists (CogZum), peer-to-peer lending platform Klear, 3D-printed prosthetics components (ProsFit Technologies), construction and energy efficiency solutions (Make Bulgaria) and even a developer of eco-friendly low-cost sustainable materials (Biomyc).

This wide range of technologies being developed in Bulgaria is impressive considering the Bulgarian innovation scene is just a few years old. It was not until 2012 that significant funding for innovation started to flow in from the EU. This budding ecosystem has already passed a number of milestones, including sizeable exits for venture investors. Evgeny Angelov, chairman of the Bulgarian Private Equity & Venture Capital Association (BVCA) and managing partner at Post-



SPECIAL REPORT

Scriptum Ventures, a local VC firm specialising in the energy sector, said: “In the past few years, our members have invested in more than 250 companies and there has been over €400m in technology company exits in Bulgaria.”

The most impressive exit of a Bulgaria-based company took place in 2014, when US-based software company Progress Software acquired application development tools company Telerik for \$262.5m.

But Ivo Dimitrov, co-founder of CogZum, spoke of the challenges he faced when setting up his company. “The biggest hurdle, by far, has been putting together the core team, usually referred to as co-founders. I started looking for ambitious and experienced people, willing to take the risk of joining a new company. Unfortunately, in 2016 discouraging news of multiple startup failures turned the heads of people in Bulgaria towards safe jobs in established companies.”

Bulgarian emerging enterprises, like their European counterparts may face a shortage of growth-stage funding, but the mix of public and private funding available to entrepreneurs is expected to grow. Angelov said: “Capital for innovation and growth in Bulgaria will very likely treble over the next 24 months. At the same time the number of fund managers will double. This is excellent news for entrepreneurs and the community. Public money will obviously continue to be the decisive factor but private fundraising is becoming increasingly important.”

Public money has been instrumental. The Bulgarian Fund of Funds has deployed over €600m to date, in the form of a broad range of equity and quasi-equity instruments, including a seed and acceleration fund, a venture capital vehicle, a mezzanine fund to support growth-stage enterprises and, more recently, Bulgaria’s first technology transfer fund. The Fund of Funds is co-financed by the Bulgarian government and the EU.

Bulgaria’s VC community

Bulgarian venture capitalists set up the BVCA to raise awareness and develop the ecosystem. Angelov, a venture investor and former adviser to the Bulgarian president, said: “The association organises educational events and seminars and produces various materials. We have also begun to create standardised documents, such as term sheets, convertible note agreements, and other such documents that are tailored to local legislation, which entrepreneurs and fund managers can freely use.”

The BVCA’s promotional activities are geared towards attracting new investors, domestic and foreign, to the realm of venture capital. “The BVCA also strives to engage the Bulgarian diaspora abroad. We started an ambitious initiative – BVCA on Tour – a series of events in different cities around the world promoting entrepreneurship and investment opportunities in Bulgaria and southeast Europe.”

Angelov believes the Bulgarian innovation scene and the venture capital arena have much to offer to potential investors. “Many opportunities for co-investment exist, particularly for corporate VCs. Companies and funds have matured and are increasing partnering with leading global investors. We would encourage people who are interested to learn more about the region to get in touch with us or with our members directly and discover opportunities to collaborate.” ♦

Evgeny Angelov
of the BVCA



MONTHLY ANALYSIS

This is our data snapshot based on last month's investment activity. The charts and tables have been generated by our data platform GCV Analytics.

Deal uptick in June

Kaloyan Andonov, reporter, GCV Analytics



The number of corporate-backed rounds reported in June was 256, considerably higher than the 222 funding rounds in the same month last year. Investment value rose even more significantly to \$26.75bn – almost four times more than the \$6.94bn of June 2017.

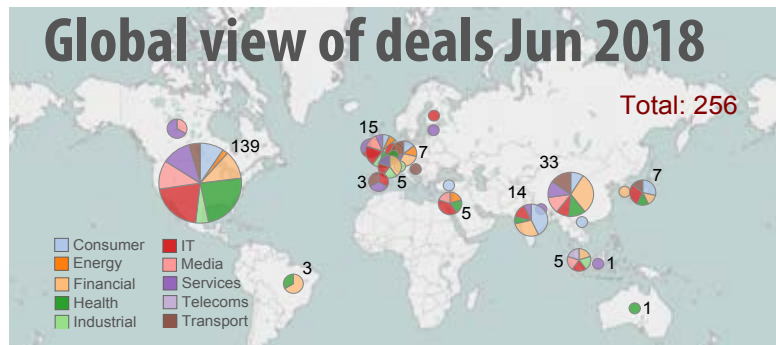
Compared with preceding months this year, June sported stronger results than April and May, with their 241 and 224 rounds, respectively, but somewhat weaker than March's 273.

However, June set a record for estimated total capital invested this year. The US hosted the largest number of corporate-backed deals, 139, while China was second with 33 and the UK third with 15.

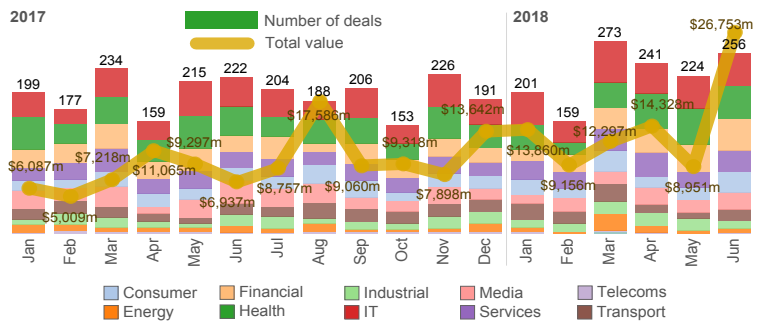
The leading corporate investors by number of deals were diversified conglomerate Alphabet, telecoms firm SoftBank and e-commerce company Alibaba. In terms of involvement in the largest deals, SoftBank topped the ranking.

GCV Analytics reported 29 corporate-backed funding initiatives in June, including VC funds, new venturing units, incubators, accelerators and others. This figure was a slight increase over May, when there were 28 such initiatives.

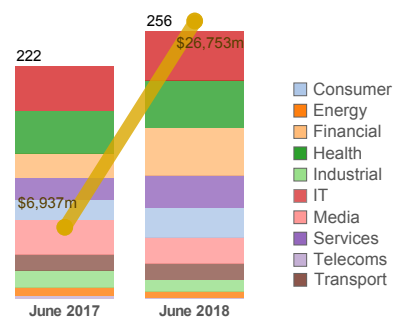
The estimated capital raised in June's initiatives amounted to \$2.77bn, down 18% from the estimated \$3.36bn the previous month.



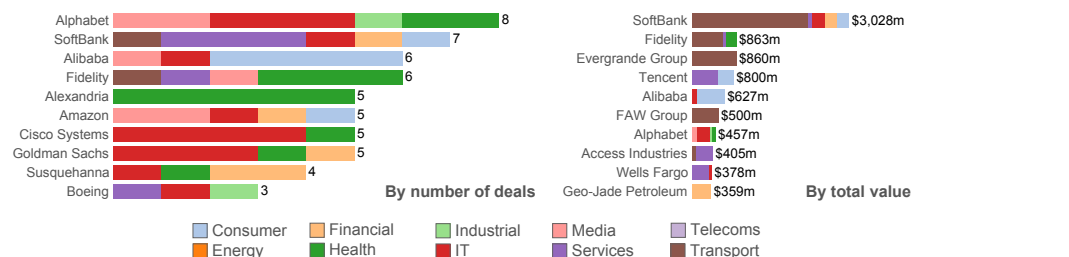
Deals 2017-Jun 2018



Deals Jun 2017 vs Jun 2018

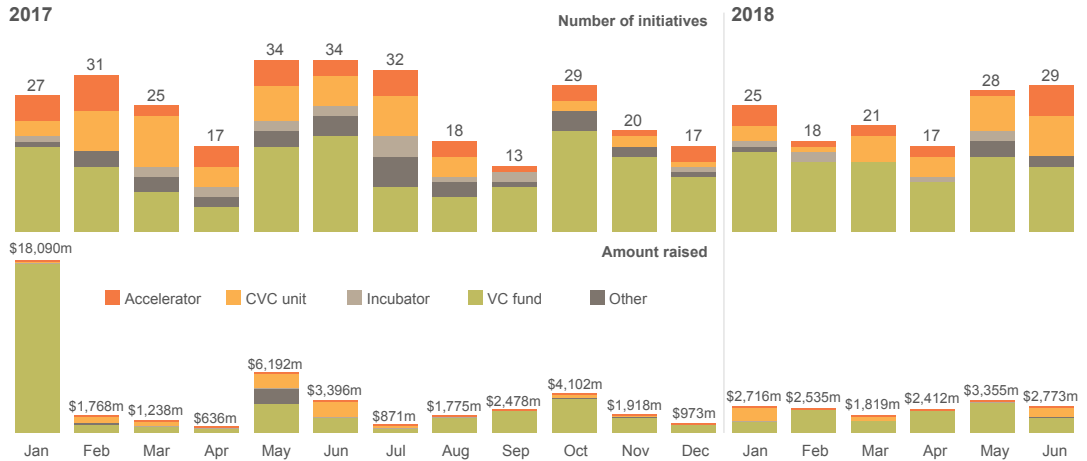


Top investors Jun 2018



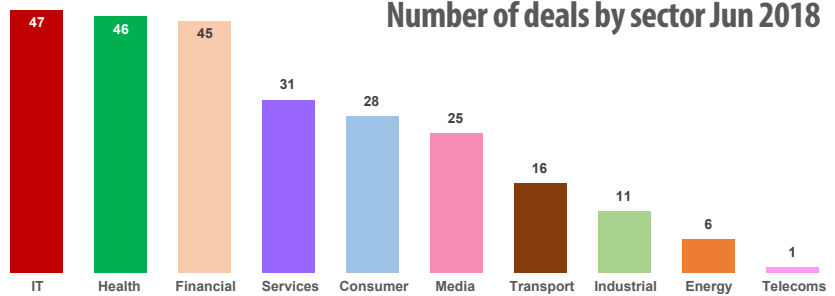
MONTHLY ANALYSIS

Funding initiatives Jun 2017-18



Deals

Emerging businesses from the IT, health, financial services and services sectors raised the largest number of deals during June. The most active corporate venturers were from the financial services, IT, media and health sectors, as shown on the heatmap.



Ant Financial, the China-based financial services affiliate of Alibaba, raised approximately \$14bn in a series C round, backed by Singapore's sovereign wealth fund GIC. The renminbi-denominated tranche was largely provided by existing unnamed investors. The round consisted of a US dollar-denominated tranche, which was backed by GIC as well as Temasek, an investment

Deals heatmap Jun 2018

	Financial services	IT	Media	Health	Consumer	Services	Industrial	Transport	Telecoms	Energy
North America	45	32	20	26	13	11	12	8	7	2
Asia	23	10	5	2	12	10	7	6	5	1
Europe	13	8	6	2	4	6	5	3	2	3
Middle East		2	1	1			1		1	
South America		1	1			1	1			
Australia / NZ				1						

firm owned by the Singaporean state. Ant Financial offers a host of financial services products developed or connected to Alibaba, which spun the company out in 2011. The company's flagship product is Alipay, which dominates more than half China's mobile payment market, with other tools including credit-scoring platform Sesame and money management fund Yu'e Bao.

SoftBank agreed to provide \$2.25bn for GM Cruise Holdings, an autonomous driving spinoff of automotive manufacturer General Motors (GM). SoftBank's Vision Fund will invest an initial \$900m when the deal closes, at which time GM itself will put up a further \$1.1bn in funding, and will supply the rest once Cruise advances its driverless car technology to commercial release, resulting in a total 19.6% stake for SoftBank's fund. Cruise is developing autonomous vehicle technology that will be deployed in GM's Bolt range of electric vehicles. The technology is being road-tested in the US states of California, Arizona and Michigan, expecting to reach market in 2019. The company was formed in 2013 and GM paid \$1bn to acquire it in early 2016, giving an exit to Qualcomm Ventures, the venturing unit of the semiconductor manufacturer.

Evergrande Health Industry, a healthcare subsidiary of property developer China Evergrande, bought a 45% stake in US-based electric vehicle developer Faraday Future for \$860m. Founded in 2014, Faraday Future is developing con-



MONTHLY ANALYSIS

Top 10 investments Jun 2018

Company	Location	Sector	Round	Size	Investors
Ant Financial	China	Financial services	C	\$14bn	Baillie Gifford Canada Pension Plan Investment Board Carlyle Group Discovery Capital General Atlantic GIC Janchor Partners Khazanah Nasional Berhad Primavera Capital Silver Lake T Rowe Price Temasek undisclosed investors Warburg Pincus
GM Cruise Holdings	US	Transport	–	\$2.25bn	SoftBank
Faraday Future	US	Transport	Stake purchase	\$860m	Evergrande Group
Lyft	US	Transport	E and beyond	\$600m	Fidelity Senator Investment Group
VIPKid	China	Services	D	\$500m	Coatue Sequoia Capital Tencent Yunfeng Capital
Byton	US	Transport	B	\$500m	Amperex Technology FAW Group Tsinghua University undisclosed investors
Caogen Touzi	China	Financial services	D	\$359m	Geo-Jade Petroleum undisclosed investors
OpenDoor	US	Services	E and beyond	\$325m	10100 Fund Access Industries Andreessen Horowitz Coatue General Atlantic GGV Capital Invitation Homes Khosla Ventures Lakestar Lennar New Enterprise Associates Wells Fargo (Norwest Venture Partners)
Hellobike	China	Transport	E and beyond	\$321m	Ant Financial
Xiaohongshu	China	Consumer	D	\$300m	Alibaba Genesis Capital GGV Capital GSR Ventures Tencent Tiantu Capital ZhenFund private investors

nected electric cars. The company's first production vehicle, FF 91, was unveiled in 2017 and will boast features such as autonomous parking capabilities and facial recognition.

Lyft, a US-based ride-hailing service backed by corporates including GM, Alphabet, Alibaba, e-commerce firm Rakuten and automotive component manufacturer Magna International, raised \$600m in a round that valued it at \$15.1bn post-money. Fidelity Management and Research led the round. Lyft runs an app-based ride-ordering platform that had more than 610,000 daily active drivers across the US and Canada at the end of last year.

China-based online tutoring service VIPKid raised \$500m in series D-plus funding from a consortium co-led by internet group Tencent, Coatue Management, Sequoia Capital and Yunfeng Capital. The round reportedly valued VIPKid at RMB20bn (\$3.1bn). Founded in 2013, VIPKid operates a platform that offers real-time, one-to-one English tutoring. It employs more than 40,000 teachers from North America and has attracted more than 300,000 students across 35 countries to date.

China-based smart car developer Byton closed a \$500m series B round, which included automotive manufacturer FAW Group and battery producer Contemporary Amperex Technology. TUS Holdings, the enterprise arm of Tsinghua University, also took part in the round alongside unnamed backers. Founded in 2016 as Future Mobility, Byton is developing smart, electric vehicles that boast features such as a gesture-based control system, a driver-assistance system, augmented reality mirrors instead of rear-view mirrors and a 49-inch electronic display on the dashboard.

China-based fintech platform Caogen Touzi secured RMB2.3bn in series D funding from a consortium led by oil exploration and production firm Geo-Jade Petroleum, which participated through an unnamed industrial fund and was joined by a range of unnamed existing shareholders. Founded in 2013, Caogen Touzi has developed a range of investment tools for private users and small to medium-sized companies. Users can also apply for collateral loans backed by assets such as houses and vehicles, while the company also offers consumer instalment credit products in rural areas.

US-based online real estate marketplace Opendoor raised \$325m in a series E round, co-led by home builder Lennar, conglomerate Access Industries and venture capital firm General Atlantic. Property manager Invitation Homes also participated in the round. Access Industries took part through its investment arm Access Technology Ventures. Founded in 2014, Opendoor has created an online real estate platform. It offers help with valuation, and once fees have been agreed its staff conduct an assessment of the property to ascertain whether work is required.

China-based bicycle-rental service Hellobike raised RMB2.06bn from Ant Financial. The transaction bestowed unicorn status on Hellobike, which is now reportedly valued at \$1.47bn. Ant Financial has become the largest shareholder in the business, owning 36%. Hellobike operates an app-based service that reportedly had 100 million registered users by April this year. It is currently available in 180 Chinese cities.

Alibaba co-led a \$300m series D round for China-based cross-border online retail platform Xiaohongshu that reportedly valued it at more than \$3bn. Tencent also participated in the round. Xiaohongshu, which means Little Red Book, started off as an online portal where users could review items they had bought in other countries. However, the app's popularity led to the company branching into direct e-commerce, allowing users to buy high-grade goods internationally. The platform, which has more than 100 million users, also has a tool that helps compile shopping itineraries for foreign trips, and allows users to post blogs, photos or videos of their trips.



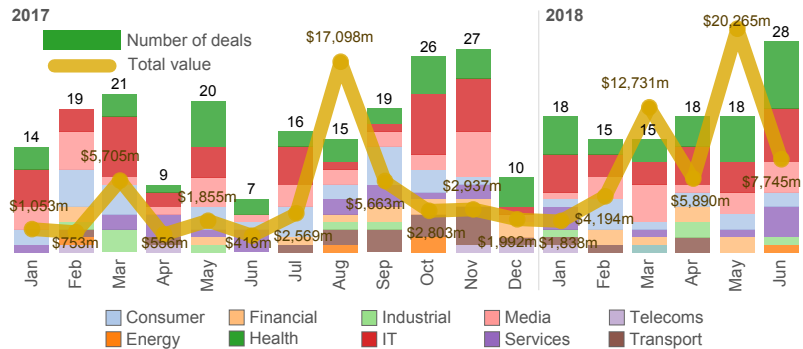
MONTHLY ANALYSIS

Exits

In June, GCV Analytics tracked 28 exits involving corporate venturers as either acquirers or exiting investors. The transactions included 16 acquisitions, 11 initial public offerings (IPOs) and one stake sale.

The number of exits went up significantly compared with May and April, which both registered 18 exits. In contrast, total estimated exited capital amounted to \$7.75bn, down from the \$20.27bn of the previous month. However, May's figure included a record-breaking acquisition of \$16bn.

Exits 2017-Jun 2018



China-based consumer electronics producer Xiaomi, in which Qualcomm is an investor, raised \$4.72bn in an IPO on the Hong Kong Stock Exchange. The company priced roughly 2.18 billion shares at the low end of the HK\$17 to HK\$22 (\$2.17 to \$2.80) range it had previously set. The price valued Xiaomi at about \$54bn. Founded in 2010, Xiaomi designs and manufactures smartphones as well as other electronic devices such as smart home products, tablets and televisions which are connected through its proprietary operating system.

Adaptive Insights, a US-based business planning software provider backed by enterprise software producer Salesforce, agreed to an acquisition by cloud-based human resources management platform Workday for \$1.55bn. The transaction includes \$150m in unvested equity that will be issued to Adaptive Insights staff. Founded in 2003 as Adaptive Planning, Adaptive Insights operates a cloud-based platform that allows organisations to build models of their operations and collaborate on planning while analysing performance data.

Top 10 exits Jun 2018

Company	Location	Sector	Type	Acquirer	Size	Exiting investors
Xiaomi	China	Consumer	IPO	-	\$4.72bn	All-Stars Investment China Mobile CICFH Entertainment DST Global GIC Hopu Fund International Data Group Morningside NGP Qiming Venture Partners Qualcomm SF Express Temasek Yunfeng Capital
Adaptive Insights	US	IT	Acquisition	Workday	\$1.55bn	Bessemer Cardinal Venture Capital Information Venture Partners JMI Equity Monitor Ventures Onset Ventures RBC Technology Ventures Salesforce Wells Fargo (Norwest Venture Partners)
Home24	Germany	Consumer	IPO	-	\$174m	Baillie Gifford Kinnevik Rocket Internet Vanguard
Avalanche Studios	Sweden	Media	Acquisition	Nordisk Film	\$138m	Nordisk Film
Translate Bio	US	Health	IPO	-	\$121m	Atlas Venture Baupost Group Brookside Capital Fidelity GlaxoSmithKline Leerink Partners Merck & Co Merck Ventures Monsanto Omega Funds Partners Innovation Fund Pfizer Rock Springs Capital Ronald Renaud 2014 Irrevocable Family Trust undisclosed investors
VictorOps	US	IT	Acquisition	Splunk	\$120m	Costanoa Venture Capital Foundry Group JF Shea
Simility	US	IT	Acquisition	PayPal	\$120m	Accel Partners Array Ventures PayPal Valley Fund Trinity Ventures
Aptinyx	US	Health	IPO	-	\$102m	Adage Capital Management Adams Street Partners Agent Capital Bain Capital Beecken Petty O'Keefe & Company Frazier Healthcare Goudy Park Capital HBM Healthcare Investments Longitude Capital LVP Life Science Ventures Nan Fung Group New Leaf Venture Partners Northwestern University Osage University Partners Partner Fund Management PathoCapital Rock Springs Capital
Neon Therapeutics	US	Health	IPO	-	\$100m	Access Industries Clal Biotechnology Industries OJSC Pharmstandard Third Rock Ventures
Magenta Therapeutics	US	Health	IPO	-	\$100m	Access Industries Alphabet Atlas Venture Be The Match BioTherapies Casdin Capital EcoR1 Capital Eventide Funds Partners Innovation Fund Third Rock Ventures Watermill Asset Management



MONTHLY ANALYSIS

Home24, a Germany-based online home products retailer backed by e-commerce holding group Rocket Internet, raised €150m (\$174m) in an IPO in Germany. The company priced just over 6.5 million shares at €23 each, near the top of the offering's €19.50 to €24.50 range, giving it a market capitalisation of more than \$690m. Home24 runs an online platform that sells furniture, lighting products or bedding to customers in Germany, France, Italy, the Netherlands, Austria, Switzerland, Belgium and Brazil on behalf of more than 500 producers.

Entertainment company Nordisk Film has bought one of its portfolio companies, Sweden-based games maker Avalanche Studios, for a total of €117m. Nordisk paid a \$98m to acquire the remaining shares in Avalanche – it already owned a minority stake. The corporate previously injected \$10m in April 2017, though it is not clear when it supplied the remaining money. Founded in 2003, Avalanche Studios develops games with a focus on open world action. The company will continue to develop its current projects.

Translate Bio, a biopharmaceutical company backed by agribusiness Monsanto and pharmaceutical firms GlaxoSmith-Kline, Merck & Co, Pfizer and Merck Group, raised more than \$121m when it floated on the Nasdaq Global Select Market. The company increased the number of shares in the IPO from 7.7 million to 9.35 million, and priced them at \$13, in the middle of the \$12 to \$14 range it had set. Formerly known as RaNA Therapeutics, Translate is working on messenger RNA therapies to treat diseases associated with gene or protein dysfunction. Its core platform was initially developed at pharmaceutical firm Shire.

VictorOps, a US-based IT incident management platform backed by property developer JF Shea, agreed to an acquisition by big data software developer Splunk for approximately \$120m in cash and stock. The transaction is subject to closing conditions. The majority of the amount will be paid in cash, though Splunk did not offer further details. Founded in 2012 as VictorOpx, VictorOps has created an incident management platform that helps IT staff solve problems. The platform will be integrated into Splunk's offering.

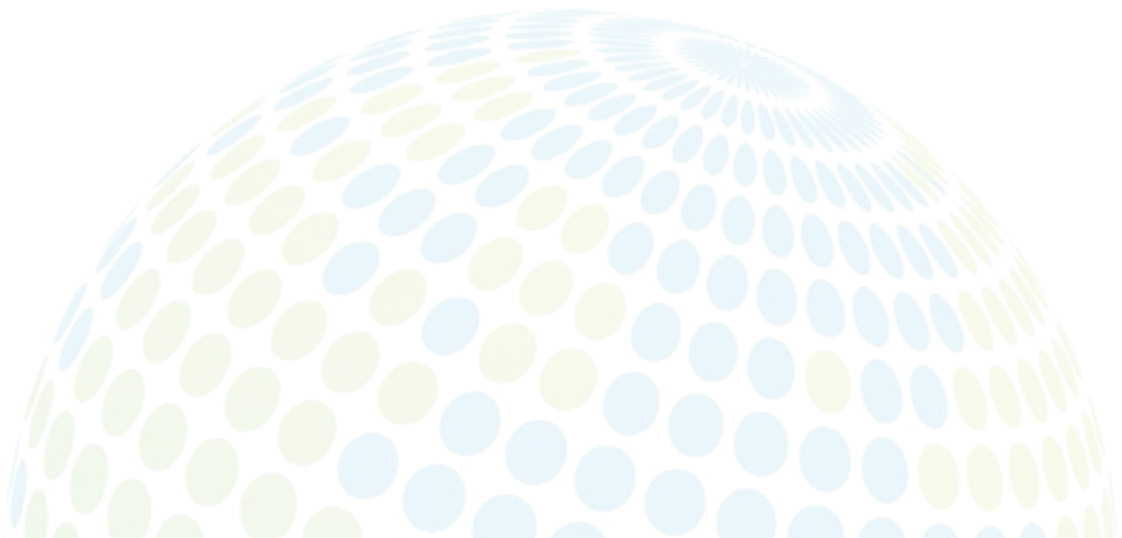
Payment services provider PayPal agreed to acquire US-based fraud detection software developer and portfolio company Simility for \$120m. Simility's software, the Adaptive Decisioning Platform, detects and prevents fraudulent transactions in real time by combining artificial intelligence and big data analytics. It can also be tuned for specific scenarios. PayPal plans to integrate the technology into its own offering.

Aptinix, a US-based neurologic disorder drug developer backed by property and healthcare group Nan Fung Group, raised approximately \$102m when it floated on the Nasdaq Global Select Market. The company issued 6.4 million shares at \$16 each, at the top of the IPO's \$14 to \$16 range, giving it a \$520m market capitalisation. Founded in 2015, Aptinix is developing synthetic small molecules to treat disorders of the brain and nervous system.

Neon Therapeutics, a US-based immuno-oncology treatment developer backed by pharmaceutical company Pharm-standard International and Access Industries, raised \$100m when it floated. Neon Therapeutics is developing therapeutics vaccines and T-cell therapies for cancer. Its approach relies on targeting neoantigens – antigens that are foreign to the body but present in cancer cells.

Magenta Therapeutics, a bone marrow transplant technology developer backed by corporates Alphabet, Access Industries and healthcare provider Partners Healthcare, raised \$100m in its IPO. The company issued almost 6.7 million shares on the Nasdaq Global Market at \$15 each, in the middle of the \$14 to \$16 range it had set earlier. Its shares opened at \$15.92 on the first day of trading and closed at \$14.50. Magenta is working on treatments for blood cancers, and autoimmune and genetic diseases based on bone marrow transplants that use gene-modified stem cells. ♦

Note: Monthly data can fluctuate as additional data are reported after GCV goes to press



QUARTERLY ANALYSIS

The following is a snapshot of the data we have collected on investment activity over the past three months. To verify reported deals, we contact about 300 corporate investors each quarter – these comprise roughly 18% of the global CVCs we cover, but account for most of the deals that are made public.

Strong second quarter and all-time high first half

Kaloyan Andonov, reporter, GCV Analytics



In the second quarter of 2018, GCV Analytics tracked 721 funding rounds involving corporate venturers, a 21% increase over the 598 rounds recorded in the same period of 2017. Estimated total investment also surged to just over \$50bn, up 83% from the \$27.3bn recorded in the second quarter last year.

The strong performance of corporate venturing naturally contributed to a notable results on a half-year basis. The first half of 2018 was the strongest we have registered in terms of both deal volume and value. Its 1,354 rounds outnumber deals recorded by GCV Analytics in any previous half, along with the estimated \$85bn of capital deployed, also a historical high.

More than half of the funding rounds in the second quarter (388) took place in the US, while China was second with 87 deals, India third with 42, and the UK fourth with 38.

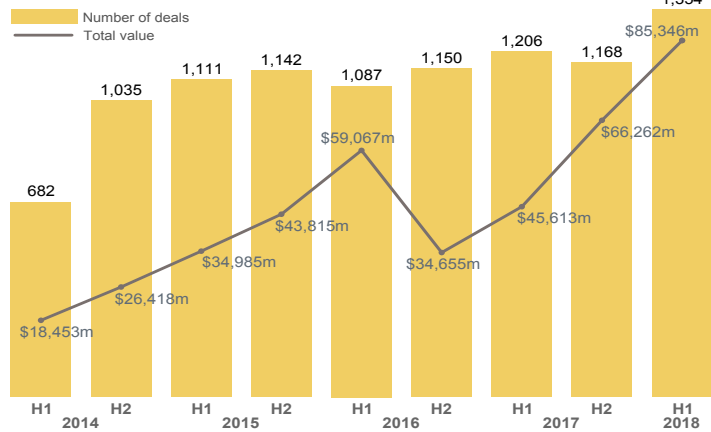
When comparing the second quarter with the first this year, there was a 14% increase in deal count, up from 633. Estimated total investment also went up from \$36.31bn, representing a 38% rise.

Emerging enterprises from the health, IT and financial services sectors proved the most attractive for corporate venturers, accounting for at least 116 deals each. The top funding rounds by size, however, were raised mostly by companies from the transport and financial services sector.

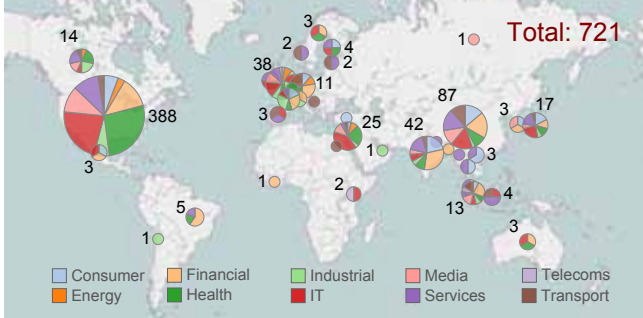
The most active corporate investors came from the financial services, IT, health, media and industrial sectors, as illustrated by the heatmap overleaf.

The leading investors by number of deals were diversified internet conglomerate Alphabet, e-commerce firm Alibaba and telecoms firm SoftBank. The list of corporate venturers involved in the largest deals by size was topped by internet company Tencent, along with SoftBank and Alphabet.

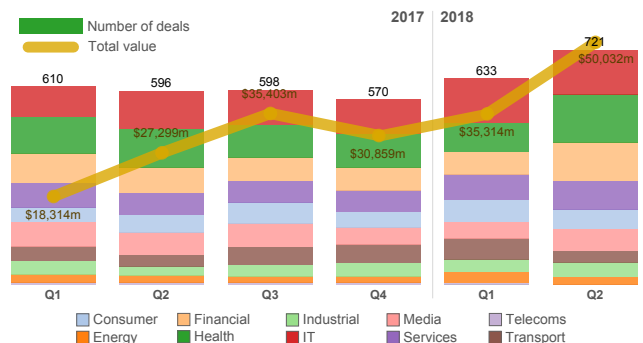
Corporate-backed deals 2014-18



Global view of deals Q2 2018



Deals 2017-Q2 2018



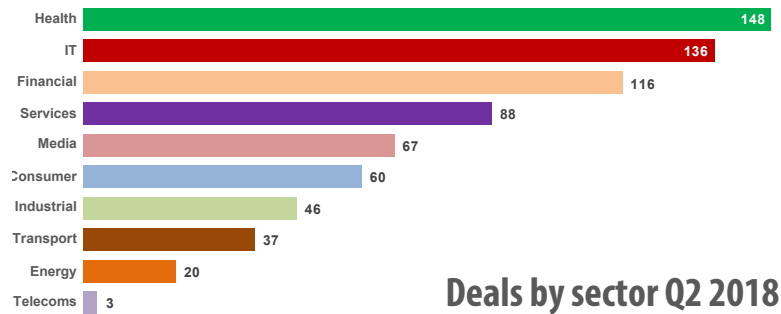
QUARTERLY ANALYSIS

Deals

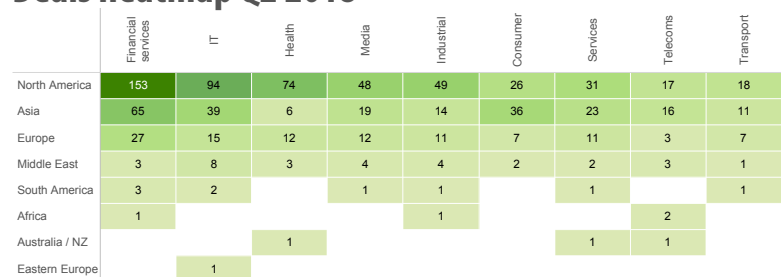
Most of the funding from the biggest rounds reported in the second quarter went to emerging enterprises in the transport and financial services sectors. Four of the top 10 rounds were above \$1bn.

China-based financial services firm Ant Financial – an affiliate of Alibaba – closed a \$14bn series C round, backed by unnamed existing investors and Singapore's sovereign wealth fund GIC. Spun out in 2011, Ant Financial offers various financial products developed by or related to Alibaba. The company's major product is Alipay, which accounts for more than half of China's mobile payments market.

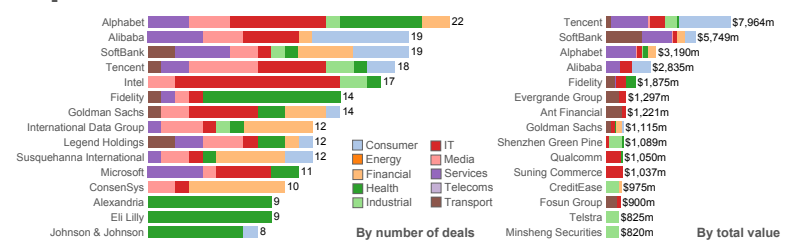
China-based online group buying platform Pinduoduo closed a \$3bn funding round led by Tencent. Venture capital firm Sequoia Capital reportedly also participated in the round, which valued Pinduoduo at \$15bn. Founded in 2015, Pinduoduo operates an e-commerce offering that allows users to use social media platforms, such as mes-



Deals heatmap Q2 2018



Top investors Q2 2018



Top 15 investments Q2 2018

Company	Location	Sector	Round	Size	Investors
Ant Financial	China	Financial services	C	\$14bn	Baillie Gifford Canada Pension Plan Investment Board Carlyle Group Discovery Capital General Atlantic GIC Janchor Partners Khazanah Nasional Berhad Primavera Capital Silver Lake T Rowe Price Temasek Warburg Pincus undisclosed investors
Pinduoduo	China	Consumer	-	\$3bn	Sequoia Capital Tencent
GM Cruise Holdings	US	Transport	-	\$2.25bn	SoftBank
Manbang Group	China	Services	-	\$1.9bn	Alphabet China Reform Holding GSR Ventures Sequoia Capital SoftBank Tencent Ward Ferry
Faraday Future	US	Transport	Stake purchase	\$860m	Evergrande Group
UBtech	China	Industrial	C	\$820m	CDH Investments CreditEase Haier Industrial and Commercial Bank of China Minsheng Securities Shenzhen Green Pine Capital Partners Telstra Tencent
Huitongda	China	Services	-	\$717m	Alibaba
Hellobike	China	Transport	E and beyond	\$700m	Ant Financial Fosun Group undisclosed investors
SenseTime	China	IT	C-plus	\$620m	Fidelity Hopu Investments Qualcomm Silver Lake Tiger Global Management undisclosed investors
SenseTime	China	IT	C	\$600m	Alibaba Suning Commerce Temasek
Lyft	US	Transport	E and beyond	\$600m	Fidelity Senator Investment Group
We Doctor	China	Health	-	\$500m	AIA Group NWS Holdings
VIPKid	China	Services	D	\$500m	Coatue Sequoia Capital Tencent Yunfeng Capital
Byton	US	Transport	B	\$500m	Amperex Technology FAW Group Tsinghua University undisclosed investors
Singulato Motors	China	Transport	C	\$474m	Undisclosed investors



QUARTERLY ANALYSIS

saging service WeChat, to share details of products they want to buy and form purchasing groups to secure discounts of up to 90%.

SoftBank provided \$2.25bn in funding to GM Cruise Holdings, an autonomous-driving spinoff of automotive maker General Motors (GM). Founded in 2013, Cruise is developing autonomous vehicle technology that will be used in GM's Bolt electric vehicles. The technology is expected to reach market in 2019. GM paid \$1bn for the company in early 2016, giving an exit to semiconductor manufacturer Qualcomm.

China-based trucking services marketplace Manbang Group raised \$1.9bn in a round featuring Tencent and subsidiaries of Alphabet and SoftBank. The round valued the company at \$6.5bn. Alphabet's investment came through its CapitalG unit, while SoftBank took part through the SoftBank Vision Fund. Formed in 2017 and previously known as Full Truck Alliance Group, Manbang has an online platform through which customers looking to ship goods can connect to truckers with surplus space in their vehicles.

Evergrande Health Industry, a health-related division of property developer Evergrande, paid \$860m for a 45% stake in US-based electric vehicle developer Faraday Future. Founded in 2014, Faraday Future develops connected electric automobiles that will boast features such as autonomous parking capabilities and facial recognition.

Exits

GCV Analytics tracked 64 corporate-related exits during the second quarter of 2018, including 39 acquisitions, 23 initial public offerings (IPOs), a merger and a stake sale. The majority of these transactions took place in the US, China and Europe.

Top exiting corporates this quarter were financial services firm Fidelity, semiconductor manufacturers Intel and Qualcomm, and cloud working platform Salesforce, which reported at least five exits each.

The total estimated amount of exited capital in Q2 2018 was \$33.9bn. However, a single transaction (\$16bn) accounted for nearly half the total.

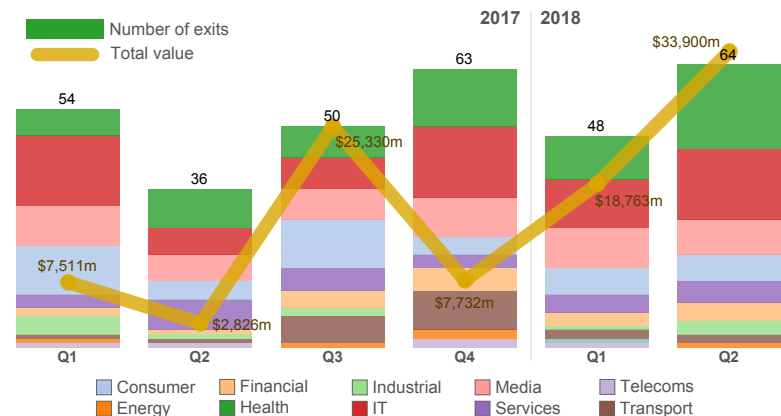
US-based retailer Walmart agreed to purchase a 77% stake in India-based e-commerce marketplace Flipkart for \$16bn. The transaction gave several corporates billion-dollar exits and valued Flipkart at \$20.8bn. The SoftBank Vision Fund reaped just over \$4bn, after having invested \$2.5bn for a stake of about 20% in 2017. Other exiting corporates included e-commerce and media company Naspers, media group Bennett, Coleman & Co, research firm International Data Group and financial services firm Morgan Stanley. Founded in 2007, Flipkart runs a diversified e-commerce platform that sells products spanning more than 80 categories.

China-based consumer electronics producer Xiaomi, whose backers included Qualcomm, raised \$4.72bn in an IPO on the Hong Kong Stock Exchange. Xiaomi issued roughly 2.18 billion shares at the low end of the HK\$17 to HK\$22 (\$2.17 to \$2.80) range it had set. Founded in 2010, Xiaomi manufactures electronics products, such as smartphones, smart home devices, tablets and television sets running on its proprietary operating system.

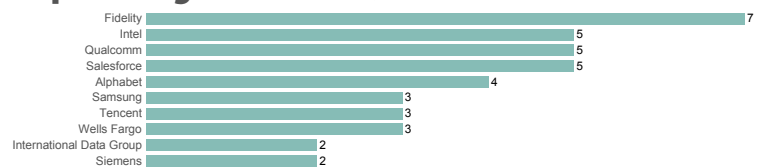
Local services platform Meituan-Dianping agreed to buy China-based bike rental service Mobike for \$2.7bn. The transaction was reportedly brokered by Pony Ma, chief executive of Tencent, which also owns a stake in Meituan-Dianping. Founded in 2015, Mobike operates an app-based dockless bike-sharing service that has attracted hundreds of millions of registered users.

Online payment platform PayPal agreed to acquire Sweden-based mobile payment technology developer iZettle for \$2.2bn, allowing a host of corporate investors to exit. The corporates in question included Intel, payment services firms Mastercard and American Express as well as financial services firm Santander. Founded in 2010, iZettle has built a small card reader that enables small businesses to accept contactless and mobile payments, plus software for taking pay-

Exits 2017-Q2 2018



Top exiting investors Q2 2018



QUARTERLY ANALYSIS

Top 15 exits Q2 2018						
Company	Location	Sector	Type	Acquirer	Size	Exiting investors
FlipKart	India	Consumer	Acquisition	Walmart	\$16bn	Accel Partners Baillie Gifford Bennett Coleman & Company DST Global GIC Greenoaks Capital Iconiq Capital International Data Group Morgan Stanley Naspers Qatar Investment Authority Sofina SoftBank Steadview Capital T Rowe Price Tiger Global Management
Xiaomi	China	Consumer	IPO	–	\$4.72bn	All-Stars Investment China Mobile CICFH Entertainment DST Global GIC Hopu Fund International Data Group Morningside NGP Qiming Venture Partners Qualcomm SF Express Temasek Yunfeng Capital
Mobike	China	Transport	Acquisition	Meituan-Dianping	\$2.7bn	Bertelsmann Bocom International Ctrip.com Farallon Capital Management Hillhouse Capital Management Hon Hai Huazhu Hotels Group ICBC International Joy Capital Panda Capital Qiming Venture Partners Sequoia Capital Temasek Tencent TPG Warburg Pincus private investors
Izettle	Sweden	Financial services	Acquisition	PayPal	\$2.2bn	American Express Creandum Dawn Capital Fourth Swedish National Pension Fund Greylock Partners Hasso Plattner Ventures Index Ventures Intel Mastercard Northzone Santander SEB Victory Park Capital Zouk Capital undisclosed investors
Adaptive Insights	US	IT	Acquisition	Workday	\$1.55bn	Bessemer Cardinal Venture Capital Information Venture Partners JMI Equity Monitor Ventures Onset Ventures RBC Technology Ventures Salesforce Wells Fargo
Glassdoor	US	Services	Acquisition	Recruit Holdings	\$1.2bn	Alphabet Battery Ventures Benchmark DAG Ventures Dragonair Investment Group Sutter Hill Ventures T Rowe Price Tiger Global Management
Dropbox	US	IT	IPO	–	\$869m	Accel Partners angel investors Baillie Gifford Benchmark BlackRock Fidelity Foundation Capital G Squared Goldman Sachs Kaiser Permanente Mark Cuban Mass Mutual Salesforce Wellington Partners Y Combinator
Pivotal	US	IT	IPO	–	\$638m	Dell Ford Motor General Electric Silver Lake VMWare
DocuSign	US	IT	IPO	–	\$629m	Accel Partners Alphabet Bain Capital BBVA Brookside Capital ClearBridge Investments Comcast Cross Creek Advisors Dell Deutsche Telekom EDBI Frazier Technology Ventures Generation Investment Management Ignition Partners Intel Kleiner Perkins Caufield & Byers Mitsui NTT Docomo Recruit Holdings Salesforce Samsung Sands Capital SAP Scale Venture Partners Second Century Ventures Sigma Partners Telstra Visa Wasatch Advisors Wellington Management WestRiver Capital
Counsyl	US	Health	Acquisition	Myriad Genetics	\$375m	Goldman Sachs Illumina Perceptive Advisors Rosemont Seneca Technology Partners
Weebly	US	IT	Acquisition	Square	\$365m	Baseline Ventures Felicis Ventures Maples Investments Sequoia Capital Tencent
Huya	China	Media	IPO	–	\$180m	Banyan Partners Engage Capital Partners Morningside Ping An Insurance private investors
Home24	Germany	Consumer	IPO	–	\$174m	Baillie Gifford Kinnevik Rocket Internet Vanguard
Homology Medicines	US	Health	IPO	–	\$166m	5AM Ventures Alexandria Arch Venture Partners Deerfield Management Fidelity HBM Healthcare Investments Maverick Ventures Novartis Rock Springs Capital Temasek Vida Ventures Vivo Capital
Avalanche Studios	Sweden	Media	Acquisition	Nordisk Film	\$138m	Nordisk Film

ments using smartphones.

Adaptive Insights, a US-based business planning software provider backed by Salesforce, was bought for \$1.55bn by cloud-based human resources management platform Workday. Founded in 2003 as Adaptive Planning, Adaptive Insights runs a cloud-based platform which enables organisations to build models of their operations and collaborate on planning.

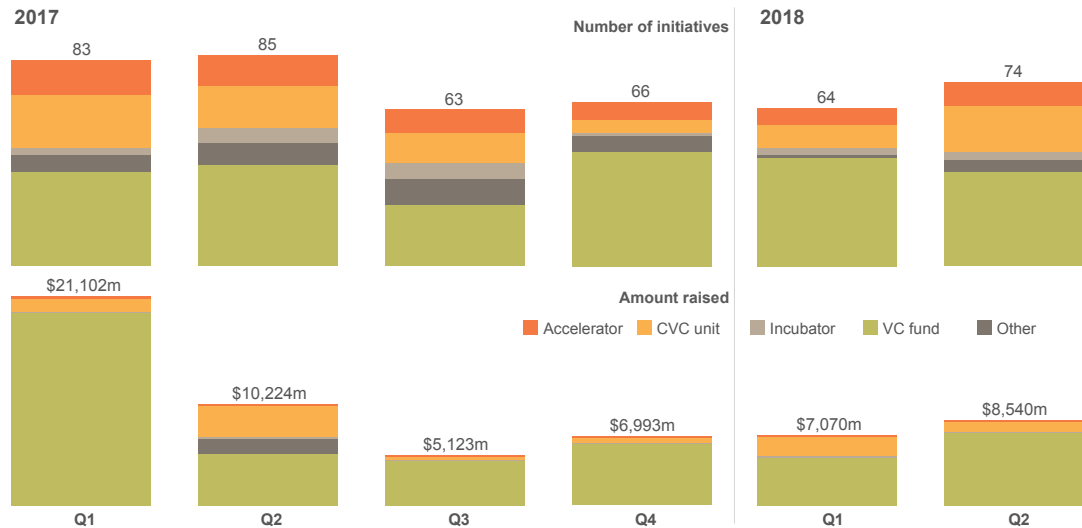
Funding initiatives

Corporate venturers supported a total of 74 fundraising initiatives in the second quarter of 2018, down from the 85 initiatives reported during the same period in 2017. The estimated total capital raised, \$8.54bn, was also lower than last year's second-quarter figure of \$10.22bn.



QUARTERLY ANALYSIS

Funding initiatives 2017-18



The initiatives include 38 announced, open and closed VC funds with corporate limited partners (LPs), 19 corporate venturing units, nine corporate-backed accelerators and three corporate-backed incubators, among others.

Singapore-based logistics provider GLP launched a \$1.6bn investment fund targeting the logistics ecosystem in China. The fund will be managed by Hidden Hill Capital, the private equity arm of its local subsidiary, GLP China, and its limited partners include unnamed insurance providers and long-term institutional investors, such as investment firm China Post Capital. Hidden Hill Modern Logistics Private Equity Fund will be the only fund in China dedicated entirely to the logistics sector, according to GLP, and will target innovative companies in the space.

China-based cryptocurrency exchange Binance set up a \$1bn fund to invest in blockchain and cryptocurrency startups. The Community Influence fund will be denominated in Binance's own cryptocurrency, BNB, and will invest both directly and through other funds. Rather than invest in existing funds, however, Binance will seek experienced fund managers – defined by the company as those who have managed at least \$100m in assets – to create new funds. The company also hopes to launch a Binance Ecosystem Fund with 20 as yet unnamed partners.

China-based venture capital firm Qiming Venture Partners closed a \$935m fund, securing capital from limited partners including medical practice and research group Mayo Clinic. Qiming Venture USD Fund VI's LPs include Princeton University, Massachusetts Institute of Technology and Duke University, among others. The vehicle was announced alongside two other funds – the Chinese yuan-denominated Qiming Venture RMB Fund V, which has attracted RMB2.1bn (\$334m) in commitments, and Qiming US Healthcare Fund I, which has secured \$120m.

Pharmaceutical firm Pfizer revealed plans to invest \$600m in biotech and other emerging technologies through new corporate venturing division Pfizer Ventures. Early-stage neuroscience companies will be a key focus, with approximately \$150m allocated to such startups. Initial areas of interest will include neuro-degeneration, neuro-inflammation and neuro-metabolic disorders. The \$600m comes as part of a restructuring effort that combines Pfizer Venture Investments, the company's existing corporate venturing arm, with research and development equity investment vehicle R&D Innovate. Pfizer Venture Investments, founded in 2004, has grown to a portfolio of more than 40 companies. It has invested about \$500m to date, bringing the size of Pfizer's corporate venturing efforts to more than \$1bn.

Trade organisation Electronic World Trade Platform (EWTP) launched a \$600m investment fund featuring Alibaba and Ant Financial as anchor investors. EWTP was first proposed by Alibaba co-founder and chairman Jack Ma in 2016 to help lower trade barriers and support the international expansion of small and medium-sized enterprises by helping them operate online. The EWTP Technology and Innovation Fund will seek to invest in companies expanding internationally and will support technology startups across the world. Alibaba will provide expertise on logistics, payment and e-commerce.

China-based internet group Baidu formed \$500m growth-stage fund Changcheng Investment Partners to back internet and artificial intelligence technology developers. The \$500m figure represents the fund's first phase, though it did not reveal plans for a final close nor whether Baidu was providing the entirety of the capital. Li Xinzhe, Baidu's former chief financial officer, will run the fund as chief executive. Changcheng will operate as an independent entity and will invest \$20m to \$30m in each deal. Its formation follows Baidu's launch of two other funds, Baidu Ventures and Baidu Capital, in 2016.

VC firm Sofinnova Partners launched a €275m (\$340m) fund with commitments from insurance provider CNP Assurances and an undisclosed China-based biopharmaceutical company. Limited partners include French state-owned



QUARTERLY ANALYSIS

Top 10 funding initiatives Q2 2018

Fund	Type	Size	Country	Sector	Investors
Norwest Venture Partners XIV	VC fund	\$1.5bn	US	IT, consumer, health	Wells Fargo (Norwest Venture Partners)
Alliance Ventures	CVC unit	\$1bn	France	Transport	Renault, Mitsubishi, Nissan
Shenzhen Tiantu Xingnan Innovative Consumption Industry M&A Investment Partnership	CVC unit	\$475m	China	Sector-agnostic	Tiantu Capital, Zhou Heiya
Playtika Growth Investments	CVC unit	\$400m	Israel	Media	Playtika
ERVE III	VC fund	\$375m	US	Consumer, financial, health, IT	Fidelity, Eight Roads Ventures
B Capital Fund	VC fund	\$360m	US	IT, transport, industrial, health, financial, services	Boston Consulting Group
Baidu Ventures III	VC fund	\$318m	China	IT	Baidu
Cathay Smart Energy Fund	VC fund	\$239m	China	Energy	Cathay Capital, Total, government of Hubei
Apollo Southeast Asia	VC fund	\$200m	China	Transport	Baidu, Asia Mobility Industries
Aspect Ventures II	VC fund	\$181m	US	IT, health, transport	Cisco Systems

investment bank BPIFrance and the government-owned Danish Growth Fund. Other investors in the Crossover Fund I feature family offices, such as Fidim and KCK, and other unnamed entities. Sofinnova originally targeted a €250m close for the fund, which will focus on the biopharmaceutical and medical device sectors. It will invest in about 15 late-stage private and public companies, with 80% of capital going to Europe-based businesses.

China-based venture capital firm AlphaX Partners closed its first fund at RMB2bn with backing from online lending platform CreditEase, outdoor advertising firm Focus Media and cybersecurity software producer Qihoo 360. Venture capital and startup services provider Zero2IPO Group and government guidance fund China International Capital Corporation also contributed to the fund. The fund is dollar and renminbi-denominated. Founded in 2016, AlphaX targets China-based high-growth companies developing technologies in the online, consumer, enterprise software, artificial intelligence, sports and culture sectors.

Idinvest Partners, a France-based growth equity firm backed by several corporate LPs in the past, raised €180m for the first close of Idinvest Digital Fund III. The firm did not disclose the investors, revealing only that they consisted of "a number of existing and new European LPs", including some corporates. This third fund is digital-focused, targeting €300m for its final close. Idinvest's past corporate backers include networking technology manufacturer Cisco, insurance group Allianz, media company Lagardère and marketing and public relations firm Up Group.

Aerospace and defence company Lockheed Martin doubled the amount of funding its corporate venturing arm Lockheed Martin Ventures has under management to \$200m. The additional \$100m follows recent tax reform legislation in the US and will primarily go to early-stage startups in the areas of sensor technologies, autonomy, artificial intelligence and cyber technology. ◆

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