October 2017

Global Corporate Venturing

Innovation in Asia – the first congress

INSIDE

Quantum venturing explored

Energy sector recharges

Gaule's question time

Contents

Global Corporate Venturing

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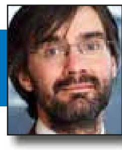
EDITORIAL

Asia reaches new heights

James Mawson, editor-in-chief



The first Global Corporate Venturing (GCV) Asia Congress last month in Hong Kong had a focus on the sectors in which the region is taking a leadership position, such as genomics, robotics and sustainability and mobility, as well as new ideas in corporate venturing to help the industry scale up and become more global.

GCV, as a trade paper for the Global 1000 corporations taking stakes in startups or committing to VC funds, was delighted that our first GCV Asia Congress in Hong Kong reflected the island's unique heritage as a centre of world finance and a bridge between north and south Asia, as well as dynamic entrepreneurial and venture ecosystem in itself and through its connections with mainland China.

The region's successes over the past few years has been reflected in the first of the annual GCV Awards to be held outside London, reflecting the winds of change sweeping the broader venture industry as people look east for the latest ideas and the capital to fund them. The soft power influence this brings, as well as capital returns and shaping the future, cannot be underestimated.

The GCV Asia Congress brought together leading corporate venturers from the region, such as Tencent, Xiaomi, JD, Meituan, 58.com, Line, Samsung, Rakuten, Sompo, Hyundai, Yamaha, Westpac, Telstra and PLDT, along with top VCs, such as Gobi and Insignia, and corporate innovation executives, such as Alvin Wang from Vive at HTC, along with their international peers keen to learn more about the region, including Shell and BP in energy and mobility through to Eli Lilly and Johnson & Johnson in healthcare.

China overtook the US by value of corporate venturing activity last year

These speakers shared insights and best practices on how to invest and work collaboratively in the region and link with international peers. China overtook the US by value of corporate venturing activity last year and the rise of its entrepreneurial ecosystem has been driven in many ways by competition between corporations to support them as well as work with VCs to create more than 100 unicorns – private companies worth more than $1bn.

All industries are looking to how Asia is developing the innovation processes and best practices to take them into the future. There are numerous examples of dragon and tiger tech – Shenzhen for drones, WeChat as a platform, North Korea – according to US intelligence services – for blockchain and Bitcoin, Lilly Asia for healthcare, Hong Kong as a smart city and HTC for virtual and augmented reality – and much to learn from the financing structures that enable them.

The GCV Asia Congress, therefore, had the roundtables to break down what is happening in each area:

- How data and technology are transforming healthcare.
- What language will machines speak with their artificial intelligence.
- Mobility drives into the future.
- Blockchain links from logistics to financ.e
- Demonetarisation – fintech future starts in Asia.
- Sustaining the region's smartest cities – clean energy and smart grids.
- Gaming communications' future.
- Sports: the digital revolution coming from China.
- Sovereign wealth funds' collaboration with corporations.
- Manufacturing Asia's next generation of competitiveness.

GCV has been hosting events in the region and working with governments in Shanghai, Tokyo and Singapore for the past five year,s and we were delighted with the support and help of our sponsors, Tencent, DLA Piper, Proseeder, Denning & Company; local partners, CiEvents, Hong Kong Venture Capital Association, Japan Venture Capital Association and Singapore Venture Capital & Private Equity Association; and all those in the corporate venture ecosystem.

The next issue will look at the growth and successes in Brazil after the third annual Corporate Venture in Brasil conference hosted by Apex-Brasil in partnership with GCV. ◆

NEWS

Tudor enters new period at Centrica

Jonathan Tudor, a managing director of oil major BP's corporate venturing unit and a Global Corporate Venturing Rising Star last year, has accepted "an offer I could not refuse" and joined UK-listed energy utility Centrica as its London-based head.

Tudor was venture director at Castrol InnoVentures, a division of BP before its reorganisation into BP Ventures over the past year. He had been at Castrol and BP since 2012, and found ample support as a "self-confessed geek, who likes technology with the allure of making money in addition to shifting the corporate dial".

Following three years at Germany-based Schott Gas, Tudor's initial move into investment was as an investment director at Qinetiq Ventures from 2002 to 2007 before its secondary buyout backed by Coller Capital led to the formation of CG Innovation Partners. He is also head of the British Private Equity and Venture Capital Association's corporate venturing committee.

Centrica launched Centrica Innovations in January to invest £100m ($125m) in startups over the next five years. The unit is co-led by Sam Salisbury and Christophe Defert.


Jonathan Tudor

Nadkarni energises Total Energy Ventures

Girish Nadkarni, former president of Switzerland-based power and automation group ABB's corporate venturing unit and member of Global Corporate Venturing's Powerlist 100 last year, has joined France-based oil major Total to lead its corporate venturing unit.

He said he would move to Paris as president of Total Energy Ventures (TEV). Francois Badoual, former CEO of TEV in France, has moved to San Francisco to be president of New Energies Ventures USA.


Girish Nadkarni


Francois Badoual


Grant Allen

After Nadkarni's departure, Grant Allen stepped up to head ABB Technology Ventures and cover the US and Americas, and has increased the amount the group invests to about $50m a year, including $10m for venture capital fund commitments and six to eight direct deals.

Nadkarni had been president of ABB Technology Ventures since 2009 and made strategic equity investments in alternative energy, clean energy, smart grids and superconductivity. He instigated the refounding of ABB's corporate venturing unit seven years ago. Before setting up ABB Technology Ventures, he was senior vice-president of ABB's robotics division.

Lin engineers new job

Alex Lin, formerly head of ecosystem development at the Singapore government's innovation agency, SGInnovate, has joined integrated engineering group ST Engineering, according to Tech in Asia.

Lin will head corporate venturing unit ST Engineering Ventures, which was set up with $150m in capital in July. 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.

The move was announced as ST Engineering Ventures invested $5.8m in US-based endpoint security software startup Janus Technologies, in a deal that will help it bolster its own hardware-based cybersecurity offering.

Vincent Chong, ST Engineering's president and chief executive, said: "This is the first investment by our corporate venture capital unit in companies with cutting-edge technologies or breakthrough innovations. Our investment will benefit not just the group's cybersecurity business, but will also enable Janus Technologies' organic growth as it will have access to our established business networks and channels."

Lin left SGInnovate last month. He had been head of the agency since December 2013, when it was still known as Infocomm Investments. Lin had previously been a director at Singapore University of Technology and Design from August 2012 to October 2013, and before that was an entrepreneur-in-residence at NTU Ventures, the tech transfer office of Nanyang Technological University. He holds a PhD in cognitive science, awarded by Stanford University in 1996.

NEWS

Li to focus on Baidu Capital…


Jennifer Li

Jennifer Li, chief executive of China-based internet group Baidu's $3bn strategic investment arm, Baidu Capital, has stepped down as the company's chief financial officer, Reuters reported.

Herman Yu, who held the that position at another internet company, Weibo, will replace Li, who is standing down from the role after almost 10 years, though she will continue as Baidu Capital's CEO.

Yu had been finance chief at Weibo for two years, having previously worked at design software publisher Adobe Systems and electronic payments processor Verifone. He also sits on the board of several China-based tech firms including e-commerce marketplace 58.com and logistics operator ZTO Express.

Li was ranked 15th on Global Corporate Venturing's Powerlist last year.

… as Karen Zhang finds General Atlantic


Karen Zhang

Karen Zhang, executive director for investment at China-based internet company Baidu, has moved on to principal and head of China internet and technology at growth equity firm General Atlantic.

Zhang joined Baidu in February 2015 and her deals covered mid to late-stage technology and media, and included Lianjia.com, Miya Baby, Edaixi, Doumi, MWee, SMI Culture, LeCheBang, Kuaishou, Womai.com and Bolomi. As a China-based director at Japan-listed investment company Jafco for more than six years, she sat on the boards of Boqii.com, Showworld, EasyPrint, iHaveu.com, Motor2 and DHGate.com. Those board positions can be added to successful flotations of Tarena and eHi on US stock exchanges, and trade sales of 51wan.com, acquired by Great Wall Cartoon for $80m, and Amsky at a five-times return on investment.

Zhang first managed companies while at Goldman Sachs before becoming an associate in the global principal investment division of investment banking peer Merrill Lynch until September 2008. At Merrill Lynch, she made four growth equity deals of between $20m and $40m in the greater China area.

Allen joins Amazon from Mastercard


Jeff Allen

Jeff Allen, Mastercard's vice-president for strategic investments, has become principal for strategic business development at e-commerce firm Amazon. Allen joined credit card operator Mastercard in August from investment bank Sagent Advisors and was a thought leader in the industry, having published in Global Corporate Venturing in February his "five success factors in strategic investing". When he was named a GCV Rising Star last January, Mastercard's portfolio consisted of about 20 active investments, including SecureKey, a Canada-based identity and authentication technology developer where he was a board observer and which raised C$27m ($20.5m) in October last year.

McKesson taps Williams and Mertol for CVC roles

McKesson Ventures, the corporate venturing arm of US-based healthcare services and IT provider McKesson Corporation, has hired Carrie Hurwitz Williams as principal and Irem Mertol as a director.

Hurwitz Williams will concentrate on strategic investments in companies developing technology or services that cover consumerism, channel development or retail transformation. The move to McKesson follows 15 years in the healthcare industry, most recently as vice-president of strategy and business development for digital behavioural medicine developer Omada Health. Mertol will source and plan investments and support portfolio management. She has been an investment banker, investor and operator in technology and healthcare services. Her last role was as director of client services and partnerships for health insurance provider Burd Health.

Madasamy moves from Qualcomm to $50m fund

Karthee Madasamy, former managing director and vice-president of mobile chipmaker Qualcomm's strategic investment unit, Qualcomm Ventures, is set to launch his own fund, LiveMint reported.

The vehicle is expected to be between $40m and $50m and will operate from Silicon Valley. It will invest in early-stage technology startups and is expected to launch within weeks. Madasamy is in the process of hiring a management team.

Madasamy stepped down from Qualcomm Ventures, where he was responsible for the unit's India fund, in June. He was replaced by Varsha Tagare. He had been with Qualcomm Ventures since 2006, during which time he led investments in companies including Waze, a GPS navigation software developer that was acquired by internet company Google for $966m in 2013.

Poland introduces $225m CVC fund of funds

The government of Poland has launched its Z800m ($225m) PFR NCBR CVC Fund of Funds, a vehicle that will invest in corporate venturing subsidiaries in the country.

The fund will be managed by PFR Ventures, the investment arm of the Polish Development Fund. The government is providing half the capital, with the remainder coming from private backers. The initiative is expected to generate six to nine corporate venturing funds with an average of Z80m to Z150m in size. Apart from capital, the government expects portfolio businesses to also gain access to the respective corporate's expertise. The funds will invest between Z5m and Z35m in domestic startups. They will operate from this year until 2023.

The call for submissions is open to both domestic and international corporations. In the latter case, the Polish government hopes a corporate can also assist with accelerated international expansion efforts by startups.

Maciej Ćwikiewicz, vice-president of PFR Ventures' management board, said: "So far on the Polish market there has been no institution supporting CVC funds. Thanks to PFR NCBR CVC this segment of the Polish VC market will be built in the near future."

Baidu launches $1.5bn Apollo Fund

China-based internet company Baidu announced the RMB10bn ($1.5bn) Apollo Fund aimed at the autonomous driving sector. The fund is set to back 100 self-driving car projects over the next three years. It will seek opportunities worldwide in the areas of software, hardware, vertical services and data providers.

The vehicle draws its name from Baidu's open-source autonomous driving platform Apollo, which has attracted 70 industry partners so far, including car manufacturers such as Hyundai. Baidu announced the latest iteration of the platform, Apollo 1.5, in conjunction with the Apollo Fund. Portfolio startups will gain access to the Apollo platform and to the ecosystem of partners.

The Apollo platform enables features such as high-definition maps, day and night obstacle detection and end-to-end deep learning. The platform also offers large-scale cloud computing that exploits real-time traffic data aggregating about a million kilometres a day. The platform currently powers self-driving cars in restricted environments but is expected to allow for simple urban road conditions by the end of the year. By the end of 2020, Baidu expects Apollo will power self-driving cars on motorways and open city roads.

Samsung sends $300m to auto technology fund

South Korea-based electronics producer Samsung has launched $300m automotive-focused investment vehicle Samsung Automotive Innovation Fund. It will make strategic investments in companies developing connected and autonomous vehicle products in areas such as smart sensors, machine vision, artificial intelligence, high-performance computing, connectivity, automotive safety, security and privacy technology.

The unit will bolster Samsung's own technology efforts in the sector. It has received licences to test its autonomous driving software and hardware on the road in California and Korea.

Samsung's portfolio companies in the sector already include autonomous car technology developer NuTonomy, vehicle communication system provider AutoTalks and collision warning system creator CarVi.

Samsung's first deal from the fund is a €75m ($89m) investment in TTTech, an Austria-based developer of networked safety control systems that help make industrial and transport electronics systems safer and more reliable. TTTech has a long-standing relationship with one of its investors, automotive manufacturer Audi, and has created automated driving systems for another carmaker, Volkswagen. It has also developed systems for planes and spacecraft.

The company previously received $55m of funding from Audi, semiconductor producer Infineon Technologies and industrial and power equipment manufacturer General Electric in early 2015. It was spun out of Vienna University of Technology in 1998.

Eight Roads finds path to $250m fund

Eight Roads Ventures, the investment arm of financial services conglomerate Fidelity International, has established a healthcare fund aimed at China-based startups, China Money Network reported.

The $250m vehicle will invest primarily in four healthcare-related areas – therapeutics, services, medical technology and IT and digital health. Approximately 40% of the money will go towards therapeutics. The fund is expected to be followed by a broader technology vehicle, though details are yet to emerge.

Eight Roads will also provide follow-on funding to existing portfolio businesses in the healthcare sector, in line with its patient capital approach.

Eight Roads' portfolio includes more than 100 healthcare businesses, of which more than 30 are based in China.

NEWS

Salesforce studies $50m AI fund

Salesforce Ventures, the corporate venturing subsidiary of US-based cloud computing platform Salesforce, has launched a $50m vehicle targeting startups in the artificial intelligence (AI) sector. The Salesforce AI Innovation Fund will back startups developing AI products built on the corporate's platform.

The fund has already made its first three investments, two of which had been disclosed previously though Salesforce did not reveal at the time it was investing through the AI Innovation Fund.

US-based sales support technology developer Highspot raised $15m in a series B round in July from Salesforce Ventures's new fund and Shasta Ventures, which led the round, as well as Madrona Venture Group. Switzerland-based data management software developer Squirro received $10m in series B funding in July that included the AI Innovation Fund and was led by Orange Growth Capital. Unnamed existing investors also contributed to that round.

US-based speech recognition platform TalkIQ secured $14m in series A capital in a round led by Scale Venture Partners, with participation from Salesforce Ventures' AI fund, internet company Line, Aspect Ventures, Felicis Ventures and Danhua Capital.

Salesforce's decision to set up the $50m AI Innovation Fund follows the first anniversary of its AI toolset Einstein.

Separately, Salesforce Ventures also revealed it has made a strategic investment in AI startup studio All Turtles and will use the partnership to co-create AI products for its platform.

iCubesWire to connect startups to funding

India-based digital marketing software provider iCubesWire has launched a $3m innovation fund that will search for early-stage technology startups, Businessworld has reported.

The fund will target companies in the artificial intelligence and progressive automation sectors, driving development of products that align with iCubesWire's own corporate philosophy. The company plans to make six investments from the fund before the end of March next year. Each commitment will be between $500,000 and $700,000, and iCubesWire will look to partner other investors with similar goals. It may also use the fund for acquisitions.

SMFG to connect to startups with Hoops Link

Japan-based financial services firm Sumitomo Mitsui Financial Group (SMFG) has launched innovation hub Hoops Link in Tokyo, the Bridge reported.

Hoops Link will build on the financial technology innovation efforts of IT Innovation Department, the open innovation unit SMFG established in 2015. It will work with local startups and host pitch meeings, networking events and seminars.

SMFG has also formed a partnership with US-based venture capital fund Work-Bench and Stanford University accelerator StartX. The bank plans to launch its own accelerator next year, according to the Bridge.

Credit Suisse creates impact investment unit

Switzerland-based banking group Credit Suisse will establish an impact investment division to back companies developing products or services that are beneficial to society, Reuters reported. The formation of the unit – Impact, Advisory and Finance (IAF) – was announced by Tidjane Thiam, chief executive of the bank.

Thiam said: "The IAF department will report to me and will direct, coordinate and facilitate activities across the bank which lead to impact investing and support our philanthropic advisory services on behalf of our private wealth, institutional and corporate clients."

IAF's investment strategy will be led by Marisa Drew, who has been with Credit Suisse for 14 years. She currently co-heads the firm's global market solutions division.

BMW begins 2018 edition of UK incubator

BMW Group UK, the UK subsidiary of the car manufacturer, has launched the 2018 edition of its BMW Innovation Lab incubator. It will look at startups aligned with one of BMW Group UK's four strategic goals – improving customer experience, automated operations, expanded access to BMW products and a wildcat category for ideas involving affordability, compliance and regulations.

Participants will undertake a 10-week mentoring program run in partnership with innovation-focused venture capital fund L Marks, which will provide fundraising support. BMW Group UK's leadership team will offer the startups advice and access to potential investors.

NEWS

PayPal processes fifth incubator cohort

US-based payment processing service PayPal has selected five fintech businesses for the next cohort of its incubator in India and will take a stake of undisclosed size in each, Tech in Asia reported. The program will take place in Chennai at PayPal's technology centre, where the companies will have access to the corporate's technology infrastructure, network and mentors. PayPal received more than 250 applications for the fifth cohort.

The company chose Finbox, which has developed a platform to facilitate online lending, NeoEyed, which has created an authentication process for online shoppers that it hopes will reduce the number of people abandoning their shopping cart, Paymatrix, a platform to simplify rental payments and tenant screening, Scalend, developer of a web app that helps financial services companies gain real-time insight into irregularities, and Tybo, which operates a hosted e-commerce platform that can be customised.

Shell unsheathes Singapore accelerator

Oil and gas company Shell has launched Singapore-based accelerator IdeaRefinery to support energy-related technology startups. Shell has partnered business consultancy company ImpacTech and National University of Singapore's NUS Enterprise for the 20-week initiative, which aims to bring early-stage startups to the point where they can raise money and grow.

Shell is interested in startups working on technology that will have an "energy impact", and cited energy storage and efficiency, sensor-based energy monitoring, energy transportation and clean energy generation as possible examples.

Startups selected to take part will be provided with free office space, mentoring from Shell executives, access to industry leaders, media coverage and exposure to investors at a final demo day during the corporate's Make the Future Singapore event in 2018. The advisory board of IdeaRefinery consists of Shell executives in Singapore, including Stephen McGrath, head of its corporate venture capital arm, Shell Technology Ventures. IdeaRefinery will not invest in the startups or retain intellectual property developed over the course of the program.

FirstMinute Capital finds Tencent for $85m close

UK-based venture capital fund FirstMinute Capital raised $25m from investors including internet group Tencent to reach an $85m second close, TechCrunch has reported. Tencent was joined by China-based property developer Nan Fung Group and entrepreneurs Cheung Chung-Kiu, Frederic Mazzella and Wes Nichols.

FirstMinute Capital aims to tap entrepreneurial expertise drawn from across Europe to support tech startups on the continent. Investors include Atomico, an investment firm set up Niklas Zennström, founder of communication platform Skype. The fund was launched by executive chairman Brent Hoberman, founder of online deals platform Lastminute.com. It had secured $60m for its first close in June.

FirstMinute will target startups in sectors such as medical, governmental and financial technology and robotics, as well as those with a focus on data, artificial intelligence and software-as-a-service, with valuations lower than $10m, initially investing between $250,000 and $750,000 in each company.

Hoberman said: "We believe emerging European technology startups will continue to excite, and build on the momentum that has seen 47 unicorn companies built in Europe in the last 10 years."

Asus finds Fenox VC for $50m fund

Taiwan-based laptop and smartphone producer AsusTek Computer (Asus) has formed a $50m fund in partnership with US-based venture capital firm Fenox Venture Capital.

The as-yet unnamed fund will invest in companies developing technologies in sectors that rely on the integration of software and hardware. such as the internet-of-things, big data, cloud, and virtual and augmented reality.

Asus is particularly interested in portfolio companies that could benefit from its strategic collaboration, with technology, design, manufacturing and post-sales partnerships in Asia all possibilities. The company is a relative newcomer to corporate venturing.

Fenox's investments include MindMeld, the artificial intelligence technology developer acquired by networking equipment maker Cisco for $125m in May, and Japan-based app monetisation platform Metaps, which went public in 2015.

Jonney Shih, chairman of Asus, said: "Finding the right global partner was a key step in our search for cutting-edge technologies that will enhance the experience of our customers. Fenox Venture Capital is one of the best partners to assist Asus in our global outreach due to their innate understanding of the Asian business culture and unmatched access to North America, Europe and the broader Asian market."

NEWS

SES signs up for Seraphim Space Fund

Communications satellite operator SES has provided an undisclosed sum to UK-based, space-focused venture capital fund Seraphim Capital. The financing will go to Seraphim Space Fund, which was formed to develop an ecosystem around space technologies.

Seraphim Space Fund had reached a £50m ($66m) first close in November last year, £30m coming from the government-owned British Business Bank. A second close of £80m was expected to take place by April, but the fund has provided no further updates. Other investors include aerospace company Airbus and spaceflight services provider Telespazio, along with the UK Space Agency and the European Space Agency (ESA).

SES hopes the investment will help further R&D for the space industry. Edgar Milic, vice-president of strategic business innovation at SES, will take a seat on the fund's advisory board alongside representatives from organisations including Airbus, Telespazio and the ESA.

Analysis: Rising Stars shows promotions and changes

James Mawson, editor-in-chief

There have been plenty of changes to the roles of many of those named as GCV Rising Stars in 2017. In the past nine months, 18 have been promoted or changed to more senior roles, including Karen Zhang, executive director for investment at China-based search engine provider Baidu, who has moved on to principal and head of China internet and technology at growth equity firm General Atlantic.

Zhang joined Baidu in February 2015, her deals covering mid to late-stage technology and media, including Lianjia.com, Miya Baby, Edaixi, Doumi, MWee, SMI Culture, LeCheBang, Kuaishou, Womai.com and Bolomi.

As a former China-based director at Japan-listed investment company Jafco for nearly six-and-a-half years, Zhang sat on boards of Boqii.com, Showworld, EasyPrint, iHaveu.com, Motor2, and DHGate.com, with successful flotations of Tarena and eHi on US stock exchanges and trade sales of 51wan.com, acquired by Great Wall Cartoon for $80m, and Amsky at a five-times return on investment.

Zhang first managed companies while at Goldman Sachs after the millennium before becoming an associate in the global principal investment division of investment banking peer Merrill Lynch until September 2008. At Merrill Lynch she made four growth equity deals of between $20m and $40m in the greater China area.

Meanwhile, Penglan (William) Zhao is still at Bertelsmann Asia Investments, but has been promoted to vice-president from senior investment manager.

On the other side of the Pacific, Jeff Allen, Mastercard's vice-president for strategic investments, has become principal for strategic business development at online retailer Amazon. He joined credit card operator Mastercard in August 2009 from an investment banking role at Sagent Advisors, and was a noted thought-leader in the industry, having published in Global Corporate Venturing in February his "five success factors in strategic investing".

At the time Allen was named a Rising Star, Mastercard's portfolio consisted of about 20 active investments, including SecureKey, a Canada-based identity and authentication technology developer where he was a board observer, and which raised C$27m ($20.5m) in October last year.

Further details on all the moves among the Rising Stars and their peers can be found at www.globalcorporateventuring.com, with thanks to reporters Robin Brinkworth and Alice Tchernokoova for identifying these latest moves and promotions. There are, however, a few other moves among these 18 that have yet to emerge publicly, but congratulations to them as they set up new funds or work with more strategic-focused VCs. ◆

For potential nominations to the 2018 GCV Rising Stars list, please contact me at jmawson@mawsonia.com

Analysis: Grab snatches $2.5bn series G cash

Kaloyan Andonov, reporter, GCV Analytics

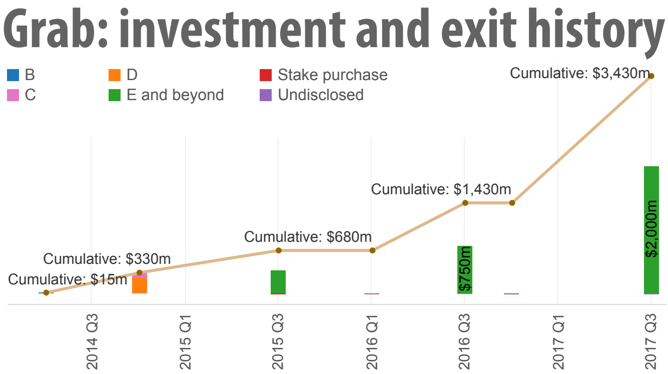
Singapore-based ride-hailing service Grab secured an undisclosed sum from carmaker Toyota's Next Technology Fund as part of a $2.5bn series G round. Grab is still seeking additional investors to complete the round.

The first $2bn tranche was provided in July by telecoms and internet group SoftBank and ride-sharing app developer Didi Chuxing at a $6bn valuation. Founded in 2012 as GrabTaxi, Grab operates an on-demand ride-hailing service currently available across 87 cities in Southeast Asia. The company has raised over $3.4bn until now.

NEWS

The deal with Toyota includes a data partnership with Toyota Motor. Grab will share data on driving patterns from 100 Toyota cars in its fleet. Toyota Motor will analyse the data and recommend how its connected car technology could improve Grab's offering.

Grab's $2.5bn is a rather typical Asian venturing round – large and with extensive corporate backing from players from the Asia-Pacific region. Most of the corporate-backed deals in Asia-Pacific-based enterprises have featured regional investors. Non-Asian corporate ventures, however, also play an important role. ◆



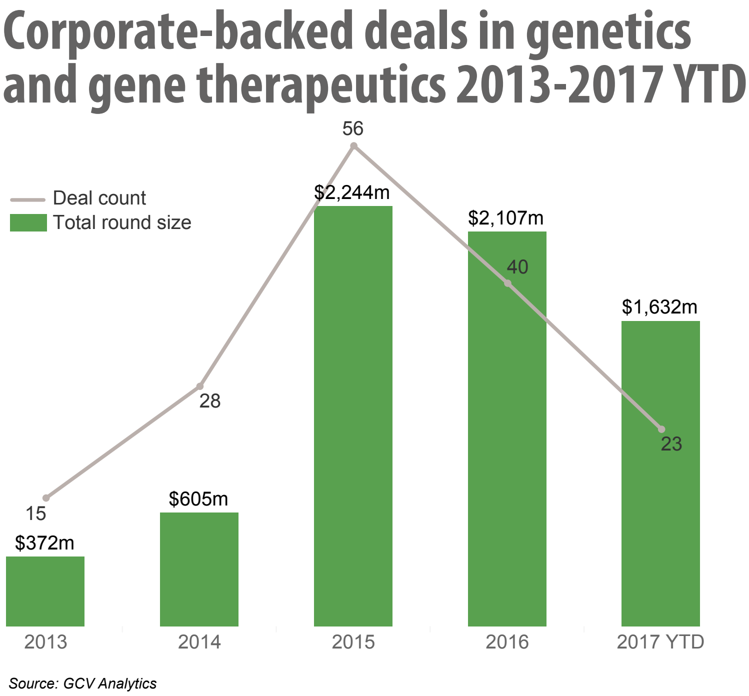
Analysis: 23andMe raises $250m

Kaloyan Andonov, reporter, GCV Analytics

US-based genetics services provider 23andMe received $250m in a round led by venture capital firm Sequoia Capital at a $1.5bn pre-money valuation. Financial services group Fidelity Management & Research (FMR) also took part in the round, as did family office Euclidean Capital, investment firms Altimeter Capital and Casdin Capital, and research support organisation Wallenberg Foundation.

23andMe operates a consumer-facing genetics service analysing DNA samples to find out whether applicants are more susceptible to certain health conditions, or discover information about their ancestry. The company had previously received substantial corporate backing from a variety of investors. In 2015, it closed a $115m series E round, which featured Alphabet's venturing subsidiary GV and WuXi Healthcare Ventures, the venturing arm of pharmaceutical research firm WuXi PharmaTech, as well as genomics technology provider Illumina. Pharmaceutical group Johnson & Johnson had participated in its $31m series C round in 2011, through its Johnson & Johnson Development Corporation unit.

23andMe is part of the broader genetics and gene therapeutics space, which has received much attention from corporate investors over the past few years. The number of corporate-backed rounds went up significantly between 2013 and 2015 – from 15 deals worth an estimated total of $372m to 56 deals worth over $2.24bn. The deal count, however, went down somewhat in 2016 and so did the investment level, to $2.11bn. Despite the slight drop, the genetics space still appears as one of the most promising in terms of potential medical breakthroughs in both the near and far future. ◆



Source: GCV Analytics

TC3 TELECOM COUNCIL CARRIER CONNECTIONS

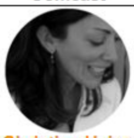
November 1–2, 2017
Silicon Valley, California

Every Fall communication industry executives from around the world travel to Silicon Valley for TC3 Summit. 400 innovation executives from global telcos, vendors, investors and startups meet at TC3 to hear the industry's upcoming innovation priorities, meet telcos one-on-one, review 100s of new startups, and introduce new technologies. TC3 features 2 stages, a large demo pavilion, 10 hours of facilitated networking, and 1000 pre-arranged exclusive meetings.

TC3 SUMMIT AT A GLANCE

- 2-day Executive Summit
- 1000 Pre-arranged Private Meetings
- 100% Focused on Innovation
- 20 Sessions on 2 Stages
- 50 Telcos Participate
- 10 Hours of Facilitated Networking
- 40 New Product Pitches
- Case Studies, Intros & Roadmaps

SPEAKERS INCLUDE

 Faraz Hoodboy Director AT&T	 Rob Hull VP, BD BT	 Lisa Gao President China Mobile	 Ben Chen SVP China Unicom
 Curtis Snyder VP Comcast	 Thomas Kicker SVP Group BD Deutsche Telekom	 Takashi Suzuki CEO DOCOMO Innovation	 Tom Komuro Senior Manager NTT
 Christine Heiss CDO PLDT/SMART	 Christina Claure BD Manager Sprint	 Daniel Herb Director T-Mobile	 Ankur Jindal VP Tata Communications
 Guenia Gawendo Managing Director Telefonica	 Mark Sherman Managing Director Telstra Ventures	 Jim Anetsberger VP, Business Strategy US Cellular	 Christie Pitts Dev Manager Verizon Ventures

AGENDA

DAY 1: WED, NOV 1st

8:30 AM Breakfast, Demos & Networking

9 AM–12 PM Start up Pitches
6 Startups pitch Telecom Council's Service Provider Forum members, and 6 Startups pitch Telecom Council's Investor Forum members on the Main Stage.

10 AM–12 PM Spotlight on Digital Transformation
Discussions on the Spotlight Stage focus on the technologies and innovation that are changing the market.

10 AM–5 PM MatchMaker Meetings
Pre-arranged Private Meetings in the MM Zone.

1 PM–5 PM Partnering for Innovation
Discuss opportunities and challenges of partnerships between established and emerging telecom companies and technologies on the Main Stage.

1 PM–4 PM Spotlight on Wireless Technologies
This discussion on the Spotlight Stage focuses on the technologies and innovation that are changing the wireless market.

5 PM–7 PM 10th Annual SPIFFY Awards
The SPIFFY Awards recognize 7 communications startups for their innovation, opportunity, and promise.

DAY 2: THURS, NOV 2nd

8:30 AM Breakfast, Demos & Networking

9 AM–4 PM MatchMaker Meetings
Pre-arranged Private Meetings in the MM Zone.

9 AM–12 PM Spotlight on Internet of Things
Discussions on the Spotlight Stage this morning focus on Internet of Things—connected car, connected home and more.

9 AM–12 PM Telco Case Studies
Telcos and their partners discuss what went right and why their partnerships worked on the Main Stage.

1 PM–4 PM Innovation Roadmaps
Carriers share which technologies are on their roadmaps for the coming year and what they need from the innovation community on the Main Stage.

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SECTOR FOCUS

Energy picks up after a trough

Kaloyan Andonov, reporter, GCV Analytics

GCV Analytics defines the energy sector to include oil and gas, renewable energy, energy storage, management and equipment, grid and power supply technologies and energy analytics, among other areas. GCV reported 60 rounds involving corporate investors from the energy sector for the period September 2016 to August 2017. A third of those rounds (21) took place in the US and 12 in Germany.

Most of these commitments went to emerging enterprises from the same sector (36), with the remainder going into companies from the IT (7), services (5), industrial (4) and transport (4), among other sectors.

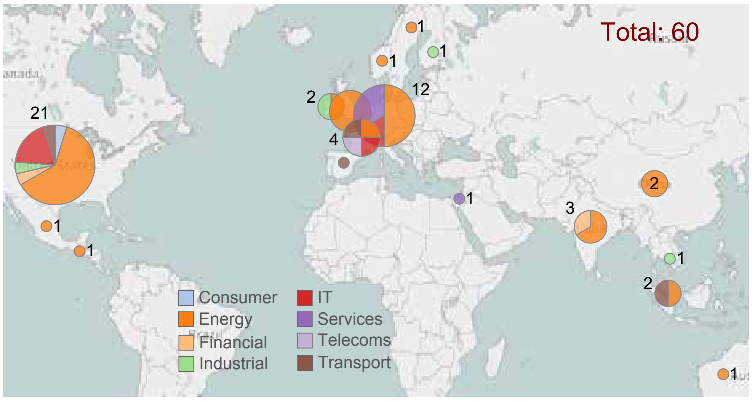
On a calendar year-on-year basis, total capital raised in corporate-backed investment rounds went up to $887m last year from the $560m allocated in 2015, a 58% decrease. The deal count also increased, rising by 33% from 40 deals in 2015 to 53 last year. This indicates the investment activity of corporate venturers from the sector is beginning to climb out of the 2014-15 trough, when the dealflow plummeted drastically from 76 rounds to 40, along with estimated drop in investment value from $877m to $560m.

The 10 largest investments by corporate venturers from the energy sector span a range of businesses.

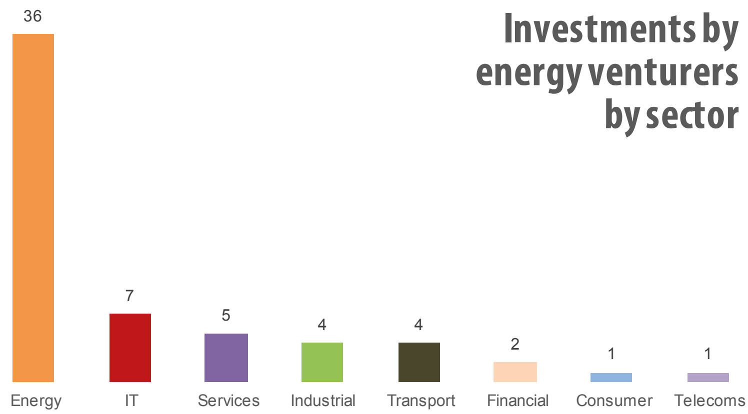
Investment professionals from energy corporate investors told Global Corporate Venturing that recent developments in the oil and gas industry have had an impact on the venturing scene in this space, incentivising both entrepreneurs and investors to look for innovative solutions in the quest to reduce operating costs. Renewables, on the other hand, are interesting to investors, albeit still with some unknowns.

Imran Kizilbash, vice-president of Schlumberger Technology Investments, the venturing subsidiary of the oil and gas services group, said a side-effect of restructuring brought about by low oil prices was often greater entrepreneurialism. “Given the staffing reductions in oil and gas companies that are commensurate with the downturn, we have seen many of those talented people developing startup companies targeting specific technology areas. Small oil and gas innova-

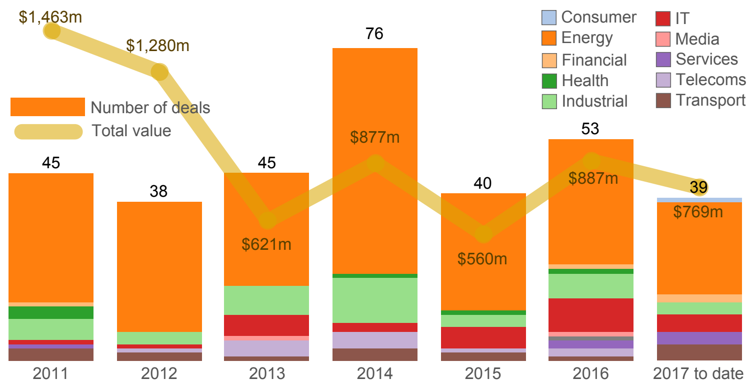
Global view of past year’s deals



Investments by energy venturers by sector



Energy sector deals 2011-17



SECTOR FOCUS

tion hubs are developing in places like Houston, Calgary and Denver." *See interview with Kizilbash*

On the investors' side, the economic challenges of the oil and gas industry appear to generate a collaborative spirit among corporate venturers representing major corporations. Kizilbash said: "With the recent reduction in oil prices, the corporate venturing units of some of the smaller independents have become defunct. The current list of CVC groups in oil and gas are essentially large international or national oil companies. Despite the downturn in the industry these CVCs continue to be very active, as are we. There is also greater willingness to collaborate across operator and service sectors at earlier stages, and more CVC units are willing to look at oil and gas investment opportunities."

This willingness to collaborate is fuelled by the quest for reducing costs in the industry. Geert Van de Wouw, managing director of Shell Technology Venturing, the venturing subsidiary of Anglo-Dutch company Royal Dutch Shell, said: "In oil and gas [innovation], we have always been focused on reducing cost. We have an ongoing cost challenge in the 'lower for longer' environment. This means that technologies have to be able to substantially reduce costs for us to be interested. Regardless of whether oil prices may go up – or not – in the future, the lower-for-longer philosophy is a really helpful guide to us."

Kemal Anbarci, managing executive of Chevron Technology Ventures, the venturing unit of the oil and gas company, noted the importance of Houston and its emerging innovation scene. "The thing we have in Houston, which makes us unique, is the convergence of energy, health and space industry. What we possibly need help in is corporate venture capital funds from both coasts of the US to look into our local ecosystem more closely. In addition to east and west coasts, we have the third [Gulf of Mexico] coast and Houston is the leader here. We want the venture capital from the other two coasts to come to Houston and widen the pool of capital."

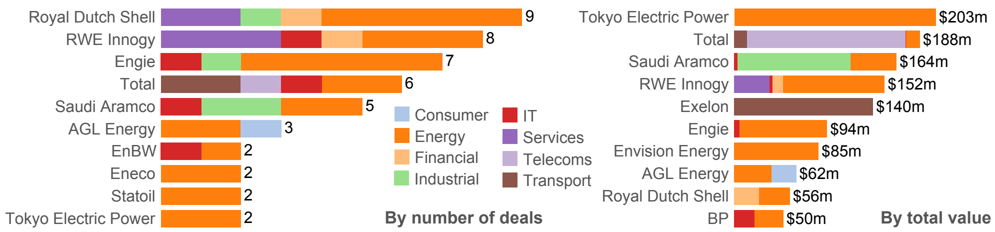
The venturing units of both Chevron and Shell are committed to helping preserve the vibrant innovation scene of Houston – seen as the oil and gas capital of the world – particularly after hurricane Harvey caused serious infrastructural damage to the city and surrounding area. Both units are jointly supporting an energy-related conference, organised by GCV, on November 1. *See interviews with Van de Wouw and Anbarci*

In addition to the oil and gas space, energy investors are naturally focused on the area of renewable energies, which are expected to challenge the role of fossil fuels and perhaps eventually replace them. Van de Wouw said: "Venturing will help us better understand how the renewable energy value chain will evolve over the coming five to 10 years. By spotting disruptive trends early and understanding who is investing in what and why, we gain better insights into what the winning technologies and business models will be in the future. Unlike in oil and gas, it is a lot harder to blueprint ourselves through the future in renewables, as there are more uncertainties associated with the maturation of this relatively young industry. At this stage, it is unclear who the winners are going to be."

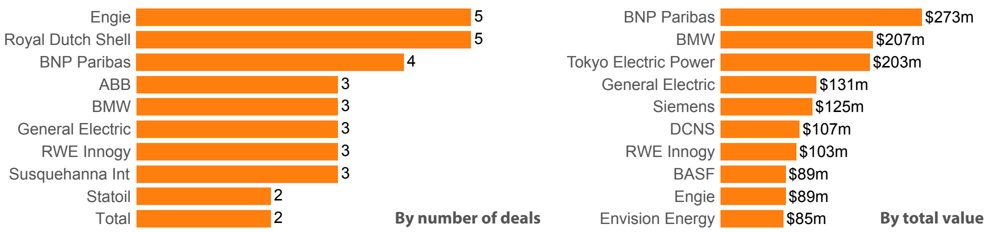
The leading corporate investors from the energy sector were Netherlands-based Royal Dutch Shell, Germany-based power utility RWE Innogy, France-based utility Engie and oil and gas company Total. Japan-based utility Tokyo Electric Power took part in the largest rounds, along with Total and oil and gas company Saudi Aramco. Shell and Engie were also the top investors in emerging energy enterprise.

Overall, corporate investment in energy-focused emerging enterprises went up from 2015 to 2016 in both deal count and total amount invested. According to GCV Analytics data, $994m was invested over 65 rounds in 2016, a 37% rise from the $725bn invested over 59 deals in 2015.

Top energy sector investors



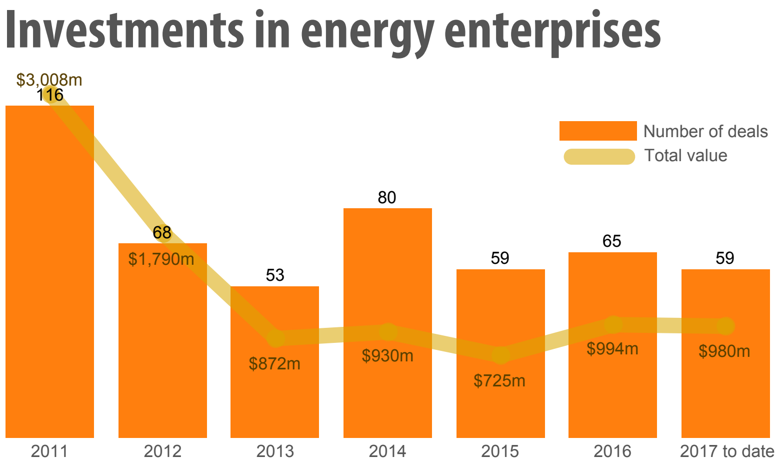
Top investors in energy enterprises



SECTOR FOCUS

Deals

Energy corporates invested in a number of large rounds, raised primarily by energy, transport and industrial companies, although none of them exceeded $200m in total.



Jera, a joint venture between Japan-based energy utilities Tokyo Electric Power and Chubu Electric Power, paid $200m for a 10% stake in India-based renewable power producer ReNew Power. Founded in 2011 with $200m of financing from investment bank Goldman Sachs, ReNew develops, builds and operates renewable energy plants. In April 2016 it became the first India-based developer to commission 1GW of solar and wind projects. The company currently operates a portfolio of 1.5GW operational wind farms and solar plants in its home country and has a further 1.8GW of projects under construction.

France-based internet-of-things (IoT) technology provider Sigfox closed a €150m ($160m) series E round that featured oil and gas producers Total and Air Liquide, semiconductor and chip manufacturer Intel, cloud computing service provider Salesforce and conglomerate Tamer Group. Total, Tamer and Salesforce Ventures, the corporate venturing subsidiary of Salesforce, participated as new investors. Aliad and Intel Capital, the venture capital arms of Air Liquide and Intel, returned for the round. Founded in 2011, Sigfox has developed an international network that allows IoT devices to connect to the cloud affordably and energy-efficiently.

US-based electric bus manufacturer Proterra secured $140m from investors including energy companies Exelon and Edison Energy as well as carmaker General Motors, in a "series 5" round. General Motors and Exelon invested through respective subsidiaries GM Ventures and Constellation Technology Ventures, but the round was led by an undisclosed participant which provided $40m, while a further $60m was supplied by undisclosed new investors. Proterra has sold more than 300 electric buses to 35 commercial, municipal and university transit agencies in North America.

US-based metal 3D printing technology producer Desktop Metal closed a $115m series D round that featured a range

Top 10 deals by energy corporate investors over the past year

Company	Location	Sector	Round	Size	Investors
ReNew Power	India	Energy	Stake purchase	$200m	Tokyo Electric Power
Sigfox	France	Telecoms	E and beyond	$160m	Air Liquide | Alto Invest | BPIfrance | Elliott Capital Management | Idinvest Partners | Intel | Ixo Private Equity | private investors | Salesforce | Swen Capital Partners | Tamer Group | Total
Proterra	US	Transport	–	$140m	88 Green Ventures | Exelon | General Motors | Kleiner Perkins Caufield & Byers | Middle East Venture Partners | Obvious | Tao Venture Capital Partners | undisclosed strategic investors
Desktop Metal	US	Industrial	D	$115m	Alphabet | Data Collective | Future Fund | General Electric | Kleiner Perkins Caufield & Byers | Lowe's Companies | Lux Capital | Moonrise Venture Partners | New Enterprise Associates | Saudi Aramco | Shenzhen Capital Group | Techtronic Industries | Tyche Partners | Vertex Ventures
Heliatek	Germany	Energy	D	$89m	Aqton | BASF | BNP Paribas | CEE Group | eCapital | Engie | High-Tech Gründerfonds | RWE Innogy | TU Dresden | Wellington Partners Venture Capital
Sonnen	Germany	Energy	C	$85m	eCapital | Envision Energy | General Electric | Inven Capital | MVP Capital Partners | SET Ventures | Thomas Putter
Advanced Microgrid Solutions	US	Energy	B	$34m	AGL Energy | Arnold Schwarzenegger | DBL Partners | Energy Impact Partners | General Electric | Macquarie Capital | Southern Company | private investors
Panzura	US	IT	E and beyond	$32m	Chevron | Matrix Partners | Meritech Capital | Opus Capital | Western Digital | undisclosed investors
Primus Power	US	Energy	E and beyond	$32m	Anglo American | DBL Partners | I2BF Global Ventures | Matador Capital Partners | Russia-Kazakhstan Nanotechnology Fund | Success Dragon
Fulcrum Bioenergy	US	Energy	–	$30m	BP

SECTOR FOCUS

of corporate investors – Saudi Aramco, retailer Lowe's, home product manufacturer Techtronic Industries, internet technology group Alphabet, which invested through its GV subsidiary, and conglomerate General Electric, which took part through its GE Ventures unit. Desktop Metal has developed two systems capable of printing 3D metal parts. The first, Studio System, is small enough to fit in an office and can be used by engineers to create complex parts.

Germany-based solar film developer Heliatek secured up to €80m in financing, including $46.8m in equity led by Innogy, a subsidiary of energy utility RWE. The series D round included Engie, RWE unit Innogy Venture Capital, chemicals producer BASF and financial services provider BNP Paribas. Heliatek produces an ultra-light organic solar film, HeliaFilm, that is less than 1mm thick and can generate energy on such surfaces as the roof of a car or the exterior of a building.

Germany-based advanced battery technology developer Sonnen closed an $85m funding round featuring General Electric and energy equipment manufacturer Envision Energy. The round was filled out by Inven Capital, the corporate venturing arm of Czech energy utility CEZ, eCapital, MVP, Set Ventures and Thomas Putter, formerly CEO of asset manager Allianz Capital Partners. Sonnen's systems connect with small-scale renewable energy systems such as solar panels and utilise intelligent software to manage energy use through the course of the day. Roughly 15,000 SonnenBatteries have been installed across the world.

US-based energy optimisation technology provider Advanced Microgrid Solutions (AMS) secured more than $34m in a series B round that included energy utilities AGL Energy and Southern Company. GE Ventures also took part in the round, which was led by investment firm Energy Impact Partners. AMS has built a technology platform, Armada, that combines energy storage and cloud analytics software to optimise distributed energy management for businesses and government customers, increasing energy efficiency and balancing energy resources.

US-based cloud storage service provider Panzura received $32m in series F funding from a consortium that featured Chevron and hard-drive manufacturer Western Digital. Founded in 2008, Panzura provides hybrid cloud storage software to enterprise clients. The technology offers the flexibility, capacity and economics of traditional storage and enables companies to migrate data to the cloud seamlessly.

US-based energy storage system producer Primus Power raised $32m from investors including Hong Kong-listed corporate services provider Success Dragon and platinum producer Anglo American Platinum. Founded in 2009, Primus produces battery-based energy storage systems that can sync with small-scale renewable energy systems, and which are generally used by data centres, the military, energy utilities and mining companies such as Anglo American that require portable off-grid power.

Fulcrum Bioenergy, a US-based developer of technology that turns household waste into fuel, attracted a $30m in investment from oil and gas company BP as part of a strategic partnership. The agreement means BP's aviation subsidiary Air BP will receive 50 million gallons of low-carbon drop-in jet fuel per year for 10 years. Airline United provided $30m in funding for Fulcrum in June 2015, after its peer Cathay Pacific Airways had invested an undisclosed amount the previous year. Air BP will also be able to provide supply chain services for the blending, certification and distribution of fuel to commercial and military clients. Founded in 2007, Fulcrum has developed a process that converts municipal solid waste into jet fuel and diesel.

There were other interesting deals in emerging energy-focused companies that received financial the backing of corporate investors from other sectors, particularly those based in east Asia.

US-based electric vehicle-charging network operator ChargePoint closed a series G round led by carmaker Daimler at

Top 10 investments in emerging energy enterprises over the past year

Company	Location	Round type	Size	Investors
ReNew Power	India	Stake purchase	$200m	Tokyo Electric Power
Chargepoint	US	E and beyond	$125m	BMW | Braemar | Linse Capital | Rho Capital Partners | Siemens
DCNS Energies	France	–	$107m	BNP Paribas | BPIfrance | DCNS | Technip
Heliatek	Germany	D	$89m	Aqton | BASF | BNP Paribas | CEE Group | eCapital | Engie | High-Tech Gründerfonds | RWE Innogy | TU Dresden | Wellington Partners Venture Capital
Sonnen	Germany	C	$85m	eCapital | Envision Energy | General Electric | Inven Capital | MVP Capital Partners | SET Ventures | Thomas Putter
Actility	France	D	$75m	BNP Paribas | BPIfrance | Cisco Systems | Creadev | Ginko Ventures | Hon Hai | Idinvest Partners | Inmarsat | KPN | Orange | Robert Bosch | Swisscom
Xiaodian	China	B	$50m	Banyan Capital | CDH Investments | Fosun RZ Capital | Sequoia Capital | Tencent | Vision Plus | Zhongwei Capital
Advanced Microgrid Solutions	US	B	$34m	AGL Energy | Arnold Schwarzenegger | DBL Partners | Energy Impact Partners | General Electric | Macquarie Capital | Southern Company | private investors
Primus Power	US	E and beyond	$32m	Anglo American | DBL Partners | I2BF Global Ventures | Matador Capital Partners | Russia-Kazakhstan Nanotechnology Fund | Success Dragon
Zhaoyouwang	China	B	$32m	Chuangban Investment | DCM | GGV Capital | Huochebang | Sky9 Capital | Susquehanna International Group | Yunqui Partners

SECTOR FOCUS

$125m, after raising an additional $19m from investors including industrial product manufacturer Siemens. BMW i Ventures, the strategic investment arm of automotive manufacturer BMW, also took part in the round. ChargePoint runs a network of almost 38,000 chargers for electric cars, buses and trucks, and serves more than 7,000 corporate and public customers.

Naval defence company DCNS and BPIfrance, the public investment bank of France, have joined forces to establish marine renewable energy company DCNS Energies with €100m. The funding round was also supported by Technip Group, an engineering firm focused on the energy sector, and BNP Paribas Développement, an investment subsidiary of financial services firm BNP Paribas. DCNS Energies will be responsible for industrial and commercial development of three marine renewable energy technologies – tidal turbine power, ocean thermal energy conversion and offshore wind energy generated by semi-submersible floats.

Cisco Investments, the corporate venturing vehicle of networking technology provider Cisco, took part in the $75m series D round announced by France-based internet-of-things (IoT) technology developer Actility. Cisco and financial services firm BNP Paribas joined a round that included telecoms groups Swisscom, KPN and Orange, contract manufacturer Foxconn, satellite telecoms company Inmarsat and industrial equipment and appliance maker Robert Bosch. Bosch and Orange invested through their Robert Bosch Venture Capital and Orange Digital Ventures units respectively. Actility supplies low-power wide-area network technology that helps businesses in the logistics, smart building, energy and utilities industries to manage IoT devices.

China-based portable charger rental service Xiaodian raised RMB350m ($50m) in series B funding from investors including internet company Tencent. Fosun Kinzon Capital, an investment arm of diversified conglomerate Fosun, also contributed capital. Incorporated in 2016, Xiaodian has installed portable power banks in stores and offices in a number of Chinese cities.

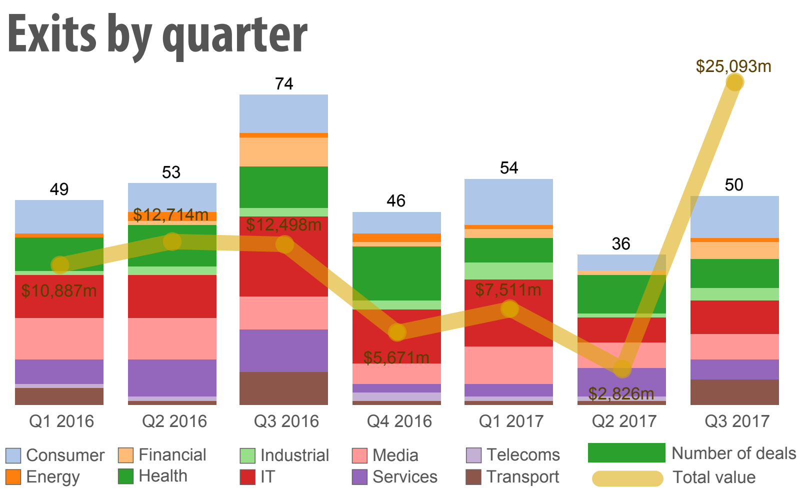
Trucking logistics services provider Huochebang participated in a $31.8m series B round for China-based online petroleum trading platform Zhaoyouwang. Founded in 2015 and also known as 51zhaoyou.com, Zhaoyouwang operates an online marketplace where businesses can buy or sell diesel, gasoline and kerosene. It also provides financial and logistics services related to petroleum.

Exits

Energy-focused corporate venturers completed only four exits between September last year and August this year. This modest figure is actually quite typical for such business. They tend to require more time to mature, thus making the investment horizon longer and respective holding periods longer for corporate venturers.

There were four reported companies energy-focused corporate venturers have either exited or acquired.

Corporates EDF and Eren recorded an exit from India-based renewable energy developer Acme Cleantech Solutions in a Rs5bn ($73m) investment by conglomerate Piramal Group. Acme has built about 600MW of solar power plants in India. It has another 400MW of



Top exits by energy corporate investors over the past year						
Company	Location	Sector	Exit type	Acquirer	Exit size	Investors
Acme Cleantech Solutions	India	Energy	Acquisition	Piramal Group	$73m	EDF | Eren
Aquion Energy	US	Energy	Acquisition	China Titans Energy Technology Group	$9m	Advanced Technology Ventures | Bill Gates | Bright Capital | CapX Partners | Constellation Energy | DNS Capital | Foundation Capital | GSV Financial Group | Kleiner Perkins Caufield & Byers | Prelude Ventures | Royal Dutch Shell | Shell | Tao Venture Capital Partners | Total
Redbird	France	IT	Acquisition	Airware	–	Engie | GDF Suez
Breathing Buildings	UK	Energy	Acquisition	Volution Group	–	BP | MMC Ventures

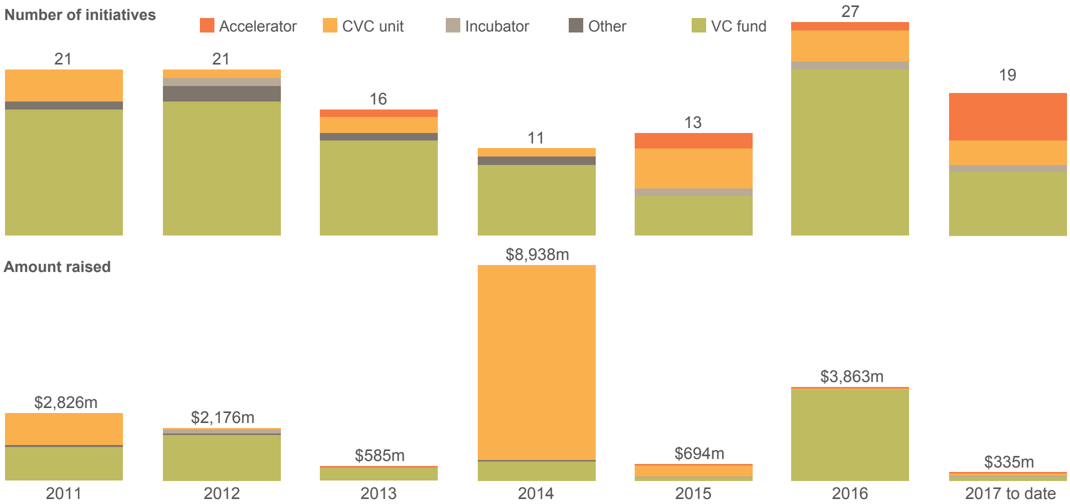
projects in construction and has secured power purchase agreements for a further 500MW.

Energy and oil producer China Titans Energy Technology Group acquired Aquion Energy, a bankrupt US-based corporate-backed energy storage technology developer, for $9.16m. Aquion had developed aqueous hybrid ion batteries and system that uses saltwater electrolyte technology to store power generated by renewable energy systems. Investors in Aquion, which was spun out of Carnegie Mellon University in 2009, include power generator Exelon and oil and gas companies Total and Shell.

Unmanned aerial vehicle services provider Airware acquired France-based aerial data provider Redbird, providing an exit to energy utility Engie and its own Commercial Drone Fund. Redbird uses drones to gather information that can be analysed on its cloud platform, and serves mainly the construction, mining and quarrying industries. The company will continue to operate under its own name as well as serving as the European office for US-headquartered Airware.

BP exited UK-based ventilation system developer Breathing Buildings through an acquisition by ventilation product supplier Volution Group for an undisclosed amount. Founded in 2006 through a collaboration between Cambridge University and Massachusetts Institute of Technology with funding from BP, Breathing Buildings designs and manufactures intelligent natural and hybrid ventilation solutions.

Energy funding initiatives 2011-17



Funds

Over the past year, corporate venturers and corporate-backed VC firms investing in the energy realm secured over $2.72bn in capital via 31 funding initiatives, which included 16 corporate-backed VC funds, five new venturing units, eight accelerators and two incubators.

On a calendar year-on-year basis, funding initiatives registered a significant increase last year in both count and total capital raised – $3.86bn over 27 initiatives, up from $694m over 13 initiatives in 2015. This increase evidences the enormous interest in the space from a variety of investors.

A group of executives and entrepreneurs launched a clean energy investment fund called Breakthrough Energy Ventures (BEV) that will collaborate with corporate partners. Bill Gates, co-founder of software provider Microsoft, is chairman of BEV and one of 20 individuals who jointly agreed to provide over $1bn to launch companies as well as to make early and growth-stage investments. Others include Jack Ma, chairman of e-commerce group Alibaba; Mukesh Ambani, chairman of conglomerate Reliance Industries; Hasso Plattner, co-founder of software producer SAP; Jeff Bezos, founder of e-commerce firm Amazon; Richard Branson, founder of conglomerate Virgin; and Masayoshi Son, CEO of telecoms group SoftBank. BEV started investing in 2017 and will focus on the commercialisation of research that helps reduce greenhouse emissions in technologies such as electricity generation and storage, transportation, industrial processes and agriculture.

Ten oil and gas companies announced a plan to establish a $1bn fund to invest in research and startups focused on low carbon emissions technologies, through the Oil and Gas Climate Initiative (OGCI). The OGCI Climate Investments fund will use new technologies owned by member companies and identify ways to cut the energy intensity of both transport and industry. The 10 OGCI member companies – BP, China National Petroleum Corporation, Eni, Pemex, Reliance Industries, Repsol, Royal Dutch Shell, Saudi Aramco, Statoil and Total – together represent a fifth of the world's oil and gas production. Each of the 10 companies will invest $100m in the fund, which is expected to last for 10 years and comple-

Top energy funding initiatives over the past year

Funding initiative	Type	Funds raised	Location	Focus
Breakthrough Energy Ventures	VC fund	$1bn	US	Commercialisation of research to help reduce greenhouse emissions in electricity generation and storage, transportation, industrial processes and agriculture
Oil and Gas Climate Initiative	VC fund	$1bn	US	Low carbon emissions technologies – accelerating the deployment of carbon capture, use and storage, reducing methane emissions from the global oil and gas industry, industrial energy efficiency and transportation efficiency
Idinvest Growth Fund II	VC fund	$256m	France	Growth-stage investments in Europe-based digital, healthcare, energy and smart city technology developers
Unnamed Eneco fund	VC fund	$111m	Netherlands	Energy companies
Honeywell Venture Capital	CVC unit	$100m	US	Aerospace systems, chemicals, fuels, safety and monitoring equipment, home building and control technology
Russia-China Venture Fund	VC fund	$100m	Russia	Big data, cloud, biotech and biomedicine, new materials, clean energy, robotics, data transmission and fintech
Pangaea Ventures Fund IV	VC fund	$40m	Canada	Advanced materials technology developers in the energy, electronics, health and sustainability sectors
Wells Fargo Innovation Incubator	Incubator	$30m	US	Early-stage cleantech and technologies that could reduce the environmental impact of buildings
Hardware Club Fund 1	VC fund	$28m	France	Smart home technology, healthcare technology, connected transport and smart buildings.
Unnamed Better Ventures fund	VC fund	$21m	US	Cleantech, healthcare, human resources and fintech

ment other investments made in reducing emissions.

Idinvest Partners, a France-based investment firm with several corporate partners, reached the €250m first close of its latest fund. Idinvest Growth Fund II will make growth-stage investments in Europe-based digital, healthcare, energy and smart city technology developers. It is expected to close at between $318m and $424m. Formed by insurance firm Allianz in 1997 as AGF Private Equity, Idinvest was spun out and renamed in 2010 through a management buyout. Limited partners in its past funds include Allianz, media company Lagardère Group and public relations firm Up Group.

Netherlands-based energy company Eneco is preparing to back later-stage companies after two senior hires in the summer. Eneco hired Yme Bosma as its head of corporate venturing, and Joeri Kamp as managing director of ventures and innovation, in June 2016. The moves took place about a year after the company reserved €100m to build up a strategic venture portfolio, with deals including relatively small companies.

US-based industrial product and software producer Honeywell unveiled a strategic investment vehicle called Honeywell Venture Capital and announced plans to provide about $100m to startups through the unit. Honeywell provides a range of products ranging from aerospace systems, chemicals and fuels to safety and monitoring equipment and home building and control technology. It has made strategic acquisitions in the past but done very little in the way of corporate venturing. The $100m figure represents Honeywell's expectation of the fund's initial size, and Honeywell Venture Capital will target companies that could grow more quickly through access to the firm's resources.

The Russia-China Investment Fund (RCIF), backed by sovereign wealth funds Russian Direct Investment Fund and China Investment Corporation, partnered TUS Holdings, the enterprise arm of Tsinghua University's Science Park, for a $100m vehicle called the Russia-China Venture Fund (RCVF). TUS Holdings and the RCIF are anchor investors in the fund, and are seeking additional institutional investors from both countries to reach the target size. The RCVF may be extended beyond its $100m goal depending on interest and opportunities. RCVF will focus on sectors such as big data, cloud, biotech and biomedicine, new materials, clean energy, smart technologies such as robotics, data transmission and fintech.

Canada-based venture capital firm Pangaea Ventures raised about half the C$105m ($80m) target set for its fourth fund, which included several corporate backers – ceramics product maker CoorsTek, petrochemical product manufacturer JSR Corp, chemicals producers Mitsubishi Chemical Holdings and Sekisui Chemical, consumer goods provider Henkel Corp and semiconductor technology supplier Lam Research Corp. Pangaea makes strategic investments in advanced materials technology developers in the energy, electronics, health and sustainability sectors.

Financial services firm Wells Fargo invested an additional $20m in its $10m cleantech and startup incubator Wells Fargo Innovation Incubator. Launched by Wells Fargo and the US Department of Energy's National Renewable Energy Laboratory (NREL) in 2014, the incubator aims to accelerate the development of early-stage cleantech, and initially concentrated on technology that could reduce the environmental impact of buildings. Participants are eligible to receive up to $250,000 in non-dilutive funding from Wells Fargo as well as technical assistance from NREL experts and beta testing at a facility run by Wells Fargo or one of the initiative's strategic partners. The decision to increase the capital available to the fund was made as it widens its focus to take in sectors such as transport, microgrid technologies and sustainable agriculture.

US-based hardware technology startup community Hardware Club achieved a first close of its inaugural fund, with

SECTOR FOCUS

contract manufacturing services provider Foxconn contributing to the €25m fundraising effort. French state-owned investment bank BPIfrance also supplied capital, as did financial services firm Crédit Mutuel Arkéa, venture capital firm Mistletoe and undisclosed additional backers. Hardware Club Fund 1 will support seed-stage hardware startups, with a particular focus on France-based businesses developing smart home technology, healthcare technology, connected transport and smart buildings. The vehicle will invest between €150,000 and €1.5m per deal and the initial capital is expected to last until 2025.

US-based venture capital firm Better Ventures closed its latest fund at $21m thanks to a commitment from insurance provider Prudential's corporate social responsibility group. The fund's limited partners include the Schmidt Family Foundation, Treehouse Investments and individuals such as Chris O'Neill, chief executive of cloud collaboration software provider Evernote. Better Ventures generally supplies between $250,000 and $400,000 to early-stage startups, though it also provides follow-on capital in series A and B rounds. The firm focuses on businesses that make renewable energy affordable, but also backs companies in the cleantech, healthcare, human resources and financial services sectors.

People

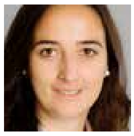
Jonathan Tudor, a managing director of oil major BP's corporate venturing unit and a Global Corporate Venturing Rising Star, has accepted "an offer I could not refuse" and joined UK-listed energy utility Centrica as its London-based head. Tudor was originally venture director at Castrol InnoVentures, a division of BP before its reorganisation into BP Ventures over the past year.

Girish Nadkarni, former president of Switzerland-based power and automation group ABB's corporate venturing unit and member of Global Corporate Venturing's Powerlist 100 last year, has joined France-based oil major Total to lead its corporate venturing unit. He said he would move to Paris this month as president of Total Energy Ventures (TEV). In turn, Francois Badoual, former CEO of TEV in France, has moved to San Francisco to be president of New Energies Ventures USA.

After Nadkarni's departure, Grant Allen stepped up to head ABB Technology Ventures and cover the US and Americas and has increased the amount the group invests to about $50m a year, including $10m for venture capital fund commitments and six to eight direct deals.


Andreas von Richter

Andreas von Richter, partner at Ecomobility Ventures (EMV), a multi-corporate venturing firm set up by France-based companies, left to join peer Aster Capital. Aster Capital, formerly Schneider Electric Ventures, backs startups based in Europe, North America and Asia, and has three corporate limited partners, Alstom, Schneider Electric and Solvay, as well as the multilateral European Investment Fund. Before joining EMV, von Richter worked for Saudi Aramco Ventures and before that for General Electric between 2005 and 2013 as a vice-president at its venture capital unit, focusing on the energy, water and transportation sectors.


Susana Quintana-Plaza

Susana Quintana-Plaza, who had led innovation activities for Germany-based energy utility Eon, joined industrial conglomerate Siemens. As senior vice-president of technology and innovation at Eon, Quintana-Plaza had led a team making 16 investments through the Eon Strategic Co-Investments (SCI) group since 2014. Philipp Ulbrich was appointed as the new head of Eon SCI and will oversee a budget of more than €100m for scouting, testing, development and the initial launch of new products and business models at the group, as well as its corporate venture capital activities.

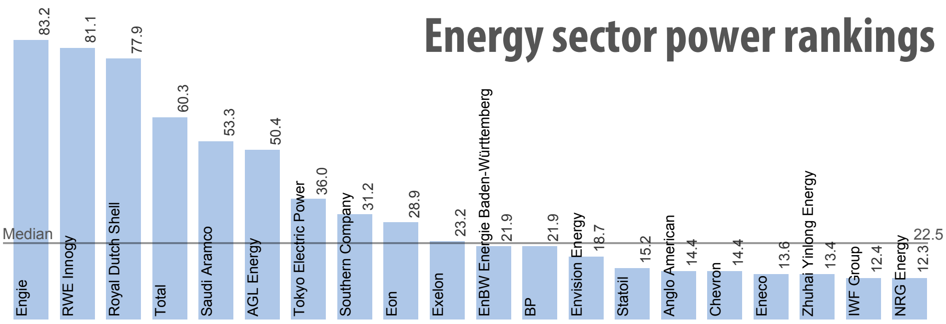

Louis Albanese

Louis Albanese joined investment advisory firm Catamount Wealth Management after more than three years at Saudi Aramco Energy Ventures, the corporate venturing vehicle of oil and gas producer Saudi Aramco. Albanese was an investment manager and principal at the unit, and has been appointed vice-president at Catamount, where his father Louis Albanese is president and managing partner.


Kirk Coburn

Kirk Coburn, founder of US-based, energy-focused Surge Accelerator, joined oil and gas company Shell's corporate venturing unit, Shell Technology Ventures, in Houston, Texas. He had shut down Surge in April 2016 because of a "lack of industry support," according to news provider Xconomy. The firm had raised four funds and invested in 43 energy technology startups in its first three years of operation. ◆

Energy sector power rankings



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Interview: Houston – centre of the third US coast

GCV's Tom Whitehouse and Kaloyan Andonov spoke to Kemal Anbarci, vice-president and managing executive of Chevron Technology Ventures, the Houston-based venturing unit of oil and gas major Chevron, about the efforts to rebuild Houston after hurricane Harvey and attract more capital to the city, the financial and industrial centre of the US "third coast". Anbarci also revealed more details about the recently announced Catalyst program to make early-stage companies more investable for corporate and traditional venturers.

How were you, your family and colleagues affected by hurricane Harvey? Is life and work getting back to normal?

My family is shaken but dry and all right. Most of the schools in Houston are open again, and we are on our way to full recovery. The tale of two cities is still playing out in Houston. We have sections of the city that look normal, and people there working hard to help in recovery, and other sections visible in recovery and people there trying to reach normalcy. We believe that Houston will come out of this even stronger. The spirit of Houstonians is very important in the recovery. It shows the resilience of Houstonians, Texans and our colleagues everywhere. This spirit creates the kind of energy which, I think, will take Houston even further.

What has been Harvey's impact on the venturing world and the oil and gas world? Does it mean that you are now more focused on things like resilient infrastructure, flood damage control? Will it have an impact on the oil and gas industry's view of the type of resilient technology it needs?

"What makes us unique, is the convergence of energy, health and space industry"

From our point of view, what has enabled Chevron Technology Ventures (CTV) to be a successful venturing group and the longest-lasting continuously operating oil and gas venturing arm is our focus on resilient infrastructure. This unfortunate event confirms the validity of our long-term strategy and what we have to focus on as a company and as a venturing group. In the short term, we have a slightly different focus revolving around helping the local entrepreneur ecosystem. The conference we are organising with Shell and Global Corporate Venturing on November 1 is one of our initiatives to energise local entrepreneurs and accelerate their business activities into growth.

What does the Houston and Texan VC industry have that is unique?

Several months ago at the Global Corporate Venturing & Innovation summit in Sonoma, you came up to me with the idea of organising an energy-related conference in Europe and I suggested we do it in Houston. And I am really happy we are putting it up in Houston. This is where we have the resources, the oil and gas energy workforce. Houston is also where you have potential customers for startup companies and we have a vibrant startup ecosystem, which we would like the rest of the corporate venturing community to see. Also, the thing we have in Houston, which makes us unique, is the convergence of energy, health and space industry. What we possibly need help in is corporate venture capital funds from both coasts of the US to look into our local ecosystem more closely. In addition to east and west coasts, we have the third coast, and Houston is the leader here. We want the venture capital from the other two coasts to come to Houston and widen the pool of capital. And anything we can do to make that happen is useful.

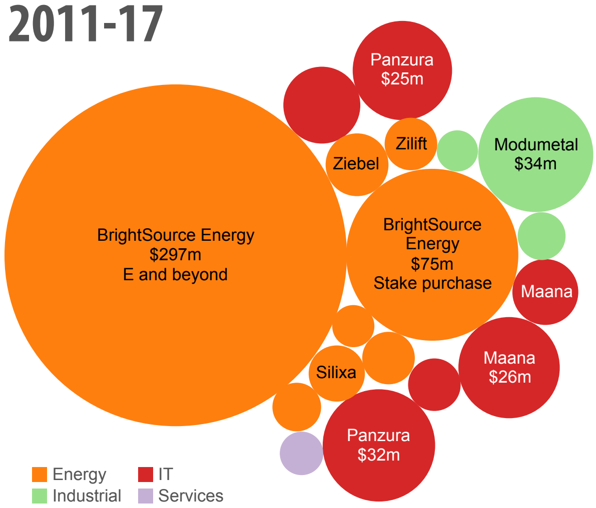
As far as the oil price is concerned, it looks like we may be in a "lower for longer" situation. With that in mind, how can venturing ensure the competitiveness of the local oil and gas industry in Texas on a global scale?

Texas is a very welcoming place to innovative ideas from all around the world because this is where we have a lot of industry talent. This is also where the end customers are, this is where purchase decisions are made. For the companies coming into this system, we would help them be more competitive on a global scale.

You are in your fifth year of leading the venture efforts at Chevron. How has the venturing strategy evolved over this period?

Our strategy of supplying technology solutions to Chevron has not changed, neither during my term nor before. We try

Investments by Chevron 2011-17



to help solve Chevron's technology needs. However, we recently added a new program to help companies at seed stage to move to round A. We call it the Chevron Technology Ventures Catalyst program.

The program's goal is to help entrepreneurs who are already past seed-stage but have not yet raised sizeable round A capital. We target companies that have developed products or prototypes ready for field trial and are looking to attract venture funding to make it happen, but do not have the required structure yet.

The idea started when I was having a discussion with Cory Steffek, head of Saudi Aramco Energy Ventures in Houston. We both noted a need for more local companies ready for series A investment. We established the CTV Catalyst program to help guide the selected companies via established business milestones and help them develop in a direction that will enable them to attract and secure venture funding. Two Catalyst companies have been announced to date – Rheidiant, a Houston-based company that applies industrial internet-of-things and machine-learning technologies to help identify small leaks on pipelines, and Ingu Solutions, which develops miniaturised inline sensors to detect leaks, geometric defects and deposits that impact pipeline performance.

What is the strategic relevance to Chevron of your most recent investments – Lux Assure, Airborne, Panzura and Maana?

All these companies actually reflect the convergence of digital technology, data science and other impactful innovation in oil and gas. In our quest to reduce costs, they are able to provide creative solutions. Some enhance our ability to extend the lifetime of our facilities and assets, while others focus on reducing the cost of new development. Others move our massive amounts of data effectively, or extract intelligence from it.

What type of resources and expertise can portfolio companies typically receive from Chevron?

In addition to funding, we bring insights about the industry. We help facilitate field trials and introductions to our supply chain. Among all the companies we have invested in across our venture portfolio, over 80% have done field trials with Chevron and over 60% have become suppliers to Chevron. Ultimately this business model has been a great success story for them and for us.

What are the current and future investment priorities?

Our fundamental strategy has not changed over the years. We are looking at companies that can be suppliers to Chevron and technologies that will improve our business. All of this supports the transition into the emerging "Industry 4.0".

CTV also holds limited partner stakes in VC and other funds. What do you look for in a fund when taking LP stakes?

When we were new to the venturing space almost 20 years ago, we invested in funds in order to gain insights. We still have a number of LPs in our portfolio that we continue to support. However, our focus these days is on our direct investments. ◆

The Chevron Technology Ventures Catalyst program

In order to help emerging companies developing oil and gas-related technologies grow beyond seed-stage level, Chevron's venturing subsidiary has added a new tool to the corporate innovation toolkit – an acceleration initiative – the Chevron Technology Ventures Catalyst program. This 12-month program provides promising startups with funding on completion of set milestones. The graduation and ultimate goal of the program is to help such startups raise a series A funding round. So far three companies have been selected to participate, only two of which have been announced – Rheidiant and Ingu Solution.

Rheidiant develops a leak detection system called The Smart Sign, which is a solution to new and old hazardous liquid pipelines, monitoring such assets for small and large leaks before they result in big environmental spills. Rheidiant's technology relies on proprietary acoustic sensors that are deployed near the pipeline without excavation or trenching.

Ingu Solutions develops its Pipers technology, which gives oil and gas companies a fast and affordable way to access pipeline assets that are currently out of reach. Its technology uses miniaturised inline sensors to detect leaks, geometric defects and deposits that threaten pipeline performance and safety, thus eliminating the need for human intervention, reducing inspection costs, strengthening preventive maintenance, and lowering repair and replacement expenditures.

Interview: Reducing costs with a 'lower for longer' oil price

GCV's Tom Whitehouse and Kaloyan Andonov spoke to Geert van de Wouw, managing director of Shell Technology Ventures, the corporate venturing unit of oil and gas major Royal Dutch Shell, about the unit's focus on industry-relevant technologies that lead to cost reductions or making assets more resilient, and how hurricane Harvey in Houston and low oil prices highlight the importance of such capabilities.

How were your colleagues at Shell Technology Ventures in Houston affected by hurricane Harvey? Is life and work getting back to normal there?

Several of my team members were closed in for more than a week and the office has been closed for two weeks to deal with clean-up. So the hurricane has had a significant impact and there is a lot of rebuilding to do. Houston is going to be in recovery mode for a long time but we continue to be committed to Houston and our venture activities in this great city.

What will be Harvey's long-term impact, if any, on your venturing priorities? Resilient infrastructure is going to be required by all hurricane-prone regions and by the oil and gas companies that work there. Does this filter down to venturing?

The hurricane has not materially changed our venturing focus, as asset surveillance and monitoring is already a focus area for investing to us. Overall, the biggest positive impact in the technology sector will be on technologies that can make assets more resilient to extreme weather and unplanned events.

Given that Shell is leading GCV's first event in Houston, tell us about the Houston and Texan VC industry. What does Texas have that is unique?

Houston is the oil and gas capital of the world – full stop. Therefore oil and gas and digital entrepreneurs with relevance to oil and gas are flocking there, both to Houston and to Austin. It is the logical centre for innovation and entrepreneurship in energy. We think that in the future it is also going to be a centre of renewable innovation, building on the existing infrastructure of tested entrepreneurs and VCs in the energy domain, plus the presence of all major energy companies, suppliers and vendors in the Houston ecosystem.

How transferable are skills from hydrocarbon to renewables?

Oil and gas people know how energy works. They understand that, unlike pure digital plays, commercialisation of new technologies or business models in the energy industry takes more time and can be very capital intensive. Energy is a truly global industry. It touches on everybody's lives in profound ways.

The good news is that the energy majors know very well how to scale, how to commercialise technology in a conservative industry. And we are increasingly seeing companies that are as appealing to the oil and gas sector as they are to renewables. For example, we invested in Maana, a big data solution for us and other players in oil and gas. But their knowledge and capabilities are equally applicable to the renewable energy domain or our retail business. We are going to see more and more crossover between the renewables and hydrocarbon-dominated sectors.

Another nice example is Glasspoint, the concentrated solar-for-steam company which is currently building a world-class solar plant at our joint venture PDO in Oman. There, we use the power of the sun for steam injection in the oil fields to enhance recovery from these fields.

Give us another example.

Three years ago, we invested in Veros Systems, an Austin-based company that uses software to monitor the reliability and energy efficiency of electrically-powered rotating equipment. We currently use their solutions on Perdido, an offshore platform in the Gulf of Mexico. Shell also has large customers of its lubricants business that want to monitor the behaviour of their equipment, which we lubricate and service. Veros does that but it also serves several other industries, such as wind power, automotive and food manufacturing.

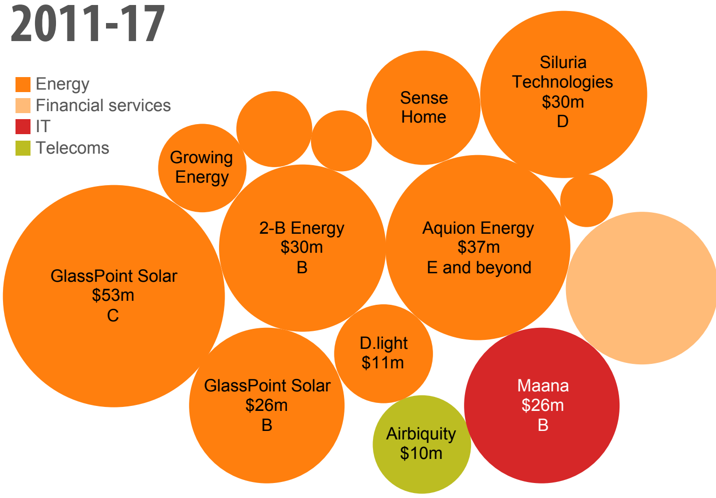
You are in your sixth year of leading the venture strategy at Shell. How has the venturing strategy evolved over this period?

In several ways. We are more thematic in terms of our investment approach today than we were six years ago. Rather

SECTOR FOCUS

than looking for solutions that Shell business units want today, we now try to find themes within which we believe there are interesting and potentially disruptive technologies and business models being trialled by startups. And when there are crossovers between these themes and the needs of our business lines, that is where exciting things happen.

Investments by Royal Dutch Shell 2011-17



While deployment in our assets remain key, we try to balance between investing in domains immediately adjacent to our existing businesses and investing in more radical and potentially more disruptive technologies and business models that we can implement longer-term, or that have the potential to become new businesses to Shell. In practical terms, we now have a more global presence. We used to be based just in the Netherlands and Houston, but now we also have a presence in San Francisco, Boston and London. We are planning to establish a presence in Shanghai.

"It is a lot harder to blueprint ourselves through the future in renewables – at this stage, it is unclear who the winners are going to be"

What has not changed?

In oil and gas, we have always been focused on reducing cost. We have an ongoing cost challenge in the "lower for longer" environment. This means that technologies have to be able to substantially reduce costs for us to be interested. Regardless of whether oil prices may go up – or not – in the future, the "lower for longer" philosophy is a really helpful guide to us.

In order to remain competitive, a relentless focus on cost-reducing technologies and business models is required, and STV can play a pivotal role in sourcing these. This could be the cost of acquiring seismic data, drilling and stimulating wells, production and processing. There simply has to be a meaningful impact on cost or we are not interested. And this is not just in capital expenditures, but in operational expenditures too. We need to monitor the health of our assets. For example, we invested last year in Roscole, a Finnish imaging technology business that enables us to detect fouling and scaling in our pipes so that we can tailor our cleaning campaigns and save operational costs.

Is cost a driving factor in your investments in renewables?

With the ever-reducing costs of energy from solar and wind, cost is clearly important for innovations in renewables, connected customers and smart mobility. In renewables, we want to invest in the best startups active within the investment themes that we focus on for investing. We are looking for new technologies and business models that have the potential to become substantial suppliers or partners to Shell in our new energy business. In selective cases, they may become substantial new businesses in Shell through an acquisition.

Venturing will help us better understand how the renewable energy value chain will evolve over the coming five to 10 years. By spotting disruptive trends early and understanding who is investing in what and why, we gain better insights into what the winning technologies and business models will be in the future. Unlike in oil and gas, it is a lot harder to blueprint ourselves through the future in renewables, as there are more uncertainties associated with the maturation of this relatively young industry. At this stage, it is unclear who the winners are going to be.

How is the "lower for longer" oil price informing your venturing strategy? Can venturing save the industry?

The oil and gas industry does not need to be saved. Fossil fuels are here for decades. Today, electricity accounts for only 20% of total energy demand. This will increase with the electrification of our societies, including auto-mobility, but still the fact is that hydrocarbons are a part of the future, whether people like it or not. The contribution venturing can make is on cost. As oil and gas majors we have to get better at commercialising the technologies we invest in and making sure they get deployed in our business to reduce costs. This will include the removal of hurdles that have become deeply rooted in our ways of working in oil and gas.

GCV data shows that corporate VCs from outside the energy industry are beginning to venture more actively in energy. In particular, we are seeing investors traditionally seen as software specialists, such as Intel and Microsoft, becoming more active. What are the implications of this? Does this point to the increasing digitisation of energy?

It underlines the profound change happening in the energy industry, in which we are participating and are shaping. In fact, this is great, as we are always looking for credible co-investors for the ventures we invest in. Having more corporates around the table that take a long-term view and have the balance sheet to invest long-term is great.

For example, we have already co-invested with tech-giants like Google and Intel, and there will be likely more to follow. We are also making LP – or fund-of-funds investments – in financial VCs. For example, we have invested in G2VP, a kind of spin-off from Kleiner Perkins Caufield & Byers, which has a great thesis on the convergence of renewables and digital in the energy domain. We have also backed Autotech Ventures, a specialist on smart mobility, automotive, transport and logistics. This helps us understand and see dealflow that could be relevant to Shell. We might also co-invest with some of our LPs.

You have had a busy summer, closing two deals in August, including Innowatts, a Texan digital energy platform. What is its strategic relevance to Shell?

Innowatts combines and aggregates data into meaningful intelligence for customers of utility services. If you connect that with our investment in Sense, a Boston-based home energy management business, Shell begins to get a much fuller picture of energy behaviours with our key customers. ◆

Interview: Schlumberger's win-win-win venturing

GCV's Kaloyan Andonov spoke with Imran Kizilbash, vice-president of Schlumberger Technology Investments (STI), about the corporate venturing unit's investment thesis, target areas and recent developments in the oil and gas sector.

What is the overall investment thesis of (STI) ?

Our primary driver for making our venture investments in startups is strategic. As a company, we have identified key technologies and themes or sectors that we are focused on in the medium term. Our remit, both in terms of technologies and sectors, is quite broad-ranging, from industrial internet of things to energy in the broadest sense and from automation to materials. This strategic rationale drives the arenas in which we are looking for dealflow.

In addition to the strategic rationale, at a portfolio level we have a threshold financial target level of return, to keep our teams focused on the right deals and to be accretive to the corporation over the long term.

What makes a good investment opportunity for Schlumberger? What do you seek in a company before committing capital?

A great investment opportunity for Schlumberger will typically have most of the following ingredients – a truly differentiating well-protected technology in at least one vertical with some potential applications to oil and gas, a company that matches our areas of focus in terms of technology or sectors, a management team in the startup and a Schlumberger product line that is engaged and working together to either develop or deploy a technology or product. We also look at the culture and quality of the management team in the startup.

It is important for us that the company be willing to accept a reasonably sized stake and Schlumberger engagement on the board. For later-stage deals, we typically look for a strong and engaged syndicate of institutional and corporate investors.

A portfolio company must complement our overall CVC portfolio in terms of strategy, risk profile, size and financial return. We like rationalised business plans that truly understand their target markets. We can then add our understanding of the oil and gas sector to it.

What type of resources and expertise do portfolio companies receive from the corporate parent?

We believe we can provide a strong partnership to our portfolio companies. This partnership can take a variety of different forms depending on the startup. Some examples are joint technology development, access to a broad highly-skilled technology organisation, extremely competent in technology commercialisation, developing joint distribution channels to market, active

SECTOR FOCUS

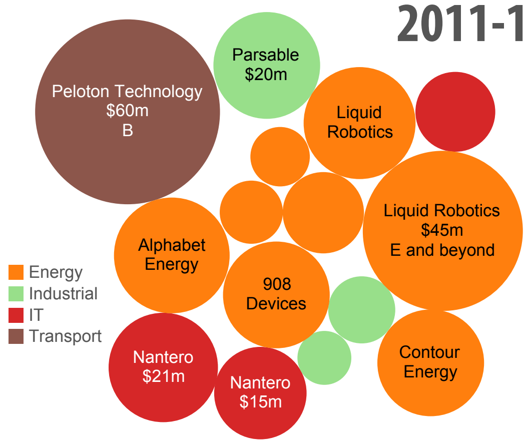
management input and guidance at the board level.

We also give them a customer perspective by being their clients and make them part of a broad external network of potential co-investors for future rounds. Thanks to our asset base, we provide them with opportunities to carry out prototyping and testing of their products under realistic field conditions.

What trends have you been observing in rising enterprises from the oil and gas area in recent years, particularly in light of dropping oil prices?

We are seeing an increasing number of customers – oil and gas companies – creating active venturing units. The oil and gas industry is reaching out to other sectors for disrupting technology. This is especially true in the areas of software, artificial intelligence, machine learning and analytics and the industrial internet of things, to name a few.

Investments by Schlumberger 2011-17



Given the staffing reductions in oil and gas companies that are commensurate with the downturn, we have seen many of those talented people developing startup companies targeting specific technology areas. Small oil and gas innovation hubs are developing in places like Houston, Calgary and Denver.

With the recent reduction in oil prices, the corporate venturing units of some of the smaller independents have become defunct. The current list of CVC groups in oil and gas are essentially large international or national oil companies. Despite the downturn in the industry, these CVCs continue to be very active, as are we. There is also greater willingness to collaborate across operator and service sectors at earlier stages, and more CVC units are willing to look at oil and gas investment opportunities, or rather technologies that could have application in the oil and gas space.

"You will be surprised at what we find interesting and how we could potentially use it"

Schlumberger's venturing unit also invests in other areas, such as advanced materials, automation and robotics, electronics and even autonomous transport – for example Peloton's deal from earlier this year.

What trends have you seen in these areas most recently?

Schlumberger's CVC unit is investing in a very broad range of companies. The areas of software, artificial intelligence and machine learning, analytics, automation, robotics, the internet of things and autonomous transport have been very busy. In the last two years, in addition to refocusing our internal efforts, we have made several robotics and automation-related investments and are actively looking at additional companies in this space as we speak.

In general, we would not like potential portfolio companies to have any preconceptions about the Schlumberger CVC group. So I would say to them: "You will be surprised at what we find interesting and how we could potentially use it. If in doubt, let us have a look at your technology or offering, and let us decide whether it is of interest."

What is Schlumberger's stance on emerging renewable energy enterprises?

Evaluating and looking at technology and companies in the renewable space is very much part of our remit. We have made three investments around renewables, energy efficiency and greenhouse gas emissions over the last two years. We also completed an in-depth review of the solar space earlier this year. So renewables are very much an area of interest.

STI's most recent publicly-disclosed deal was in chemical analysis device developer 908 Devices, in which you co-invested with Saudi Aramco's venturing unit, Saudi Aramco Energy Ventures. Are there any new deals in the pipeline?

We actually invested in 908D several years ago and then also participated in the recent round of capital-raise. To date we have closed three new transactions in 2017 and are actively evaluating several additional transactions in the arena ranging from machine learning and analytics through additive manufacturing to power generation.

What do you usually look for in co-investors?

In prior transactions, we have co-invested with some of the oil and gas CVC units as well as other industrial CVCs in addition to traditional VC firms. Several of our partners often bring transactions and opportunities to us and we reciprocate in a similar fashion. Having good corporate and financial partners in a transaction is always a positive and leads to increased collaboration.

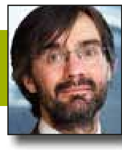
We look for win-win-win relationships when looking at investment syndicates, where all partners can bring something to support, energise and assist in the growth and adoption of the startup's technology and business. We like to think that we are good investment partners and will bring dealflow to other CVC groups even if we are not investing in the particular startup. ◆

CONGRESS REPORT

Hong Kong under-secretary for commerce and economic development Bernard Chan addresses the GCV Asia Congress

Asia explores its tech dragons and tigers

James Mawson, editor-in-chief



The theme of the inaugural Global Corporate Venturing (GCV) Asia Congress, held in Hong Kong last month, was the next-generation technologies being developed and invented in the region. These so-called dragon and tiger technologies are leapfrogging the platforms and technology infrastructure in much of Europe and the US and in large part a result of a unique combination of competitive and collaborative investment strategies by entrepreneurs, governments, universities and corporations.

The opening panel at the congress, led by **Jay Eum**, managing partner at Translink Capital, highlighted this process. **Koichi Narasaki**, group digital officer at Japan-based insurer Sompo, which recently set up a $150m corporate venturing programme, including a $50m commitment to Translink, said it had started working with China-based peer ZhongAn.

Narasaki said: "I am amazed by their disruptive insurance process. They do not need us as much as we need them. It is learning [by us] not necessary collaboration."

ZhongAn, which floated in Hong Kong last month raising $1.5bn at about a $10bn market capitalisation, has sold more than 5.8 billion insurance policies to 460 million customers since its foundation in 2014 by insurer Ping An, media conglomerate Tencent and online retailer Alibaba's affiliate Ant Financial.

ZhongAn has the platform to launch a new product every week and a creative and testing process with its partners to encourage new ideas and development.

Narasaki described China's market as so large and sophisticated it allowed for such rapid growth. However, these characteristics meant business models and even technologies that work there could have limited application in other markets.

SaeMin Ahn, the Singapore-based managing partner at Rakuten Ventures, on the same panel said: "I am cautious. Business models [that work in China] and ones that work overseas are as different as those between Mars and Earth."

Satoshi Yano, leader of corporate investments at Japan-listed communications platform Line, which has made more than 10 corporate venturing deals since its investments programme launch last year agreed.

Yano said the majority of its deals had been outside Japan and focused on entrepreneurial hotspots around the world. Of its team of 10, two are in Silicon Valley and one in Beijing, while Ahn said Rakuten preferred to "sniper" invest from Singapore into the Valley.

Similarly, **John Suh**, vice-president and head of corporate venturing at South Korea-based carmaker Hyundai plans to open a CVC office in Shenzhen, China, by the first quarter of next year, to complement the one in Silicon Valley, California.

CONGRESS REPORT

Suh said investing globally and particularly in Silicon Valley was important.

He said: “When Hyundai set up its ventures team in the Valley six years ago it was difficult to justify then but the CEO had the vision and drive to make it happen. Now, it is self-evident we should be there as autonomous vehicles, technology, original equipment manufacturers, tier-one suppliers and entrepreneurs are all there. The talent is self-sufficient regardless of whether there are ups or downs in a startup itself.”

He gave the example of one deal it had struck in 2010 for US-based SoundHound. This was reported as a GCV big deal in February this year when it closed $75m as part of a push to develop a conversational artificial intelligence (AI) platform. TransLink had been an investor in this round and invited as co-investors some of its limited partners, including Sompo and Line.

The close collaboration between sophisticated VCs and corporate partners, either investing directly in technologically-advanced portfolio companies or working as technology providers or customers, was a theme running through the day’s discussion.

Yano said Line did a few deals directly on the west coast of the US but this was not enough, so it partnered VCs to help and also as a source of exits for their portfolio companies by buying them.

Suh said from 2007, when Apple’s iPhone effectively launched the smartphone breakthrough, to about 2014, Hyundai’s open innovation and venturing focus had been on understanding mobility and connecting devices to its cars.

In this case, SoundHound was initially known for its music recognition app, which took the template set by Shazam and added features such as the ability to find songs by inputting lyrics or to see them linked to the music as it plays. But its more recent evolution reflects what many see as the next wave of technology breakthroughs, voice-recognition to control devices applicable across a wide range of industries, which is why so many CVCs joined its latest round.

In late 2015 the company introduced Houndify, a platform that enabled developers to add complex voice interaction to their products, and added a voice-powered personal assistance app called Hound a few months later. It intends to build its products into a large-scale platform for voice and sound-based AI that can be used by a range of partners.

Jeffrey Li, managing partner at Tencent Investment, in a fireside chat with **Chris Pu**, head of China at Telstra Ventures, moderated by **Gloria Liu**, partner at law firm DLA Piper, said it had also looked at SoundHound for this reason.

Li, who led the GCV Powerlist in May, collected the Unit of the Year award in the lunchtime session presented by **Bernard Chan**, Hong Kong’s under-secretary for commerce and economic development, and **Paul Morris**, chief investment officer at the UK’s Department for International Trade.

Ben Joffe of HAX chats to Wayne MacGregor of Naspers

CONGRESS REPORT

From left, Elizabeth Fung of the Hong Kong government, Chin Yung Lu of InvestHK, Laura Oliphant of Translarity

Tencent was the largest investor in Asia-based companies last year by deal value, followed by Alibaba and SoftBank, according to GCV Analytics, and has committed to more than 100 VC funds as it develops its network.

Tencent also scored highest among local CVCs in the GCV Power Index, in part for its innovative approach to working with portfolio companies effectively as business units able to access its WeChat platform rather than independent companies.

Li said: "Tencent set up its investment arm in 2008 as before there had been criticised for operating a closed ecosystem and copying startups. From 2009 to 2010, the focus was on building the ecosystem by developing the core ecosystem and then opening it up to partners so they can build, and investment is an important arm of that.

"For the past six years we have been reinvesting our profits back to venture while other corporations focus on M&A. We do do that but it is a small part compared with lots of minority deals, such as Didi Chuxing, 58 and Meituan, from our 50-strong team, which is still growing."

Li had earlier told GCV: "The competitive landscape of China internet space, especially the very high iteration speed of the market, forced all major players to capture future innovation. In that case, there might be relatively more minority deals in China compared with the US market. And the giants might leverage their market resource to speed up the growth of the investee company."

Li said it was increasingly turning its attention from its local market, China, to deep technology and research in the US and Europe. However, he said the company was cautious in its international expansion as the network effects in communications, such as Tencent's WeChat platform, meant switching could be difficult.

WeChat's near 1 billion users dominates China's market but in Hong Kong many locals still seem to use Facebook's WhatsApp, which Li admitted it had tried to buy before Facebook acquired it for about $19bn in 2014.

But the challenge is increasingly encouraging corporations to scale up their CVC units as part of wider research and development and open innovation programmes and for what Li called a "survival game, as organisation structures mean it is hard for big companies to survive".

Especially in technology and communications, where network effects, such as language, culture and user behaviour, mean it is "extremely difficult" to expand, Li said: "WhatsApp is a 30-year-old product feature built around text, versus WeChat, which is an amazing product that has not happened overseas.

"We tried to acquire WhatsApp before Facebook did, but [instead] invested in Kik and Snapchat to try to understand the major challenge of culture and talent in expanding. Digital communications have strong network effects and other verticals are easier maybe. Didi invested in Uber and we are global partner for them, for example.

"Since 2005, there have been lots of innovation in consumers and mobile internet but fundamental research technology will be a key driver in the next five to 10 years."

This is helping venture both scale up and globalise, according to Telstra's Pu, in agreement with Li. Pu said: "Corporations are attacking from everywhere [all sectors and regions]."

Telstra last year estimated CVCs could soon make up about 35% of the entire venture market, with SoftBank named GCV's Fund of the Year for raising $93bn in its first close of the SoftBank Vision Fund doing much to reach this goal, it

CONGRESS REPORT

Blair Zhang of Comb Plus, left, and Chris Pu of Telstra

seemed to attendees.

Although SoftBank was just one of 124 venture funding initiatives backed by Asia-Pacific-based corporations last year, it was the vast majority of the $117.1bn they raised, according to GCV Analytics data.

Nearly half the direct CVC investments in Asia-Pacific region went to China (763), followed by India, Japan and Singapore and Indonesia and South Korea, all active target areas for SoftBank. Asia-Pacific made up about a quarter (463) of the more than 2,000 deals globally last year, according to GCV Analytics, although its share of exits (42 out of 221 last year) has lagged behind as the market has been relatively nascent.

SoftBank, which addressed the GCV Symposium in May as it made the first close of the Vision Fund, committed up to $500m to the flotation of ZhongAn in just one of its latest large rounds.

Other CVCs noted how sophisticated the group was at investing by buying primary shares in a up round – higher valuation than earlier rounds – but also buying secondary shares, those from existing shareholders, at a discount and negotiating hard on the terms and rights. As one investor said: "They [SoftBank] are disrupting growth equity by targeting market leaders and adding a zero on the end of the cheque."

But while leading corporations are stretching the belief in what is possible in terms of deal size and fundraising, the basic tenets in venture remain the same and increasingly applicable in different regions and industries.

Ramy Farid, co-founder and partner of technology platform Proseeder, moderated a panel discussion on dealmaking and incubation in Asia and their ties to the west.

Yinglan Tan, CEO and managing partner at VC firm Insignia Venture Partners, which he founded this year after leading Sequoia Capital's Southeast Asia investment team from Singapore, including leading its deals for Tokopedia, Go-Jek, Carousell, Appier, Dailyhotel, Pinkoi and 99, said the Southeast Asia region was a few years behind China in terms of entrepreneur numbers and unicorns – companies worth at least $1bn *(see analysis)* – but this was changing rapidly given its demographics, economies and openness to technology.

Singapore-based **Pocket Sun**, founding partner at SoGal Ventures, pointed to the technology purchases and working and living patterns of the millennial generation as integral to outlier returns in the future. Millennials increasingly wanted personalised, on-demand products and services. She said: "Millennials are looking for consumption upgrade in niche products and services that reflect their values, such as one-off hair care by colour or fragrance."

Blair Zhang, partner at Hong Kong-listed SkyOcean's Comb Plus accelerator, said she was developing a global platform to bring these western entrepreneurs, particularly from the Nordic region, to China.

However, selecting the entrepreneurs remains a challenge. **Cha Li**, founder and managing partner at China-based early-stage VC iStart Ventures, said he had started angel investing in the early 2000s after selling his company but initially struggled as his focus was on top-down research and "reading the press". However, his investment track record improved when he concentrated on the founders and their goals.

As Li from Tencent said in advising potential new CVCs: "In our experience focus is important and it takes about three

CONGRESS REPORT

Asking a question, Jay Eum of TransLink, beside, on left John Suh of Hyundai

years to train people in what they should not do as the issue is there are so many opportunities that could make money. Be selective on what you can do and core competence you can bring."

This message has been heeded by some of Tencent's unicorn portfolio companies. **Ernest Fung**, senior director and head of international investments at JD, **Wen Jiang**, entertainment and content investment lead at Xiaomi, **Wenqian Zhu**, vice-president for strategy and investment at Meituan Dianping, and **Xiaoyang Li**, vice-president for corporate investment, head of M&A and strategic investment, at 58.com, discussed in the congress's final panel how to go from being venture-backed to being a corporate venturing leader through such insights and others.

They said it was important to be able to move as fast as the next generation of entrepreneurs and this combination of speed, capital-raising and growth was at the heart of why China had worked so well at both venture and developing its entrepreneurial ecosystem.

It was a strength that the often founder-led corporations have engaged as rapidly and with support for the next generation, especially when compared with many US and European peers, the panel concluded before sharing case studies on how their deals had benefited from the parents' core business in the way they themselves had benefited from WeChat's platform.

But these founders have more funding choices now. **Louis Lehot**, co-head of the VC practice at DLA Piper, asked speakers about initial coin offerings (ICOs) and the disruption they were causing to dealmaking and fundraising if entrepreneurs could effectively raise tens or hundreds of millions of dollars in a few minutes by crowdsourcing. Cha Li said: "ICOs could kill all of us. Two of my portfolio raised $12m in one hour and $24m in 40 minutes, respectively. Last month China blocked blockchain and so they just moved to Japan.

Gloria Liu of DLA Piper and Jeffrey Li of Tencent

The dealmakers panel admitted there was plenty of cash chasing the best entrepreneurs but the value of governance and other support through corporate and independent investors meant they were still in demand.

However, the impact of ICOs on funds is less clear and VCs were increasingly targeting corporate limited partners (LPs) – investors in funds – for the value-add they brought to the general partners (GPs) – the fund's managers.

Paul Denning, CEO and legendary placement agent at Denning & Co, moderated a panel discussion on what were the factors driving next-generation corporate LP and GP relationships.

The panellists showed the wide range of options, depending on the corporate strategy. **Chibo Tang**, managing director of Gobi VC firm, which manages Alibaba's Hong Kong Entrepreneur Fund as one of its eight funds with a dozen corporate LPs among them, said the mandate gave it greater scale and opportunities to invest on the island while Alibaba was able to tap into

CONGRESS REPORT

GCV founder James Mawson chairs a panel involving, from left Ernest Fung of JD, Wen Jiang of Xiaomi, Wenqiang Zhu of Meituan and Xiaoyang Li of 58

greater local presence and a skilled team for earlier-stage investments than its growth and buyouts focus.

He added: "Corporations [investing directly] are a love-hate relationship for VCs. They can fund the next round or provide an exit but it is hard to compete with strategics on the best deals."

Victor Orlovski, managing partner at Sberbank's SBT Venture Fund, said having Russia's largest bank as sole limited partner in its first fund while he was based in the US was an advantage in giving it money and close connections but a degree of autonomy to find deals that could be disruptive.

Karthik Prabhakar, partner at IDG Ventures India, said its own journey had been from a similar relationship where publisher International Data Group had been sole LP when it started a decade ago, but for its third fund closed this year its parent provided a minority of the $200m raised.

International Data Group had earlier been acquired by its China-based corporate venturing subsidiary, IDG Capital, which was perhaps a global first, but family offices developed out of wealth generated from corporate profits and ownership often have increasing ties to CVC and venture investing.

Hong Kong's tax haven status as a special administrative region of China has meant many of these family offices have billions or tens of billions of dollars to invest and a desire for more impactful venture strategies. The government is also supporting VCs more directly with its latest fund.

Danai Pathomvanich, managing partner at Hatton Capital, which is his family office, and adviser to Thailand's conglomerate CP's venturing strategy, said the role of the state in underpinning VC was important to recognise. Thailand's state bank is an LP in its inaugural social impact fund, while changing legal restrictions on private equity and VC managers.

Prabhakar drily noted that in India or emerging markets, anything could be considered impact and it had the International Finance Corporation, the World Bank's private investment organisation, as one of its LPs partly for this reason.

But in terms of state support, China has led the way. **Angelica Anton**, founding partner at Silk Ventures, in a keynote, described how China's State-owned Assets Supervision and Administration Commission of the State Council controlled about 98 state-owned enterprises with between $1.5 trillion and $3.5 trillion in annual revenues.

Given their importance, she described China's strategic venture landscape as having multinational corporations, domestics CVCs and state-owned and backed venture funds, such as the RMB100bn ($14.5bn) China Internet Investment Fund supported by Industrial & Commercial Bank of China and state-owned Citic Guoan Group, China Post Insurance, China Mobile, China Unicom and China Telecom.

Anton said the state was also pushing mixed-ownership reforms to bring in private corporate investors, such as Tencent, Alibaba and Didi Chuxing's investment in China Unicom. She said: "It will be impossible to compete if they get it right."

Her view was funding, ownership reforms and policy focus on technology as an enabler to increase efficiency would drive the economy. For the latter, China has developed three major policies, around AI – to be the premier nation in the field by 2030 – things being "Made in China" by 2025, and the infrastructure-focused Belt and Road initiative, which she described as "today's Marshall plan, only 40 times bigger" with $900bn in projects planned to develop land and sea routes from China.

CONGRESS REPORT

Alvin Graylin, China president of Vive at Taiwan-based HTC, gave virtual reality (VR) and AI as an example of how China's five-year plans focused attention on a topic. In a presentation on the topic and the excitement around it, he said China was willing to adapt and VR was being used as a tool to drive its fifth-generation (5G) communications infrastructure, as well as AI work. China was also setting the standards globally and Vive's cloud VR business launched just before the congress required partnerships to enable 60 megabits per second download speeds to avoid latency issues.

Paul Morris of the UK's Department for International Trade talks to Bernard Chan, Hong Kong's under-secretary for commerce and economic development

For other countries not at China's scale, **Simon Cant**, co-founder and managing director of Australia-based Westpac's Reinventure corporate venturing unit, then went through fintech as an example of how to play a role when China was leapfrogging ahead on the technology.

While China seemingly has cities with populations the same size as Australia's enitre 24 million, Cant said his continent was the world's fourth-largest pension pot and fintech was its largest employer, so disruption was a big issue for the country.

As a result, its focus on Westpac had helped the country as a whole, he said, but this required a shift in its strategy. "Reinventure Fund provides Westpac Bank the optionality to own the disruptors and grow into adjacencies."

Initially, its corporate venturing strategy had been to look to find proven entrepreneurs and business models in local markets where it had an unfair advantage, as in Australia. But under Cant and his co-founder, **Danny Gilligan**, it had evolved into a strategy looking to provide early cheques to credible founders in technologies, such as AI, data and blockchain, in which Westpac had "potential" unfair advantages.

Reinventure, therefore, was set up as an independent unit with Westpac as its LP. Cant added: "To reinforce our independence while raising the tide of Australian fintech we set about creating a fintech ecosystem in Australia – connecting startups to capital, government, corporates and mentors."

As well as the two A$50m ($40m) Reinventure funds, they set up co-working spaces, Stone & Chalk and the Sydney Startup Hub, for corporate and government support, the Fuel-D Accelerator for skill-sharing and mentoring, and Fintech Australia to campaign for government cooperation and a favourable regulatory environment.

All of which has led to more meetings and fintech startups, going from fewer than 100 in 2014 to 579 by this year, Cant concluded.

However, the day's final keynote went to academic, entrepreneur and investor **Martin Haemmig**. His presentation on the Global Innovation Corridor Challenge covered initially the R&D and patents landscape then how startups were increasingly going global. Using data provider Dow Jones figures, between 2006 and end-June 2017, 6.7% of the 32,840 startups tracked had both raised money and set up an international office.

And CVCs were active in helping them. While data provider PitchBook found about a third of VCs invested internationally between 2014 and 2016, GCV Analytics traced about half of CVCs doing so in this time period. This made sense given Haemmig identified a global valuation arbitrage at the series A round stage. He said: "Valuations are significantly lower in some smaller or less mature markets, providing scope for significant valuation uplift follow-on funding rounds, and higher multiples at exit. However, very few from these markets can be market leaders in Silicon Valley, and only if they set up offices there early in their life."

Haemmig combined the analyses to look through where CVCs had invested in startups with international offices and found China had the largest proportion (64 out of 79).

In discussing the future of venture and technology, all roads seem to lead to China. ◆

CONGRESS REPORT

The sovereign wealth fund roundtable: from left, Hira Laksamana of Amvesindo, Stella Park of FPC, and Alison Nankivell of BDC

Yesha Sivan of Coller with Krishna Chokhani of Chokhani Group

Angelica Anton of Silk Ventures

Koji Murata of Kyoto and Soichi Yano of Line

Wen Jiang of Xiaomi

Tencent's Jeffrey Li receives his award from Bernard Chan

Olivier Glauser of Shankai talks to Wenqian Zhu of Meituan Dianping

Paul Morris presents an award to CK Kan of Desktop Metal

CONGRESS REPORT

Roundtable roundup

Future of technology roundtables were hosted under Chatham House rules with summaries of the discussions shared by the speakers.

Blockchain and fintech's future starts in Asia – moderated by Rimas Kapeskas, UPS; Ron Arnold, IAG Ventures; Nina Zho, CreditEase; Igor Pesin, Life.SREDA VC Fund

- It feels a bit like we are flying the plane while building it
- Difficult to see truly fully distributed ledgers taking root in industries, although specific applications make sense, for example fraud, tracking goods through supply chains
- Very likely a useful architecture that will be utilised by business to drive some efficiency and allow some innovation, eg smart contracts
- A fair degree of caution/cynicism around ICOs (initial coin offerings)
- Query the ability of the majority players in a system to 'redefine rules' – how does effective governance work/what is needed for effective governance?

Mobility drives into the future – moderated by Graham Howes, BP; Hiro Saijou, Yamaha Motor Ventures; John Suh, Hyundai; Leonard Lee, Airbus Group; Marc Teo, Infineon

- The business model is important and where to act in the mobility sector is not immediately clear.
- The long term economics of the various applications being pursued need to be carefully considered
- It is apparent that personal space and travel time are important, and that seamless mobility experience is required, probably using multi-model transportation
- Data does not lie with any one organisation and if mobility is to be simplified in terms of user experience then issues of sharing, ownership, trust privacy, etc surrounding personal data need to be overcome and agreed at an individual level
- Each new generation has a different attitude to data privacy and mobility which could precipitate disruption in the transportation sector
- Electric vehicles and fully autonomous capability are likely to converge in a similar time frame as there are symbiotic characteristics

What language will machines speak with their artificial intelligence – moderated by Vitaly Golomb, HP Tech Ventures, and Pocket Sun, SoGal Ventures

- Timing is always a question. People typically expect technology breakthroughs to cause direct effects (Hollywood idea of the future) on life faster than possible and at once they underestimate the second order effects of a new technology paradigm, which tend to be much more profound.
- There will certainly be an effect on jobs but timing is not yet clear. Government jobs will be safe.
- We will see a greater level of personalized content and targeting creating very different experiences.
- AI can already understand humans better than we can.
- The first trillion-dollar company will be driven by AI.
- Core AI has a chance of being open-source or freely available
- If AI is more human, who are we? What is the new meaning of life?

Sports: the digital revolution coming from China – moderated by Olivier Glauser, Shankai Sports, and Alvin Wang Graylin, HTC Vive

- Favourable Chinese government policies towards sports, in part to grow the consumption economy, in part to bolster healthy lifestyles and "national pride" will present significant opportunities for growth
- China with its advanced adoption of digital media and mobile technologies will be able to leapfrog and accelerate the adoption of digital media across the sports industry.

The artificial intelligence roundtable

The manufacturing roundtable

- "Traditional sports" are ripe for a revolution in digital media adoption – TV consumption being an old model – which will be driven in big part in the Chinese market.
- Chinese companies, with their need to have their brands known globally via sports sponsorship – for example, Alibaba Olympics and the Fifa World Cup – plus outbound investments will be a driving factor of China entering the world stage in sports.
- AR and VR adoption – happening first in China – will also lead a revolution in both sports media consumption and practicing sports. This will lead to a convergence of virtual world and physical world. People will be able to practise physical sports in virtual environments against virtual or distant opponents, and consume real sports remotely as if being on the scene.

Manufacturing Asia's next generation of competitiveness – moderated by Keith Gillard, Pangaea Ventures; CK Kan, Desktop Metal; Laura Oliphant, Translarity; Valery Krivenko, FPI
- Additive manufacturing and robotics.
- Precision and speed will drive yields up, cost down, and quality up, taking market share from traditional manufacturing.
- As complexity increases, new application emerge, including printed electronics.
- Artificial Intelligence and big data.
- Manufacturing will be democratised and largely open-sourced, except for quality-critical applications such as medical devices, which will be regulated.
- AI will exponentially accelerate progress, also allowing fur accurate anticipation of demand, further reducing costs.
- Social Impact.
- Advantage of cheap labour will become obsolete, moving manufacturing close to demand.
- Jobs in Asia will be lost.

Sovereign funds and corporations' collaboration with VC – moderated by Abigail Wye, Future Planet Capital; Gordon Lam, Guangdong Asia Pacific E-Commerce Institute; Hira Laksamana, Mandira Capital; Alison Nankivell, BDC Capital; Antti Kosunen, Nestholma
- The discussion covered three main topics:
- Should government entities / SWFs take direct investments in startups?
- How do sovereign wealth funds and sovereign development funds help ensure innovation transfer?
- Do these funds make good investors, and what might be best practise?
- There was agreement that there are many different sovereign funds, so it is hard to make generalisations.
- However, overall consensus that there needed to be a separation between financial investing and political executives.
- Governments may be best placed to set up accelerators and invest in funds as LPs, unless deep experience.
- Acknowledgement of the challenges if innovation transfer – much easier said than done. Corporates can help to bring business understanding.

Big deal: Hong Kong launches $256m fund

Thierry Heles, editor, Global Government Venturing

The government of Hong Kong launched its HK$2bn ($256m) Innovation and Technology Venture Fund (ITVF), inviting venture capital firms to become co-investors as part of a push to support the "remarkable growth" in the startup scene in China's special administrative region (SAR), according to Bernard Chan, under-secretary for commerce and economic development, at the Global Corporate Venturing Asia Congress.

Chan said in 2003 there had been three co-working spaces in the SAR but now there were 15 with 5,300 staff in the startups. He added: "Hong Kong is well positioned between Shenzhen and the Great Bay [the name given to the Pearl River delta in southern China]."

The fund's launch had been awaited since July, when Anne Choi, commissioner of information and technology, said at the Hong Kong Venture Capital Association's VC Forum that it was due to go live "in a matter of weeks" after several years of development.

The ITVF will accept applications from both domestic and overseas firms, though it will invest exclusively in Hong Kong-based startups, with a view to bolstering the local ecosystem. Each selected co-investor will agree the details of collaboration with the government.

The government will invest approximately a third of the overall commitment in startups, with VC firms providing the remaining two-thirds. Applications to become a co-investor are open until 15 January.

Nicholas Yang, secretary for innovation and technology, said: "The ITVF will help fill the funding gap for local technology startups. We are confident that having this new fund will be conducive to developing a more vibrant Hong Kong innovation and technology ecosystem."

The fund is the latest in a range of initiatives by the SAR's government since its sovereignty was transferred from the UK to China in 1997.

Existing schemes include Cyberport, a co-working and incubator cluster that had supported the launch of more than 320 startups as of February last year. The business park also operates the HK$200m Cyberport Macro Fund, which helps startups grow beyond the seed stage. One of its success stories is logistics company GoGoVan, which has raised capital from backers such as media group Singapore Press Holdings, e-commerce company Alibaba and social media firm Renren.

The government also manages the Innovation and Technology Fund, which was launched in 1999 with HK$5bn and doubled in size to HK$10bn in 2015. The fund focuses on technology startups.

The various moves all form part of the region's goal of becoming an economy that can keep up with the technological innovations of its neighbours. Mainland China has more than 100 unicorns – businesses worth more than $1bn – among its startups, according to a ranking by local news publication China Money Network. Meanwhile, Hong Kong's economy has relied primarily on four traditional sectors – financial services, professional services, trading and logistics, and tourism.

The government's renewed focus on startups also comes at a time when the region is still reeling from mass protests in 2014 that led to the imprisonment of three pro-democracy leaders and further protests this summer.

In that political context, it will be interesting to see how effective the government will be in attracting overseas venture capital firms as co-investors – a key component of helping startups accelerate international expansion efforts. It will also be interesting to track whether entrepreneurs will be drawn to Hong Kong.

It has already had considerable success with Gobi Venture Partners managing retailer Alibaba's Hong Kong Entrepreneurs Fund and quickly becoming one of the largest VC investors on the island with about 20 deals, and the more recent creation of Hong Kong X Foundation, backed by Sequoia investor Neil Shen and Tencent chairman Pony Ma.

China-based buyout firm Hony Capital, founded by tech company Legend, is setting up Beyond Ventures as a VC fund trying to raise HK$1.2bn to invest in the island's entrepreneurs and potentially close the gap in early-stage funding compared with its peers.

Newswire Reuters reporting on Beyond's launch said average early funding for Hong Kong-based startups was $80,000, versus $182,000 in Singapore and $340,000 in New York. Reuters quoted Lap Man, a founder of Beyond Ventures, who said: "In the coming three years, if we have another five DJIs, capital is not a problem," referring to the world's largest drone company that was conceived at Hong Kong's University of Science and Technology by China-born Frank Wang before being based in Shenzhen.

Peter Mok, head of the incubation programmes at Hong Kong Science and Technology Park, in a tour for international CVCs before the GCV Asia Congress said the hardest part in encouraging entrepreneurialism as part of the island's reindustrialisation strategy was the cultural and education element. He said the infrastructure bit – building another science park – was the "easy bit" but getting students from its world-class, leading universities to take on risk was harder.

The region is not shy about pursuing its grand economic ambitions and the ITVF proves the government is not afraid of putting its money where its mouth is – a promising sign. ◆

ANALYSIS

China's unicorns multiply under CVC stewardship

James Mawson, editor-in-chief

◆Chinese corporate venturers have invested in almost all the 125 local unicorns

◆Rapid growth in international ambition and domestic concentration by Chinese CVCs

◆State-owned enterprises look to harness venture skillsets to transform economy

A decade ago, before the term was captured for the most successful type of entrepreneurs, academic Jeannie Parker's book The Mythic Chinese Unicorn explained "how the myth of the unicorn began in China then gradually spread into other parts of Asia and Europe".

Aileen Lee, a venture capitalist and American daughter of Chinese immigrants, captured the term unicorn in a November 2013 TechCrunch article – Welcome to the unicorn club: learning from billion-dollar startups.

Among venture capitalists at least, a unicorn is a privately-held startup that has at least a $1bn valuation. But while the idea has taken off in the US, which remains home to most such unicorns, perhaps the fastest-growing region for them is China, and the implications of how quickly and by whom they have been funded carries increasing weight in the innovation capital ecosystem.

In August, Baidu, Alibaba, Tencent and JD.com were among the investors committing to invest $10bn in a China-based telecoms company.

This was no startup but the state-owned China Unicom worth about $30bn.

Also that month, however, these same four companies (often referred to by their collective acronym, BATJ,) backed far more, younger, more entrepreneurial companies.

- Tencent and Alibaba CEO and founder Jack Ma's family office Yunfeng Capital were part of the consortium for VIPKid's $200m round at a reported valuation of more than $1.5bn.
- Deep learning chipset developer Cambricon secured $100m in a series A round that included subsidiaries of Alibaba and reportedly valued the company, which was founded only last year, at more than $1bn.
- Huochebang, a logistics platform that has partnered Alibaba Cloud to develop big data tools that can help make vehicles and goods distribution more efficient, has secured $56m in a series B-3 round, adding to more than $270m raised from investors including Baidu Capital and Tencent since December.

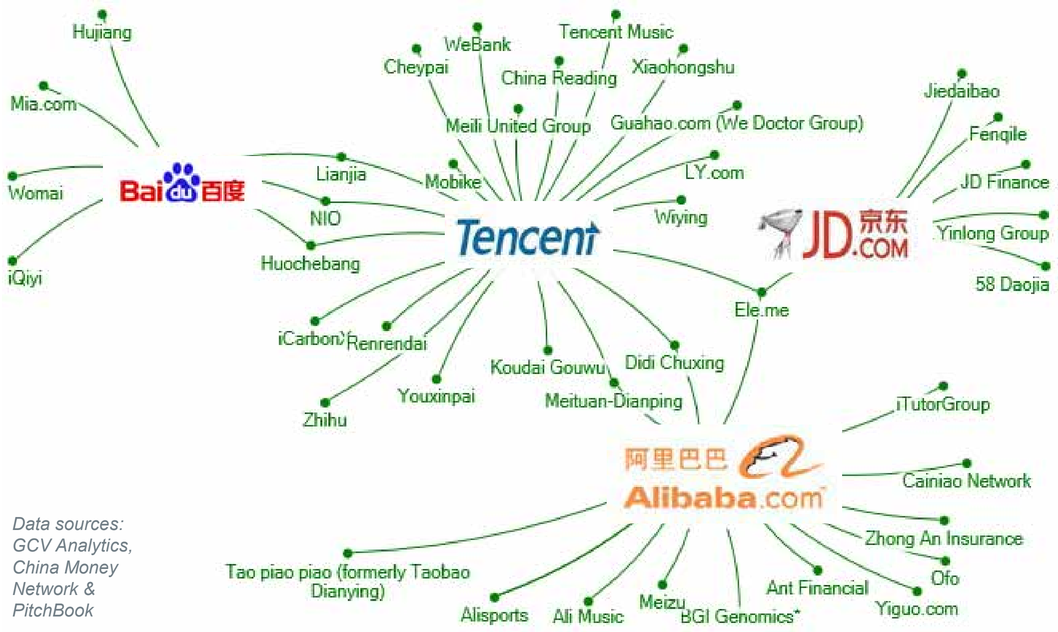
In deals outside of China in August, JD added $100m to Indonesia's Go-Jek, Alibaba was set to lead a $1.1bn round for south-east Asian e-commerce marketplace Tokopedia, while Tencent was part of Essential Products, the US-based smartphone startup founded by Android creator Andy Rubin's, $300m funding round.

This was just a handful of the larger deals that month, with Baidu also closing a $1bn later-stage venture fund in partnership with China Life.

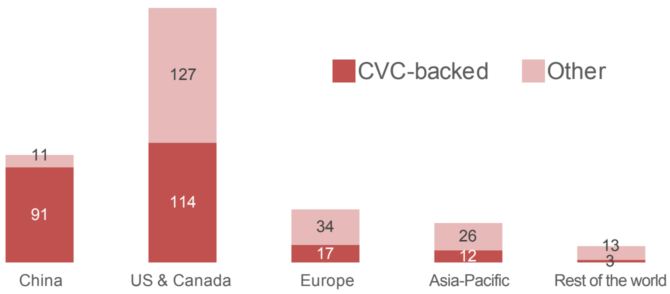
It would seem unsurprising, therefore, that these four corporations have backed the majority of China's unicorns – private companies worth at least $1bn.

ANALYSIS

Investments in unicorns by Alibaba, Tencent, Baidu and JD



Unicorns by region



Taking as a starting point probably the most comprehensive list of such unicorns in China - the 108 tracked by China Money Network (CMN) as at 28 August – and more than 90% of them appeared from public records to have at least one corporate venturing investor in the syndicate, according to GCV Analytics.

For context, data provider Pitchbook's list of 345 unicorns in countries other than China shows fewer corporate-backed ones in all the other main regions. Only a third (11, as matched in GCV Analytics' database,) of the 34 unicorns in Asia-Pacific ex-China have corporate backing, a similar proportion to Europe's 17 out of 50 and the Middle East's three out of nine.

The US and Canada come closest to China, with 103 out of 240 unicorns backed by corporations. And, just as in China, a handful of corporations dominate Pitchbook's list of North American unicorns. Alphabet, primarily through its GV and CapitalG units (formerly Google Ventures and Google Capital, respectively,) have backed 20 unicorns in North America, while other notable corporate venture capital (CVC) investors include Goldman Sachs, which has 17, while there are 11 for Salesforce, 10 for SAP's US-based Sapphire unit, seven for Intel Capital and five for Qualcomm.

In China, however, the concentration of a handful of sophisticated CVCs in the most successful deals is more extreme. Nearly half of CMN's list of Chinese unicorns, 46, had at least one of the BATJs as an investor, GCV Analytics found. Even adding in another 15 or so reported or estimated unicorns by 28 August, such as VIPKid and Cambricon, yet to be tracked by CMN at that time and the pattern continues to play out that the largest private sector companies are driving the entrepreneurial ecosystem.

Tencent has backed 24 unicorns in the CMN list, plus another handful (four) of others in China from the broader list tracked by GCV Analytics, and Alibaba's 18 unicorns in its portfolio indicate how dominate the two are, even excluding their track records outside of the country. Baidu's seven would have been better but for the fallen unicorn status of Baidu Waimai, which had seen its valuation cut from $2.5bn to $600m in its latest round, according to CMN.

JD.com's five unicorn portfolio companies would be extended by another three if its JD Capital portfolio company's own investments in other unicorns were included.

Similarly, Alibaba's affiliate, Ant Financial, has backed a couple of other unicorns, including UrWork and Qufenqi, even outside of those, such as Koubei, Ofo and Ele.me, it has coinvested alongside Alibaba in. The crossholdings become

ANALYSIS

China's venture landscape

The number of startups established in China in the first six months fell 74% from the previous year to 230, while investors were more selective about larger funding deals, according to a report by Tencent and internet business research firm ITjuzi.

China's three leading internet conglomerates Tencent, Alibaba and Baidu (BAT) invested in 38, 23 and six deals, respectively, in this first half of the year, according to the report published by South China Morning Post (SCMP), owned by Alibaba.

The relative slowdown this year came after Chinese venture capital investments hit an all-time high in 2016, with $31bn invested, and in which BAT collectively provided 42% of all venture capital investment, a far more prominent role than Amazon, Facebook, Google and Netflix that together contributed only 5% of US venture capital investment in that year, according to management consultants McKinsey.

About $77bn went into China between 2014 and 2016, compared with $12bn between 2011 and 2013, according to news provider Economist. China's outbound venture capital totalled $38bn between 2014 and 2016, reaching 14% of global venture-capital investment outside China, McKinsey added.

VC firm Innoangel Fund was the most active Chinese investor, being involved in 54 out of the 1,519 funding deals, followed by IDG Capital with 53 and Matrix Partners China with 39, the report added.

Of the 230 new companies, 48, 21%, were in the corporate services business, mainly artificial intelligence, big data and cloud computing, followed by culture and entertainment firms, which made up 15%, and e-commerce and education companies, which accounted for 8% each.

The transport industry attracted most of the money, raising RMB90.5bn ($13.7bn), 37% of the total.

That was due largely to sharing service providers including bicycle-sharing services Ofo and Mobike, while Didi Chuxing, China's ride-hailing service, raised $5.5bn in April.

"Entrepreneurial opportunities have been reducing in the transport industry and medical and property services now that these industries have entered a period of rapid development," said Zheng Kejun, the main author of the report quoted by SCMP.

"Education and agriculture, however, still provide many entrepreneurial opportunities as their development is in a very early stage."

Overall, investors were cautious about funding deals of more than RMB100m, with 192 such cases in the first half, compared with the same period of 2014 when there had been 390.

However, exits through initial public offerings on China's main stock exchanges have soared. In the first half of the year there were 247 IPOs, 119 on the Shanghai stock exchange and 128 on Shenzhen's, raising an aggregate $18.5bn, more than four times the amount in the same period of last year.

more complicated once affiliated, subsidiary or personal investments are included.

Alibaba founder, Jack Ma's, personal investment vehicle, Yunfeng Capital, which has also invested in Koubei, Alisports and VIPKid among others, while Xiaomi, another unicorn with an active venture portfolio, has one of its founders, Lei Jun, invest through Shunwei Capital in Iwjw and Huami Technology as well as the company directly in deals such as IQiyi, Ofo, Ninebot, Kingsoft Cloud and Jiangsu Zimi Technology. Yunfeng also backed BGI Genomics, a division of BGI Group, which in mid-July completed a RMB547m ($81m) initial public offering by selling 40.1 million shares at a list price of RMB13.64 each on the Shenzhen Stock Exchange's ChiNext board. After the first day's 44% share price pop – or increase - BGI Genomics was worth $1.15bn.

BGI, in turn, has also become a corporate venturing investor, backing UK-based genomics company Congenica, developed at University of Cambridge, while its alumni have also left to set up some of the most exciting unicorns, such as Wang Jun's departure to create healthcare analytics firm ICarbonX, backed by Tencent and the fastest to reach such a status in the world.

Given there are 609 billionaires in China, many self-made through founding and often still running their companies, or successor ones in the case of the impressive Li Bin who has set up successive unicorns BitAuto, MoBike and Nio in the transport sector, compared with 552 in the US and the close connections between financial and strategic goals in venture are hard to untangle. Succession planning, however, could be an issue as top-down management in China. One source said: "Twenty years in tech in China is like 50 in the US at the speed of change but with all the big corps still founder-led (and moving faster) then succession a potential issue given how top-down most businesses are, although Tencent and Alibaba have done most on this."

Still, for now the pace remains fast. Beyond the speed and complexity of overlapping shareholdings and competition in widely different sectors between the main corporate venturing units by providing large cheques for portfolio companies has effectively allowed them to also go out and invest in other startups, which might potentially even end up as competitive to some of their own investment syndicate members.

More than three-quarters (16) of the top 20 Chinese unicorns ranked by CMN by valuation, including all of the top 10, have set up corporate venturing units or made investments in entrepreneurial third parties, according to GCV Analytics *(see table overleaf)*.

The highest-valued ones, such as Ant Financial and Didi Chuxing and which have also usually raised the most money or formed out of market consolidation, have been the most active in corporate venturing themselves. As well as backing local bike sharing service Ofo, Didi Chuxing, which saw off US rival Uber in its home market, has over the past year invested in European peer Taxify, the Middle East's Careem, Brazil-based 99, and Grab to tackle the south-east Asia market, which in turn has last month backed bike-sharing service OBike.

ANALYSIS

Top 20 Chnese unicorns

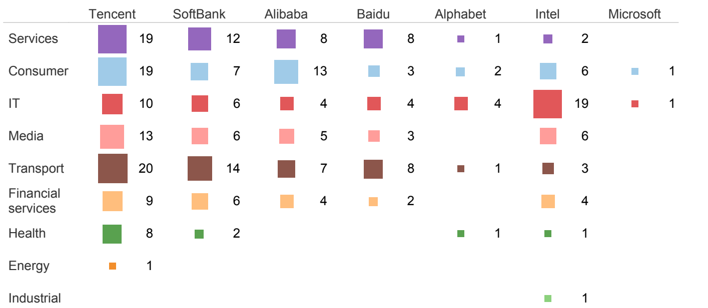
	Company	Valuation	Backers	CVC
1	Ant Financial	$70bn	China Life Insurance | China Post Capital | National Council for Social Security Fund | undisclosed strategic	Y
2	Didi Chuxing	$50bn	Alibaba | Ant Financial | Apple | Capital Group | China Life Insurance | China Post Capital | Hon Hai | Ping An Insurance | Sina | SoftBank | Tencent | undisclosed strategic	Y
3	Xiaomi	$46bn	International Data Group | Qualcomm	Y
4	Lufax	$18.5bn	Infinity IP Bank of China | Ping An Insurance | undisclosed strategic	Y
5	Meituan-Dianping	$18bn	Alibaba | Alphabet | Dalian Wanda Group | Fosun Group | Hina Group | Meituan | Tencent | TrustBridge Partners | Xiaomi | undisclosed strategic	Y
6	Jinri Toutiao (Bytedance)	$11bn	Sina | undisclosed	Y
7	DJI	$10bn	Accel, Sequoia	Y
8	Tencent Music	$10bn	Tencent	Y
9	Koubei	$8bn	Alibaba, Ant Financial, Silver Lake, CDH Investments, iPrimavera Capital, Yunfeng Capital	Y
10	Zhong An Insurance	$8bn	Alibaba, CDH, CICC, Morgan Stanley	
11	Cainiao Network	$7.3bn	Alibaba	Y
12	Jiedaibao	$7.3bn	undisclosed bank, JD Capital	Y
13	JD Finance	$7.3bn	JD.com	Y
14	Lianjia (IPO in July 2017)	$6bn	Baidu | China Vanke | Sunac China Holdings | Tencent	Y
15	WeBank	$5.5bn	Tencent, Shenzhen Baiyeyuan Investment, Shenzhen Liye Group	
16	SouGou	$5bn	Tencent, Sohu	
17	Trendy International Group	$5bn	Citic	Y
18	Ele.me	$4.5bn	Alibaba | Ant Financial | Citic | JD.com | Tencent	Y
19	iQiyi	$4.5bn	Baidu | International Data Group | Xiaomi	Y
20	Meizu	$3.55bn	Alibaba	

Source: China Money Network, Global Corporate Venturing

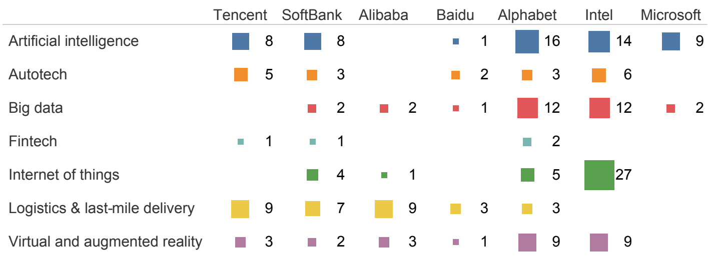
Beyond the local unicorns above and other Chinese startups backed by Ant Financial, such as VFinance in July, the company has also look to invest abroad, including Mynt in the Philippines, Thailand's Ascend Finance, Singapore's M-Daq, India's Paytm, invested $200m in South Korea's Kakao Pay and, subject to regulatory approval been in the process of acquiring US payments firm MoneyGram for $880m. Such a global investment playbook comes straight out of the approach taken by the established four, BATJ.

Even the one apparently non-CVC-backed Chinese unicorn in the top 20, the Accel-backed drones maker DJI, (although New China Life was reportedly planning to invest a few years back,) set up a $10m corporate venture fund, SkyFund, backed by both DJI and Accel. At the start of the year, DJI acquired one of its portfolio companies, Sweden-based high-end camera manufacturer Hasselblad.

Deals by top corporates in Asia by sector 2014-H1 2017



Top corporates in trending tech areas 2014-H1 2017



Fast-tracked corporate and strategic returns

The domestic corporate venturing industry in China only took off in 2011 when Tencent set up a RMB10bn corporate venturing programme, three years after it began corporate venture capital investing, and Alibaba's own blockbuster that raised $25bn — more money than any IPO in history – only came in 2014.

At the time of Tencent's CVC fund launch, Global Corporate Venturing opened and concluded its analysis: "It seems oxymoronic to describe a company as cautiously aggressive but these two descriptors come up most commonly when people privately discuss Tencent, a China-based, corporate venturing-backed, online media conglomerate that has this

ANALYSIS

year set up the world's biggest debut corporate venturing fund.

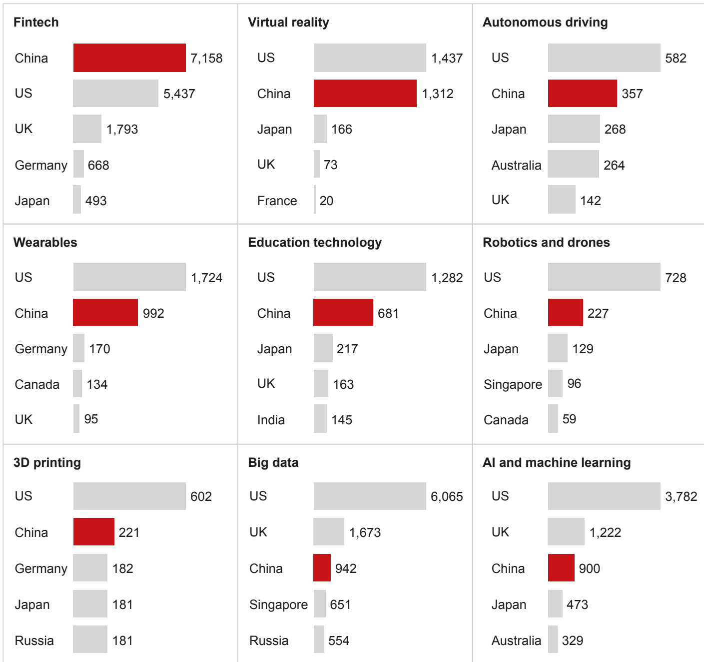
"That, and smart. It is an investment and development strategy that asks to be judged on actions and results rather than hype."

Given many of the current crop of unicorns have only benefited from the competition between the BATJs since 2011 it is a remarkable development in the ecosystem. Alibaba and Tencent were each understood to have invested in more than 100 deals in 2015 alone, although the pace reportedly dropped slightly last year.

Jeffrey Li, managing partner at Tencent Investment, at the Global Corporate Venturing Asia Congress last month explained why the innovation tool was so important to the company. He said: "For Tencent, CVC is a survival game, as organisation structures mean it is hard for big companies to survive.

"If you do not sit there [as a corporation] and wait for a black swan to come in then your fundamental response has to be CVC [to reinvest profits from the core business].

Venture capital investment in leading technologies 2016 ($m)



Based on the nationality of the venture capital investor. Co-invested deals are counted under each nationality. Investments in startups with multiple technologies are counted in each category of technology. Note: Not to scale.

Source: PitchBook; McKinsey Global Institute analysis

"We invest now because they are good years for our core business to reinvest profits."

Olivier Glauser, former China-based corporate venture at Qualcomm and Disney's Steamboat Ventures and now adviser to Alibaba's Jack Ma on its sports rights acquisitions through his Shankai business, said: "China's strength is its speed and execution by corporations interested in working with startups. It is a different culture and pace [than in the west]."

But while backing large rounds grabs the headlines currently, the financial and strategic successes that enables such confidence among the BATJs and other CVCs have been born from finding and building many of these unicorns.

Yao Xia, executive director at Tencent Investments and ranked first in the Global Corporate Venturing Rising Stars Awards 2017, was nominated by his boss, Jeffrey Li, for backing what is now the $35bn-valued Didi Chuxing, retail unicorn Xiaohongshu, which means Little Red Book in Chinese, at a $70m valuation in 2014's $10m B round and used car auctioneer and another unicorn Youxinpai at its $50m-valued B round in 2013.

And this focus beyond large, later-stage rounds by all the BATJs continues. In August, for example, supply chain finance startup Linklogis raised money in a series B round featuring Bertelsmann Asia Investments and existing investor Tencent.

Steve Allan, head of SVB Analytics, said in its State of the Markets: Third Quarter 2017 report: "China's internet giants, impressive in their scale and breadth, play a pivotal role in pushing innovation forward in knowledge-intensive industries. Proving out strong revenue and profit growth, Alibaba and Tencent each hit all-time market highs in the first half of 2017. Baidu has struggled to expand beyond its dominance in search [although its share price is up by about 50% since the start of the summer as the market has rerated its opportunities in deep tech areas, such as artificial intelligence, and giving it a capitalisation of nearly $100bn].

"Many of the private enterprises finding current success have done so by meeting the evolving tastes of the Chinese consumer. Unrealized opportunity lies in China's budding service-based economy. In contrast, many highly valued US tech giants target enterprise markets.

"China's homegrown strengths – mobile ubiquity, the emergence of microtransactions and the migration to urban centres – have allowed local consumer companies to scale without relying on advertising. However, as seen with heightened regulatory scrutiny over live-streaming this year, there are limits to the advantages China presents."

And while the BATJs have focused on a sweep of sectors, they all said in their quarterly results their focus was increasingly on deep, or advanced, technology areas, such as facial or voice recognition, and artificial intelligence.

Management consultants McKinsey Global Institute's August paper, China's digital economy: A leading global force, found the country was in the top three in the world for venture capital investment in key types of digital technology,

ANALYSIS

including virtual reality, autonomous vehicles, 3D printing, robotics, drones, and AI. McKinsey added: "China is the world's largest e-commerce market, accounting for more than 40% of the value of worldwide e-commerce transactions, up from less than 1% about a decade ago. China has also become a major global force in mobile payments with 11 times [$8.6 trillion] the transaction value of the US.

"Baidu, Alibaba, and Tencent have been building dominant positions in the digital world by taking out inefficient, fragmented, and low-quality offline markets, while driving technical performance to set new world-class standards.

China's faster unicorn development pace

Unicorns, companies that have a market value of at least $1bn, are being developed at a faster pace in China than the US, according to a joint report by Boston Consulting Group (BCG), Alibaba Group, Baidu and Didi Chuxing.

The report, published by South China Morning Post (SCMP), owned by Alibaba, last month examined the development cycles of 175 unicorns from the US and China during the past decade.

The average unicorn in China took four years to develop from scratch, and nearly half (46%) in two years, compared with seven years for one on average in the US, according to BCG.

The contrast can be partly explained by differences in the internet user base of the two countries, according to Li Shu, BCG's partner and managing director.

Quoted by SCMP, Li said: "[The 710 million] Chinese internet users are more receptive to new applications, but they also cast away applications in a quicker way."

The average age of web users in China is 28, or about 14 years younger than the US average, according to BCG.

Users in first tier cities download an average of 46 apps per year, and those from remote parts of the country could download as many as 38. In the US users download 33 apps per year on average, BCG added.

However, it also reflects sophisticated investors encouraging mergers and consolidation where required.

Jeffrey Li, managing partner at Tencent Investment, at the Global Corporate Venturing Asia Congress last month said: "In China it has been too easy for venture investors because of economic growth so high returns. In the past five years China has become really competitive in its economy and industries grown from infant to real markets. Many players in the small and early stages need sharper investors, which we understand and provide power to investee companies. VCs deliver high-quality portfolio companies but we do not see enough smart investors with lots of money.

"The impact of Didi Chuxing or Meituan Dianping mergers was prices go up because subsidy by investors' money was removed but that is the nature of business. In healthy, mature markets there is a high cost to consumers but long-term increased efficiency for society overall.

"VCs help business consolidate as they all learn from each other and so converge."

"In the process, they have developed powerful new capabilities, and a rich digital ecosystem initially centered on the threesome is now spreading. Unicorns and entrepreneurial startups are proliferating. Traditional companies are expanding their platforms, and China's strength in manufacturing enables unique and rapid combinations of physical and virtual innovation."

But the track record of investing in and creating unicorns through new business units with outside investors, such as Tencent Music, Koubei, JD Finance, Ant Financial, WeBank, SouGou and BAIC BJEV, has probably already returned more money than invested.

In August, Alibaba and Tencent both reported record quarterly earnings, prompting the New York Times to point out that the two companies now rank alongside Apple, Google, Facebook, Microsoft and Amazon as the world's most highly valued companies.

Tencent's "blowout" second quarter revenue climbed 59% and profit to shareholders expanded 70% to RMB18.2bn, according to newswire Bloomberg, which noted RMB5.1bn came from other gains, such as revaluing its stakes in bike rental and fintech startups, and the flotation of South Korea-based games publisher Netmarble Games. The quarter before and such gains from its venture deals had been just more than RMB3bn and in the second quarter of 2016 they had been RMB911m as the fruits of the investments continue to grow.

Alibaba, China's top e-commerce firm, also beat analyst's estimates with a 56% rise in first-quarter revenue (its financial calendar runs three months behind Tencent's) to RMB50.1bn, driven by growth in online sales which make up most of its business and where many of its investments, such as increasing its stakes in Ele.me and Lazada, have been focused. Alibaba added: "Revenue from innovation initiatives and others increased 21% year-over-year to RMB645m.

"In July we launched our first [artificial intelligence] AI-powered voice assistant, Tmall Genie, which was developed by our AI Lab leveraging our group's proprietary AI technology."

Baidu posted an 82.9% increase in net income to RMB4.4bn on revenues up 14.3% to RMB20.9bn and pointed to its "two strategic pillars: to strengthen our mobile foundation and lead in AI".

In August, Baidu and JD launched a strategic partnership leveraging both companies' data resources, user bases and AI algorithm technology so that Mobile Baidu's search application will provide JD with level-one access points to the hundreds of millions of mobile Baidu users in China.

China's second-largest insurer Ping An, also benefited from its venture investments in its latest results. With holdings in five of the top 30 largest Chinese unicorns, Ping An and its ventures unit has holdings in Didi Chuxing, e-Shang Redwood, Meili United Group, Lufax and its healthcare startup Ping An Haoyisheng. Lufax for example uses AI to manage its online marketplace matching 7.4 million buyers with sellers of RMB6 trillion in investment products last year.

In an interview with Institutional Investor last month, Alex Ren, Ping An's president, said the company had "paid between $5m and $50m for each of the stakes it had purchased in venture capital-backed firms".

Ren added: "Our performance data is the strongest ever," with net profit up 6.5% to RMB43.4bn in the first six months of the year.

Both Ping An and Tencent, along with Ant, benefited from last month's blow-out flotation of China-based insurer ZhongAn at about a $10bn market capitalisation.

Geopolitical considerations loom

Competition between the unicorns and their investors is creating the conditions for a far larger entrepreneurial ecosystem to form in a fraction of the time the US reached and in which Europe, over a far longer period of time, has failed to achieve given its relative paucity of unicorns and far-smaller venture investment totals than China's or the US's.

What is notable is how few international corporate venturing units have made the list of backers of Chinese unicorns. There have been notable successes by Yahoo (Alibaba), Expedia (eLong), International Data Group/IDG Capital (Tencent), Nokia Growth Partners (UCWeb), Qualcomm (Xiaomi), Softbank (Alibaba), CyberAgent (iTutorGroup), Naspers (Tencent), Intel (Ninebot) and Bertelsmann (BitAuto) in the early wave of Chinese entrepreneurs.

There has, however, seemed almost a conscious snubbing of the large US tech peers, such as Alphabet's myriad corporate venturing units, Amazon, Facebook and Apple, by the best entrepreneurs.

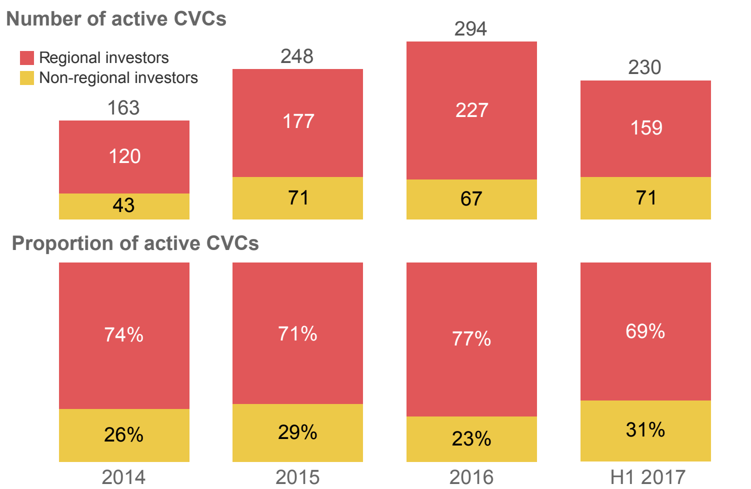
While leading corporate and independent VCs with strong local operations, such as Sequoia Capital China, IDG Capital, GGV, Accel, Lilly Asia Ventures, Intel Capital, Nokia and Softbank, remain active and welcomed (Sequoia has coinvested with Tencent at least 17 times in Asian deals, according to GCV Analytics,) there seems to be far fewer strategic ramifications from the deals struck by them and their importance in the ecosystem has declined.

Co-investor analysis

Columns include non-CVCs & CVCs

Rows include only CVCs	International Data Group	Tencent	Qualcomm	Legend Holdings	SoftBank	Intel	Sequoia Capital	Alibaba	Bertelsmann	Gree	Matrix Partners	Angel investors
International Data Group		3		4		1	8		1	2	6	4
Tencent	3			1	3		17	6	2		7	
Qualcomm					4		1				3	1
Legend Holdings	4	1					6		3		2	1
SoftBank		3	4				4	3				1
Intel	1											
Alibaba		6			3		1					
Bertelsmann	1	2		3			1				1	1
Gree	2						1					6
Baidu	2	4	1				3		1		3	
Mizuho Financial					1					2		2
CyberAgent								1		1		

Corporate investors in Asia-Pacific 2014-H1 2017



"Active" is defined as having participated in at least one VC/minority stake deal for the given period. Asia-Pacific includes Russia.

Source: GCV Analytics

As one experienced venture investor active in China for nearly two decades said: "To be an outsider in China is getting harder and harder. There is so much money competing for deals."

Venture capital in China was $16m in 1991, with US-based published International Data Group the first into the country as a corporate venturer, and foreign venture capital firms made up 97% of funds raised for China between 1991 and 1997, according to AVCJ. Even by 2005 and foreign VCs made up eight of the top 10 firms for an industry that raised $1.2bn that year. By 2015, China had more than 10,000 venture capital and private equity firms, according to Beijing-based research and investment firm Zero2IPO, and they raised $50bn last year, according to SVB analysis.

And while there is more interest by non-Asia-based corporations in backing startups in the region, they make up a relatively smaller proportion of CVCs given the number of new local launches in the past few years.

GCV Analytics noted 42 foreign corporate venturers active in the wider Asia-Pacific region in 2014, compared with 118 local CVCs. Last year, the more than 50% increase in overseas interest to 65 had been dwarfed by the near-doubling of local CVCs to 223.

The picture was even more marked in China with 19 foreign CVCs in 2014 increasing to 29 by last year, compared with a domestic increase in active CVCs doing at least one deal increasing from 33 to 83 in this period.

Unicorns' preferences indicate returns

In a recent paper, Squaring Venture Capital Valuations with Reality, academics Will Gornall and Ilya Strebulaev reviewed valuations for a sample of unicorns – companies worth at least $1bn.

They found the valuations were on average 49% above fair value but largely because such analyses assumed all of a company's shares had the same price as the most recently issued shares.

However, the most recently issued shares have better cashflow and other rights than the prior series of shares, they found.

The study also found 53% of unicorns gave investors a return guarantee in an initial public offering (IPO), the ability to block an IPO that would not return their investment, and seniority over other series.

They concluded in the summary: "Much has been written about unicorns deferring their IPOs because private rounds yield higher valuations, as well as about IPOs coming at a valuation below the immediately preceding private round. The paper reiterates that these observations gloss over the fundamental contractual differences between common stock and preferred stock, which has a liquidation preference and other rights."

Or as Jeffrey Li, whose team has probably backed more companies worth at least $1bn than any other venture investor over the past five years in China, said at the GCV Asia Congress last month, its analysis indicated the returns on investment were the same or better once a company had become a unicorn.

Martin Haemmig looked at the exit performance of 140 unicorns to the end of June and found they had delivered a 13.5 times multiple ($647bn) on the $50bn invested in them. China lead the way with a 43.9-times return on the 18 unicorn exits identified, compared with 10.4-times for its 107 US-based peers, he added at the GCV Asia Congress. And while the perceived wisdom has been for venture investors to prefer flotations over trade sales as a way of delivering higher returns, Haemmig found comparable multiples (14.7-times for initial public offerings against 13.5-times for acquisitions).

He added that venture capital-backed IPOs in China did better than way they listed abroad.

As author Michael Enright noted in his book Developing China: The Remarkable Impact of Foreign Direct Investment: "By the mid-2010s there were hundreds of domestic venture capital companies operating in China. Many Chinese who once worked for the big US VC companies have started their own funds backed by Chinese investors."

It has been a shift from regulations barring private companies and individuals to a domestic-dominant venture ecosystem inside three decades.

But perhaps the next iteration is how the combination of state and private businesses can work together and the latter potentially improve the efficiency of the former. State-owned enterprises (SOEs) recorded a 2.8% return on assets, while private companies returned 10.6%, according to the Peterson Institute for International Economics. Given McKinsey's calculation that China's labour productivity in many sectors is only 15% to 30% of the rich countries' club Organisation for Economic Cooperation and Development (OECD0 average and there remain plenty of potential inefficiencies to root out.

Chinese insiders said of the government's $200bn or so in innovation funding, about 80% went to those who know those in the know and pay the 20% to 30% expected commission but this source of inefficiency was a drop in the ocean of its budget and outweighed by any developments leading to new things, especially as the government seemed to deliberately keep regulations blurry in new areas so entrepreneurs can work there and then policy is settled based on what works.

There seem few more important issues within China's ruling elite and the solution being tried is this so-called "mixed ownership reform" where the leading private companies, including Tencent, Alibaba and Baidu, invest in SOEs, such as China Unicom. The government announced that it completed 48 mixed ownership investment deals in June alone.

China's President Xi Jinping in outlining his vision for the next five years of development in China at the Communist Party's congress this month emphasised making state-owned enterprises stronger and bigger, yet more efficient.

Mass privatisation or flotations – the route chosen by the European peninsular of the Asian continent from the 1980s on to reduce government control of their SOEs – has seemingly left many incumbent companies struggling in the global competition for new markets. The Organisation for Economic Cooperation and Development (OECD), the member body for leading countries primarily in Europe and North America, for the peak 20 years for privatisations after Margaret Thatcher and Ronald Reagan became heads of the UK and US, respectively, said: "Public offerings in the equity market have been the preferred method for privatisation in the OECD area."

More recent analysis, such as the Privatising Industry in Europe report last year, however, has questioned the efficiency or societal gains from such flotations of privatised companies.

Trying to harness the entrepreneurial success of the BATJ and some of their startups, such as three-year old Zhong An Insurance, whose 5.4 billion policies sold is eye-catching and relies on being able to develop new products every few

ANALYSIS

days and create competitive tension among its partners to help do so, seems a potentially plausible approach.

Success would be perhaps more radical for the Chinese economy than even the rapid development of the Tencent and Alibaba, which have combined market caps of about $800bn, with Baidu and JD.com adding more than $100bn combined.

Venture capitalist Mary Meeker's excellent 2017 Annual Internet Trends report said that, in 2005, private enterprise made up 5% of the MSCI China stock index by weighted market capitalisation. Last year it was 48%, Meeker, a partner at Kleiner Perkins Caufield & Byers, said in collaboration with local investment manager Hillhouse Capital.

But with the other 52% as SOEs, decisions made by China's State-owned Assets Supervision and Administration Commission of the State Council (SASAC) to explore how its $3.5 trillion in corporate assets held through more than 100 companies can be best managed are significant.

In May, SASAC's Shenzhen subsidiary became a limited and strategic partner for Silk Ventures when it closed a China fund at $500m.

As one market expert warned: "[The] Chinese government is very sensitive on SOE investment into foreign assets. Venture investment into US dollar assets with operation in China is blurry area."

And another expert added: "Typical venture skill sets would imply a certain degree of risk appetite, yet that is not so much the case of Chinese SOEs who would rather pay a much higher price to acquire the technology/resource directly rather than invest following the traditional VC model.

"They have the money and they are impatient. When an acquisition is not the case, then strategic partnerships are a solution whereby the SOE offers the younger and smaller tech company access to the Chinese market in return for tech IP co-development."

The combination of potentially long-term patient capital investors in the BATJ and other private investors with a focus on improving SOE performance and helping them develop a global mindset in line with the government's One Belt One Road initiative to connect up the broader Asian continent could be inspired. It could avoid insularity and domestic tensions forming by maintaining the focus on global competitive positions.

As China investors at the GCV Asia Congress noted: "In China, the government has tremendous power to influence the market for positive change and generate an economic market. The biggest issue over the next five years will be the 19th People's Congress [this month]."

But with stability and if the government's plan works as well as unleashing the private entrepreneurial spirits of the founders behind the 125 or so existing unicorns – let alone the BATJ and others that have already floated and are worth hundreds of billions – then there perhaps would be justice in China's reclamation of its position as the world's largest and most important economy.

But by one measure at least – the soft power metric of where its international peers look for inspiration – then China is already number one.

Ignacio Estivariz, head of corporate development at Argentina-based MercadoLibre, probably Latin America's most active corporate venturing unit, said ahead of the Corporate Venture in Brasil conference this month: "We look at what is happening in China first now." ◆

GAULE'S QUESTION TIME

Six key aspects for success in corporate venturing

Andrew Gaule, left, talks to David Atkinson, managing partner, Circadia Ventures

Circadia Ventures manages the funds of corporate venturing unit Tate & Lyle Ventures. Tell us about your fund and lessons you have learnt over more than 11 years.

In 2006, few corporates in the food sector were operating venture funds. Those that did were in-house and managed off the balance sheet, apart from Nestlé-backed Inventages that had a much wider brief than its corporate backer. It is to the credit and vision of Tate & Lyle's then CEO, Iain Ferguson, who had already been instrumental in setting up Unilever's venturing activities, that Tate & Lyle Ventures was born.

Operating as an independent fund and externally managed by Circadia Ventures, the structure of the fund has changed little to this day, despite the inevitable changes of personnel at the corporate, including a new CEO, Javed Ahmed, in 2009. Fast forward to 2017 and a number of fast-moving consumer goods groups have now established their own venture fund units, especially in the US, with a variety of operating models – in-house, externally managed or a hybrid.

What lessons have we learnt over the past decade for managing a successful corporate venture fund?

Success can be put down to a balancing strategic aims and ambitions with the discipline and focus on financial return

We have identified a few key aspects, which have remained a constant during those years and across both of the funds Circadia operates for Tate & Lyle.

1 A simple structure. Tate & Lyle Ventures is structured just like any other independent venture capital fund. This is a structure that all potential investee companies and, crucially, other investors recognise and feel comfortable with.

2 The relationship with the corporate is transparent. For example, Tate & Lyle holds no special rights or requirements regarding, say, internal sponsorship with a potential investee company before agreeing to investment.

3 A simple decision-making process. Potential investee companies see corporates as slow decision-making bodies. This puts them at a disadvantage in venture capital. Tate & Lyle Ventures' investment committee meets monthly to make quick investment decisions, and more regular meetings can be called as necessary.

4 A clear pre-agreed scope. The corporate and the manager should fully debate and discuss the remit of the fund before launch. This needs to be a balance between corporate strategy and the fund's requirement for sustainable and investable dealflow. It is important to get senior level engagement because, with a fund life of up to 10 years, corporate strategy can change quicker than the fund's scope.

5 Engagement with all levels of the corporate structure. As important as it is to have high-level executive buy-in and support, wider engagement and understanding of the fund's aims throughout the organisation is vital.

6 Clear and quick response. Not every opportunity will fit with the fund's ambitions or scope, especially when the fund is as focused as Tate & Lyle Ventures on food sciences and technologies. That said, clear, quick and helpful feedback to prospective partners is important, especially when you are often the most visible part of the innovation programme of the corporate.

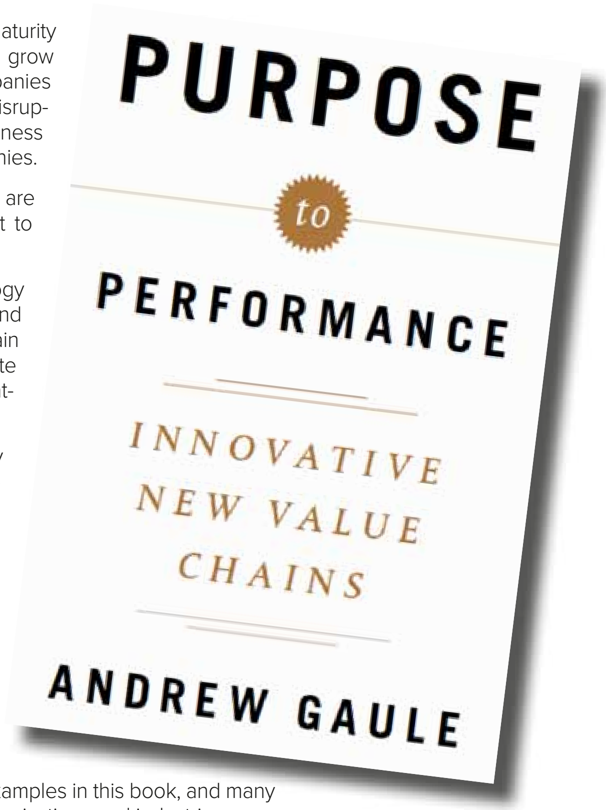
Ultimately Tate & Lyle Ventures' success can be put down to balancing Tate & Lyle's strategic aims and ambitions with regards to the innovation in the food sector, with the discipline and focus on financial return of the venture capital fund. It has served us well for over a decade so far. ◆

David Atkinson and other leading corporate venturers will feature in Andrew Gaule's new book – Purpose to Performance: Innovative New Value Chains – details overleaf.

You can listen to other interviews on a podcast – subscribe at gaulesqt.podomatic.com. Andrew Gaule supports innovation programs and collaborations with "innovative new value chains" in global organisations as CEO of Aimava. If you have interview ideas, email *andrew.gaule@aimava.com* or James Mawson *jmawson@globalcorporateventuring.com*

GAULE'S QUESTION TIME

Purpose to performance – innovative new value chains



Technology has reached a previously unknown level of maturity and availability, greatly altering how modern businesses grow and perform. We have seen the phenomenal rise of companies such as Google, Uber, Tencent, Tesla and Huawei. Thanks to disruptive innovation, the speed of change is so great that a "business as usual" approach no longer works for today's leading companies.

As technologies converge and create business models that are spurring competition from different sectors, it is not sufficient to innovate in a current industry.

In this book, we will go on a journey through changing technology and consider how organisations need to align their strategy and processes to deliver strategic and financial returns. I will explain the strategic importance of innovation and effective corporate venturing, as I believe there is a need to go beyond just innovating and investing.

Looking outside the organisation is key to see new technology and business models that were "not invented here". Organisations now need to be joining startups, technologies and corporates to create new business models globally. This is what we have termed "innovative new value chains", and building them will improve people's lives and the planet as we tackle the challenges in health, food, transport, urban living and many other areas.

Embracing innovative new value chains means companies must first define their strategic objectives, search the markets and subsequently invest in ways that allow them to look beyond existing business models to drive long-term growth.

There are organisations leading the way. There will be many examples in this book, and many more in the resources, giving insights to the changes in the organisations and industries.

- Merck, a health company, has a Global Health Innovation Fund led by William (Bill) Taranto with a focus on digital health. In an interview with me, Taranto said: "You have to build a strategy around how you are going to invest and how you are actually going to scale, and then bring that value back to your parent company."
- RELX (formerly called Reed Elsevier) has moved from paper-based information publishing to decision support systems and is a world-leading provider of information and analytics for professional and business customers across industries.
- DSM has transformed itself, moving from coal mining in Holland to health, nutrition, and materials.
- BP Venturing plays a key role in BP corporate strategy by helping the transition to a low-carbon energy future, leveraging its investments across a wide portfolio of relevant technology businesses.
- GE is moving, on an industrial scale, toward being a "software" company, as data will be the core of future business.
- Unilever has been innovating and venturing for more than fifteen years in sustainability, personal care, and digital marketing, which has brought financial and strategic returns.
- IBM is continuing the transition from a computer hardware company to cloud platform and cognitive solutions company—the basis of many of the new technologies behind the startups and corporates going through the change.

These companies know that the path to big-picture growth involves more than modifying the current suite of products in their respective industries or making ad hoc investments. Instead, those businesses continue to harness the power of disruptive innovation, gathering knowledge, investing, and acquiring to create new business models.

They are delivering valuable strategic insight and new business areas for the core business. Also, we will see that one of them has created a billion-dollar entity with its corporate venture capital and private equity transaction.

The value of strategising for change

The convergence of technology creates both opportunities and disruption to leading corporates. A business that ignores such innovation risks a "Kodak moment" – that is, the possibility of going, like Kodak, into liquidation in just a few years as it fails to meet the fundamental change in its industry.

Most organisations do not face the threat of this kind of rapid obsolescence, but they could very well miss multibillion-dollar opportunities caused by their failure to adapt to the changing digital marketplace. Incumbent corporates might have the right technologies, a standout relationship with customers, multiple distribution channels, and a brand they can leverage into a new disruptive industry by way of innovative new value chains.

Developing a strategic innovation strategy

Having stakeholders and executives say they are going to innovate is not enough to produce real results, even at the incremental level. For many executives, proactively facing disruptive innovation means understanding the scale of the issue, balancing the various innovations, and joining up the delivery. For this process to be effective, there must be a clear method to guide the way. We are going to go through the five Ps of innovation and venturing, which have been effectively used for more than 10 years in leading corporates to address the key challenges and questions organisations face:

- **Purpose:** What is the purpose of the innovations the business is trying to address? Incremental innovation to improve the current business is a valid answer, but disruptive innovation is a different matter entirely, bringing different technology and business models together. Defining the purpose of the endeavour is a critical first step.
- **Process:** What will the innovation process look like for this particular business? Different purpose objectives will drive different processes. We will cover the range of processes from fund investing, to direct investment, incubation, partnering and so forth.
- **People:** People are central to the five Ps. Are the right types of people looking outside the organisation effectively, building strategic narratives with executives, and driving a process involving startup investments?
- **Partners:** Have the right partners, outside the scope of the organisation's current capabilities, been selected?
- **Performance:** What is the appropriate balance of short-term financial return and strategic, long-term growth, and how can organisations measure this?

The five Ps are an iterative process. Purpose, process, partners and performance all circle around a centre – people. The method was built on the concept of adapting and learning, a cycle focused on moving forward in the face of fundamental change to build a winning strategic innovation and building innovative new value chains.

Investing today is not enough. It is strategically important to gather data to create new business models that result in strategic innovation and change. Currently, corporates are not joining the pieces together properly – that is where innovative new value chains come into play. The purpose of this book is to enhance the discussion between innovation areas in the business and give a framework for discussion with C-suite executives and boards.

This book's first chapter explains the fundamentals of corporate venturing. Subsequent chapters explore each component of the five Ps and provide additional information, including basic legal considerations for corporate venturing, overviews of the leading global innovation superpowers in the space, and techniques for leveraging analytics, with a focus on GCV Analytics examples, to drive optimal growth.

This discussion ultimately leads to a thorough examination of innovative new value chains strategy. Having developed the five Ps method in the early 2000s, I set out to build a framework to help businesses struggling with innovation launch strategic discussions. I first published the five Ps method in my 2006 book Open Innovation in Action: How to be Strategic in the Search for New Sources of Value, and I have more than 17 years' experience helping corporates reach their corporate venturing goals, which can now be truly strategic. ◆

Purpose to Performance: Innovative New Value Chainsis availble in hard cover, paperback or eBook from Amazon. There will be a series of global book launch events and innovative new value chain programs. Details at Aimava Eventbrite.

Testimonials and forewords from leading executives in the corporate and venturing communities

"Driving Innovative New Value Chains is a testament to Andrew and offers an important view of the role organisations must play as they face both the opportunities and the challenges of the future. It should be required reading for all corporate innovation leaders."

– Sue Siegel, CEO, GE Ventures

"Already for many years Andrew Gaule has been consistently helping to connect entrepreneurial people and providing insights in new forms of innovation."

– Rob van Leen, chief innovation officer and member executive committee, DSM

"Andrew plays an important role in building the capability and strategic understanding of senior executives on the best corporate venture capital and business approaches. I am pleased to have worked with Andrew over many years and have seen him in action helping businesses build capabilities for effective strategic and operational alignment of venturing and business units."

– Tony Askew, founder partner, REV Venture Partners, and chairman, British Private Equity and Venture Capital Association VC group

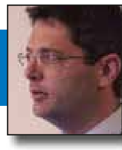
"Andrew has been key in developing and implementing what he has termed Innovative New Value Chain, which is driving more strategic corporate venturing and change."

– Claudia Fan Munce, founder, IBM Venture Capital Group, and venture adviser, New Enterprise Associates

COMMENT

‘Alexa, I need some venture capital’

Gary Dushnitsky, associate professor of strategy and entrepreneurship, London Business School



When Amazon launched its corporate venture capital (CVC) fund Alexa in June 2015, it did so in the enthusiastic tone typical of the company that’s gone from cheeky disruptor to envied behemoth in just two decades. “Experiences designed around the human voice will fundamentally improve the way people use technology,” CEO Jeff Bezos announced. “Since introducing Amazon Echo, we have heard from developers, manufacturers and startups of all sizes who want to innovate with this new technology. We want to empower people to explore the boundaries of voice technology. We are eager to see what they come up with.”

Sounds almost charitable – but of course Amazon has an agenda. The question is, what is that agenda? The answer is not as straightforward as you might think. Because not all corporate venturing programs are the same.

Corporate venture capital is an umbrella term for the practice of setting up a dedicated unit in order to engage and harness startups that are out there – separate from your internal R&D team. We are not talking about joint ventures with established competitors, but specifically engaging with entrepreneurs and startups because there is something different about them. They might envision or find different products, services and business models to you. It is not necessarily about novel technology – though that can come into it. There is a commercial logic around it.

CVC does not always live up to the expectations of the parent organisation. Consider the experience of BlackBerry Partners Fund, which was set up by RIM and others to invest in startups that would enhance the value of the BlackBerry. On the rationale that the best athletes should not be locked into one platform, BlackBerry Partners Fund did not exclude its portfolio companies from running on other platforms. Not tying themselves down was critical to getting the best ideas. It was a way for BlackBerry to get sight of all the best ideas early on. What happened, however, was that some startups took BlackBerry money and developed phone-facing solutions.

Corporate venturing has grown up

So why would you want to do it? That is what any company needs to think through clearly before embarking on CVC. There is more than one rationale and you need to know what you want to achieve before throwing your innovation budget at a startup. For example, every company has a chief marketing officer but that does not mean they all have the same marketing strategy. It is critical to understand why you are engaging with startups and how to structure the four Ss – strategy, structure, staffing and salary. Those four dimensions must be aligned for the CVC to deliver the value you intended it to deliver. A misalignment adds substantial challenges to what is already a challenging process.

Challenging but potentially rewarding – and at least nobody launching a CVC unit will be met by raised eyebrows these days. There have been several waves of corporate venturing since the mid-1960s and it is now regarded as an established acceptable activity. There has been learning both in terms of the people running corporate venturing and in terms of understanding what it does. Corporate venturing has matured and grown and is becoming a viable business strategy. In the past you would hear people referring to it as “the CEO’s pet project” – now it has a meaningful business value. This does not mean companies are not making mistakes or that corporate venturing will always succeed, but it is becoming more commonplace.

Identifying your CVC strategy and purpose

I has identified three approaches to corporate venturing and there is a lot of confusion where a company thinks it is doing it for one purpose but mimics the structures and performance measures of another. Let us take each of these three in turn:

1 **Monetising the parent firm’s current offering:** In 2011, BBC Worldwide participated in a $20m series B round of investment into Viki. The Singapore-based venture gains the rights to popular TV shows, movies and music videos and then

COMMENT

invites its online community to translate them into local languages using its subtitling software. That content is available online and on mobile. To date, a billion videos have been viewed on Viki and 200 million words translated.

At about the same time it invested in Viki, BBC Worldwide licensed more than 200 hours of its own programmes to Viki. In the space of a few weeks, these were translated by thousands of enthusiasts into several Asian languages. The BBC had a very high penetration rate in the English-speaking world but should they invest in making content for that part of the world, not knowing if there is a market for it? It made that content accessible and by the number of downloads and page views the BBC was able to gain insight into the size of the market.

It was a clever move also because local people were translating it in a way that was true to their pop culture. It was not a London view of what Filipinos think, it was being translated by hundreds of Filipinos and that gave you a much more alive, punchy result. Crucially, the investment allowed BBC Worldwide to get a broader reach for its existing products and services.

2 **Discovering trends and offerings outside the parent firm:** This second approach is about an established player wanting to scan the entrepreneurial landscape. Here, it is common to see CVC programmes with a clear mandate to identify and invest in novel technologies. The logic extends beyond the narrow technological remit. Consider Coca-Cola's venturing and emerging brands unit, which has been investing in nascent brands in North America since 2009, reviewing 150-200 brands every year. They know that carbonated drinks are not the future – the market has probably peaked. This enables Coca-Cola to explore possible future trends and product categories that might not be on their immediate horizon.

Products such as tea-based drinks and wellbeing drinks might not appeal to Coca-Cola's existing customers, but they are potentially major growth areas. Yes, you can wait until one of these things hits big, but by that point you might have missed the true opportunity and have to pay a hefty price to get it instead of your competitor getting it. So this is a way to find out from the outside what new products and services exist out there. Is there a grass-roots growing of ideas? By building relationships with companies earlier on you can see where the market is headed.

By building relationships with companies earlier on you can see where the market is headed

3 **Building an ecosystem for offerings both inside and outside the parent firm:** The third approach to CVC entails a corporation that has developed a product or service that it believes could be valuable but it is early days and requires others' developments in order to take off.

There is a recognition that for the product or service they have developed to be valuable, more stuff needs to happen elsewhere. It shares similarities with the first approach in that your goal is to monetise your own offerings but it overlaps with the second approach in that you do not know what is going to make this most valuable – you are reaching out for the market to do that.

For example, Intel Capital launched a $100m Perceptual Computing Fund in 2013 with the aim of accelerating the development of software and applications to enable human-to-computer interactions.

So what is Amazon up to?

In August 2016, Amazon joined a $35m round through the Alexa Fund for the Canadian smart thermostat maker Ecobee, which had 24% share of the market, second only to Nest.

Most Alexa Fund investments to date have been relatively small. One such is Nucleus, which produces an Alexa-powered video intercom system. Amazon put $5.6m into it in August 2016 and worked with Nucleus's developers on how best to implement the Alexa technology. Nucleus's product – purchased via Amazon.com – sold out within a day of its launch. A few months later Amazon unveiled the Echo Show, an almost identical product. While Nucleus's CEO Johnathan Frankel expressed "sadness", Amazon claimed the two companies had shared the same vision.

Today's CVC space contains a range of players beyond the more obvious tech candidates. The most active CVC investors in 2016 were Intel Capital and Google Ventures in joint first place, followed by Salesforce Ventures and Comcast Ventures, according to venture capital database CB Insights. But everybody is at it. Samsung recently announced a $1.1bn fund called Next47 to invest in futuristic technologies such as artificial intelligence, autonomous machines and blockchain-based data transfer. The car manufacturer BMW is working on raising a $530m fund for its BMW iVentures subsidiary. Even Campbell Soups has a CVC unit now.

The early signs appear positive for Amazon's Alexa CVC experiment. The platform passed 15,000 skills in June, according to Voicebot. During that month, new skill introductions increased by 23%, up from the less than 10% growth in each of the previous three months. Compare this with Google Assistant, which has fewer than 400 voice apps and you might think it is a no-brainer.

The recently announced collaboration with Microsoft voice service Cortona may further shape the role and success of the Alexa Fund. But will Amazon succeed in this space in the longer term? We know Amazon is an organisation that has been able to deliver a new business model time and again. They already have a strong offering in this space. Now the question becomes, is the $100m Alexa Fund the way to push voice forward – or not? ◆

This is an edited version of an article first published by London Business School

COMMENT

Awareness, access and collaboration – pillars of CVC

Christian Weiss, partner, Creathor Venture

This article will deal with the prerequisites of a successful venture strategy for both institutional and corporate VCs and offer a solution to the dilemma many corporates face. We at Creathor Venture see three core prerequisites to leverage VC successfully – awareness, access, and collaboration. To be successful you need be excellent in all three categories.

Awareness – It is highly important to be familiar with innovative concepts. That is, to measure innovation as a key strategic pillar of corporate development and be aware of startups, operating modes and hot topics. What are the most discussed and inspiring developments, where is disruptive potential? It is not enough to read a blog post every once in a while. Always being on top of trends is hard and time-consuming work. However, even more important than the actual knowing is the willingness to recognise external innovation– for example, by startups – as opportunity, not threat. At the end, it is the culture of your company which determines the strategic success of your CVC activities.

Access – Having sufficient funds does not mean you will find what you are looking for. Only having a broad network and high-quality dealflow makes it possible to identify the most relevant startups with strategic potential for your company – and not only those who actively approach you. Often, the most relevant ones stay hidden.

Collaboration – Pilot projects, joint research efforts and other forms of partnering with startups offer deep insights and reinforce your efforts in technological progress. This is a key challenge for corporates that typically think in M&A only.

> Many VCs have developed a corporate venture strategy that make your corporate development story a success

You are probably getting where we are heading by now. VCs are – more often than not – good people who do not let the big corporates stand in the rain with all these challenges. Many VCs have therefore developed actions for a corporate venture strategy that support the described prerequisites – awareness, access and collaboration – and make your corporate development story a success. The bad news – it does not take the main burden off your shoulders, but it helps a lot.

Most VCs offer their corporate partners a set of involvement areas to ensure knowledge transfers. We, for example, provide detailed industry expert clusters with specific recommendations on disruption potential, using the extensive experiences and industry insights that we have accumulated over more than 30 years in the VC business, helping corporates to build awareness in key trends, developments and relevant startups. Furthermore, we offer a special set-up for secondments of investors' employees in our offices in Bad Homburg or Zurich. This enables the development of dedicated knowledge in specific industries or technologies – nice spin-off for established companies. You get insights into startup and venture capital culture at the same time.

Another approach is our executive roundtables series, offering significant opportunities for access to the venture ecosystem. It gives valuable space for knowledge development and networking and is, for many corporates, their knock on the venture world door.

A more common approach is to share the dealflow on pre-defined criteria with fund investors, efficiently leveraging corporates' monitoring efforts. Investors benefit from the VC's access to the market and the large and structured screening process. However, that is only the first step. The difficult part is how to follow up internally.

While being aware of future developments and getting access to the valuable ecosystem are important prerequisites, they are worth little without the possibility to collaborate with fitting startups and companies. We as well as other VCs offer our investors joint due-diligence efforts, co-investment opportunities, cooperation and beta or pilot customer programs as well as advice in acquisition potential of proven companies. Through a VC's high-quality network, corporates get in contact with relevant targets quicker and more easily. The good VCs can support and bridge to the right person, in the right position, at the right moment.

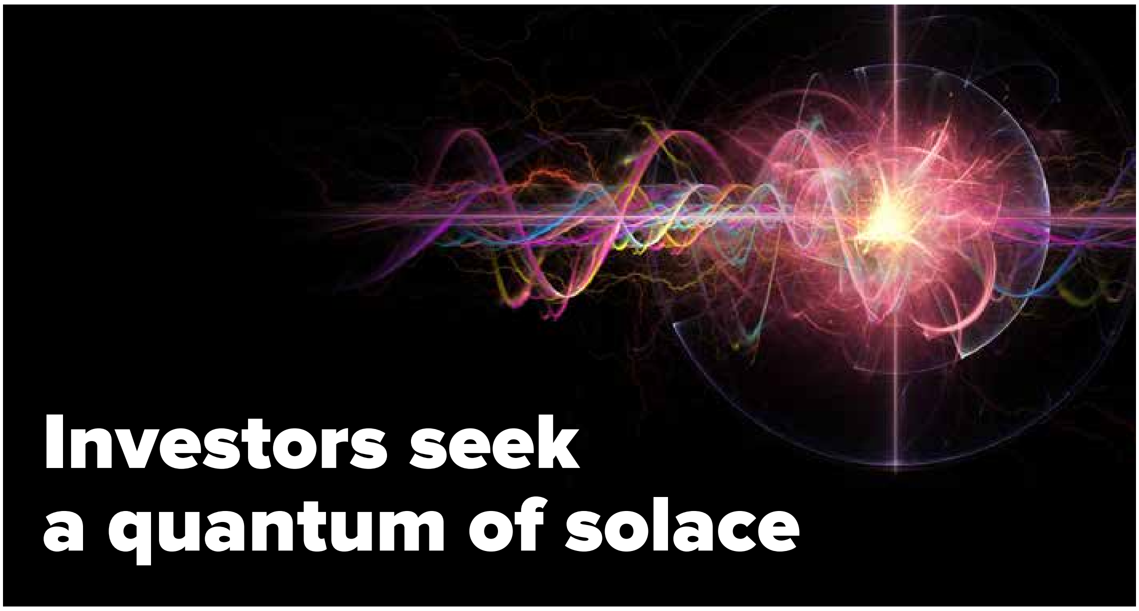
In a nutshell, CVC is good, institutional VC is, most of the times, better.

We don't want to bad-mouth CVC, which is an interesting option, but, as pointed out, it struggles with several challenges. We strongly believe an investment in venture capital funds is an equally strong – and in many cases an even more successful – alternative to meet the challenges of the future. It offers higher opportunities and deeper experiences in venture industry, paired with less funds needed, lower efforts, at least for the corporates, and a reduced exposure to risk.

Contact us to learn more about Creathor's corporate collaboration strategy. A big thank you to Fabian Degenhardt for co-writing this piece. ◆

This is an edited version of an article first published on Medium

SPECIAL REPORT



Investors seek a quantum of solace

James Mawson, editor-in-chief, with thanks to Pramila Mullan of Accenture Ventures for the notes of the roundtable

Accenture Ventures, the corporate venturing unit of the management consultancy, hosted a Global Corporate Venturing roundtable at the end of August on quantum computing and the opportunities for investors. The discussion was held under Chatham House rules, so attendees, including those from Facebook, Microsoft, IBM, Intel, Samsung, Verizon, Rigetti, In-Q-Tel and others, could speak at ease.

GCV brought attendees up to date on corporate venturing deals directly in quantum computing, such as 1QBit by CME and RBS, IonQ by GV and NEA, D-Wave by In-Q-Tel, and Rigetti, by Bloomberg Beta and In-Q-Tel, with subsequent deals including Efinix by Xilinx.

There have already been a number of applications using quantum dots, especially in photonics – which GCV reviewed earlier in the year – optics (CaiLabs, QD Vision), solar (QD Solar), displays (Nanosys), and bioelectricals (Doppel, Galvani).

Photonics is one of the fastest-growing branches of technology. It concerns light generation, detection and manipulation and provides a viable alternative to electronics, as it promises greater speeds of transmission. In an electronic circuit, signal transmission is carried out by electrons. In a photonic circuit, it is carried out by photons – particles that travel at the speed of light – thus generating a rate of transmission several magnitudes higher.

Researchers at the University of Science and Technology of China at Hefei are trying to use particle interaction at a subatomic level to make calculations, rather than the conventional computers method of using electronic gates, switches and binary code. The Hefei machine, research on which was published in Nature Photonics in August, predicts the highly complex movement and behaviour of photons. Current supercomputers struggle with this because of basic unpredictability and difficulties in modelling.

When GCV visited scientists at University of Waterloo in Canada earlier this year, they said there were a number of approaches to cracking quantum computing. Some are problem-specific, such as those of Hefei with photons or Vancouver's D-Wave startup, and some are more theoretical in trying to build universal quantum computers, such as the work being conducted at Waterloo.

Attendees said there were a number of myths about quantum computing as the ability to solve big problems, such as breaking through modern encryption, solving intractable equations, and replacing classical computers entirely, were currently unachievable. It seemed to be the consensus that these applications were 15 to 20 years away.

The most beneficial use cases today are aimed at cost reduction and efficiencies, for example, augmenting subroutines of classical algorithms that can be efficiently run on quantum computers to tackle specific business problems. High-end workloads, where classical computing is used today, will shift to quantum incrementally for speed, scale and cost, attendees argued.

Accenture Ventures then revealed its survey into quantum computing and found a general consensus that:
- It is not just for universities.
- Technology leaders are slightly ahead but its close.
- Barriers to adoption concern accuracy and cost.

The closeness of the race is encouraging investment. Accenture's survey found 50 to 100 companies were spending more than $10m in the next one to three years to develop quantum computing.

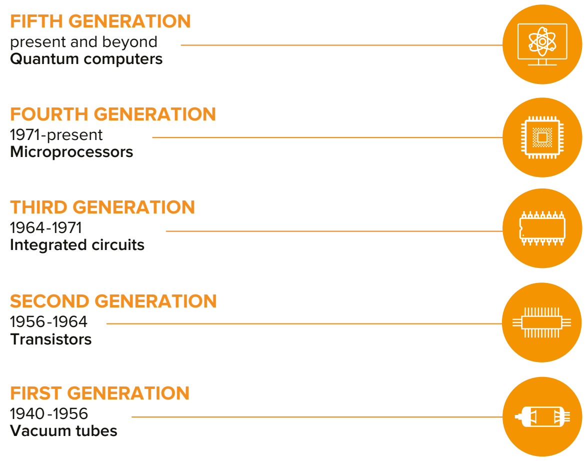
It was not clear which corporations were the most likely acquirers of companies such as D-Wave and Rigetti, with suggestions ranging from US tech leaders to Chinese peers.

As one attendee said: "This is the beginning of a new industry opportunity to build a large vertically-focused business with partnership opportunities. If the Chinese can get through their security issues then they would be an interesting contender. Otherwise, the US will be the centre of the quantum computing wave."

However, there is plenty of interesting research being conducted in China – such as the researchers who beamed entangled photons from a quantum satellite to ground stations, which made the cover story for Science magazine this summer – and in other regions, including the UK and Israel.

For example, one attendee mentioned that in cryptography there was an Israel-based company called Secret Double Octopus working on a password-free keyless strong authentication solution.

QUANTUM: THE FIFTH GENERATION OF COMPUTING



One of the reasons Peter Shor created the first quantum algorithm in 1994 was for factorisation of large numbers – using quantum computing to factor enables the breaking of security systems, such as the Rivest-Shamir-Adleman public-key cryptosystems widely used for secure data transmission.

The use of quantum computing to improve security is still early in the research phase, particularly in UK universities, attendees said.

However, corporations are keen to encourage experimentation. IBM's quantum solution, Watson, is in its cloud – giving people opportunities to experiment with ideas, but there is fragmented usage – while Rigetti's Forest platform comes with a Python environment to enable research and scientific communities to experiment.

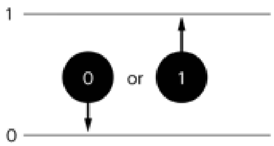
Accenture has worked with quantum-computing company 1Qbit and biotech corporation Biogen to develop a quantum-enabled molecular comparison application that could improve molecular design to speed up drug discovery for complex neurological conditions, and D-Wave works well with graph-based techniques for molecule discovery.

And while drug discovery is a clear application, attendees said any industry that cared about the behaviour of molecules, such as materials science, was a likely candidate, as well as any industry that cared about machine learning and artificial intelligence.

There is much anticipation among experts about an important milestone, which could be passed soon. Attendees said 50qubit – a qubit is a piece of information analagous to a conventional bit – was a key number because current chips and computers could simulate only 48qubits. Attendees said: "If we crack 50qubit then with quantum computing we can do something that we could not do classically." ◆

CLASSICAL VS QUANTUM COMPUTING

Classical



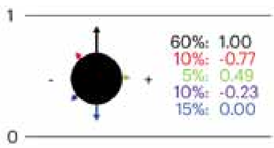
Basic unit of information: The bit

Discrete number of possible states: 0 or 1

Deterministic: Repeat computations on the same input produce the same output

Bits processed sequentially for one-thing-at-a-time computation

Quantum



Basic unit of information: The qubit

Infinite number of possible states

Probabilistic: Confidence in answers builds up through repeated computations and probabilistic measurements

Performs many computations simultaneously

UNIVERSITY CORNER

Bring more support to those with the big ideas

Submission to Sir Damon Buffini, who is leading the Patient Capital Review

This submission is written by Future Planet Capital in partnership with Global University Venturing. Having raised $300m for British innovation from the world's largest investors, Future Planet Capital is a key contributor to the innovation ecosystem. Global University Venturing writes as the world's leading source of accurate and authoritative research on the detail and diversity of innovation funding models. Indeed, they are regarded as unrivalled experts and regularly hold global conferences attended by the world's foremost investors.

The international investors perspective and British innovation

The government highlights the lack of patient capital available to young and innovative companies. Acknowledging this truth, at Future Planet Capital, we have in the past two years received commitments of $300m from sovereign wealth funds and institutional investors in Asia. We offer the opinion that if Britain is going to give our innovation the investment it deserves, we must think globally. Britain has innovation in spades, and there is, in fact, a large appetite for investment at home and abroad.

Connectivity is the key issue that the Future Planet Fund was designed to solve. The world's first global top university fund, Future Planet connects the world's largest institutional investors, sovereign wealth and pension funds, to centres of innovation.

Flying the flag

Connecting with innovation can be difficult for large investors, as Nick Greenwood, Future Planet's Cornerstone Investor and Fund Manager of the Royal Berkshire Pension Fund, highlights in his submission to this review. Indeed, the world of startups is convoluted and ever-changing. On the contrary, sovereign wealth and pension funds tend not to operate at a tempo compatible with the accelerating entrepreneurial world, nor is it worth their while to invest small amounts that barely move their investment needle, but are susceptible to a high percentage of career limiting failures.

Increasing the accessibility of the sector to these investors is the most intuitive path for the government to take. The appetite for innovation investment is certainly there, just last year the Public Investment Fund of Saudi Arabia invested $3.6bn in Uber and, in collaboration with Japan's SoftBank, created a $100bn technology venture capital fund.

We urge the government to follow two approaches to address this dissonance. The first is in the creation of marketable, intermediary investment vehicles such as the British Innovation Fund, from which capital can be deployed as and when it is needed. Second, and most important, is marketing. We need to connect Britain not just to patient capital but also international capital. Britain must shy away from insularity. We are home to the best universities and primary research in the world. Investing in the accompanying ecosystem is a clear long-term option for international investors seeking portfolio diversity and access to world-class innovation, not least in a world of low public market returns.

Transferring technology

Capital – or a lack thereof – is not the only issue. As the Treasury has suggested, the UK has struggled to replicate the array of billion-dollar unicorns produced by the US. Scaling innovation from seed to success requires not only capital but grit, efficiency and ambition. At Future Planet we are seeing far greater size and valuation achieved in California and China – Britain needs to raise its game.

The UK consistently ranks top in the world for innovation and yet, when it comes to IP applications and exports, we do not make the top 10. We are unable to propel and protect the technology that would allow our companies to up-scale from the outset. Look no further than the Cambridge-born Solexa. Acquired by Illumina in 2007, their technology now forms the basis of a $30bn company. Again, DeepMind, the brainchild of Demis Hassabis and Mustafa Suleyman at UCL, is the world's pre-eminent artificial intelligence company, yet were acquired by Google after four years.

We are an integral part of the global value chain, but fail to capture our share of that value. Our technology is instrumental to the world's largest companies, shaping our very existence, yet Britain is left behind.

As leaders in the world of university venturing, we see part of the issue as a product of the UK's method for technology transfer. Britain's model for supplying public funding to universities rewards a high output of primary research. While this drives us to the top of university ranking tables, it fails to encourage the commercialisation of IP. The government has an important role in setting structures which allow academics and faculties to personally profit from commercialisation.

Britain has the talent, the technology and the money to compete with our US counterparts

This leads on to the second area for improvement – university equity models. As the consultation considers, the 50% stakes typically taken by British universities in their spinouts may deter and demotivate entrepreneurship. However, as referenced in GUV's research, lower equity may be untenable, especially for smaller institutions.

Oxford Sciences Innovation (OSI) has one of the best models in the UK. Its agreement with Oxford entitles it to 50% of the university's stake in return for a 5% equity stake in OSI, allowing founders to exploit the $600m in investments attracted from the likes of Google and Tencent, and maintaining the university's interest.

An incremental but fundamental improvement to this model would be for universities to take smaller but perpetual non-diluting stakes. In the US, the figure is typically below 10%, incentivising entrepreneurship, while maintaining a sizeable exit stake for universities – Stanford maintained over 10% in Google up to their IPO in 2004.

Believing in Britain

Britain has the talent, the technology and the money to compete with our US counterparts. All that is missing is the execution. Consider just some of our accomplishments. In 1977, Frederick Sanger sequenced the first complete genome, 12 years later Sir Timothy Berners-Lee invented the world wide web. Before them, Brits invented the jet engine, the fridge and antibiotics.

British innovation continues to shape our very existence. We are world leaders in genetics, machine learning and big data. If handled correctly, we are on the cusp of a British technological renaissance. The industrial revolution in Britain led the world and opened up huge prosperity for itself and the rest of society. Now the internet, DNA and big data offer the potential for a knowledge revolution, capable of producing even greater wealth and prosperity for the UK and the world.

The work you are doing in the Patient Capital Review is incredibly important for Britain as a whole. The government's most effective contribution will not be money but providing the voice that communicates and the infrastructure that protects the plethora of innovation we have to offer. We urge the Treasury to be bold in its approach, and look to the future – it is surely bright for Britain.

The Global University Venturing perspective

Your review of the UK's need for more patient capital has been well received with its greater focus on helping companies scale up to at least 250 employees through access to more long-term finance. To many experienced investors and entrepreneurs, the review is broadly spot on.

However, while the consultation is focusing on this provision of capital and the needs of scaling up, it is important to consider how these entrepreneurs start and the infrastructure they can use more broadly to turn their ideas into global champions. In this context, the role of universities as source and provider of longer-term support is important.

As the House of Commons select committee inquiry into IP management and technology transfer said: "It is, therefore, surprising that the terms of reference for the government's forthcoming Patient Capital Review do not mention universities, nor is there any indication that they will have a place on the industry panel that will support the review.

"The government's Patient Capital Review must engage with the university sector and learn from those universities that have developed patient capital schemes."

The review counted 45 spinout deals in 2011 and an average of 85 a year from 2014 to 2016, with a total of £370m ($490m) invested in 2011 to £340m a year in 2014, 2015 and 2016. The activity is mostly concentrated in London and the southeast, the east of England and the southwest – with other regions across the UK struggling to attract capital.

The figures quoted from the unnamed source, however, do not line up with data collected by trade paper Global University Venturing, which shows that, between 2013 and 2016, spinouts from University of Oxford alone raised almost $2.25bn between them, closely followed by University of Cambridge at just over $2bn.

Spinouts are also just the tip of the iceberg in terms of university engagement with entrepreneurialism. Licensing and proof-of-concept (PoC) are hugely important areas for helping turning the best minds' ideas into useful innovations and inventions that be commercialised.

David Allen, former head of the first PoC in the US at the University of Colorado more than 20 years ago, proposed the creation of a national network of PoC centres across the US based on the highly successful University of Colorado model. US President Barack Obama followed up and this system and its results could be studied and the UK consider how to leverage tech commercialisation expertise established locally in regional universities and then linking this into a national network, perhaps under the Praxis-Unico trade body, focused on created success stories and new unicorns emerging from across the country.

A focus on spinouts can miss the role students, post-graduates and faculty can play

More broadly, a focus on spinouts can miss the role students, post-graduates and faculty can play in working for entrepreneurial businesses and passing on their research and ideas and seeing the theory work in practice to shape their later academic studies. Encouraging these links beyond just a focus on counting spinouts and scaling them up through patient capital can be helpful for national productivity but also helpful for one of the UK's largest export industries – the universities themselves.

As Imperial College London professor David Gann wrote last month about artificial intelligence: "Through their own brilliant discoveries, universities have sown the seeds of their own disruption."

Universities have as much to gain from understanding the ideas and work that their student and faculty develop as they have in seeing these ideas becoming commercially successful or developed into a scaled-up enterprise.

In this a context, giving the universities encouragement that this is regarded in their funding as strategically important remains helpful. But they also need flexibility to find and iterate on their approach with spinouts and startups, such as Imperial's founder's choice to retain 95% equity or more equal balance, seems to allow institutions from within the so-called golden triangle of Oxford, Cambridge and London to the regions in the UK beyond to find what works and is helpful to them.

Even well-provided universities, such as Oxford, in its submission think it should have the flexibility to have much higher than 5% equity because it is public money that has gone to the academics to give them the time and facilities.

However, universities increasingly recognise they could perhaps, in the words of Tom Hockaday, founder of Technology Transfer Innovation, afford to be as generous as they can be to those developing the ideas at their institutions.

Providing the patient capital will then enable those entrepreneurs with the talent and vision to scale up to do so.

Signed:

Douglas Hansen-Luke, executive chairman, Future Planet Capital
Christine Gulbranson, SVP Innovation, University of California, and Global University Venturing Leadership Society advisory chairman
Kendrick White, Leadership Society member, formerly UNN Technology Commercialisation Centre
Gregg Bayes-Brown, Leadership Society member, Oxford University Innovation
James Mawson, Global University Venturing Leadership Society founder
Other society members in a private capacity

Global Corporate Venturing
Leadership Society

Why Join?

- Support your industry
- Help shape thought-leadership and best practice to increase success
- Network with the most influential corporate venturers in the world – these could be your co-investors or partners
- Raise your company's profile to increase co-investment and deal-flow opportunities
- Increase your personal profile for your next career move
- Join sub-committees to move the industry forward in areas such as deal flow, investment models, partnership approaches, innovation excellence and intellectual property

GCV Leadership Society and ICVCA missions:

The GCV Leadership Society is for corporate venturing leaders and aims to be the pre-eminent provider of data, information, events and other services for the global corporate venturing community. The Society helps develop the corporate venturing leaders of the future.

A separate CVC trade body, the International Corporate Venture Capital Association, chaired and majority governed by practicing corporate venturers, has also been created to help the industry communicate its work to third parties, such as entrepreneurs, VCs, corporate management and through regional trade bodies and local networks that provide government lobbying.

	ICVCA (Organisation/ Individual) $499 per year	Premium* (Company) $12,500 per year	Luminary (Company) $50,000 for 2 years
Right to join and use the *'ICVCA'* Name	✓	✓	✓
Get the Weekly Community Newsletter	✓	✓	✓
Entry in the Member App	✓	✓	✓
Pro Bono - Bridging communications to third parties	✓	✓	✓
Enhanced Company Profile in the Directory app		✓	✓
Free Ticket to either the annual Summit or Symposium		TWO	THREE
Executive Advisory Role - act as GCV Leadership Society Ambassador for a three-year period			✓
GCV Subscription** for up to 2 users for 12 months - access to the monthly magazine (pdf), news website and special reports	10% Discount	FREE	FREE
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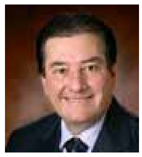
NDA Club			✓

*GCV Subscribers can upgrade for a limited time. Subscription fee already paid will be subtracted from the amount due on a pro-rated basis.
**Includes access to Global Government Venturing and Global University Venturing.

Committee members include:

Claudia Fan Munce
NEA

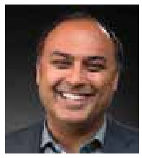


Bill Taranto
Merck

Sue Siegel
GE Ventures

Tom Heyman
J&J

Jeffrey Li
Tencent



Jaidev Shergill
Capital One

ICVCA $499 per year

This US-based non-profit organisation is governed by the industry leaders in order to communicate with third parties, such as entrepreneurs, VCs and corporate managers. It is separate to Global Corporate Venturing (GCV) and its UK-based corporate parent, Mawsonia, although it can contract services from GCV and/or other service providers, such as data, to help in its outreach efforts. Subscribers to GCV will automatically be enrolled in the ICVCA with $499 rebated to the non-profit as GCV's contribution to the industry. However, people can join the trade body separately to taking GCV's Leadership Society services.

GCV Industry Partner (Firm) or other industry professional (e.g. Academic, Government) $10,000 per year*

* Non-corporate venturers will have more limited access to the ICVCA's services unless authorised by its board.

"Global Corporate Venturing represents the industry and the good citizens and leaders in the innovation capital ecosystem are part of its Leadership Society."

Claudia Fan Munce,
GCV Leadership Society Chairperson
and former Head of IBM Venture Captial

Get all the benefits of the Mawsonia brands with the GCV Leadership Society, all under one umbrella.

Global Corporate Venturing & innovation SUMMIT

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For more information or to apply today contact James Mawson:
+44 (0) 7971 655 590 | jmawson@mawsonia.com

Global Corporate Venturing

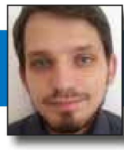
www.globalcorporateventuring.com

ANALYSIS

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

Deal count falls slightly in September

Kaloyan Andonov, reporter, GCV Analytics



The number of corporate-backed deals in September stood at 186, down from the 209 funding rounds in the same month last year. Investment value, however, was 21% higher than last year's level, at $8.23bn, up from $6.77bn in September 2016.

The deal count in September rose slightly compared with 176 in August this year, though there is normally a slowdown related to the summer holiday season. September's deal count, however, was lower than July's, when we reported 197 transactions.

Total capital invested in corporate-backed rounds during September also declined, down from the record-setting $17.16bn in August, representing a 100% decrease.

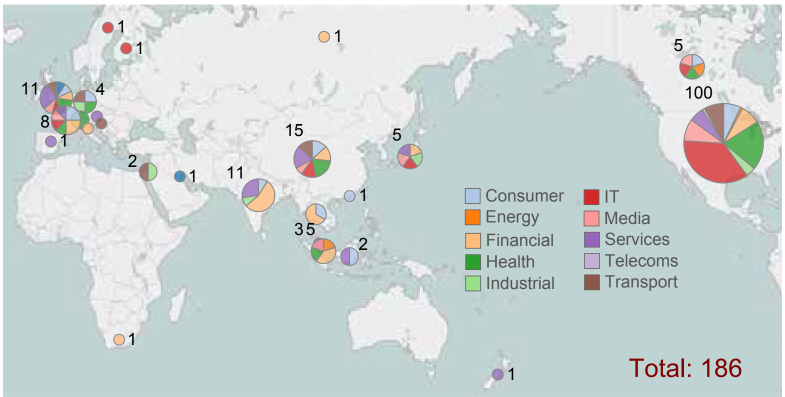
The US came first in the number of venturing deals with corporate backing, hosting 100 rounds, more than half the disclosed dealflow. China was second with 15 rounds and India and the UK third with 11.

The leading corporate investors by number of deals were diversified conglomerate Alphabet, payment platform PayPal and semiconductor and chipset manufacturer Intel. In terms of involvement in the largest deals, telecoms firm SoftBank topped the ranking, along with other investors, most notably e-commerce platform Alibaba and financial firm Fidelity.

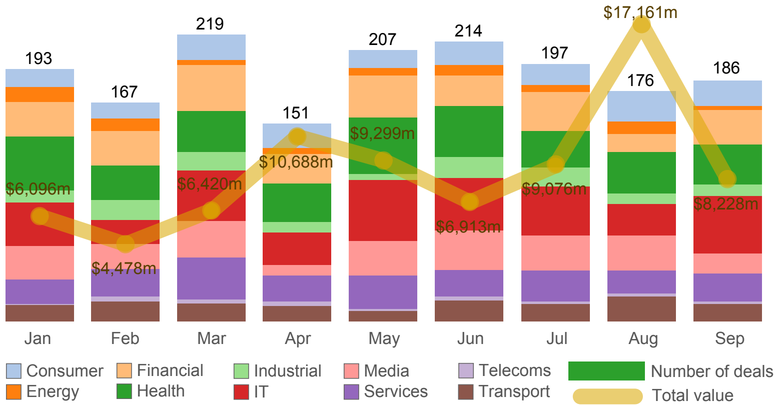
Deals

The most active corporate investors came from the

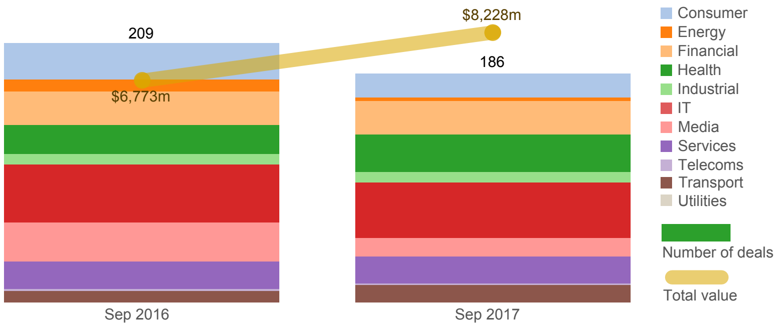
Global view of deals Sep 2017



Deals by month 2017

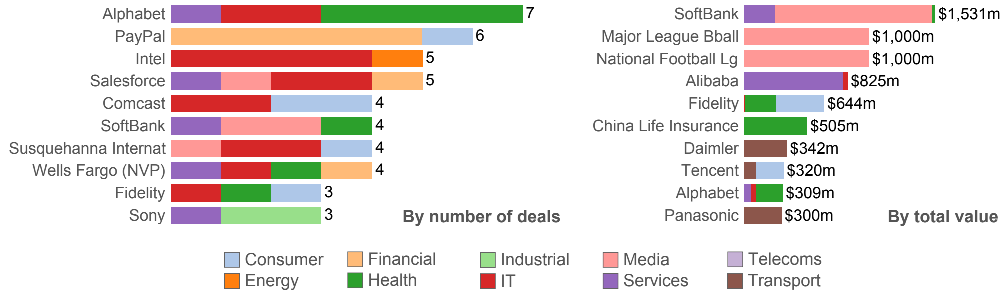


Deals Sep 2016 vs Sep 2017



ANALYSIS

Top investors Sep 2017



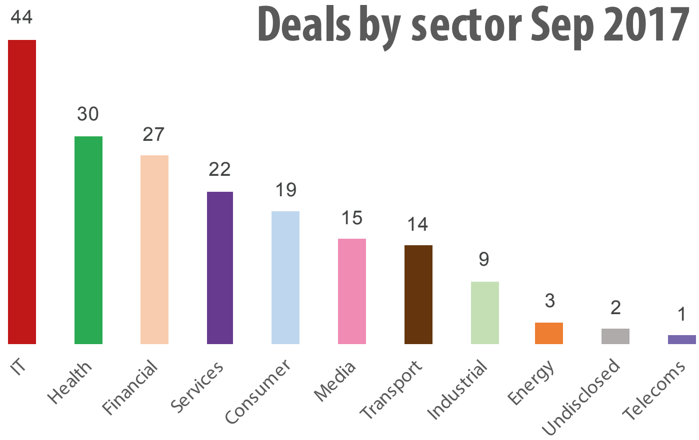
financial services, IT, industrial and media and health sectors, as shown on the heatmap.

GCV Analytics data shows that emerging businesses from the IT, health, financial and media sectors secured the highest number of deals involving corporate venturers. The top deals by round size were not concentrated in any particular sector, however. Rather, they ranged from transport and services through consumer and media to health companies.

SoftBank, through its $93bn Vision Fund, led a $1bn funding round in US-based sports e-commerce platform Fanatics. The round, first rumoured a month ago, also included sports bodies National Football League (NFL) and Major League Baseball (MLB). Fanatics has created an e-commerce platform that sells official sports team merchandise and apparel. Fanatics acts as the official merchandise partner for NFL and MLB as well as fellow sports bodies National Basketball Association, National Hockey League and Nascar.

Alibaba agreed to pay RMB5.3bn

Deals by sector Sep 2017



Deals heatmap Sep 2017

	Financial services	IT	Industrial	Media	Health	Services	Consumer	Telecoms	Transport
North America	35	24	20	13	15	10	7	8	5
Asia	20	6	2	5	1	6	4	3	2
Europe	11	4	5	2	4	2	5		
Middle East		1	1				1		1
Africa	1								
Australia and NZ				1					
Eastern Europe	1								

Top 10 investments Sep 2017

Company	Location	Sector	Round	Size	Investors
Fanatics.com	US	Media	–	$1,000m	Major League Baseball | National Football League | SoftBank
Cainiao Smart Logistics	China	Services	Stake purchase	$798m	Alibaba
United Imaging Healthcare	China	Health	A	$505m	Capital Venture Investment Fund | China Development Bank | China Life Insurance | Citic Securities | CMB | SDIC Fund Management | Zhongjin Zhide
Deliveroo	US	Consumer	E and beyond	$385m	Accel Partners | DST System | Fidelity | General Catalyst | Index Ventures | T Rowe Price
Gogoro	US	Transport	C	$300m	Engie | Generation Investment Management | Panasonic | Samuel Yin | Sumitomo | Temasek
Oyo Rooms	India	Services	D	$250m	Greenoaks Capital | Hero Enterprise | Lightspeed Venture Partners | Sequoia Capital | SoftBank
23andMe	US	Health	E and beyond	$250m	Altimeter Capital Management | Casdin Capital | Euclidean Capital | Fidelity | Sequoia Capital | Wallenberg Foundation
Via	US	Transport	–	$250m	Daimler | undisclosed strategic investors
Slack	US	Media	E and beyond	$250m	Accel Partners | SoftBank
Miss Fresh	Canada	Consumer	C	$230m	Genesis Capital | Tencent | Tiger Global Management

($798m) to raise its stake in China-based logistics affiliate Cainiao Smart Logistics Network from 47% to 51%. Cainiao was formed in 2013 by Alibaba, which held a 48% stake at the time of its formation, together with diversified conglomerate Fosun and retail chain Intime Retail Group. Cainiao oversees an e-commerce logistics system that spans more than 120 warehouses and 180,000 express delivery stations across more than 600 Chinese cities, with the company's large data-powered IT system linking its services to improve efficiency.

China-based medical imaging equipment developer United Imaging Healthcare raised RMB3.3bn ($505m) in a series A round co-led by insurance provider China Life Insurance. China Life co-led the round with SDIC Fund Management, a private equity firm majority-owned by the Chinese government's investment holding firm, State Development & Investment Corporation. Founded in 2011, United Imaging is working on imaging devices that use computerised tomography, magnetic resonance imaging and digital radiography. It has also developed a full-body positron emission tomography (PET) scanner to track the body's internal metabolic processes.

Deliveroo, a UK-based online food ordering platform, received £285m ($384m) in new funding. Financial services group Fidelity and investment firm T. Rowe Price co-led the round, which valued Deliveroo at $2bn. The funding follows a decision by SoftBank's Vision Fund not to back Deliveroo. Founded in 2012, Deliveroo enables consumers to order food from local outlets such as cafés and restaurants through a mobile app and website. The food is delivered by bicycle and motorcycle couriers which work for Deliveroo on a freelance basis.

US-based electric scooter provider Gogoro closed a $300m series C round that included diversified conglomerate Sumitomo, energy utility Engie and consumer electronics producer Panasonic. The round valued Gogoro at more than $800m, CEO Horace Luke told Forbes. Founded in 2011, Gogoro has developed a smart electric scooter as well as a battery-swapping network for its customers, both of which were launched in Taipei, the capital of Taiwan, in 2015.

India-based budget hotel booking platform Oyo Rooms raised $250m in a funding round led by Softbank's $93bn Vision Fund. Service project management and contract manufacturing company Hero Enterprise, among others, also contributed to the round, which reportedly valued Oyo at $850m to $900m. Founded in 2012, Oyo operates an online platform for users to book branded rooms in partner, budget hotels that guarantee a certain standard of accommodation. The company currently manages a network of 7,000 hotels with 70,000 rooms across 200 cities.

US-based genetics services provider 23andMe received $250m in a round led by venture capital firm Sequoia Capital, at a $1.5bn pre-money valuation. Financial services group Fidelity Management & Research (FMR) took part in the round, as did family office Euclidean Capital, investment firms Altimeter Capital and Casdin Capital, and research support organisation Wallenberg Foundation. 23andMe operates a consumer genetics service allowing users to send a DNA sample for analysis, in order to find out if they are more susceptible to certain health conditions or discover information about their ancestry.

US-based mass transit service Via obtained a strategic investment from a consortium led by car manufacturer Daimler, estimated to be worth approximately $250m. The figure includes a $50m commitment from Daimler's Mercedes-Benz Vans subsidiary towards the creation of a Netherlands-based joint-venture that will operate an own-brand and licensed service across European cities. Remaining investors in the round were not named. Founded in 2012, Via operates a shuttle-based carpooling service that it provides both directly and through licensing partnerships with other public transport providers, such as rail company Deutsche Bahn-owned public transport operator Arriva.

US-based enterprise communication platform Slack raised $250m in funding, "much of which" came from SoftBank's Vision Fund. The round, which valued Slack at $5.1bn post-money, also featured venture capital firm Accel. Slack has built a communication platform that has 9 million weekly active users and 6 million daily active users, according to Bloomberg, 2 million of which are paid subscribers.

Internet group Tencent participated in a $230m series C+ round for China-based grocery e-commerce platform MissFresh. Hedge fund manager Tiger Global Management and investment firm Genesis Capital co-led the round, which followed a $100m series C for the company in January this year. MissFresh runs an online platform that sells fresh produce such as fruit, vegetables, seafood and eggs, and delivers them to customers within two hours, making use of a cold chain logistics network it has established in China.

Exits

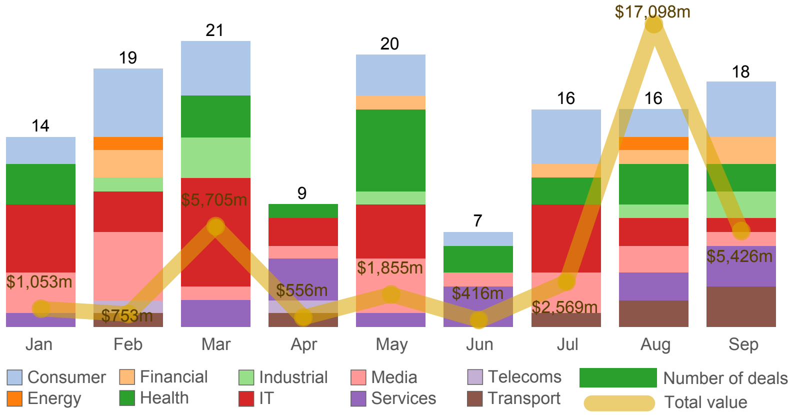
In September GCV Analytics tracked 18 exits involving corporate venturers as either acquirers or exiting investors. The transactions – most of which took place in the US – included 14 acquisitions and four initial public offerings (IPOs).

This exits count figure represents a decrease from the 16 and 15 transactions tracked in the summer months of July and August this year. Total estimated exited capital in September amounted to $5.42bn, significantly above the dollar figures for either July or August – estimated at $2.57bn and 1.79bn, respectively.

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 approximately 199 million new shares on the Hong Kong Stock Exchange priced 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 sized at just under 5% for its investment. ZhongAn's online platform provides upwards of 300 specialised insurance packages, its most popular being the option to append insurance to e-commerce purchases in order to cover the cost of returning the goods.

ANALYSIS

Exits by month 2017



NeoTract, a US-based medical device producer, was acquired by medical device maker Teleflex for a total of $1.1bn, thus giving an exit to pharmaceutical group Johnson & Johnson, whose strategic investment arm of Johnson & Johnson, participated in NeoTract's $28.1m funding round in 2009. Founded in 2004, NeoTract has developed a minimally invasive device, UroLift, to treat lower urinary tract symptoms caused by an enlarged prostate gland, a condition known as benign prostatic hyperplasia (BPH).

Rigontec, a Germany-based RNA therapeutics developer backed by pharmaceutical firm Boehringer Ingelheim, agreed to an acquisition by US-based pharmaceutical company Merck for up to €464m ($554m). Merck, through an unnamed subsidiary, will make an upfront cash payment of €115m, with the remaining €349m dependent on clinical, development, regulatory and commercial milestones. The deal is subject to certain closing conditions. Rigontec, spun out from University of Bonn's Institute for Clinical Chemistry and Clinical Pharmacology in 2014, is developing an immuno-oncology treatment that exploits a mechanism of the body's immune system known as RIG-I.

Food and beverage producer Nestlé agreed to acquire a majority stake in Blue Bottle Coffee, the coffee roaster and

Top 10 exits Sep 2017

Company	Location	Sector	Exit type	Acquirer	Size	Investors
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
NeoTract	US	Health	Acquisition	Teleflex	$1.1bn	Johnson & Johnson | New Enterprise Associates | Quilvest
Rigontec	Germany	Health	Acquisition	Merck & Co	$554m	Boehringer Ingelheim | Forbion Capital Partners | High-Tech Gruenderfonds | MP Healthcare Venture Management | NRW Bank | Sunstone Capital | Wellington Partners
Blue Bottle Coffee	US	Consumer	Acquisition	Nestle	$500m	Alphabet | Fidelity | Index Ventures | Morgan Stanley | Tetragon Financial Group | True Ventures
Best Logistics	China	Services	IPO	–	$450m	Alibaba | Brackenhill Tower | Broad Street Principal Investments | Cainiao Smart Logistics | CDH Investments | Denlux Logistics Invest | Florence Star Worldwide | Hina Group | Hong Kong Jiashi International Group | International Data Group | Orchid Development Holdings | Walden International
Gigya	US	IT	Acquisition	SAP	$350m	Adobe | Advance Publications | Benchmark | Common Fund Capital | DAG Ventures | Greenspring Associates | Intel | Mayfield Fund | Vintage Investment Partners
Despegar	Argentina	Services	IPO	–	$332m	Accel Partners | Expedia | General Atlantic | Insight Venture Partners | Sequoia Capital | Tiger Global Management
Blue River	US	Industrial	Acquisition	John Deere	$305m	Data Collective | Innovation Endeavors | Khosla Ventures | Monsanto | Pontifax Global Food and Agriculture Technology Fund | Stanford Business School Alumni Angels | Steve Blank | Syngenta | ULU Ventures
CashStar	US	Consumer	Acquisition	Blackhawk Network	$175m	FTV Capital | Intel Capital | Mosaik Partners | North Hill Ventures | Passport Capital | undisclosed strategic investors
Korbit	South Korea	Financial services	Acquisition	Nexon	$80m	angel investors | Bam Ventures | Pantera Capital | SoftBank

ANALYSIS

retailer backed by internet technology group Alphabet. Nestlé declined to provide details of the deal, but the Financial Times reported it is set to pay up to $500m for a 68% stake in the company. The New York Times confirmed the stake size, but a source told Bloomberg the price was $425m. Founded in 2002, Blue Bottle has built a premium coffee brand with a presence in the US and Japan.

Best Logistics, a China-based logistics service backed by e-commerce group Alibaba, raised $450m in an IPO in the US. The company priced 45 million American depositary shares on the New York Stock Exchange at $10 each, at the foot of the $10 to $11 range it had set. Alibaba had considered buying up to $150m of shares in the IPO but did not ultimately do so. Best provides supply chain services such as warehousing and last-mile package delivery through third-party affiliates which use its technology platform. It serves more than 500 corporate customers as well as a range of small and medium-sized businesses.

Enterprise software provider SAP agreed to acquire US-based customer management platform Gigya in a deal that will enable chipmaker Intel, software provider Adobe and media group Advance Publications to exit. SAP will pay $350m for the company. 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 at the same time.

Despegar, the Argentina-based travel and accommodation booking marketplace backed by tourism services provider Expedia, raised $332m in an IPO on the New York Stock Exchange. The company issued almost 12.8 million shares priced at the top of the $23 to $26 range it had set the previous week. Founded in 1999, Despegar runs an online platform that sells flights, holiday accommodation package holidays on behalf of third parties. The platform, known as Decolar in Brazil, was responsible for $3.3bn in bookings in 2016, and Despegar made a $17.8m net loss that year from $411m in revenue.

Agricultural and construction equipment manufacturer John Deere agreed to purchase Blue River Technology, a US-based agriculture technology developer backed by agrochemical company Monsanto, for $305m. Founded in 2011, Blue River produces robotic systems that integrate computer vision and machine learning technology to detect and monitor each individual plant in a crop and apply herbicides and fertilisers only when needed.

Fintech company Blackhawk Network acquired CashStar, a US-based digital gift card service backed by semiconductor technology producer Intel, for approximately $175m in an all-cash transaction. CashStar will become part of Blackhawk's digital and incentives businesses. CashStar has developed a platform that allows customers to purchase personalised digital and physical gift cards. Retailers can use the service to manage gift voucher-based promotions and marketing efforts.

Game developer Nexon paid $80m for a 65.2% stake in Korbit, a South Korea-based cryptocurrency exchange backed by SoftBank. The valuation of Korbit was initially pegged as more than $150m, but Nexon's South Korean holding company NXC subsequently told TechCrunch the deal valued the company at approximately $120m. Korbit operates an online platform that enables users to trade in cryptocurrencies such as Bitcoin, Ethereum and Ripple. It stores the majority of deposits in digital wallets that are not connected to the internet in order to prevent cyberattacks. ◆

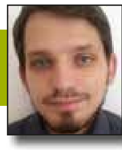
Note: Monthly data can fluctuate as additional data are reported after GCV goes to press

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.

Dealflow and investments go up in the third quarter

Kaloyan Andonov, reporter, GCV Analytics



In the third quarter of 2017, GCV Analytics tracked 559 funding rounds involving corporate venturers, a slight 2% increase from the 447 rounds recorded in Q3 2016. However, the estimated total investment surged to $34.46bn, up 83% from the $18.78bn last year.

The US hosted nearly half of those funding rounds (274), while China came in second with 72 deals, India third with 38, and the UK fourth with 32.

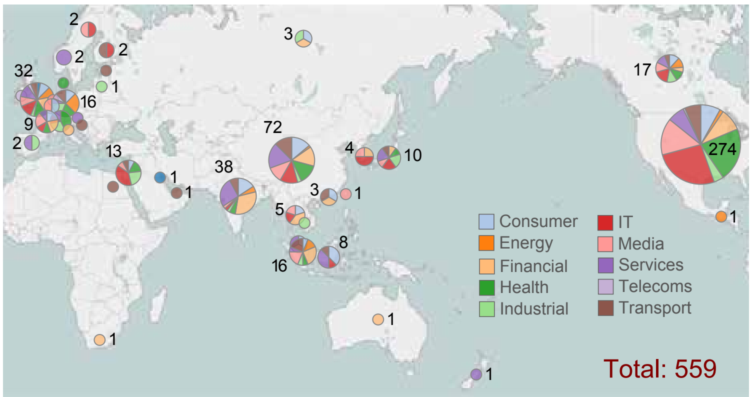
When comparing Q3 2017 with the first quarter of this year, there was a decrease in deal count, dropping from 579. However, estimated total investment jumped significantly from $16.19bn, i.e. by 102%.

Emerging enterprises from the IT, health, media and financial services sectors proved the most attractive for corporate venturers, accounting for at least 69 deals each. The top funding rounds by size, however, were raised mostly by companies from a variety of sectors, as outlined below.

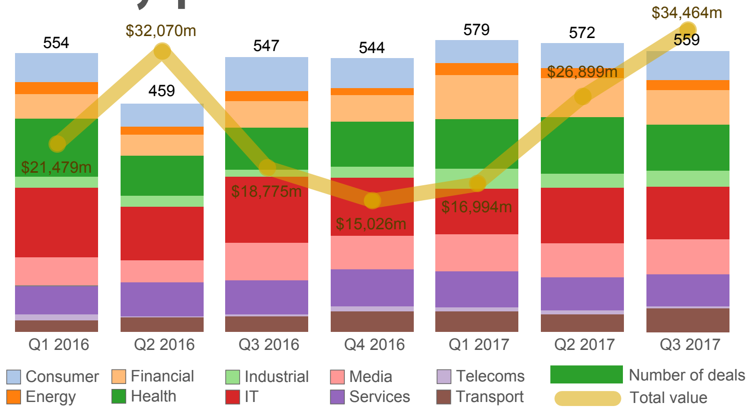
The most active corporate investors, in turn, came from the financial services, IT, media, health and industrial sectors, as illustrated in the deals heatmap.

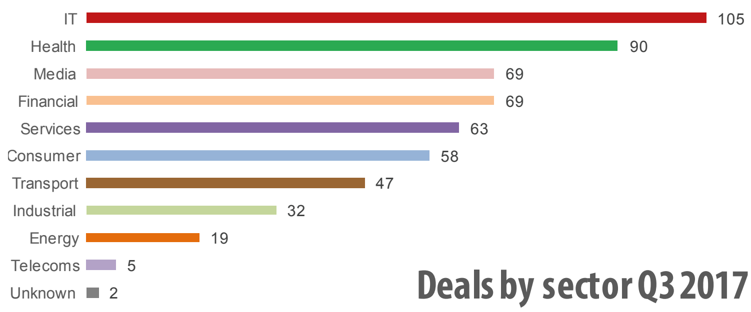
The leading investors by number of deals were telecoms firm SoftBank and its Vision Fund, diversified internet conglomerate Alphabet, cloud services platform Salesforce and media and entertainment company Disney. The list of corporate venturers involved in the largest deals by size was also topped by SoftBank, along with ride-hailing platform Didi Chuxing and payment

Global view of deals Q3 2017



Deals by quarter





Deals by sector Q3 2017

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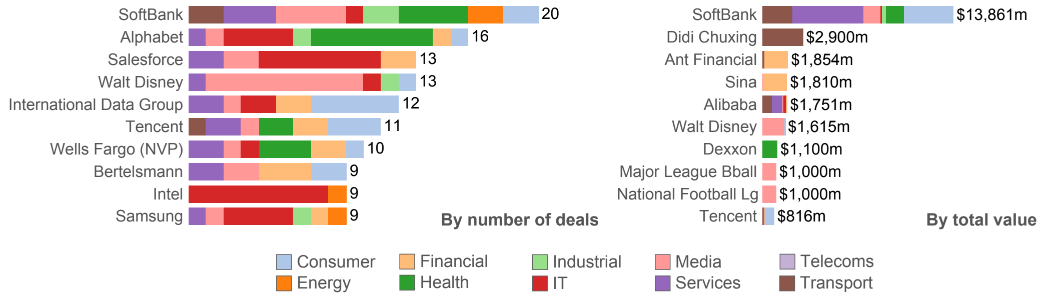
Top investors Q3 2017



Heatmap of deals Q3 2017

	Financial services	IT	Media	Health	Industrial	Consumer	Telecoms	Services	Transport
North America	90	66	55	46	36	18	24	17	15
Asia	63	39	18	4	7	14	13	14	12
Europe	27	11	11	9	10	10	6	4	3
Middle East	1	7	3	1	2	2	1		5
Eastern Europe	3	1							
Australia and NZ	1		1						
Africa	1								

services company Ant Financial. SoftBank was also the most often found in investors in the top venturing rounds by dollar size.

Deals

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

SoftBank and its $93bn Vision Fund agreed to invest a total of $4.4bn in US-based working space operator WeWork.

Top 15 investments Q3 2017

Company	Location	Sector	Round	Size	Investors
WeWork	US	Services	Stake purchase	$4.4bn	SoftBank
FlipKart	India	Consumer	E and beyond	$2.5bn	SoftBank
Grab	Singapore	Transport	E and beyond	$2bn	Didi Chuxing | SoftBank
MassMutual Asia	Hong Kong	Financial services	Stake purchase	$1.7bn	Ant Financial | City-Scape Pte | Sina | Yunfeng Capital
BamTech	US	Media	Stake purchase	$1.58bn	Walt Disney
Roivant Sciences	Switzerland	Health	–	$1.1bn	Dexxon | SoftBank
Tokopedia	Indonesia	Consumer	E and beyond	$1.1bn	Sequoia Capital | SoftBank | undisclosed
Fanatics.com	US	Media	–	$1bn	Major League Baseball | National Football League | SoftBank
Cainiao Smart Logistics	China	Services	Stake purchase	$798m	Alibaba
Ofo	China	Transport	E and beyond	$700m	Alibaba | Citic | Didi Chuxing | DST System | Hony Capital
United Imaging Healthcare	China	Health	A	$505m	Capital Venture Investment Fund | China Development Bank | China Life Insurance | Citic Securities | CMB | SDIC Fund Management | Zhongjin Zhide
WeWork	US	Services	E and beyond	$500m	Hony Capital | SoftBank
WeBank	China	Financial services	–	$450m	Undisclosed strategic investors
Kakao Mobility	South Korea	IT	Seed	$437m	Kakao | TPG
SenseTime	China	IT	–	$410m	Dalian Wanda Group | undisclosed strategic investors

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The two will pay $3bn to acquire a mixture of primary and secondary shares, and will provide $1.4bn in funding for three new regional WeWork subsidiaries in Asia. Founded in 2010, WeWork oversees a network of 160 co-working spaces, stretching across 50 cities in 16 countries. Customers can rent desks or full offices and have access to rapid-speed internet, office supplies and equipment, and other perks such as free coffee.

The SoftBank Vision Fund also invested an amount reported by LiveMint to be “at least” $2.5bn in India-based e-commerce company Flipkart. Flipkart confirmed the investment in a statement without giving the figure. Founded in 2007, Flipkart has built the largest e-commerce marketplace in India by market share. It currently lists about 80 million products across more than 80 consumer categories including electronics, fashion, appliances and furniture.

Singapore-based on-demand ride service Grab raised $2.5bn series G round from carmaker Toyota’s Next Technology Fund, SoftBank and Didi Chuxing at a $6bn valuation. Founded in 2012 as GrabTaxi, Grab operates an on-demand ride-hailing service that is currently available across 87 cities in Southeast Asia.

China-based Ant Financial, an affiliate of its former parent and 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’s founder Jack Ma, which acquired a 60% majority stake in the firm. The other 40% were acquired by Ant Financial and a host of other investors including media group Sina and Singapore government-backed acquirer City-Scapes. The total size of the transaction was $1.7bn, which was comprised of $1bn in cash and $700m in shares. MassMutual Asia manages general insurance as well as a Mandatory Provident Fund, a compulsory pension plan for the retirement of residents in Hong Kong.

Entertainment and media group Walt Disney invested $1.58bn in US-based online video streaming technology provider BamTech to take a majority stake in it. Disney had paid $1bn for a 33% stake in BamTech in 2016 as part of a deal that granted it an option to acquire a majority stake. This latest investment hiked its share to 75%. BamTech was originally created by MLB Advanced Media, the interactive media arm of sporting league Major League Baseball (MLB). It powers the online video offerings of MLB and several other major sporting organisations.

SoftBank Vision Fund led a $1.1bn round for Switzerland-based drug developer Roivant Sciences. The round also featured existing investors including pharmaceuticals distributor Dexxon. Founded in 2014, Roivant pursues a business model whereby it develops therapeutics through a range of subsidiaries: Myovant, which focuses on endocrine diseases and women’s health in general, Axovant (neurology), Dermavant (dermatology), Enzyvant (rare diseases) and Urovant (urology).

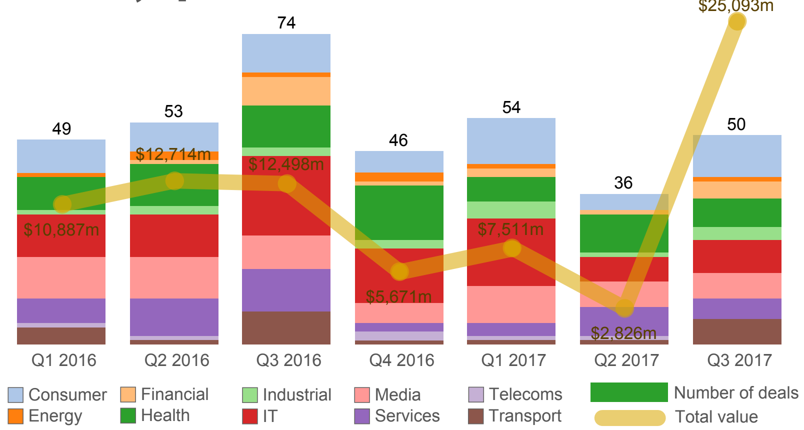
E-commerce firm Alibaba led a $1.1bn round for Indonesia-based e-commerce platform Tokopedia. The round included undisclosed existing investors, the company said, and reports suggested SoftBank and venture capital firm Sequoia Capital. Tokopedia runs an online marketplace where online merchants and local brands sell a range of consumer products spanning categories like fashion, software, electronics, cars and lifestyle products.

Exits

GCV Analytics tracked 50 exits during the third quarter of 2017, including 35 acquisitions, nine initial public offerings (IPOs), four mergers and two business closures. The majority of these transactions took place in the US.

Top exiting corporates this quarter include technology and internet companies like Alphabet, Ant Financial and media and research company International Data Group (IDG), which reported at least three exits each.

Exits by quarter



Top exiting investors Q3 2017

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The total estimated amount of exited capital in Q3 2017 was the record-setting $25.10bn, most of which was accounted for by a single large transaction – Intel's massive $15.3bn acquisition of Mobileye.

The largest acquisition of a corporate-backed company ever-recorded was completed by Intel during this third quarter. Intel acquired Israel and US-based developer of vision driver assistance systems Mobileye for $15.3bn by purchasing 84% of the company´s outstanding ordinary shares. Mobileye had previously received backing from financial firms Goldman Sachs and Morgan Stanley in the 2000s as well as by car rental services Enterprise Rent-a-Car and financial firm Fidelity in 2013 before it floated on the New York Stock Exchange in 2014. Founded in 1999, Mobileye develops a collision avoidance system designed to reduce vehicle injuries and fatalities, offering computer vision and machine learning, data analysis, localisation and mapping for advanced driver assistance systems and autonomous driving.

SoftBank committed $500m to China-based online insurance platform ZhongAn Online Property and Casualty Insurance as part of the latter's $1.5bn IPO. ZhongAn issued approximately 199 million new shares on the Hong Kong Stock Exchange priced at HK$59.70 ($7.64) each, at the top of the range it had set earlier. SoftBank purchased a stake under 5%. ZhongAn runs an online platform which offers more than 300 specialised insurance packages.

Germany-based online food ordering platform Delivery Hero went public in a €996m ($1.13bn) initial public offering (IPO),

Top 15 exits Q3 2017

Company	Location	Sector	Size	Exit type	Acquirer	Investors
Mobileye	Israel	Transport	$15.3bn	Acquisition	Intel	Undisclosed investors
ZhongAn Online Property and Casualty Insurance	China	Financial services	$1.5bn	IPO	–	Ant Financial | CDH Investments | China International Capital Corporation | Keywise Capital Management | Morgan Stanley | Ping An Insurance | SoftBank | Tencent
Delivery Hero	Germany	Consumer	$1.13bn	IPO	Rocket Internet	Global Online Takeaway Group | Naspers | Rocket Internet
NeoTract	US	Health	$1.1bn	Acquisition	Teleflex	Johnson & Johnson | New Enterprise Associates | Quilvest
Intacct	US	Financial services	$850m	Acquisition	Sage Group	American Express | Battery Ventures | Bessemer | Costanoa Venture Capital | Deloitte | Emergence Capital Partners | Goldman Sachs | Hummer Winblad Venture Partners | JK&B Capital | Morgan Creek Capital Management | Sigma Partners | Split Rock Partners
Baidu Waimai	China	Consumer	$800m	Acquisition	Rajax	Ajisen Investment | Baidu | Hina Group
Berry Genomics	China	Health	$653m	Merger	Chengdu Tianxing Instrument and Meter	Boyu Capital | Dingfent Asset | Haitong Securities | Legend Holdings | Qiming Venture Partners
Rigontec	Germany	Health	$554m	Acquisition	Merck & Co	Boehringer Ingelheim | Forbion Capital Partners | High-Tech Gruenderfonds | MP Healthcare Venture Management | NRW Bank | Sunstone Capital | Wellington Partners
Blue Bottle Coffee	US	Consumer	$500m	Acquisition	Nestlé	Alphabet | Fidelity | Index Ventures | Morgan Stanley | Tetragon Financial Group | True Ventures
Best Logistics	China	Services	$450m	IPO	–	Alibaba | Brackenhill Tower | Broad Street Principal Investments | Cainiao Smart Logistics | CDH Investments | Denlux Logistics Invest | Florence Star Worldwide | Hina Group | Hong Kong Jiashi International Group | International Data Group | Orchid Development Holdings | Walden International
Gigya	US	IT	$350m	Acquisition	SAP	Adobe | Advance Publications | Benchmark | Common Fund Capital | DAG Ventures | Greenspring Associates | Intel | Mayfield Fund | Vintage Investment Partners
Despegar	Argentina	Services	$332m	IPO	–	Accel Partners | Expedia | General Atlantic | Insight Venture Partners | Sequoia Capital | Tiger Global Management
Blue River	US	Industrial	$305m	Acquisition	John Deere	Data Collective | Innovation Endeavors | Khosla Ventures | Monsanto | Pontifax Global Food and Agriculture Technology Fund | Stanford Business School Alumni Angels | Steve Blank | Syngenta | Ulu Ventures
Skycure	Israel	IT	$250m	Acquisition	Symantec	Foundation Capital | New York Life Insurance | Pitango | Shasta Ventures | private investors
Yandex Taxi	Russia	Transport	$225m	Merger	–	Uber

giving a partial exit to e-commerce holding company Rocket Internet. The IPO was comprised of 18.95 million newly issued shares and 20 million shares held by the Rocket Internet, all priced at €25.50 each. Delivery Hero has built an online food ordering and delivery platform that serves customers in over 40 countries across Europe, Latin America and the Middle East and North Africa, and Asia-Pacific regions.

US-based medical device producer NeoTract was acquired by medical device maker Teleflex for $1.1bn, providing pharmaceutical group Johnson & Johnson with an exit. Founded in 2004, NeoTract develops a minimally invasive device, UroLift, to treat lower urinary tract symptoms caused by an enlarged prostate gland, a condition known as benign prostatic hyperplasia (BPH).

Enterprise software provider Sage Group agreed to buy US-based financial management software provider Intacct for $850m, giving exits to payment services provider American Express and professional consulting services firm Deloitte. Founded in 1999, Intacct has built a cloud-based platform for enterprises that incorporates cash, inventory, contract and vendor management as well as accounting, purchasing, financial consolidation, revenue recognition, subscription billing, financial reporting and project and fund accounting.

Funding initiatives

Corporate venturers supported a total of 61 fundraising initiatives in Q2 2017, down from the 90 initiatives reported at the same time last year. The estimated total capital raised, $5.11bn, also considerably lower than last year's Q3 figure of $6.43bn.

The initiatives in question include 25 announced, open and closed VC funds, 12 newly launched corporate venturing units, nine corporate-backed accelerators and seven corporate-backed incubators, among others.

This has also been the lowest number of initiatives recorded since Q1 2017 but this is likely attributable to the summer slowdown of investment activity during August, related to the holiday season.

China-based internet company Baidu announced a RMB10bn ($1.5bn) vehicle called Apollo Fund aimed at the autonomous driving sector. The fund is set to back 100 self-driving car projects over the next three years. It will seek opportunities across the globe in the areas of software, hardware, vertical services and data providers. The vehicle draws its name from Baidu's open-source autonomous driving platform Apollo, which has attracted 70 industry partners so far, including car manufacturers such as Hyundai. Baidu announced the latest iteration of the platform, Apollo 1.5, in conjunction with the Apollo Fund.

Insurance firm China Life and internet company Baidu announced a RB7bn ($1.05bn) private equity fund partnership. China Life will put up as much as RMB5.6bn of the capital for the fund, which will be known as Baidu Fund Partnership, while Baidu will provide up to RMB1.4bn. The two China-based corporates will each invest 30% of those figures initially. 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.

Lilly Asia Ventures, the Asia-focused biomedical venture capital firm sponsored by US-based pharmaceutical firm Eli Lilly, closed its fourth fund at $450m. It has not disclosed any limited partners apart from Eli Lilly. Founded in 2008, Lilly Asia Ventures was formed by Eli Lilly to invest in life sciences and healthcare technology developers in Asia, and particularly in China. It typically invests between $5m and $15m per round at growth stage, and tries to take a board seat if possible.

South Korea-based electronics producer Samsung launched a $300m automotive-focused investment fund dubbed Samsung Automotive Innovation Fund. The fund will make strategic investments in companies developing connected and autonomous vehicle products in areas such as smart sensors, machine vision, artificial intelligence, high-performance computing, connectivity, automotive safety, security and privacy technology. The unit will bolster Samsung's own technology efforts in the sector. It has received licenses to test its autonomous driving software and hardware on the road in California and Korea.

Top 10 funding initiatives Q3 2017

Initiative	Size	Location	Targeted sectors	Backers
Apollo Fund	$1.5bn	China	Transport	Baidu
Baidu Fund Partnership	$1bn	China	IT, telecoms, financial services	Baidu | China Life Insurance
LAV Biosciences Fund IV	$450m	China	Health	Eli Lilly
Samsung Automotive Innovation Fund	$300m	South Korea	Transport	Samsung
Eight Roads China Health Fund	$250m	China	Health	Fidelity
PFR NCBR CVC Fund of Funds	$225m	Poland	Sector-agnostic	Polish Development Fund | undisclosed strategic investors
Vertex Ventures III	$150m	Singapore	Financial services	Temasek | Kasikornbank
ST Engineering Ventures	$150m	Singapore	IT, industrial, transport	ST Engineering
Evolution Technology Fund	$125m	Switzerland	IT	Cisco Systems | PZU Insurance Group
Tech Fund I	$117m	France	Financial services	BPIfrance | Swiss Life | Natixis Assurances | Sogecap | Groupama | Vaudoise Assurances Group | BlackFin Capital Partners

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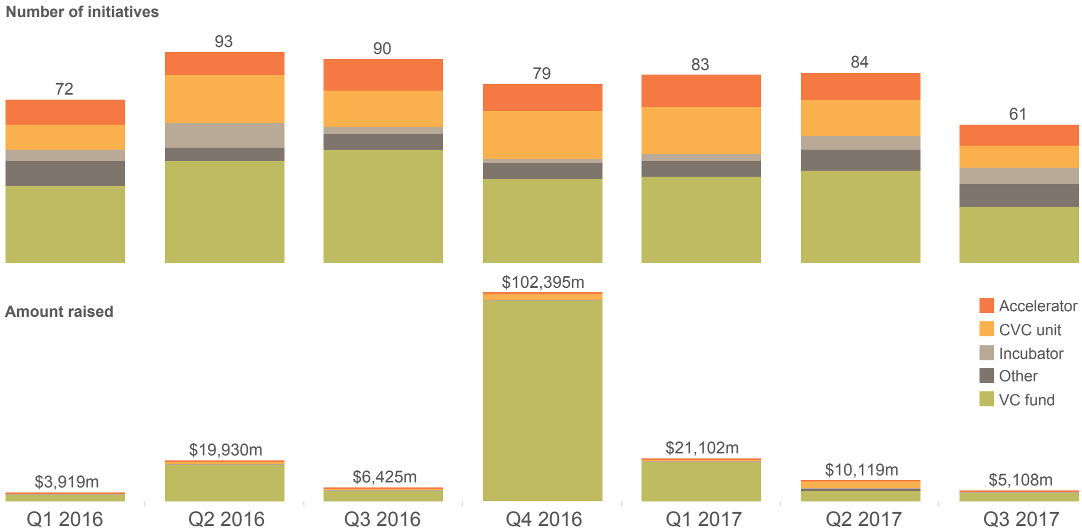
Funding initiatives by quarter



Eight Roads Ventures, the investment arm of financial services conglomerate Fidelity International, established a healthcare fund aimed at China-based startups. The $250m vehicle will primarily invest in four healthcare-related areas: therapeutics, services, medical technology and IT and digital health. Approximately 40% of the money will go towards therapeutics. The fund is expected to be followed by a broader technology vehicle, though details about the latter are yet to emerge.

The government of Poland launched its Pzl800m ($225m) PFR NCBR CVC Fund of Funds, a vehicle that will invest in corporate venturing subsidiaries in the country. The fund will be managed by PFR Ventures, the investment arm of the Polish Development Fund. The government is providing half the capital, with the remainder to be provided by private backers. The initiative is expected to generate six to nine corporate venturing funds with an average of Pzl80m to Pzl150m in size. Apart from capital, the government expects portfolio businesses to also gain access to the respective corporate's expertise. The funds will invest between Pzl5m and Pzl35m in domestic startups.

Vertex Ventures, the VC arm of Singapore state-owned investment firm Temasek, raised more than $150m for its third fund aimed at Southeast Asia and India. The fundraising effort included a commitment from Thailand-based financial services firm Kasikornbank. The $150m figure represents the fund's target, but Vertex said it will close the fund at the end of the year. The fund is expected to focus on fintech startups, providing between $3m and $5m to series A-stage companies and using Kasikornbank's expertise and network.

Singapore-based integrated engineering and industrial product manufacturer ST Engineering launched a corporate venturing subsidiary dubbed ST Engineering Ventures that is 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.

Switzerland-based growth equity firm Evolution Equity Partners closed its latest fund at $125m, with contributions from Cisco Investments and Witelo Fund, representatives of networking technology provider Cisco and PZU Insurance Group. Evolution has offices in Zurich and New York City, USA, and invests in technology developers, with a particular focus on cybersecurity and enterprise software. The fund is targeting companies building software platforms, and in particular technologies such as machine learning, big data, software-as-a-service, mobile and the point where consumer and enterprise software meet. It will provide between $5m and $25m for each investment.

France-based investment firm BlackFin Capital Partners achieved a first close of its Tech Fund 1, having secured more than €100m ($117m) with the support of several insurance companies. The insurers, which included Vaudoise Assurances Group, Groupama Group, Sogecap, Natixis Assurances and Swiss Life, were joined by France's public investment bank Bpifrance, which contributed directly and through its MultiCap Croissance fund, and unnamed financial services firms and family offices. The fund has a target size of more than €150m and will identify opportunities in the financial sector, including pure-play fintech, insurance technology and regulation technology. ◆