

Global

Corporate

Venturing

# 2017

## Talking points



### INSIDE

Cryptocurrencies and the future of finance

AI and colliding venture models

Think different in 2018

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## Global Corporate Venturing

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## EDITORIAL

# The power of technology

James Mawson, editor-in-chief



**H**istorian Melvin Kranzberg's first law states: "Technology is neither good nor bad – nor is it neutral." This seems increasingly relevant even after 30 years. The future is, in many ways, made by those who fund it. The traditional model of relying on R&D to generate new ideas within large corporations and government agencies, and in partnership with universities and public research institutions, remains, but it is startups and investors looking at their blend of risk, return and impact that is creating opportunities and disruption.

Corporate venturers are an increasingly important part of this future, providing nearly a third of the innovation capital in some sectors, such as life sciences, and probably more in others (see *World of Corporate Venturing next month for a full analysis of the year*). Their decisions about who and what technology and business models to fund matter, and so there is increased attention on who they are and how they are structured (see *comment*).

The near-\$100bn SoftBank Vision Fund has this year drawn most attention. The rate of deployment and focus on the sensors, data and algorithms driving towards "singularity" – self-evolving artificial intelligence – and the source of capital as a mix of individuals, corporations and governments is probably unprecedented in the tech industry.

A look through the scores of answers from the heads of corporate venturing units in this year's annual survey (see *special report*) identifies the main technology trends that occupy their minds – artificial intelligence and machine learning, blockchain and cryptocurrencies, Crispr and the convergence of life sciences and tech, quantum computing and autonomous technology, and cybersecurity to protect it all. As Bonny Simi, president of JetBlue Technology Ventures, said: "These technologies will transform entire industries."

Within the next 15 years, nearly 15% of the global workforce may need to switch jobs, according to a report by consultants at McKinsey Global Institute. By 2030, McKinsey estimated 75 million to 375 million workers will change occupation categories while another 400 million to 800 million could be displaced by automation and will be required to find entirely new forms of employment. "While new jobs will be created during that same period, the big question is if workers will have the necessary skills to transition into these new roles effectively," the report said.

Vivek Wadhwa, distinguished fellow at Carnegie Mellon University Engineering at Silicon Valley, has written in his next book – *Your Happiness was Hacked* – due out in May, that the "technology that was supposed to bring us together, increase freedom and democracy, and make us content and happy is doing the opposite". He believes the next consumer tech "revolution" will "reduce our choices even further and make us dumber – and this will consolidate power in the hands of the big providers, Amazon, Google and Apple [plus SoftBank, Tencent, Alibaba, Baidu and Huawei], by providing them with a larger treasure trove of data that can be abused".

But perhaps it is worth reminding ourselves of Kranzberg's fourth law: "Although technology might be a prime element in many public issues, nontechnical factors take precedence in technology-policy decisions." Effectively, the question is less about what can be accomplished but what should be and who, or what algorithm, decides.

Margrethe Vestager, European commissioner for competition, told Europe's biggest tech conference, Web Summit: "Competition drives us to get better. It helps us achieve things we had no idea we could do. And that means it is a problem when successful companies, which dominate the market, decide to use their power to shut down competition, because that can end up closing the door to innovation."

Corporate venturers, therefore, could take it as an indication that the ties and minority holdings they have with startups will be increasingly scrutinised even before a potential acquisition is made. This will flow through the limited partnerships, too, as has already started with those from whom SoftBank and VCs have raised money. Tech has the power to influence societies, whether through so-called fake news, or longer-term through gene editing or human-machine interfaces.

Vestager added: "But more and more, we are being asked to put our trust not just in other people, but in computers and algorithms – algorithms most of us do not fully understand. Whose workings might be a mystery even to those who use them to run their businesses. So today, the biggest challenge to the future of innovation is not whether we have enough ideas. It is whether that new technology can succeed in winning the public's trust."

The history of dominant companies and platforms has been one of anti-trust breakups, such as Standard Oil in 1911 after 40 years, or the East India Company in 1874 after nearly 300 years, and failed leaps to new platforms, such as those by Xerox or Kodak.

Governments recognise technology helps to shape or break their societies and people, and this year has been a period when the implications of the work, neither good nor bad, of innovation capitalists has become clearer to see. ♦

"The technology that was supposed to bring us together, increase freedom and democracy, and make us content and happy is doing the opposite"



## NEWS

## Europe 'guarantees' research and innovation budget

Günther Oettinger, European commissioner for budget and human resources, has "guaranteed" research and innovation would face no cuts in its next budget after the current seven-year period ends in 2020.

Oettinger said, at the 9th European Innovation Summit, the European Commission was preparing the next multiannual financial framework (MFF) by May and wanted to add more "money on top" of the existing budget, called Horizon 2020.

Horizon 2020, the eighth framework program for research and innovation lasting from 2014 to 2020, and other programs provide a global estimated budget of more than €120bn (\$140bn) in EU funds. With research and innovation effectively ringfenced, Oettinger said the EC would "have to cut" effectively elsewhere.

However, he also said there would have to be more efficiency in research and innovation to increase the number of startups that can scale up and rival US peers.

## Lam joins Parsons to set up Imagination

Rachel Lam, former head of corporate venturing unit Time Warner Investments, has set up venture capital firm Imagination Capital with her former CEO, Richard Parsons.

She said Imagination Capital was targeting \$250,000 to \$500,000 in initial investments in institutional seed and A rounds for about 20 to 25 startups in eSports, big data and machine learning, and digital media.

Parsons, who stepped down as CEO of Time Warner in 2007, is now CEO of the Los Angeles Clippers basketball franchise. He and Lam are providing the money for Imagination Capital.

Lam, named in the GCV Powerlist 2016, founded the Time Warner Investments group in 2003 and invested more than \$325m in 54 companies before leaving earlier this year. Her exits include Maker Studios (sold to Disney), Bluefin Labs (sold to Twitter), Admeld (sold to Google), Playspan (sold to Visa), MediaVast (sold to Getty Images), CrowdStar (sold to Glu Mobile), Kosmix (sold to Walmart), iSocket (sold to the Rubicon Project), ScanScout (sold to Tremor Video) and Turbine (sold to Warner Bros).



Rachel Lam



Richard Parsons

## SoftBank grows Vision Fund team

Japan-based internet and telecoms conglomerate SoftBank has added at least 10 executives to SoftBank Investment Advisors, which manages the \$97.7bn SoftBank Vision Fund, according to Private Equity News.

The new hires include Paul Davison, who was an associate at investment bank Rothschild & Co before moving to SoftBank in October. Lucio Di Ciaccio joined SoftBank earlier this month from private equity firm Carlyle Group, where he was part of the special situations team.

Both Davison and Di Ciaccio have joined SoftBank's London office, where the fund's chief executive, Rajeev Misra, is based. The remaining eight executives have joined the fund's office in San Carlos in California. They include Justin Nam, former associate at private equity firm Gryphon Investors, Denton Xu, former associate at private equity firm Francisco Partners, Mihir Jain, a former executive at consultancy Boston Consulting Group, and Sebastian Cua, previously an analyst at investment management firm Toronado Capital Management.

The Vision Fund reached \$97.7bn after additional money was invested at some point during the third quarter, though SoftBank has not disclosed details. The fund is targeting a final close of \$100bn which it hopes to achieve by the end of this year.

SoftBank initially committed \$25bn to in the fund, and the vehicle's limited partners include consumer electronics companies Apple and Sharp, mobile chipmaker Qualcomm and contract manufacturer Foxconn. The fund is also backed by Saudi Arabia's sovereign wealth fund Public Investment Fund, which committed \$45bn, and Abu Dhabi state-owned Mubadala Investment Company, which put in \$15bn.

The fund has deployed \$18.4bn to date, according to a quarterly earnings report. Portfolio businesses include graphics chipmaker Nvidia, biopharmaceutical company Roivant Sciences and co-working space operator WeWork.

## Heggie and Sharma ascend at JetBlue

JetBlue Technology Ventures, the corporate venturing subsidiary of the US-based airline, has promoted investment associates Christina Heggie and Ajay Sharma to investment principal, Axios reported.

Heggie joined JetBlue as an investment associate in June 2016 and led its investment in Recharge Labs, a hotel booking app developer for which she is also a board observer. Sharma was a founding member of the JetBlue venturing team. His investments include participation in rounds for wireless industrial network developer Filament, hybrid electric aircraft startup Zunum Aero and customer service software provider Gladly.



## NEWS

## Martín-Villa replaces Placer at Telefonica Open Future

Gonzalo Martín-Villa is to run Spain-based telecoms firm Telefónica's Open Future corporate venturing initiative in addition to the chief innovation officer role he has held since the end of 2015. It follows the recent departure of Javier Placer, named in the GCV Powerlist 2017.

Placer took over corporate venturing and open innovation strategy at Telefónica in 2013, two years after joining the company. Martín-Villa has been involved with Open Future's core constituents since co-founding Wayra, its global startup accelerator, alongside then director Javier Santiso in 2011. Wayra has backed hundreds of entrepreneurs, primarily in Latin America and Europe but increasingly in Asia through its partnership with Tsinghua University in China.

In addition to Wayra, Open Future runs incubator co-working spaces, Latin America-focused venture capital fund-of-funds initiative Amerigo and late-stage investment unit Telefónica Ventures. Telefónica had €275m (\$300m) invested in 680 companies through Open Future, led by Placer's right-hand person, general manager Ana Segurado, as of the end of 2016.

## Sargent marches on to Generation

Jeannine Sargent, president of innovation and new ventures at Flex, a US-based logistics services company, has become a senior adviser at fund manager Generation Investment Management.

Sargent spent nearly six years at Flex, "responsible for worldwide innovation activities including innovation labs, global design and engineering, launching new product businesses, the Lab IX technology accelerator, and corporate and venture investments". Her team included Ali Zaman, Babak Movassaghi and Zixio Pan.

## Holtzman leaves AARP for Longevity

Jody Holtzman, former senior vice-president for market innovation at US-based age-related network AARP, has been appointed senior managing partner at Longevity Venture Advisors.

Longevity looks to identify and leverage business and investment opportunities presented by what Holtzman calls the "\$7.6 trillion longevity economy". In 2015, AARP and bank JPMorgan set up the AARP Innovation Fund to target startups developing technologies and services for customers aged 50 and above.

## Vančura leaves RBVC to join Imec

Cyril Vančura, investment principal at Robert Bosch Venture Capital (RBVC), the corporate venturing unit of the Germany-based industrial goods company, has left to join Imec, a Belgium-based micro and nano-electronic research centre.

Imec had a first close at €60m (\$70m) for its Imec.xpand fund earlier this year, Vančura said, and was targeting up to €100m for the second close by February.

Initially managed by Tom Vanhoutte and Peter Vanbekbergen, Imec.xpand will back both Imec spinouts and external startups, focusing on early-stage projects where Imec's technology, expertise and infrastructure can make a difference to the development. Vančura has been investing for RBVC since the start of 2009, particularly in enabling technologies.

## Xiaomi makes \$1bn Indian corporate venturing call

China-based consumer electronics producer Xiaomi is set to invest up to \$1bn in 100 India-based startups over the next five years, LiveMint reported.

Xiaomi has joined forces with its venture capital affiliate Shunwei Capital as it seeks to build an ecosystem of mobile apps around its smartphones. Its investments focus on manufacturing, entertainment content, fintech and hyperlocal services such as phone repairs.

The corporate, which entered India in 2014, hopes the investments will help create more loyalty among Indian users who, research has indicated, have been driven by a wish to own the most up-to-date popular devices, regardless of brand.

The approach would differentiate Xiaomi from Chinese corporate venturing peers, such as e-commerce group Alibaba and internet company Tencent, which have also been investing in India but have not focused on locking customers into their own offerings.

Xiaomi currently shares leadership of India's smartphone market with South Korea-based electronics manufacturer Samsung, with each accounting for 23.5% of shipments in Q3 2017.



## NEWS

## Nio Capital to charge \$500m fund

Nio Capital, an investment firm co-founded by China-based smart electric vehicle developer Nio, has approached investors about raising a \$500m fund targeting the automotive sector, according to PEHub.

Nio Capital was launched by Nio in partnership with Sequoia Capital and Hillhouse Capital in December last year. Its inaugural, renminbi-denominated fund has a target size of RMB10bn (\$1.5bn). The firm has invested between \$303m and \$455m in 15 startups through the fund, with recent deals including a \$57m series B round for autonomous driving technology developer Momenta last month.

The fund is targeting China-based companies exploiting overseas structures, such as variable-interest entities, and international businesses.

## Optum aces \$250m fund

US-based health services provider Optum has launched \$250m corporate venturing fund Optum Ventures to focus on the healthcare sector. It will be led by partners AG Breitenstein and Virginia McFerran, reporting to Larry Renfro, chief executive of Optum and managing partner of Optum Ventures. It will operate out of offices in Boston and Menlo Park.

The fund will particularly seek early-stage companies working on technologies to deliver better healthcare, such as digital health startups that aim to improve access to services and businesses that make the healthcare system easier to navigate. Portfolio companies will also be given strategic advice to develop and grow through Optum's network of experts and partnerships, and they will benefit from Optum's expertise to bring their products to market and scale more quickly.

Optum Ventures has already made four investments, though it did not reveal amounts. The businesses include Apervita, a cloud-based platform seeking to make the development of analytic applications more efficient, Buoy Health, creator of a digital health assistant to help patients understand symptoms, Mindstrong Health, which has developed technology to detect and treat neuropsychiatric and neurodegenerative diseases, and Shyft Analytics, which operates a cloud-based data and analytics platform aimed at life sciences businesses.

## Baidu lines up new fund for 2018

Baidu Ventures, the corporate venturing arm of the China-based internet group, is to launch a \$200m tech-focused fund next year, the company's managing partner Daisy Cai told Calcalist.

Cai told the tech news site that the fund would invest in early and mature-stage companies, focusing on China but considering companies based in Israel, Europe and the US. Cai said that in terms of Israel-based investments the fund is particularly interested in voice-related technologies in the automotive industry, as well as the artificial intelligence, computer vision, voice identification and cybersecurity sectors.

## Axa adds \$175m for fund of funds

Axa Strategic Ventures (ASV), the corporate venture capital arm of the France-based insurance group Axa, has launched \$175m fund-of-funds scheme ASV Diversified to make investments in selected VC funds.

ASV has already been equipped with \$275m to make direct investments in startups in areas such as enterprise software, fintech, digital health and consumer technologies. ASV Diversified will provide between \$5m and \$15m for seed, early and growth-stage VC funds.

The initiative will be headed by Dominic Maier, who has been recruited from investment management firm Adams Street Partners where he was vice-president. Maier will report to ASV's managing director, François Robinet.

## Partners HealthCare puts \$171m into venturing

US-based healthcare system Partners HealthCare closed approximately \$171m in financing for two corporate venturing funds – \$105m from Partners institutions for the group's Partners Innovation Fund, which invests in early-stage healthcare companies, and \$66.1m raised from external investors for Partners Innovation Fund II.

The first fund was launched in 2008 with a \$35m investment by Partners HealthCare. It focuses on seed and follow-on investments in developers of technology based on intellectual property that is at least partly owned by its hospitals.

The capital for the second fund was sourced from backers including pharmaceutical companies Astellas Pharma, Eli Lilly, ShangPharma Corporation and Simcere Pharmaceutical Group, which jointly make up the fund's anchor investors.



## NEWS

## Crescent creates \$150m venture capital arm

Diversified United Arab Emirates-based conglomerate Crescent Enterprises has formed a venture capital fund to invest up to \$150m, Gulf News reported. The fund will invest directly in early and later-stage companies across the world, though about half of the capital reserved for the fund will go to recipients based in the Middle East and North Africa region. The \$150m will be allocated over the next three years.

## Unilever agrees fund after Sundial purchase...

Unilever, an Anglo-Dutch listed consumer goods company, has acquired US-based hair and skincare products maker Sundial Brands and agreed to set up a \$50m corporate venturing fund for women entrepreneurs of colour.

The New Voices Fund is targeting a final close of \$100m to include external investors. Bain Capital, a private equity firm that acquired a minority stake in Sundial in September 2015, is discussing the nature of the fund with Unilever's existing corporate venturing unit, Unilever Ventures, and Sundial's founder and CEO Richelieu Dennis, according to a source.

Dennis founded Sundial in 1991 and forecast its 2017 revenues at \$240m. Businesses owned and run by women of colour receive only 0.2% of all venture capital funding.

## ...as IDG Ventures secures \$10m from Unilever

Unilever Ventures has injected \$10m into venture capital firm IDG Ventures India's fund, Inc42 reported. The money was invested over the course of this year, though further details have not emerged. IDG Ventures India will invest the capital in consumer technologies and digital startups.

Unilever Ventures and e-commerce and cloud computing firm Amazon's Amazon Internet Services division, previously partnered IDG Ventures India in June this year to launch an accelerator program – the IDG Ventures India 2017 Innovation Program is aimed at early-stage consumer technology, software, healthtech and fintech startups.

Unilever Ventures hopes its collaboration with IDG Ventures India will enable it to identify additional deals as it seeks to strengthen its foothold in the Indian market.

## Element AI accesses Korea for \$45m fund

US-based artificial intelligence developer Element AI has formed a \$45m investment fund with South Korea-based telcoms firm SK Telecom, automotive manufacturer Hyundai and diversified conglomerate Hanwha.

The unnamed fund will target companies developing AI technology for commercial applications and infrastructure, in areas such as hardware, autonomous vehicles, domestic robotics, manufacturing and unmanned aerial vehicles. The funds are to be deployed over the next three years. The Korean corporates will manage the fund while Element AI, which raised \$102m in a Hanwha-backed series A round in June this year, will advise.

## HDFC Bank to handle startups with VC fund

India-based financial services firm HDFC Bank has launched a startup investment fund of between \$25m and \$30m, the Times of India reported. The fund will invest in startups in all sectors as long as they are a good fit for the bank, a source said. In addition to funding, HDFC will offer startups banking products, mentoring, and financial and legal advice.

HDFC has previously invested an undisclosed amount in online automotive marketplace CarDekho in May 2015, and participated in a \$2m round for Kooh Sports, the operator of a children's fitness and activity testing platform, in December the same year.

## Clique offers \$10m to startups

US-based voice application programming interface (API) provider Clique API plans to invest \$10m in the Asia-Pacific region through a venture capital unit, TechCrunch has reported.

Clique operates a cloud-based platform that lets customers integrate voice, messaging and video communications into their software. It has 20 million users in 150 countries, and recently opened two offices in Australia. The company's investment arm, Clique Labs, funds startups developing technologies related to communications APIs. Clique is open to expanding its \$10m fund for the region if it finds the right partners.



## NEWS

## CAA experiments with Creative Labs venture

US-headquartered talent agency Creative Artists Agency has launched Canada-based Creative Labs to incubate media technology startups. The venture is financed with \$12.5m from investors including media company Telegraph Media Group, entertainment distributor Entertainment One, Boatrockers Ventures, Real Ventures, Seedcamp Ventures and private investors such as Saul Klein, Jeff Mallett and Lane Merrifield.

Creative Labs will look to create companies in sectors such as gaming, over-the-top video, virtual and augmented reality and artificial intelligence-based messaging, and e-commerce, mobile, social and digital publishing online brands.

Creative Labs' first two startups are Belletrist, a product-based media company that covers media and the arts from a female standpoint, and Ground Control, the developer of an interactive audio platform that works with voice-based operating systems.

## Dementia Discovery Fund gets \$50m from Gates

The Dementia Discovery Fund, a strategic investment fund backed by pharmaceutical firms Biogen, GlaxoSmithKline, Johnson & Johnson, Lilly, Pfizer and Takeda, has secured \$50m from Microsoft co-founder Bill Gates.

The fund, managed by venture capital firm SV Life Sciences, was launched in 2015 with \$100m of funding from the corporates. It invests in technology that can improve the diagnosis and treatment of dementia. The fund's limited partners also include Astex Pharmaceuticals, a UK-based subsidiary of drug manufacturer Otsuka Group, the UK government's Department of Health, medical charity Alzheimer's Research UK, and Woodford Investment Management, which provided \$19.1m in June this year. The new funding will be used to expand the fund's team, including the appointment of a chief executive. The fund plans to invest up to \$230m in the next five years.

## Genesis Innovation Group launches \$10m fund

US-based medical device developer Genesis Innovation Group has launched a \$10m fund to focus on medical devices and orthopaedic technology. The Cultivate(MD) Capital Fund is limited to private placements. It is likely to begin searching for investment opportunities next year and will target early, mid and later-stage companies.

Founded in 2013, Genesis partners companies and medical inventors to develop healthcare technologies, focusing on those at the seed and pre-seed stages. Some of the firms it has previously invested in include Magnesium Development, a developer of metal alloys for surgical implants, and Shoulder Innovations, which has developed a glenoid platform to improve stability in shoulder arthroplasty.

## Milwaukee corporates commit \$10m to boost startups

Insurance firm Northwestern Mutual and care provider Aurora Health Care are to provide \$5m of funding, plus mentoring and business resources for startups in the US city of Milwaukee. Northwestern Mutual will invest through Cream City Venture Capital while Aurora will do so through InvestMKE.

Cream City will invest between \$100,000 and \$250,000 in each startup and will provide access to co-working space, advisers, mentors and technology resources from its parent company. It will be run by Craig Schedler, a partner at Northwestern's VC unit, Northwestern Mutual Future Ventures. InvestMKE will co-invest up to \$1m in startups looking to make healthcare easier, more efficient and more tailored to individuals. It will also supply access to its healthcare professionals and medical care data.

## Aster attracts \$282m in capital

Aster Capital, a France-based venture capital firm sponsored by chemicals producer Solvay and power and automation equipment makers Alstom and Schneider Electric, has closed a €240m (\$282m) fund.

Aster was formed in 2010 with a €40m investment from Schneider and €30m from Alstom, before Solvay subsidiary Rhodia added €15m the following year. The European Investment Fund supplied €20m in 2012. Aster's backers this time include plastics manufacturer Plastic Omnium. The firm now has a total of almost \$590m under management, along with offices in the US and Israel, and partner funds in China and Africa.

The new funds will be used to invest about \$300,000 at seed stage up to roughly \$18m at growth stage in Europe and US-based companies. The firm is looking particularly at developers of energy and mobility technology that will support the digital transformation and industries of the future. It will also provide non-monetary assistance to startups through an acceleration platform called Business Hub.





## NEWS

## Merck and CRDC establish innovation fund

Pharmaceutical firm Merck & Co is partnering Canada's national drug development institute, the Centre for Drug Research and Development (CDRD), to form a C\$1.5m (\$1.2m) fund to support the centre's projects.

Founded in 2007, the CDRD is a public-private technology incubator and accelerator that supports life sciences research. It is affiliated with more than 50 universities, six global pharmaceutical companies and 26 entrepreneurs or small and medium-sized enterprises. The new Merck-CDRD Innovation Fund will invest in the advancement of CDRD collaborations with academic researchers which have high therapeutic potential.

## Nordic Web spins fund

Denmark-based data research and analytics firm Nordic Web has launched an angel fund to invest in 10 to 15 early-stage startups based in Denmark, Finland, Iceland, Norway and Sweden. The Nordic Web Angel Fund will aim to deploy its capital over the next year, though details about its size have not been revealed. The fund will invest between \$25,000 and \$75,000 in each startup and will be sector-agnostic. The fund's limited partners include more than 50 individual backers, with several boasting VC backgrounds, such as Martin Mignot, partner at Index Ventures, and Christoph Janz, partner at Point Nine Capital.

## Barilla to nourish startups with venture fund

Italy-based packaged food producer Barilla has launched venture capital fund and innovation hub Blu1877 to invest in innovations associated with its core business, the Spoon reported.

Blu1877's CEO Victoria Spadaro Grant said the fund would focus initially on seed-level investments. It has an undisclosed amount of capital to invest in areas related to pasta, sauces and Italian-style condiments, in which Barilla specialises. Startups participating in the hub will have access to a virtual network of advisers from the food industry, as well as a pilot manufacturing plant to experiment with small-batch production runs of new concepts.

## EWE energises HTGF III

EWE, a Germany-based local government-run energy and telecoms utility, has provided a seven-figure euro sum for public-private partnership High-Tech Gründerfonds' third seed-stage fund.

EWE serves about 3.9 million customers, mostly in northern Germany. It hopes the move will provide information on digitised services and potential growth in the energy, telecoms, mobility and IT sectors, with the aim of future-proofing its energy supply network by 2026.

HTGF is due to close its third fund, HTGF III, at an oversubscribed €310m (\$367m), having reached a \$275m first close in May. The fund began investing in September. Each portfolio company could receive up to €3m. The fund's 30 backers include Germany's Federal Ministry of Economic Affairs and Energy, development bank KfW, research organisation Fraunhofer-Gesellschaft and 27 corporates including EWE and fellow energy supplier RWE, which made a seven-figure euro commitment last month through its RWE Generation subsidiary.

Other corporate backers include Altana, BASF, BBraun, Büfa, CEWE, Deutsche Postbank, Deutsche Post, Drillisch, Evonik, Hettich, Knauf, Körber, Lanxess, Phoenix Contact Group, Robert Bosch, SAP, Schufa, Schwarz Gruppe, Stihl Group, Vector Informatik and Wacker.

## Corporates go to Seedcamp for fourth fund

UK-based venture capital firm Seedcamp has closed its fourth fund at £41m (\$54.3m), having secured contributions from limited partners including subsidiaries of consumer goods producer Unilever, travel agency Thomas Cook and insurer MassMutual. They were joined by the UK government's British Business Bank, which TechCrunch reported was the fund's anchor investor, as part of a group of 60 corporates, venture capitalists and funds of funds.

Accelerated Digital Ventures, Draper Esprit, Index Ventures, Atomico, Idinvest Partners, Underscore Ventures, Speedinvest, Korelya Capital, LocalGlobe and HenQ also invested.

Founded in 2007, Seedcamp is an accelerator that has branched out into early-stage VC investments, having closed its £20m third fund in 2014. The firm sold its first two funds to VC firm Draper Esprit for \$23.6m last month, nearly three times their initial size. The firm expects to invest in 100 Europe-based startups through Seedcamp Fund IV, and will reserve funds to participate in follow-on rounds through to series B stage.



## NEWS

**Comment: Balance and diversity emerge in venture****James Mawson, editor-in-chief**

Entrepreneurs who are not white Stanford-educated males face a real challenge obtaining venture funding. Businesses owned and run by women of colour, for example, receive only 0.2% of all venture capital funding, according to news provider Impact Alpha, although 10% of venture dollars globally between 2012 and the end of September 2017 went to startups with at least one woman founder, according to TechCrunch analysis.

A study published in the Harvard Business Review found male and female entrepreneurs were asked different questions by venture capitalists, which affected how much money they received.

TechCrunch found that 8% of partners at the top 100 venture firms this year were female, while 15% of corporate venture capitalists are women, as were 22.1% of 1,659 US-based angels in the most recent survey by North America's Angel Capital Association and Wharton business school.

Of these US angels, 5.7% were Asian, 2.3% Hispanic and 1.3% black. In this light, Anglo-Dutch-listed consumer goods company Unilever's decision to acquire US-based hair and skincare products maker Sundial Brands and set up a \$50m corporate venturing fund for women entrepreneurs of colour is significant.

Unilever and Sundial's New Voices Fund is targeting a final size of \$100m to include external limited partners. Bain Capital, a private equity firm that acquired a minority stake in Sundial in September 2015, is reviewing with Unilever's existing corporate venturing unit, Unilever Ventures, and Sundial's founder and CEO Richelieu Dennis the final setup of the fund, according to a source.

The governance of the fund could be important. As Lam told Wired about Imagination Capital, pitching to a venture fund run by an Asian-American woman and an African-American man "is likely to be a bit different than when pitching to your typical VC".

Lam, who founded the Time Warner Investments group in 2003 and invested more than \$325m in 54 companies before leaving earlier this year, was in many ways a pioneer, but the door for a broader and more diverse range of entrepreneurs and investors has been opening more widely, encouraged by this decade's luminaries, such as Sue Siegel at GE Ventures.

While a fifth of corporate venturing leaders in the GCV Powerlist 100 this year were female, more than 40% of the GCV Rising Stars, nominated by their bosses, were women, and overall diversity was greater.

Leaders, such as Wendell Brooks at Intel Capital, have set high standards in their approach to this issue. But probably the most telling reaction comes from outside the US, where Jeffrey Li, managing partner at Tencent Investment, named unit of the year at the GCV Asia Congress in September, looked bemused when asked about the topic, as China has more equality in terms of female entrepreneurial billionaires and corporate venturing investors than probably anywhere else.

But much depends on context – China's one-child policy has affected the generations growing up since Deng Xiaoping started economic reforms, and there are few easy answers. Some women in venture have expressed concerns that female leaders pull up the ladder after climbing through the so-called glass ceiling.

A starting point for many, therefore, is to look through the noise and judge people by their character. Next year's Global Corporate Venturing & Innovation Summit will focus on balance and diversity, and spotlight the corporate imperative to take action in balancing gender, ethnicity, sexual orientation, religion, education and geographic origin.

After all, who does not want to be on the right side of history? ♦

**Analysis: Tencent's \$14bn IPO exit streak****Kaloyan Andonov, reporter, GCV Analytics**

China-based internet company Tencent has recently been involved in five large initial public offerings (IPO) for Asia-based companies that have floated in either Hong Kong and New York.

Tencent's ownership positions in the five is estimated by Global Corporate Venturing Analytics to be about \$14bn. For context, Intel Capital, arguably the largest and most successful corporate venturing unit of the past 25 years, had six portfolio companies complete IPOs in the first nine months of 2017 – another 19 were acquired – but for lower paper returns.

In terms of return size, it is worth looking at some of the most famous wins in venture capital history, such as VC firm Accel's stake in social network Facebook, which was worth \$9bn at the time of its 2012 IPO, and peer Sequoia Capital's \$60m investment in messaging application WhatsApp, which was worth \$3bn in its sale to Facebook in 2014, according to data provider CB Insights.



## NEWS

It appears as though the mere presence of Tencent among a company's shareholders can drive its price up, given a user base of nearly a billion for its WeChat app and strategic positions across the economic landscape in China.

The positive secondary effect was clearly observed in the stock price of Snap, owner of messaging app Snapchat, which rose after Tencent revealed its 13.9% stake. Tencent's purchase of a 5% stake in China International Capital Corp in September this year sent the investment bank's shares in Hong Kong to an all-time high.

Yixin Group, a China-based e-commerce marketplace operator spun out of automotive transaction services provider BitAuto, raised HK\$6.77bn (\$867m) in its recent IPO. Tencent has a 24.3% shareholding in Yixin, which also counts e-commerce firm JD.com, in which Tencent also owns 16.6%, and internet company Baidu as backers. Yixin issued almost 879 million shares on the Hong Kong Stock Exchange priced at the top of the IPO range, giving it a market cap of about \$6.54bn and Tencent a stake worth almost \$1.6bn.

A week earlier Tencent had successfully floated its e-book publishing subsidiary, China Literature, on the Hong Kong Stock Exchange. China Literature raised approximately \$1.1bn when its shares floated at HK\$55 (\$7.05) – the top of its offering range. China Literature's share price near doubled in the morning session of its first day of trading. Tencent owns 63% of the issued shares, worth about \$7.1bn of its \$11.3bn market cap.

Sogou, a China-based search engine operator backed by internet companies Sohu and Tencent, floated in the US raising \$585m in an IPO on the New York Stock Exchange at the top of the range it had set. Tencent's stake was diluted from 43.7% to 38.7%, worth \$2.05bn of Sogou's \$5.3bn market cap.

Singapore-based online services provider Sea raised \$884m in an IPO in New York with shares priced at \$15, above the \$12 to \$14 range. Founded in 2009, Sea runs a diversified online business that incorporates a digital media and game offering (Garena), an e-commerce marketplace (Shopee) and a financial services platform (AirPay). Tencent invested in Sea at an early stage and held a 39.8% stake pre-offering that was diluted to 35.1%. It then purchased additional shares in the offering to take a 37.6% holding as at the end of September, worth \$1.88bn of its \$5bn market cap.

Tencent recorded another IPO exit in September, when online insurance platform ZhongAn recorded the largest fintech IPO yet in Hong Kong. The \$1.5bn IPO was priced at the top of the offering's range. Tencent and insurer Ping An each owned 12.1% stakes before the IPO, worth \$1.7bn pre-dilution based on ZhongAn's \$14.1bn market cap, while the share held by Ant Financial, e-commerce firm Alibaba's financial services affiliate, stood at 16%.

These IPOs will not be the last in the streak, as Tencent seems to have backed at least a quarter of the noted unicorns – companies worth at least \$1bn – in China, according to GCV's October analysis, and there is at least one more IPO in the making.

Meituan-Dianping, a China-based local services platform, plans to go public in the US as soon as 2018 and is seeking at least \$3bn. It was valued at \$30bn as of a \$4bn funding round led by Tencent that closed last month. Formed by the 2015 merger of group buying service Meituan with local reviews and listings platform Dianping, the combined company acts as an online portal for a range of services, including ride hailing, food delivery and event ticketing.

Tencent appears to be using IPOs less as an exit than an extra funding round for its portfolio companies, with the option to sell shares later. Jeffrey Li, managing partner at Tencent Investment, said at the GCV Asia Congress in September that its returns from holdings after they had become unicorns were better than those taken before they reached that status, so the approach made sense.

Tencent's own history would encourage this thinking. Its own long-term shareholder is South Africa-listed media company Naspers, which has watched its portfolio company rise in value above \$400bn and continue to deliver quarterly results that surpass expectation. ♦

Company	Stock exchange	Tencent holding (% as of Sep 30)
Sea	NYSE	37.6
58.com	NYSE	21.7
HengTen Networks	SEHK	19.7
Netmarble Games	KOSE	17.7
Glu Mobile	Nasdaq	16.9
JD.com	Nasdaq	16.6
Cheetah Mobile	NYSE	14.6
Leju Holdings	NYSE	14.6
Huayi Tencent Entertainment	SEHK	14.3
Snap	NYSE	13.9
ZhongAn Online P&C Insurance	SEHK	12.1
China South City Holdings	SEHK	10.7
NavInfo	SZSE	9.9
Frontier Developments	Aim	8.8
Kakao.	KOSE	8
Aiming	TSX	8
Huayi Brothers Media	SZSE	7.9
Mail.Ru Group	LSE	7.4
Bitauto Holdings	NYSE	7.1
Kingsoft Corporation	SEHK	7
China LotSynergy Holdings	SEHK	5.7
Tesla	Nasdaq	5
Paradox Interactive	USPDX	5
YG Entertainment	Kosdaq	4.5
China United Network Communications	SHSE	3.3
Hangzhou Shunwang Technology	SZSE	2.6
Media Asia Group Holdings	SEHK	2.3
Oupalm	SZSE	2
Hylink Digital Solution	SHSE	1.5
PATI Games Corporation	Kosdaq	0.9
Postal Savings Bank of China	SEHK	0.2

Source: Tencent



## NEWS

## Analysis: Alibaba backs WeLab in a \$220m round

Kaloyan Andonov, reporter, GCV Analytics

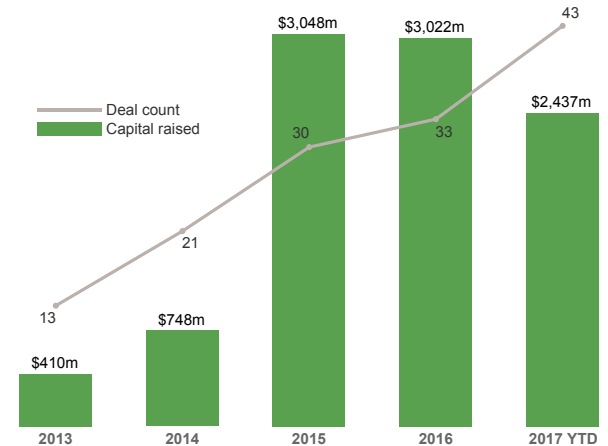
China-based online lending marketplace WeLab has raised \$220m in debt and equity financing in a series B-plus round that featured e-commerce firm Alibaba's Hong Kong Entrepreneurs Fund, financial services firms Credit Suisse and China Construction Bank and the International Finance Corporation, the private investment arm of the World Bank.

WeLab has developed an app-based peer-to-peer lending platform with more than 25 million users. It normally issues small loans to consumers, and has reportedly experienced six or sevenfold year-on-year growth in the first half of this year.

The company has so far raised an estimated \$425m since its inception in 2013. Malaysian sovereign wealth fund Khazanah Nasional led its \$160m series B round in January 2016, investing with Netherlands-based financial services firm ING Bank and Chinese state-owned investment firm Guangdong Technology Financial Group. It had previously received \$20m in series A funding in early 2015 from investors including media company Tom Group.

WeLab is only one company in the rising sub-sector of alternative lenders within the fintech realm. As the GCV Analytics chart shows, the number of corporate-backed rounds in such emerging enterprises has been rising steeply since 2013 – deals have grown from 13 in 2013 to 43 in 2017 at the time of writing. The total estimated size of these rounds has also grown sevenfold from an estimated \$410m in 2013 to \$3.02bn by the end of 2016. It seems likely these new lenders will continue to disrupt traditional retail banking. ♦

Corporate-backed deals in alternative lenders 2013-17



## Analysis: Megvii faces a \$460m round

Kaloyan Andonov, reporter, GCV Analytics

Megvii, a China-based facial recognition technology developer also known as Face-plus-plus, has received approximately \$460m in a round featuring diversified conglomerate SK Group, contract electronics manufacturer Foxconn and Ant Financial, the financial services affiliate of e-commerce group Alibaba.

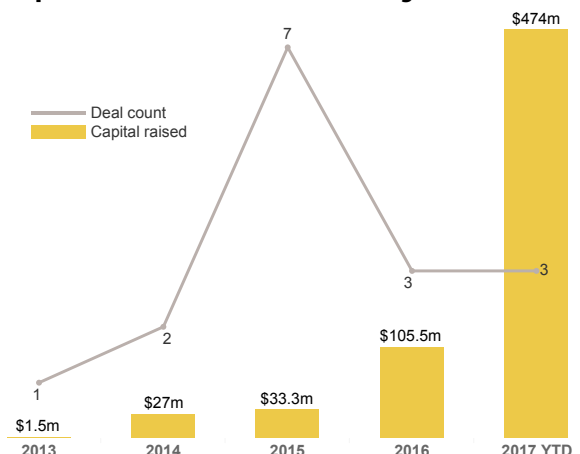
Face-plus-plus provides a facial detection and recognition API to developers and enterprises. E-commerce group Alibaba and Jiayuan, one of China's biggest dating sites, both use the software, as does financial services provider Ant Financial, and its systems draw on identification files the Chinese government holds on its citizens.

Foxconn committed \$20m to Megvii in November 2016, in a round that also featured CCB International Holdings, part of financial services group China Construction Bank Corporation. That round eventually reached \$100m the following month.

This is by far the largest round raised by a business in the facial recognition space to receive corporate backing. There have so far been few disclosed corporate-backed deals in that realm, as the GCV Analytics chart of suggests. It remains to be seen how much further this technology will grow. ♦

See *Government House*

Corporate-backed deals in facial recognition 2013-17



## NEWS

**Analysis: Lyft hails additional \$500m****Kaloyan Andonov, reporter, GCV Analytics**

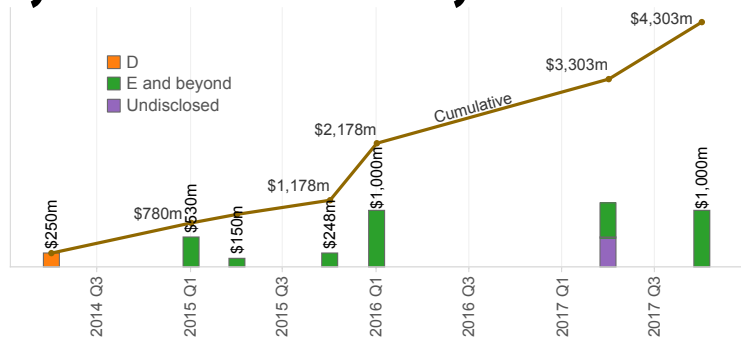
Ride-hailing platform Lyft is to raise \$500m of capital additional to the \$1bn it raised in October from internet technology group Alphabet's Capital G investment vehicle.

The news came after it was reported Lyft would aim to enter Canada, its first international market. Unlike its largest rival Uber, which has long gone international, Lyft has so far operated only on US territory. To date, the company has raised an estimate \$4.3bn in corporate-backed rounds, as shown on the GCV Analytics chart. Aside from Alphabet, Lyft is backed by corporates such as its Chinese peer Didi Chuxing, e-commerce firms Alibaba and Rakuten, and carmakers General Motors and Jaguar Land Rover.

Founded in 2007, Lyft operates an on-demand ride-hailing platform in approximately 300 cities across the US. It has completed more than 500 million rides and competes with Uber, which is backed by Alphabet's GV unit. It has reportedly approached investment bankers to study the possibility for going public next year.

This deal is only the latest in the booming ride-hailing and car-sharing space, which has registered considerable growth over the past three or four years in both deal count and total capital raised. While there were only 10 corporate-backed deals in this space in 2013, estimated at \$431m, the space has grown over the following years, reaching 54 transactions by November 2017, estimated at \$15.55bn.

The big battle in China between Uber and Didi Chuxing appeared to have ended last year with the acquisition of Uber China. However, the ride-hailing space, which now include even bike sharing, has not stopped attracting enormous investor interest to date. ♦

**Lyft investment history****Big deal: TransferWise funding signals evolving fintech****Robert Lavine, news editor**

The \$280m raised by UK-based cross-border financial transfer platform TransferWise, combined with the \$115m series D round announced by US-based financial remittance platform Remitly, indicates one way in which the fintech sector is evolving.

TransferWise has built an online platform that provides a more affordable option for businesses that want to make financial transfers to other countries. It intends to expand next year by launching a consumer-focused service that will involve a dedicated debit card.

The funding was secured in a series E round co-led by asset manager Old Mutual Global Investors and venture firm Institutional Venture Partners that included conglomerate Mitsui & Co, Andreessen Horowitz, Baillie Gifford, Sapphire Ventures, World Innovation Lab and entrepreneur Richard Branson.

The round valued the company at \$1.6bn and took its overall funding to almost \$400m. In addition to its consumer features, TransferWise will use the capital to expand geographically, particularly in the Asia-Pacific region.

Remitly is meanwhile in the process of raising \$115m in a round that will be led by PayU, the payment services subsidiary of e-commerce and media company Naspers, and which also features existing investors Stripes Group, DFJ and DN Capital.

The company, which had previously raised \$99m in debt and equity financing, runs an online remittance platform through which people in developed nations send some \$4bn to recipients in developing countries each year. Like TransferWise, it seeks to make the transfer process easier and more affordable.

The deals are timely. Brexit and the election of Donald Trump as US president have helped to set a media narrative that



## NEWS

citizens in the home countries of TransferWise and Remitly are increasingly straining against globalisation by favouring political solutions that reinforce hard borders, but the truth as ever is more complicated.

The internet more than anything has made international borders more porous. Companies source goods from some nations to sell in others, while smaller operators are finding they are able to compete with larger rivals by developing specialist services they can provide globally.

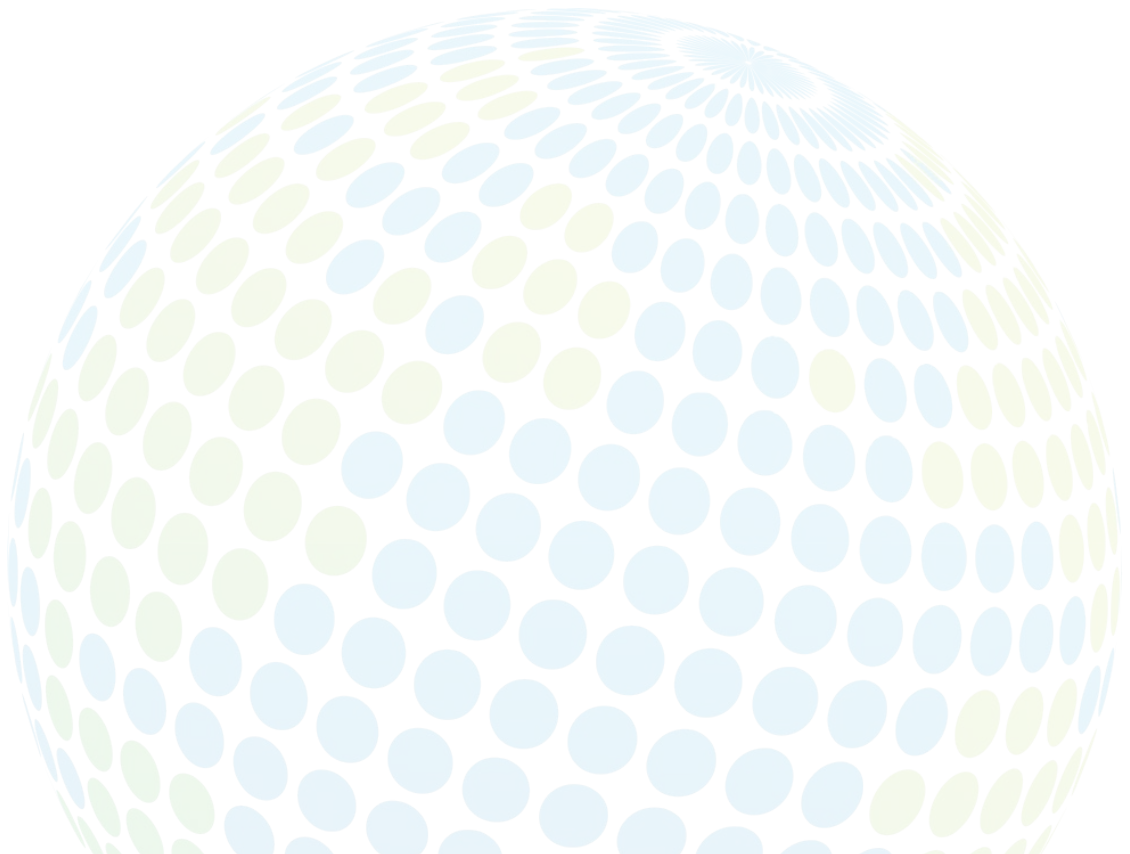
On the consumer side, meanwhile, international e-commerce platforms such as eBay, Amazon and Alibaba, together with the developments in online and mobile payment, and optimised logistics, have cut down the barriers that would prevent people buying directly from international sellers.

All that is without increasing work-based migration worldwide. Even if countries such as the US and UK manage to cut unskilled migration – and it is questionable they can – skilled professionals will always be in demand and will require services that make transferring funds or assets easier. Foreign investment, too, appears to be as welcome as ever.

TransferWise and Remitly are far from the only participants in the sector to raise money this year. Currencycloud, Instarem and Meixin Global have all closed corporate-backed rounds, and as mobile payment becomes more popular while national currencies remain separate, the demand for such services is likely to grow.

In turn, larger businesses will be expected to invest directly in the sector but, perhaps significantly, of the five companies above only Instarem is backed by a financial services firm – SBI Holdings.

Perhaps the big question is whether banks have been slow to enter the cross-border transfer sector because they have been slow to react, or whether they already have the means to enter it themselves once disruption reaches a certain point and are simply waiting for it to become sufficiently profitable to do so. The answer will probably become clearer in 2018. ♦



## SPECIAL REPORT

# The talking points of ...

In our annual corporate venturing survey of industry leaders, we asked: “What were the most important trends in 2017?” Next month we examine their insights into the big opportunities of 2018. Both these questions will also be part of our full annual review – **World of Corporate Venturing 2018** – to be published at the **Global Corporate Venturing & Innovation Summit in Monterey, California, on January 31**. The full survey includes insights on best practices in corporate venture capital.



## Sue Siegel, chief innovation officer, GE, and co-chairman of the GCVI Summit

The rise of diversity as an asset class.

The edge will eat the cloud: The rise of edge computing – pushing applications, data, and services away from centralised nodes to the logical extremes of a network, ie at the source of the data – and the need for corporates to develop an edge computing strategy is really good news for the edge computing economy.

Deep learning will eat software, aka software 2.0: Deep learning – that special flavour of machine learning – is changing the way software is developed and the way it responds. Software is turning into dataware, where the functionality and responses are determined and learned via lots of data representing previous examples of inputs and outputs. Almost any data processing system with non-trivial logic can be improved significantly by applying modern machine learning.

Decentralised artificial intelligence (AI) may eat both edge and software 2.0: Centralised AI solutions provided as application programming interfaces and cloud-based services are common, but they have certain bottlenecks. Since users access AI features via the network and because machine learning algorithms involve heavy computations, high latency is often an issue. Also, if you train AI models in a centralised way, it may take more time to improve them. In contrast, decentralised AI can function locally on edge computing devices, have direct, fast access to more raw data and have no dependence on a network connection, which means less power consumption and minimal latency. Recent advances in decentralised AI have been made thanks to on-device optimisation and production of custom chips for AI and machine learning.

Machine learning and AI – moving beyond collection of data to insights.

Collaborative and sharing economy penetrates industrial, for example Xometry, Sonnen, RigUp.

Tech moving from consumer, financial to broader economy, for example blockchain moving beyond cryptocurrency, and autonomy, AI and machine learning from advertising and media to the physical world, particularly in automotive but broadly across industrial.



## SPECIAL REPORT

Massive convergence where vertical lines use to be much brighter – convergence of all parts of healthcare with each other, of tech and health, of fintech and other industries.

Voice integration for consumer and business apps.

Record stock markets, few real exits. Post-IPO stock performance seems to have been modest, which is a reflection of companies going public when growth is slowing.

### SaeMin Ahn, managing partner, Rakuten Ventures

In Southeast Asia, corporate strategic interest driving most if not all of venture capital asset growth and proliferation.

India has seen its first iteration of large-scale startup wind-ups and mergers, and with this secondary liquidation mid-stream has become a valid and trusted exit path for larger investors.

Further intensifying of mobile and online ad dollars concentrating into Google and Facebook, amplified further by Twitter's inability to upgrade its adtech infrastructure to support performance marketing and next-gen programmatic, and Snap's inability to understand that in 2017 the expectation of a closed ecosystem for metrics, viewability and return on ad spend is draconian and unforgiving.

The adtech ecosystem has started to take itself apart to realign with business models previously built overtly on opaque metrics.

Public markets are even more contextual and up to the times as they punish commerce platforms that have pushed the tech company premium for some time for better market cap multiples.

Seeing the beginnings of the next BAT (Baidu, Alibaba, Tencent) arise from the soils from Meituan, Toutiao as the old guards start to dig deeper into the ecosystem with very smart and committed value transfer strategies.

Public markets have done more damage from fear than Amazon could have ever done in the US.



### Biplab Adhya and Venu Pemmaraju, co-heads, Wipro Ventures

Accelerated movement of enterprise workload to hybrid cloud, deep learning being used to create sophisticated user experience across verticals, blockchain-driven applications and initial coin offerings.

### Grant Allen, head of ABB Technology Ventures

The explosion in interest in cryptocurrency and its increasing mainstream acceptance. This has the effect of implicitly legitimising Bitcoin in the public sphere as a longer-term value store and even a gold alternative, which in turn solidifies blockchain as a very real foundation on which to build many applications over the coming years.



### Riyadh AlRuwais, partner, STC Ventures

Fintech.

### Mariano Amartino, Latam startups director, Microsoft

Crispr and blockchain.



Amartino

### Ron Arnold, managing general partner, IAG Firemark Ventures

The rapid rise of VC and CVC out of Asia and particularly China. This has the potential to be game changing, with large volumes of additional money coming into the space – and specifically into Asian markets. Couple that with the growing penetration in smart mobiles and I anticipate some exciting and game-changing ventures out of these markets in the coming years.





## SPECIAL REPORT

### Tony Askew, founder partner, REV Venture Partners

Machine learning and AI appeared on every investment pitch – if they had it they were looking to leverage it, if they did not it was becoming part of their plans. We are still at the early stages of really defining scalable, useful AI and machine learning became mainstream.

Cybersecurity has become a design principle and a must-have for every corporation, particularly around early threat detection and intervention.

Augmented interfaces began to show their early promise and will be the natural next extension point of the Human-machine interface, pushing the boundaries of what humans are capable of on their own, and potentially heralding an age of ubiquitous expertise.

Always-on sensors and networks, combined with advanced analytics, continued to challenge the data game. Data companies are now leveraging massive volumes of real-time data to drive unique insights and decision points as they happen, eclipsing legacy and often human intensive data gathering, curation and analysis.

The data giants – Amazon, Facebook, Google, Apple – extended their grip on permissioned first-party data, raising the bar but lighting the way across industries.



### Amit Aysola, managing director, Wanxiang Healthcare Investments

Machine learning.

### John Banta, managing director, Blue Cross Blue Shield Venture Partners

US federal health policy instability.

### Miroslav Boublik, group head of special projects, Home Credit Venture Capital

Continuing rise of AI.

### Louis-Philippe Boucher, venture analyst, Randstad Innovation Fund

AI, specifically chatbots.



Aysola



Banta

### Scott Brun, vice-president of scientific affairs and head, AbbVie Ventures

In biopharma venture investing, early-stage and series A deals and company creation are taking on greater overall prominence. Corporate venture groups are heavily engaged in these early-stage deals with CVCs involved in 31% of series A in the first half. Rounds are getting larger to reduce fundraising pressure and allow companies to reach meaningful and robust milestones and inflection points.

Novel therapeutic modalities such as cellular therapeutics and gene therapies received significant validation with regulatory approvals and positive late-stage results.



### Roel Bulthuis, managing director, Merck Ventures

Convergence of life sciences, tech and digital.

### Tony Cannestra, head of Denso Corporate Ventures

AI and automotive.



Cannestra

### Leo Castellanos, investment director, Saatchinvest

Wider use of AI, including bots. This plays on both sides of the spectrum. On the negative side, the role of social media to undermine democracy and western society.



## SPECIAL REPORT

**Oscar Chamberlain, general manager, Petrobras/Cenpes**

Bitcoins and AI.

**Tony Chao, head of Applied Ventures**

AI and deep learning.

**Piyush Chaplot, partner, Innosight Ventures**

AI and machine learning.

**Scarlett Chen, director of strategic investments, Prudential**

Big data, AI and blockchain-related solutions

**Eddi Danusaputro, CEO, Mandiri Capital Indonesia**

Fintech in developing countries.

**Kai Engelhardt, head of corporate strategy, Mahle International**

Within companies, smart industries, for example connected supply chains, efficient digitised processes. Electrification – efficient powertrains and CO2 reduction. Digitisation of cars – driving assistants for security and comfort reasons, autonomous driving.

**Jay Eum, co-founder and managing director, TransLink Capital**

Emergence of blockchain technology, cryptocurrencies, and initial coin offerings (ICOs) as an alternative to traditional fundraising.

**Aurora Fagerhus, executive assistant, Marsec**

The internet of things, smart home tech and improved healthcare.

**Ernest Fung, senior director, head of international corporate development, JD**

Increasing adoption of deep tech – datamining, AI, augmented reality, autonomous vehicles – across different business functions, such as customer relationship management, marketing, user interface and experience.

Focus on customer intelligence technologies.

Uncertainty in global markets – the EU, Brexit, US politics.

Increased global consolidation in e-commerce and retail, with focus on omni-channel expansion, for example Amazon, Whole Foods, unmanned stores.

**William Germain, director of M&A and strategic development, Inmarsat, and venture capital adviser, Techstars**

Everything as a digital service, such as application platforms; machine intelligence, automation, AI; trust economy, for example blockchain.

**David Gilmour, head of BP Ventures**

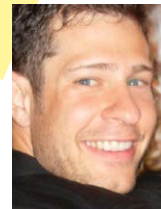
AI and blockchain.



Chao



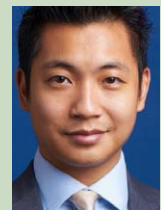
Danusaputro



Engelhardt



Eum



Fung



Gilmour



## SPECIAL REPORT

### Larry Harper, vice-president, Stanley Ventures, Stanley Black & Decker

The most important trend for us are investments around AI and machine learning. It is moving fast into all our businesses. We are also having a lot of discussions on how we get exponential growth from our investment portfolio.

### George Hoyem, managing partner, In-Q-Tel

In-Q-Tel observed two large megatrends deepen.

Computing at the edge: The continuing evolution and accelerated funding in the general area we call computing at the edge, which is best exemplified by edge compute devices and solutions that leverage AI and training models in the cloud, and push identifying features to the edge device. These products will show up in areas called hearables and seeables which will, for example, provide highly accurate voice command identification in low-powered devices with feature markers trained in cloud-based neural networks. These signatures or features will be pushed to smart edge devices which may be based on specialised processors. Another example may be the same construct acting on edge video or camera recording devices – seeables – that have impeded feature selectors to identify items or objects at the edge in video or images trained from cloud-based neural networks.

Synthetic biology: Synthetic biology-based companies are taking advantage of the convergence of several megatrends including high-speed gene sequencing that can do in hours what used to take years and the gene editing breakthroughs with Crispr. Synthetic biology companies are simply the practice of engineering gene sequences to create new biological systems and devices. In a commercial application, it often involves altering biological products for the purpose of health or materials replication at lower costs. Examples include biofuels, lab-grown meat, produce preservation, and perfume or mint oils made without plants. This is a big wave which may have a 10-year run of new companies and products.

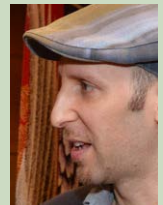


### Bevin Jacob, partner and co-founder, Automobility

Facial recognition.

### Benjamin Joffe, partner, Hax

Our focus is hardware investment. Despite media stories about the failure of companies like Jawbone and Juicero, the investment amount and number of rounds in the sector has gone up. What we saw is also a growing interest from corporates – including non-tech multinational companies – in connected devices, service robots and healthtech devices. The hype around virtual and augmented reality and wearables has calmed down, and it is all about solving real problems with real value now. AI has also spread to more and more devices, from robots to healthtech and consumer things. Voice agents was also a new trend, but the killer app is still playing music and asking for the weather or the time. Not quite the revolution yet.



### Alexander Kalinnikov, investment manager, VTB Capital Investment Management

Increase of blockchain applications, and AI and machine learning.

### Rimas Kapeskas, managing director, UPS Strategic Enterprise Fund

AI, machine learning and cognitive computing.



Kapeskas

### Brendon Kim, managing director, Samsung Next Ventures

Proliferation of AI.



Kizilbash

### Imran Kizilbash, vice-president and head of Schlumberger Venture Fund

Continued developments and evolution of products in the mobility and transport sector.



## SPECIAL REPORT

**Shashi Kumar, director, SK Telecom**

Blockchain and AI

**Nityen Ranjan Lal, managing director, Icos Capital Management**

Trump election and US climate policy changes, solar hitting price parity with coal, and recovery of economy and back to business.

**Jacqueline LeSage Krause, managing director, Munich Re/HSB Ventures**

The internet of things, AI, and transportation.

**Jon Lauckner, president, GM Ventures**

Autonomous technology, augmented reality, 3D printing, AI and fintech.

**Crispin Leick, managing director, EnBW New Ventures**

Blockchain goes nuts.

**Fernand Lendoye, managing director, Aviva Ventures**

AI, machine learning, blockchain, cryptocurrencies, ICOs.

**Victoria Lietha, market development partner, ABB Technology Ventures**

Applied AI, advanced machine learning.

**Wayne MacGregor, strategic business development, Naspers**

Blockchain.

**Ashish Mahashabde, principal, IBM Ventures**

Face recognition tech becoming mainstream.

**Brad McManus, managing director, Motorola Solutions Venture Capital**

AI as applied to our specific vertical. Cybersecurity, especially securing mobile access to proprietary cloud-based platforms.

**Dominique Mégret, head of Swisscom Ventures**

The rapid development of AI technologies in all types of vertical, the emergence of gigantic Asian VC funds backed by corporates.

**Tom Montgomery, senior vice-president, De Beers Ventures**

Blockchain and AI.

**Keith Muhart, senior director, Qualcomm Ventures**

AI was by far the most important tech trend in 2017.



LeSage Krause



Lauckner



Leick



MacGregor



Muhart



## SPECIAL REPORT

### **Koji Murota, head of KU-iCap**

Gene editing and AI.

### **Girish Nadkarni, president, Total Energy Ventures**

AI, machine learning and blockchain.

### **Janis Naeve, managing director, Amgen Ventures**

Focus on next-generation technologies to improve immuno-oncology and cell-based therapies.

### **Jay Onda, startup investments, Orange Silicon Valley**

AI, 5G and the internet of things, fintech and blockchain.

### **Tony Palcheck, managing director, Zebra Ventures**

AI, analytics and automation.

### **Amish Parashar, partner and director of strategic business development, Yamaha Motor Ventures**

Convergence of advances in robotics hardware systems with advancing vision systems, more robust AI, and connectivity.”

### **Charles Paul, vice-president, Henkel Ventures**

Wireless everything. Gene editing.

### **Ulrich Quay, managing partner, BMW i Ventures**

Blockchain and AI.

### **Susana Quintana-Plaza, partner, Siemens Next47**

Autonomous driving.

### **Mayuresh Raut, managing partner, Salamander Excubator Angel Fund**

AI going mainstream, blockchain getting more entrenched, cryptocurrency making rapid strides and ICOs.

### **Erik Ross, head of Nationwide Ventures, Nationwide Insurance**

Machine learning and artificial neuron networks, autonomous vehicle advances, liquid biopsies and biomarkers, quantum computing.

### **Marek Rubasinski, director of startup investments and partnerships, Sky Ventures**

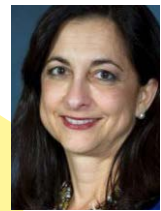
Start of the process of maturing AI and machine learning technology to specific enterprise applications.

### **Gaurav Sachdeva, partner, JSW Ventures**

We are an India-focused fund. We saw AI and machine learning adoption across the board. I would rate it the most important technology trend from an adoption point of view.



Nadkarni



Naeve



Palcheck



Quay



Quintana-Plaza



Rubasinski



## SPECIAL REPORT

**Seiji "Eric" Sato, unit general manager, Sumitomo Corporation Europe**

Mobility services.

**Reese Schroeder, managing director, Tyson Ventures**

AI, cybersecurity and foodtech.

**Jean-Pierre Sedaghat, managing partner, Vantage Capital Partners**

Fintech and AI.

**Clara Shen, catalyst director, Mars**

Non-tech CVC. China.

**Bonny Simi, president, JetBlue Technology Ventures**

We see the emergence of AI and blockchain as an early trend that CVCs are starting to pay attention to, as these technologies will transform entire industries.

**Markus Solibieda, managing director, BASF Venture Capital**

Digitisation.

**Sam Tanskul, managing director, Krungsri Finnovate**

Blockchain and AI.

**William Taranto, president, Merck Global Health Innovation Fund**

As it relates to digital healthcare, we have seen growth and investment appetite in a number of areas. On-body sensor monitoring continues to grow and has become more relevant as the technology gets better, faster and produces more data for clinical outcomes. The other big growth area in healthcare has been the use of AI and health analytics, which is being supported by health middleware and data liberation. This will continue to dominate in 2018.

**Philipp Thurn und Taxis, managing director, Constantia New Business**

Blockchain, AI, automation and robotics.

**Frank Tong, global head of innovation and strategic investments, HSBC**

The continuing fast-paced adoption of digital technology in banking continued as a key theme in 2017. Customers expect to be able to carry out their banking when they want, in the way they want. This is seen in the tremendous global growth across technologies that includes mobile payments, biometrics – voice, digital fingerprint and facial recognition – data analytics and AI – improving risk management, financial crime resilience and marketing to customers.

**Nobuyuki Toyoda, manager, office of the president, JSR**

AI.

**Jonathan Tudor, technology and strategy director, Centrica Innovations**

AI, machine learning, blockchain.



Schroeder



Simi



Solibieda



Tong



Tudor



## SPECIAL REPORT

**Masatoshi Ueno, senior manager, AGC Asahi Glass**

Software powered by AI.



Ueno

**Thomas Van Halewyck, founding partner, Bundl**

Blockchain and virtual reality.

**Rita Waite, manager, Juniper Networks Ventures**

AI and machine Learning, cybersecurity, edge computing.



Waite

**Paul Wallace, managing director, Heritage Group**

Security, migration to the cloud, blockchain.



Wallace

**Robert Wetzel, vice-president of corporate development, Enterprise Holdings**

Acceleration in advances in autonomous technology, AI and machine learning, and augmented and virtual reality. The pace of advances is increasing.

**Thomas Whiteaker, partner, Propel Venture Partners**

AI: although not a new topic, it is well positioned to become much more mainstream based on recent technical advancements. In the world of financial services, AI is just beginning to scratch the surface in terms of possibilities. Early AI customer support solutions are already demonstrating meaningful return on investment by deflecting calls that would normally go to human agents while at the same time providing a better consumer experience.

Blockchain: This trend continues to emerge and is not going away. While we are likely to be on the cusp of a bubble in terms of Bitcoin prices, a solid foundation is being put in place for innovation over the coming decades. Feels like 1998 all over again.

**Robin Wye, research commercialisation manager, BP**

Rise of AI, fall of lithium ion battery costs, and the light popping sound of quantum devices in the background.



Yamakami

**Shintaro Yamakami, CEO, Colopl Next**

Launch of ARkit and ARcore by Apple and Google, the ICO boom, and the \$100bn SoftBank Vision Fund

**Jimmy Zhu, vice-president, Citi Ventures**

The rise of AI and the application of machine learning.”



Zhu





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#### Co-Chairs



Sue Siegel  
GE Ventures



Quinn Li  
Qualcomm Ventures

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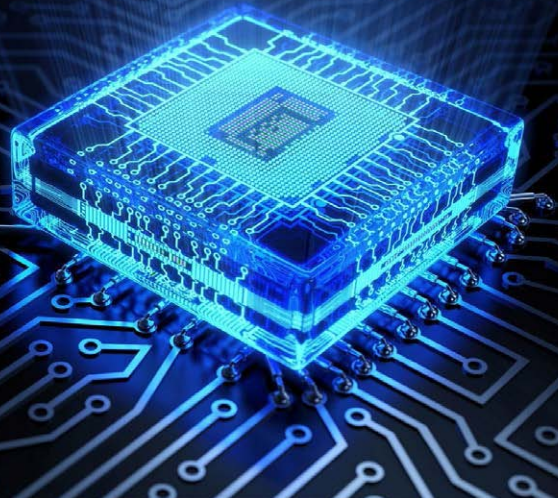
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## SECTOR FOCUS

# AI is eating software but venture models are colliding



James Mawson, editor-in-chief

## AI-focused chip startups

Name	Region	Type (investor)
Beyond Limits	US	CVC-backed (BP)
Cerebras Systems	US	VC-backed (Benchmark Capital, Open Field Capital and Foundation Capital)
Groq	US	VC-backed (Social Capital)
KnuEdge (formerly Intellis)	US	Angel-backed
Mythic (formerly Isocline)	US	VC-backed (DFJ, Lux Capital, Data Collective, AME Cloud Ventures)
ThinCi	US	CVC-backed (Denso, Magna)
Wave Computing	US	VC-backed (Tallwood Venture Capital, Southern Cross Venture Partners)
Koniku	US	VC-backed (IndieBio, Oriza Ventures)
Knowm	US	
Minds.ai	US	
Adapteva	US	CVC-backed (Ericsson)
Almotive (formerly AdasWorks)	Hungary/US	VC/CVC-backed (Robert Bosch Venture Capital, Draper Associates, Nvidia)
DeepScale	US	Angel/VC-backed (BessemerVenturePartners, Greylock, Auto TechVentures, Andy Bechtolsheim, Jerry Yang)
KRTKL	US	Crowdfunding
NovuMind	US	VC-backed (ZhenFund)
Deep Vision	US	
Tenstorrent	Canada	VC-backed (Real Ventures)
Bitmain	China	CVC/VC-backed (SequoiaCapital, IDGCapital, LanqiVenture Capital)
DeePhi	China	VC/CVC/GUV-backed (Tsinghua, China Merchant Venture, China Growth Capital, Samsung, Ant Financial, GSRVentures, BanyanCapital)
ChipIntelli	China	
Cambricon	China	CVC/GGV/GUV-backed (CAS Investments, China state, Alibaba, Lenovo, Zhongke, Oriza, Younghua)
Horizon Robotics	China	VC/CVC-backed (Intel Capital, Wu Capital, Linear Ventures, MorningsideVenture Capital, Hillhouse Capital)
Pezy	Japan	GGV-backed (New Energy and Industrial Technology Development Organisation)
Kalray	France	CVC-backed (Safran Corporate Ventures, Pengpai)
Ineda Systems	India	CVC-backed (Walden-Riverwood Ventures, Samsung Catalyst Fund, Qualcomm Ventures, Indus Age Partners, Imagination Technologies)
GraphCore	UK	CVC-backed (Sequoia, Foundation Capital, Samsung, Bosch, Dell, Amadeus, C4, Atomico, Draper Esprit, Pitango)

Sources: Ark, Nanalyze, Github, GCV Analytics

Software is eating the world, as Marc Andreessen, founder of venture capital firm Andreessen Horowitz, said, “but AI [artificial intelligence] is eating software”, according to chipmaker Nvidia, at its annual conference in May.

As a result, there has been increased interest in all parts of the AI ecosystem and particularly the chipmakers, such as US-listed Nvidia, in which SoftBank took a stake earlier this year through the near-\$100bn SoftBank Vision Fund, and UK-based machine intelligence technology developer Graphcore, which just secured \$50m in its series C round.

However, the backers of Graphcore and other nascent AI chipmakers indicate potential collisions of different approaches to venture capital and how they support startups in North America compared with other regions.

While venture capital firm Sequoia led Graphcore’s series C round, following peer Atomico’s lead in its \$30m series B this summer, the round also featured the corporate venturing subsidiaries of industrial product manufacturer Robert Bosch, electronics producer Samsung and computer vendor Dell.

Robert Bosch Venture Capital (RBVC), Samsung Catalyst Fund and Dell Technologies Capital, therefore, invested alongside Sequoia Capital, Amadeus Capital Partners, Atomico, C4 Ventures, Draper Esprit, Foundation Capital and Pitango Venture Capital.



## SECTOR FOCUS

RBVC had previously led the company's \$30m series A round in November 2016, just after it was spun out of chipmaker Xmos. In turn, RBVC had led Xmos's previous D round in 2014 a few years after it spun out of University of Bristol in the UK, before strategic investor Infineon Technologies led its \$15m series E round in September this year.

By contrast, the Graphcore co-founders' previous business, Icera, had financial investors. Nigel Toon, Graphcore's CEO, and its chief technology officer, Simon Knowles, were previously co-founders of Icera, a 3G cellular modem chip company sold to Nvidia in 2011 for a reported \$367m, after \$250m of VC equity and bank debt.

But rather than an aside, the source of funding for nascent AI-focused chip companies could be important if it brings strategic options beyond the provision of capital.

A check through the funding sources of some of the most-mentioned nascent AI-focused chip producers around the world shows a pattern of VCs backing North American startups and a more diverse syndicate base backing those in other regions.

Four of the 17 AI chip startups based primarily in the US – Beyond Limits, ThinCi, Adapteva and Almotive (formerly AdasWorks) – have disclosed corporate or strategic venturing backing, compared with eight out of nine based outside North America with strategic backers.

As Qi Lu, chief operating officer at China-based search engine provider Baidu, said in a podcast with Y Combinator this month: "In the AI era, my view is that data will become a primary means of production. So, harnessing data becomes key."

"And that comes back to China, because China has a different social economical policy around it. With that, it creates an environment for developing AI technologies, and then commercialising those technologies towards market-oriented applications or social applications. It is in that context that China has a structural advantage."

Kai-Fu Lee, founder of VC firm Sinovation, described AI in May to news provider Forbes. "Whoever has the most data wins," he said. Goldman Sachs and a host of others have pointed out that China has the data and is offering it to companies, aided by strategic funding.

If the AI industry proves to be as important to economic growth and societies as predicted by SoftBank and other investors, then having a handle on the hardware underpinning it will be important.

The startups certainly hope so, and a host of established companies including Apple, Google and Facebook, as well as incumbent chipmakers such as Nvidia and IBM, are betting the same way and investing in AI chips, such as the Bionic chips in Apple's iPhone X, and entrepreneurs in the AI ecosystem.

Still, AI might be eating software but the software could help shape which hardware platform succeeds.

As Jeff Hebst, vice-president at Nvidia and head of its GPU Ventures unit, told Global Corporate Venturing: "The market potential for AI is extremely large, so makes perfect sense that companies will form to build acceleration chips."

"However, most grossly underestimate the software efforts that are required – building the chip is maybe 10% of the job at best. We support all the frameworks and all the clouds. And we invest billions in every generation of our platform, which we iterate on a regular cadence."

An analysis from Ark Investment Management in September this year found Nvidia backed the main programming codes supporting the machine or deep learning methods underpinning AI, and more than its main peers, although Ark noted that consolidation around Google TensorFlow could help level the playingfield even as it potentially consolidates. ♦

### Main AI chip corporations and venturing approaches

Company	Region	CVC
AMD (with Tesla)	US	Fusion Fund
Apple	US	LP in SoftBank Vision Fund
BrainChip	US	ASX-listed
Facebook	US	Iconiq Capital*
Google	US	Gradient, CapitalG, GV
Huawei (HiSilicon)	US	Huawei
IBM	US	IBM Ventures
Intel	US	Intel Capital
Microsoft	US	Microsoft Ventures
Nvidia	US	Nvidia GPU Ventures
Qualcomm	US	Qualcomm Ventures
Samsung	Korea	Samsung Ventures, Next, Catalyst
SoftBank (Arm)	Japan	Vision Fund
STMicroelectronics	US	ST NewVentures
Xilinx	US	XilinxTechnologyVentures

\* Iconiq Capital is a closed multi-family office linked to Facebook founder Mark Zuckerberg rather than a direct venture investor for the firm.

Source: GCV Analytics

"In the AI era, data will become a primary means of production. So, harnessing data becomes key"



## COMMENT

# The initial coin offering and the future of finance

Toby Lewis, CEO and founder, Novum insights



Entrepreneurs with big visions are working on raising huge sums of capital, and it is not uncommon to meet initial coin offering hustlers jabbering about how we are getting a chance to live through something akin to the dot.com era – the blockchain era. Initial coin offerings (ICOs) have now raised \$3.2bn this year, Novum Insights data shows, which seemingly puts a new sector on course to take a decent chunk of the wider venture capital industry.

The excitement is driven by the ability to raise coins instead of equity to finance ideas, with the coins generally having some form of utility as well as fluctuating value. This is leading to greater funds being raised by entrepreneurs than would typically come from angels and venture capitalists as well as the likelihood of entrepreneurs retaining greater control of their company's operations.

There is much talk of grandiose ideas and the use of smart contracts based on Ethereum. In some cases these contracts are working, but in many others they are a work in progress. Yet, as in the early days of the world wide web, there is strong hope that some of the tokens being used today will dominate a new "internet of value". The concept is that your online activity and identity will lead to cryptocurrency rewards, generating a better valuation of all our actions.

With many sold on this vision, entrepreneurs at the seed stage, who only last year may have raised \$500,000 to \$1m to prove their project, are attempting to raise tens and even hundreds of millions of dollars, as crypto-fever sweeps the investment and entrepreneurial worlds.

This vision of an internet of value has been a driving force propelling cryptocurrencies, led by Bitcoin and Ethereum, to repeated new highs this year – with their current valuation pegged at more than \$257bn, according to CoinMarketCap. In turn this has led to holders of crypto-assets looking to diversify their holdings.

This interest is booming because the entrepreneurial community is warming to the idea of an internet of value, as well as the huge funds available for winners. Investors are attracted by the huge gains made by those in the sector and for those with cryptocurrencies already, in part because they are keen not to pay capital gains tax on their huge profits, which they would have to do if they converted back into fiat currency like the dollar or the euro.

Because of this, cryptocurrency holders have diversified their crypto-assets into lesser known tokens. This has often proved a great trade to make, although at some stage there is likely to be a crypto-crash.

It was interesting to watch a co-founder of Bancor, one of the biggest new tokens, Galia Benartzi, present twice recently, in Amsterdam at the e/d/t Global Foundation launch and at Davos for the D10E ICO event. With the energy and confidence of being a frontier entrepreneur, Benartzi responded in an upbeat way to an audience member challenging her on the relatively poor performance of the token, which has slid significantly against Ethereum, despite it having raised more than \$150m in an ICO.

She said much of the funding was being used to stand behind the currency and also made the case that by raising the funds in a token, the group was going to the people and its users rather than the venture industry, which she argued had been a poor allocator of capital. The audience was certainly more sympathetic after hearing her present, although most observers of particular ICOs have significant questions.

The crypto-world is not for the faint of heart. Its boom at some stage will be followed by a crash, although there is huge momentum behind cryptocurrencies at present. The ability to remain anonymous using some exchanges mean there is significant criminal interest in the sector for money-laundering.

The organisations running tokens themselves lack the kind of reporting and governance you would expect of groups managing millions of dollars of other people's money. A worrying number of tokens are also scams, which will doubtless damage the sector's reputation, although while investor paper profits are booming this is being overlooked by many.

Yet the money is coming to cryptocurrencies and initial coin offerings because the returns have been eye-popping and the technological vision for the use of funds is often huge. For this reason, Novum is keeping a close eye on all tokens, and is on the lookout for those that stand out from the rest. ♦

Entrepreneurs at the seed stage, are attempting to raise tens and even hundreds of millions of dollars



## COMMENT

# ‘I don’t know what you have, but I don’t think you’re going to make it’

Melinda Richter, head of JLABs, Johnson & Johnson Innovation



I will never forget that moment when those words came out of my doctor’s mouth. I was 27 years old and there was still so much in life I had yet to experience – getting married, having children, growing old. Just the day before, I was excited to be in Beijing on an executive fast track with my employer, a giant in the telecoms industry, and the next day, I was a patient who just wanted to get through the night to see the next day.

Looking back, my reaction still surprises me. I felt scared and vulnerable, but I also felt confused. How is it possible that I had been poked and prodded, my blood studied under a microscope multiple times by multiple people, not one but two spinal taps, a helivac to Hong Kong for more poking and prodding, and still they could not tell me what was wrong? At the same time, technology had become so advanced that I was working in a company focused on ordering sodas from a vending machine with a cell phone. Couldn’t anyone see the irony of all this money and talent going to something that now seemed so frivolous when there seemed to be a lack of investment for innovation focused on our health?

Over the course of nearly three months in hospitals in Asia, they finally figured out that I had been bitten by a mite and prescribed the correct therapeutics. Over the course of the next year, I slowly made a full recovery. But that did not quell the passionate journey that mite sent me on. What my doctor said that day changed the course of my life.

As I recovered, I felt more and more compelled to level the playingfield between technology and healthcare. I knew first-hand how fast the tech industry moved, what little resources were required to do so, and how many people were attracted to it, so why not “techify” life sciences? Why couldn’t the model that enabled a few coders with a little seed money to develop a multimillion-dollar platform in a year be applied to healthcare?

Everyone thought I was crazy. How would it be possible to make healthcare innovation more productive, more advanced, more time and cost-efficient? “Healthcare is too regulated.” “Lab space is too expensive.” “Investors don’t like to invest in biotech.” “You don’t have a PhD.” Every reason I was given for why it would not work and why I could not do it fuelled my determination to tackle it. So I made the jump, and along the way found a few other wild folks who were passionate about making a difference.

We formed a company called Prescience International in San Francisco, with the goal of providing everything an innovator and an investor would need to form a company, and accelerate the best science to patients in a time and cost-efficient way. We provided lab space, equipment, training, set them up with compliance procedures, and even provided consulting and education on business, science and operations. We convinced investors that this model would make a better return, and because we housed multiple companies, we gave our scientists a community and opportunities to network and collaborate.

Most importantly, I believed it was critical to make this a no-strings-attached model – where innovators were incentivised to build as much value as they could on their own so their returns in the business of health might rival the returns tech entrepreneurs realised. By creating an open innovation approach, I believed early-stage innovation would not only multiply and accelerate, but that with more and better shots at goal, we would have a higher probability of reaching patients.

The wildest thing about all this? It worked. So we decided to expand to San Diego, where we caught the eye of Janssen Pharmaceuticals, the R&D arm of Johnson & Johnson, and JLABs was officially born.

It has been five years since the launch of JLABs, and the growth we have experienced has finally started to feel for me like we are making a difference in early-stage health innovation, and not just in pharma, but across many sectors in healthcare. We have grown to eight locations across the US and Canada, with New York set to open early next year. We want to empower, enable and inspire innovators around the world to make a difference for their region, for their people.

I am proud of the opportunity JLABs gives the best and the brightest to set their sights on a mission to help people live long and healthy lives. We currently have more than 190 companies inside JLABs, with 121 more in our alumni network, all focused on health. My dream is for patients all over the world, lying in hospital beds at this very moment as I once did, to know we have an army of people fighting for them – hopefully never to hear those dreaded words: “We don’t know.”

To this day, the emotions I went through in that moment in Beijing still overwhelm me, and at the same time I realise that in that moment was the gift of life – a purpose that has fuelled me through the hills and valleys of this journey to create a productive, proud and purposeful community for health. It is the common thread that binds all our scientists and entrepreneurs in JLABs – setting our sights on overcoming disease and willing to risk everything to see it through. That is what our innovators are doing every day, and although we may be providing them with the platform, they are the real heroes. They are the ones dedicating their lives so we might live and thrive. ♦

*This an edited version of an article first published on LinkedIn*

As I recovered, I felt more and more compelled to level the playingfield between technology and healthcare



## COMMENT

# Automation and the creation of a new world

Erik Vermeulen, professor of law, Tilburg University



**T**he more I think about it the more I am convinced that automation forces us to revisit, re-evaluate and rethink some of the fundamental “building blocks” of society. Think finance, business, work, energy, health and law. But this is not going to be easy. Take the example of work.

Broadly speaking, we can distinguish between two schools of thought, even among those who accept that automation will soon transform the workplace. The first group points to the emergence of mass poverty, wealth inequality and new forms of social exclusion as a result of automation depriving large sections of the workforce of employment opportunities. The second group takes a more positive view. They are convinced that we will find ways to deal with these issues. They believe that those groups that have traditionally performed routine work will be able to find alternatives.

But, in one important sense, it does not matter which group you belong to. There is no right answer. The crucial point is that the future is open and everyone is going to have to “think different” in the creation of a new automated world.

The use of a “think different” strategy to usher in a new era is not new. In late 1997, Apple adopted the slogan “think different” to relaunch the brand, go back to basics and focus on “what really matters”. Twenty years later, what strikes me is how relevant the slogan still is today. In fact, I believe the mantra of “think different” is even more important to society now than it was for Apple in 1997. Here’s why.

## This technological revolution is different

We are on the brink of a new world centred around digitisation, automation and machine intelligence. I have written about this before, but I genuinely believe this technological revolution is different from previous technological revolutions of the last 250 years. The challenge of coming to terms with these differences requires us all to think different.

**The complexity of technological change:** Current technological innovations in the area of smart machines, sensors and big data, appear to be faster and more wide-ranging. The pace of digitisation and automation is accelerating. This makes perfect sense. The developments in the different automation technologies, such as machine learning, blockchain technology, internet of things and data analytics, are all accelerating each other.

Anyone who doubts the pace and complexity of change should follow one of the many websites that are now devoted to the daily chronicling of technological discoveries. My own current favourite is Futurism.

*IT experts foresee 60% of businesses affected by automation within five years. There are growing concerns that artificial intelligence (AI) and robotics will slowly take more jobs away from people.*  
futurism.com

We are living through an era of the exponential growth of new technologies. Moreover, technological innovation now has a global character, in the sense that significant discoveries can happen almost anywhere. And – thanks to the internet – the dissemination of the latest innovation is also global and almost simultaneous.

This process of constant and unrelenting technological change will only get faster as more resources are devoted to developing even more technologies.

**The key role of consumers in driving innovation:** Previous technological revolutions were, broadly speaking, spearheaded and controlled by a combination of industry and national governments working together to deliver innovation to the market.

But this time, things seem to be different. Consumers play a much more central role in both driving technological change and determining its scope and impact. Consumers today are often among the first group to experiment with new innovations. Think of smartphones, drones, games. What is interesting is that whenever new innovations make life more convenient or meaningful for consumers, they are very quickly accepted by society as a whole.

This widespread consumer adoption of new innovations has a number of interesting side-effects.

- Access to finance becomes easier. Professional investors, such as venture capital funds and angels, naturally gravitate to technologies with mass consumer appeal. But, increasingly, innovators can turn to the public for funding, through crowdfunding or initial coin offerings. This then feeds the hype, which encourages even more professional investors to invest in what is perceived as the next big thing.
- The next-big-thing argument plays a key role in convincing large corporations to invest heavily in new automation and



## COMMENT

digitisation applications. Consumer success provides a powerful override to the in-built cautiousness of established corporations when dealing with innovation.

- Finally, governments see innovations with broad consumer appeal as a powerful means to boost economic growth or other public policy goals. For example, innovation can provide an opportunity for a government to solve demographic issues – think Japan – or as a means to project a youthful and dynamic image to the world – think Singapore.

**The uncertain social effects of new technologies:** The social effects and meaning of new technologies today are more dynamic and complex than with previous technological revolutions. We struggle to come to terms with how automation impacts on society. The process of automation often occurs unnoticed.

From a consumer-user point of view, the best – most convenient – technologies facilitate action, but quickly disappear into the background. This transparent quality makes any assessment of the social effects of new technologies difficult to assess.

What is also different about the digital revolution is that whereas the social effects of previous technologies unrolled over decades, the social effects of the automation efforts today occur over a much shorter time horizon and these social effects are geographically more dispersed and affect every aspect of social life.

The result? New technologies require us to “think different” about the most fundamental building blocks of society.

### “Think different” as the mantra of a digital age

The urgency of responding to new automation technologies means that we do not have time to adopt a wait-and-see approach. We need to be proactive in determining how automation is affecting society. This requires us to set aside traditional ways of thinking and – by thinking different – find new ways of thinking that are more appropriate for the new realities of a digital age.

More and more of us believe that issues regarding bureaucracy, middle men, legacy systems, human error, corruption and fraud can be solved by automated technologies. Particularly, the combination of blockchain technologies, AI, robots and sensors offer a powerful and convenient alternative for business, consumers and government.

Here are just a few examples of the impact of automation technologies:

- Centralised banking systems and financial organisations are slowly but surely being replaced by peer-to-peer lending and crowdfunding strategies.
- We see a growth in communities and smart grids taking ownership of renewable energy.
- There is a shift in how we think about ownership and organisations as a result of the technology-driven sharing economy.
- Life expectancy is gradually increasing, again as a result of technological revolution.
- The use of smart – automated code-based – contracts has the potential to transform legal transactions and enforcement.
- Trust is being automated by the use of prediction algorithms, sensors and blockchain technologies.

The new world of automation means we will have to rethink banking, tax, retirement and pension policies, as well as employment. It will also have a significant impact on our legal systems, which will have to be revisited in light of the sharing economy and blockchain. And the implications for energy and the environment are similarly far-reaching. We need to think different in order to create a better future together.

*Welcome to 2030. I own nothing, have no privacy, and life has never been better*

*Ida Auken, member of parliament, Denmark*

### Think different education

So, what's next? Where do we begin? Well, we need to start by giving everyone the necessary skills to think different.

I have written before about education and the importance of positioning myself as a co-creator, collaborator and influencer for the students, rather than the more traditional role of teacher. My experience of this new approach is promising.

By reflecting together on the digital age, we – both educators and students – gain a better understanding of the world that we are currently living in and will certainly live in tomorrow. “Think different” seems to be an appropriate and significant first step to introduce in all levels of education. It is a powerful way to think about the distinctiveness of a digital age.

Even more importantly, it can be used as a mantra to stimulate and activate the necessary combination of creativity and teamwork that we will all need to navigate the uncertain automated world to come. ♦

*This is an edited version of an article first published on Hackernoon*

We need to be proactive in determining how automation is affecting society



## GOVERNMENT HOUSE

# Sino-Russian fund recognises Megvii in \$460m round

Thierry Heles, editor, Global Government Venturing



The Russia-China Investment Fund, a private equity vehicle backed by the governments of Russia and China, last month led a \$460m funding round for Megvii, a China-based facial recognition technology producer. Megvii, whose Face-plus-plus technology has been billed as the world's largest face-recognition platform by publications such as MIT Technology Review, counts among its clients e-commerce and internet group Alibaba, which uses the software to verify the identity of employees entering its buildings.

Alibaba, while an impressive client, is just one of more than 300,000 customers of the platform – companies, financial services firms, individual developers and municipal governments. The last use Face-plus-plus for applications ranging from ensuring citizens have paid for their train ticket to detecting known criminals on CCTV.

Megvii – the name derives from “mega-vision” – was founded in 2011 and has never been shy about its ambitions. Yin Qi, chief executive and one of the company's co-founders, has gone as far as describing the platform as a “brain” for visual computing, according to the Economist.

Facial recognition may seem a futuristic concept – or a dystopian one, depending on your point of view – but after many years of the technology having been predicted as a game-changer, it appears these forecasts are finally coming true. Take, for instance, consumer technology firm Apple's latest smartphone, the iPhone X, which has ditched fingerprint verification in favour of facial recognition. With Apple's clout, and market share, the move is likely to herald widespread adoption of the technology in the western world.

More adoption will inevitably mean more startups and corporates trying to join the field, so Megvii's fresh cash injection should help the company stay ahead of the curve. The involvement of Russia and China in that funding round is also good news for the company.

The platform is a dominant player regionally, especially in China, and Megvii hopes to enter verticals ranging from retail to autonomous driving. But the fact that it is now aligned with the governments of China and Russia could prove a difficult sell to western investors and regulators.

Western governments have been mostly on friendly terms with China, thanks to economic interdependency, but they have been far less keen on Russia. In the US, purported links between the White House and the Kremlin are even subject to a large-scale investigation that has already led to the indictment of high-profile figures.

While the technology would undoubtedly be valuable to investors such as In-Q-Tel, the venture capital affiliate of the US intelligence community, their involvement is now highly unlikely.

Even beyond money, the idea of handing citizens' personal data – and it hardly gets more personal than someone's face – to a company backed by two governments that have values different from those of western democracies is sure to send chills down most regulators' spines.

So an expansion beyond Asian markets appears to be off the cards. That might be fine for a lot of companies – with approximately 4.4 billion people, more than half the world's population lives in Asia – but for a business as ambitious as Megvii, this may pose an interesting dilemma down the road.

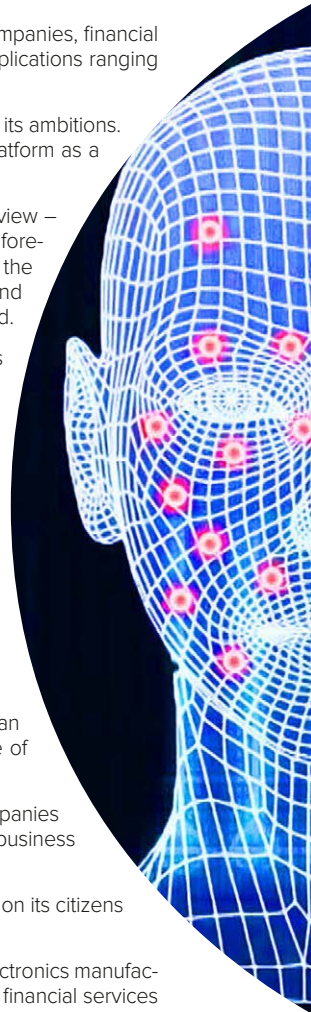
And the fact that Megvii's systems draw partially on identification files the Chinese government holds on its citizens is hardly a selling point to European or other regulators.

So far, Megvii's backers have all been from Asia – diversified conglomerate SK Group and contract electronics manufacturer Foxconn participated in the \$460m funding round, which reportedly included Ant Financial, the financial services affiliate of Alibaba.

Foxconn had previously supplied \$20m in November last year in a \$100m funding round also backed by CCB International Holdings, a subsidiary of financial services group China Construction Bank. It is unclear whether the \$100m was a first tranche of the most recent round.

Innovation Works and Qiming Venture Partners participated in a \$22m series B round in 2014, before later adding \$25m in series B-plus funding. Innovation Works had already taken part in a seven-figure series A round in 2013. Legend Star, a unit of conglomerate Legend Holdings, provided an undisclosed amount of seed capital for Megvii. ♦

The fact that it is now aligned with the governments of China and Russia could prove a difficult sell to western investors and regulators



# We are living in a wondrous world

Thierry Heles, editor, Global University Venturing



One of the great joys of working in the tech transfer sector is the opportunity to see ground-breaking technologies make their way to market before anyone else comes across them, and in this month's magazine we have not one but two comments from people in the industry who take a look at why they love their job and why others should join them.

While it may take slightly longer for an invention to make it onto Global University Venturing's radar than a TTO staff member's desk, the same joy still applies – particularly in those thrilling moments that really underline that we live in a technological future a lot of us have dreamed of growing up.

We may not have jet-packs (yet), but we do have self-driving cars. What we may also have soon are food replicators – those machines from Star Trek where crew tell a machine what sustenance they desire and it appears in front of them as if out of thin air.

Yissum, the commercialisation arm of Hebrew University of Jerusalem, introduced a technology last month that enables the 3D printing of personalised food based on nano-cellulose, a natural, edible, calorie-free fibre.

Based on research by Oded Shoseyov, a professor at the Robert H Smith Institute of Plant Sciences and Genetics in Agriculture, and Ido Braslavsky, director of the Inter-Faculty Biotechnology Program and head of the BSc Program at the Institute of Biochemistry, Food Science, and Nutrition, the platform is able to produce items catered to dietary requirements of coeliac people, diabetes sufferers or vegans – among countless other options.

It might not be quite like living on the USS Enterprise, but what a wondrous age we live in.

A wondrous age that, it turns out, may even teach us things about light we never knew. In the US, researchers at the Harvard John A Paulson School of Engineering and Applied Sciences have created nanostructured materials that are able to generate completely new states of light, exhibiting strange behaviour such as bending in a spiral, corkscrewing and dividing like a fork.

The intellectual property has been protected by the university's tech transfer office, Harvard Office of Technology Development, which is exploring ways to exploit the research. While the researchers have thought of a few applications for their discovery – such as creating optical tweezers to manipulate molecules – their discovery has the potential to revolutionise our understanding of physics and that knowledge would lead to completely unforeseen new applications.

It is the prospect of learning about cutting-edge technologies such as these and a love for science that keeps us all coming back to our desks each morning to absorb more knowledge. There is no better world to live in.

Global University Venturing will, however, take a short break from all of this next month to celebrate the holidays with our friends and family. But fear not – we will keep writing daily news online in the run-up to Christmas and, of course, the magazine will be back in January with our annual data analysis. ♦







**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

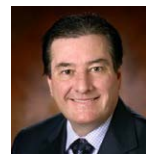
and majority governed by practicing corporate venturers, has also been created to help the industry communicate its work to third parties, such as entrepreneurs, VCs, corporate management and through regional trade bodies and local networks that provide government lobbying.

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Get the Weekly Community Newsletter	✓	✓	✓
Entry in the Member App	✓	✓	✓
Pro Bono - Bridging communications to third parties	✓	✓	✓
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Tom Heyman  
**J&J**



Jeffrey Li  
**Tencent**



Jaidev Shergill  
**Capital One**

*"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 Capital

**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.

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[www.globalcorporateventuring.com](http://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 bounces back

**Kaloyan Andonov, reporter, GCV Analytics**



Corporate-backed deals tracked by GCV Analytics in November numbered 215, significantly higher than the 186 funding rounds in the same month last year. Investment value also increased by 84% to \$8.05bn – up from \$4.37bn in November 2016.

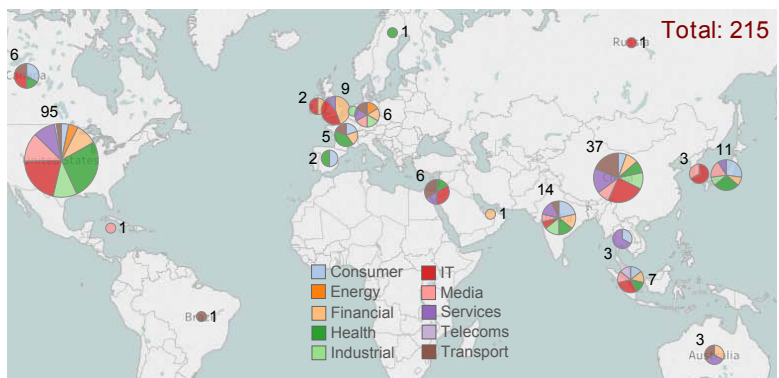
The deal count in November was even more drastically higher compared with the 147 recorded in October this year, along with March (225) and June (216). Total capital invested in corporate-backed rounds in November, however, went down from \$10.24bn the previous month, a 27% drop.

The US came first in the number of corporate-backed deals, hosting 95 rounds, while China was second with 37, India third with 14 and Japan fourth with 11.

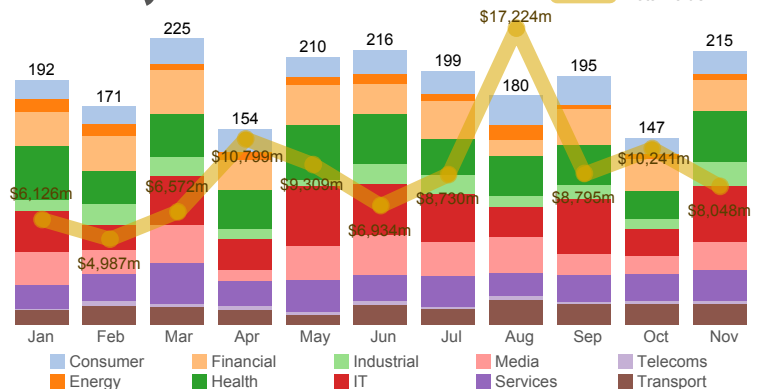
The leading corporate investors by number of deals were chipmaker Qualcomm, internet company Tencent and electronics manufacturer Samsung. Of those involved in the largest deals, Tencent topped the ranking, along with e-commerce firm Alibaba and electronics contract manufacturer Foxconn (Hon Hai).

GCV Analytics reported 20 corporate-backed funding initiatives during November, including VC funds, new venturing units, incubators and accelerators. This is a substantial decrease from the previous month, when initiatives numbered 27. The estimated capital raised was also lower than in the previous month, at \$1.92bn, down from \$4.08bn.

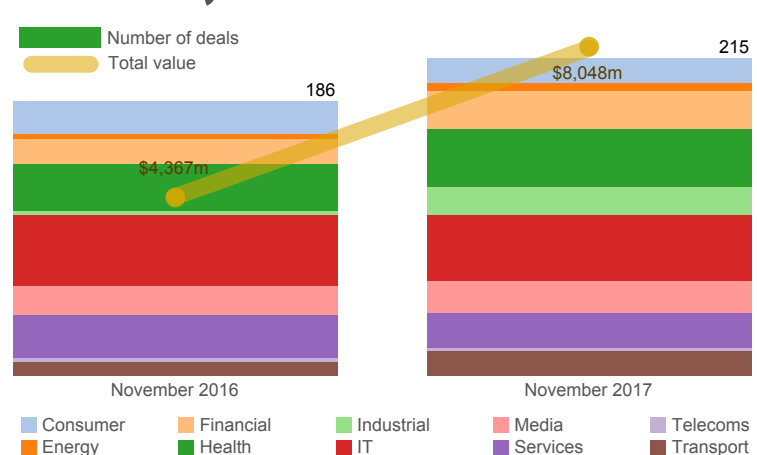
## Global view of deals Nov 2017



## Deals by month 2017

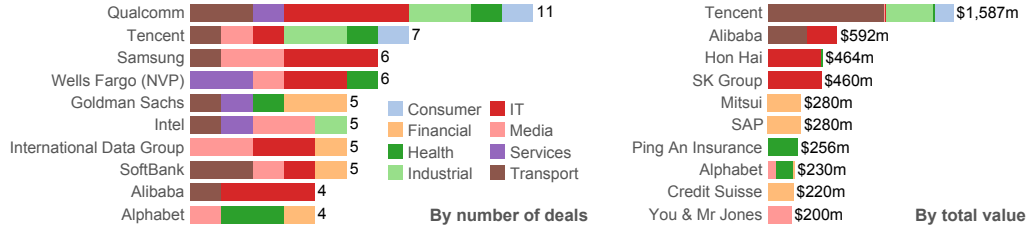


## Deal activity Nov 2016 vs Nov 2017

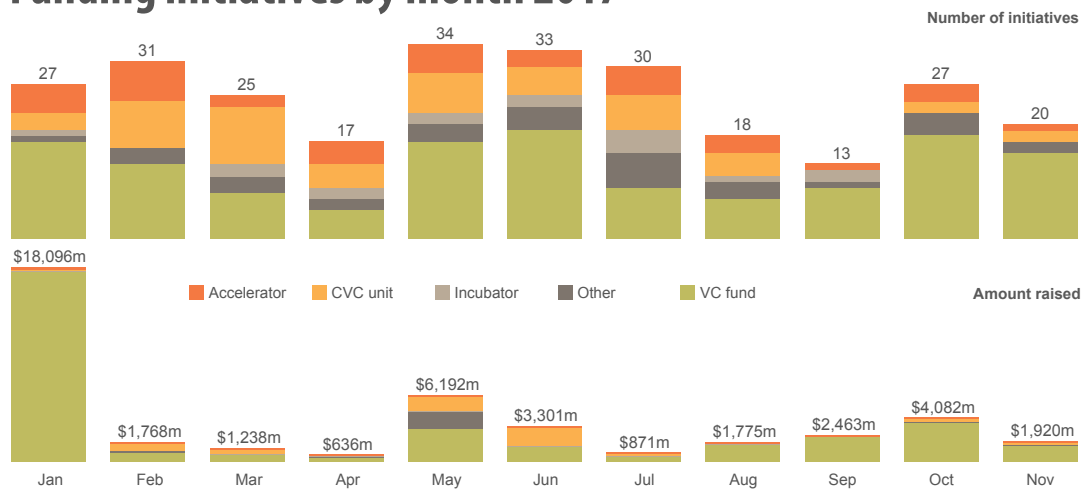


**ANALYSIS**

### Top investors Nov 2017



### Funding initiatives by month 2017



### Deals

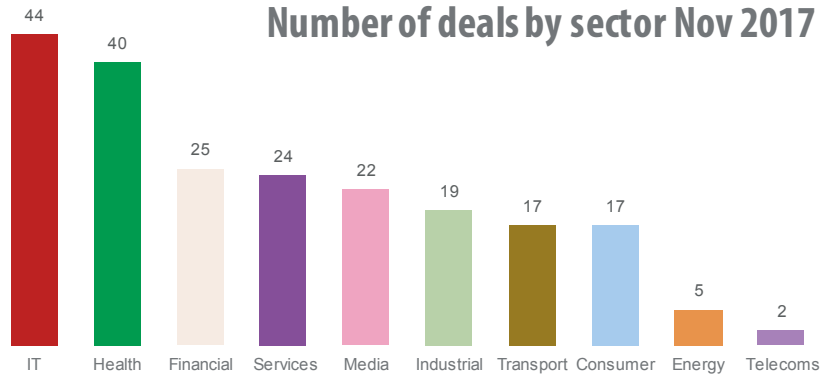
The most active corporate investors were those from the financial services, IT, media and health sectors.

GCV Analytics data shows that emerging businesses from the IT, health and financial services sectors secured the highest number of deals involving corporate venturers.

The top deals by round size were raised mostly by China-based enterprises. The focus of these businesses ranged from transport and IT through industrial activities to media and financial services.

Tencent and Alibaba were the top investors in many of these largest rounds, only one of which was above \$1bn.

### Number of deals by sector Nov 2017



### Deals heatmap Nov 2017

	Financial services	IT	Health	Industrial	Telecoms	Services	Media	Consumer	Transport
North America	32	23	21	9	14	7	9	4	5
Asia	21	31	3	12	7	9	6	7	
Europe	14	4	3	2	2		1	2	1
Middle East	1	1		2	2			1	1
Australia and New Zealand	2			1		1			
Eastern Europe	1								
South America	1	1							



## ANALYSIS

## Top 10 investments Nov 2017

Company	Location	Sector	Round	Size	Investors
Nio	China	Transport	–	\$1bn	Baillie Gifford   Citic   Lone Pine   Tencent
Megvii Technology	China	IT	C	\$460m	Hon Hai   Russia-China Investment Fund   SK Group   Sunshine Insurance Group
UBtech	China	Industrial	C	\$400m	Tencent   Undisclosed strategic investors
Souche.com	China	Transport	E and beyond	\$335m	Alibaba   CMB   Primavera Capital   Warburg Pincus
TransferWise	UK	Financial services	E and beyond	\$280m	Andreessen Horowitz   Baillie Gifford   Institutional Venture Partners   Mitsui   Old Mutual   SAP   World Innovation Lab   private investors
SenseTime	China	IT	–	\$227m	Alibaba
WeLab	China	Financial services	B	\$220m	China Construction Bank   Credit Suisse   Alibaba   International Finance Corporation
Niantic Labs	US	Media	B	\$200m	Founders Fund   Javelin Venture Partners   NetEase   Spark Capital   You & Mr Jones
Chehaoduo	China	Transport	B	\$180m	Bank of China   Capital Today   DST System   H Capital   Sequoia Capital
Intersection	US	Media	–	\$150m	ArrowMark Partners   Graham Holdings   New Spring Capital

China-based smart electric vehicle developer Nio secured over \$1bn in a funding round led by Tencent. The round, which reportedly valued the company at about \$5bn, included hedge fund Lone Pine Capital, asset manager Citic Capital and investment firm Baillie Gifford. Another internet company, Baidu, co-led the round, according to local media reports, but its participation was not confirmed. Founded as NextEV, Nio is working on an electric autonomous car equipped with a personalised digital assistant that it aims to bring to market by 2020. It has already created a car – the EP9 – claimed to be the fastest electrically-powered vehicle in the world.

Megvii, a China-based facial recognition technology developer also known as Face-plus-plus, raised about \$460m in a round featuring diversified conglomerate SK Group and Foxconn. Russia-China Investment Fund, the private equity fund backed by the governments of each of those countries, led the round, which also featured Ant Financial, the financial services affiliate of Alibaba. Face-plus-plus provides free facial detection and recognition software to developers and enterprises. Alibaba, Ant Financial and Jiayuan, one of China's biggest dating sites, use the software.

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

Alibaba led a \$335m series E round for China-based online vehicle marketplace SouChe. The round took the company's overall funding to approximately \$635m. Private equity firm Warburg Pincus, investment firm Primavera Capital and CMB International, a subsidiary of financial services firm China Merchants Bank, also participated in the round. Founded in 2012, SouChe operates an online automotive e-commerce platform that partners a network of more than 110,000 new and used vehicle dealers across China. It has some 330,000 monthly active users and expects to book about RMB150bn (\$22.7bn) in transactions by the end of this year.

UK-based money transfer platform TransferWise raised \$280m in a series E round featuring diversified conglomerate Mitsui & Co that valued it at \$1.6bn. Asset management firm Old Mutual Global Investors and venture capital firm Institutional Venture Partners co-led the round, which included Sapphire Ventures, the venture capital firm spun out of enterprise software provider SAP, among other investors. TransferWise operates an online platform enabling businesses to streamline cross-border financial transfers.

China-based artificial intelligence technology producer SenseTime received \$227m from Alibaba. The transaction reportedly valued SenseTime at \$3bn post-money. It is not clear whether Alibaba made the commitment as part of a \$500m series C round that SenseTime is said to be in the process of raising. Founded in 2014, SenseTime is developing computer vision and deep learning technology to power facial and image recognition as well as language processing and vehicle identification.

China-based online lending marketplace WeLab raised \$220m in debt and equity financing in a series B-plus round that included Alibaba's Hong Kong Entrepreneurs Fund. Financial services firms Credit Suisse and China Construction Bank also participated in the round, along with the International Finance Corporation, the private investment arm of the World Bank. WeLab runs an app-based peer-to-peer lending platform with more than 25 million registered users. It generally issues small loans to consumers, and CEO Simon Loong had told Tech in Asia its loans business has experienced six or sevenfold year-on-year growth in the first half of 2017.

US-based augmented reality (AR) mobile game developer Niantic secured \$200m in a series B round that included internet company NetEase. Brand services provider You & Mr Jones also participated in the round, which was led by venture capital firm Spark Capital. Niantic was established in 2010 as an internal startup at internet company Google, before being spun out in 2015. The company has developed a range of massively multiplayer online role-playing games, such as Pokemon Go, that incorporate real-world landmarks.

Chehaoduo, a China-based automotive e-commerce company backed by steel producer Shougang Group, raised



**ANALYSIS**

\$180m in series B-plus funding. The funding came from a subsidiary of financial services firm Bank of China Group, as well as investment firm DST Global, private equity firm Capital Today and venture capital firms Sequoia Capital China and H Capital. Chehaoduo runs two e-commerce platforms – Guazi, which focuses on used vehicles, and Maodou, which sells new cars. Both also provide adjacent services such as vehicle appraisal, automotive insurance and financial services for buyers.

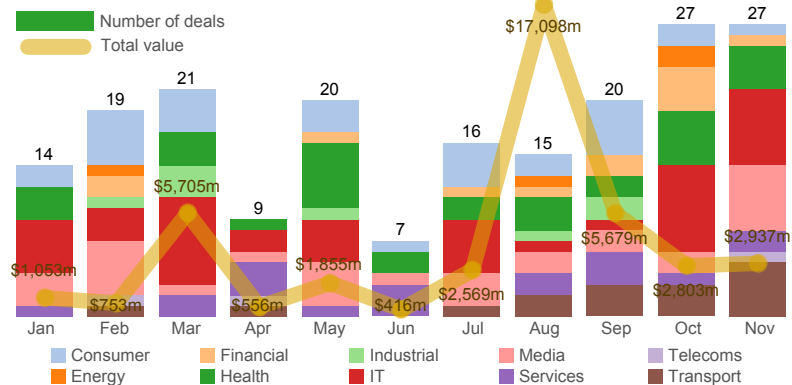
US-based smart cities technology provider Intersection closed a \$150m funding round led by media conglomerate Graham Holdings that also featured asset management firm ArrowMark Partners and investment firm NewSpring Capital. Intersection was created in 2015 through the merger of outdoor advertising company Titan and design consultancy Control Group, and acquired by a consortium led by Sidewalk Labs, the urban infrastructure subsidiary of diversified conglomerate Alphabet. The company operates in markets such as New York, where it has converted old phone booths into a range of kiosks, called Links, offering free wifi, information on public transit and charging facilities, which are funded through advertising displays.

**Exits**

In September GCV Analytics tracked 27 exits involving corporate venturers as either acquirers or exiting investors. The transactions – most of which took place in the US – included 18 acquisitions, six initial public offerings (IPOs) and one merger.

The number of exits was the same as in the previous month, the highest this year on a monthly basis. Total estimated exited capital amounted to \$2.94bn, only a slight increase – 5% – over the October figure, estimated at \$2.8bn.

**Exits by month 2017**



Yixin Group, a China-based e-commerce marketplace operator spun out of automotive transaction services provider BitAuto, raised HK\$6.77bn (\$867m) in an IPO. The company issued almost 879 million shares on the Hong Kong Stock Exchange priced at the top of the IPO’s HK\$6.60 to HK\$7.70 range. Its stock opened at HK\$10 and briefly reached HK\$10.18 before closing at HK\$8.12, giving it a market cap of about \$6.54bn. Yixin runs an online marketplace for vehicles, and a financial services unit that provides leasing as well as financing for car purchases.

Bytedance, owner of news app Toutiao, acquired China-based social video app developer Musical.ly, giving an exit to mobile app developer Cheetah Mobile. According to various media sources, Bytedance agreed to pay between \$800m and \$1bn. Musical.ly has created a short-form music-based social video app aimed at a millennial user base. Users upload a 15-second clip of themselves lip-synching or engaging in some other activity accompanied by a popular song.

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

PPdai, a China-based online lending marketplace backed by trading and technology firm Susquehanna International Group, raised \$221m in a New York Stock Exchange flotation. The company issued 17 million American depository shares at \$13 each, below the \$16 to \$19 range it had previously set. Also known as Paipaidai, PPdai runs an online consumer loans marketplace with more than 48 million registered users, targeting borrowers between 20 and 40 years old that are underserved by traditional lenders, and more receptive to online activities.

Enterprise security software provider Proofpoint agreed to acquire US-based cybersecurity technology developer Cloudmark for \$110m, enabling communications technology provider Nokia and trading group Sumitomo to exit. The all-cash deal is expected to close soon, pending regulatory approval. On completion, Proofpoint will integrate Cloudmark’s threat telemetry and intelligence data into its Nexus platform, which powers its product portfolio. Founded in 2001, Cloudmark provides messaging security software to protect communications service provider networks and their subscribers.

Metamarkets, a US-based advertising technology developer backed by internet group Oath, was acquired by messaging app developer Snap for less than \$100m. Neither Metamarkets nor Snap officially confirmed the deal, which may not have closed yet. Founded in 2010, Metamarkets provides interactive advertising analytics tools for businesses to



## ANALYSIS

## Top 10 exits Nov 2017

Company	Location	Sector	Size	Type	Acquirer	Investors List
Yixin Group	China	Transport	\$867m	IPO	–	Baidu   Bitauto   China Orient AMC International   JD.com   Tencent   private investors
Musical.ly	China	Media	\$800m	Acquisition	Bytedance	Cheetah Mobile   DCM   GGV Capital   Greylock Partners   Qiming Venture Partners
Black Duck Software	US	IT	\$565m	Acquisition	Synopsys	Fidelity   Flagship Ventures   Focus Ventures   General Catalyst Partners   Intel   Red Hat   SAP   Siemens   Split Rock Partners
Ppdai	China	Financial services	\$221m	IPO	–	Legend Holdings   Lightspeed Venture Partners   Noah Private Wealth Management   Sequoia Capital   Susquehanna International Group
Cloudmark	US	IT	\$110m	Acquisition	Proofpoint	Ignition Partners   Industry Ventures   Nokia   Sumitomo   Summit Partners
Metamarkets	US	Media	\$100m	Acquisition	Snap	AOL   Founder Collective   IA Ventures   Khosla Ventures   True Ventures   Village Ventures   Wellington Financial   undisclosed strategic investors
SCPharmaceuticals	US	Health	\$90m	IPO	–	5AM Ventures   Lundbeckfond Ventures   OrbiMed   Pieter Muntendam   Sun Pharmaceutical Industries
Spero Therapeutics	US	Health	\$77m	IPO	–	Alphabet   Atlas Venture   GSK   Kraft Group   Lundbeck   Merck & Co   Osage University Partners   Partners Healthcare   Partners Innovation Fund   RA Capital   Rock Springs Capital
Aquantia	US	IT	\$61m	IPO	–	Cisco Systems   Credit Suisse   GlobalFoundries   Greylock Partners   Intel   Lightspeed Venture Partners   LSI   New Enterprise Associates   Paxion Capital Partners   Pinnacle Ventures   Rusnano   Venture Tech Alliance   Walden-Riverwood Ventures   Xilinx
Arsanis	US	Health	\$46m	IPO	–	Alexandria   Alphabet   Anna Maria and Stephen Kellen Foundation   Bill & Melinda Gates Foundation   EMBL Ventures   NeoMed Management   OrbiMed   Polaris Venture Partners   SV Health Investors

track the real-time performance of their marketing campaigns. Its clients include Oath, social media company Twitter and cross-device advertising platform Drawbridge.

SCPharmaceuticals, a US-based subcutaneous drug developer backed by pharmaceutical companies Sun Pharmaceutical Industries and Lundbeck, raised \$89.6m in an IPO. The offering consisted of 6.4 million shares issued on the Nasdaq Global Select Market at \$14 each, at the lower end of its \$14 to \$16 range. The company's shares closed at \$14.15, giving it a market capitalisation of about \$249m. SCPharmaceuticals is developing subcutaneously-administered drugs to treat conditions such as heart failure in more affordable environments than traditional hospitals.

Spero Therapeutics, a US-based biopharmaceutical company raised \$77m in an IPO. The company issued 5 million shares on the Nasdaq Global Select Market at \$14 each. The company counts a range of corporates among its backers, including Alphabet and health and pharmaceutical firms Partners Healthcare, GlaxoSmithKline, Merck & Co and Lundbeck. Founded in 2013, Spero is working on drugs that treat bacterial infections resistant to multiple therapeutics, by enhancing the spectrum and potency of existing antibiotics.

Aquantia, a US-based ethernet connectivity technology producer raised \$61.4m in its IPO on the New York Stock Exchange. The offering consisted of just over 6.8 million shares at \$9 each, below the IPO's \$10 to \$12 range. Previous corporate backers of the company include networking equipment producer Cisco Systems, semiconductor foundry GlobalFoundries, semiconductor and chip makers Intel and LSI as well as programmable logic equipment producer Xilinx. Founded in 2004, Aquantia develops and produces integrated circuits for high-speed ethernet communications, easing bottlenecks in network bandwidth caused by heavy internet traffic.

Arsanis, a US-based immunotherapy drug developer backed by Alphabet and research hub European Molecular Biology Laboratory, closed an IPO at \$46m. Founded in 2010, Arsanis is working on monoclonal antibody immunotherapies to treat serious infectious diseases. Its lead product candidate, ASN100, is being developed to treat the potentially fatal infection-based disease staphylococcus aureus pneumonia. ♦

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



# Turning Raw Data into Meaningful Insights

Global Corporate Venturing Analytics delivers corporate venture teams the data and tools they need to develop their insights and data-driven decisions.

## GCV Analytics Unique Features

- 8,000+ global CVC deals since January 2011 for you to analyse. It's the best global CVC data available.
- Quickly and easily create charts, maps and graphs to download to Excel or as a PDF - ideal for presentations and reports.

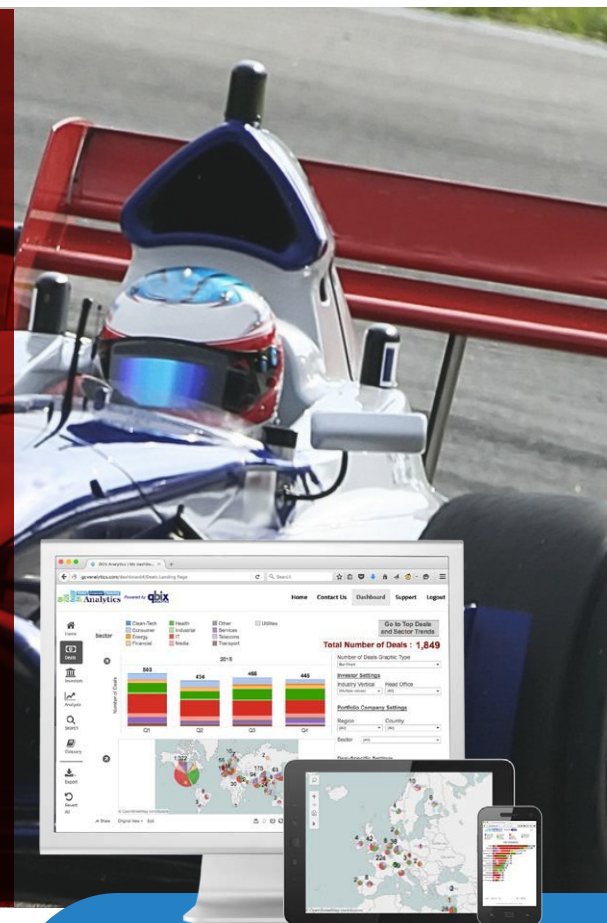


If you're an investor or a start-up, GCV Auto & Mobility Analytics can help answer the following questions:

- Who are the leading corporate VCs in automotive and mobility?
- How are the patterns of investment changing?
- Who are the new entrants?
- Which sub-sectors are attracting most capital?
- What is the region-by-region break-down?
- Who are the relevant decision-makers in the CVCs?
- What is the corporate venturing activity on a sub-sector basis?

## Key areas of focus include:

- > Autonomous driving
- > Car connectivity & cybersecurity
- > Car insurance
- > Driver assistance
- > Driving risk & safety management
- > Logistics, food and grocery delivery, other delivery services
- > Mapping, navigation & localisation
- > Sensors & LIDAR
- > Truck fleet telematics
- > Vehicle battery storage
- > Vehicle efficiency & equipment
- > Vehicle maintenance & repair



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