June 2019

Global Corporate Venturing

Symposium 2019: entering the age of turbulence

INSIDE

Contents

Global Corporate Venturing

Address:
3 Lower Thames Street,
London EC3R 6HE

Editor-in-chief: James Mawson
Email: *jmawson@globalcorporateventuring.com*

News editor: Rob Lavine
Email: *rlavine@globalcorporateventuring.com*

Analytics: Kaloyan Andonov
Email: *kandanov@mawsonia.com*

Supplements: Edison Fu
Email: *efu@globalcorporateventuring.com*

Contributing editor: Tom Whitehouse
Email: *twhitehouse@globalcorporateventuring.com*

Reporter: Robin Brinkworth
Email: *rbrinkworth@globalcorporateventuring.com*

Reporters: Jack Hammond, Callum Cyrus

Chief operating officer: Tim Lafferty
Tel: +44 (0) 7792 137133
Email: *tlafferty@globalcorporateventuring.com*

Production editor: Keith Baldock

Website: *www.globalcorporateventuring.com*

EDITORIAL

Fresh opportunities for corporate venturers

James Mawson, editor-in-chief

There is a video online of two buck antelopes fighting before the tussle is broken up by the arrival of a lion, representing corporates rivalling each other while being unaware of external forces. It raised a few knowing laughs at last month's GCV Symposium in London, from the corporate venturers trying to alert their C-suite and business units about the issues swirling around the parent company.

These issues are affecting management – 17.5% of CEOs at the world's 2,500 largest companies stepped down last year, a record in the 19 years of consultancy PwC's survey of corporate leaders, and corporate venturers have to cope with management change to provide a consistent platform and team supporting entrepreneurs. By now, more than 200 corporate venturing units have more than a decade's experience, so the overall experience in the industry has never been better.

This wisdom will be needed. Trade rules are shifting, with protectionism and mercantilism rearing their heads. Nascent issues could also surface around whether loss-making venture-backed companies offering cheap goods could face the same extra tariffs that, say, steel has done in the past. The use of data gained by Chinese and US companies from users in other countries is something the next president of the EU could well look at.

All this can, however, be an opportunity for CVC leaders. As risk factors increase, so do their responsibilities to act as scouts for their parent companies.

> More than 200 corporate venturing units have more than a decade's experience, so the overall experience in the industry has never been better

Speaking at the symposium, Max Fowinkel and William Janeway, respectively managing director and special limited partner at private equity firm Warburg Pincus, discussed how corporate venturing funds could make returns in a more difficult economic environment, and of institutional investors moving away from supporting cash-burning businesses, such as ride-hailing services Uber and Lyft, in the wake of their initial public offerings.

Janeway said the "distinct investment environment" is entering a second decade of real risk-free interest rates of negative-to-zero levels. He said institutional investors still dominated the investment space, and their need for return was driving models of behaviour that have never been seen in professional venture capital.

He added: "It has created this extraordinary environment where startups not only have the opportunity to burn humongous amounts of cash, but when tested, as electric carmaker Tesla is being tested right now, have no plausible path to positive cashflow from operations."

Due to low interest rates and the assumption that they will always be able to raise capital even without positive cashflow, Fowinkel said companies could get away with saying they did not expect their business to be profitable for a long period of time, and suggested that some were taking that assumption for granted. "We always look to make sure we do not get into funding a company based on the assumption that someone else is going to fund the company in the future, because it can go wrong," he added.

Janeway said: "It does not matter where the venture starts, everyone needs to have an evolving, working and operating plan as to how we get positive cashflow." He told the audience the risks of this environment are actually "very positive" for corporate venture capital and venturers could maintain the continuity of a strategic investing process.

More recently, said Janeway, startups had predominantly been purchased by corporates, as opposed to taking the IPO route. "In that environment, corporate venture capitalists' roles as scouts for market research and for entrepreneurial talent can be an asset that transcends the financial return to be delivered to the corporate."

Tony James, eminence grise at private equity firm Blackstone, looking back on 2007, said: "Because when everything feels good and you cannot see any problems, historically you have been near a peak. It is not that you see problems coming. You never see problems coming at that point, or no one would be giving you 10-times leverage."

He added: "There are no clouds on the horizon. What you see is too much exuberance, too much confidence, people taking risks that in the last 145 years would not have made sense. What you say is, this feels like a bubble."

Next month's issue will have a special data report on the past five years' record-breaking period of large rounds of at least $100m that have driven the innovation capital ecosystem and corporate venturing's role, and considers whether a turning point has now been reached. Insights are most welcome to *jmawson@mawsonia.com*. ◆

NEWS

Jungle Ventures jumps to $175m for third fund

Singapore-based venture capital firm Jungle Ventures has reached a $175m first close for its third fund, with commitments from limited partners including networking technology producer Cisco, TechCrunch reported.

Other investors were Singaporean state-owned investment firm Temasek, the International Finance Corporation, the private sector arm of the World Bank, and DEG, a subsidiary of development bank KfW. Cisco invested through its Cisco Investments unit.

Jungle Ventures expects to close the fund at $220m, sources told TechCrunch. The fund will be more than double the size of its predecessor, which reached a $100m final close in 2016. In addition to backing Southeast Asian startups, the third fund will explore investments in India and internationally. It has already completed five deals.

MRCF impresses with $148m for fifth vehicle

Australian government-backed healthcare investment vehicle Medical Research Commercialisation Fund (MRCF) has raised A$210m ($148m) from limited partners including biotech producer CSL for the first close of its fifth fund. Investors include MRCF's existing investors – the Australian government and pension fund managers AustralianSuper, Hesta, Statewide and Hostplus.

Like its predecessors, MRCF5 will be managed by venture capital firm Brandon Capital Partners, which is now courting institutional investors for a targeted final close of up to A$250m. It will back early-stage medical research associated with its network of Australian and New Zealand-based research institutions and hospitals.

Corporates push Pangaea to $70m close

Canada-based venture capital firm Pangaea Ventures reached a C$95m ($70m) final close for its fourth advanced materials fund, having sourced commitments from several corporates, among them chemicals producers Mitsubishi Chemical Holdings, Shin-Etsu, Sekisui and Tosoh, petrochemical product manufacturers JSR and PPT Global, consumer goods provider Henkel and semiconductor technology supplier Lam Research.

Other backers are apparel and footwear producer Adidas, diversified conglomerate Doosan, ceramics product maker CoorsTek, steel, energy, mining group Severstal, credit union VanCity and investment firm Kensington Capital Partners' BC Tech Fund.

Pangaea targets advanced materials technology developers in the energy, electronics, health and sustainability sectors. The new fund has completed six investments and the firm expects to add up to eight more.

Toyota AI Ventures turns key on $100m second fund

Toyota AI Ventures (TAIV), a US-based corporate venture capital vehicle owned by Japan-headquartered carmaker Toyota, has launched a $100m second fund.

The unit invests in innovative technologies that could inform the future of transport, such as artificial intelligence, autonomous mobility, big data, robotics and cloud software.

It also put out last year what it refers to as a "call for innovation", inviting seed-stage robotics hardware and software startups to apply for up to $2m in funding.

SoftBank Vision Fund moots spinout or IPO

Japan-based telecoms and internet group SoftBank is considering spinning out its $98.6bn SoftBank Vision Fund in an initial public offering, according to the Wall Street Journal.

The prospective IPO is one of several options for the vehicle, another being the raising of a second fund that would also have a projected $100bn close. SoftBank has also entered talks with the sultanate of Oman over a multibillion-dollar commitment to its next fund, according to the Wall Street Journal. A source confirmed to Reuters that it had spoken to banks about raising a second fund as well as a possible IPO.

The fund, which generally targets artificial intelligence technology and online service providers, has spent its capital quickly and is reportedly considering raising another $15bn alongside possible debt financing and requests that its investors waive immediate loan repayments.

The fund, managed by SoftBank Investment Advisers, is also looking to double its headcount to 800 in the next 18 months to two years, according to SoftBank CEO Rajeev Misra.

NEWS

BRI brings up to $100m for VC arm

Indonesia-based financial services firm Bank Rakyat Indonesia (BRI) is to form a venture capital unit equipped with between $70m and $100m, DealStreetAsia has reported.

BRI will build the vehicle around the VC firm Bahana Artha Ventura (BAV). It bought a 35% stake in Bahana Artha Ventura in late 2017 before increasing its share to 97.6% in December last year, acquiring a regulatory licence from Indonesian regulators in April.

BRI Ventures will invest in startups developing technology of strategic interest to its parent company. It has reportedly brought in experienced venture capitalists and has entered talks with prospective portfolio companies. The bank is being helped in the establishment of the unit by MDI Ventures, the corporate venturing arm of telecoms firm Telkom Indonesia, sources told DealStreetAsia.

Natura retains $5m for startup investments

Brazil-headquartered cosmetics manufacturer Natura plans to make up to $5m available for North America and Europe-based beauty and wellness startups, according to Reuters.

The corporate will invest through venture capital funds, the first of which will be Dynamo Beauty Ventures. Founded in 1969, Natura develops and sells cosmetics such as make-up, moisturisers, perfumes, soaps, oils, shaving creams and deodorants in Latin American countries and France.

Drone Fund drives second vehicle to $47m

Drone Fund, a Japan-based investment fund targeting drone-focused startups, has raised ¥5.2bn ($47.3m) for its second fund. Investors include several corporates.

Returning investors from the first fund included engineering consultancy Japan Asia Group, price data aggregator Oak Fan, education provider Leave a Nest, internet company Digital Garage's DG Incubation subsidiary, financial services firm Bank of Fukuoka's FFG Venture Business Partners unit, Mistletoe Venture Partners, and Canal Ventures, systems integrator Nihon Unisys' investment arm.

New investors include agricultural equipment producer Kobashi Kogyo, price comparison platform Aucfan, telecoms firm KDDI, marketing group Dentsu, entertainment group Sega Sammy, film studio Shochiku, brokerage Daiwa Securities, Mizuho Bank, KSK Angel Fund, the founding family of motor manufacturer Mabuchi Motor, natural gas producer Saibu Gas, internet group GMO Internet, financial services firm Orix, map publisher Zenrin, online recruitment firm En-Japan, entertainment group Avex, Japan Post Capital and Tepco Ventures, respective subsidiaries of postal service Japan Post and energy utility Tokyo Electric Power.

Target finds startups for 2019 accelerator

US-headquartered big-box retailer Target has chosen nine startups for this year's accelerator, which it runs in partnership with Germany-based grocery chain Metro, the Minneapolis/St Paul Business Journal has reported.

Metro Target Retail accelerator was launched in 2016 to work with retail-focused startups. Each participant in the three-month initiative will receive $120,000 from Target and Metro. The startups include supply chain platform developer Afresh Technologies, audio-based payment technology developer Lisnr, inventory software provider Shelfbucks, autonomous electric vehicle developer Einride, loyalty scheme operator UniteNotes, customer insights software developer Perksy, instalment payment service Sezzle, identification software provider Idee and retail software producer CB4.

Target has also chosen eight startups for its new incubator. They will each receive a $10,000 investment during the eight-week course. Participants are social network operator Trill Project, sustainable packaging producer Terravive, children's doll maker Mickey's Mission, food supplier Pulp Pantry, workforce management platform Symba, drug-testing napkin developer KnoNan, garment maker Dressmate and farming exports platform Blue Mangoes.

DeNA deploys evergreen corporate venturing vehicle

Japan-based internet company DeNA is to set up an evergreen investment fund expected to be about ¥10bn ($91.2m). The fund is set to begin operating in the summer. DeNA plans to set up a subsidiary to manage the fund. DeNA largely participates at seed and series A stage, but has not revealed a new investment for about 18 months. The new fund is intended to enhance the startup and innovation ecosystem in Japan, and to support intrapreneurship among employees of DeNA as well as external entrepreneurs. It will fund startups from pre-seed stage through follow-on rounds.

NEWS

Unshackled Ventures unsheathes $20m second fund

US-based venture capital firm Unshackled Ventures has raised $20m for its second fund from investors including Bloomberg Beta, media company Bloomberg's data-focused investment arm. Other commitments came from AME Cloud Ventures, the investment vehicle of internet company Yahoo co-founder Jerry Yang, social impact organisation Emerson Collective and Brad Feld, managing director and co-founder of VC firm Foundry Group.

Unshackled Ventures was launched in 2015 and concentrates its investments in companies founded by immigrants, and migrants on student or work visas. It provides visa support as well as capital and had raised $3.5m for its first fund. The firm has backed 31 portfolio companies and conducted 80 immigration filings.

FIS Fintech Accelerator finalises fourth cohort

FIS Fintech Accelerator, run by banking technology provider Fidelity National Information Services (FIS) with fintech-focused accelerator operator Venture Centre and the US state of Arkansas, has selected its fourth cohort for a 12-week scheme to cultivate their ideas.

The 10 finalists include banking platform developer Digital Onboarding, financial marketing and compliance software provider Gremlin Social, transnational payroll system developer Sendmi, student loan repayment facilitator ChangeEd and social trading app operator Voleo, regulatory compliance analytics software provider Neener Analytics, health risk analysis platform Genivity, credit gamification system developer Curu, internal communication security system provider Highside and personal finance strategy app developer Mimble made up the batch.

Participants are supported by mentors from FIS and Venture Centre. They will each receive $75,000 with the possibility of about $300,000 of follow-on capital.

Suning partners Yunfeng for $2.5bn fund

China-based retail group Suning is to provide up to $210m for a fund being raised by China-based private equity firm Yunfeng Capital with a $2.5bn target, according to a regulatory filing. Suning will invest through wholly-owned subsidiary Suning International. The fund, Yunfeng Investment III, is seeking additional investors.

Founded in 1990, Suning is the biggest retail store operator in China, specialising in consumer electronics, household appliances and office equipment, and operates both bricks-and-mortar stores and an e-commerce platform. Suning previously partnered Yunfeng, which was co-founded by e-commerce firm Alibaba's founder, Jack Ma, committing $50m to Yunfeng IK Co-Invest in January this year. In April, Suning joined forces with securities firm Guoati Junan Securities' private equity division, Guojun Capital, to launch a $1.5bn fund of funds targeting advanced equipment manufacturing, IT, healthcare and renewable energy.

First Movers invites applications

Japan-based venture capital firm Samurai Incubate's corporate-backed sixth fund is inviting applications for the second batch of First Movers, a three-month incubation scheme.

Samurai Incubate's sixth fund attracted investment from rail operator Keikyu, insurance provider Mitsui Sumitomo Insurance, logistics provider Seino Holdings, air conditioner producer Daikin, syringe maker Maeda, retail group Marui and financial services firm Mizuho Bank, through its Monoful telematics arm. Experts from the corporates will join the scheme as mentors.

Participants in First Movers will form businesses through two phases – idea creation and lean validation – covering logistics, healthcare, retail technology, fintech, construction and mobility as a service. The first edition, in January this year, selected 17 from 75 applications. Five will eventually receive between ¥3m ($27,000) and ¥5m in seed capital, with possible additional funding in the following phase.

Telkom Indonesia and Singel launch $40m fund

Telkomsel, the mobile network subsidiary of Indonesia-headquartered telecoms company Telkom Indonesia, has launched a $40m VC fund in collaboration with Singapore Telecommunications, Business Times reported. The fund was formed jointly by the companies' corporate venturing units – MDI Ventures and Singtel Innov8 – and will be managed by Telkomsel Mitra Inovasi, a new corporate venturing arm of Telkomsel tasked with managing investment funds and fostering collaboration with Telkomsel businesses. The fund will target startups with the potential to collaborate with Telkomsel, providing access to the company's ecosystem and assets.

NEWS

Universal Display lights up venture arm

Universal Display Corporation, a US-based developer of organic light emitting diode (OLED) technologies and materials, has established corporate venturing arm UDC Ventures.

Founded in 1994, Universal Display supplies OLED technologies and phosphorescent materials for the displays of consumer electronic products. UDC Ventures will invest from seed stage to later growth stage, focusing on areas such as OLED, organic electronics, displays, lighting and materials science technology. Each portfolio company will have the opportunity to partner Universal Display, tapping the company's expertise in intellectual property licensing, materials development and manufacturing, and accessing the corporate's technology experts.

UDC Ventures has hired Josh Epstein, formerly managing director for investment bank Stifel Financial, to lead the unit as managing director. During his nine-year stint at Stifel, he focused on the semiconductor, capital equipment, optical, technology manufacturing and industrial technology sectors.

Nabard sows $99m for investment fund

Nabventures, the investment arm of the Indian government-owned National Bank for Agriculture and Rural Development, is aiming to raise up to Rs7bn ($99.4m) for a venture capital fund, the Hindu has reported.

The bank will anchor the fund, which has reached its first close. It is focusing on startups developing technologies in agriculture, food and rural development. The vehicle has a proposed target of Rs5bn but has a greenshoe option in place, meaning up to Rs2bn of additional capital can be added. Nabventures was launched in December 2018. Its funding is intended to help improve local ecosystems and rural livelihoods, facilitating support for rural entrepreneurs from impact investors and public sector bodies, with a focus on early to mid-stage rounds.

The bank has also established at least two India-based incubators for agriculture products, and has committed a total of almost $40m to 16 alternative investment funds, according to the Hindu.

JG Summit pages startups with $50m fund

Diversified Philippines-based conglomerate JG Summit Holdings has launched $50m corporate venturing fund JG Digital Equity Ventures to invest in startups in Southeast Asia that can link to JG Summit's existing businesses. It is exploring opportunities in the consumer, new media, data, logistics, financial services and digital health sectors.

The fund will provide between $1m and $10m per company and intends to invest at series A and B stage. BJ Sebastian, who moved from chief strategy officer of JG Summit to head of its digital and strategic investments group in September 2018, is leading the fund as CEO.

The unit's other key figures are chief operating officer Ian Estrada, chief technology officer Caesar Morata and chief financial officer Mara Utzurrum. It will collaborate with an investment committee headed by JG Summit president and CEO Lance Gokongwei.

Gree Ventures greets $137m third fund

Gree Ventures, the corporate venturing arm of Japan-based digital media company Gree, has reached the first close of its fund Strive III, which it intends to close at ¥15bn ($137m).

General partners Yusuke Amano and Tatsuo Tstutsumi will run the fund with Singapore-based partner Nikhil Kapur. Investors include Gree, financial services firm Mizuho Bank and its corporate venturing unit Mizuho Capital, and state-backed entity SME Support Japan. Strive III will provide early-stage funding for business-to-business technology developers. It has already invested in Japan-based identity confirmation platform provider Trustdock and India-based education management app developer Classplus. It is seeking capital from investors in Southeast Asia and India, with a view to exploring the local ecosystems.

Ubisoft Entrepreneurs Lab swings to Singapore

France-headquartered video game producer Ubisoft plans to launch the fourth edition of its six-month Ubisoft Strategic Innovation Lab accelerator in Paris and has announced a new venture in Singapore.

Applicants for the Paris scheme will be selected from global developers of blockchain and extended entertainment services. Participants will receive advice from Ubisoft professionals on areas including communications, finance, marketing and hard tech. The company is also to launch Ubisoft Entrepreneurs Lab in Singapore at the city's innovation hub Pixel, which is run by the Singaporean government's Infocommunications Media Development Authority.

NEWS

Booking Booster Program picks 10 finalists

Booking Booster Program, a three-week Netherlands-based accelerator run by US-headquartered travel booking platform Booking.com, has selected 10 startups for its third edition. The initiative helps 10 emerging companies with business development each year. Booking.com professionals will mentor participants throughout the year, and finalists are entitled to endowments from its €2m ($2.2m) fund.

Australia-based sustainable utilities technology developer Okra Solar and Colombia-based experiential travel agency Impulse Travel ranked top and have received aboout $450,000 each. India-based immersion tourism operator NotOnMap and Netherlands-based automated drone developer Avy secured $280,000 and $220,000 respectively, while Nepal-based hiking training provider Sasane Sisterhood Trekking and Travel, and Malaysia-based halal catering service Picha Eats each received $200,000.

The scheme also awarded $110,000 each to Australia-based ethical immersive tourism provider Clean Travel, France-based water resources manager Hydrao, Netherlands-based local tour platform developer I Like Local and Indonesia-based hotel and restaurant facilities operator Sumba Hospitality Foundation.

Corporates coax third MD Start to close

France-based venture capital firm Sofinnova Partners has closed its MD Start III fund at €48m ($53.5m) having raised cash from investors including medical device makers Medtronic and LivaNova, pharmaceutical company Baxter Healthcare, public investment bank BPIFrance's French Tech Acceleration fund and the EU's European Investment Fund.

Sofinnova created MD Start in 2009 in tandem with entrepreneurs Tim Lenihan and Gérard Hascoët to seed and accelerate early-stage medical device startups. MD Start sources medical systems when they are at the stage when they are ready to provide the basis for startup companies, and supplies funding in addition to the resources required to take them to the clinical testing stage. It is now being managed by Anne Osdoit, a partner at Sofinnova Ventures.

UnityPoint Health assembles $100m fund

US-based healthcare provider UnityPoint Health has formed investment vehicle UnityPoint Health Ventures Innovation Fund with $100m.

UnityPoint Health's health system encompasses 32 hospitals and home care services across nine local regions in the states of Iowa, Illinois and Wisconsin. The fund will focus on early-stage companies in digital health, medical devices, therapeutics and healthcare services. Beyond investing, it will seek to connect its portfolio to its parent's network of clinical and operational staff to test and scale technologies.

The unit is led by Kent Lehr, vice-president of strategy and business development at UnityPoint Health, and Matthew Warrens, the company's managing director of innovations.

EV Growth expands first fund to $200m

EV Growth, a Singapore-based joint venture by conglomerate Sinar Mas, internet company Yahoo Japan and venture capital firm East Ventures, has closed a $200m investment fund, Business Times reported.

Telecoms conglomerate SoftBank, growth equity firm Pavilion Capital and asset manager Indies Capital contributed to the fund alongside unnamed additional regional investors. It was oversubscribed from its initial target of $150m.

EV Growth was formed in March 2018 by Sinar Mas Digital Ventures and YJ Capital, respective corporate venturing subsidiaries of Sinar Mas and Yahoo Japan, together with East Ventures. Yahoo Japan is itself a joint venture between SoftBank and US-based internet company Yahoo. EV Growth is led by three partners – Sinar Mas Digital Ventures managing partner Roderick Purwana, YJ Capital CEO Shinichiro Hori and Willson Cuaca, managing partner of East Ventures.

Union Bank to unite fintech startups with $9m

Financial services firm Union Bank of the Philippines has set aside P500m ($9.6m) a year to incubate and invest in fintech companies through innovation subsidiary UBX Philippines, the Inquirer has reported.

The bank set up UBX late last year to digitise its traditional banking business and discern new banking models, including financial inclusion for remote communities by linking rural banks to the national banking system through a blockchain-powered payment scheme. UBX's first corporate venturing deal was acquiring 30% of digital logistics platform operator Shiptek Solutions for an undisclosed amount.

NEWS

Reality Accelerator realises $6.7m for first fund

Japan-based venture capital firm and accelerator program Reality Accelerator has reached a ¥730m ($6.7m) close for its first fund, having received commitments from multiple corporates, including Asahi Media Lab Ventures and So-net Media Ventures, corporate venturing arms of beverage producer Asahi and electronics producer Sony's So-net internet service subsidiary respectively, as well as data security technology provider Eltes and retailer Marui Group. They were joined by VC firm Future Venture Capital, an undisclosed additional corporate backer and two angel investors. Founded in 2017, Reality Accelerator focuses on seed and early-stage investments in developers of software-as-a-service and artificial intelligence technologies, typically providing between $90,000 and $275,000 per company.

SoftBank prepares second AI-focused fund

Deepcore, an artificial intelligence-focused fund owned by Japan-based telecoms conglomerate SoftBank, is looking to raise more than ¥6bn ($55m) for its second fund, Bloomberg has reported.

The firm plans to launch the fund in the next three years, with investments targeting seed and early-stage artificial intelligence startups in Japan, chief executive Katsumasa Niki told Bloomberg. Deecpore was formed as an incubator in February 2018.

Corporates to help feed $100m to Israeli startups

Israel-based food provider Tnuva Food Industries and beverage producer Tempo Beverages has joined equity crowd-funding platform operator OurCrowd and venture capital firm Finistere Ventures to launch a food-focused investment consortium.

The four will invest up to $100m in Israeli food and agricultural technology startups, but it remains unclear whether the money will be invested through a dedicated fund or whether the partners will invest directly. The group will focus on the food and beverage sector, ranging from alternative proteins and nutritional value improvements to companies working on functional ingredients and increasing supply chain efficiency.

Portfolio companies will benefit from the knowledge and resources of the partners, accessing guidance on technology and business development, due diligence, team building, early-stage funding and food production and marketing. Startups could also tap the corporates' industry networks, which include food and beverage producers such as PepsiCo, Bright Food, Heineken and Nutrien.

The partnership follows the creation of a foodtech incubator in the northern city of Kiryat Shemona by Israel's Ministry of Economy. Tnuva, Tempo, OurCrowd and Finistere are also bidding to operate the incubator, which will form part of a larger innovation hub.

HTGF bags another investor for $375m close

Germany-based public-private partnership High-Tech Gründerfonds (HTGF) has secured €3m ($3.5m) from the co-founders of backpack and fashion label Fond Of to close its third corporate-backed fund at $375m.

Founded in 2005, HTGF backs early-stage startups and typically provides up to $3.5m per portfolio company, though it has the option to supply more capital to promising opportunities. It has backed more than 540 startups to date and celebrated more than 100 exits. Investors include 32 corporate backers as well as Fraunhofer Society, development bank KfW and Germany's Federal Ministry for Economic Affairs and Energy.

The corporates include pharmaceutical firm Boehringer Ingelheim's corporate venturing subsidiary, Boehringer Ingelheim Venture Fund, pharmaceuticals and chemicals producer Bayer, maritime industry group Wilh and conglomerate Werhahn.

The fund was specifically reopened for Fond Of's co-founders, and HTGF has joined XDeck, an accelerator set up by Fond Of that will welcome its first cohort next year at a purpose-built facility in Cologne. It will focus on the consumer, commerce and digital technology sectors.

Salesforce fires up $125m Europe Trailblazer Fund

Salesforce Ventures, the corporate venturing arm of cloud enterprise software provider Salesforce, has launched a $125m fund that will invest in Europe-based startups. Europe Trailblazer Fund will back developers of cloud enterprise technologies at assorted stages of growth. In 2015, Salesforce allocated $100m to be invested through Salesforce Ventures, and it has since built a portfolio of 50 European companies.

NEWS

SoftBank Vision Fund to double its staff

The SoftBank Vision Fund, the $98.6bn vehicle operated by Japan-headquartered telecoms and internet group SoftBank, plans to double its headcount from about 400 to 800 in the next two years. The fund's initial offices were in the UK, Japan and California, but it has since begun building teams in China and India.

SoftBank is also putting together a $5bn fund that will invest in Latin American startups. The Vision Fund has committed about 70% of the capital, Bloomberg has reported.

The increase in staff is likely to precede the raising of a second fund, for which SoftBank will probably seek capital from the same Middle Eastern sovereign wealth funds that backed the first, though it has not revealed when it intends to begin that process.

Northwestern Mutual forges $150m second fund

US-based life insurance provider Northwestern Mutual has committed another $150m to corporate venturing vehicle Northwestern Mutual Future Ventures Fund II, providing between $500,000 and $5m to startups. The unit intends to invest initially at series A and B stage, and is targeting companies developing consumer finance, digital health, customer experience and data analytics technologies.

Saiprasad makes way to Mayfield Fund

Priya Saiprasad has left her position as principal at M12, the corporate venturing arm of US-based software producer Microsoft, for a venture investor role at VC firm Mayfield Fund, which focuses on early and growth-stage developers of consumer and enterprise technologies. It co-invested with M12 in customer engagement software developer Outreach's series C, D and E rounds.

Saiprasad was a founding member of M12 in September 2016 and oversaw investments in business-to-business software providers. Her departure follows that of Elliott Robinson, a former partner at M12, in April. Saiprasad's role at Mayfield will focus on investments in artificial intelligence and analytics-focused enterprise technology providers.

McGrath marches on to Mach49

Steve McGrath, a former executive at oil producer Shell's corporate venturing unit, Shell Ventures, has joined Mach49, a US-based startup incubator that devises internal innovation mechanisms for corporate clients.

Mach49 hired McGrath as senior vice-president and Asia-Pacific managing director. He will help Asia-Pacific-based corporations form venture funds.

McGrath helped establish Shell Ventures in 2017 and headed its North America branch for two years while also launching and leading its Asia-Pacific activities. He oversaw activities in the mobility sector worldwide.

Before Shell Ventures, McGrath was a director of DFMSim, a US-based semiconductor simulation technology developer he co-founded, from 2005 until it was acquired by semiconductor technology producer Applied Materials in 2016.

Harmsen snags Saint-Gobain Nova role


Harmsen

Sven Harmsen left his position as investment director at M Ventures, the corporate venturing vehicle of Germany-based pharmaceutical firm Merck Group to join Nova, France-based glass maker Saint-Gobain's strategic investment arm, has as director of external ventures. Harmsen joined Merck in 2016 to help set up and lead M Ventures.

Hanika wades into Wind River

Frederic Hanika has left his position as US-based head of M&A and corporate ventures for Germany-headquartered enterprise software provider Software to move to US-based industrial internet-of-things (IoT) software producer Wind River as senior vice-president of corporate development.

Wind River was an IoT-focused subsidiary of semiconductor and data technology provider Intel from 2009 until April 2018 when it was divested to TPG Capital, a subsidiary of private equity group TPG. Hanika joined Software in 2006 and held several Germany-based senior positions managing M&A.

NEWS

JLL Spark triggers Wittman hire

Eric Wittman, formerly chief operating officer at web interface design software developer Figma, has joined JLL Spark, US-based property manager JLL's corporate venturing arm, as chief growth officer.

JLL established Spark in 2017, providing it with $100m to invest in real estate and property management technology developers. The new role of chief growth officer will involve Wittman joining Spark's established growth team and implementing strategies to help portfolio companies expand using JLL's resources. Figma hired Wittman in January 2017, and he built the company's senior management team and client base.

Course reaches Shell Ventures


Course

Andrea Course has left US-based oil and gas services provider Schlumberger to join Shell Ventures, petroleum producer Shell's corporate venturing vehicle, as a venture principal. Course had spent about 18 months in a similar position at Schlumberger.

Intel managing director Larson to retire


Larson

Keith Larson, vice-president and managing director of semiconductor and data technology producer Intel's corporate venturing subsidiary, Intel Capital, has retired. Larson joined Intel Capital in 1996 and is one of five voting executives on the investment committee responsible for approving all the unit's investments. Before joining Intel, he was a general partner at venture capital firm InterVen Partners for some years up to 1994, having previously been a chief financial officer and controller at First Interstate Capital.

Hain hurries to Vattenfall venture post

Alexander Hain has left his position as head of Wincubator, Germany-based water pump system maker Wilo's corporate innovation subsidiary, and joined Sweden-headquartered energy company Vattenfall as senior venture development manager. He will help devise innovative business models for Vattenfall in renewable energies, digitisation and decentralised energy generation through the Germany-based open innovation platform, Greenfield, which was launched by the company in November 2016. Greenfield funds and mentors startups focusing on sustainable energy, big data and digital consumer technologies.

Parikh parks herself at Wells Fargo

US-based financial services firm Wells Fargo has hired Mansi Parikh to oversee strategic venture investments. She came from electronic payments processor Verifone where she was director of global business and corporate development.

Before that, she worked for Wells Fargo Securities, the capital markets and investment banking services arm of Wells Fargo, where she was an investment banking analyst for more than three years as part of its technology, media and telecoms group.

Wells Fargo conducts corporate venturing through its internal investment arm, Wells Fargo Strategic Capital. In addition to its venturing activities, the bank has a cleantech-focused joint initiative with the US Department of Energy – Wells Fargo Innovation Incubator.

Healthineers prompts Siemens' Pompl to new role

René Pompl has left his position as principal at Next47, a corporate venture capital vehicle for Germany-based industrial equipment and appliance producer Siemens, to be manager of venture technology at Siemens' medical technology subsidiary, Healthineers. Its digital incubator targets companies developing precision medicine and care delivery technology. Pompl joined Next47 in June 2018 after spending two years heading Siemens' Tel Aviv innovation hub in Israel. Siemens originally hired him in early 2014 as a senior innovator at its cleantech-focused Technology to Business Centre accelerator in Germany.

NEWS

Kevrekian seizes CVS Health promotion

US-headquartered pharmacy chain CVS Health has promoted its corporate development and venture investing team's senior director, Gregor Kevrekian, to executive director.

Kevrekian was a senior director at medical insurance provider Aetna for almost three years, moving to the same position at CVS when it acquired Aetna for $78bn in November 2018. His role at Aetna involved leading mergers and acquisitions, divestitures and joint venture deals, and conducting early-stage investments through corporate venturing unit Aetna Ventures.

Cowan cues up Venadar CEO role

US-based corporate venturing advisory firm Venadar has appointed its chairman, Keith Cowan, as chief executive, replacing Mark Kaiser, Vendar's founder, who will remain as vice-chairman and adviser.

Founded in 2005, Venadar has helped more than 40 corporate clients to conduct corporate venturing through strategic and transactional advice. Cowan has been CEO of strategic advisory firm Cowan Consulting since 2013, having come from telecoms and internet conglomerate SoftBank's US-based telecoms business, Sprint, where he was president for five years. His role at Sprint involved Cowan taking part in strategic planning and corporate development, and he was involved in SoftBank acquiring an 80% stake in 2017.

Rothenberg runs from Eventbrite to Defy

Brian Rothenberg, formerly vice-president of growth for event ticketing and technology platform developer Eventbrite, has joined US-based venture capital firm Defy Partners as a partner.

Rothenberg joined Eventbrite in 2013 and oversaw global revenue, managing various departments such as finance, marketing and engineering. He had a six-month stint as chief marketing officer before becoming a vice-president.

Defy focuses on series A deals with a ticket size of $3m to $10m, having raised a $262m second fund in April. Its portfolio companies include developers of logistics, internet-of-things and fintech software. Rothenberg was previously an angel investor and scouted deals for VC firm Sequoia Capital.

Lecarpentier lands new role at ServiceNow

US-based enterprise software provider ServiceNow's corporate venture capital subsidiary, ServiceNow Ventures, has hired Claire Lecarpentier as a corporate strategy manager. She moves from US-based financial services firm JPMorgan, where she was a strategic investor in early to growth-stage cloud-based software developers. She will do the same job for ServiceNow Ventures. ServiceNow formed its corporate venturing unit in September 2016 and also runs a startup competition called CreatorCon Challenge.

Rohit Dave to run WeWork Creator Fund

US-based co-working space provider WeWork has promoted senior director and head of M&A Rohit Dave to vice-president and head of its corporate venturing unit, Creator Fund. He will remain head of M&A, a role he has held since May 2018. He came previously from enterprise software producer Twilio, where he spent almost two years as senior manager of corporate development, partnerships and investment subsidiary TwilioFund.

WeWork Creator Fund was set up in October 2018 and has since backed startups developing technologies focused on the future of work. WeWork also conducts M&A deals, and launched accelerator WeWork Labs in April to invest $1m in 10 foodtech startups.

Ahrens arrows to Deutsche Bank

Germany-headquartered financial services firm Deutsche Bank has hired Gil Ahrens as its US-based head of venture capital and emerging growth company coverage.

Ahrens comes to the bank after two years in a similar role at Wells Fargo Securities, the capital markets and investment banking services arm of US-based financial services firm Wells Fargo. During his time there, he collaborated with technology, media and telecoms startups on behalf of its technology investment banking group.

NEWS

Analysis: Beyond Meat cuts a $251m IPO

Kaloyan Andonov, reporter, GCV Analytics

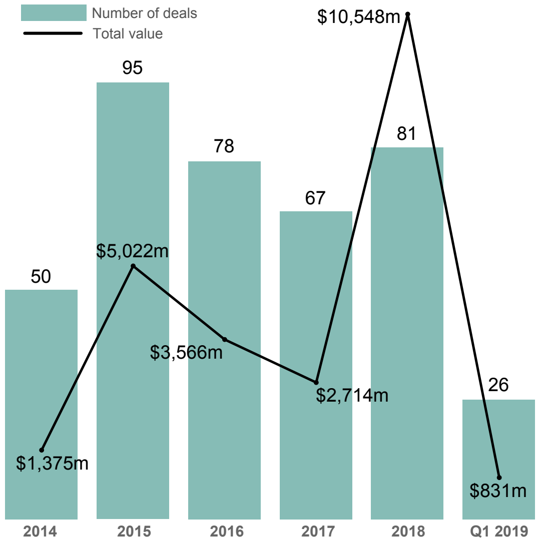
US-based alternative meat developer Beyond Meat, which had among its backers food producers General Mills and Tyson Foods, floated in an IPO of roughly $241m on the Nasdaq Global Select Market.

Beyond Meat issued more than 9.6 million shares at $25 each, at the top of its price range. The company had raised the price range of its offering from $21-$23 per share to $23-$25. General Mills committed capital through its strategic investment arm, 301. Tyson Foods had already exited before the IPO. Tyson held a 6.6% stake but reportedly divested because of friction when Tyson announced it would develop its own meat-free products.

Founded in 2009, Beyond Meat develops and supplies plant-based substitutes for beef, pork and poultry meats. Its most renowned product is the Beyond Burger, which has taste and texture similar to ground beef and is being distributed to both supermarkets and restaurants. Beyond Meat almost tripled its revenues to $87.9m up to 2018, reducing net losses to $29.9m. The IPO proceeds will go to streamlining production facilities, research and development, and marketing.

This IPO is in the broader emerging food and beverage space, which has been of great interest to corporate investors. According to GCV Analytics data, this subsector registered a surge of corporate-backed deals in 2018, with 81 rounds worth an estimated total of $10.55bn, up from the 67 worth $2.71bn in 2017. Food and beverage had already recorded 26 deals in the first quarter of this year. ◆

Corporate-backed rounds in food and beverage enterprises 2014-19



Analysis: SoftBank passes $419m to PayPay

Kaloyan Andonov, reporter, GCV Analytics

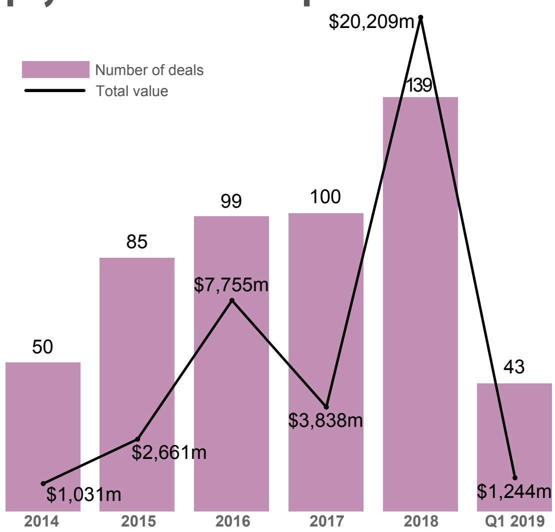
Mobile payment platform PayPay raised $419m from its co-founder telecoms conglomerate SoftBank – a deal in a space where there has been much growth in terms of corporate-backed dealflow in recent years.

SoftBank committed ¥46bn ($419m) to Japan-based PayPay. The investment was announced along with news that SoftBank intends to buy up to $4.2bn of new shares issued by Yahoo Japan, the other co-founder, to increase its holding from 12% to 45%.

Launched by the two groups in 2018, PayPay runs a platform through which users transfer money online and pay for items using QR codes on mobile devices. The backbone of the platform was formed by a customer base of 40 million user accounts on Yahoo Japan's Yahoo Wallet platform, which it replaced. Part of the technology is based on Indian digital payment system operator Paytm, which has already received backing from SoftBank via the SoftBank Vision Fund.

According to an earlier press release by SoftBank, PayPay was originally launched as a joint venture with Yahoo Japan in conjunction with measures by the Japanese authorities aiming to encourage cashless

Corporate-backed rounds in payment tech enterprises 2014-19



NEWS

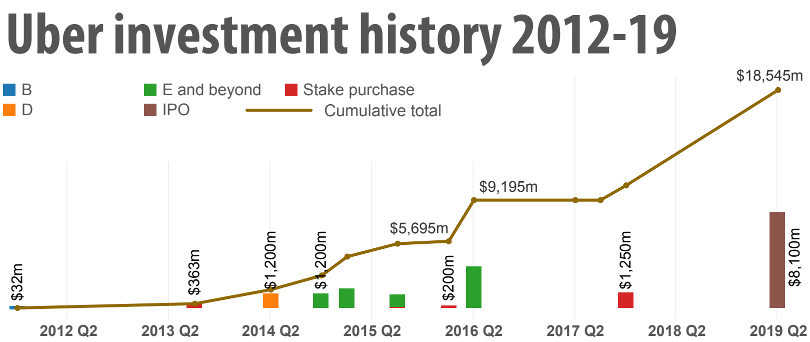
payments. In Japan, cash payments remain dominant – cashless payments are preferred in only a fifth of transactions. PayPay ran a discount campaign, offering 20% off purchases at selected Japan-based retailers at the height of the Christmas shopping season last year. The campaign, according to Bloomberg, cost PayPay and its investors the equivalent of $88m.

PayPay is in the payment tech space, where corporate investors are active, as GCV Analytics data shows. Corporate-backed rounds peaked in 2018, reaching 129 deals estimated at $20.2bn, up from 100 deals worth an estimated $3.84bn in 2017. During the first quarter of this year, there have already been 43 deals in this space, estimated at a total of $1.24bn. ◆

Analysis: Uber floats in $8.1bn IPO

Kaloyan Andonov, reporter, GCV Analytics

Ride-hailing services company Uber, backed by many corporate investors, held its long-awaited $8.1bn IPO – the world's largest since 2014, though many consider it a disappointment



US-based Uber, which has a range of corporate backers, raised $8.1bn when it went public on the New York Stock Exchange. Uber was long cobsidered the most valuable unicorn in venture capital. Uber issued 180 million shares at $45 each, near the bottom of the $44 to $50 range it had set earlier. The offering's 29 underwriters have a 30-day option to acquire a further 27 million shares, which could lift the size of the IPO to more than $9.3bn.

Although this was the largest IPO since e-commerce firm Alibaba floated in 2014, raising $25bn, it was considered by many a disappointment. It valued Uber at $82.4bn on the first day of trading but its share price subsequently went down to $41, leaving it with a total market capitalisation of around $69bn. While this is certainly an impressive figure for a company that has withstood many challenges since its inception, it is a far cry from the $120bn investment banks Morgan Stanley and Goldman Sachs, its underwriters, were targeting. However, the IPO went ahead amid political and economic turmoil as the US administration imposed tariffs on a range of Chinese goods and services.

Founded in 2009, Uber runs an app-based on-demand ride service spanning 63 countries in addition to food delivery and last-mile delivery services. Its core ride-hailing service boasts 91 million monthly users and its UberEats offering 15 million. It recently spun off autonomous driving subsidiary Uber ATG, which received $1bn in funding from automotive manufacturer Toyota, automotive components producer Denso and telecoms conglomerate SoftBank.

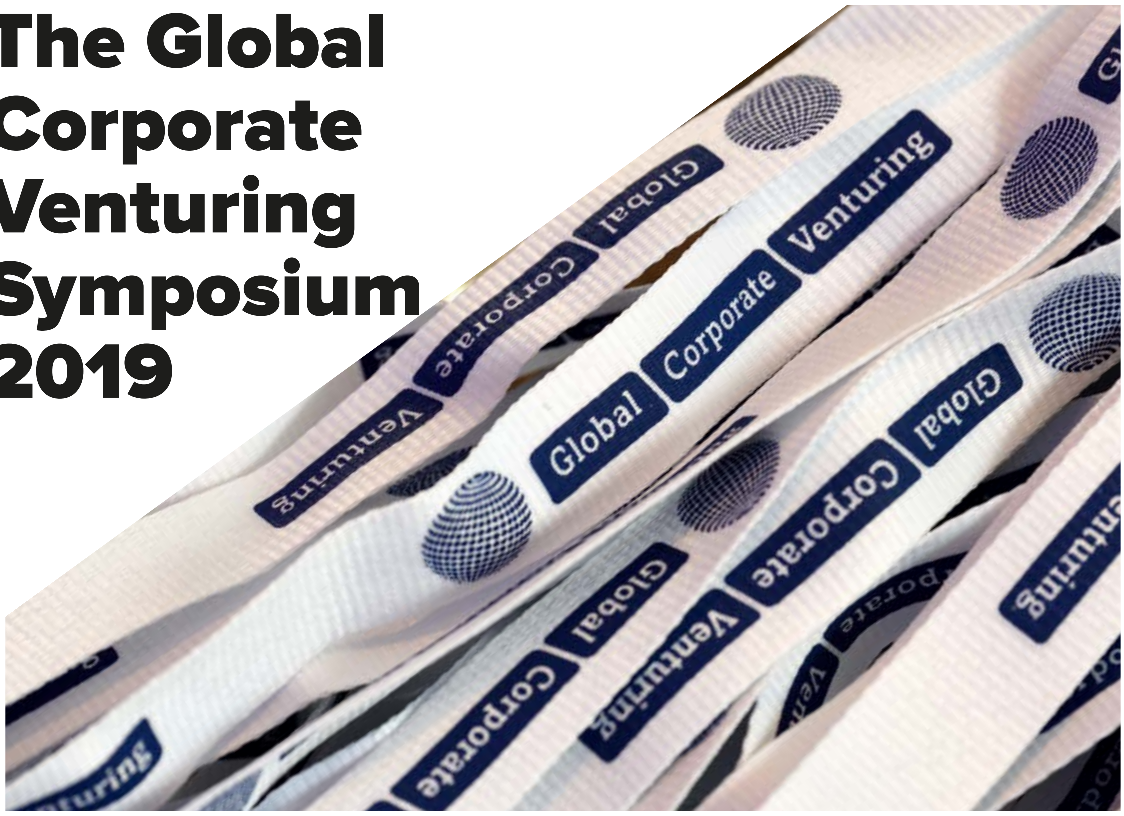
Uber registered an operating loss of over $3bn for 2018, on revenues of nearly $11.3bn. The loss was reportedly offset by divestment of regional subsidiaries in Eastern Europe and Southeast Asia.

Uber has many corporates among its backers. The company had raised a total of over $10.5bn in funding, with most rounds featuring corporate investors. The SoftBank Vision Fund sold $245m of shares, diluting its stake from 16.3% to 12.8%, while digital payment services provider PayPal bought an additional $500m through a private placement.

Other corporate investors that have backed Uber in previous rounds include media group Axel Springer, automotive manufacturer Toyota, media company Bennett, Coleman & Co's Times Internet, software company Microsoft, internet group Baidu, and GV, a subsidiary of internet and technology group Alphabet. GV's stake was also diluted after it sold some shares in the offering, reducing the size of its holding from 5.2% to 4.2%. ◆

REVIEW

The Global Corporate Venturing Symposium 2019



Callum Cyrus and Jack Hammond, reporters

The first day of the Global Corporate Venturing Symposium 2019 covered topics ranging from frontier technologies and risk-reward to the launch of Global Impact Venturing. The ninth annual symposium in London got under way with opening remarks from GCV founder and editor-in-chief James Mawson and chief operating officer Tim Lafferty.

Co-chairing this year's symposium – David Gilmour of BP Ventures and Jacqueline LeSage Krause of Munich Re/HSB Ventures

Co-chairing this year's gathering were BP Ventures vice-president David Gilmour and Jacqueline LeSage Krause, managing director of Munich Re's corporate venturing unit, Munich Re/HSB Ventures, who spoke about the principal theme of this year's symposium – facing up to potential "turbulence" in the industry. They identified the potential downsides from the perspective of their companies. As LeSage Krause remarked, "risk is everywhere in this world".

LeSage Krause and Gilmour concurred that it is vitally important that CVC units demonstrate professionalism to their parent companies. As Gilmour put it, C-suite executives must be convinced that corporate venturing strategy is based on sustainability, not vanity. If you cannot demonstrate value then you are at risk.

The symposium's attention then turned to challenges facing frontier technologies such as artificial intelligence (AI), and the need for the sector to continue innovating in both its investment strategy and product development.

Neil Foster, partner for corporate M&A and private equity at international law firm Baker Botts, chaired a panel that included Stuart Chapman, chief operating officer of Draper Esprit, and Bindi Karia, a former Microsoft innovation specialist and outgoing adviser to the EU's European Innovation Council.

Bruno Massioner, chief executive of AI technology developer AI Brain, also took part, urging the industry to build more intelligent AI technologies capable of anticipating the user's needs rather than merely responding to programming.

From a funding standpoint, Karia suggested prospective inventors in frontier tech could be put off by tick-box barriers to equity and grant funding, and argued investors were better off with vocational talent assessments such as interviews.

Mawson returned to the stage to moderate a panel on risk, return and collaboration featuring Jaidev Shergill, senior vice-president of Capital One Ventures and Scott Lenet, founding president of VC firm and corporate fund manager Touchdown Ventures.

Opinion was divided on the immediate prospect of an economic downturn. Despite cooling international trade ties and

REVIEW

Jonathan Carling, Klaas de Boer, Nicholas Hawker, Jim Wilkinson and Thierry Heles

The 1-to-1 meeting area

Max Fowinkel and William Janeway of Warburg Pincus

regulatory uncertainties, speakers seemed more bullish than those polled at January's GCV summit in California. However Shergill warned a slump within the next year remained a distinct possibility.

William Taranto, president of Merck & Co's $500m Global Health Innovation (GHI) Fund, spoke to Heidi Mason, co-founder of consultancy Bell Mason Group, about his experiences driving GHI forward over the past decade and in the wider healthcare corporate venturing realm.

Merck had needed convincing of Taranto's game plan, but the strategy of GHI, which operates as a independent vehicle, soon took shape with the deployment of strategic innovation tools that kickstarted a period of rapid expansion between 2013 and 2015. Data was crucial for healthcare's path forward, Taranto observed, with innovative products marrying informational tools to health data and existing health IT technology to hit two key industry targets at once – improved patient outcomes and lower healthcare costs.

A talk on the corporate venturer's role as a value-added investor followed with insights from Ray Singh, managing director of JetBlue Technology Ventures, the corporate venturing vehicle for airline operator JetBlue, that was moderated by Ken Gatz, CEO of innovation platform Proseeder.

Singh compared the current proliferation of CVC units to the explosion of life that took place on Earth during prehistory. To bring value, however, corporate venturers had to tackle distrust from others wary of the acquisition motive, lest they be prevented from entering lucrative investment rounds. He echoed Gimour's call for a business-like approach. As corporate venturing was a line of business for the corporate parent, he argued, it must be treated in the same way, though he also noted there were different approaches to measuring that performance.

Later, Max Fowinkel and William Janeway, respectively managing director and special limited partner at private equity firm Warburg Pincus, talked about the implications of macroeconomic disturbances for CVC funds.

Janeway claimed exits now came more often through corporate acquisitions rather than public flotations, facilitating strategic value for startups from CVC scouting operations outside the motive of financial returns. Fowinkel meanwhile cited a perception that funding would always be available for the increasing tendency of companies to postpone profitability for long periods, and Janeway stressed that a company must have a plan to achieve positive cashflow as a barrier to potential issues such as rising interest rates.

Mawson chaired a panel on blockchain technology and its ability to enhance the management of venture capital funds and investments *(see full report below)*.

Thomas Zehnder of VC firm BlueOcean Ventures and Ami Ben David, managing partner of blockchain-powered fund manager Spice Venture Capital, touted blockchain's potential in facilitating ownership of value, though the regulatory framework emerging for tokenised assets was a key consideration.

Blockchain technology had the potential to add a liquidity element to venture capital, and Zehnder said he was looking to make the process of getting investors on board more efficient. Ben David cited the potential it had to make the value of asset and securities ownership more secure.

REVIEW

HTC virtual reality exhibition

Ademidun Edosomwan, Allie Burns and Martijn de Wever

Charmian Love

After lunch, proceedings moved to an innovation showcase on disruptive mobility and energy applications that was overseen by GCV adviser on energy and mobility Tom Whitehouse. Representatives of four CVC-backed businesses gave an overview of the latest technological trends after being introduced by members of the venturing vehicles that backed them.

David Gilmour, vice-president of business development at BP Technology Ventures, made the case for electric powertrain supplier Lightning Systems; Tony Cannestra, director of corporate ventures for automotive component maker Denso, introduced conductive nanomaterial creator Canatu; Brian Schettler, managing director of Boeing HorizonX, introduced Mark Thomas, CEO of supersonic airplane engine developer Reaction Engines, and John Finney, founder of low-profile satellite terminal developer Isotropic Systems.

Soichi Kariyazono, chairman of trade association Japan Venture Capital Association (JVCA), featured in the penultimate session of day one, exploring trends in Japan's corporate venturing ecosystem gleaned from a survey the JVCA conducted in partnership with GCV Analytics.

With venture funding on the rise in Japan, Kariyazono said the country's corporates had seized the opportunity to mirror the transformational example set by the wider CVC community. He said the JVCA's membership had doubled since 2015 alongside the significant growth of Japanese VC activity, in a country where corporates are the source of about half of investment. A lack of short-term returns may be a concern, but domestic corporates were increasingly seeking strategic benefits from their deals.

Mawson closed proceedings with Amanda Feldman and Charmian Love, co-founders of consulting firm Heliotropy, taking the wraps off the latest addition to Mawsonia's family of publications, Global Impact Venturing.

GIV will report on impact investments that drive progress towards positive change globally, in areas ranging from sustainability to education and finance in developing nations, as corporates seek to support the UN's Sustainable Development Goals.

Panellists Ademidun Edosomwan from Total Energy Ventures, Allie Burns from Village Capital and Martijn de Wever of Force Over Mass spoke about current investment trends in the space, before Clara Shen from Mars Wrigley Confectionery China and Andy Dewis of Schneider Electric discussed what impact investment looks like.

Feldman urged investors to strive for transparency in their impact-related portfolios, a call echoed by Mawson, who remarked: "It is about all of us coming together."

The second day of the symposium featured discussions on implementing AI in deal-sourcing, hybrid CVC initiatives and a fireside chat with Tencent's Jeffrey Li.

Josemaria Siota, director of research at the Spain-based IESE Business School, moderated the first panel, referencing an article he had written outlining the prejudices against corporate venturing. Julie Kainz, an investor at Salesforce Ventures, enterprise software producer Salesforce's venturing unit, and Marc Rennard, president of Orange Digital Ventures, telecoms firm Orange's investment arm, joined Siota to discuss how CVC units could manage their autonomy.

REVIEW

GCV Leadership Society luncheon

Andrew Hinkly, Dominique Mégret, Samuli Sirén and Gerald Schumann

Kainz said that because customer success was the main concern for both Salesforce and Salesforce Ventures, having a common goal helped the unit "know our position as a venture fund". Having been in a similar position, Rennard said the CVC's role was to facilitate the relationship between startup and corporate, adding: "We are not forced to invest in companies just because of commercial relationships with Orange."

Mark Muth, director of corporate venturing at auditing and consulting firm PwC, moderated a panel focusing on how direct investments in companies differed in strategic terms from indirect investing as a limited partner.

Muth was joined by Jacqueline LeSage Krause, managing director of reinsurance firm Munich Re's Munich Re/HSB Ventures unit; Bernhard Mohr, managing director of Evonik Venture Capital, a subsidiary of chemical producer Evonik Industries; and Jeanne Bolger, vice-president of venture investments at CVC unit Johnson & Johnson Innovation–JJDC.

Bolger said indirect investments had yielded mixed results for Johnson & Johnson, while Mohr said investing in funds had constituted a useful lesson and dealflow-generating tool in the early days of the fund he manages. But LeSage-Krause noted that while there were opportunities that could be valuable to a corporate investor, she remained sceptical about the value of investing in traditional funds to learn and enhance dealflow.

On the next panel, Mark Wilson, principal at commercialisation consultancy Strategic Technology Bioconsulting, told attendees that CVCs were increasingly adopting hybrid fund models. He said the hybrid structure was emerging particularly from large pharmaceutical companies engaging with independent VCs, saying: "In many of these structures experimentation seems to be the dominant design and is used to bring together a vision of finance and decision-making."

Shiva Dustdar, head of innovation finance advisory at the European Investment Bank, said a key issue was how CVC units and angel investors could come into these hybrid structures. Peter Cowley, president of European Business Angel Network, had previously set up a small corporate venturing unit for an engineering company, and said his main concern was the potential for misunderstanding between parties.

Later in the day, Gerald Schumann, partner at law firm DLA Piper, moderated a panel on balancing the differing interests of stakeholders in multi-corporate venture capital funds. The discussion included Dominique Mégret, head of Swisscom Ventures, the corporate venturing arm of telecoms firm Swisscom, Andrew Hinkly, managing partner of AP Ventures, the VC firm originally co-anchored by mining company Anglo American Platinum, and Samuli Sirén, founder and managing director of VC firm Redstone Capital.

Hinkly said that where purely strategic situations arose for profit-led VC funds with corporate backing, the best approach was to communicate the decision-making process to investors. Mégret added that it was crucial for a unit to find the correct balance between keeping contact with its parent company and maintaining independence from the corporate's central financial motives. Sirén said it made sense to work with corporates through VC funds to aid with the process of amassing a portfolio with strategic value.

Trond Undheim, partner at VC firm Vidian Ventures, moderated a discussion on the future of work and the role of AI. Paul Jacquin, managing partner at Randstad Innovation Fund, an investment vehicle for human resources firm Randstad, said the easiest way to get to grips with the future of work was to hire millennials. He also said required skills should be assessed using AI to make hiring decisions based on data.

REVIEW

Leo Clancy, head of technology, consumer and business services at state-sponsored foreign investment agency IDA Ireland, agreed that millennials had more skin in the game and added that Ireland had to focus on retraining and staying agile as a solution to concerns about whether policy could keep up with the pace and extent of AI implementation. Bo Ilsoe, managing partner at NGP Capital, the VC firm spun off from communications technology provider Nokia, also pointed to AI success stories from around Europe.

In a fireside chat, Jeffrey Li, managing partner of Tencent Investment, a subsidiary of China-based internet group Tencent, explained that rather than acquiring or investing in companies as a get-rich-quick scheme, Tencent was trying to build an ecosystem of strong long-lasting partnerships.

Li told Michael Redding, managing director at Accenture Investments, an investment vehicle for consulting firm Accenture: "We are creating an ecosystem because whether it is gaming or mobile payments, we cannot run these business ourselves – it just not in our DNA. That is the way we provide the best service to the end user."

Li said technology was a combination of personnel and capital, and he noted of the huge potential in retail, in particular the convergence of offline and online experience.

Kaloyan Andonov, a reporter and analyst for GCV Analytics, presented data showing that since 2011, deal sizes in corporate-backed rounds had risen across the board from seed-stage to series E and beyond.

Martin Haemmig, an adjunct professor at the Technical Centre for Mechanical Industry and the Glorad Centre for Global R&D and Innovation, showed data identifying China as the biggest destination for investment flowing out of the US, with 83 deals representing about 15% of the overall total. He also highlighted corporate venturing's performance advantage over institutional VC-backed businesses according to certain metrics.

Global University Venturing editor Thierry Heles moderated a panel in which he spoke to professionals from four fusion energy technology companies to gauge the challenges involved in scaling a breakthrough technology. Panellists were Klaas de Boer, managing director at General Fusion, joined Nicholas Hawker and Jonathan Carling, respective CEOs of First Light Fusion and Tokamak Energy, and Jim Wilkinson, chief financial officer of university venture fund Oxford Sciences Innovation.

Boer said that although technology moved quickly at a multinational institution, it often stalled between stages. He also suggested that nimbleness differentiated the private sector from the public sector.

Carling added that competition in the private sector was also a benefit, while Wilkinson said: "Governments should be underwriting these projects. It is not the easiest route but that is the most feasible."

Turning back to AI and how it can help corporate venturers improve deal pipelines and unearth investments at scale, Roberto Bonanzinga, co-founder and investment partner of venture capital firm InReach Ventures, said the biggest asset a firm had was data, not the amount of cash available.

Mawson closed the final day of the symposium by moderating a discussion on the impact financial technology developers were having on incumbent banks *(see report below)*. ◆

Focus: Blockchain benefits

James Mawson, editor in chief

Blockchain technology is an opportunity to change the way we see illiquid assets of ownership including venture capital, with implications for all stakeholders, according to a discussion moderated by GCV editor-in-chief James Mawson.

The debate featured Thomas Zehnder, general partner at medical technology and life sciences-focused venture capital firm BlueOcean Ventures, and Ami Ben David, co-founder and managing partner of tokenised fund manager Spice Venture Capital.

BlueOcean Ventures has opted to build a security token offering (STO) platform to facilitate crypto-investments into its second medtech-orientated venture fund, BlueOcean Ventures II, with the aim of improving VC liquidity while luring more retail investors to the table.

Zehnder said: "We want to create liquidity in this highly attractive but at present completely illiquid asset class that is venture capital. Second, we also want a more efficient onboarding process for the investors and we want to have access to more retail investor types. We know very well that once you go retail, the regulators will hit you hard, especially in the area of tokenisation. It is a field where [regulation] is moving everywhere and, depending on the jurisdiction, you are at a different stage."

One benefit of BlueOcean's platform was that it could avoid spooking entrepreneurs who were sceptical about the functionality of digital assets. Zehnder argued: "Our portfolio companies do not see any change. All the money is coming in

REVIEW

Julie Kainz, Marc Rennard and Josemaria Siota

The Powerlist reception at the Palace of Westminster

Tencent's Jeffrey Li receives his Powerlist award

tokenised through the platform, and on the day it arrives it gets converted into Swiss francs. It is Swiss francs we invest into our portfolio companies. The day we have an exit, the proceeds are returned."

BlueOcean's STO platform functions as the single limited partner in its BlueOcean Ventures II fund, which effectively collates disparate contributions from its crypto-investors. In contrast, Spice Venture Capital has built its fund around blockchain technology. Its team intended to see whether blockchain could reshape rigid concepts historically fundamental to VC, such as seven-year time horizons.

For Spice, a crucial advance was the creation of bespoke software that could automatically interpret regulations relevant to tokenised assets in each jurisdiction. Ben David said: "We quickly realised we had to go country by country and understand the regulation and then basically put all the rules into the software. Once we had done that it was easier. We then took the technology that we used to tokenise ourselves and actually used it to spin off our first portfolio companies to tokenise other funds."

He said at the heart of Spice's strategy was the desire to introduce a digital mode for securing ownership of value, an objective that differed fundamentally from the currency speculation fuelling crypto-products such as Bitcoin. "We are using blockchain to replace analogue securities," he said. "Whereas crypto is about making new kinds of money, what we are focused on is a very mathematical way of securing ownership of value. The value of Bitcoin is digital but it is in the environment, but when we are talking about securities it is about the real world. There has to be a very strong tie between the token that is being moved and the digital world."

Roberto Bonanzinga, co-founder and investment partner of venture capital firm InReach Ventures, talked about how AI technology could help corporate venturing units locate companies from obscure countries and scale their investment pipeline. He said AI could help corporate venturing firms improve their deal pipeline and unearth investments at scale.

He said the biggest asset a firm had was data, and not the amount of cash on hand. "I am surprised by how little people are talking about it because that is where corporate venturing should be leading in terms of innovation," he said.

With venture capital firms and corporate venturing units investing in one deal out of about 1,000 they had considered, their job really came down to building "a funnel source" of those potential investments. He said InReach was proud ofhaving more software engineers than investors, using AI-based technology to source potential opportunities at scale.

He added: "We are trying to apply a software layer that supports all aspects of the value chain and portfolio management." He went on to explain the challenges of deal-sourcing in Europe as an example. In order to find the right companies you had to have people working across different countries or time zones.

Through InReach's mixture of machine learning and expertise, Bonanzinga claimed the firm could examine "a couple of

REVIEW

One of the roundtable sessions

A fireside chat with David Gilmour, Jaqueline LeSage Krause and James Mawson

Keynote speaker Nagraj Kashyap

thousand" companies a month. The staff did this by applying everything they had learned and the techniques they had gained to data. "It is not about hiring a data scientist to figure out the data," he said. "This is about re-engineering the basic process of what it looks to invest in and re-engineering the industry's approach."

According to Bonanzinga, the technology allowed InReach Ventures to access a pipeline of investments at scale, but it had also helped reveal potential investments from fairly obscure parts of Europe, and he pointed to an investment in Lithuania-based retail importer Oberlo as an example. "These guys were trying to use drop-shipping between China and the US using Shopify," he said.

In drop-shipping, the retailer does not keep goods in stock but instead transfers orders and shipment details to either the manufacturer, another retailer or a wholesaler, which then ships the goods directly to the customer.

"It was basically an app on Shopify. These guys had an enormous amount of traffic for such a small company, and after discovering them using the technology, we looked a little deeper and found out the founders were all drop-shipping experts. No one would have known this company exists without the AI tech." ◆

Focus: Fintech disruption

James Mawson, editor in chief

GCV editor-in-chief James Mawson closed the second day of the symposium by moderating a discussion on the impact financial technology developers are having on incumbent banks.

The participants were Dominic Maffei, financial markets and UK lead of SC Ventures, the open innovation arm of financial services firm Standard Chartered, and Erica Young, director of venture capital and advisory firm Anthemis Group.

Young and Maffei agreed there was not yet significant disruption of existing financial institutions, and the focus was on collaboration with fintech developers, which had come to Maffei while attempting to disintermediate banks, whereas now they are coming to him offering their data.

Young said disruption was hard, in part due to the size of banks' balance sheets and existing regulations, but that she

REVIEW

Keynote speaker Raj Singh

Unpanel roundtable session

Guest speaker, rugby veteran Rory Underwood

was excited about embedded finance, where financial instruments moved from a vertical to a horizontal structure, and she compared it to computing.

Mawson asked Maffei why Standard Chartered had set up a venture studio now, given that it seemed relatively comfortable. He said there was still competition. He pointed to the 2008 crash, saying that people forget that banks had been innovative, something that stagnated with the structures that were placed on them after the recession.

Comparing big institutions to elephants – large traditional actors – and fintech developers to mice – smaller but nimble – Mawson asked about the pain points and impacts Maffei's and Young's groups faced.

Maffei said that at Standard Chartered, fintech has quickened culture change, though he placed that responsibility at the feet of media, rather than internal excitement about fintech startups. Young said the elephant was actually rather well optimised for its desired outcome – stability and longevity.

Mawson pointed out that new people were entering the fintech and insurtech spaces, and asked whether there were any new areas of opportunity for actors like Young and Maffei.

Young was interested in longevity. As the general population lived longer, existing financial instruments were breaking down. Traditional assumptions surrounding life insurance and retirement no longer applied, particularly as the baby-boomer generation was transferring assets to younger people.

Maffei's area of interest was in the client journey, but he was personally most excited by new securitisation technology and the potential market for it in China. He spoke about the need to build off-ramps and on-ramps for digital assets, and creating the ecosystem around them.

A question from the floor challenged fintech's place as the recipient of a quarter of all UK venture investment. Young said this may be down to the current definition of fintech, which may be too broad, whereas Maffei admitted he did not know, saying valuations were very "frothy" right now, making it hard to tell. ◆

COMMENT

'God is an algorithm'

Bo Ilsoe, partner, NGP Capital

So said author and speaker Yuval Noah Harari in a recent podcast I listened to. Yuval has listed the three main challenges that mankind has to wrestle with in the coming decades as nuclear war, climate change and technological disruption.

This is Yuval's list, and you may disagree or have other topics at the top of your list, eradicating malaria for instance. What is thought-provoking to me as a trained engineer, a venture capital investor, and, more broadly, an optimist about the positive change technological innovation can bring to mankind, is that last topic, technological disruption.

I have witnessed close up the boom and bust of the first Internet wave, and I have co-developed an investment firm that has backed nearly 100 technology companies in the US, China, India and Europe.

I spent 12 years with Nokia, from 1990 onwards, and left the company in 2002, shortly before the market capitalisation peaked at $245bn, one of the world's largest companies at the time. Little did I imagine that seven of the 10 largest companies today in terms of market capitalisation would be technology companies. The other three are JPMorgan, a bank that is very much a technology company, pharmaceutical group Johnson & Johnson, and conglomerate holding company Berkshire Hathaway.

When the algorithms in the systems being developed by either the tech giants of today or the VC-backed companies of tomorrow decide which patient is prioritised to get a liver transplant, which cars have priority in traffic jams, who gets a mortgage, who gets admitted to university, who gets social benefits, who gets persecuted for tax evasion, and so on, you start to see the shape of the sinister meaning in Yuval's term "God is an algorithm".

> We have to take ownership of and responsibility for the dialogue about the impact we impart on society

Yuval was putting a finger on the potential dangers of the development of artificial intelligence, software, processing power and billions of hyperconnected devices. Our systems of corporate governance, societal organisation and liberal economics, together with the continued drive for effectiveness, are likely to promote the redundancy of humans wherever possible – step by step, industry by industry. His point is that, if we do not find meaningful ways for humans to become useful in society, we could end up with what he calls a "useless" class of people – a class that is irrelevant to the interests of companies.

This may be a dystopian vision, but as Yuval is not a technologist, I take heed of his views – as always, it is more likely that an industry outsider will be able to tell us where we are heading rather than the expert insiders wedded to the tech industry. In fact, we may be better off having outsiders setting the guardrails for our industry.

Lina Khan, a brilliant young lawyer, may be such a person. She was thrust into the limelight in 2016 when she wrote a brilliant paper – *Amazon's Antitrust Paradox* – while still at Yale law school. The paper essentially reframed what monopoly power is and how it should be viewed under anti-trust legislation, in this case US anti-trust legislation.

In my view, it is unavoidable that we in the technology industry are going to be subject to substantially more regulation and government intervention. This is not necessarily a bad thing. Many industries, such as finance, telecoms, transportation and healthcare, function under regulation and supervision. When you involve deeply human and ethical choices concerning our health, access to education or our personal data, it is inevitable that regulation will come into play. The EU's General Data Protection Regulation is a good example of privacy protection now being followed in many jurisdictions around the world.

What has brought me to write this note is the apparent lack of recognition by our industry that we have to take ownership of and responsibility for the dialogue about the impact we impart on society. Many entrepreneurs are already working to impact regulations relevant to their business, and lobbying politicians, to implement favourable tax treatment of stock option plans for instance. Some entrepreneurs are part of handpicked governmental advisory bodies and are working on many other important topics.

However, we need to work on shifting the dialogue away from these tactical conversations to the issues that are really important for our mission. We need to help educate not only politicians but policymakers, lobbyists, influencers, trade unions, educators and journalists about how hyperconnectivity and algorithmic support can create augmented intelligence where humans are in the driver's seat.

It is easy to imagine the next populist movement, not against globalisation and immigration, but against technology, and the displacement of workers and disruption of the established order that it creates. It is a narrative in the making, and much too close for comfort for us all. Engage in the dialogue where you can. Make a difference, and let us make sure the human is in charge. ◆

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

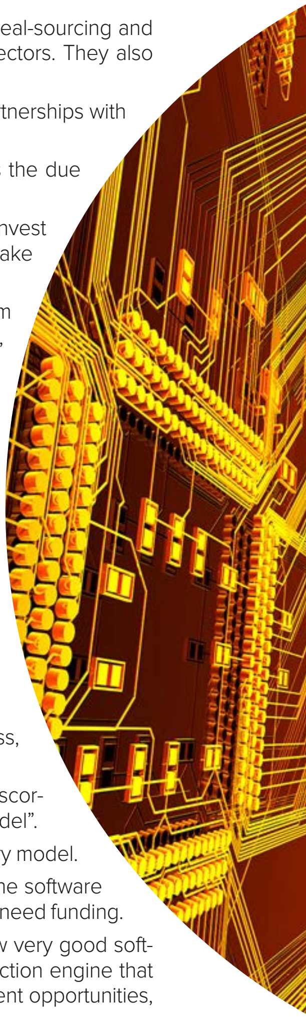
COMMENT

Data-driven VCs who use AI for smarter investing

Francesco Corea, contributor, Cognitive World

Those who know me are aware that what has obsessed me for the past few years is how to use analytics and artificial intelligence (AI) to improve the venture industry. While I tended to focus on scouting and evaluation, I learned that AI can also be used to spot general trends, identify market gaps, improve portfolio management, match co-investors and deals better, gather intelligence on competitors' landscape, identify potential acquirers and improve pricing models.

I am clearly not the first one who is arguing for a data-driven approach to investing, and I thought it would make sense to write about other like-minded investors I have heard of. Knowing exactly what they do is quite cumbersome without having inside information, so I am simply reporting public knowledge.



645 Ventures: a series A investor, they follow a data-intensive approach that mostly helps them in deal-sourcing and evaluation, and they have a fairly specific metrics-driven process to invest in a bunch of different sectors. They also seem to automate many of the manual tasks of traditional VCs.

Ardian: a world-leading private investment house, they are enhancing their AI capabilities through partnerships with startups that can collect and analyse unstructured market data.

Connetic Ventures: their data analytics platform collects, analyses and ranks startups, and supports the due diligence process.

Correlation Ventures: probably the first real data-driven investor, they reach a decision on whether to invest in two weeks, plus another two for extra due diligence. They co-invest only in the US and do not take board seats.

EQT Ventures: with more than $560m of assets under management, and equipped with an AI system called the Motherbrain, they have done more than 40 investments in less than three years. Apparently, most of its backbone is based on convolutional neural networks.

E.ventures: in addition to having a public dashboard to spot internet startups, they have been playing with analytics since 2012 to inform their investment process.

Fyrfly: there is not much information available publicly on their process, but this is another fund claiming a data-driven approach as part of their foundational principle.

Fly Ventures: they recently closed a first $46m data-driven fund to do small investments – up to $1.1m – and have invested in companies like Bloomsbury AI, recently acquired by Facebook.

Follow[the]seed: a post-seed global algorithmic VC, they have developed two data-driven methodologies – one business to business and one business to customer – to simplify the investment process.

Georgian Partners: one of the most prominent Canadian VCs, they are not simply looking at AI to improve their investment process, but they also put machine learning at the service of their portfolio companies – a differentially private machine learning software for their ecosystem.

GV: formerly Google Ventures, they are using AI and machine learning to inform their investment process, although almost no one knows exactly what they are doing and how.

Hatcher-plus: they use a data-driven approach to offer their partners quality analysis and opportunity scoring. They identify early-stage opportunities and have created what they call a "resilient investment model".

Hone Capital: the Palo Alto-based US arm of CSC Group partnered AngelList to create their proprietary model.

InReach Ventures: led by Roberto Bonanzinga and Ben Smith, InReach has quickly built a name as the software powered house able to scout early-stage European startups even before other VCs have realised they need funding.

Nauta Capital: a business-to-business software-focused European VC, they recently brought in a few very good software engineers and data scientists with an ambitious roadmap in mind. They are working on a prediction engine that assesses the probability of investment success, a dealflow engine that gathers and analyses investment opportunities, and a reserves planner that calculates the optimal distribution of reserves for follow-on.

NorthEdge Capital: a private equity investor that developed a platform that identifies new investment and buy-and-build opportunities by analysing regional-specific companies.

Origin Ventures: they claim to have built their own scoring software to assess the quality of startups.

Redstone: a renowned VC that introduced the VC-as-a-service model, it hired a talented scientist, Stefano Gurciullo, who is, using Redstone's words, "building technologies that help them invest based on evidence and on a quantitative understanding of innovation".

Right Side Capital Management: with more than 800 pre-seed investments so far, they make small investments –

COMMENT

$100,000-$500,000 at valuations of less than $3m.

Scale Venture Partners: their Scale Studio is a platform that allows startups to compare their progress with similar startups across a handful of key business metrics.

SignalFire: the firm run by Chris Farmer uses analytics to pick the right companies and helps them grow by providing market intelligence and talent-matching services.

Social Capital: led by Chamath Palihapitiya, the firm is better known to have started the capital-as-a-service concept, and more recently they created an analytics due-diligence tool, hosted on their webpage, to help them invest in early-stage companies and identify trends in customer cohorts.

Switch Ventures: they are using a mathematical and predictive approach to sourcing.

Ulu Ventures: they use "decision analysis" to inform investment decisions – creating market maps, assessing risks, quantifying uncertainty, performing sensitivity analysis and computing the risk-return profile of a potential investment.

Venture/science: a quant-driven VC led by Matt Oguz, it uses AI and decision theory to compute the risk associated with different attributes such as team completeness and vision.

WR Hambrecht Ventures: Thomas Thurston is the key man behind this and Growth Science, its sister tech company, advocating the use of data science to guide growth investments.

We now have more than 25 funds using AI in different ways. Even though this may look like a drop in the ocean of the venture industry, it seems to me it is something that may change the way we think about investing.

Is this the whole story? Not quite. Even though I started this article focusing on venture funds that use AI in different ways, I eventually discovered that VCs are not the only players in this niche industry. There are several startups and tools worth mentioning for the sake of completeness because they are trying to democratise VC investors' skills:

> More funds are pouring money into development of these engines than companies selling those systems as a service

Aingel.ai: they have recently filed a patent for a machine learning system that scores startups and founders and also matches the companies to the most suitable investor.

Capital Pilot: another service that facilitates the match between companies and investors.

Crunchdex: a new company focusing on identifying the fastest-growing startups.

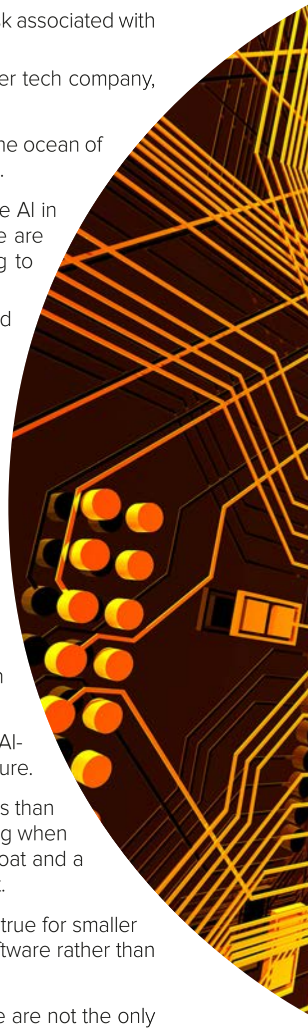
Kognetics: they have a proprietary framework to identify interesting deals and offer extra insights on trends, markets and competition.

Preseries: another fully automated solution to discover and evaluate startups, which also has a voice interface through Alexa.

Radicle: their proprietary software can be used to detect novel interesting sectors, and I believe they have something to say on new ways to evaluate startups.

Rocket DAO: a decentralised crowdfunding and startup evaluation platform, still in beta, that helps to match companies and investors.

Valsys: they provide professionals with the tools they need to make data-driven decisions in valuation and estimation processes. They focus, however, more on a later stage.



This is likely to be only a partial list, but it conveys and bolsters the point mentioned above – having an AI-driven investment engine is becoming a trend, and we should expect more of those solutions in the future.

It is also interesting to note that are more funds are pouring money into development of these engines than companies selling those systems as a service. In other words, VCs seem to prefer building over buying when it comes to intelligent software for their own internal use. Intuitively, this is paramount in creating a moat and a competitive advantage with respect to other investors, but it could segment the market and polarise it.

While bigger funds may have the resources to invest in building their own platforms, this may not be true for smaller funds, and this could result in wrong signalling to limited partners and potential deals – if you buy software rather than building it, you may be seen as a second-class investor.

I listed funds and mainly software companies that are offering different types of AI services, but these are not the only two options. There are intermediate alternatives such as the one provided by Clearbanc and 20-Min Term Sheet, which use algorithms to review the startup's marketing and revenue data and decide whether to grant a loan in about 20 minutes. Similar capital-as-a-service offers are provided by companies such as BlueVine, Lighter Capital, Corl, always with an automated process that speeds up investment decisions.

I am pretty optimistic about data-driven VCs being the future, and I am spending a lot of time thinking and working on how to push it further. I do not believe the future of the industry is likely to be fully automated and VC is and always will be a people business. On the other side though, it sounds astonishing that algorithmic thinking has not so far permeated the way investors work on a daily basis. I spent time researching and talking to many of those people, but it is also very likely that I might have misunderstood something or missed someone out there working on similar approaches. If so, feel free to reach out. ◆

This is an edited version of an article first published by Forbes

Global Corporate Venturing

Connect

The new CVC peer-to-peer collaboration and deal platform

Have you ever wanted to help one of your portfolio companies by introducing them to other strategics but didn't know which ones might be interested or who to contact?

GCV Connect is a new CVC peer-to-peer collaboration and deal platform. GCV Leadership Society members can:

- Find other CVCs that could be a good match for their portfolio companies based on their deal history and preferences
- Privately message those CVCs about future rounds or collaboration

For an online demo contact
James Mawson: *jmawson@mawsonia.com*

SECTOR FOCUS

Health sector continues to grow

Kaloyan Andonov, reporter, GCV Analytics

In an increasingly digitised, mobile and data-driven world, the health and life sciences sector has been subject to various technological shifts. Many innovations are derived from general technological developments and their democratisation and enablement through mobile devices, the internet of things, artificial intelligence (AI) and big data analytics.

GCV Analytics defines the health sector as encompassing pharmaceuticals, medical devices and diagnostics, healthcare IT services and administration, care provision and on-demand services and other life sciences products and services.

Other drivers are the economic and regulatory characteristics of the sector – whether in drug discovery and pharmaceuticals or in care provision. Research and development in both medicinal drugs and medical devices is a notoriously costly, risky and subject to slow development.

According to a study of clinical trial success rates in the US, the probability of a new compound going from phase 1 trials to approval following phase 3 is about 6.9% – only seven in every 100 new developments are approved by US regulator the Food and Drug Administration. According to data from Pharmaceutical Research and Manufacturers of America, it takes at least 10 years on average for a new drug to go from initial discovery to the marketplace. The average costs of a successful drug are estimated at $2.6bn.

Chances of successful FDA drug approval by trial phase

Stage	Description	Probability of progressing to next phase
Phase 1	Is it safe?	38.8%
Phase 2	Does it work?	38.2%
Phase 3	Is it better than current drugs?	59%
Approval	Probability of approval phase 1-3	6.9%

Source: Chi Heem Wong, Kien Wei Siah, Andrew Lo – Estimation of clinical trial success rates and related parameters. Biostatistics 20(2), 273-86 (https://doi.org/10.1093/biostatistics/kxx069)

Factoring in the low-interest-rate environment, it can be understood why many industry incumbents have been externalising R&D costs and sharing risks with co-investors through licensing, spinouts, mergers and acquisitions, venture investing and joint ventures.

As in other sectors, life sciences faces digital and datafication challenges. Consultancy Deloitte's 2018 Global Life Sciences Outlook recommends that life sciences companies "focus on aligning the enterprise to deliver an exceptional customer and patient experience, using data to create value, and create a sustainable digital culture with new leadership styles that embrace change."

The report identifies the technologies with most transformative potential for the life sciences industry, including AI, robotics, the internet of medical things (IoMT), software-as-a-medical-device, blockchain, DIY diagnostics, virtual care, genomics, cloud computing, real-world evidence – data from routine clinical practice rather than controlled trials – and data-driven precision medicine.

The digital transformation of the sector – from care provision to clinical trials, is creating opportunities for startups and new tech entrants, as incumbents are likely to outsource and seek partnerships to drive down costs. Some of these new entrants are established tech companies such as Alphabet or Apple, while others are emerging businesses. The report also notes that new entrants threaten the status quo, and that traditional pharma and medtech companies can take advantage of opportunities and drive innovation, or risk falling behind.

Aside from the disruptive impact of digital technologies at industry level, new technologies are having a significant effect on clinical outcomes. This has much to do with the evolving field of "digital therapeutics", which employs digital and internet-connected tools to monitor and treat medical and psychological conditions. Mobile applications help patients with medicine dosage and regularity, or monitor vital statistics, while others offer sensorial alternatives to chemical-based medicinal drugs for conditions such as depression or insomnia. According to a McKinsey article – Digital Therapeutics: Preparing for Takeoff – digital therapeutic solutions tend to focus on chronic diseases or neurological disorders that are "poorly addressed by the healthcare system".

Digitisation is has had a huge impact on medical devices and diagnostics. Medical devices are expected to be smarter. A report by consultancy EY – Medical technology report 2018: Pulse of the industry – asks: "When the human body is the biggest data platform, how will medtech companies capture value?" Such data are becoming the most valuable currency in life sciences.

According to the report, the medtech industry generated a record $379bn in revenues during 2017, the highest since the 2008 recession. However, the report claims the medtech industry is "overinvesting in short-term business activities to the potential detriment of its long-term growth". It goes on: "Overemphasis on returning cash to shareholders at the expense of R&D spending leaves the industry with a looming innovation gap." The report claims R&D spending in the industry has declined and much of the growth in recent years has been achieved inorganically through M&A.

According a Deloitte report – Medtech and the Internet of Medical Things – around 48% of medical devices are connected, while respondents expect 68% of them to be connected within five years. The report stresses the importance of turning data into valuable knowledge. "While the IoMT has the potential to help alleviate some of the cost, access and care coordination challenges facing healthcare, the generation of data points through millions of connected medical devices will have little impact unless turned into actionable insight." The report also points out that some medical device businesses may have to switch business models as a result of the datafication of the IoMT.

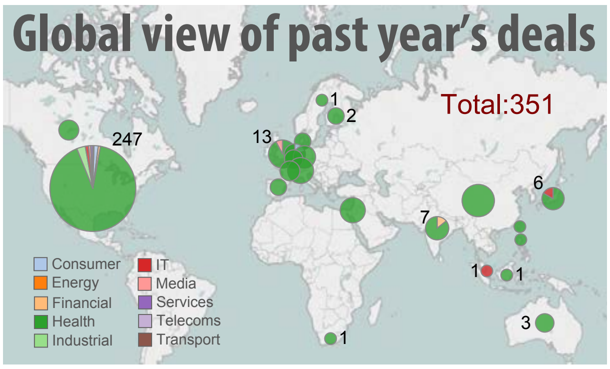
The pharmaceutical subsector of the life sciences space remains among the most important. The global outlook for the pharmaceutical industry in the near term appears moderately promising, though riddled with some concerns on pricing issues. On one hand, there is pressure on governments that pay or co-pay for their citizens' medicines to reduce costs by placing limits on drug pricing. On the other hand, health insurers and care providers are increasingly more demanding, requiring evidence of effectiveness, cost savings and clinical benefits before including a new drug.

More than half of global pharmaceutical producers believe drug pricing and reimbursement constraints will have the greatest negative impact on the pharmaceutical sector this year, according to the Global Data Pharma's 2019 industry outlook. A price comparison study conducted by the US Department of Health and Human services from 2018 found that "prices charged by drug manufacturers to wholesalers and distributors in the US are 1.8 times higher than in other countries for the top drugs". The study ran a comparison with prices mostly in other developed economies. On the positive side, respondents to the survey were optimistic about opportunities in China.

Oncology and cancer treatment has undergone significant transformation. The Quintile IMS Institute's Global Oncology Trends 2018 report notes that "63 cancer drugs, each approved in one or more tumours, have impacted the treatment of 24 different cancer types". It also mentions the rise of the field of immuno-oncology since 2014, and that more than 700 cancer drugs are currently in late-stage development – up more than 60% from a decade ago. The report forecasts the value of global oncology therapeutics will reach $200bn by 2022. Many biopharmaceutical deals tracked by GCV Analytics are directly related to cancer treatment.

For the period May 2018 to April 2019, we reported 351 venturing rounds involving corporate investors from the health sector. A considerable number of them (247) took place in the US, while 20 were hosted in China, 13 in the UK, nine in Israel and seven in India.

The majority of those commitments (324) went to emerging enterprises from the same sector (mostly pharmaceuticals, medical devices and diagnostics as well as healthcare IT and administration) with the remainder going to companies developing other technologies in synergies with the life sciences sector – eight deals in the industrial sector (mostly robotics and unmanned aerial



SECTOR FOCUS

vehicles as well as agtech), five in the consumer sector (hygiene, beauty, and food and beverages), and five in IT (mostly big data analytics, semiconductors and chips.

The network diagram, illustrating co-investments of health corporates, shows the variety of investment interests among the sector's incumbents. The commitments range from diabetes treatments (PhaseBio Pharmaceuticals, Omada Health, Semma Therapeutics) through mobile apps for surgeons (Gauss Surgical) and microbiome-based treatments of a variety of conditions (BiomX) to neuroscience enterprises (Magnolia Neurosciences) and oncology diagnostics (Grail).

On a calendar year-on-year basis, total capital raised in corporate-backed rounds soared from $9.45bn in 2017 to $13.99bn in 2018, a 48% increase. The deal count also grew, by 11% from 296 deals in 2017 to the 328 tracked by the end of 2018.

The 10 largest investments by corporate venturers from the health sector were concentrated in the same industry.

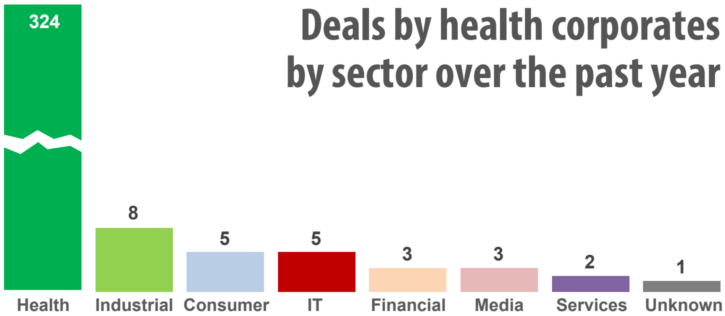
The leading corporate investors from the life sciences sector in terms of largest number of deals were pharmaceutical firms Eli Lilly, Johnson & Johnson and Merck & Co. Health corporates committing capital in the largest rounds were led by Eli Lilly and pharmaceutical firms Pfizer and Wuxi App Tec.

The most active corporate venture investors in the emerging health businesses were life sciences real estate investment trust Alexandria, pharmaceutical firm Eli Lilly and diversified internet conglomerate Alphabet.

The emerging life sciences businesses in the portfolios of corporate venturers included treatments for neurodegenerative diseases such as Alzheimer's disease (Cortexyme, Arrakis, Alector), cancer treatments (NextCure, Relay Therapeutics, Artios, Galera) and platforms for prescriptions of apps and devices (XHealth).

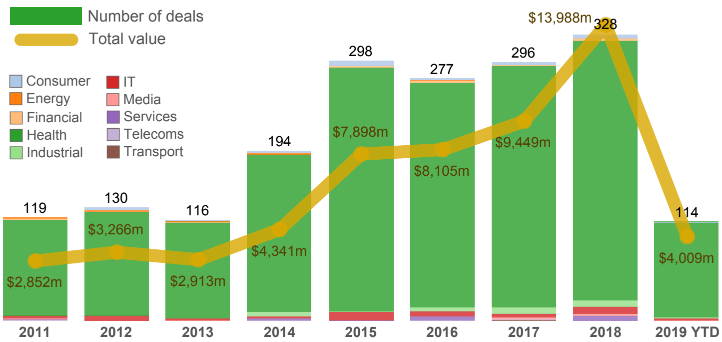
Overall, corporate investments in emerging health-focused enterprises went up from 440 rounds in 2017 to 473 by the end of 2018,

Deals by health corporates by sector over the past year

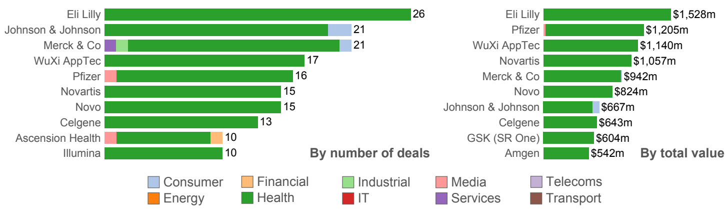


Co-investments of health sector venturers 2017-19

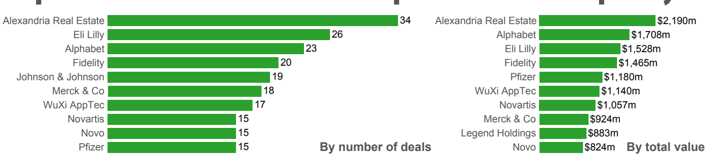
Deals by health sector corporates 2011-19



Top health sector investors over the past year



Top investors in health enterprises over the past year



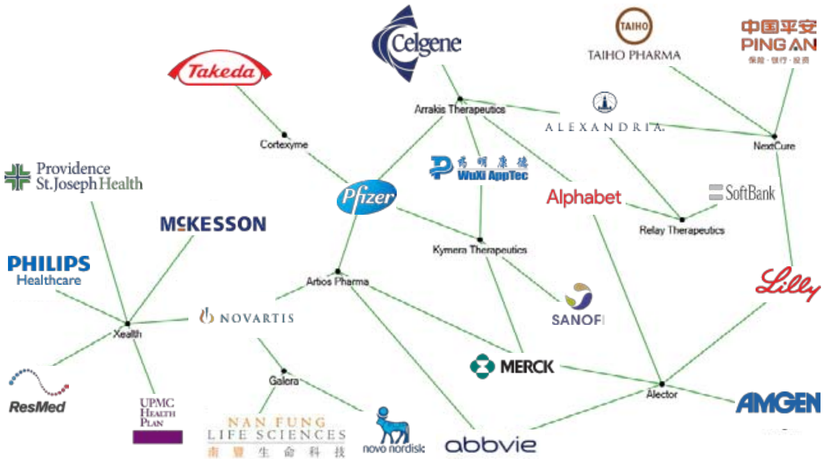
a 7.5% increase. The estimated total value of those rounds, however, rose significantly, by 51% from $13.80bn in 2017 to $20.90bn last year.

Deals

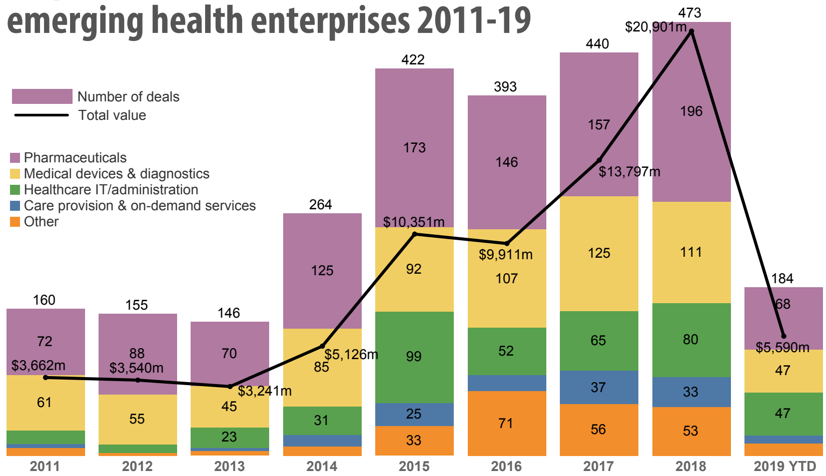
Corporates from the health and life sciences sector invested in large multimillion-dollar rounds raised by enterprises from the same sector. None of the top 10 deals was above $1bn.

US-based biopharmaceutical company Cerevel Therapeutics was launched with $350m from private equity firm Bain Capital to commercialise several neuroscience assets licensed from Pfizer. Bain Capital supplied the money through funds affiliated with Bain Capital Private Equity and Bain Capital Life Sciences. Pfizer took a 25% stake in Cerevel, and two of its executives – Morris Birnbaum, chief scientific officer of internal medicine, and Doug Giordano, senior vice-president of worldwide business development – joined the board. Cerevel is developing treatments for disorders affecting the central nervous system. Pfizer has licensed preclinical and clinical-stage assets to the company, including compounds aimed at Parkinson's disease, Alzheimer's disease, epilepsy, schizophrenia, addiction and neuroinflammation. Cerevel's most advanced drug candidate is expected to enter a phase 3 clinical trial to treat the symptoms of Parkinson's, with a second asset ready to enter a phase 2 trial for epilepsy.

Corporate co-investments in health enterprises 2017-19



Corporate-backed rounds in emerging health enterprises 2011-19



Pharmaceutical firm GlaxoSmithKline (GSK) invested $300m in US-based DNA services provider 23andme as part of a four-year collaboration involving 23andme becoming GSK's partner on drug target discovery initiatives, and utilising its data and analytics to discover disease targets. Founded in 2006, 23andme analyses genetic data to identify ancestry or risk of certain diseases. Customers provide a saliva sample at home using the company's DNA collection kit. 23andme also uses the genetic data to conduct research on inherited disorders in addition to selling it to other researchers.

US-based cancer test developer Grail secured $300m in an oversubscribed series C round co-led by 6 Dimensions Capital, the healthcare investment firm co-founded by WuXi AppTec. The round, co-led by healthcare investment group Ally Bridge and hedge fund manager Hillhouse Capital, also featured WuXi AppTec's genomic information subsidiary, WuXi NextCode. Blue Pool Capital, China Merchant Securities International, CRF Investment, HuangPu River Capital, ICBC International and Sequoia Capital China also invested. Spun off from genomics technology producer Illumina, Grail uses a combination of high-intensity sequencing, computer and data science technology and large-scale clinical studies to develop a blood test for detect early signs of cancer.

US-based telemedicine technology provider American Well raised $291m from investors including electronics and healthcare equipment maker Philips. A regulatory filing indicated the company had secured $291m of a round expected to reach $315m, and Philips invested in the wake of a strategic partnership, which involves the companies collaborating on health systems worldwide. American Well has created an online video-based platform that enables physicians to conduct consultations with patients remotely using computers or mobile devices. Doctors can use it to access a range of data options, and health systems can integrate the service.

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

Company	Location	Sector	Round	Size	Investors
Cerevel Therapeutics	US	Health	–	$350m	Bain Capital | Pfizer
23andMe	US	Health	–	$300m	GlaxoSmithKline (SR One)
Grail	US	Health	C	$300m	6 Dimensions Capital | Ally Bridge Group | Blue Pool Capital | China Merchant Securities International | CRF Investment | Hillhouse Capital Management | HuangPu River Capital | ICBC International | Sequoia Capital | Wuxi PharmaTech
American Well	US	Health	–	$291m	Philips
Essence Group Holdings	US	Health	Stake purchase	$266m	Cerner
CStone Pharmaceuticals	US	Health	B	$260m	3W Partners | 6 Dimensions Capital | Arch Venture Partners | Avict Global Holdings | Boyu Capital | Citic PE | Frontline BioVentures | GIC | Hillhouse Capital Management | King Star Capital | Oriza Holdings | Sequoia Capital | Taikang Life Insurance Company | Terra Magnum Capital Partners | WuXi AppTec | Yunfeng Capital
Butterfly Network	China	Health	D	$250m	Bill & Melinda Gates Foundation | Fidelity | Shanghai Fosun Pharmaceuticals | private investors | undisclosed investors
Anthos Therapeutics	US	Health	Seed	$250m	Blackstone | Novartis
Arvelle Therapeutics	Switzerland	Health	A	$180m	Andera Partners | Axovant Sciences | BRV Capital Management | HIG BioHealth Partners | LSP | NovaQuest
Humacyte	US	Health	Stake purchase	$150m	Fresenius

Healthcare technology provider Cerner paid $266m for a minority stake in Essence Group Holdings, a US-based health service provider backed by corporate venturing unit BlueCross BlueShield Venture Partners. Cerner provided the funding as part of a 10-year partnership agreement. Cerner and Lumeris aim to cut inefficiencies from the care system and will form a joint venture called Maestro Advantage to accelerate processes such as claims processing, reimbursement and data sharing in health plans. Essence owns Lumeris, which manages care provision on behalf of healthcare systems, supplying technologies, care processes, data and products intended to promote healthy living.

China-based biopharmaceutical company CStone Pharmaceuticals closed a $260m series B round featuring insurance provider Taikang and WuXi Healthcare Ventures, the strategic investment arm of pharmaceutical research firm WuXi PharmaTech. The round, led by Singaporean sovereign wealth fund GIC, also featured 6 Dimensions Capital, the investment firm formed by WuXi Healthcare Ventures, and venture capital firm Frontline BioVentures. Founded in 2016, CStone is working on a combination of therapies for diseases such as cancer, cardiovascular diseases, rheumatoid arthritis, haematology and autoimmune conditions, with a particular focus on immuno-oncology. The company has more than 10 candidates in its pipeline, four of which have entered the clinical testing stage *(see IPO report, below)*.

US-based handheld ultrasound device maker Butterfly Network raised $250m in a series D round featuring pharmaceutical company Fosun Pharma. The round was led by financial services and investment group Fidelity and included philanthropic organisation Bill and Melinda Gates Foundation, private investor Jamie Dinan and unnamed existing backers. It valued Butterfly at $1.25bn. It has developed a handheld 3D ultrasound scanner that costs $2,000, considerably less than current alternatives which retail for up to $20,000. Scans taken by the system's probe are uploaded to an encrypted cloud storage platform and can be shared securely. The company has developed a smartphone app for the scanner that relies on artificial intelligence and computer vision.

Pharmaceutical firm Novartis joined Blackstone Life Sciences, a biopharmaceutical investment arm of private equity firm Blackstone, to launch US-based cardiovascular drug developer Anthos Therapeutics. Blackstone Life Sciences provided $250m, while Novartis licensed an antibody to Anthos. Novartis has secured a minority stake in Anthos as part of the licensing agreement. Anthos Therapeutics will focus on targeted therapies for high-risk people with from cardiovascular disease. The antibody will be developed as a blood clot treatment.

Life sciences investment firm LSP led a $180m series A round for Arvelle Therapeutics, a Switzerland-based epilepsy drug developer spun out from pharmaceutical company Axovant. Andera Partners, BRV Capital Management, NovaQuest and HIG BioHealth Partners also participated in the round. Axovant will retain a 5% stake in the company. Arvelle is developing drug therapies to treat central nervous system disorders and will focus initially on Cenobamate, an investigational-stage small molecule anti-epileptic drug it has licensed from pharmaceutical firm SK Biopharmaceuticals.

Humacyte, a US-based developer of tissue-based medical technology that counts conglomerate Access Industries as an investor, signed a $150m deal with healthcare company Fresenius Medical Care, in which Fresenius received a 19% stake in Humacyte and will become the exclusive distributor of Humacyte's bioengineered blood vessel, Humacyl, after the product has secured regulatory approval. Founded in 2004, Humacyte is developing regenerative medicine and vascular surgery technology and has products at the preclinical and clinical stage. The company's platform produces extracellular tissues that mimic human tissues.

Emerging health-focused businesses also received financial backing from corporate investors from other sectors.

China-based online healthcare services platform WeDoctor raised $500m in a round co-led by a subsidiary of insur-

Top 10 investments in health sector enterprises over the past year

Company	Location	Round	Size	Investors
We Doctor	China	–	$500m	AIA Group | NWS Holdings
Relay Therapeutics	US	B	$400m	Alexandria Real Estate Equities | Alphabet | BVF Partners | Casdin Capital | DE Shaw | EcoR1 Capital | Foresite Capital | Perceptive Advisors | SoftBank | Tavistock Group
Cerevel Therapeutics	US	–	$350m	Bain Capital | Pfizer
23andMe	US	–	$300m	GlaxoSmithKline (SR One)
Grail	US	C	$300m	6 Dimensions Capital | Ally Bridge Group | Blue Pool Capital | China Merchant Securities International | CRF Investment | Hillhouse Capital Management | HuangPu River Capital | ICBC International | Sequoia Capital | Wuxi PharmaTech
China Diagnostics Medical Corp	China	–	$294m	China Renaissance | High Light Capital | Legend Holdings | Matrix Partners | Ping An Insurance | Shanghai Free Trade Zone Equity Fund | Zhongjin Kangrui Healthcare Industrial Fund
American Well	US	–	$291m	Philips
Rakuten Aspyrian	US	C	$284m	Rakuten | SBI Group | private investor
Essence Group Holdings	US	Stake purchase	$266m	Cerner
CStone Pharmaceuticals	US	B	$260m	3W Partners | 6 Dimensions Capital | Arch Venture Partners | Avict Global Holdings | Boyu Capital | Citic PE | Frontline BioVentures | GIC | Hillhouse Capital Management | King Star Capital | Oriza Holdings | Sequoia Capital | Taikang Life Insurance Co | Terra Magnum Capital Partners | WuXi AppTec | Yunfeng Capital

ance group AIA. Infrastructure and services conglomerate NWS Holdings co-led the round, which valued the company at $5.5bn. Also known as Weiyi, WeDoctor runs an online platform that enables users to book medical appointments with more than 220,000 doctors and at some 2,700 hospitals and receive consultations from qualified physicians. The company also offers pharmaceuticals and insurance products. In addition to its investment, AIA will become WeDoctor's preferred life and health insurance partner, and the proceeds will support domestic expansion.

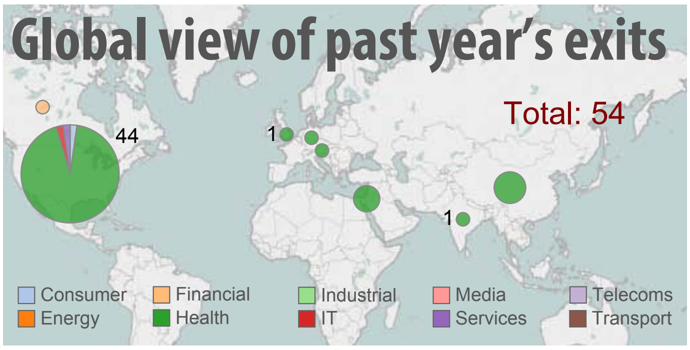
Relay Therapeutics, a US-based developer of protein-focused medicines, closed a $400m series B round led by the SoftBank Vision Fund, the $98.6bn fund run by telecoms firm SoftBank. GV, an early-stage investment vehicle for Alphabet, also took part in the round, as did Alexandria Venture Investments, the strategic investment division of Alexandria Real Estate Equities. Founded in 2016, Relay is developing medicines that exploit the structural changes in protein molecules to treat cancer and other diseases. The company will spend the proceeds on recruitment, expanding its pipeline and advancing its lead programs into clinical testing.

China-based medical diagnostics technology provider China Diagnostics Medical Corporation has raised almost RMB2bn ($294m) from investors including insurance firm Ping An. Legend Capital, the venture capital firm launched by conglomerate Legend Holdings, invested $100m to co-lead the round with investment bank China Renaissance's healthcare fund. Chinese Diagnostics develops diagnostic testing reagents to detect conditions such as HIV, cancer, diabetes and syphilis, and runs more than 20 testing centres across China.

US-based oncology drug developer Rakuten Aspyrian completed a $284m series C round featuring e-commerce firm Rakuten and financial services provider SBI Group. The close of the round came through the provision of $134m that was added to a $150m first tranche secured earlier. The first close was led by Rakuten chief executive Hiroshi Mikitani, who is also Rakuten Aspyrian's chairman. Founded in 2015, Rakuten Aspyrian is working on cancer treatments based on its photoimmunotherapy platform, which adds the molecular targeting of cancer cells to the laser-activation of a biophysical mechanism that causes them to die. The company expects to generate top-line results from a phase 1 and 2 trial for its lead drug candidate, which targets a cancer antigen in solid tumours.

Exits

Corporate venturers from the health sector completed 54 exits between May 2018 and April 2019 – 33 initial public offerings, 17 acquisitions, three mergers and one other transaction.



On a year-on-year basis, the number of IPOs increased drastically in 2014 – 29, up from the nine in the previous year – and then declined in number to 14 by the end of 2017. However, last year there was a surge, as GCV Analytics reported 36 IPOs of businesses backed by life sciences corporates. Going public is a financing tool more

SECTOR FOCUS

frequently used in the life sciences sector than in other sectors, where IPOs account for about a 10th of all exits, according to our data. This is attributable to the complexity, time and capital requirement of developing treatment or medical devices, processes largely unparallelled in other sectors.

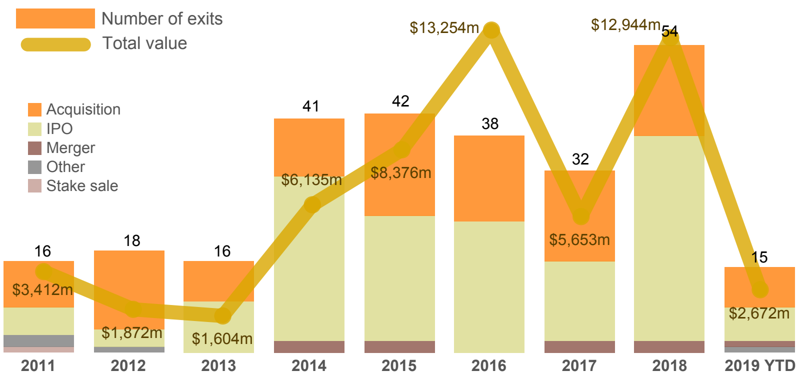
Biopharmaceutical company Alexion Pharmaceuticals agreed to acquire Syntimmune, a US-based autoimmune disease therapy developer backed by drug producer Baxalta, for up to $1.2bn. Alexion will pay $400m in cash and up to $800m more dependent on milestones. Founded in 2013, Syntimmune's drug candidates target a protein that contributes to regular immune responses in healthy individuals but can drive autoimmune disorders when it malfunctions. Its lead asset is undergoing phase 1b and 2a clinical trials in people with warm autoimmune haemolytic anaemia, which causes a premature destruction of red blood cells, and in people with pemphigus vulgaris or pemphigus foliaceus, which cause skin blisters.

Verano, a US-based vertically integrated cannabis group backed by cannabinoid therapy developer Scythian Biosciences, agreed to an $850m acquisition by peer Harvest Health and Recreation. The all-stock transaction assumes a Harvest share price of C$8.79 ($6.57). Verano operates licensed cannabis cultivation and manufacturing facilities, produces a wide range of cannabis products such as edibles, extracts and concentrates, and owns dispensaries under the brand name Zen Leaf.

Moderna, a US-based messenger RNA therapeutics developer backed by pharmaceutical companies AstraZeneca, Merck & Co and Alexion, raised about $604m when it went public on the Nasdaq Global Select Market. The IPO, the largest for a biotech company, consisted of almost 26.3 million shares at $23 each, up from 21.7 million shares when the company set a $22 to $24 range earlier. The offering valued it at about $7.52bn. Moderna is working on drugs and vaccines, and has advanced 21 product candidates into development, 10 of which have gone into clinical studies. The company will put up to $420m of the proceeds into drug discovery, clinical development and the growth of its manufacturing capabilities. Between $90m and $100m will go to developing its platform.

Otsuka Pharmaceutical, the pharmaceutical subsidiary of healthcare and nutrition group Otsuka Holdings, agreed to acquire US-based antibody developer Visterra for $430m, allowing Merck & Co to exit. Visterra had filed for an IPO in 2016 but withdrew its plans in 2017. Visterra is developing precision antibody-based therapeutics designed to modulate disease targets not currently treatable by other antibody-based drugs. Its candidate pipeline includes prospective treatments for kidney diseases, cancer, chronic pain and infectious diseases.

Exits by health sector corporates 2011-19



Innovent Biologics, a China-based biopharmaceutical company backed by insurance providers China Life, Ping An and Taikang as well as Eli Lilly and Legend Holdings, raised $421m in an IPO on the Hong Kong Stock Exchange. The company issued 236 million shares at HK$13.98 ($1.78) , near the top of the $1.60 to $1.80 range it had set. A total of 10 cornerstone investors, including Sequoia Capital China, Value Partners Hong Kong and Prime Capital Funds, bought $245m shares. Founded in 2011, Innovent Biologics is working on treatments for cancer, eye conditions, autoimmune disorders and cardiovascular diseases. It has 17 assets in its pipeline, with four candidates in late-stage clinical development. Proceeds from the offering will support clinical trials and go towards commercialisation of several drug candidates.

Ascletis, a China-based hepatitis C drug developer backed by pharmaceutical company Tasly Pharmaceuticals, was valued at $400m in an IPO in Hong Kong. The company sold 224 million shares – 20% of its overall share capital – at HK$14 each, in the middle of the IPO's HK$12 to HK$16 range. Singaporean sovereign wealth fund GIC bought $75m of shares as a cornerstone investor. Founded in 2011, Ascletis is developing treatments for the hepatitis C virus. It received approval from Chinese regulators for anti-viral treatment Ganovo. The company has also concluded a phase 2 and 3 trial for Ravidasvir, which is intended to be taken orally with Ganovo.

Genomics technology producer Illumina exited US-based genetic screening service Counsyl, after the latter agreed to a $375m acquisition by molecular testing service provider Myriad Genetics. Counsyl's shareholders are entitled to receive up to 25% of the $375m in Myriad stock, not exceeding 3 million shares. Founded in 2007, Counsyl operates a laboratory that offers low-cost non-invasive prenatal and cancer screening. It has also developed a suite of tools that integrates its tests into existing clinical workflows and electronic medical records.

US-based immuno-oncology drug developer Allogene Therapeutics closed an IPO that scored exits for Pfizer and Gilead Sciences at almost $373m. The company raised an initial $324m when it issued 18 million shares at $18 each on the Nas-

SECTOR FOCUS

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

Company	Location	Sector	Exit type	Acquirer	Size	Investors
Syntimmune	US	Health	Acquisition	Alexion Pharmaceuticals	$1.2bn	Apple Tree Partners | Baxalta | Partners Innovation Fund
Verano	US	Consumer	Acquisition	Harvest Health and Recreation	$850m	Scythian Biosciences
Moderna Therapeutics	US	Health	IPO	–	$604m	Abu Dhabi Investment Authority | Alexandria Real Estate Equities | Alexion Pharmaceuticals | ArrowMark Partners | AstraZeneca | BB Biotech | EDBI | Fidelity | Invus | Julius Baer | Merck & Co | Pictet | RA Capital | Sequoia Capital | Viking Global Investors | Wellington Management
Visterra	US	Health	Acquisition	Otsuka Pharmaceutical	$430m	Alexandria Real Estate Equities | Allegheny Financial Group | Bill & Melinda Gates Foundation | CTI Life Sciences Fund | Cycad Group | Flagship Ventures | Merck & Co | Omega Funds | Polaris Venture Partners | Serum Institute of India | Vertex Ventures
Innovent Biologics	China	Health	IPO	–	$421m	Ally Bridge Group | Capital Group Private Markets | China Life Insurance | Cormorant Asset Management | Eli Lilly | Fidelity | Frontline BioVentures | Hillhouse Capital Management | Legend Holdings | Ping An Insurance | Rock Springs Capital | State Development & Investment Corporation | Suzhou Industrial Park | Taikang Life Insurance Company | Temasek
Ascletis	China	Health	IPO	–	$400m	C-Bridge Capital | Focus Media | Goldman Sachs | Hangzhou Binjiang Investment | Pavilion Capital | QianHai Equity Investment FOF | Tasly Pharmaceutical | WTT Investment
Counsyl	US	Health	Acquisition	Myriad Genetics	$375m	Goldman Sachs | Illumina | Perceptive Advisors | Rosemont Seneca Technology Partners
Allogene Therapeutics	US	Health	IPO	–	$373m	Gilead Sciences | Pfizer | Seaview Trust | TPG | Vida Ventures
Millipede Medical	US	Health	Acquisition	Boston Scientific	$325m	Boston Scientific | undisclosed investors
Liaison Technologies	US	IT	Acquisition	OpenText	$310m	Accenture | Forté Ventures | Merck & Co | UPS | Verdane Capital

daq Global Select Market. Allogene's shares closed at $25 on the first day. Joint book-running managers Goldman Sachs, JPMorgan Securities, Cowen and Co, and Jefferies subsequently bought a further 2.7 million shares for $48.6m. Founded in 2018, Allogene is developing allogeneic T-cell therapeutics based on intellectual property licensed from Pfizer.

Medical device manufacturer Boston Scientific acquired the rest of the shares in one of its portfolio companies, US-based mitral regurgitation system developer Millipede Medical, for $325m. Millipede will receive an additional $125m payment dependent on a milestone. Founded in 2012, Millipede is developing a medical device to treat people with from severe mitral regurgitation, a condition that causes blood to flow the wrong way in the heart.

Enterprise software provider OpenText agreed to acquire US-based application and data management software developer Liaison Technologies for about $310m, allowing corporates including Merck & Co to exit. Founded in 2001, Liaison produces software that helps a base of more than 4,000 enterprise customers integrate their business applications and manage data. The company's Alloy platform also includes a cloud-based monitoring and visualisation tool for business and transaction activity, and a data-mapping and translation system which Merck uses in all its clinical trials. OpenText plans to add the company's technology to its own offering, particularly for customers in life sciences and healthcare.

Global Corporate Venturing also reported several exits of emerging health-related enterprises that involved corporate investors from different sectors.

CStone Pharmaceuticals raised HK$2.2bn ($285m) in an IPO on the Hong Kong Stock Exchange. CStone achieved a valuation of $1.5bn after selling 18.6 million shares to Hong Kong-based investors and more than 167 million shares to international backers at $1.50, in the middle of its range of $1.40 to $1.60. The company allocated 30% of proceeds to clinical trials, registration filings and commercialisation of its lead immuno-oncology asset. Another 40% will drive the development of the company's investigational new drug pipeline.

Alcon, an eyecare subsidiary of Novartis, agreed to buy US-based eyecare technology developer PowerVision, a Novartis portfolio company, in a $285m transaction. Founded in 2002, PowerVision is developing an intraocular lens implant aimed at improving the sight of elderly people with from cataracts and presbyopia, a condition that gradually reduces the eye's ability to focus. The implant reacts to the natural contractions of the eye muscles. Alcon intends to develop the product and advance it through clinical trials to prepare it for commercialisation. It will also make additional payments based on the achievement of regulatory and commercial milestones.

Top 10 exits from health sector enterprises over the past year

Company	Location	Exit type	Acquirer	Size	Investors
Syntimmune	US	Acquisition	Alexion Pharmaceuticals	$1.2bn	Apple Tree Partners | Baxalta | Partners Innovation Fund
Moderna Therapeutics	US	IPO		$604m	Abu Dhabi Investment Authority | Alexandria Real Estate Equities | Alexion Pharmaceuticals | ArrowMark Partners | AstraZeneca | BB Biotech | EDBI | Fidelity | Invus | Julius Baer | Merck & Co | Pictet | RA Capital | Sequoia Capital | Viking Global Investors | Wellington Management
Visterra	US	Acquisition	Otsuka Pharmaceutical	$430m	Alexandria Real Estate Equities | Allegheny Financial Group | Bill & Melinda Gates Foundation | CTI Life Sciences Fund | Cycad Group | Flagship Ventures | Merck & Co | Omega Funds | Polaris Venture Partners | Serum Institute of India | Vertex Ventures
Innovent Biologics	China	IPO		$421m	Ally Bridge Group | Capital Group Private Markets | China Life Insurance | Cormorant Asset Management | Eli Lilly | Fidelity | Frontline BioVentures | Hillhouse Capital Management | Legend Holdings | Ping An Insurance | Rock Springs Capital | State Development & Investment Corporation | Suzhou Industrial Park | Taikang Life Insurance Company | Temasek
Ascletis	China	IPO		$400m	C-Bridge Capital | Focus Media | Goldman Sachs | Hangzhou Binjiang Investment | Pavilion Capital | QianHai Equity Investment FOF | Tasly Pharmaceutical | WTT Investment
Counsyl	US	Acquisition	Myriad Genetics	$375m	Goldman Sachs | Illumina | Perceptive Advisors | Rosemont Seneca Technology Partners
Allogene Therapeutics	US	IPO		$373m	Gilead Sciences | Pfizer | Seaview Trust | TPG | Vida Ventures
Millipede Medical	US	Acquisition	Boston Scientific	$325m	Boston Scientific | undisclosed investors
CStone Pharmaceuticals	US	IPO		$285m	3W Partners | Arch Venture Partners | Avict Global Holdings | Boyu Capital | Citic PE | Frontline BioVentures | GIC | Hillhouse Capital Management | King Star Capital | Oriza Holdings | Sequoia Capital | Taikang Life Insurance Company | Terra Magnum Capital Partners | WuXi AppTec | Wuxi PharmaTech | Yunfeng Capital
PowerVision	US	Acquisition	Alcon	$285m	Advanced Technology Ventures | Aisling Capital | Alcon | ATV Capital | Correlation Ventures | Frazier Healthcare Ventures | Johnson & Johnson | JP Morgan | Lexington Partners | Medtronic | Panorama Capital | VenRock

Funds

From May 2018 to April 2019, corporate venturers and investing in the life sciences sector secured over $10.22bn in capital via 46 funding initiatives, which included 29 VC funds, 12 new CVC subsidiaries, two accelerators and two other initiatives.

On a calendar year-to-year basis, the number of funding initiatives in the health sector remained stable, with a total of 42 in 2018 compared with 43 in 2017, though significantly down from the peak of 74 initiatives in 2016. The total estimated capital, however, increased to $6.99bn by the end of last year, up 22% from the $5.74bn in 2017. This year's initiatives raised $6.40bn in the first four months or so.

Germany-based insurance and asset management group Allianz increased the capital available to its venturing subsidiary Allianz X from €430m to €1bn ($1.13bn). Formed in 2013, Allianz X targets growth-stage companies developing digital technologies relevant to its parent's business, covering areas such as health products, mobility, wealth management, cybersecurity, data analytics and connected property. The firm said it had allocated more capital to Allianz X as a reflection of the unit's success in its investments and partnerships as well as its importance to Allianz's digital transformation plan.

Verily, the US-based life sciences subsidiary of Alphabet, expanded its investment activities to include more startups following a $1bn commitment. Verily raised $1bn from private equity firm Silver Lake, Ontario Teachers' Pension Plan and two undisclosed investment management firms. Partner Space, Verily's investment and collaboration scheme, is set to increase the number of startups it hosts from between six and eight companies to up to 15 companies. The initiative typically invests in series A or B rounds and offers portfolio companies the opportunity to work in its San Francisco campus in a move to foster collaboration.

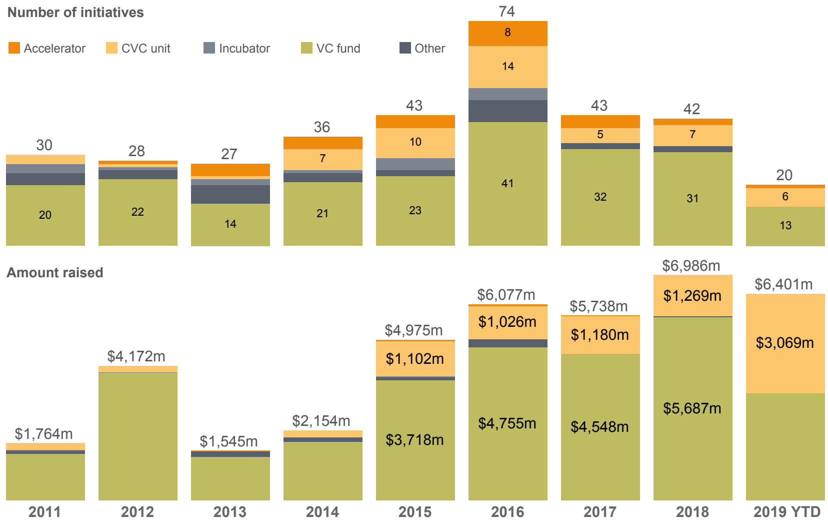
Pfizer revealed its plans to invest $600m in biotech and other emerging technologies through new corporate venturing division Pfizer Ventures. Early-stage neuroscience companies will be a key focus, with about $150m allocated to such startups. Initial areas of interest will include neurodegeneration, neuroinflammation and neurometabolic disorders. The

SECTOR FOCUS

$600m came as part of a restructuring effort that combines Pfizer Venture Investments, the company's existing venturing arm, with research and development equity investment vehicle R&D Innovate. Pfizer Venture Investments, founded in 2004, has grown to a portfolio of more than 40 companies and has invested about $500m to date, bringing the size of Pfizer's corporate venturing efforts to more than $1bn.

Netherlands-based venture capital firm Forbion Capital Partners closed a €360 fund with commitments from insurance providers ASR Insurances and KLP, beating its original target of $290m. TNO Pension Fund, owned by the Netherlands Organisation for Applied Scientific Research, also contributed capital, as did German state-owned development bank KfW and the EU-owned European Investment Fund. Investors also included wealth management firm Formuesforvaltning, private equity firm Pantheon Ventures and a range of undisclosed institutional investors based in North America. Forbion IV will focus on the biopharmaceutical sector, seeking significant stakes primarily in EU-based businesses, though it also expects to allocate some cash to North American deals. The fund will look to invest in 15 companies, including five to be co-founded by Forbion and 10 existing growth-stage companies.

Health sector funding initiatives 2011-19



US-based growth equity firm Edison Partners closed its ninth fund at $365m having raised capital from limited partners including insurance firm American Family. Other investors were investment manager Hirtle Callaghan, New Mexico Educational Retirement Board, Rutgers University and fund of funds Renaissance Venture Capital Fund. Edison makes investments in growth-stage companies generating $5m to $25m in revenue, targeting developers of enterprise, financial and healthcare software technology. It assesses investments using proprietary software platform Edison Edge. The fund was oversubscribed from a $300m target.

SK China, a local subsidiary of South Korea-based telecoms conglomerate SK Group, invested ₩300m ($266m) in a fund created by Legend Capital. SK China reportedly contributed half the fund's targeted capital. It will focus on early-stage companies in the IT and healthcare industries based in China and across Asia. SK China runs a group of real estate, energy and rental car businesses in China.

US-based healthcare provider Cigna launched corporate venturing vehicle Cigna Ventures with $250m of capital. Cigna provides both healthcare and health insurance but formed Cigna Ventures to access innovative technology that can improve the effectiveness and efficiency of its services. The fund will target companies focusing on health insights and analytics, digital health and retail technology, and healthcare delivery and management.

France-based venture capital firm Seventure Partners has reached the first close of a €200m healthcare-focused fund with commitments from corporate limited partners including cheese producer Bel and food provider Danone. Pharmaceutical firm Novartis, yeast manufacturer Lesaffre, medical device producer Wright Medical and Unigrains, the investment arm of agricultural products supplier Unicéréales, also backed the fund. Health for Life Capital II has also signed up an unnamed US-based food ingredient provider, undisclosed financial services firms and assorted individual investors. The fund will invest globally, focusing on technologies centred on the human microbiome, but will also conduct opportunistic investments in areas such as digital therapeutics, digital health, digital nutritional advice, personalised diets, precision medicine and food technologies.

Netherlands-based investment firm Gilde Healthcare closed a €200m private equity fund with a contribution from financial services firm Rabobank's Rabo Corporate Investments unit. Pension fund PGGM/Pensioenfonds Zorg en Welzijn also backed the fund, as did a range of unnamed Netherlands-based institutional investors and international funds of funds. The fund, Gilde Healthcare Services III, closed at its hard cap. It will target healthcare and service providers as well as medical product suppliers, focusing on profitable businesses with earnings before interest, tax, depreciation and amortisation of $2.2m to $16.8m. The vehicle will particularly seek opportunities in Belgium, the Netherlands, Luxembourg, Germany, Austria and Switzerland, operating from offices in the Netherlands and Germany. Apart from capital, it will offer portfolio companies access to its international network and support with growth strategies.

SECTOR FOCUS

Health sector funding initiatives over the past year

Funding initiative	Type	Funds raised	Location	Focus	Investors
Allianz X	CVC unit	$1.13bn	Germany	Financial, IT, transport, services, health	Allianz
Verily	CVC unit	$1bn	US	Health	Alphabet | Ontario Teachers' Pension Plan Board | Silver Lake
Pfizer Ventures	CVC unit	$600m	US	Health	Pfizer
Forbion IV	VC fund	$415m	US	Health	ASR Insurances | European Investment Fund | Forbion Capital Partners | Formuesforvaltning | KfW | Kommunal Landspensjonskasse | Netherlands Organisation for Applied Scientific Research | Pantheon Ventures
Edison IX	VC fund	$365m	US	Health, financial	American Family Insurance | Edison Partners | Hirtle Callaghan | New Mexico Educational Retirement Board | Renaissance Venture Capital Fund | Rutgers University
Unnamed Legend Capital fund	VC fund	$266m	South Korea	IT, health	Legend Holdings | SK Group
Cigna Ventures	CVC unit	$250m	US	Health	Cigna
Health for Life Capital II	VC fund	$225m	France	Health	Danone | Groupe Bel | Lesaffre | Novartis | Seventure Partners | Unicéréales | Wright Medical
Gilde Healthcare Services III	VC fund	$225m	Netherlands	Health	Gilde Healthcare | Rabobank
HPE III	VC fund	$188m	US	Health	Allina Health | Anthem Blue Cross | Blue Cross Blue Shield of Tennessee | Health Enterprise Partners | Intermountain Healthcare | Novant Health | Sentara Healthcare | UCHealth | USAble Corporation
Propel Asia	Accelerator	–	Singapore	Services	District6 | Jones Lang LaSalle | Lend Lease | MeshMinds

US-based healthcare investment firm Health Enterprise Partners (HEP) closed its oversubscribed third fund at $188m having secured several healthcare organisations and care providers as backers. Although the participating corporates were not officially named, HEP identifies a number of strategic limited partners on its website, including healthcare systems Allina Health, Intermountain Healthcare, Novant Health, Sentara Healthcare and UCHealth. Others were health insurance providers Anthem Blue Cross, BlueCross BlueShield of Tennessee and Usable Corporation. Founded in 2006, HEP generally makes growth equity and small buyout investments of between $5m and $15m in healthcare technology and services providers.

People


Bulthuis

Roel Bulthuis, senior vice-president and managing director at M Ventures, the corporate venturing unit of Germany-based drugs group Merck, joined Netherlands-based venture capital fund Inkef Capital as head of healthcare. Dutch pension fund ABP founded Inkef with €500m in 2010. Bulthuis will co-manage the Inkef fund alongside Robert Jan Galema, head of the technology team. At M Ventures he was succeeded by Jasper Bos. Bulthuis originally set up what was then called MS Ventures in 2009 and in 2016 saw the evergreen strategic venture fund double to €300m.


Rosenberg

M Ventures also hired Dave Rosenberg as a managing director. Based in Amsterdam, iRosenberg will head M Ventures' New Business Fund. Rosenberg came from GE Ventures, the corporate venture capital arm of industrial and power technology producer General Electric, where he spent two years as managing director of business creation, having previously headed cloud investments for intellectual property licensing firm Intellectual Ventures. In addition to his VC work, Roseberg was a co-founder and previously CEO of Mulesoft, the integration software provider acquired by Salesforce for $6.5bn. He subsequently founded Nodeable, a data processing platform acquired by Appcelerator in 2012.


Jones

Elaine Jones, executive director of Pfizer's corporate venturing subsidiary, Pfizer Ventures, retired after two decades in venture capital and business development applying pharmaceutical research. Pfizer Ventures hired Jones at the end of 2008 to drive deals and manage the unit's portfolio at board level. Jones began her career in corporate finance at GlaxoSmithKline's corporate venturing unit, SR One, in 1999 as a vice-president, after which she spent five years as a general partner at EuclidSR Partners, a joint venture between SR One and venture capital firm Euclid Partners.


Wuttke

Pharmaceutical company Almirall hired Francesca Domenech Wuttke as chief digital officer. Wuttke left US-based pharmaceutical firm Merck & Co's Merck Global Health Innovation Fund (GHI) subsidiary where she was managing director. Wuttke headed Almirall's corporate development strategy team for a year before joining Merck GHI in 2016. During her earlier tenure at Almirall, she focused on medical device and pharmaceutical M&A deals. While at Merck GHI, she led Europe-based investments.

SECTOR FOCUS

Perry Robinson, managing director of investments for insurance firm Guardian Life's $100m corporate venturing arm, GIS Strategic Venture Capital, rejoined US-based venture capital firm Greenwich BioMedical Digital Health Ventures. Robinson founded Greenwich BioMedical in 2002 and was its managing director until 2016. He returned to the firm as a managing partner and will oversee investments in digital health and artificial intelligence. During Robinson's four years at GIS Strategic Venture Capital, he funded and advised companies at board level in the fields of biotech, digital health and financial technology.

Alexa von Tobel, previously chief innovation officer for life insurance provider Northwestern Mutual, has formed early-stage technology venture fund Inspired Capital. As managing partner, Von Tobel will join Mark Batsiyan, a colleague from Northwestern Mutual's corporate venturing arm, NM Future Ventures. Inspired Capital plans to raise $200m for its first fund. At NM Future Ventures, Souheil Badran, formerly president of Americas for e-commerce group Alibaba's financial services affiliate Ant Financial, has taken over Von Tobel's duties.


Shrestha

Rasu Shrestha left his position as chief innovation officer at healthcare system University of Pittsburgh Medical Centre (UPMC) to join healthcare provider Atrium Health as chief strategy officer. Having joined UPMC initially in 2007 as medical director of radiology informatics, he spent almost 12 years at the organisation and led its innovation strategy from 2014 as chief innovation officer. He was concurrently an executive vice-president at UPMC's investment arm, UPMC Enterprises, where he oversaw investments in startups focusing on healthcare intelligence. At Atrium, Shrestha will develop enterprise strategy and lead innovation efforts.

Alphabet's investment arm GV has hired David Schenkein, former chief executive of biopharmaceutical company Agios Pharmaceuticals, as a general partner. Schenkein joined Agios in 2009, and helped transform the company from a preclinical-stage startup to a business with two US-approved cancer drugs in the market. He will remain chairman. Schenkein will co-lead GV's life sciences investment team with Blake Byers and Krishna Yeshwant.

GV also hired Rosana Kapeller, former chief scientific officer at biotechnology company Nimbus Therapeutics, as its first entrepreneur-in-residence for life sciences. Kapeller will concentrate on technologies that apply machine learning technology to healthcare and life sciences, with the intention of running a startup developing one of those technologies. She spent eight years as the founding chief scientific officer of Nimbus, having previously co-founded peptide drug developer Aileron Therapeutics as vice-president of research, after 10 years at Millennium Pharmaceuticals, which was acquired by Takeda in 2008. Kapeller has also provided consulting services for venture capital firms Third Rock Ventures and Atlas Venture on their life sciences investments.


Burr

Elizabeth Burr, formerly US-based health insurance provider Humana's chief innovation officer and vice-president of healthcare trend, joined mortgage lender Mr Cooper. Humana hired Burr in 2015 to set up its Silicon Valley office and its corporate venturing subsidiary, Humana Health Ventures. She oversaw its healthcare venturing and innovation activities.


Suennen

Lisa Suennen left her position as managing director of GE Ventures. The corporate venturing unit hired Suennen from healthcare investment firm Psilos Group in December 2016 to lead its healthcare investment team. Suennen had spent more than 15 years at Psilos where she was managing partner. She is also managing partner of Venture Valkyrie, a media advisory firm and platform.


Steager

Eric Steager has left Independence Blue Cross (IBC), a healthcare licensee of health insurance group Blue Cross Blue Shield Association, to join health benefits provider Anthem, where he is vice-president of corporate venture capital at its new corporate venturing unit. He will carry out strategic equity investments in healthtech startups and supervise portfolio development. Steager joined IBC in 2012 as director of corporate development and innovation, and oversaw strategic investments, partnerships and mergers and acquisitions. He also co-managed corporate venture capital arm Strategic Innovation Portfolio, sourcing and leading investments in early-stage healthcare information technology companies. Tom Olenzak, co-manager of Strategic Innovation Portfolio, took over his duties at IBC.


Norman

Bayer Growth Ventures, the corporate venturing arm of Germany-headquartered life sciences and agricultural products group Bayer, has hired Derek Norman as vice-president. Norman was formerly head of Syngenta Ventures, Switzerland-based agribusiness Syngenta's corporate venturing unit. Syngenta Ventures managing director Colin Steen has assumed Norman's duties. Norman joined Syngenta Ventures in 2009 as a managing director. Bayer Growth Ventures makes seed-stage investments in developers of health and nutrition technologies.

Pivotal BioVenture Partners, a US-based healthcare-focused venture capital firm financed by property development and healthcare group Nan Fung, hired Heather Preston as managing partner. Preston came to Pivotal from TPG Biotech, private equity group TPG's life sciences venture capital arm, where she was partner and managing director for over a decade. A seasoned biotech investor, Preston received training in gastroenterology and hepatology from University of California San Francisco and was a postdoctoral research fellow in molecular biology at the Dana Farber Cancer Institute. She has a medical degree from University of Oxford.

Brian Gallagher left a partner position at SR One, the venturing arm of GlaxoSmithKline, to take the same position at investment group Abingworth. Gallagher joined SR One in 2010 after two years as director and then senior director of

SECTOR FOCUS

corporate development for Sirtris Pharmaceuticals, a biotech developer acquired by GlaxoSmithKline for $720m. During his time at SR One, Gallagher helped set up the unit's Boston office.

Tom Luby, former head of JLabs Texas, a regional incubator subsidiary of Johnson & Johnson, joined US-based healthcare provider Texas Medical Centre (TCM) to lead its innovation institute. Luby was appointed director of TCM Innovation, the TCM subsidiary that houses several accelerators and initiatives focused on developing technologies centred on digital health and medical areas such as neurology, oncology and mental health. As site head of Johnson & Johnson's JLabs@TMC incubator, which is overseen by the corporate's Johnson & Johnson Innovation–JJDC unit, Luby helped pharmaceutical, medical device and consumer health startups develop technologies and services. Luby was previously senior director of new ventures at Johnson & Johnson for four years from 2013, having moved from biopharmaceutical firm Shire where he was senior director of research ventures.

Jessica Zeaske left her position as director of healthcare investments at GE Ventures to be a partner at Echo Health Ventures, a US-based joint investment venture formed by health services provider Cambia Health and Blue Cross and Blue Shield of North Carolina's Mosaic Health Solutions unit. Before joining GE Ventures, Zeaske was a principal at healthcare-focused venture capital firm Lemhi Ventures for more than eight years.

Zeaske

Andreas Jurgeit, formerly a director at Germany-based Merck Group's corporate venturing arm, M Ventures, joined life sciences foundation Lundbeck Foundation's early-stage investment unit, Lundbeckfonden Emerge. The Denmark-based unit, which hired Jurgeit as a partner, invests in biotech, life sciences, pharmaceutical and healthcare technology developers. Jurgeit has experience in R&D in target discovery and drug development from doctoral and post-doctoral work at University of Zurich from 2006 to 2011, collaborating with 3V Biosciences, an oncology therapeutics developer whose co-founder Urs Greber was his professor. Following his doctorate studies, Jurgeit pursued venture capital investments for five years at VC firm Redalpine Venture Partners, and business development and mergers and acquisitions at biotechnology producer Redbiotec.

Jurgeit

Nico Straub, venture director at Siemens Technology Accelerator (STA), a corporate venturing subsidiary of industrial product and appliance producer Siemens, joined venture capital management consulting firm Bioventure as a partner. Founded in 2001, Germany-based Bioventure provides investment management services to life sciences and biotech-focused entrepreneurs and investors. Straub had been at STA since 2013, overseeing startup investments and commercialising and licensing Siemens' technologies.

Parth Desai left the investment team of NewYork-Presbyterian Ventures, the innovation vehicle for US-based healthcare provider NewYork-Presbyterian, to join venture capital firm Flare Capital Partners as a health-focused senior associate. Desai had been with NewYork-Presbyterian Ventures since 2018. Before standing down, Desai had been promoted from senior associate to manager. He began his career in 2012 as a health policy analyst for the Massachusetts House of Representatives, taking responsibility for preparing reforms to the state's legal framework for the pharmaceutical industry. He was later appointed to the health and human services committee of the US National Conference of State Legislatures, the non-profit advocate for legislators and staff of all US state assemblies.

Tracy Saxton, an alumna of corporate venturing funds Roche Venture Fund and Pivotal BioVenture Partners, became entrepreneur-in-residence at US-based venture capital firm Frazier Healthcare Partners, which provides VC and growth-stage funding for life sciences technology developers. Saxton is founder and chief executive of Aucupo Biosciences, a stealth-stage Frazier-incubated startup developing treatments for conditions insufficiently addressed by current therapies. In 2017 she co-founded Pivotal BioVenture Partners, a biotech-focused VC firm funded by property and life sciences group Nan Fung. She previously spent two years as an investment director at Roche Venture Fund, the corporate venturing arm of pharmaceutical firm Roche.

Saxton

Jen McCabe, a US-based director of investments and strategic business development for China-based contract electronics manufacturer Foxconn since 2016, joined fertility startup Future Family as head of business development. Future Family provides fertility services including egg freezing and in vitro fertilisation. During McCabe's time at Foxconn, the corporate invested in mobility-focused companies. She was previously a director of business development and alliances at supply chain electronics manufacturer Flex's US-based innovation unit from 2015 to 2016, overseeing investments in robotics.

University backing for health companies

By the end of 2018, there were 336 rounds raised by university spinouts, up 38% from the 244 registered in the previous year. The level of estimated total capital deployed in 2018 stood at $5.91bn, more than double the $2.85m figure in 2017.

Asklepios BioPharmaceutical (AskBio), a US-based gene therapy spinout of University of North Carolina (UNC) at Chapel Hill, raised $235m in funding from investors co-led by TPG Capital and Vida Ventures. TPG and Vida provided a combined $225m, with the remaining $10m supplied by the company's co-founders and board members. Founded in 2001, AskBio is working on treatments for rare genetic disorders. The spinout's approach exploits adeno-associated virus gene therapy and a cell line manufacturing process called Pro10. AskBio has developed a large portfolio of clinical programs across more than half a dozen conditions, such as cystic fibrosis, Huntington's disease, limb girdle muscular dys-

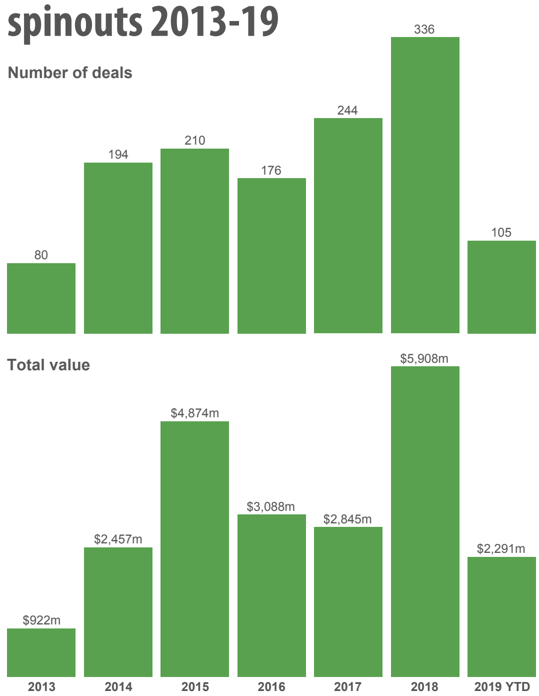
SECTOR FOCUS

trophy and myotonic muscular dystrophy. The spinout is based on research led by Jude Samulski, director of the Gene Therapy Center at UNC Chapel Hill. Samulski collaborated with Xiao Xiao, the Fred Eshelman distinguished professor of gene therapy in the Eshelman School of Pharmacy.

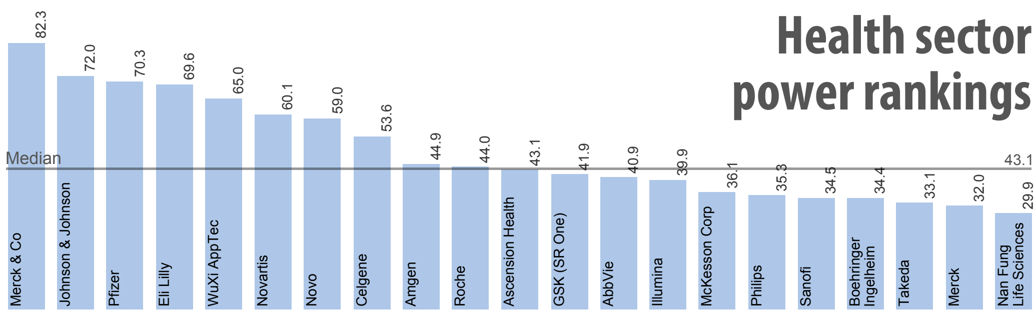
US-based biotechnology developer Maze Therapeutics launched with $191m in funding provided by a consortium featuring GV, the corporate venturing subsidiary of Alphabet. Alexandria Venture Investments, the investment arm of life science real estate trust Alexandria Real Estate Equities, also participated in the round co-led by Third Rock Ventures and Arch Venture Partners. Foresite Capital, Casdin Capital and several undisclosed investors filled out the round. Maze Therapeutics will focus on genetic modifiers – genes that affect the severity of a disease – and develop drugs that target such modifiers to treat disorders.

Orchard Therapeutics, a UK-based gene therapy spinout of University College London, closed a $150m oversubscribed series C round featuring medical marketing group Medison and healthcare management services provider Sphera Global Health Care. The round was led by Deerfield Management. Medison participated through its strategic investment vehicle, Medison Ventures. Temasek, the Singaporean state-owned investment firm, also participated, among many other investors. Orchard is working on gene therapies for rare, potentially fatal diseases and the series C proceeds will support work on its most developed drug candidates. ◆

Deals in health sector university spinouts 2013-19



Health sector power rankings



Interview: Merck fund's rolling thunder

Liwen-Edison Fu, reporter

William Taranto spoke about his near decade at Merck Global Health Innovation Fund and how corporate venturing has evolved in that time

In a discussion at the Global Corporate Venturing Symposium 2019 with Heidi Mason, co-founder of consultancy Bell Mason Group, Taranto, president of pharmaceutical firm Merck & Co's Global Health Innovation Fund (GHI), shared tips on how to build a resilient corporate venturing unit.

Mason considered Taranto's success to be a combination of the right time and right place. He was already in the healthcare industry and came from pharmaceutical firm Johnson & Johnson to help Merck set up GHI in 2010.

However, Taranto said: "We did not understand the complexity of healthcare in the early 2000s. We did not realise all the pieces we needed to connect. One of the reasons we failed early on was because we did not consider data."

Innovative solutions, he said, resulted from combining informational tools with existing health data while utilising health information technology platforms. This approach could improve the quality of health outcomes and lower overall health

William Taranto in discussion with Heidi Mason

system costs. He added that there were novel resources involved in procuring emerging data in healthcare, including diagnostics and social media, adding that Merck GHI was looking to build a data infrastructure to help scale its portfolio companies.

Asked how GHI achieved its expansion phase between 2013 and 2015, Taranto told Mason: "There were more tools in the toolbox."

Taranto valued the outsourcing model, as it could be difficult to leverage Merck's business units to perform what was required. To achieve maximum speed and flexibility, the fund looked to conduct certain procedures externally. GHI was set up as an independent private equity firm, which meant the corporate parent had no impact on the fund's profit and loss, though the fund's capital was eventually increased to $500m.

Merck would not initially accept Taranto's strategy, observed Mason, but it was now ready to participate. "It took a lot of communicating," he said. "It does not matter to whom we are reporting, we need to bring value." GHI was a strategic fund but it was a financial vehicle first. "There is no free ride – do not lose the money, you need to aggregate," said Taranto.

Mason asked about GHI's oncology thesis. Taranto said patients should have timely access to the best cancer care backed by evidence. Enabling technologies – artificial intelligence, health analytics and other platform technologies – were employed to interpret clinical data and generate insights, improving outcomes.

"We are going to use our private equity firm to create a large data network of companies to serve our oncology patients," he concluded. ◆

COMMENT

Best practices for starting and building CVC firms

Ian Goldstein, Fenwick & West, Rich Grant, Touchdown Ventures, and Gus Warren, Samsung Next

At this year's Global Corporate Venturing & Innovation Summit in California, we organised and led a workshop on best practices for starting and running a corporate venture capital program. This workshop was based on our extensive collective experience organising, operating, and advising a significant number of CVC programs across industries and stages of development. We focused on bringing into the open the various alternatives for structuring a corporate venture practice as well as steps and considerations for implementation and execution of an effective CVC investment program.

The goal for the presentation was not only to provide a general framework and guidance for companies considering launching an internal corporate venture program, or expanding an existing program, but also how to articulate to senior members of an organisation the strategic benefits of corporate venture investments.

A brief summary of the presentation and a few of the key takeaways follow. As we noted in our presentation, this is a generalised summary and analysis – creating, structuring and implementing a CVC investment program is much more complex due to the need to develop and align the particular strategic elements of a CVC program with the needs of a complex parent organisation.

Selling CVC internally

Every industry is threatened and affected by disruption. This is evident from the fact that the average lifespan of companies listed on the S&P 500 decreased by 66% since 1960, according to Innosight and Standard & Poor's. As a result, nearly all executives believe innovation is a top priority for their corporations, with the vast majority dissatisfied with the performance of their innovation programs, according to surveys by consultancies PwC and McKinsey.

As the need for rapid innovation has increased, corporate venture capital has emerged as a leading tool because it allows companies to explore external opportunities and partner external innovators, while preserving the flexibility to bring such innovations in-house at the appropriate time via R&D, business development and acquisition. Companies across diverse industries have increasingly embraced active corporate venturing programs, resulting in corporate participation in $66bn of venture investments across nearly 1,500 deals in 2018, based on data from US trade body the National Venture Capital Association and data provider PitchBook.

Corporate venture capital is primarily about innovation, competitive advantage and survival. The 10-year-plus growth trend in CVC deals and investment dollars is not a reason to build or expand a CVC program, but such growth suggests that corporations increasingly look to CVC to participate in the innovation and disruption facing their respective industries.

For those seeking to obtain internal alignment and support for a new or expanded CVC program, following the herd is, of course, not an adequate business rationale. But understanding the underlying reasoning for the growth in CVC, the strategic benefits corporations seek and obtain by operating dedicated CVC programs, and the different ways in which a CVC program could be structured to provide strategic benefits to an organisation, are entry points for gathering support for launching or expanding a program.

Building it strategically

In determining the appropriate corporate and operational structure for any new corporate venture fund, we discussed the importance of defining objective and quantifiable strategic goals and balancing them against certain structural considerations. Building the appropriate structure for a CVC fund requires balancing financial returns and strategic alignment with the company's business needs, as well as determining how closely the corporate venture fund will coordinate with business units. These structuring considerations provide a framework for answering many of the important questions that define the appropriate CVC fund structure.

Operations and decision-making: Key considerations include who will have ownership over investment processes, who will run the fund operations on a day-to-day basis and the level of autonomy the fund will have relative to the parent organisation. Certain funds are structured with oversight from upper management or a specific business unit, while others balance strategic and financial decisions with a dedicated corporate venture team along with participation from other stakeholders from the parent. Similarly, on a day-to-day basis, certain funds assign management from the parent, while others either hire an external team or have a combination of internal and external managers. Autonomy also varies along a similar spectrum, with some providing full autonomy subject to defined parameters and thresholds, while other companies provide more limited autonomy with a separate investment committee providing final approval.

Size and funding commitment: Determining capital allocation and parameters for the number of investments and the investment period helps determine the size and structure of the program and team. While considerations vary based on the goals of the parent, it is important to align size with the expected stage of target investments. For example, earlier-stage investments generally require less capital and thus a smaller investment budget, whereas later-stage investments generally necessitate larger cheques and thus a larger fund is more appropriate for building a diversified portfolio.

Compensation and performance metrics: Compensation structures are important for attracting, retaining and motivating an effective investment team. Compensation for corporate venture teams is traditionally tied to achievement of return-on-investment objectives or other strategic metrics. Defining key performance metrics is critical for strategic alignment between the corporate venture fund and the parent. In addition to financial return, other metrics include number of targeted investments within a defined industry, development of new commercial relationships between portfolio companies and parent business units, and acquisitions of portfolio companies, either by the parent or third parties.

Legal structure: Each of the above considerations contribute to determining the appropriate legal and operational structure for a corporate venture capital fund. There are three common CVC fund structures:

- Single limited partner – a traditional venture capital structure, with the parent as a single limited partner with limited governance rights and obligations. This fund can be structured to require investments within defined parameters that align with the parent's corporate strategy, but typically operates with greater independence than other structures.
- LLC subsidiary – the fund acts as a wholly-owned subsidiary of the parent entity. Typically the investment team has some autonomy in sourcing, evaluation and execution, but will typically report to and seek approval from a separate investment committee or executive team for certain investment matters.
- Fully integrated – the team consists of investment professionals working directly for the parent, with each investment requiring support from a specific business unit.

Running an effective program requires incredible discipline in developing and managing a quality deal pipeline

Running it effectively

Running an effective program requires the implementation of best practices seen at long-established successful corporate venture capital funds. This includes:

- Setting up a program with a clear investment thesis aligned with the strategic objectives of the parent.
- Building the investment infrastructure of team members plus internal and external support structures.
- Developing a robust deal pipeline and process to evaluate, close and manage investments.

We also discussed the importance of effective internal and external communication.

Internal communication, regardless of fund structure, incorporates day-to-day contact with the investment team as well as periodic but consistent communication with the parent, both through an investment or advisory committee and the executive team. Successful funds develop a cadence of weekly internal meetings to discuss management of the deal pipeline, execution and portfolio management, as well as monthly or quarterly meetings with the investment committee or the executive team to discuss strategies and goals for transferring key insights to the parent's core business.

External communication includes promotion of the fund's practices as well as active involvement with portfolio companies. Successful funds develop a comprehensive external messaging plan, including an investment mission and outreach plan to connect with startups and other members of the related ecosystem. Creating and delivering a comprehensive outreach plan will add credibility to the fund, reinforce support from the parent as well as drive dealflow and key relationships. Successful funds also strive to be a valuable investor to their portfolio companies, including board meeting attendance, advisory roles and help with internal and external business development.

Running an effective program requires incredible discipline in developing and managing a quality deal pipeline. We discussed how different programs network in a particular industry ecosystem, develop a deal pipeline, complete the vetting process for potential investments and then compete to win deals. We also discussed the importance of programs positioning themselves for success in winning deals by adopting best practices for venture investments and by ensuring their organisations can move through the deal process at customary venture speed.

A final thought

A final thought we discussed at our workshop is the often-overlooked strategic assets that CVC programs bring to their portfolio companies vis-à-vis their venture capital peers. These include a broader depth of non-financial resources, the ability to be a customer or other collaboration partner, and often a longer investment time horizon. The best programs use these strategic assets to the benefit of their portfolio companies, which can help derisk investment opportunities and bring greater strategic benefit to the parent. When building a new program, begin with the paying-it-forward mindset. This approach can help build trust and support – critical elements for success, both strategically and financially. ◆

The authors would like to thank Mike Devlin, Ryan McRobert, Scott Lenet and Selina Troesch for their contributions to this article

COMMENT

Venturing is here to stay

Why corporate investors won't wash away with the tide during the next economic downturn

Scott Lenet, president, Touchdown Ventures

Everyone is fascinated with predicting when the market will turn, especially venture capitalists. Perhaps now that Game of Thrones is over, we can end the refrains of "winter is coming" that seemed so much more clever seven seasons ago.

And while Chamath Palihapitiya of Social Capital recently suggested that quantitative easing could prevent most recessions in the future, the rest of the industry seems steeled for the inevitable. At the Global Corporate Venturing & Innovation Summit in California this year, Mark Boslet of the Venture Capital Journal interviewed me, Quinn Li of Qualcomm, Bonny Simi of JetBlue, and other professionals from our community, to discuss how corporate investors might be affected in the next economic downcycle.

Boslet wanted to discuss which programs might pull back or shut down, and he was keenly attuned to our industry's post-traumatic stress disorder.

"Corporate venture suffered a tarnished reputation in the wake of the dot.com crash, when dozens of programs exited the business and left portfolio companies short of follow-on capital. Whether a similar exodus, and stain, follows the next economic downturn is a hot question"

For many, the emotional flashpoint that signals an economic downturn is a stock market crash. Morningstar stock market data from 1926 to 2014 shows that a typical bear market lasted 1.3 years with an average cumulative loss of 41%, while annualised losses for bear markets range from about 20% to nearly 50%.

In a downturn, all investors have a natural tendency to pull back. Let's examine how the three main types of venture capital investors – angels, institutional venture capitalists and corporate investors – are affected by a bear market:

Angels

Start by looking at how angels are affected by a market crash, assuming the Dow Jones Industrial Average and Nasdaq Composite lose value according to Morningstar's predicted averages. Modern portfolio theory assumes the typical investor keeps 50% of her net worth in public equities, but wealthy investors target about 34% of their net worth in

COMMENT

stocks, partially because angels have the resources to make venture investments and other risky allocations. Cash and equivalents are 24% of a typical angel's net worth.

In our hypothetical bear market, the angel investor loses 13.9% of her net worth. Angels may fund their venture capital deals with proceeds from other startup investments that have been sold or gone public, rolling these into new investments. Or they may liquidate stocks at a high price and use the profits to invest in startups. Neither of these is a great option in a downturn, first because few venture investments are getting liquid at attractive prices during a bear market, and second because stocks are now low, not high, so unless the angel is ready to take a loss, the strategy of liquidating stocks is less applicable. The angels still have cash, but are likely "feeling the pinch" and may be careful about making new commitments to long-term illiquid investments. As a result, many angels pull back from new investing.

For angels, this reduction of value in liquid assets drives retrenchment.

Institutional VCs

Institutional venture capitalists are impacted not by reduction in value of liquid assets, but by asset allocation rebalancing. This is because venture capital funds get most of their money from pension funds, university endowments and other institutions. These institutional investors, known as limited partners, maintain explicit target allocations for what percentage of their assets belongs in risky investments like venture capital.

Prior to starting Touchdown Ventures, I spent the bulk of my career as an institutional investor. My anchor limited partner was Calpers, the world's largest pension fund, which publishes its target allocations. The most recent published data specifies 46% in public equities and 8% in private equity, which includes venture capital. These target allocations are fairly typical in my experience.

Perversely, the better the private equity industry performs after a public market downturn, the more institutional investors would need to cut back

Target allocations are thrown out of balance in our hypothetical crash. Because the value of public stocks decreases by 41%, the value of the entire portfolio declines by 18.9%. As a result, other assets make up a greater percentage of the overall pie. If there is no change in the value of a pension fund's private equity holdings, they will automatically compose 10% of overall assets, instead of the target 8%. Pension funds will often freeze commitments to new private equity funds in an effort to rebalance target allocations.

When limited partners signal to VCs that they should not feel too secure about the next fund, VCs naturally slow down. Without limited partners, institutional VCs are out of business. Because most venture funds are designed as 10-year entities, we do not see a wave of firm closures. Managers who never receive another allocation from institutional limited partners following a crash must still manage their funds.

This rebalancing has nothing to do with the performance of the venture capital industry. Perversely, the better the private equity industry performs after a public market downturn, the more institutional investors would need to cut back. The pension funds are simply managing the relative values of their various asset classes and the performance of the public market can directly impact capital supply for future VC funds.

Corporate venturers

How about corporate venturing funds, which have been so maligned as quickest to lose their lunches at the first sight of blood?

For corporations, liquid asset value is relatively unaffected by a stock market crash, and target asset allocation rebalancing is mostly irrelevant. For many corporations, balance sheet cash is the primary source of funding for CVC programs. Cash is minimally impacted by stock market crashes, and few CVCs have outside limited partner investors. Corporate investors are actually in a great position to maintain their CVC programs following a crash.

So why might corporations lose their appetite for venturing activity following a crash? Psychological effects will be real. Poor employee morale, declining sales growth, and reduction in profits that could cause a future reduction in cash might all contribute to a short-term mentality, and venture capital requires a long-term perspective.

As a result, some CVCs will indeed decide that they do not have the stomach for long-term investments when the economy crashes – and it would benefit our entire industry to consider how to manage these transitions professionally, avoiding the reputation damage that resulted from what was perceived as an exodus in the last downturn. After all, if you are driving and would like to be on a different road, it is a good idea to slow down, pull over and check your map. Few would open the door, roll out of the driver's seat and expect good results.

Most importantly, CVCs should recognise we do not need to rush for the exits when the next crash occurs. In fact, corporates might have the greatest structural opportunity to stay in the game when it is most advantageous to do so. As Mark Boslet wrote: "There are good reasons to believe the VC community is more durable this time, and that corporates better understand the need for innovation and the way to structure investment efforts for longevity." ◆

Global Corporate Venturing Leadership Society

GCV Leadership Society mission:

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.

	Premium* (Company) $13,000 per year	Luminary (Company) $50,000 for 2 years
Executive Advisory Role - act as GCV Leadership Society Ambassador for a two-year period	–	✓
Branding on Leadership Society materials as Luminary members	–	✓
Invitations to exclusive leadership society networking events worldwide	✓	✓
Showcase portfolio companies during GCV events	–	✓
Right to join and use the *'GCV Leadership Society'* Name	✓	✓
Get the Weekly Community Newsletter	✓	✓
Entry in the Member App	✓	✓
Pro Bono - Bridging communications to third parties	✓	✓
Enhanced Company Profile in the Directory app	✓	✓
Free Ticket to either the annual Summit or Symposium	TWO	THREE
Assistance in arranging one-to-one meetings and/or private meeting space during GCV events	✓	✓
GCV Subscription** - access the monthly magazine (pdf), news website and special reports	UNLIMITED USERS	UNLIMITED USERS
GCV Analytics for 1 user (add an extra user for $5,000 more) - access 15,000+ deals through GCV Analytics for bespoke reports	✓	✓
Access to GCV Connect	✓	✓

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

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 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 GCV Leadership Society unless authorised by its board.

Luminaries include:


Wendell Brooks
Intel Capital


Barbara Burger
Chevron Technology Ventures


David Gilmour
BP Ventures


Beau Laskey
SVB Capital


Jacqueline LeSage Krause
Munich Re / HSB Ventures


Jeffrey Li
Tencent


Sulu Mamdani
SVB Capital


Faran Nouri
Lam Capital


Michael Redding
Accenture Ventures


Brian Schettler
HorizonX Ventures


Tarik Galijasevic
AllState


Bonny Simi
JetBlue Technology Ventures


Bill Taranto
Merck


Geert van de Wouw
Shell Technology Ventures


Marianne Wu
GE Ventures

The benefits of the **Mawsonia** brands under one umbrella

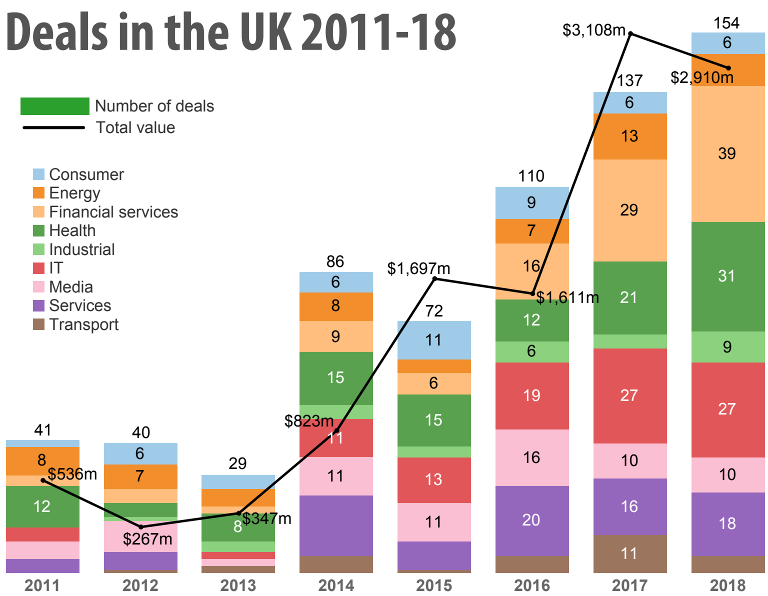
Global Corporate Venturing Symposium
Global Corporate Venturing Synergize
Global Corporate Venturing Analytics
Global Corporate Venturing Academy
Global Corporate Venturing & Innovation SUMMIT
Global Corporate Venturing ASIA CONGRESS
Global Venturing Review
Global Corporate Venturing Connect
Global Corporate Venturing
Global University Venturing
Global Impact Venturing

For more information or to apply today contact Janice Mawson:
+1 (703) 380 25 69 | janicemawson@globalcorporateventuring.com

INNOVATIVE REGION

UK performing well despite political turbulence

Robin Brinkworth, reporter



This year the UK's corporate venturing scene faces unique challenges. Is it as strong as ever, or is it affected by domestic political turmoil? The UK may soon be competing against countries with potentially greater access to the European market.

There were a record 152 corporate-backed deals last year, with a total value of \$2.9bn of investment backing. These figures were up from 2017's 137, with the financial services and health sectors doing particularly well. But less cash changed hands, down \$200m from 2017's high of \$3.1bn.

Ignacio Giménez, BP Ventures' managing director for Europe, said the UK was in a strong

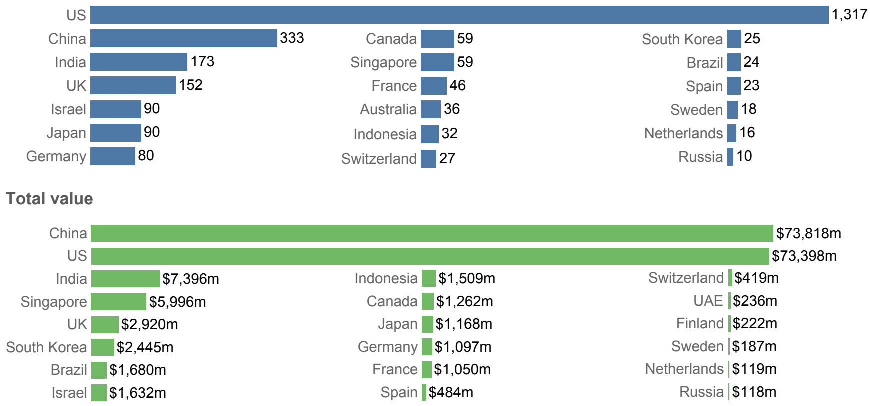
INNOVATIVE REGION

place. "The UK's innovation ecosystem is thriving and it is still regarded as the number-one tech hub in Europe".

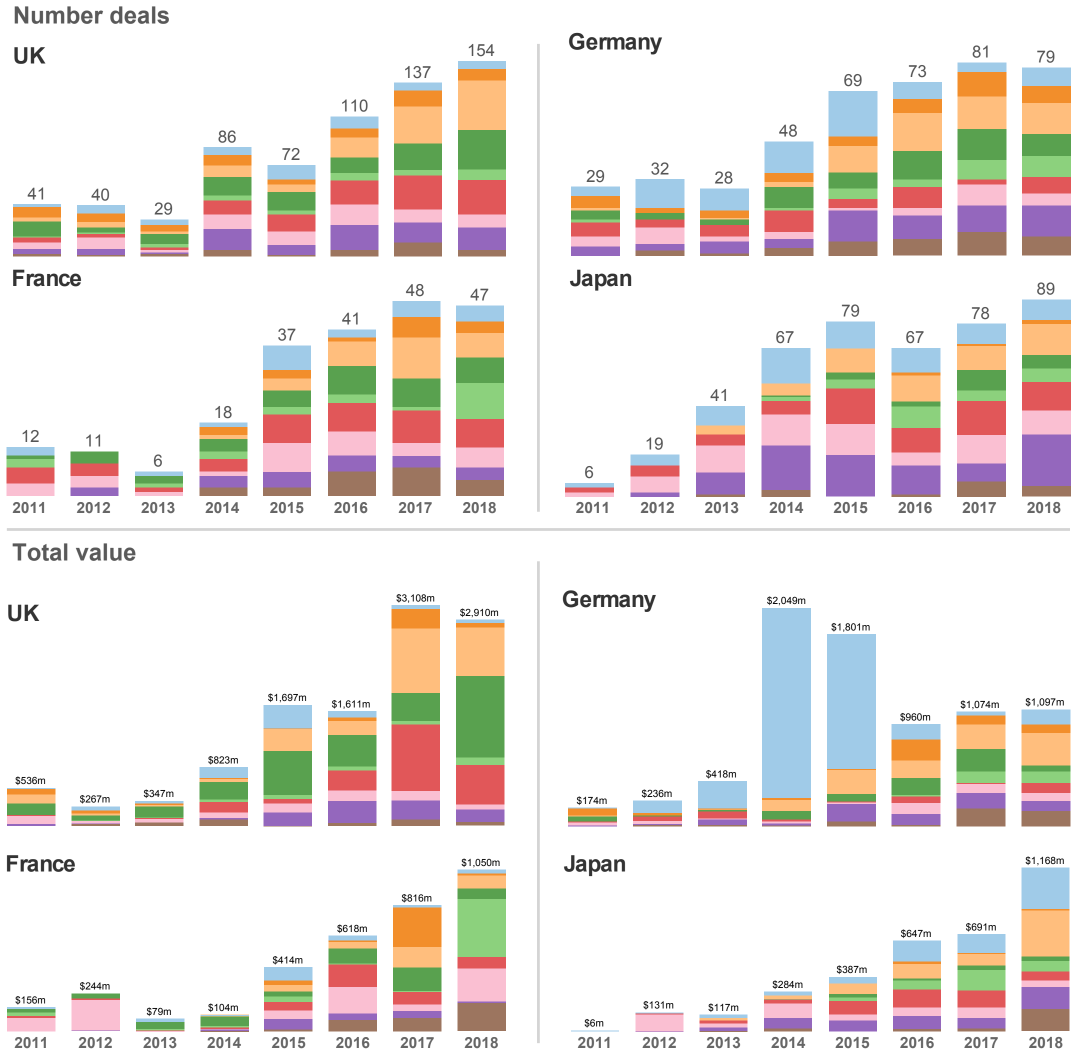
The UK outstripped European peers by deal count, but also by level of investment. Germany, the UK's nearest rival, enjoyed $1.1bn of investment in just 80 deals.

While Giménez acknowledged that political uncertainty had "dampened the

Top countries by deal volume and value 2018



Corporate-backed deals 2011-18



mood", he said it had "little ongoing impact".

He added: "Against the backdrop of this uncertainty, companies and investors have worked to keep their options open, without committing too many resources. As political risks have failed to materialise in the first half of this year, the mood seems to have lifted again and activity remains high."

Away from the heat of the Brexit debate, with the next deadline expected to be October 31, the UK is not completely out of the fire. As Giménez pointed out, one of the main challenges facing the UK is competition, which would exist regardless of Brexit.

He said: "While the UK remains the biggest VC market in Europe, competitors are growing equally fast. The UK government and local authorities therefore need to remain committed to promoting and supporting UK-based innovation. What I mean by this is making it easier for companies to test new products and business models, minimising red tape and providing supporting infrastructure."

Competition is inevitable, but the UK is holding its own. France and Germany are the main European rivals, but their deal counts combined do not surpass the UK's. Both France and Germany hover around the $1bn mark for corporate-backed deal value in 2018, up significantly in France's case. France had $816m of investment in 2017, rising to $1.05bn in 2018, whereas Germany increased investment only by $23m from 2017 – from $1,074m to $1,097m.

While the UK does have its strengths, such as its "high quality education system, investor availability, and government support", Giménez identifies the economic concentration in London as a weakness, saying the government should "continue its work in promoting the innovation ecosystem in the UK by extending it beyond the capital to take it to the next level".

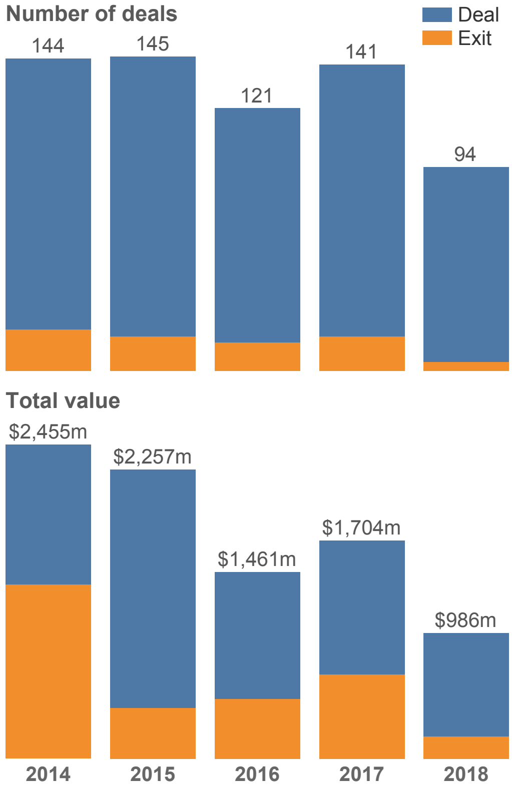
Education plays a key part in the UK's innovation scene, not just by developing talent, but also through university spinout startups. Difficult to replicate according to Giménez, it gives the UK a strong advantage, yet whether the startups are coming out of universities at the rate Giménez would like is dubious.

"What I would like to see is more universities starting to spin out great startups. It is a really promising model for innovation, as our investment track record at BP Ventures can show. Earlier this year we invested in C-Capture, a business that designs world-leading chemical processes for carbon dioxide. It is a great example of this model for innovation having spun-out from Leeds University in 2009."

Fewer deals were made in 2018 involving university spinouts, down to 90 compared to 125 in 2017. Less money was spend too: $986m on deals and exits compared to 2017's $1.7bn.

Universities are one source of startups, and hubs, accelerators, and incubators are another, where at least according to Giménez, the UK is a world leader.

Deals in and exits from UK university spinouts 2014-18



"A great example of this in our sector is an accelerator we partnered with called TechX. Based out of Aberdeen, it is focussed on helping smaller, ambitious technology developers take their solutions to the oil and gas market."

BP is after all, the new acronym for British Petroleum, and with a rapidly changing climate, startups and the innovation system across the UK represent a key tool for BP to change.

"A key part of our investment strategy at BP Ventures is to nurture and develop startups and entrepreneurs that can help the wider BP business in its transition to a lower carbon economy. So there is potentially a great deal of mutual benefit for both BP and startups in ensuring the UK's innovation ecosystem continues to thrive, and as VCs we also need to look at ways in which we can support and develop this innovation further."

Regardless of what happens over the next few years, politically or environmentally, Giménez says that, "the UK is still the epicentre for our European VC operations and we envisage keeping it this way. We would like to see continued support for the VC community from the UK government, to make sure it continues to thrive and retains its position as a European leader". ◆

IMPACT REPORT

Optimism in climate change – disruption with social attitude

Editorial from the launch issue of GCV's sister title, *Global Impact Venturing*

Mike Foster, financial journalist

It is hard to be optimistic about the potential impact of the climate crisis. Four degrees of warming this century would melt ice caps, flood coastal cities, torch rainforests and trigger mass migration. And scientists say we are heading that way, as carbon dioxide emissions steadily grow. The damage done to the global economy and stock markets would be extreme, the impact on society and healthcare, worse. Ecosystems on land and at sea are in grave danger.

Emissions will surely be cut. Governments talk of zero carbon emissions by 2030, or 2050. But people are really really bad at making sacrifices to deal with long-term issues. Australians told opinion pollsters climate change was their top concern this year, but ended up voting for a government keen to boost the economy. In 2016 US Democrats warned climate change had to be avoided. So people voted for Trump instead. And don't even mention the impact of Brexit on cross-border climate initiatives.

Innovation is the only way forward. Carbon will need to be recaptured. New systems for energy, transport and planetary engineering will require a fast track. Technology, automation and engineering support is crucial, along with public sector support. And all this just might generate economic growth, with a following wind from a more constructive approach in the ballot box.

Win or lose, it amounts to the most stunning opportunity for corporate and impact venturing the world has seen. And because it will be driven by saving the human race, as well as making profits, the very nature of capitalism will change. Shareholders will continue to matter, but stakeholders will matter just as much.

Let's call it disruption, with social attitude.

Climate venturing is already changing the oil, auto and electricity distribution sectors. The visionary Elon Musk has tapped the capital markets over and again for his Tesla electric car, battery and solar panel businesses. Large corporate ventures are snapping at his heels.

As well as from corporates, institutional investors and the public sector, climate venture funding will come from wealthy families out to burnish their reputation as social saviours, while making the world safe for their children – and themselves. The cause is led by Microsoft founder Bill Gates. The Rockefeller family is another strong supporter – many members severed their links with oil and gas in 2016, despite the role they played in building the dynasty. Funding agriculture is more to the Rockefeller taste these days.

Breakthrough Energy is an altruistic gorilla in the venture capital room, dedicated to finding power systems that will cut emissions to zero, while providing a comfortable living for all. It has raised $1bn for an exploratory fund, with the backing of corporate backers and a score or more billionaires, led by Bill Gates, Ray Dalio, Jeff Bezos, Meg Whitman, Mark Zuckerberg and Jack Ma.

Central banks are rallying to the cause. Bank of England governor Mark Carney has condemned the "tragedy of the horizons" as climate responsibilities are being shirked. He believes enormous climate risks are facing insurers and banks across the world – not least where they, or their clients, operate at sea level.

The UN has laid out 17 sustainable development goals, such as zero hunger, clean energy and climate action that investors should aspire to meet following the 2015 Paris Agreement on climate change. University of Cambridge is launching a research facility to explore whether the Arctic can be refrozen by pumping sea water into the atmosphere. Imperial College London backs the Grantham Institute's drive for carbon solutions. And so on.

Investors are also swinging behind the movement following the publication of a series of strategy reports proving that weightings in sustainable stocks can protect portfolios against the risk of loss and help them generate higher returns. They can produce yet higher returns by investing in companies that agree to start on a responsible journey. Fair wages, decent training and good working conditions improve productivity, according to Massachusetts Institute of Technology. Diversity in the board room improves the quality of decision-making.

Large pension schemes are increasingly viewing themselves as universal owners, where they manage external risks through active ownership, public policy and sustainable investment strategies. Investment consultants are pushing for change from the smaller fry. Fiduciaries used to invest for profit – now they are expected to invest for profit in a responsible way.

Generation Investment Management, co-founded by climate campaigner Al Gore, has been backing companies with a sustainable approach since 2007. Since then it has produced a total net return of 150%, against the 65% of the MSCI benchmark. Generation has now raised a $1bn sustainable business fund dedicated to the health of the planet and its people. It backs a decarbonised economy, improved employment conditions and circular business models, which continually recycle waste. All of which amount to a dose of good old British liberalism, far removed from the cut-throat capitalism of yesteryear, and not too far from socialism.

US President Trump, funded by several fossil fuel producers, continues to dismiss the risk of climate change, which is a bore. But he depended on elderly white males to seize power. Brexit was also favoured by the old rather than the young.

The power of demographics means a new generation of forward-thinkers, already in power in local and regional assemblies, will move into positions of greater power in due course. Western Europe is seeing a continual voting swing in favour of the greens. China and India are taking a pragmatic view, not least because the climate crisis is bad news for social cohesion.

The new thinking, in the west, is led by millennials aged between 25 and 40. According to the Pew Research Centre their numbers will outpace baby-boomers this year. Changing attitudes in the investment community can be explained by their growing influence within pension schemes and asset managers. They are leading a series of ventures, and they are steadily penetrating the corporate C-suite.

Millennials, often struggling to pay back their student loans, are dubious about traditional forms of capitalism. They are loyal to causes rather than brands – deep generalists who use technology to assist their decisions. They challenge authority but believe in big government.

Social media has influenced their world view, typified by Sir David Attenborough's warnings on Netflix. Future weird weather, and disturbing visual images, will reinforce their views.

> Millennials, often struggling to pay back their student loans, are dubious about traditional forms of capitalism

A lobby of young employee shareholders is trying to force US distributor Amazon towards zero carbon emissions. An individual named Mark McVeigh, aged 23, representing Generation Z, is suing his pension scheme in Australia for failing to protect him against climate change risks.

Officers of millennial age are active in Climate Action 100-plus which represents institutional investors worth $33 trillion. Its members have forced Shell into a series of sustainable pledges, plus executive pay benchmarked on enviromental targets. It has persuaded commodities group Glencore to put a cap on its production of coal. It is taking on Exxon.

Young lobby group Extinction Rebellion has learned to use holacracy, a potent form of organisation, where teams think of themselves as leaders within a fragmented structure and clean up the mess if they get things wrong. Inspired by teenager Greta Thunberg, schoolchildren across the world have been taking part of a series of school walkouts and strikes.

A so-called US Green New Deal proposal has been supported by US Democrat Alexandria Ocasio-Cortez, aged 29, to deal with inequality and sustainability. It would amount to an unprecedented multitrillion-dollar program of public works, financed with the help of money printing. Trump is hostile – surprise – but support for it among millennials is strong.

Climate venturers will be aware there is no shortage of ideas jostling for attention on a smaller scale. Around 250 startups involved in auto electrification have attracted more than $20bn in venture capital, notably from a broad array of corporations across multiple industries, according to Reuters, ranging from Intel to BMW, Nissan and Alibaba. A new generation of nuclear reactors and tidal energy will need government funding, but a role for the private sector is inevitable if plans get approved.

Now that wind and solar power have achieved grid parity in many weather conditions, thanks to public sector subsidies, the number of corporate clean energy ventures has mushroomed, with support from the likes of National Grid and Saudi Aramco. Investment in generation is slipping but grid networks and battery technology ventures are seeking funds. Tax-efficient opportunities exist in green energy transmission, whether it is through hydrogen boilers, heat pumps or fuel cells.

The Forum for Climate Engineering Assessment, backed by several wealthy families including the Carnegie Endowment, is assessing ways to use engineering to reduce emissions. There is interest in mechanical "direct air capture" ventures, such as Climeworks and Carbon Engineering, which is backed by BHP of Australia. The UK's Sir James Dyson, best known for his vacuum cleaners, is among those keen to eradicate city pollution, a particular concern for the Chinese.

Plant life is under the microscope at Salk Institute, which is researching ways to breed plants that can store carbon dioxide in their root structures and enrich the soil. In April, the process received a hefty donation from wealthy donors, including Joseph Tsai, co-founder of Alibaba.

Arborea has just teamed up with Imperial College London. It is developing efficient plants that can also be a source of food. Plants are also being put to use at Beyond Meat, backed by Bill Gates. As the name suggests, the company believes plants can be a engineered into an alternative to animal flesh, which is no longer viewed as a sustainable form of nourishment.

Which if nothing else is further food for thought. ◆

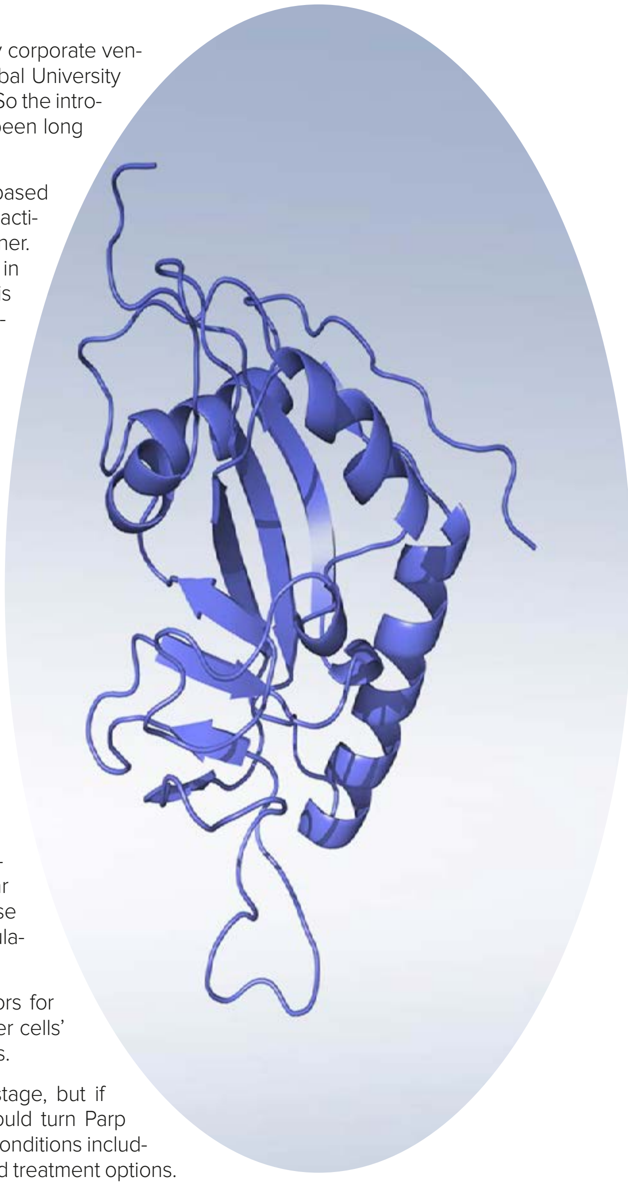
UNIVERSITY CORNER

Research reward – GUV's award for spinout investment

Thierry Heles, editor, Global University Venturing

There is an assumption that tech transfer offices face an uphill battle when trying to equip their spinouts with corporate venture capital. This is certainly true to an extent as the early-stage nature of spinouts means it is a difficult proposition for corporates. It is not impossible to pull off, of course, and funds such as Oxford Sciences Innovation attracting limited partners such as GV, an early-stage investment arm of conglomerate Alphabet, prove as much.

Even when it comes to direct investments in spinouts by corporate venturing subsidiaries, there are countless examples – Global University Venturing tracks about half a dozen a week on average. So the introduction of an award recognising this achievement has been long overdue.



And among so many options, Ribon Therapeutics, a US-based biotechnology company developing enzyme families activated under cellular stress conditions, is a rightful winner. The spinout emerged from stealth in January with $65m in series B capital provided by a consortium led by Novartis Venture Fund, the corporate venturing division of pharmaceutical firm Novartis.

Johnson & Johnson Innovation–JJDC and Takeda Ventures, respective corporate venturing subsidiaries of healthcare group Johnson & Johnson and pharmaceutical company Takeda, also participated in the series B round, as did biotechnology developer Celgene.

Spinout-focused investment firm Osage University Partners, Column Group, Deerfield Management, US Venture Partners and Euclidean Capital filled out the round, which followed $23.5m in 2016 and $20m in 2017, according to regulatory filings.

While it was unclear in which of these two preceding rounds they participated, Novartis Venture Fund, Johnson & Johnson Innovation–JJDC and Celgene were all identified as returning investors for the series B, indicating they were on board much earlier.

Founded in 2015, Ribon Therapeutics is working on treatments initially focused on cancer but with the additional potential to treat inflammatory diseases and neurodegenerative diseases. It targets the regulators of cellular stress pathways activated by cancer cells, which use these pathways to counter cellular stress such as the accumulation of DNA damage.

The company's lead asset is focused on Parp7 inhibitors for squamous cell lung cancer. The inhibitors remove cancer cells' ability to evade immune detection and repair themselves.

The approach is not entirely new and remains early-stage, but if Ribon's lead asset and pipeline prove successful, it could turn Parp inhibitors into a much more viable treatment for various conditions including cancer. It would particularly benefit people with limited treatment options.

While it may be early days for Ribon's treatments, the company is building on research from not one but three internationally renowned institutions – Massachusetts Institute of Technology, University of Texas Southwestern Medical Centre and Harvard University's Harvard Medical School. And the calibre of investors – most importantly the four healthcare corporates – reinforce the fact that Ribon is a force to be reckoned with. ◆

MONTHLY ANALYSIS

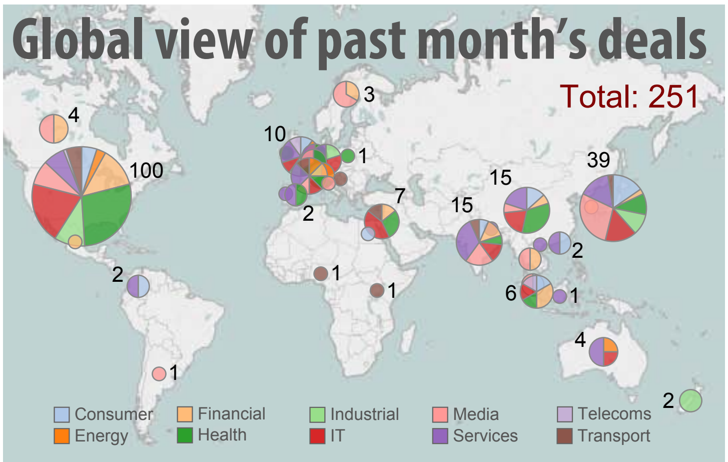
This is our data snapshot based on last month's investment activity.
The charts and tables have been generated by our data platform GCV Analytics.

Venturing increases in May

Kaloyan Andonov, reporter, GCV Analytics

The count of corporate-backed deals we reported from around the globe in May stood at 251, up 11% from the 225 funding rounds from the same month last year. Investment value also went up, by 48%, to $13.11bn – up from $8.86bn in April 2018.

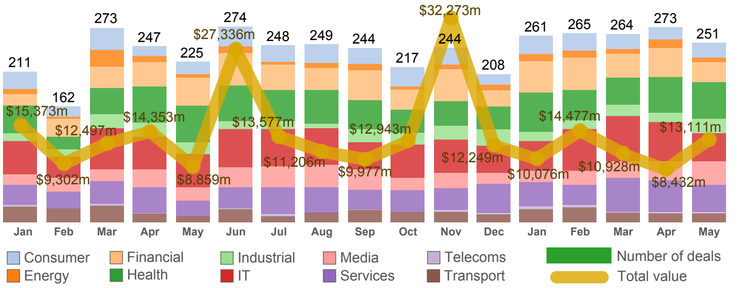
In comparison with preceding months of 2019, the month of May registered similar, though somewhat lower results in terms of deal count (previous months had registered between 261-273 rounds each). However, the total estimated capital invested was higher than the $8.42bn in April but lower than the $14.47bn in February.



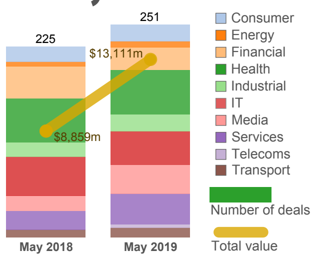
The US came first in the number of corporate-backed deals, hosting 100 rounds, while Japan was second with 39 rounds, China and India– third with 15 each.

The leading corporate investors by number of deals were travel booking platform Booking.com, telecoms firm SoftBank and diversified internet conglomerate Alphabet. In terms of involvement in the largest deals, SoftBank topped the list along with automotive vehicle manufacturers General Motors and Honda.

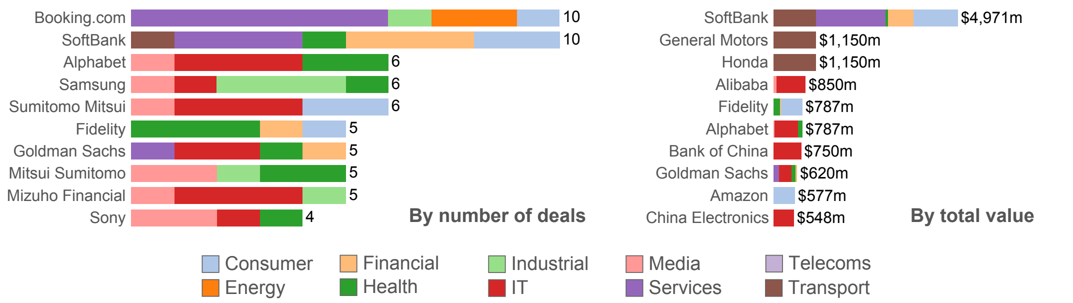
Deals by month Jan 2018-May 2019



Deals May 2018 vs May 2019

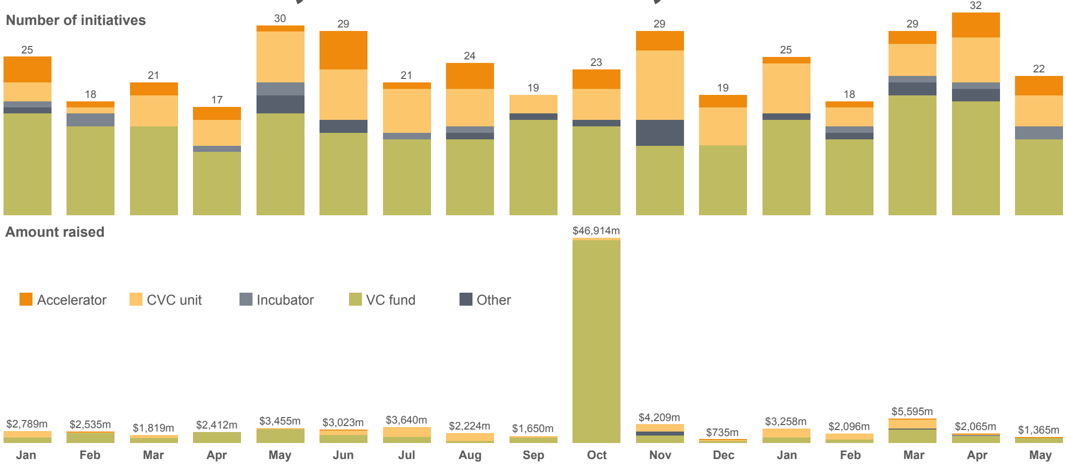


Top investors May 2019



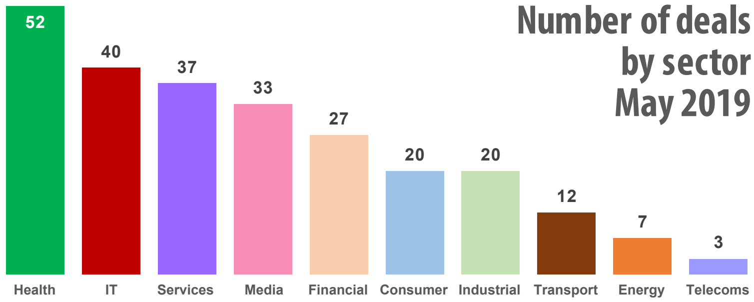
MONTHLY ANALYSIS

Fund initiatives by month Jan 2018-May 2019



GCV Analytics reported 22 corporate-backed funding initiatives in May, including VC funds, new venturing units, incubators and accelerators. This figure is a significant decrease compared with April, when there were 32 such initiatives. The estimated capital raised in May's initiatives was $1.36bn, less than the estimated $2.07bn in the previous month. More than 50 corporations with no venturing unit registered their first startup deal last month.

Number of deals by sector May 2019



Deals heatmap May 2019

	Financial services	IT	Media	Industrial	Services	Health	Consumer	Telecoms	Transport	Energy
North America	42	22	11	17	4	19	9	7	7	1
Asia	33	19	17	7	13	1	10	9	4	3
Europe	15	6	2	5	8	6	2	3	1	1
Middle East	2	1	1	1	1	2		1		1
Australia / NZ	2				3				1	
South America			1		1			1		
Africa	2								1	

Deals

Emerging businesses from the health, IT, services and media sectors led in raising the largest number of rounds during the fifth month of 2019. The most active corporate venturers were from the financial services, IT, media, industrial and services sectors. Only two of the recorded top rounds were above $1bn.

US-based autonomous driving software developer Cruise Automation secured $1.15bn from investors including car makers General Motors (GM) and Honda, the SoftBank Vision Fund and investment manager T Rowe Price Associates. The round valued Cruise Automation at $19bn post-money. GM acquired Cruise for $1bn in 2016, three years after it was founded, and spun it off again in 2018. Cruise is working on software enabling driverless cars to process data from sensors and react.

SoftBank invested $1bn in Colombia-based logistics platform Rappi. The corporate's $5bn Innovation Fund, currently raising funds, supplied half the capital while the SoftBank Vision Fund provided the rest. Founded in 2015, Rappi operates an on-demand delivery service in Colombia, Argentina, Peru, Chile and Uruguay. The company delivers consumer goods and is diversifying into other areas such as medicine deliveries and the establishment of a digital payment platform.

UK-based supply chain financing provider Greensill received $800m from the SoftBank Vision Fund. The transaction reportedly valued Greensill at $3.5bn, more than doubling its previous valuation of $1.64bn in 2018. The SoftBank Vision Fund also took board seats as part of the deal. Founded in 2011, Greensill provides supply chain finance to clients in North America, Europe, Africa and Asia, working with financial services firms and institutional investors. Greensill has extended more than $60bn in financing to date, covering more than 8 million clients in 60 countries. It also owns Germany-based commercial lender Greensill Bank, having acquired and rebranded financial services firm NordFinanz Bank in 2014.

China-based facial recognition software provider Megvii received $750m in series E funding from investors including

MONTHLY ANALYSIS

Top 10 investments May 2019

Company	Location	Sector	Round	Size	Investors
Cruise Automation	US	Transport	–	$1,15bn	General Motors | Honda | SoftBank | T Rowe Price
Rappi	Colombia	Consumer	–	$1bn	SoftBank
Greensill	UK	Services	–	$800m	SoftBank
Megvii Technology	China	IT	E and beyond	$750m	Abu Dhabi Investment Authority | Alibaba | Bank of China | Industrial and Commercial Bank of China | Macquarie
DoorDash	US	Services	E and beyond	$600m	Coatue | Darsana Capital Partners | Dragoneer Investment Group | DST Global | Sands Capital | Sequoia Capital | SoftBank | Temasek
Deliveroo	US	Consumer	E and beyond	$575m	Amazon | Fidelity | Greenoaks Capital | T Rowe Price
UiPath	US	IT	–	$568m	Accel Partners | Alphabet | Coatue | Dragoneer Investment Group | Institutional Venture Partners | Madrona Venture Group | Sands Capital | Sequoia Capital | T Rowe Price | Wellington Management
Beijing Qianxin Technology	China	IT	Stake purchase	$548m	China Electronics Corporation
GetYourGuide	Germany	Services	E and beyond	$484m	Korelya Capital | Lakestar | SoftBank | Temasek | Zürcher Kantonal Bank
PayPay	Japan	Financial services	–	$419m	SoftBank

e-commerce group Alibaba at a valuation of more than $4bn. The round was led by a $200m investment from Bank of China Group Investment, the private equity arm of state-owned financial services firm Bank of China. Investment banking firm Macquarie Group, sovereign wealth fund Abu Dhabi Investment Authority and ICBC Asset Management, a division of financial services firm Industrial and Commercial Bank of China, also invested. Megvii provides software platform Face-plus-plus which uses artificial intelligence to identify faces, people and objects.

US-based online food delivery service DoorDash raised $600m in series G financing from investors including the SoftBank Vision Fund at a $12.6bn post-money valuation. Hedge fund manager Darsana Capital Partners led the round and was joined by investment managers Sands Capital and Coatue Management, investment firms Dragoneer and DST Global, venture capital firm Sequoia Capital and Singaporean state-owned Temasek. DoorDash runs an online platform that enables users to order food from local restaurants for home delivery. It has ramped up its offering by forming delivery partnerships with several big restaurant chains.

UK-based online food ordering service Deliveroo raised $575m in a series G round led by e-commerce, cloud computing and consumer technology group Amazon. Investment and financial services group Fidelity Management and Research, asset management firm T Rowe Price and investment firm Greenoaks Capital also contributed. Deliveroo runs an app-based food delivery service spanning more than 500 cities and towns in 14 countries in Europe, East Asia, the Middle East and Australia. The series E proceeds will be put towards expanding the company's delivery presence and growing its engineering team. It also plans to establish delivery-only kitchens.

US-based robotics software provider UiPath completed a $568m series D round featuring CapitalG, the investment arm of Alphabet. Investment manager Coatue Management led the round, which included Dragoneer, Wellington Management, Sands Capital, Accel, Sequoia Capital, IVP, Madrona Venture Group and funds and accounts advised by T. Rowe Price Associates. UiPath has developed robotic process automation (RPA) software that helps companies automate parts of their business by programming robots with new skills, enabling them to fulfil a wider range of repetitive tasks.

China-based network security products vendor Beijing Qianxin Technology raised more than RMB3.73bn ($548m) from telecoms equipment manufacturer China Electronics Corporation, which received a 22.6% stake. The deal valued Qianxin at $2.4bn. The company was spun out of Qihoo 360 to develop network security products and services that perform activities such as tracking phishing threats in real time and thwarting distributed denial of service attacks, in addition to a cloud-based antivirus and anti-malware platform. Clients include government departments, state-owned enterprises and large financial services firms in China. It has also expanded into Indonesia, Singapore and Canada.

The SoftBank Vision Fund led a $484m series E round for Germany-based travel activity booking platform GetYourGuide. The round also featured Swisscanto Invest, an asset management subsidiary of financial services firm Zürcher Kantonalbank, as well as Temasek, Lakestar, Korelya Capital and Heartcore Capital. It boosted the company's overall funding to $655m. GetYourGuide runs an online platform where tourists can book tours and other attractions in 170 countries. It plans to expand its range of tours, improve search and booking capabilities and extend marketing activities.

SoftBank invested ¥46bn ($419m) in Japan-based mobile payment service PayPay, which was formed by SoftBank and internet company Yahoo Japan in July 2018. It operates a platform for users to transfer money online and pay for items using QR codes on mobile devices. The system was launched on the back of 40 million accounts held by users of both SoftBank and Yahoo Japan's Yahoo Wallet platform. Part of its technology is based on that developed by India-based digital payment system operator Paytm, which counts the SoftBank Vision Fund as one of its main investors.

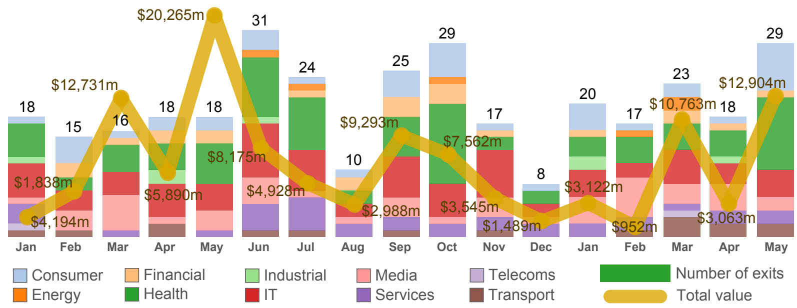
MONTHLY ANALYSIS

Exits

In May, GCV Analytics tracked 29 exits involving corporate venturers as either acquirers or exiting investors. The transactions included 14 acquisitions and 15 IPOs.

The number of exits was the highest this year so far. The total estimated value of exits increased significantly to $12.9bn, up from an estimated $3.07bn in the previous month. In May last year there were fewer exits (18) but estimated total value was a record $20.26bn.

Exits by month Jan 2018-May 2019



Uber, a US-based on-demand ride service backed by a range of corporate investors, raised $8.1bn when it floated on the New York Stock Exchange. The company priced 180 million shares at $45 each, near the foot of the $44 to $50 range it

Top 10 exits May 2019

Company	Location	Sector	Type	Acquirer	Size	Exiting investors
Uber	US	Transport	IPO		$8.1bn	Alphabet | Axel Springer | Baidu | Benchmark | Bennett Coleman & Co | BlackRock | Dragoneer Investment Group | Fidelity | Kleiner Perkins | Lone Pine | Menlo Ventures | Microsoft | New Enterprise Associates | Qatar Investment Authority | Saudi Arabia's Public Investment Fund | Sequoia Capital | SoftBank | Summit Partners | Toyota | TPG | Valiant Capital | Wellington Management
Harry's	US	Consumer	Acquisition	Edgewell Personal Care	$1.37bn	Alliance Consumer Growth | Grace Beauty | Highland Capital Partners | SV Angel | Temasek | Thrive Capital | Tiger Global Management | Wellington Management
Twistlock	US	IT	Acquisition	Palo Alto Networks	$410m	Dell | Iconiq Capital | Polaris Venture Partners | Rally Ventures | TenEleven Ventures | YL Ventures
Therachon	Switzerland	Health	Acquisition	Pfizer	$340m	BPIFrance | Cowen Group | Inserm | New Enterprise Associates | Novo | OrbiMed | Pfizer | Tekla Capital Management | Versant Ventures
Verodin	US	IT	Acquisition	FireEye	$250m	Bessemer | Blackstone | Capital One | Cisco Systems | Citi | Crosslink Capital | Rally Ventures | TenEleven Ventures
Beyond Meat	US	Consumer	IPO	–	$241m	Cleveland Avenue | DNS Capital | General Mills (301) | GreatPoint Ventures | Kleiner Perkins | Obvious | Seth Goldman Revocable Trust | Tyson Foods | Union Grove Venture Partners
Cheddar	US	Media	Acquisition	Altice USA	$200m	7 Global Capital | Altice USA | Amazon | Antenna Group | AT&T | Broadway Video | Comcast | Dentsu | Goldman Sachs | Liberty Global | Lightspeed Ventures | New York Stock Exchange | Raine Ventures | Ribbit Capital
Fastly	US	Media	IPO	–	$180m	Amplify Partners | August Ventures | Battery Ventures | Deutsche Telekom | Iconiq Capital | O'Reilly Media | Ridge Ventures | Sapphire Ventures | Sorenson Capital Partners | Sozo Ventures | Swisscom
SoYoung Technology	China	Health	IPO	–	$179m	Apax Digital | ATCG | Bank of China | CDH Investments | Matrix Partners | Orchid Asia | Russia-China Investment Fund | Tencent | TrustBridge Partners | private investor
TransMedics	US	Health	IPO	–	$91m	3i | Abrams Capital | Alta Partners | BioStar Ventures | CB Health Ventures | Ervington Investments | Fayerweather Fund | Flagship Ventures | Foundation Capital | JPMorgan | JPMorgan Chase | Kleiner Perkins | Lung Biotechnology | MedEquity Investors | Novel Bioventures | OJSC Pharmstandard | Posco | Sagamore Bioventures | Sherbrooke Capital | Sofinnova Partners | Tudor Investment Corp | VantagePoint Capital Partners

MONTHLY ANALYSIS

had set. It was the largest public offering since Alibaba raised $25bn in 2014, and valued the company at $82.4bn. Digital payment services firm PayPal bought an additional $500m of shares through a private placement. Founded in 2009, Uber operates a ride-hailing platform with 91 million monthly users with additional services such as food and freight delivery. It recently spun off its autonomous driving subsidiary, Uber ATG, with $1bn of external funding.

Harry's, a US-based razor retailer backed by beauty product distributor Grace Beauty, agreed to an acquisition by consumer products supplier Edgewell Personal Care for $1.37bn. Edgewell agreed to pay about 79% in cash and the remainder in common stock. Harry's shareholders will own about 11% in Edgewell following the transaction. Founded in 2013, Harry's runs an subscription-based online platform that sells men's grooming products, including razors, shaving cream, post-shave balm, face wash and lotion, plus other accessories.

Cybersecurity technology provider Palo Alto Networks agreed to acquire container security software developer Twistlock for about $410m in cash, giving computing technology producer Dell an exit. Twistlock has built a cybersecurity platform that protects cloud-native container systems, such as Docker and Kubernetes, using machine learning to track normal and detecting changes that could point to security issues.

Pharmaceutical firm Pfizer agreed to acquire its portfolio company Therachon, a Switzerland-based developer of treatments for rare genetic disorders, in a $340m deal. Payment could rise to $470m with additional milestone payments. Founded in 2014, Therachon is developing therapies for rare genetic diseases.

Cybersecurity technology developer FireEye acquired US-based cybersecurity validation software developer Verodin in a $250m deal that gave an exit to networking equipment producer Cisco and banks Capital One and Citi. Founded in 2014, Verodin provides software for users to identify gaps and risks in their security controls by testing and assessing the effectiveness of endpoint, network, cloud and email security systems.

Beyond Meat, a US-based vegetarian meat developer with producer General Mills as an investor, went public in an IPO raising about $241m on the Nasdaq Global Select Market. The company priced more than 9.62 million shares at $25, at the top of an increased range of $23 to $25. Beyond Meat develops and supplies plant-based substitutes for beef, pork and poultry meats. Its best-known product is the Beyond Burger, simulating the taste and texture of ground beef.

Broadband communications and video services provider Altice USA agreed to acquire its portfolio company, US-based entertainment network Cheddar, for $200m. Cheddar operates an online television network that consists of two channels – Cheddar Business, which focuses on technology and the innovation ecosystem, and Cheddar News, which broadcasts general news stories. The network is accessible through online streaming platforms such as DirecTV Now, Hulu, YouTube TV, Snapchat, Facebook, Twitter, Twitch and Amazon, and through smart televisions in the US.

Fastly, a US-based content delivery technology provider backed by media group O'Reilly and telecoms companies Deutsche Telekom and Swisscom, floated in a $180m IPO on the New York Stock Exchange. The offering consisted of almost 11.3 million shares priced at the top of its $14 to $16 range, valuing it at about $1.45bn. Its shares closed at $23.99 after the first day of trading. Founded in 2011, Fastly is a developer of a cloud-based content delivery network with added security features such as web application firewalls and tools to combat distributed denial of service attacks.

SoYoung, a China-based cosmetic surgery booking and reviews platform backed by internet group Tencent, floated on the Nasdaq Global Market in a $179m IPO. SoYoung issued 13 million American depositary shares, each representing 10 normal shares, at $13.80 each, at the top of the IPO's $11.80 to $13.80 range. SoYoung runs an online platform where users book cosmetic procedures while accessing reviews and before-and-after photographs posted by other users. It made an $8m net profit in 2018 from $89.8m in revenue.

TransMedics, a US-based medical device producer backed by pharmaceutical firm Pharmstandard International and steel conglomerate Posco, went public in a $91m IPO. The company issued 5.69 million shares at $16 each on the Nasdaq Global Market, achieving a market cap of $430m. Founded in 1998, TransMedics has developed a device that uses warm blood perfusion to preserve hearts, lungs and livers while they are being transported for transplant. The technology also allows physicians to assess the viability of an organ. ◆

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