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Kaloyan Andonov reveals that on a calendar year-on-year basis, total capital raised in rounds backed by transport corporates went down from \$10.19bn in 2019 to \$9.64bn in 2020, representing a 5% decrease. The deal count remained broadly flat at 162, versus the 169 rounds reported in 2019.

The slight decreases were clearly attributable to the shock from the outbreak of the covid-19 pandemic. However, investment activity of corporates took off and soared in 2021 with 236 deals recorded by mid-December 2021 and an estimated total capital committed in those at \$21.94bn. This explosive growth, much like in other sectors, was a reflection of generous liquidity injections by central banks which impacted on asset prices in both public and private markets.



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Héctor Shibata, director of investments & portfolio, ACV

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In a recent poll running in October and November of corporate venturing industry leaders, Global Corporate Venturing (GCV) asked what would be the biggest issues for this year



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- Deals count and dollars spike to record highs
- Record highs for exits too
- Fundraising activity went up

Deals in 2021

5,047

Exits last year

642

Global Corporate Venturing

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Editorial

Starting the year with transformative goals



By James Mawson
Editor-in-chief

Five years ago, this [column](#) argued that “with US President-elect Donald Trump selecting fellow billionaires and investment bank Goldman Sachs alumni to his team, Europe fracturing under divergent member state aims and Russian pressure, and Asia grappling with China’s crackdown under President Xi, a panglossian degree of optimism is unwarranted about the economy or much else”.

Half a decade on and the same geopolitical concerns seem to remain (though Trump’s first term has finished he remains influential among his supporters). Judging, however, by the markets and it seems like there are few, if any,

cares even with the populist swing to a new [“Buenos Aires Consensus”](#) of fiscal spending and higher inflation and hence interest rates.

The yield on two-year Treasury bonds (0.6%) or 10-year bonds (1.44%) are very low by historical standards and much lower than the current rate of inflation (6.8% in the US).

In the US, equity valuations are very high, as measured by the cyclically adjusted price-earnings (Cape) ratio developed by Robert Shiller of Yale University, which compares share prices with the average corporate earnings of

the past 10 years. The current Cape ratio is 38, a level that was only higher during the peak of the dotcom bubble of 2000, according to the Financial Times in Philip Coggan's excellent analysis – check out his keynote speech from his latest book, *More: The 10,000-Year Rise of the World Economy*, at the [GCV Digital Forum](#).

Unsurprisingly, therefore, a wall of money has entered the innovation capital economy in the search for returns. Last year saw records broken in all areas – from investments to exits and fundraising and ever-increasing numbers of corporations start their venturing programmes.

Consultants McKinsey's survey of executives, [The State of New-Business Building](#), found that by 2026 they expected 50% of global revenues would come from products, services, and businesses that do not exist today. A lot of the money will be soaked up by the duplication of assets required by geopolitical and supply chain tensions. But at least some will flow to the infrastructure transition to tackle climate change through electrification, hydrogen, storage and distribution and opportunities in healthcare through personalised medicine and new information and communication tech, such as compound chips, quantum and photonics.

This macro picture and strategic driver pushing innovation and hence growth is helpful to the corporate venture capital (CVC) industry.

The requirement identified five years ago by GCV that venture investing was moving "from a cottage industry of VCs following 'pattern recognition' to select



former colleagues, fellow university alumni and sons of friends" to one where "the newer breed of venture investor has emerged with the brand, marketing and support-beyond-money that entrepreneurs want".

This new breed has blossomed, but two issues remain when looking at GCV's annual survey of 200-plus investors around the world.

First, the record number of new CVCs if they are perceived as dumb money brings a risk of tarnishing even the good investors. The top 20% of investors – as benchmarked by GCV Analytics' rigorous qualitative and quantitative analysis – have, through the GCV Leadership Society, stepped up to this challenge and given back to the community through their mentorship and insights within the GCV Institute.

The Institute has trained hundreds of professionals over the past year both at new and existing

CVC units and, crucially, at the parent companies so they can better land the value of working with entrepreneurs and portfolio companies. Having a professional investor base also attracts and retains the right sort of talent to the industry, as witnessed through the GCV Rising Stars and Emerging Leaders awards.

This delivery of the promise of professional corporate venturing to add value to both startups and corporations requires support as customers and suppliers as well as product and service development.

The second challenge is, despite these efforts, the wall of cash and competition from investors to work with the best entrepreneurs remains intense. To win deals, CVCs are tending to go both earlier-stage as well as provide bigger cheques to later-stage rounds with clear strategic alignment. The latter is easier if they have a track record, such as Boeing, Telstra, Swisscom or SAP's Sapphire, that enables them to raise third-party capital.

The good corporate venturers are also making more of their internal talent to incubate or build ventures, potentially with external funding to support the portfolio companies and validate the opportunities they see.

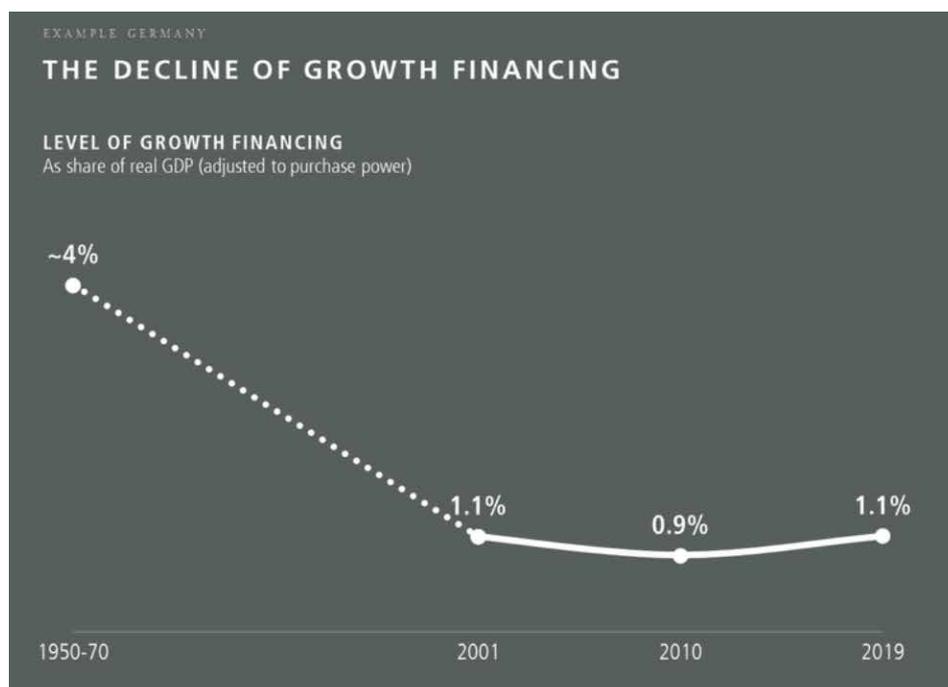
Effectively this starts to reverse the outside-in innovation toolset. Once the culture and innovation capacity through use of corporate venturing professionals is utilised to aid more efficient mergers and acquisitions and research and development departments then the overall corporation has reached its transformative innovation stage and can offer the inside-out opportunities.

The past decade has seen the [golden age](#) – when just about any deal would do well because the competition from most VCs was amateurish and venture capital was still a cottage industry – pass into the [professional era](#) of blurred private and public capital markets bringing more efficient allocation of capital to those who can use it best.

The next year and decade will see the entire entrepreneurial ecosystem start to scale-up to reach its potential as ideas and technologies build on themselves – ideas discussed in GCV's next book, *Transformative Innovation*, to be published next month.

There is much potential outside of the US, which still accounts for nearly half of the record-breaking \$600bn-plus venture dollars invested last year.

Even though venture funding to Latin American or European startups grew the most, by more than 300% and 150%, respectively, year-over-year, according to Crunchbase, their



The winners will be those that, like SoftBank's founder, Masayoshi Son, have kept their eyes fixed on the future, looking 100, 200 or 300 years ahead

totals were still relatively small compared with gross domestic product or population and the financing needs of their economies. With close to \$20bn invested in LatAm in 2021 and \$110bn invested in Europe the sums seem impressive only compared to with the paucity of capital available before.

VC firm Lakestar's [analysis](#) of the financing gap takes Germany as an example (see graph above) and shows how it has declined relative to its recent past but also how little innovation value it delivers compared to the US (less than a tenth).

In this era, the winners will be those that, like SoftBank's founder, Masayoshi Son, have kept their eyes fixed on the

future, looking 100, 200 or 300 years ahead rather than paying too much attention to the passing obsessions.

"Are all of these decisions taken to protect minuscule interests bound by geography with a small-scale sense of justice and a short-term mindset really for the greater good of humanity?" he asks in his biography, *Aiming High: Masayoshi Son, SoftBank Group and Disrupting Silicon Valley*, by Atsuo Inoue.

Looking back 250 years to the crucible of the first industrial revolution shows the financial, cultural, ethical and political ambitions required to win. As Scottish philosopher and political economist Adam Smith said then: "Wealth is power."

News review

CVC in 2021: The trends

- > In our look at 2021's corporate venturing trends, we examine the growth in funding, IPOs and Spac mergers, a big year for M&A, the emergence of CVC in new sectors, fintech and enterprise bull markets along with some emerging regions

By Robert Lavine,
News editor

This time [last year](#) we were commenting on what a strange 12 months 2020 had been and 2021 did not prove much different, as money continued to flow into the space while exits increased and the digitisation process hastened by covid-19 intensified. If 2021 saw records broken on both the funding and exit levels, it is also worth looking at where that capital was allocated. Crypto and blockchain was one of the sectors that helped fintech emerge as the primary sector for funding while enterprise software had a strong year and money flowed to emerging markets like Indonesia and Nigeria.



Fintech was the primary sector for funding

Funding

2020 was a bumper year for corporate venture capital (CVC), setting records for overall VC funding as well as CVC-backed deals, but 2021 blew it out the water.



One of the most highly valued CVC-backed private companies is spacecraft producer SpaceX

Global Corporate Venturing had tracked \$283bn raised in corporate backed rounds as of December 21, more than doubling the \$131bn secured through similar rounds in 2020.

Some of the largest individual rounds took place in the transport space, which in the wake of the massive increase in Tesla's share price has moved from ride hailing to focusing on the vehicles themselves along with related technology.

Electric truck developer Rivian pulled in a total of \$5.15bn by itself, [taking \\$2.65bn](#) in a January round backed by Amazon's Climate Pledge Fund at a \$27.6bn valuation, before Amazon and Ford Motor Company co-lead [a \\$2.5bn round](#) six months later.

The largest individual round was closed by autonomous driving technology developer Cruise, which completed a \$2.75bn round [in April](#), adding \$750m at a \$30bn valuation from investors including big-box retailer Walmart to a \$2bn first tranche backed by software provider Microsoft and automotive manufacturers Honda and General Motors.

Apart from TikTok owner ByteDance, which last raised cash in 2020 at a reported \$140bn valuation, the most highly valued CVC-backed private companies are spacecraft producer SpaceX, which [snapped up \\$850m](#) in February at a \$74bn valuation that reached \$100bn through secondary sales by October, and digital payment technology producer Stripe, which [received \\$600m](#) in a March round featuring insurers Axa and Allianz valuing it at \$95bn.

IPOs

Public market exits also soared in 2021, rising from 1,028 in 2020 to 1,126 in the first half of 2021 alone according to Pitchbook data, rounding off at just over 2,000 by year's end.

Rivian again topped the list, pulling in a massive \$11.9bn [last month](#) in an initial public offering that was the largest for a VC-backed tech company since Alibaba [in 2014](#) and the biggest for a US-based tech company since Facebook back in 2012. Its share price rocketed to over \$171 in the aftermath of the IPO and currently sits at over \$100, giving it a market capitalisation of nearly \$89bn.

The year also marked an influx of US IPOs for Asian companies. China-based video streaming platform operator Kuaishou [secured \\$5.4bn](#) in a February offering and South Korea-headquartered e-commerce marketplace Coupang's March IPO [generated \\$4.55bn](#) while China-based ride hailing service Didi raised \$4.4bn in [a June offering](#).

Telecommunications and internet group SoftBank, by some distance the largest CVC investor in recent years, was an investor in both Coupang and Didi pre-IPO, and sold almost \$1.7bn of shares in Coupang [in September](#). It had invested a total of \$3bn and owned a 39.4% stake prior to the flotation.

Internet and gaming group Tencent had meanwhile backed Kuaishou and Didi, in addition to Brazil-based digital bank NuBank, which went public last month in [a \\$2.6bn IPO](#).

The number of IPOs peaked in the first three months of the year and have fallen since, but it is significant that the number for each quarter outstripped that of any quarter in 2020.

One prediction that did not come to pass was that direct listings could finally emerge as a viable alternative to traditional flotations.

There were a few notable exceptions – gaming platform developer [Roblox](#), digital currency exchange [Coinbase](#) and cross-border money transfer service [Wise](#) – but they were generally market leaders in edge sectors and their stock was in high demand either way.

Reverse mergers

Reverse takeovers however did emerge as a rival to the IPO, and the number of mergers with special purpose acquisition companies (Spacs) increased from 66 in 2020 to 204 last year, with the amount of cash allocated through accompanying private placements soaring from \$17.2bn to \$60.5bn in the process.

The largest deals in the space included electric vehicle developer Lucid, which achieved [a \\$24bn valuation](#) in February; self-driving software developer Aurora, which joined forces with a Spac in [a July deal](#) valuing it at \$13bn; and SoFi, an online financial services provider backed by SoftBank and social media company Renren, which listed [in January](#) at an \$8.65bn valuation.

Biggest of all was Grab, the Southeast Asian mobility and financial services provider that had raised \$8.3bn in pre-IPO funding from an investor base featuring more than a dozen corporates. It merged with a [publicly listed](#) Spac in an April transaction valuing it at \$39.6bn.

The charge in reverse mergers had been fuelled by an especially active period of flotations for Spacs which began in the second half of 2020 and carried on into last year, though the subsequent fall in IPOs for the vehicles preceded a similar drop in reverse takeovers, and it looks likely this will continue into 2022.

M&A

Not that public listings were the only route to exits for corporate investors in 2021 – the M&A market for pre-IPO companies was also extremely busy.



Grab raised \$8.3bn in pre-IPO funding

Credit: Grab

The biggest such deal for a CVC-backed private company announced over the course of the year took place in May when two of Southeast Asia's largest tech companies – on-demand ride provider Gojek and online marketplace Tokopedia – joined forces to form a new business called GoTo at [an \\$18bn valuation](#).

DoorDash's November all-share acquisition of consumer goods delivery service Wolt [valued it at \\$8.1bn](#), providing an exit for Naspers-backed internet group Prosus, while CVC vehicles Salesforce Ventures, NTT Docomo Ventures, DTCP and Telstra Ventures [exited](#) identity verification software provider Auth0 in a \$6.5bn all-stock purchase by Okta.

Medical data exchange Datavant merged with healthcare data software producer Ciox Health at a \$7bn valuation [in June](#) while the largest acquisition by an existing corporate investor involved Coca-Cola [paying \\$5.6bn](#) for the 85% of sports drink producer BodyArmor it did not already own.

It is a curious fact that while pre-IPO valuations for financial and health technology providers have continued to rise in 2021, share prices for publicly-listed companies in those sectors have been far more volatile. This points to M&A as a potentially more inviting route to exit for corporate investors in 2022.

New CVCs

One concern in early 2020 was that the coronavirus-fuelled financial crisis could lead to a drop off in CVC investing as corporate parents in traditional markets looked to keep a stronger handle on outgoing capital.

The decline never came to pass, but what is interesting is that many of the most active new entrants into corporate venturing were from digital first industries, indicating the traditional image of CVC – an out-of-touch incumbent business relying on strategic investments to access cutting-edge technology – no longer applies.

This could be seen most fervently in the digital currency space, where players such as crypto trading platforms Coinbase and Binance, blockchain app publishers Animoca Brands and Dapper Labs, and trading firms Alameda Research and CMT emerged as some of the biggest backers of the year's crypto startup boom.

Interestingly, it is also an area where corporates are willing to collaborate. Blockchain platform developer Solana teamed up with digital currency exchange FTX and VC firm Lightspeed Venture Partners on [a \\$100m fund](#) in November while Animoca Brands and Binance Smart Chain are each contributing half of [a \\$200m vehicle](#) which will fund gaming finance projects.

Enterprise software also saw several new figures emerge. Snowflake Ventures made a dozen investments over the course of 2021 while [Twilio](#), [HubSpot](#) and [Zoom](#) all launched CVC vehicles in the second half of the year, backing a total of 40 deals between them last year.

Another busy area was online food delivery, with Delivery Hero leading the way in large-scale rounds for [Gorillas](#), [Glovo](#) and [Facily](#). Zomato [went public](#) in July, and by November it had committed a total of \$175m to three India-based companies on the way to [a targeted \\$1bn](#) of CVC commitments by the end of 2023. It is going to be interesting to see if the likes of Deliveroo and Instacart follow suit next year.

Fintech

Financial technology was the biggest game changer last year, with the 2020 covid-19 lockdowns precipitating new models of payment in addition to new structures.

Online share trading platform Robinhood had one of the most eventful six months of any company in the first half of 2021. Users pumped considerable amounts of money into 'meme' stocks like GameStop, Nokia and AMC – many of which were name brands considered undervalued in the wake of the pandemic – meaning Robinhood had to raise \$3bn to cover the collateral requirements of its clearing house.

In the event, the Alphabet and Roc Nation-backed company [secured \\$3.4bn](#) in equity financing in February. It [went public](#) four months later in a \$2.09bn initial public offering,



Zomato went public in July

Credit: Zomato

pricing its shares at the bottom of its \$38 to \$42 range. Even that came to seem high, its shares closing at \$18.20 yesterday.

The sector's largest IPO involved Nu Holdings, the operator of Brazil-based digital bank Nubank, [raising \\$2.6bn](#) in a US offering earlier last month. Elsewhere in digital banking, Tencent and Allianz-backed N26 [netted \\$900m](#) at a \$9bn valuation while Revolut [bagged \\$800m](#) in a July round featuring SoftBank Vision Fund 2 valuing it at \$33bn, Chime [raised \\$750m](#) at a \$25bn valuation and Slice [secured \\$220m](#) in series B funding.

There were also increasing numbers of banking apps targeted toward children, including Greenlight, which [secured \\$260m](#) from investors including Wells Fargo Strategic Capital, and Step, which [received \\$100m](#) in a series C round featuring Stripe.

Klarna spearheaded a group of buy now, pay later operators that raised substantial amounts last year,

closing [a \\$1bn round](#) in March before Vision Fund 2 led a \$639m round [four months later](#) that lifted its valuation to \$46bn. Klarna itself took part in a [\\$100m series C](#) round for Billie, while [Zilch](#) and [Addi](#) received \$190m and \$140m in their series B rounds and FinAccel agreed a reverse merger [in August](#) at a \$2.5bn valuation.

Cryptocurrency and blockchain technology

The fastest growing sector within fintech involved cryptocurrency and blockchain product developers, which were fuelled by corporate capital within the sector, notably from the likes of Coinbase, Binance, Alameda Research and Animoca Brands.

The overall funding in corporate venture capital-backed rounds for pure-play cryptocurrency technology developers rose from \$773m over 35 deals in 2020 to more than \$6.3bn across 92 rounds last year, according to Global Corporate Venturing data.

Coinbase, the corporate-backed operator of a cryptocurrency exchange, went public through a direct listing [in April](#) valuing it above \$65bn, three months after digital currency platform Bakkt [agreed](#) a reverse merger at a \$2.1bn valuation. Blockchain payment technology provider Circle was [valued at \\$4.5bn](#) in its own reverse takeover.

Digital currency exchange FTX, [received \\$900m](#) in a July round featuring Coinbase and SoftBank, and hiked its valuation to \$25bn [three months later](#) in a \$421m series B-1 round. Peer Gemini subsequently [took in \\$400m](#) through a November round.

Bitcoin technology provider Nydig pulled in \$300m across March and April before [adding \\$1bn](#) last month from investors including FIS, Fiserv, MassMutual and New York Life at a valuation topping \$7bn. Fellow crypto technology producers [Ledger](#) and [Fireblocks](#) closed rounds totalling \$380m and \$310m respectively, and the latter is reportedly in talks to raise \$400m from VC firm Sequoia Capital.

As the year progressed, blockchain and crypto technology increasingly began to stretch outwards into new areas, initially with non-fungible tokens (NFTs), mirroring their increasing influence in the collectible investment space.

NFT fantasy sports operator Sorare [received \\$680m](#) in a SoftBank-led series B round valuing it at \$4.3bn while Dapper Labs – also a big CVC investor – lifted its valuation to \$7.6m in a \$250m [GV-backed round](#), and corporate-backed NFT marketplace [OpenSea](#) was reported last month to be in talks to raise money at a \$10bn valuation.

The space also saw a flurry of rounds for play-to-earn gaming guilds towards the end of the year, and we expect this to be a significant growth area in 2022.

Enterprise software

The shift to working from home in recent months also served to push the development and funding of enterprise software forwards.

In addition to [newcomers](#) like Zoom, HubSpot and Twilio, existing participants like Salesforce Ventures, Okta Ventures and M12 continued to invest strongly in the sector.

Corporate-backed data analytics software provider Databricks had perhaps the biggest year of all, [securing \\$1.6bn](#) in a series H round valuing it at \$38bn following [a \\$1bn round](#) earlier in 2021. By the end of the year it had become the latest player in the sector to set up its own corporate venturing unit.

American Express Ventures and Citi Ventures contributed to [a \\$394m round](#) for identity verification software provider Trulioo while, elsewhere in the sector, Socure [raised \\$450m](#) at a \$4.5bn valuation and Incode [received \\$220m](#) in a SoftBank-led series B round.

On the exit side, Citi Ventures-backed customer engagement software producer Braze floated in [a \\$520m IPO](#) in November and Barracuda Networks-backed expense management technology provider Expensify closed its own IPO at \$302m [the same month](#). NTT Docomo, Telstra, Deutsche Telekom and Salesforce all exited identity verification technology provider Auth0 in a \$6.5bn all-stock acquisition by Okta [in March](#).

New markets

Moving away from technologies for a moment, it was notable that several geographical markets also experienced significant growth in their startup sectors in 2021 with corporate backing.

Southeast Asia witnessed a considerable uptick last year, with companies in the region raising a total of nearly \$17.9bn according to Pitchbook Data, more than double the \$7.57bn they secured in 2020, the second consecutive year of such growth.

Indonesia was at the centre of much of that growth and was responsible for \$7.6bn of the funding. Two of its biggest players – e-commerce marketplace Tokopedia and ride hailing service Gojek – [merged in May](#) at an \$18bn valuation, and the resulting company, GoTo, [raised \\$1.3bn](#) last month as it gears up for an IPO expected to bump that valuation up towards \$30bn.

The country's largest round was closed by delivery and warehousing services provider J&T Express, which [received \\$2.5bn](#) from investors including Tencent last month. Another logistics provider, SiCepat Ekspres, completed a [\\$170m series B](#) round that included Telkom Indonesia's MDI Ventures unit in March, while online investment service Ajaib _ in an October round featuring SoftBank.

Another emerging market, Nigeria, proved to be fertile ground for startups at an earlier stage, particularly in fintech, where mobile payment software developer OPay secured \$400m in an August round valuing it at \$2bn, marking SoftBank Vision Fund 2's first investment in Africa.

Elsewhere, digital banking technology provider Kuda [raised \\$55m](#) in series B funding from investors including SBI while Yamaha-backed last-mile delivery service Max received \$30m last month.

With startups like South Africa-based [Jumo](#) also pulling in significant amounts last year, Africa looks poised to finally fulfil its promise and emerge as the next big growth area for startups.

News

FirstEnergy commits again to EIP

- > Germany's Merck increases CVC commitment
- > Constellation Software sets up \$200m fund
- > Binance and Animoca Brands form \$200m fund

By Kaloyan Andonov, Liwen-Edison Fu, Thierry Heles, Robert Lavine, James Mawson and Fernando Moncada Rivera

FirstEnergy, a New York-listed electric distribution company, has made its second commitment to US-based venture capital firm Energy Impact Partners (EIP).

As a limited partner in EIP Fund II, FirstEnergy joins with other utilities and companies to provide more than \$1bn in capital commitments to invest in heating and air conditioning, transportation electrification, energy storage and carbon capture technology, grid hardening, cyber security, and smart home and cities programs.

Germany's Merck increases CVC commitment

Merck Group, a Germany-based

healthcare and technology group, has increased its commitment to corporate venture capital with a further €600m (\$677m) to invest over the next five years.

As an evergreen fund, the proceeds from any exits will now be reinvested, Merck said.

Merck's CVC unit, M Ventures, had previously been allocated €400m and has invested in more than 80 portfolio companies, including Artios Pharma, DNA Script, Memryx, Mosa Meat, Padlock Therapeutics, Progyny Inc, and SeeQC.

Constellation Software sets up \$200m fund

Constellation Software, a Toronto-listed tech firm, has become the latest Canadian group set up a corporate venture capital fund.

Constellation has set up VMS Ventures to provide \$200m over a three-to-five-year period for software businesses, most of which will have been either incubated or identified by a sponsoring Constellation business unit.

While Constellation already invests in dozens of small initiatives and will continue to do so, VMS Ventures under managing partner Daan Dijkhuizen will invest in larger initiatives.

Binance and Animoca Brands form \$200m fund

Cayman Islands-registered cryptocurrency exchange Binance's Smart Chain subsidiary launched a \$200m blockchain gaming investment scheme with China-headquartered digital entertainment and blockchain technology developer Animoca Brands.

Animoca Brands and Binance Smart Chain (BSC), the company's dual app and digital asset software subsidiary, are each putting \$100m into the partnership. They will work together to shortlist and advance gaming finance (GameFi) projects to fruition.

BSC is contributing the capital through the \$1bn Growth Programme it launched last month, with the capital split into \$500m for investment, \$100m for talent development, \$100m for liquidity incentives and \$300m for builder rewards, to boost areas such as social, sports logic, role-playing and adventure story-based crypto games.



Eir Ventures Partners, a life science venture capital firm, has made a final close of its first fund

AXA takes a fifth of VC firm

France-listed insurer AXA Group has acquired a 20% stake in Luxembourg-based, emerging markets venture capital firm Blue Like an Orange.

AXA had been one of the first investors to commit to Blue's \$200m Latin America Fund I in June last year and has re-upped as a cornerstone investor to its second fund as part of the ownership stake in the management company.

Blue Like an Orange's second fund, Sustainable Capital Latin America Fund II, will invest in South American companies offering social impact in support of the UN's Sustainable Development Goals.

NEC seeks \$150m for corporate venturing fund

Japan-headquartered IT services firm NEC Corporation has launched an investment vehicle called Orchestrating Future Fund and plans to raise \$150m for the fund from external limited partners.

NEC provides software and computing, networking and data storage technology for use across a wide range of industries.

The additional capital is set to come from additional corporates and the goal of the fund is to strengthen innovative external services, knowledge and technologies as well as the creation of ecosystems capable of enhancing social value through customers and partners.

Eir Ventures makes final close

Eir Ventures Partners, a Sweden- and Denmark-based life science venture capital firm, has made a final close of its first fund from limited partners including healthcare company Novo and local universities.

Eir Ventures I fund raised €122.3m having made its initial close at €76m (\$86m) in July last year to partner closely with universities across the Nordics and invest in their spinouts.

Other LPs include state-owned European Investment Fund (EIF), Saminvest and Vækstfonden, as

well as Sustainable Development Umbrella Fund (SDUF) and family offices,

Apple anchors new VC fund

Consumer electronics producer Apple has made an anchor investment in a debut fund for US-based venture capital firm Offline Ventures with a \$100m target for its close, Forbes has reported.

Offline Ventures will invest in startups focused on web3 and consumer technology, sustainability and neurological and women's health. It was launched by Apple alumni David Morin and James Higa with Brito Morin and Nate Bosshard.

The firm will provide between \$1m and \$2m per company at pre-seed and seed stages and had already made 30 investments as of last month. Its portfolio includes social audio app developer Clubhouse, cryptocurrency trading platform Hedgehog, fertility services provider Kindbody and baby formula producer Bobbie.

Sompo backs Isomer fund

Japan-based insurer Sompo has expanded its corporate venturing activities into Europe with a commitment to UK-based Isomer Capital's second fund of funds.

Isomer's first fund raised over €100m (\$113m) and made 34 investments (a mix of VC funds and direct co-investments in the startups). Isomer's second fund, launched in July 2020, raised €250m and has made 20 investments.

Founded in 2015, Isomer said it helped Sompo's innovation centre in Israel access European startups.

Aviva commits \$67m to funds

Aviva, a UK-listed insurer, has committed £50m (\$67m) to back independent venture capital funds backing sustainable-focused technologies.

Its first commitment of undisclosed amount is into the Clean Growth Fund, which invests in early-stage UK-based technology companies in the low carbon economy, such as Indra, which manufactures and supplies smart electric vehicle chargers, and Tepeo, which invented a zero-emission boiler.

The commitment follows Aviva's announcement earlier this year to become a net zero carbon emissions company by 2040.

Closed Loop adds corporations to fund

Closed Loop Ventures Group, a US-based venture capital firm, has

closed its second fund at more than \$50m from limited partners including corporations Microsoft and GS Group.

Other LPs include foundations, such as the Autodesk Foundation, and single and multi-family offices.

The Closed Loop Venture Fund II run by Danielle Joseph will invest in circular economy solutions across plastics and packaging, fashion, food and agriculture, and supply chain technology. The second fund has already invested in Partsimony, Ucrop.it and Dimpora.

Twilio twigs to \$50m investment vehicle

US-based enterprise communication platform operator Twilio formally launched a \$50m corporate venture capital (CVC) vehicle called Twilio Ventures.

Founded in 2008, Twilio has built a communication-oriented application programming interface (API) tool that enables developers to design and customise in-house voice, text, chat, video and email-based platforms.

The company had been backed by investors including e-commerce and cloud technology group Amazon and enterprise software provider Salesforce before it went



Closed Loop Venture Fund II run by Danielle Joseph will invest in circular economy solutions across plastics and packaging, fashion and food

public in 2016. The corporates also target investments in software-as-a-service (SaaS) companies through subsidiaries Alexa Fund and Salesforce Ventures respectively.

Optimum Agriculture backs Yield Lab LatAm

US-based farmland manager Optimum Agriculture has made a commitment of undisclosed size to Yield Lab LatAm (YLL), an agriculture-focused venture capital firm.

By investing in YLL, Optimum will work with the VC firm to raise Yield LatAm Opportunity Fund, which has a \$50m target, according to news provider AgFunder News (AFN).

The partnership combines Optimum Agriculture's expertise in the operational side of farming with YLL's access to startups and technologies.

Allegion Ventures allocates \$100m to second fund

Allegion Ventures, the strategic investment arm of Ireland-headquartered security equipment producer Allegion, announced a \$100m second fund.

The unit was formed by Allegion in 2018 with a \$50m allocation for its first fund and a brief to invest in developers of technology capable of making buildings safer.

The second fund will be managed by Allegion Ventures principal Bobby Prostko, also the corporate's chief privacy officer. It has also doubled the size of its investment range, from between \$250,000 and \$5m to a \$500,000 to \$10m range.



Drone Fund has received ¥5bn (\$44.2m)

Drone Fund 3 flies to final close

Japan-based, drone-focused investment firm Drone Fund has received ¥5bn (\$44.2m) from multiple investors including corporates to close its latest fund at its \$95m target.

Marine propulsion equipment manufacturer Nakashima Propeller and aircraft engine and aerospace parts producer Yoshimasu were among the limited partners for Drone Fund 3, as was automotive information services Proto's corporate venturing subsidiary, Proto Ventures.

The LPs also numbered Logistics Innovation Fund, which is run by logistics group Seino Holdings and venture capital firm Spiral Ventures' fund management subsidiary, Spiral Innovation Partners, in addition to public-private partnership Innovation Network Corporation of Japan.

2TM Group focuses on blockchain deals

Brazil-based 2TM Group, which runs the largest cryptocurrency

exchange in Latin America and has Softbank as an investor, has launched a corporate venture capital unit focusing on blockchain companies.

2TM Ventures, the firm's new unit under Daniel Carneiro da Cunha, has so far invested \$32m across a portfolio of 10 companies in the crypto universe, Roberto Dagnoni, CEO at 2TM, told newswire Reuters. Since then its deals have included Figment's \$110m C round.

Investments are made using both traditional financial instruments, such as equity and convertible notes, as well as new instruments including direct purchase of tokens.

Cross-Border Impact Ventures adds health fund

Cross-Border Impact Ventures (CBIV), a Canada-based venture capital firm, has raised \$30m in the initial close of its Women's and Children's Health Technology Fund.

The fund will primarily invest in medical device, diagnostic, and digital health companies based in North America, Europe, and Israel. Its secondary focus is on commercial stage companies in emerging markets with global technology transfer potential.

CBIV is targeting more than \$100m for the fund, which has an undisclosed strategic healthcare as a limited partner (LP).

First Rate sets up CVC unit

US-based financial services provider First Rate has committed \$25m over the next three years to its new corporate venture capital unit.

First Rate Ventures will be led by managing director Marshall Smith,

previously chief operating officer at First Rate, with Prabhakar Reddy as a strategic adviser.

It will target seed investments in wealth management and regulation tech companies.

In addition to growth capital, First Rate Ventures said it would provide early-stage startups with strategic technology assets, connections to decision makers at its 500 bank and wealth management clients, and a tier one bank-approved data security infrastructure.

Hormel bites into Green Circle fund

US-based processing company Hormel Foods' corporate venturing unit has committed to Green Circle Foodtech Ventures as an anchor investor.

Hormel's 199 Ventures backed the new ventures fund, which is targeting \$25m, from investment manager Green Circle Capital Partners.

Locaweb adds CVC programme

Brazil-based web services company Locaweb has set up a corporate venture capital programme to invest BRL100m (\$17.9m) over four years.

Local venture capital-as-a-service provider Valetec Capital Investments will manage the investments that connect to Locaweb's e-commerce ecosystem. (Peter Seiffert, founder of Valetec, spoke at the prior GCV webinar alongside Apex-Brasil as part of the annual Corporate Venture in Brasil conference series.

Hulic builds corporate venturing vehicle

Japan-headquartered property developer Hulic launched a corporate venture capital (CVC) subsidiary late last month called Hulic Startup, forming a ¥2bn (\$17.6m) vehicle dubbed Hulic Startup 1.

Founded in 1957, Hulic runs real estate development, investment and leasing businesses that owns substantial properties including stores and company housing linked to former Fuji Bank, now part of financial services firm Mizuho Financial Group.

Hulic serves as a limited partner for Hulic Startup Fund 1 along with Mizuho Capital, an investment arm of Mizuho Financial Group. The vehicle will invest in sectors relevant to its core businesses including real estate, healthcare, tourism, environment and education.

Emasa sets up ventures unit

Grupo Emasa, a Chile-based vehicle parts manufacturer part-owned by Germany's Robert Bosch industrial group, has started a corporate venturing unit as part of its plan to bring 30% of its income from business lines with zero emission energy by 2030.

Emasa Ventures under general manager Arsenio Fernández Ovalle will have an initial \$10m in its set-up stage with a further \$20m to then finance startups.

Blockchain-enabled fund raises \$10m

Borderless Capital, a US-based venture capital firm, has raised \$10m for its Planets Fund backed by blockchain infrastructure developer Algorand.

The fund will invest in the ecosystem surrounding PlanetWatch, a decentralized indoor and outdoor air quality monitoring network built on the Algorand blockchain.

Those participating in the PlanetWatch network are



Japan-headquartered property developer Hulic launched a CVC subsidiary, Hulic Startup

compensated with Planets tokens for streaming air quality data. The fund will also hold a long-term position in Planets tokens and equity.

Bupa Arabia commits to Global Ventures

Bupa Arabia, a health insurance company in the Middle East, has committed to Global Ventures, a Dubai-based international venture capital firm's, second fund.

Bupa Arabia's participation in Global Ventures Fund II as strategic partner particularly in Saudi Arabia comes after receiving regulatory approvals to establish Bupa Arabia Ventures.

Global Ventures has invested in 44 companies across 10 markets, including Clue, a female health application.

Databricks sets up venture fund

Databricks, a US-based data analytics software developer that counts a host of corporate backers as investors having raised \$2.6bn this year at a \$38bn valuation, has set up its corporate venturing unit.

Databricks Ventures' first strategic investment vehicle, Lakehouse Fund, will focus on early- and growth-stage data and AI-powered companies raising rounds led by institutional venture capital firms and extending the company's Lakehouse analytics ecosystem.

GV alumni launch new VC firm

John Zeratsky and Jake Knapp, former design partners at internet and technology conglomerate Alphabet's GV corporate venturing subsidiary, have co-founded a venture capital firm called Character with Eli Bee-Goldman.



Indonesia offers angel investors opportunities

Character will invest in seed-stage rounds using the design sprint methodology Knapp had originally developed and employed at GV, which consists of a five-day process to design, prototype and test ideas with customers.

The firm will deploy up to \$1m per investment at seed-stage and has already raised \$30m in commitments from limited partners including executives from technology companies including Alphabet.

Credem Group closes first CVC deal

Credem Group, an Italy-based bank, has closed its first deal from its corporate venture capital (CVC) launched in April as peer Intesa sets up a new fund.

Credem's Euromobiliare Asset Management unit has backed Noonum, a US-based financial analysis and portfolio construction provider developed in the Franklin Templeton Silicon Valley FinTech Incubator.

Kyocera commits to Good Growth fund

Kyocera AVX, a US-based

subsidiary of Japan-based electronic components maker Kyocera, has committed to medical and deep technology-focused venture capital firm Good Growth Capital's (GGC) second fund.

GGC has offices in both Charleston, South Carolina, and Boston, Massachusetts, to better target spinouts from its research universities.

Telkom Indonesia starts angel network

Indonesia-based telecommunications firm Telkom Indonesia has developed a network for angel investors to coinvest alongside its corporate venturing unit, MDI Ventures.

The eMerge network has signed up more than 60 angel investor members, ranging from startup founders to conglomerate owners.

The move to develop ties between corporate investors and angels follows similar efforts to develop strategic links by investment firm 24 Haymarket.

Sinar Mas mulls financing second SMDV fund

Indonesia-based conglomerate Sinar Mas is considering financing the second fund of venture capital affiliate SMDV from its own balance sheet, potentially running it as an internal family office vehicle.

Founded in 2014 as Sinar Mas Digital Ventures, SMDV operates independently to Sinar Mas and targets financial returns rather than strategic investments. It has built a portfolio that includes e-commerce software provider Sirclo and digital payment platform developer Omise.

People

Salvagno emerges at SentinelOne

- > Keïta leaves Airbus for Meta Materials
- > Noske joins NGP Capital
- > Singleton leaves Alibaba for Nasdaq

By Kaloyan Andonov, Liwen-Edison Fu, Thierry Heles, Robert Lavine, James Mawson and Fernando Moncada Rivera

Rob Salvagno, former head of US-listed networking equipment provider Cisco's mergers and acquisitions (M&A) and corporate venturing unit, has re-emerged in the industry at SentinelOne, a cybersecurity provider.



Rob Salvagno

The move to become senior vice-president for corporate development in September came less than a year after SentinelOne raised \$267m in its series F round from a consortium of hedge and venture capital firms led by Tiger Global Management,

with participation from Sequoia Capital Global Equities, Insight Partners and Third Point Ventures.

Salvagno had left Cisco in March 2020 after 20 years to join private equity firm KKR as a managing director of its next generation technology fund.

Keïta leaves Airbus for Meta Materials

Meta Materials, a Nasdaq-listed manufacturer, has hired Elsa Keïta as executive vice-president for



Elsa Keïta

corporate strategy, partnerships and innovation.

Keïta, a GCV Rising Stars 2016 award winner, had previously spent 12 years at Airbus, including as deputy chief innovation officer running strategic partnerships with startups alongside Airbus Ventures.

Noske joins NGP Capital

Christian Noske has joined Finland-based tech company Nokia's corporate venturing unit as a partner to set up its German office.



Christian Noske

He will run NGP Capital in Berlin having previously moved to a partner position at Germany-based venture capital firm Target Global in December last year.

Noske had initially moved back to Europe after a decade in the United States to become head of Alliance Ventures, the \$1bn investment vehicle formed by carmakers Renault, Nissan and Mitsubishi, in September 2019, having joined the fund in California at the start of 2018.

Singleton leaves Alibaba for Nasdaq

US stock exchange provider Nasdaq has hired Selena Singleton from online retailer Alibaba as head of strategic development.



Selena Singleton

Before her two years running business-to-business globalisation for China-based Alibaba, Singleton had been a director at insurer New York Life's corporate venturing unit.

It is an important hire for Nasdaq, which in January appointed Jeremy Skule as chief strategy officer in a newly expanded role overseeing mergers and acquisitions, venture investments, and data and analytics.

Sapphire hires Steinberg for sports

Sapphire Ventures, a US-based independent venture capital firm backed by software provider SAP, has raised almost \$2bn and expanded its sports-focused investment team with the hire of Chloe Steinberg as a partner.



Chloe Steinberg

In its largest fundraise to-date, the firm said the closings of Sapphire Ventures Fund VI and associated co-investment vehicles took its assets under management to \$8.8bn.

Sapphire invests in series B through late-stage enterprise technology companies in the US, Europe and Israel and would move beyond SAP as its limited partner (LP).

Norwest hires Aynechi after fund close

Norwest Venture Partners, an independent venture capital and growth equity investment firm backed by US



Tiba Aynechi

bank Wells Fargo, has closed its sixteenth fund at \$3bn and hired Tiba Aynechi as a general partner on the healthcare team.

Aynechi, a former GCV Rising Stars award winner, will start at Norwest next month after 11 years at Denmark-based healthcare group Novo's corporate venturing unit.

Her addition follows last year's hire of Dave Zilberman as Norwest's newest general partner on the enterprise team from his managing director role at Comcast Ventures.

Analyses

- > Animal-free protein producer raised series C from investors including Prosus Ventures
- > Semiconductor maker completed a nine-figure series C round with SAIC Motor investing
- > Digital banking platform operator Nu Holdings priced its IPO at the top of its range in New York, representing the first Brazil-originated flotation in three months

By Fernando Moncada Rivera, senior reporter; Liwen-Edison Fu, reporter; Kaloyan Andonov, analyst

The Every raises \$175m

US-based synthetic animal protein developer The Every Company raised \$175m in a series C round, which included Prosus Ventures, the corporate venturing arm of internet holding group Prosus. The round brought the company's overall funding to \$233m. McWin Food Ecosystem Fund, a vehicle formed by restaurant group AmRest founder Henry McGovern, co-led the round with venture capital firm Rage Capital, investing together with

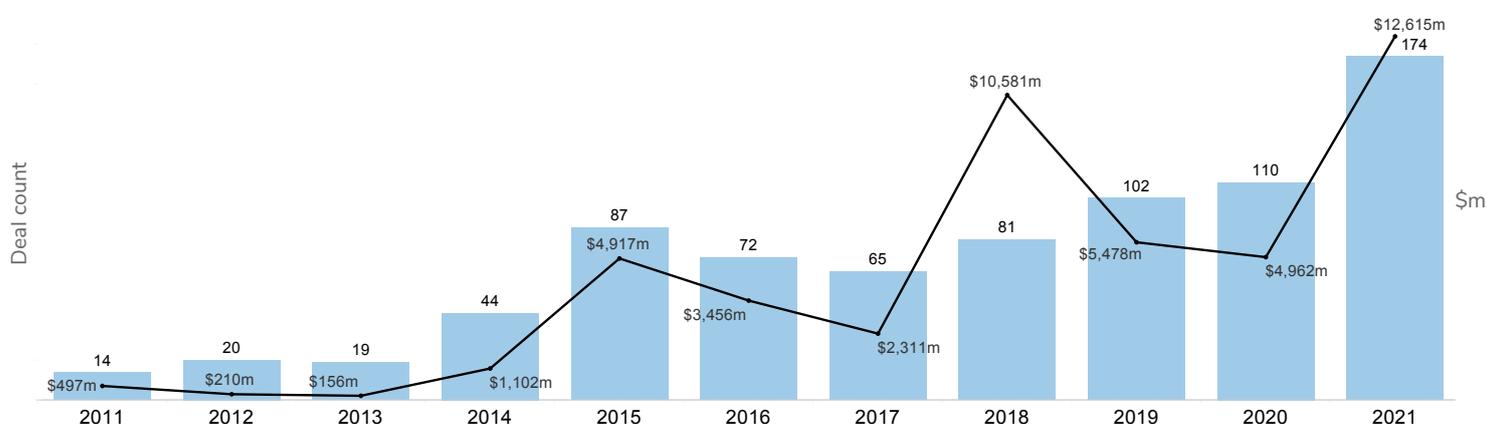
Wheatsheaf Group, SOSV, TO Ventures and the Singaporean government-owned Temasek.

Founded in 2014 as Clara Foods, the company rebranded to The Every Company in October this year and is developing animal-free replacement proteins using its micro-organism-based fermentation technology.

The Every is part of the broader food and beverage space, which has enjoyed much interest from corporate venture investors. The

number of corporate-backed deals in emerging businesses from this space has been growing over the latter half of the past decade. However, both the number of deals and the total estimated capital in them took off throughout 2021, reaching 174 rounds and \$12.65bn in estimated total capital versus 110 transactions and \$4.96bn in 2020. There has clearly been upward pressure on valuations and more deals being done over the past year in this space.

Corporate-backed deals in food & beverage 2011-21



Source: GCV Analytics

Data as of 9 December 2021

Eswin computes \$392m

China-based semiconductor technology developer Beijing Eswin Technology Group raised a \$392m series C round, which was backed by automotive manufacturer SAIC Motor’s Shang Qi Capital subsidiary. The round was co-led by investment bank Citic Securities’ private investment arm, Goldstone Investment, with China Internet Investment Fund, and also featured Legend Capital, the venture capital firm spun off by conglomerate Legend Holdings, among other investors.

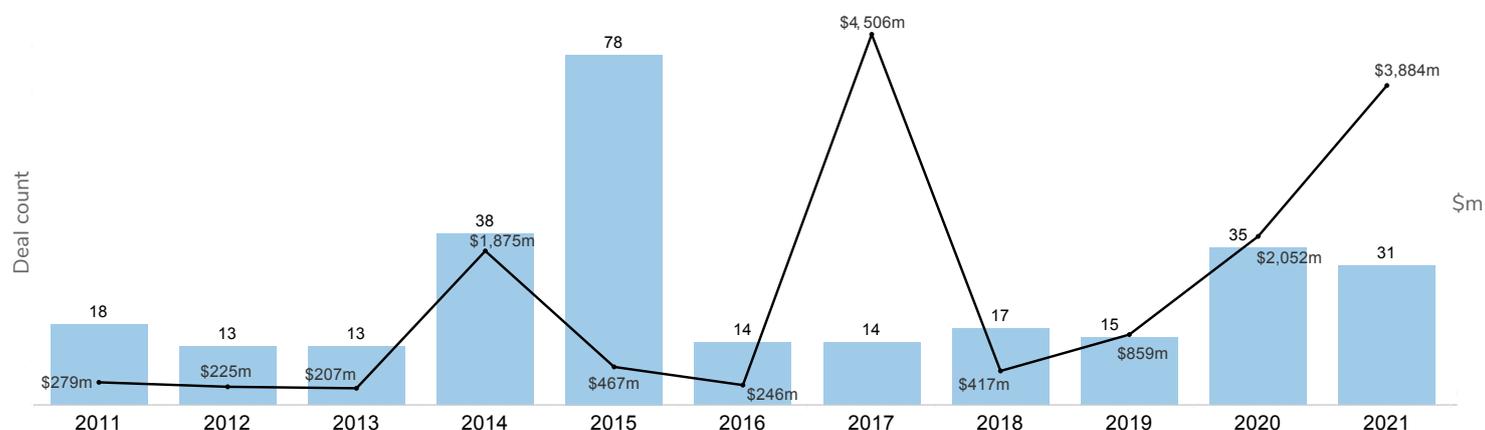
Founded in 2016, Eswin is developing integrated chips for use in applications such as

artificial intelligence-powered data processing, wireless connectivity, displays and video. In addition to integrated circuits, it provides silicon materials, advanced packaging products as well as packaging and testing services.

Eswin is part of the semiconductors and chips tech space, which has seen some interest by corporate venture investors over the years. As this is a hardware space, where innovation is more difficult to mature, the number of deals per year has been fairly modest during much of the past decades (mostly between 10 and 20 deals),

except for 2015, which registered 78 corporate-backed deals in such businesses. In most recent times, when we began hearing about the now well-known shortage of semiconductors after the pandemic broke out, we saw 35 deals in 2020 and 31 by the end of November this year. Notably, the total estimated dollars in those deals nearly doubled from \$2.05bn by the end of last year to \$3.88bn by the end of November. This suggests not only heightened interest in the semiconductors space, likely in part to due to the shortages, but also significant upward pressure on valuations.

Corporate-backed deals in semiconductors and chips tech 2011-2021*



Source: GCV Analytics

Data as of 30 November 2021

Nubank raises \$2.6bn in IPO

Brazil-based Nu Holdings, owner of neobank Nubank which counts internet company Tencent and conglomerate Berkshire Hathaway among its backers, raised \$2.6bn in an initial public offering priced at the top of its range. Nu issued 289 million shares on the New York Stock Exchange at \$9 per share. Nu had initially intended to raise as much as \$3.18bn before decreasing its range from \$10 to \$11 per share to between \$8 and \$9 apiece. Berkshire Hathaway, conglomerate led by famed value investor Warren Buffett, has reportedly acquired 10% of the new shares. The company also

issued depositary receipts on São Paulo's B3 stock exchange in a concurrent offering. The listing came at a time when Brazil's IPO activities have decreased significantly, with no companies having gone public on São Paulo's B3 stock exchange since September this year.

Founded in 2013, Nubank has developed a digital banking app that provides services including bank accounts as well as debit and credit cards with competitive fees. It is the largest independent digital bank in the world, with more than 48 million users across Brazil, Mexico and Colombia.

Nu Holdings forms part of the broader fintech space, which has seen much growth and interest from corporate venture investors. Both the number of corporate-backed deals in emerging fintech enterprises and the total estimated dollars have skyrocketed over the past decade, growing from 66 deals and an estimated \$911m in 2013 to 558 rounds and \$33.41bn in estimated committed total capital by mid-December 2021. It is only natural that promising enterprises coming from this space would be going public like NuHoldings in what happens to be (still) an impressive bull market.

Corporate-backed deals in fintech companies 2013-21*



Source: GCV Analytics

Data as of 16 December 2021

Feature

Talking heads: The biggest opportunities for 2022

In a recent poll running in October and November of corporate venturing industry leaders, Global Corporate Venturing (GCV) asked what would be the biggest issues for 2022

By Kaloyan Andonov, analyst, and James Mawson, editor-in-chief

Global Corporate Venturing runs global councils for CVCs across the main sectors of the economy from energy, health, finance, industrial, media and communications, AI and deeptech, and consumer.

Through these councils and its wider group members, more than 150 corporate venture investors told Global Corporate Venturing their trends and technologies of importance for this year. The



As the world moves toward its net zero goal, innovation will follow in the same direction

quotes, a selection included here and to be published in the World of Corporate Venturing annual review next month, offer a unique snapshot of the potential opportunities they identify for 2022. Last month GCV published their views on the verticals and horizontals that caught the attention of these investors throughout 2021.

Notably, we have also seen responses pointing to climate tech, decarbonisation and hydrogen beyond the health and tech investment themes of last year. As the world moves toward its net zero goal by 2050 and innovation and technology follow in the same direction, such responses are hardly surprising.

What will be the biggest investment opportunities in 2022?

“Climate tech”

Rahul Parekh,
2150 Venture Capital
/ NREP



“Reducing impact of climate change”

Mark Brooks, Syngenta
Group Ventures



“Sustainability has become central to every corporation’s strategy over the last year – investing in technologies that enable delivery of bold ESG (environmental, social and governance) targets will be critical”

Erin VanLanduit, Cargill Ventures



“Growing importance and adoption of telehealth tools – for example, remote patient monitoring, virtual visits, increasing access to mental and behavioural health”

Donald Hoang, Varian, a Siemens Healthineers Company



“New data sources, embedded propositions, IoT (the internet of things) applications and trust tech”

Ron Arnold, 11eight



“Life sciences and precision medicine, cybersecurity. Digital transformation, supply chain localisation and automation especially as we grapple with geopolitical and pandemic disruptions”

Faran Nouri, Lam Capital



“In commercial insurance, investments in technologies that help us rethink the product and service will be top of mind. Leveraging data to better determine new signals of risk, and transition to the use of more dynamic data sets will shape our investment strategy for example industrial IoT, or spatial imagery”

James Orchard, QBE Ventures



“Cyber insurtech and fintech (insurance and financial technology) and enterprise software”

Reese Schroeder,
Allstate Strategic Ventures



“Smart mobility”

Vito Giallorenzo,
IVY Innovation Fund,
BlackBerry



“Fintech”

Jeff Hennig,
Xilinx Ventures



“More reliable use of automation, more cleantech, evolving social media, and healthcare”

Stephen Socolof,
Tech Council Ventures



“Automation due to labour shortage and sustainability”

Suzanna Chiu,
Amadeus Ventures /
Amadeus IT Group



“Hydrogen, carbon capture, net zero fuels”

Girish Nadkarni,
TotalEnergies
Ventures



“Emerging ‘market networks’ and deep tech startups focusing on impact solutions”

Sead Bajrovic,
Grundfos Ventures



“Continued proliferation of electrification and while vehicles are top of mind for many, there are sweeping opportunities enabled through infrastructure. Further highlighted by labour needs and augmenting human capabilities, robotics and AI [artificial intelligence] continue to attract talent and interest as well”

Dennis Liu,
Ford Motor Company – Palo Alto



“Energy and clean tech”

Maho Miyamoto, KDDI
Open Innovation Fund



“Decarbonisation and sustainability”

Kyle Sugiyama,
Kanematsu Ventures



“Insurtech”

Steve Bernardez,
Avanta Ventures /
CSAA Insurance Group



“Retail tech”

Mizuki Enomoto,
Nissho Electronics
USA



“The future of work”

Gen Tsuchikawa,
Innovation Growth
Ventures / Sony
Corporation and
Daiwa Securities



“Blockchain gaming, fintech, food and agri tech”

Josie Lai,
Genting Ventures



“The focus on sustainability beyond tailpipe emissions means battery management systems, end-of-life solutions and sustainable supply chains are a major focus of OEMs [original equipment manufacturers]. The next generation of connected vehicle technologies will give connected vehicle service propositions a boost, as well as the need for cybersecurity solutions”

Alex Smout, InMotion Ventures /
Jaguar Land Rover



*“1. Fintech – is quite an emerging thing
2. Metaplatforms and ecosystems: the edge between banks, marketplaces, IT-companies will be blurred
3. AI and ML [machine learning] applications and teams”*

Ivan Kuzmenkov, Prospective
Ventures / Norilsk Nickel



“Energy sector”

Naotaka Gotoh,
DIC Corporation



“The CVC industry in Latin America”

Richard Zeiger,
MSW Capital



“Insurtech, cybersecurity, privacy”

Naoki Kamimaeda,
Global Brain



“Defi (decentralised finance)”

Crispin Leick,
EnBW New Ventures



“Application of blockchain technology is driving new business models and innovative solutions

across verticals. In 2022 and beyond, we will see accelerating use of blockchain-based solutions by both businesses and consumers. This upcoming mass adoption will provide compelling opportunities for CVC and VC investments. The metaverse is a new whitespace area attracting top talent interested in creating products and services that do not exist yet. Companies developing metaverse platforms and applications are relatively small or unknown today but have started seeing strong traction. Exciting investment opportunities lie ahead for those that venture out into the metaverse. EVs (electric vehicles) have been in the market for a while, but growing acceptance and unmet customer needs are driving constant innovation. With a massive TAM (total available market), this space will continue to provide an abundance of superior investment opportunities across the entire EV lifecycle”

Anshul Agarwal,
LG Technology Ventures



“Energy transition, climate tech, industrial decarbonisation”

Kemal Anbarci,
Chevron Technology Ventures



“Startups in emerging markets”

Kip Frey, HG Ventures / Heritage Group



“Experiences”

Josh Berg, Magna Innovation Ventures



“Hydrogen, fintech, AI chips, edge computing”

George Gogolev,
Severstal Ventures



“Ag tech, synthetic biology, supply chain”

Kris Kemeny,
Tekfen Ventures



“Electrification, energy-tech, hydrogen, advanced functional materials”

Anil Achyuta,
TDK Ventures



“Total experience”

Toshiya Maruta,
Japan Post Capital



“Industry 4.0, sustainability and cleantech”

Drew Amato,
Lear Corp



“Semantic and NLP (neuro-linguistic programming) analysis tools to empower digital workers to be more efficient, more connected, and physically more often remote”

Grant Allen,
SE Ventures / Schneider Electric



“Platforms, AI, autonomy, robotics. Infrastructure and construction technology, sustainability”

Chris Stern, Trimble Ventures



“Hydrogen and carbon capture”

Johann Boukhors, Engie New Ventures



“Cybersecurity”

Sergio Escobar, BCF Ventures



“In surgery and minimally invasive care, new models of care delivery directly targeting payors and consumers leveraging deep technology and best in class services”

Oliver Keown, Intuitive Ventures



“Climate tech”

Roe Furman, Doral Energy-Tech Ventures



“Modular and off-site construction, site-automation, sensor technologies”

Burak Gursel, Simpson Strong-Tie



“Future of work, future of learning, web3, new mobility models, broadening financial access and literacy, climate tech”

Francis Rosenberg, GSV Ventures



“Expansiveness of data and AI in digital transformation blockchain, crypto and NFTs (non-fungible tokens). The continued focus around AI, ML and data”

Paul Glaser, Hewlett Packard Pathfinder



“Hydrogen value chain”

Hee Suk Jung, SK Gas



“Automation addressing labour shortages across industries”

Mark Johnson, Husqvarna Ventures



“Emerging markets and Africa series A”

Anton Kleingeld, Old Mutual New Ventures



“Health at home”

John Uribe, Stella Ventures



“Even more VC funding in foodtech and other underappreciated traditional industries (construction, education)”

Andrei Zuzin, Fuel for Growth / EFKO Group



“Carbon neutral [or] climate [tech]”

Michihiko Kasai, KDDI



“I believe that AI continues to disrupt businesses across all industries and we are not done yet. As an example, the entire manufacturing sector is still lagging in its digital transformation and we will continue to see innovation in the space”

Rita Waite, Semapa Next VC



“The energy transition”

Kaare Helle, DNV Ventures



“The biggest investment needs to be in new disruptive energy technologies. Energy companies are known to move very slowly, can they be challenged to adopt new technologies and methodologies faster?”



Noel Hurley, Arm

“Everything around sustainability”
Christian Lindener,
Airbus Scale



“New market effects following markets – for example e-commerce, travel, future of work”



Brandon Yahn,
Convivialité Ventures /
Pernod Ricard

“In fintech: defi, embedded finance, real-time lending (for example, revenue based financing), open banking applications”



Suleiman Arabiat, Elevator Ventures
/ Raiffeisen Bank International

“Biotech applications such as biofoundry, biofuels, biopharma, biomaterials and bioengineering approach to clean tech”



Kenichi Funaki, Hitachi

“Climate [tech]”
Edouard van Tichelen,
Natixis Investment
Managers



“Metaverse”
Dong-Su Kim,
LG Tech Ventures



“ESG opportunities”
André Strauss,
Leverage Partners



“Aggregator platforms for B2B (business-to-business)-circular economy, system infrastructure for tokenised production 4.0 and circularity of things”



Florian Hofmann,
1886Ventures / Daimler

“Digital engagement”
Stuart Domingos,
Zurich Insurance



“Robotics, AI, ML, digital twins”
Daisuke Tojima,
Konica Minolta



“More metaverse, maybe we will finally understand what that means”

Michael Stewart,
M12 / Microsoft

“AR, crypto, blockchain”
James McClurg,
Sky Ventures



“Investment and partnering will continue to be highly attractive across many sectors and segments – reflecting available funds and key players willingness to transform and need to transform”



Paul Price,
IBM Ventures

“Climate tech”
Kendra
Rauschenberger,
Siemens Energy
Ventures



“AI-driven technologies, hyper automation tech, chip-related technologies”
Kai Engelhardt,
Brose Ventures



“Hydrogen, no compromise farming”

Erkki Aaltonen, Yara Growth Ventures



“Sustainability, hydrogen, tech”

Dimitris Triantafyllidis, Saudi Aramco Energy Ventures



“Continue on the decarbonisation and climate action front”

Gonzalo Galindo, Cemex Ventures



“Climate tech – materials and sustainability, health tech, semiconductor manufacturing related technologies helped by the Chips Act”

Eileen Tanghal, In-Q-Tel International



“Healthcare personalisation”

Les Hine, Once Ventures



“Clean technology”

Dave Schulte, McKesson Ventures



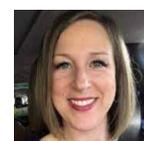
“One of the biggest trends will be artificial intelligence to diagnose cancer coupled with automated and remote diagnostics”

William Taranto, Merck Global Health Innovation Fund



“Expanding the bubble for clean tech – for example, instead of just hydrogen, there will be real attention paid to making other alternatives viable options. Also, as the world moves away from focusing on pure autonomy as THE solution, there will be more co-bot models developed which may expand and accelerate adoption”

Jaci Sager, Caterpillar Venture Capital



“Robotics”

Kuni Kawase, Presidio Ventures Europe / Sumitomo



“Materials, supply chain and logistics efficiency, predictive AI”

Tony Cannestra, Denso



“Multiverse”

Mauricio Cardoso, Casa Azul Ventures / O Povo



“Targeted LNPs [lipid nanoparticles], additional applications of LNPs, additional applications for mRNA (messenger RNA) therapeutics and vaccines”

Barbara Dalton, Pfizer Ventures



“Financing and fintech and prop tech and construction tech”

Ben Price, Saint-Gobain NOVA External Ventures



“Blockchain-based digital assets”

Dominique Mégret, Swisscom Ventures



“Sustainable aviation”
Matt Ridley, Hangar 51 / International Consolidated Airlines Group (IAG)



“Robotics”

Noel Chan, Drive Catalyst

“NFT, agritech, sodium-ion battery as an alternative to lithium, climate tech”
 Yean-Chau Ong,
 Origgin Ventures



“SaaS (software-as-a-service) companies”
 Francisco Schuler,
 Wayra / Telefonica



“Energy transformation for a greener planet, especially around technologies that can truly deliver on net zero goal”
 Nicolas Sauvage, TDK Ventures



“Power generation, power storage and management – including nuclear, defence tech, robotics, drones, autonomous vehicles infrastructure, micro mobility integration and age tech”
 Rod Brown,
 Carlisle Place / John Lewis Partners



“Those related to back to normal”
 Takeshi Kodama,
 31Ventures /
 Mitsui Fudosan



“Energy storage, hydrogen, DES (data encryption standard) technology”
 Roy Brown,
 Worley Technology Ventures



“Energy (electrification, alternative energy sources, hydrogen, micronuclear) and sustainability (battery recycle and reuse)”
 Raymond Zheng,
 Honda Innovations



“Impact, AI, big data, fintechs and data-driven marketing platforms”
 Rodrigo de Alvarenga,
 HAG Ventures



“Same as 2021. Although I am also seeing more electric vehicles and warehouse automation solutions”
 Tony Palcheck, Zebra Ventures



“Artificial intelligence”
 Mohamed Nazir Azmirly,
 Raya FutureTECH



“Autonomous robots”
 Paul Asel,
 NGP Capital / Nokia



“Battery and EV-related technologies”
 Wade Sheffer,
 GM Ventures / General Motors



“Digitalisation of everything, special attention to healthcare”
 Gustavo Cavenaghi,
 Kortex Ventures / Fleury and Sabin



“Intersection of health and fintech: ESG enablers”
 Lisa Suennen,
 Manatt Venture Fund



Comment

Trends in innovation and technology for 2022

By [Héctor Shibata](#), director of investments & portfolio at ACV – a global corporate venture capital (CVC) fund – and adjunct professor for entrepreneurial finance; and [Gonzalo Soriano](#), a VC investor at ACV

2021 was a year where investment in VC grew very fast. Just to give context, global investment in startups had never exceeded \$100bn on a quarterly basis before this year, which has happened in the first three quarters of the year. This growth was not only driven by the number of deals, but also by the increase in capital raised. During the first three quarters of the year, the number of rounds of \$100m-plus doubled compared with last year, and the figure of new decacorns (companies valued at \$10bn-plus) also increased by 100%, with 30 new ones as of November 2021 compared with 15 in all of 2020.

The current conjuncture in the VC capital raising shows an accelerated interest of different actors of the global investment ecosystem towards having exposure to the financial returns generated by disruptive technologies.

In our article from last year, [What's Next: Trends in Innovation and Technology for 2021](#), we defined 11 technological trends applied to different verticals and industries that were going to lead the innovation and entrepreneurship ecosystem through the creation of startups and the raising of VC capital for this year.

Reflecting on the past 12 months and based on the global VC activity, we identified five of these predictions that were key in the development of the VC industry.

Embedded AI

Artificial intelligence is becoming increasingly relevant at the business level, more companies are looking to integrate learning and automation models within their processes. The evolution of this technology in its development and ease of implementation opens the possibility that any company, regardless of its size and business model, can be an AI-based company. In addition, AI has the potential to be integrated into any technological infrastructure regardless of its level of maturity, such is the case of blockchain, computer vision and AR / VR.

Some interesting use cases developing in this space are; Hallah, which provides recommendation personalisation capabilities to retailers in the digital world; Peekage, who through their algorithm create an “honesty score” so that brands can carry out more targeted sampling campaigns; or Torch, which is a digital carrier optimising routes through AI.

Branded content and social commerce

Mainly driven by the growth of platforms born in Asia in recent years, such as Pinduoduo or Meesho; and accompanied by the intersection between e-commerce and social networks, 2021 saw a boom in solutions related to social commerce. Social commerce became a logical evolution to e-commerce given the ease that nowadays any brand has to sell



Credit: Cargamos

through these channels, and it was even more accelerated by the pandemic. It is estimated that the social commerce space will exceed \$7bn in capital raising by the end of 2021, a significant increase compared to the \$3bn raised in 2020.

Within this vertical there are different business models, but all with the common factor of leveraging the power of the community to enable more online transactions. Among the most popular models are group buying, chat commerce, livestream e-commerce, influencer marketing & gamification. The geography where these business models have been most sought to migrate is Latin America, some startups doing this in the region are Favo, Facity, Apperto, Elenas, Nilus, Dolado and Mimo.

Micro-fulfilment centres (MFC) and hyper-localisation

The pandemic undoubtedly accelerated the adoption of e-commerce at a global level, and as a result of this, business models

were born focused on minimising waiting time for consumers, optimising last-mile logistics costs, and maximising the consumer experience. This is how the need to have MFCs or dark stores was born, points of sale located in high-density areas of large cities solely dedicated to meeting the demand of digital consumers.

The first half of 2021 saw a great disruption in this sector, which was initially dominated by the food sector, achieving amounts of VC investment little seen in the industry. The main business models in this space were: digital retailers supported by MFCs, such as JOKR, Gorillas, Fridge No More and Flink; and those who outsource or seek support in the operation of MFCs. The latter is divided into companies that only rent storage space, such as Wareclouds in Chile; those that outsource the entire logistics operation from end to end, such as Cargamos in Mexico, Estoca in Brazil or FlowSpace in the US; those that integrate each part of the logistics chain with different

software companies through APIs, such as Instance in Chile or Fulljaus in Argentina; and those who support the search for physical space and operation of MFCs such as Clicoh in Argentina.

Blockchain & NFTs

The evolution of blockchain technology continued its accelerated growth, with 2021 being a year with important milestones, such as Coinbase's IPO in April through a direct listing, valuing the cryptocurrency exchange at \$65bn at the time of its exit. Also, the Mexican platform for the purchase and sale of crypto assets Bitso raised a Series C of \$250mm at a post-money valuation of \$2.2bn, and its Brazilian counterpart, Mercado Bitcoin raised \$200m in its Series B at a valuation of \$1.9bn pre-money.

As a result of this, a "bull run" of the cryptocurrency market was seen, in which Bitcoin managed to reach a market capitalisation of \$1tn. Similarly, the decentralised platform Ethereum had exponential growth, with ETH being one of the highest performing crypto assets, driven mainly by its application of use cases such as decentralised finance (DeFi) and non-fungible tokens (NFTs).

Within the NFT's ecosystem there was an increase in interest from global VC funds. Among the most relevant investment rounds are the \$900m Series B from FTX or the \$100m Series B from the NFT's marketplace OpenSea led by a16z, which reached a valuation of \$1.5bn. In the collectibles space, the CryptoPunks collection that has transacted ETH 726.8k (\$2.9bn) can be highlighted, or that of Bored Ape Yacht Club, which has generated a transactional



volume of ETH 241k (\$984m) among its 10,000 pieces. Many world-renowned multinational companies, organisations and individuals have interacted with this initiative; as was Visa with the acquisition of an NFT of CryptoPunks for \$150k, the NBA launching its marketplace of digital collectibles "Top Shot", and even Lionel Messi launching a collection of NFTs, with one of them selling for more than \$1m.

Cybersecurity

The accelerated digitisation that has resulted from the pandemic has brought the need for greater cybersecurity in companies and even on a personal level. Let us remember the ransomware attacks that have happened this year like the Colonial Pipeline in the summer where they paid 75 Bitcoins (approximately \$4bn) to release the assets. The computer equipment producer Acer also suffered an attack from the REvil hacker group who demanded \$50m.

As a result of all this there is a wave of cybersecurity companies trying to seize the market

opportunity. In addition, during the year the SentinelOne IPO was carried out at an implicit valuation of \$9bn.

2022 will undoubtedly be the continuation of the digital age. In addition to continuing to face covid-19, society will continue to face global inflation, disruptions in the supply chain, and financial uncertainty.

The main trends for 2022 will be the following:

1. **Connectivity:** Connected sensor data, machines and powerful analytics at the edge will lead us to a completely measured world. IoT and 5G technologies will become the deal breakers that will drive transformations in every single industry. The combination of these technologies will boost innovation and the speed of connections, creating new services, business models and next generation customer experiences. (McKinsey)

Derived from connectivity, the global analytics market is estimated to reach \$133bn by 2026 (CAGR of 29%). Global analytics and big data revenue will reach \$275bn in 2022, according to Market Research Future Report.

Some of the startups supporting this connectivity gap are FloLive in the UK, Databricks and Fivetran in California.

2. **Cybersecurity mesh:** Cybersecurity mesh enables scalable, flexible and reliable cyber control across cloud and non-cloud environments to secure data anywhere, approaching a centralised policy that reduces security breaches and keeps up with data protection legislation. (Gartner)

Today, companies are developing more robust cybersecurity architectures using even technologies such as blockchain, which could become a relevant percentage of the global economy in the coming years. Cybersecurity, privacy and security startups have raised \$10.7bn so far this year, six times more than was raised throughout 2010 (\$1.7bn). (Crunchbase)

Some startups developing in this space are Axis Security in California, DefenseStorm in Georgia and Ethyca in New York.

3. Future of programming:

Machine learning and AI tools will revolutionise coding creating a new age of software: Software 2.0. It will create new ways of coding and reduce its complexity and working time for software development and analytics; especially given that the lack of programming knowledge will cease to be a barrier sooner than later. In order to do so, companies need to master DataOps and MLOps practices and technology along the way. (McKinsey)

Spending on artificial intelligence solutions in 2021 will reach \$342bn and \$500bn by 2024. Another trend within programming solutions are no-code and low-code platforms, which allow developers and non-developers to write code seamlessly through visual and interactive dashboards with drag-and-drop interfaces. If the current trend holds, the market for low- and no-code could climb from between \$13.3bn and \$17.7bn in 2021 to between \$58.8bn and \$125bn in 2027.

Some startups developing this technology are Netlify in California, Unqork in New York and Pipefy in California.

4. Data Fabric: Data fabric makes data available anywhere. It integrates data across multiple platforms and business users; thus, it is essential for modernising data management and integration, and connecting processes. There are opportunity areas regarding its use cases and its improvements to reduce data management efforts. Data fabric deployments will quadruple efficiency in data utilisation by 2024. This will reduce 50% of human-driven data management tasks. (Gartner)

Some startups working in this area are: K2View and Magnitude Software in Texas, and Eyeota in Singapore.

5. Cloud computing: Cloud sovereignty and edge computing needs have become a contemporary challenge for CTOs. Cloud adaption has disrupted IT organisations, governance and operating models (FinOps, CloudOps) and by next year, 70% of business will go fully or hybrid cloud. IT infrastructure and services are experiencing some serious disruption, reducing the needs for IT setup and maintenance, bringing computing capacities closer to users and resources for real-time processing and most important, decentralising the cloud infrastructure. (Bearing Point)

The total value of the cloud computing market is of \$371.4bn in 2021 with a CAGR of 17.5%. By 2025, the market value is expected to be \$832.1bn. (Markets and Markets)

Within this space, some relevant startups are Rescale in California, Surpath in Shanghai and Backbox in Israel.

6. Hyperautomation 2.0:

Hyperautomation is “a disciplined, business-driven approach to rapidly identify, vet and automate as many business and IT processes as possible”. Hyperautomation 2.0 enables scalability, remote operation and business model disruption; with it, processes are faster and allows workers to focus on more important tasks; playing an important role for Industry 4.0. (Gartner)

Hyper-automation will be driven primarily by technologies that help organisations map and optimise workflows and orchestrate the functions of their work teams in a simple way. The most important technologies to achieve this are robotic process automation (RPA), low-code and no-code platforms, and AI-based virtual assistants. Gartner estimates that the hyper-automation market will reach \$600bn by 2022.

Some startups developing in this area are Cyclone Robotics in Shanghai, Swish.ai in Israel and Rele.ai in Switzerland.

7. Healthtech: The health sector and its intersection with technology have opened a wide range of opportunities for innovation. Some of the most important applications within this sector are digital health, medical devices, biopharmaceuticals, digital therapeutics, health IT, mental health and wellness, and telehealth. The capital raised by startups in this sector is also increasing, during the first three quarters of last year VC investment in healthtech reached \$97bn, an increase of 20% compared with the total investment that the sector had in 2020.

Some startups with important transactions in this sector are AboGen Biosciences in China (\$700m Series C), Laronde in Massachusetts (\$400m Series B) and Cityblock Health in New York (\$400m Series D).

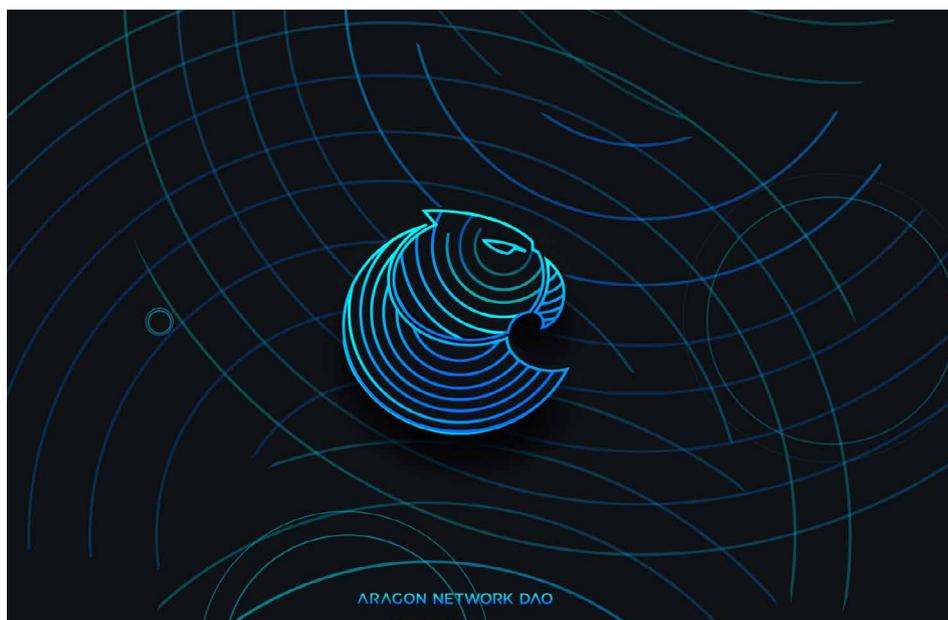
8. Circular economy and sustainability: The circular economy is growing due to climate change. It will take on more and more relevance in the decisions of companies and governments. Some of the trends in this sector are the following: waste-to-resource, reuse, internet of waste, AI-powered recycling, bio-based materials, remanufacture, blockchain and repair.

Some startups with recent transactions in this sector are Refurbed in Austria (\$54m Series B), FixFirst and Concular in Germany. Other relevant companies include Algramo, Nilus, BioBox, ThredUp, Rent the Runway.

9. Web 3.0 and DAO: Technological evolution and the convergence of multiple technologies such as blockchain, AI, ML, IoT, among others, is resulting in the formation of Web 3.0 and Decentralised Autonomous Organisations (DAO).

Web 3.0 is the next stage of the web evolution that would make the internet more intelligent or process information with near-human-like intelligence through the power of AI systems that could run smart programs to assist users.

A DAO is a mechanism that enables online communities to form and coordinate economically. It is a new kind of digital and economic entity that runs as code and is owned and controlled by its members. It makes possible for



any community or organisation to deploy capital through a set of rules enforced by an underlying blockchain.

Today DAOs with different use cases are already being developed, among the most relevant are the protocol DAOs, social DAOs, investment DAOs, grant DAOs, service DAOs, media DAOs, creator DAOs, and collector DAOs. Some existing DAOs, or platforms that seek to facilitate the creation of these are Aragon, MakerDAO, Friends with Benefits, The LAO, MetaCartel and RaidGuild.

10. Metaverse: The metaverse is an artificial space where the physical world meets the virtual world. In order to allow users to interact virtually, the metaverse concept combines virtual reality (VR) technology, augmented reality (AR), social media, online gaming and cryptocurrencies. It is widely known that Facebook is the current leader on the industry, but some Apac companies have also excelled; especially in marketing and medical use cases.

Crypto cloud economies are the next emerging market investment frontier and the Metaverse is at the

forefront of this Web 3.0 internet evolution. The Metaverse is a set of interconnected, experiential, 3D virtual worlds where people located anywhere can socialise in real-time to form a persistent, user-owned, internet economy spanning the digital and physical world. Grayscale, one of the leading crypto asset managers, stated that the metaverse could be a \$1tn business opportunity for the future.

The following year will be full of great challenges and opportunities for those who have the vision to capture them. Decentralisation and deep technologies are converging in a new era of the internet, out of which unknown business models and new technologies will arise. We are on the verge of the birth of the next wave of companies that will lead the market in the following decade. Market participant such and entrepreneurs, investors and existing companies must understand the dynamics and limitations of these technology trends to adapt their vision and business strategy to the new internet age to increase their competitiveness in the market.

Comment

Disruptive innovation: facts and response strategies

> First published on LinkedIn [here](#)

By [Ralph-Christian Ohr](#), corporate innovation expert

An insightful HBR [article](#) by [Julian Birkinshaw](#), titled How Incumbents Survive and Thrive, caught my attention. It makes two crucial and thought-provoking points on industry disruption (side note: we talk about demand-side disruption, as opposed to supply-side disruption) and appropriate response strategies which greatly resonate with my view:

There has been less creative destruction than prior studies have suggested – indeed, less than most people believe.

Digital disruption is real, of course, but it has been oversold by three myths:

- Every sector is under threat
- Disruption happens quickly and is accelerating
- Established firms are struggling to adapt

The data suggests otherwise: While many believe that technological disruption has been rampant for decades, the internet has actually caused much less creative destruction than people think. Birkinshaw's analysis of the Fortune 500 and the Global 500, in fact, reveals that most sectors have been surprisingly stable over the past 25 years. Very few firms on those lists today were launched after 1995.

Some industries, like TMT and retail, seem to have been moderately affected. In contrast, industries like industrial and consumer goods were hardly affected at all. Disruption happens over a long time frame. Retail banking, insurance, education audit and consulting industries were seen as vulnerable in the 1990s.

However, even though changes are afoot in all those sectors, incumbents have not yet surrendered their dominant positions. And while some established companies have struggled over the past few decades, the evidence shows that they are not representative of broad trends, according to Birkinshaw.

Strategies pursued by the Fortune 500 and Global 500 firms that successfully navigated the past 25 years of digital change reveal four general approaches.

The best response to disruption also seems to be misunderstood. Companies that adopt bold, offensive strategies in the face of industry digitisation improve their odds of coming out winners, argues a recent McKinsey study. Following this advice, the default response is to fight fire with fire, that is setting up a competing digital unit or pursuing a (self-disrupting) transformation. On the other hand, Birkinshaw’s analysis has distilled out four distinct viable strategies (see table above):

- **Double down** – playing to the own existing strengths, for example Disney.
- **Fight back** – trying to take on an insurgent at its own game. Examples include British Airways and Microsoft.

Birkinshaw’s analysis finds four distinct viable strategies

	Focus on existing segments and markets	Focus on new segments and markets
Offense	<p>Double Down</p> <p>Benefit: Leveraging long-time assets</p> <p>Risk: Market may not value those assets in the future</p>	<p>Fight Back</p> <p>Benefit: Keeping new entrants at bay by moving quickly</p> <p>Risk: Hard to execute and easy to get timing wrong</p>
Defence	<p>Retrench</p> <p>Benefit: Reducing threats from new entrants through scale and lobbying</p> <p>Risk: Recipe for managed disaster and hard to sell to stakeholders</p>	<p>Move Away</p> <p>Benefit: Seizing opportunities in new markets</p> <p>Risk: Diversification is challenging to pull off</p>

Adapted from HBR - <https://hbr.org/2022/01/how-incumbents-survive-and-thrive>

- **Retrench** – yielding ground to new arrivals and using a variety of weakness-based tactics (compared with strengths) to ensure own survival. For example many banks.

- **Move away** – moving into entirely new opportunities, such as Fujifilm.

Selecting a response strategy involves decision-making on

- playing offense versus defence, that is taking on an entrant directly compared with indirectly
- focusing on existing rather than new segments or markets.

Each strategy has benefits and risks. As always in the context of corporate strategy and innovation, one size does not fit all: a company’s preconditions and

circumstances determine which one it should actually pursue.

No matter which option is chosen, companies must embrace digital technology to improve operational effectiveness across the organisation. What is more, each of these approaches sends a very different message to the various stakeholders, says Birkinshaw - and Retrenchment in particular is a tough story to sell. It most likely goes along with a shortened CEO tenure.

Takeaway

There are a couple of lessons Julian Birkinshaw wants to be taken from the analysis:

- Avoid making generalisations based on anecdotal and high-profile examples. Everyone

knows the stories of Kodak and Blockbuster, and companies can learn from them. But they are outliers. Most industries have not seen that much disruption.

- **Judgment beats paranoia:** Keeping alert to the next big threat does not necessarily help to pick up on the exponential growth of a new technology or business model. Focusing on the risks of coming late may lead to ignoring the possibly greater risk of moving too quickly.
- **Take the time to choose the response strategy that best fits your organisation's needs and capabilities.** The effects of new technologies are usually felt across decades, not years, and the most potentially disruptive firms end up co-existing with their established counterparts.

In a [Dual Innovation](#) approach, responding to disruptive innovation in large part entails [exploratory](#) (versus core business) activities to reposition existing business or build new business. The direction of this countering 'Exploration' impact may vary depending on the chosen response strategy:

- **Offense / focus on existing business:** Strengthening and extending the existing core business by pursuing adjacent innovation opportunities. Doubling down on existing assets and capabilities to fend off disruptors.
- **Offense / focus on new business:** Taking on Self-Disruption and going about emerging, unproven markets by reaching beyond the present core business. Establishing a dedicated (self-disrupting) unit and/or repositioning the core business to go head-to-head against



disruptors, involving building up new assets and capabilities.

- **Defence / focus on new business:** Innovating beyond the present core business by venturing and diversifying into largely unrelated fields. Reapplying core assets and capabilities in new markets to give way to disruptors.

Bottom line: Do not fall prey to the misconceptions around industry disruption and disruptive innovation. Chances are better

than you might think that your incumbent company will be able to survive and thrive in the face of disruptive entrants. Rather than pursuing ad-hoc strategies, incumbents are better off taking their time to observe developments, scrutinise their options and pick an adequate response that meets their individual requirements and conditions.

Once more: One size does not fit all!

Comment

More and more CVCs are investing in climate tech. Here is why

From Silicon Foundry, used with permission

Companies are taking sustainability more seriously than ever before. Reducing greenhouse gas emissions is now a corporate imperative and shareholder mandate. [More than 20% of the world's largest public companies](#) have committed to reaching net-zero emissions, and many have shared their plans for how they will actually get there in the years to come. These sustainability strategies often focus on greening supply chains, purchasing carbon offsets, or [embracing the circular economy](#). But there is another tool which corporations are increasingly deploying in the race to reverse the effects of climate change: corporate venture capital.

Corporate venture capital (CVC) is the practice of investing corporate funds directly into external startups and in some cases the private venture funds that back them. CVC units have traditionally invested in technologies and [adjacent markets](#) that are strategically important for their parent company. But increasingly, says Erik Terjesen, Partner at Silicon Foundry, CVCs are purposefully expanding their scope and investing in startups that address pressing society-wide issues like climate change.

“Emerging technologies are critical to slowing down global warming and reducing carbon emissions,”

Equinor Ventures, the CVC for Norway's state-owned multinational energy company, invests in companies focused on solar technology such as the Guanizul 2A solar park in Argentina



Credit : Scatec

Terjesen said. “The startups building those technologies need investment. CVCs can be instrumental in advancing those technologies and bringing them to market.”

When it comes to [investing in climate tech](#), oil and gas CVCs are leading the charge. Decarbonisation requires incumbent energy companies to radically change their business models. In order to stay competitive, major oil and gas players need access to the emerging technologies shaping the future of energy.

Take [BP Ventures](#): the CVC was created to give BP access to disruptive technologies and business models in the renewable energy sector. It is also a critical enabler of BP's [commitment](#) to be net zero by 2050.

“Over time BP aims to increase the proportion of investment it makes into non-oil and gas businesses,” BP chief executive Bernard Looney

[said](#) in a 2020 announcement about the company's net zero plans. “We expect to invest more in low carbon businesses – and less in oil and gas – over time. The goal is to invest wisely, into businesses where we can add value, develop at scale, and deliver competitive returns.”

BP Ventures targets [five focus areas](#): advanced mobility, bio and low-carbon products, digital transformation, and power and storage. They have made [investments](#) in companies specialising in everything from mobile energy storage to carbon capture, desalination, sustainable feedstock, AI-powered energy management systems, and EV charging and ride sharing in emerging markets.

Meghan Sharp, BP's Global Head of BP Ventures, [told](#) Silicon Foundry that they take an active role in the startups they invest in.

“We are both an investor and an end-user of the technologies

in which we invest,” she said in a [past interview](#). “This creates a longer-term commitment because we look beyond a quick financial return. We want to see these new technologies deployed into our businesses. In order to do that, we have to be pretty close to the company at both the board and business levels.”

BP Ventures is not the only oil and gas CVC investing in climate tech. Shell Ventures recently [announced](#) that they are setting up a dedicated \$1.4bn fund to invest in startups that will accelerate the move to a lower-carbon future.

Equinor Ventures, the CVC for Norway's state-owned multinational energy company, recently [announced](#) investments in companies focused on combined solar and long-duration storage technology, as well as technology to convert the energy wasted in pressure reduction processes into clean electric power, and solid state batteries.

But Terjesen points out that you do not have to be an oil and gas CVC in order to invest in sustainability-focused companies. Increasingly, CVCs with parent companies across industries have been creating specific funds committed to making clean tech investments. BMW i Ventures [announced](#) a \$300m sustainability fund in June 2021. National Grid Partners [announced](#) a \$150M energy and IT fund shortly before that. Salesforce Ventures [launched](#) a \$100m impact fund last year, with sustainability and climate action as one its major focus areas. These announcements show the increasing focus across the corporate landscape on sustainability as a crucial priority for global corporations.

“CVCs are important levers for corporate sustainability strategies,” Terjesen highlighted. “When CVCs invest in sustainability focused companies, it signals to stakeholders and the public that your company is serious about reducing emissions. You are deploying capital and putting your money where your mouth is.”

Sending that signal, he added, can give CVCs and their parent companies both a competitive advantage and reputational boost. “CVCs often operate in the background,” Terjesen said. “Investing in sustainability offers an opportunity to increase CVCs’ visibility and demonstrate their impact and relevance.”

When CVCs expand their scope beyond their parent company’s traditional focus areas, they may encounter pushback about the ROI and time horizons of their investments. CVCs have historically tied their investments to specific business areas tied



National Grid Partners have announced a \$150M energy and IT fund

to their core competencies. But when it comes to sustainability investments, Terjesen says the usual rules do not apply.

“The time horizon is usually long for these types of investments,” he explained, “and in the case of corporates the returns can be both direct and indirect. It is important for CVCs and their parent companies to be comfortable with these return profiles and horizons and really understand their motivations for investing in sustainability.”

Reversing the impacts of climate

change and accelerating society’s transition to net zero emissions is only possible with sustained commitments from leading global corporations. CVCs, Terjesen says, are an important part of that.

“Mobilising capital in support of sustainability initiatives offers CVCs the opportunity to engage with startups that are making world-changing advances,” Terjesen said. “Corporate venture capital has a unique role to play in advancing the technologies that will reverse the impacts of climate change and contribute to a greener, cleaner world.”

Comment

Sizing up ESG investment outcomes: unpacking the disconnect

By Manuel Silva Martínez, general partner, Mouro Capital

In recent years, executives' mentions of environmental, social and governance (ESG) on earnings calls has skyrocketed, as has the flow of capital into ESG funds. Bloomberg projects that ESG compliant investments will reach [\\$53 trillion](#) in assets under management globally by 2025 – roughly one in every three dollars of managed assets.

These are large numbers, yes, but they should not come as a surprise – ESG has permeated the conversation across capital markets, private equity, and the rest of the financial services industry. Thanks to new regulations and increased

consumer and media interest in sustainable business practices, fuelled by a sense of urgency regarding the climate crisis and the social divides that deepened because of covid-19, ESG reporting has entered the limelight

The demand for a more proactive corporate approach to ESG has transcended informal shareholders' demands and regulatory guidance to infiltrate every corner of global markets. Now, asset managers, risk assessment teams, and credit agencies have the huge task of navigating evolving regulatory requirements for their portfolios, despite a lack of defined taxonomy and data often being self-reported.

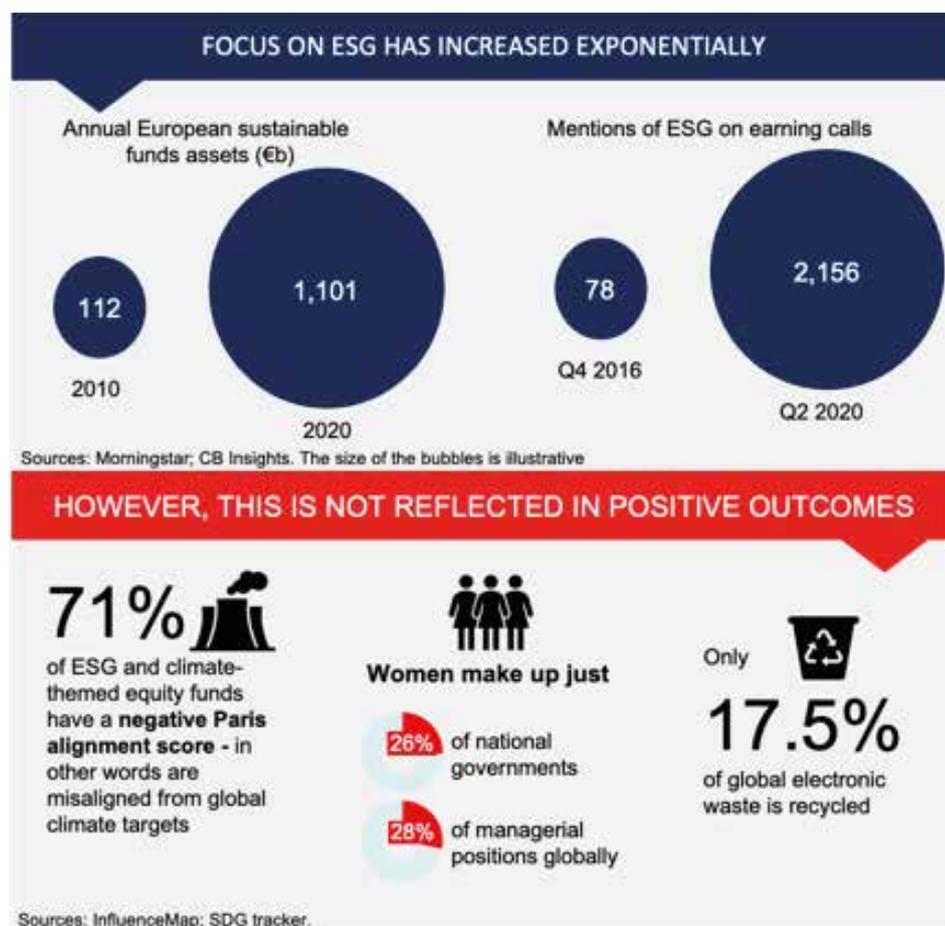
Unfortunately, though, the rise in ESG investments and media mentions have not translated into measurable positive outcomes. Quite the opposite, in fact. After decreasing in 2020 due to dramatically reduced industrial activity and commuting during the pandemic, carbon emissions are expected to [rise again in 2021](#). As the global population has grown over the last decade, so too has both natural resource consumption and the amount of e-waste [generated and not recycled](#).

Furthermore, socially, gender and ethnic parity remains far off, with [women](#) and minority groups still having low representation globally in local and national governments, as well as leadership positions in the private sector.

Whether this results from a lag between the adoption of ESG practices and their impact in real economies, ESG practices not having the desired effect, or even having the opposite effect to what was intended, the gap between where things are and where they need to be is clear. Wider industry must reflect on how to accelerate the ESG agenda and, most importantly, focus on impact rather than just discourse.

How can the venture capital community address these challenges?

There are two obvious ways that venture capital can enhance the impact of ESG practices: first, by developing and maintaining a laser-focus on measurable ESG outcomes and directing capital towards those initiatives most likely to deliver (capital allocation), and second, strongly encouraging existing portfolio management teams to think about and, crucially, measure,



how their decisions impact a broader base of stakeholders than traditionally considered.

While money is increasingly flowing towards green-finance initiatives, we are still in the early days. A combination of stakeholder pressure, technological advancements, and regulations such as the EU's Sustainable Finance Disclosure Regulation (SFDR), will catalyse rapid innovation in the sector – but much still needs to be done to agree common standards and ways of measuring and reporting on not only financial impact, but a business' double and triple bottom line.

There are three key areas in this space where there are already investment opportunities: analytics and investing tools; platforms for reporting and compliance; and new ESG assets.

Analytics and investment tools define ESG and sustainability metrics, and screen ESG investments for institutional investors, helping them to cut through potential greenwashing and dig deeper into the impact of their portfolio.

Platforms for reporting and compliance enable companies to better understand and improve their own ESG scores, by tracking the sustainability of their value chains and enabling corporate sustainability reporting. This is particularly useful for large corporates needing to demonstrate compliance with domestic legislation, international regulation, or even investor demands.

Finally, new ESG assets are investment vehicles, such as marketplaces or platforms, that enable retail and institutional investors to allocate funds towards

companies having a measurable positive social and environmental impact. This includes green bonds and reforestation and initiatives as well as carbon monitoring and offsetting (a subcategory in its own right).

Beyond capital allocation

VCs also have a role beyond just allocating capital: to support and encourage their portfolio management teams to consider their business's wider environmental and social impact.

There is a tendency to focus on the environmental and social impact of large corporates, over that of startups and scale-ups. Of course, a company's ESG strategy will evolve as it matures, and likely become more important as the business grows, but that does not mean that ESG is more relevant to later-stage companies. In reality, it is both easier and more effective to integrate ESG standards and policies from day one, to facilitate the right processes and enable a culture supportive of sustainability to develop. This conflicts with start-ups' lack of resources and need for focus, especially in the early days of their existence. To some extent, it comes down to venture capital investors' guidance on how to strike the right balance and incorporate reasonable ESG policies early on.

While we still live in a shareholder-capitalism era, where profit and growth are prioritised over sustainability metrics and wider social good, a shift is clearly underway as shareholder themselves start valuing ESG more and more. A prominent example of this includes [Blackrock's public commitment](#) to monitoring specific ESG key performance indicators



While we still live in a shareholder-capitalism era, where profit and growth are prioritised... a shift is clearly underway

for its portfolio companies when considering supporting the re-election of board members. Many other large asset managers are moving in the same direction, although progress is slow. This is because there is increased recognition that while individual asset allocators' attitudes may change, we must redefine how the market measures success to include non-profit-driven metrics to be consistent with such a change of attitude. Regardless, as investors start focusing on sustainability, business management teams must ascertain how ESG decision-making ties into shareholder value, and how to evaluate and prioritise stakeholder demands.

Sustaining momentum

The factors impairing the impact of ESG – particularly the complexities around data collection and the lack of measurement and reporting standards - will not come as a surprise to those familiar with sustainability initiatives. Many of the tools and technologies we need to achieve positive ESG outcomes already exist or are being developed by entrepreneurs and funded by venture capitalists as we speak.

It all starts with standards and having a generally agreed North Star to aim towards, but the globality required for those standards is hard to achieve and could take a generation or two to materialise if we had the time – which we do not. To reach that point before it is too late, isolated and self-initiated practices must be gradually integrated into a single framework (or a reasonably small amount of non-contradictory frameworks) that will stand both the passage of time and the practical needs of international industry. This will be the only way to secure global buy-in.

Hopefully, regulators will develop standards while individual businesses take increasing action of their own volition. In particular, the “experimentalist governance” model advocates for smaller institutions and governments to set binding standards that catalyse change, such as California's vehicle pollution state laws that pushed manufacturers to increase their focus on electric vehicles. Only then, when top-down and bottom-up solutions converge, will the global ESG agenda be able to effectively solve the different problems our environment and societies are facing.

Sector report

Transport and mobility move forward

- > Both deal count and total dollars soared in 2021
- > Exit figures also soared through 2021
- > Funding initiatives also grew year-on-year

By Kaloyan Andonov
Reporter and analyst

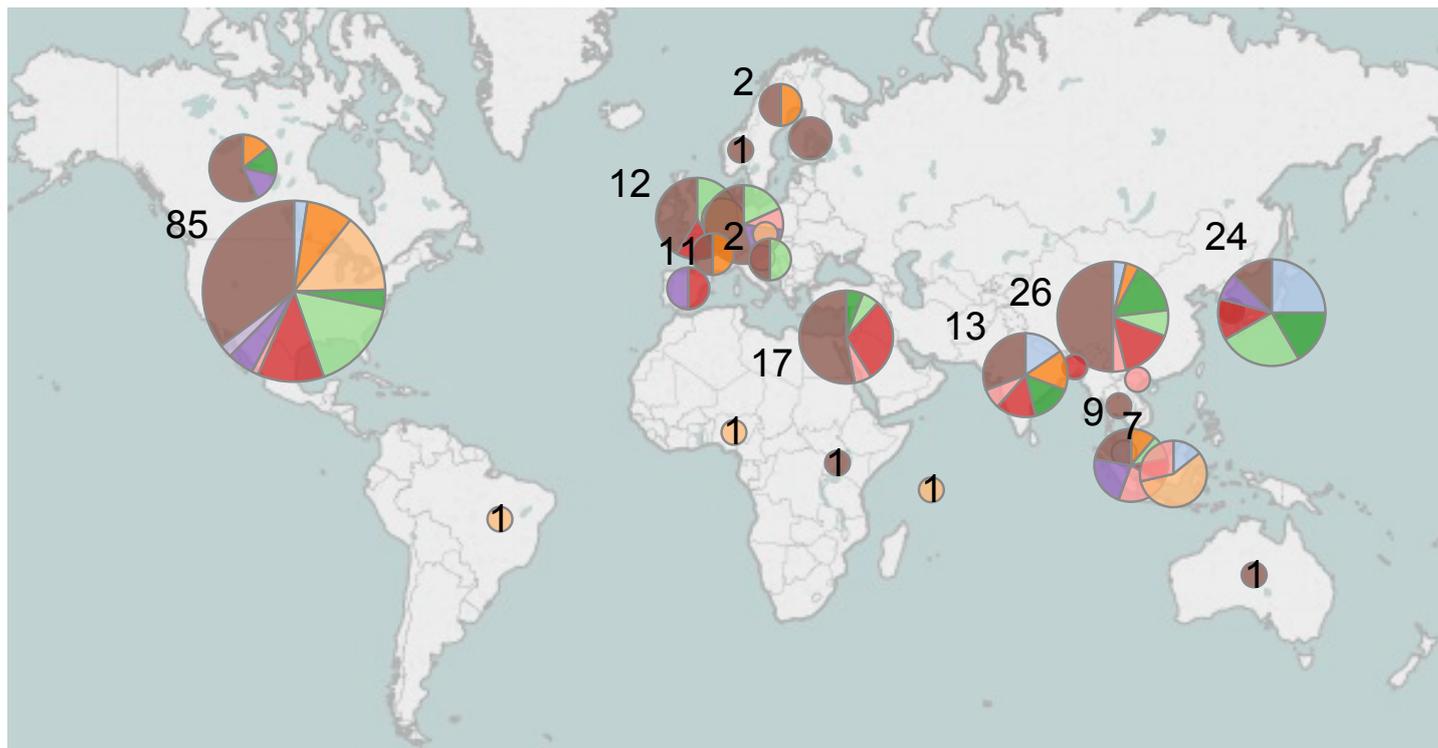
For the period between January and mid-December 2021, we reported 236 venturing rounds involving corporate investors from the transport and mobility sector. Many of them (85) took place in the US, while 26 were hosted in China and 24 in Japan.



The GCV Analytics' definition of the transport sector encompasses ride hailing, car sharing and rental in addition to connected, autonomous and electric vehicle technologies, vehicle marketplaces and platforms, public mobility and parking, vehicle hardware and maintenance, and other subsectors.

Global view of past year's deals

Total number of deals: 236



Source: GCV Analytics



Many of those commitments (86) went to emerging enterprises from the same sector (mostly autonomous and connected car tech and ride hailing and car sharing) as well as into companies developing other technologies in synergies with mobility: 32 deals in the industrial sector (mostly robotics and drones as well as other industrial activities), 29 in the IT sector (mostly artificial intelligence, cybersecurity and enterprise software) and 23 in financial services (mostly payment tech and alternative lending).

Amy Daniels Burr, president, JetBlue Technology Ventures

JetBlue Technology Ventures (JTV), the corporate venture capital (CVC) and innovation arm of US-based airline operator JetBlue Airways, is led by president Amy Burr.

Before becoming president in July 2021, Burr had been managing director of operations and partnerships for three years from 2018, where she focused on building an ecosystem of partners and deployment opportunities for the many technologies of JTV's portfolio companies.

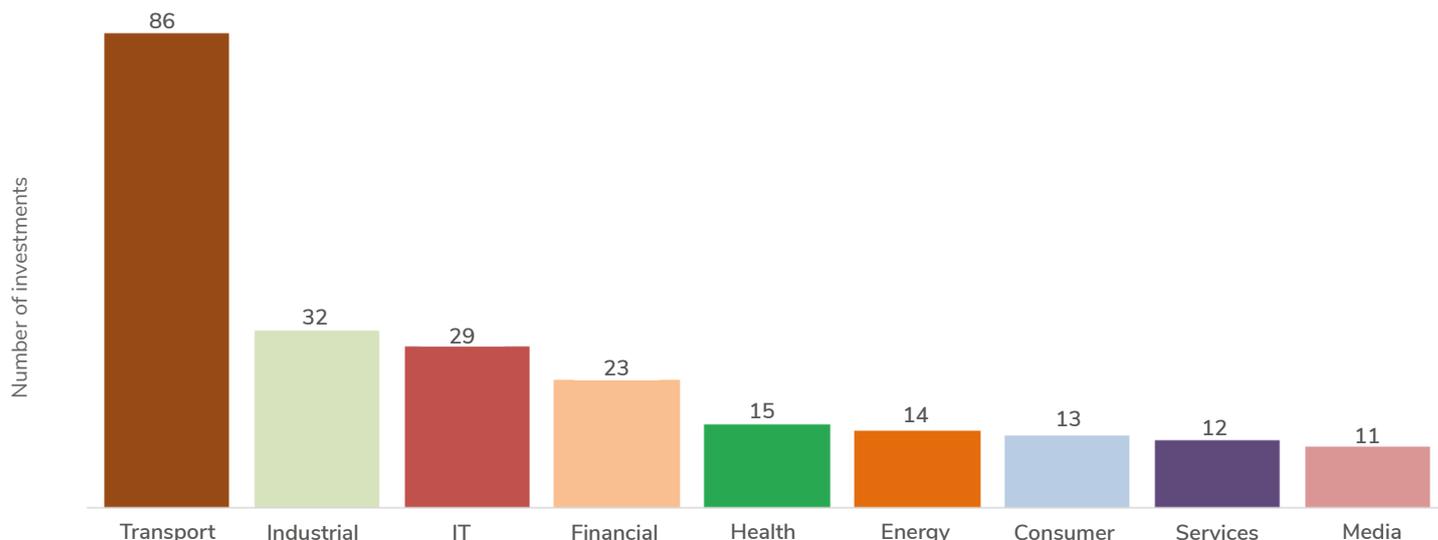
As head of JTV, Burr will lead JetBlue's strategic venture investment direction and help integrate startups into the airline's overall corporate

innovation initiatives. She will report to Brandon Nelson, JetBlue's general counsel and corporate secretary, who also serves as oversight officer of JTV.



Nelson, who was involved with the creation of JTV in 2016 and has served on the subsidiary's investment committee as chair for the past several years, said: "Amy has done a phenomenal job leading the JTV team over the past several months, and we are looking forward to seeing her bring her innovation experience to life as part of JetBlue's leadership team."

Investments of financial venturers by sector over the past year



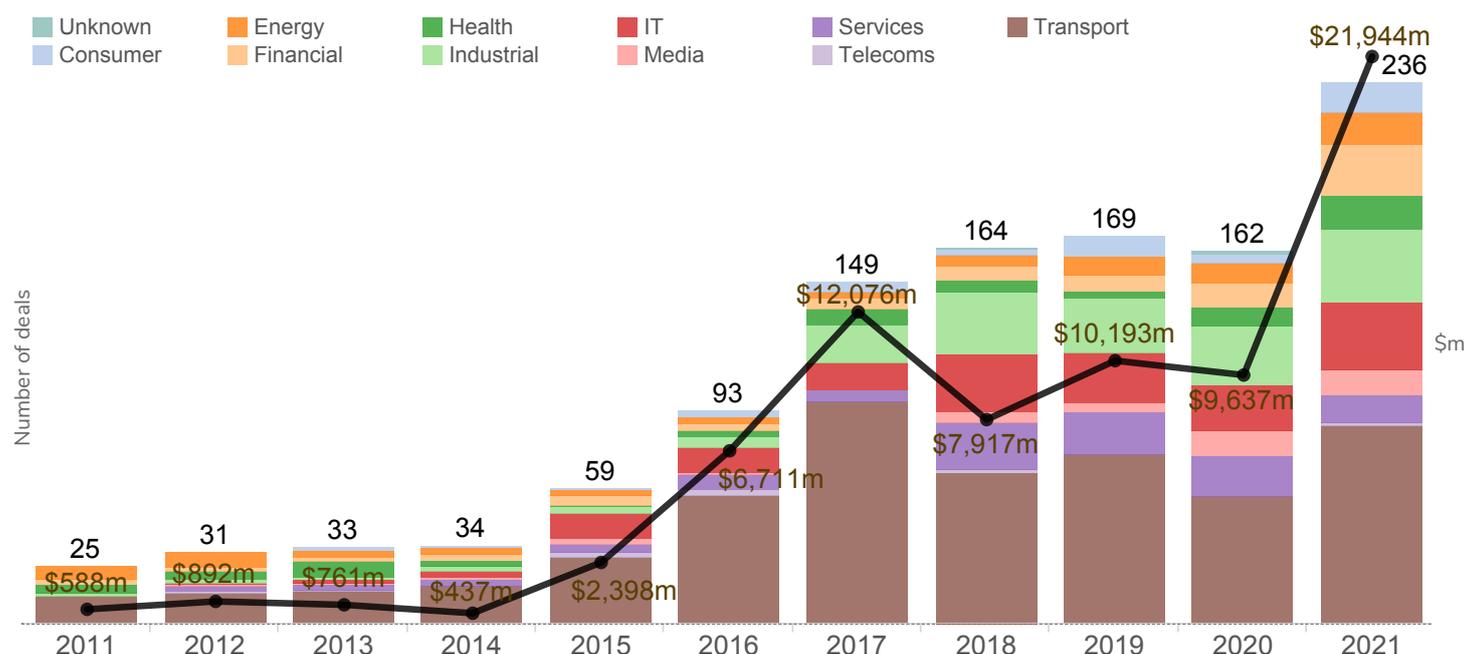
Source: GCV Analytics

On a calendar year-on-year basis, total capital raised in rounds backed by transport corporates went down from \$10.19bn in 2019 to \$9.64bn in 2020, representing a 5% decrease. The deal count remained broadly flat at 162, versus the 169 rounds

reported in 2019. The slight decreases were clearly attributable to the shock from the outbreak of the covid-19 pandemic. However, investment activity of corporates took off and soared in 2021 with 236 deals recorded by mid-December 2021 and an estimated

total capital committed in those at \$21.94bn. This explosive growth, much like in other sectors, was a reflection of generous liquidity injections by central banks which impacted on asset prices in both public and private markets.

Deals by transport corporates 2011-21



Source: GCV Analytics

Matthew Tsien, president, GM Ventures

Matt Tsien serves as executive vice-president (EVP) and chief technology officer (CTO) at US-based carmaker General Motors (GM) and is also president of its corporate venturing subsidiary, GM Ventures. He conducts research and development and venture investments on behalf of the unit.

Tsien assumed the roles in April and July 2020 respectively after the retirement of Jon Lauckner. GM Ventures partners and backs entrepreneurs working on mobility and automotive technologies that can be adapted by GM's cars, manufacturing plants and operational teams.

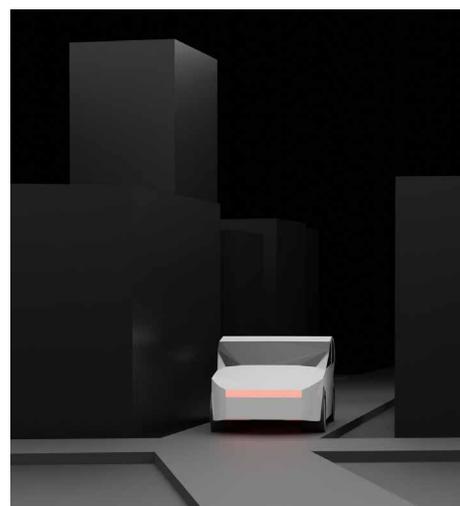
Tsien has been at GM since 1995 and had most recently been

president of the group's GM China division in 2014 to lead its electrification and connectivity strategies in the country. During his time in China, he helped GM strengthen its business there and leverage technologies such as electrification and connectivity for long-term growth.

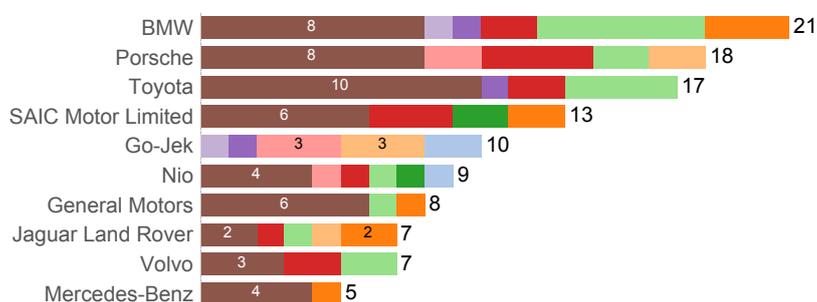
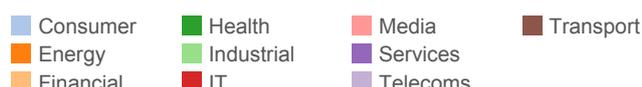


Having begun his career at Delco Electronics, a vehicle electronics design and manufacturing arm of GM, in 1976 as an electrical engineer, Tsien designed embedded system for automotive applications and managed advanced work in navigation and telematics.

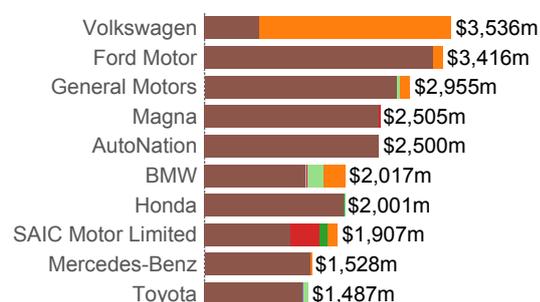
Investment activity of corporates took off and soared in 2021 with 236 deals recorded by mid-December 2021



Top transport investors over the past year



By Number of Deals



By Total Dollars

Source: GCV Analytics

The leading corporate investors from the financial sector in terms of largest number of automotive manufacturers BMW, Porsche and Toyota. The list of

transport corporates committing capital in the largest rounds was headed by carmakers Volkswagen, Ford and General Motors.

Deals

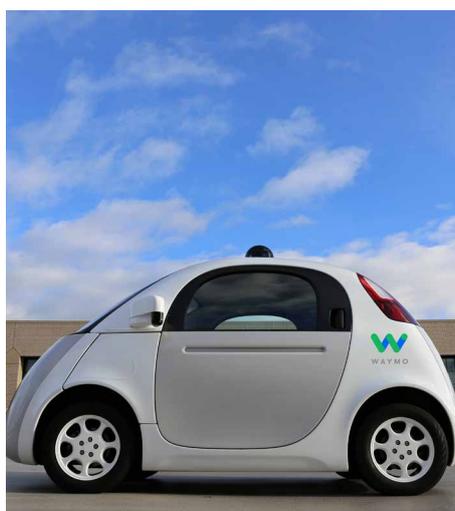
Top 10 deals by transport sector corporate investors 2021

Portfolio company	Location	Sector	Round	Round size	Investors list
Northvolt	Sweden	Energy	Undisclosed	\$2.75bn	AMF AP1 AP2 AP3 AP4 ATP Baillie Gifford Baron Capital Group Bridford Investments Compagnia di San Paolo EIT InnoEnergy Goldman Sachs Ikea Norrskan Foundation Omers PCS Holding private investors Stena Metall Volkswagen
Waymo	USA	Transport	Undisclosed	\$2.5bn	Alphabet Andreessen Horowitz AutoNation Canada Pension Plan Fidelity Magna Mubadala Perry Creek Capital Silver Lake T Rowe Price Temasek Tiger Global Management
Rivian	USA	Transport	Undisclosed	\$2.5bn	Amazon Coatue D1 Capital Partners Dragoneer Investment Group Fidelity Ford Motor T Rowe Price Third Point Ventures
GM Cruise	USA	Transport	Undisclosed	\$2.5bn	General Motors Honda Microsoft undisclosed investors
lonity	Germany	Transport	Undisclosed	\$786m	Audi BlackRock BMW Ford Motor Hyundai KIA Motors Mercedes-Benz Porsche Volkswagen
Nuro	USA	Transport	D	\$600m	Alphabet Baillie Gifford Fidelity Gaorong Capital Kroger SoftBank T Rowe Price Tiger Global Management Toyota
Lime	USA	Transport	Undisclosed	\$523m	Abu Dhabi Development Fund Fidelity Highbridge Capital Management Uber UBS O'Connor
Momenta	China	Transport	C	\$500m	Bosch Cathay Capital GGV Capital Mercedes-Benz SAIC Motor Limited Shunwei Capital Temasek Tencent Toyota Yunfeng Capital
Banma Network Technologies	China	Transport	Undisclosed	\$465m	Alibaba CMG-SDIC Fund Management SAIC Motor Limited Yunfeng Capital
Genesis Digital Assets	USA	Financial Services	Undisclosed	\$431m	Electric Capital FTX Kingsway Capital New York Digital Investment Group Paradigm Ribbit Capital SkyBridge Stoneridge

Source: GCV Analytics

Corporates from the transport sector invested in large multi-million-dollar rounds, raised by enterprises from the same sector as well as from other sectors like energy and financial services. Four of the top 10 deals were above the \$1bn mark.

1 Volkswagen invested \$620m to co-lead a \$2.75bn private placement for Sweden-headquartered battery producer Northvolt that also featured commercial vehicle producer Scania. The round was co-led by investment bank Goldman Sachs' Asset Management subsidiary, pension funds AP1, AP2, AP3, AP4 and Omers Capital Markets, a vehicle for pension fund manager Omers. The financing will support the expansion of the company's Gigafactory from a capacity of 40 GWh per year to 60 GWh per year. It is considering building another two facilities by 2030 to handle a projected increase in demand.



Waymo is a spin-off of tech group Alphabet

Northvolt manufactures lithium-ion batteries for use in electric vehicles in addition to portable electronics products such as drones, and the storage of renewable energy.

2 Waymo, the autonomous driving technology developer spun off by US-headquartered internet and technology group Alphabet, raised \$2.5bn in funding from investors including its former

parent company. Automotive retailer AutoNation and automotive component manufacturer Magna International also took part in the round, as did investment and financial services group Fidelity Management & Research. Sovereign wealth funds Mubadala and Temasek filled out the round together with Andreessen Horowitz, Canada Pension Plan Investment Board, Perry Creek Capital, Silver Lake, Tiger Global Management and funds and accounts advised by T Rowe Price. Waymo is developing an autonomous driving system called Waymo Driver for use in driverless vehicles in the taxi, package delivery and freight industries. It has launched an autonomous taxi service in the US city of Phoenix and has a logistics offshoot dubbed Waymo Via. The funding will be channelled into enhancing Waymo Driver, which has powered test drives in some 25 US cities, in addition to upping headcount.

3 E-commerce group Amazon's Climate Pledge Fund and Ford Motor Company co-led a \$2.5bn funding round for US-based electric truck developer Rivian. The round was also co-led with investment firm D1 Capital Partners and funds and accounts advised by T Rowe Price, and included Third Point, Fidelity, Dragoneer Investment Group and Coatue Management. FoRivian is about to begin production on a range of electric trucks that will include an electric pick-up truck dubbed the R1T as well as the R1S, an all-terrain electric sports utility vehicle. Its vehicles are also set to be supplied to Amazon to serve as their last-mile delivery vans.

4 US-headquartered autonomous driving technology developer Cruise raised more than \$2bn from investors including software provider Microsoft and General Motors and Honda. The corporates were joined in the round by undisclosed institutional investors, and the cash was provided at a \$30bn post-money valuation. Microsoft invested through a strategic partnership that will involve it combining its cloud computing and software and hardware engineering capabilities, manufacturing expertise and partner ecosystem with Cruise's to bolster the commercialisation of the latter's technology. The corporate will also be Cruise's

preferred cloud services provider. Cruise is working on autonomous driving software that will be used in all-electric vehicles forming the basis for shared taxi services, in addition to hardware such as sensors, robotics and telematics systems.

5 Ionity, the Germany-headquartered electric vehicle (EV) charging network set up by a range of automotive manufacturers, raised €700m (\$786m) from its existing backers in addition to investment management firm BlackRock. BlackRock took part in the round through its Global Renewable Power platform and the proceeds will be allocated to quadrupling the number of Ionity stations to some 7,000 by 2025 as the company looks to expand its presence to trunk roads and urban locations. Founded in 2017 by carmakers BMW, Ford Motor Company, Mercedes-Benz, Volkswagen Group, Audi, Porsche, Hyundai Motor Group and its Kia subsidiary, Ionity oversees a range of EV charging stations spanning highways in 24 countries, facilitating long-range travel. The funding will also be channelled into expanding some of the company's existing stations from four chargers to between six and 12.

6 US-based autonomous vehicle developer Nuro raised \$600m in series D funding from investors including internet technology provider Google, grocery chain Kroger and telecommunications and internet group SoftBank's Vision Fund 1. Tiger Global Management led the round, which also featured Toyota's Woven Capital fund, investment and financial services group Fidelity, Baillie Gifford, Gaorong Capital and funds and accounts

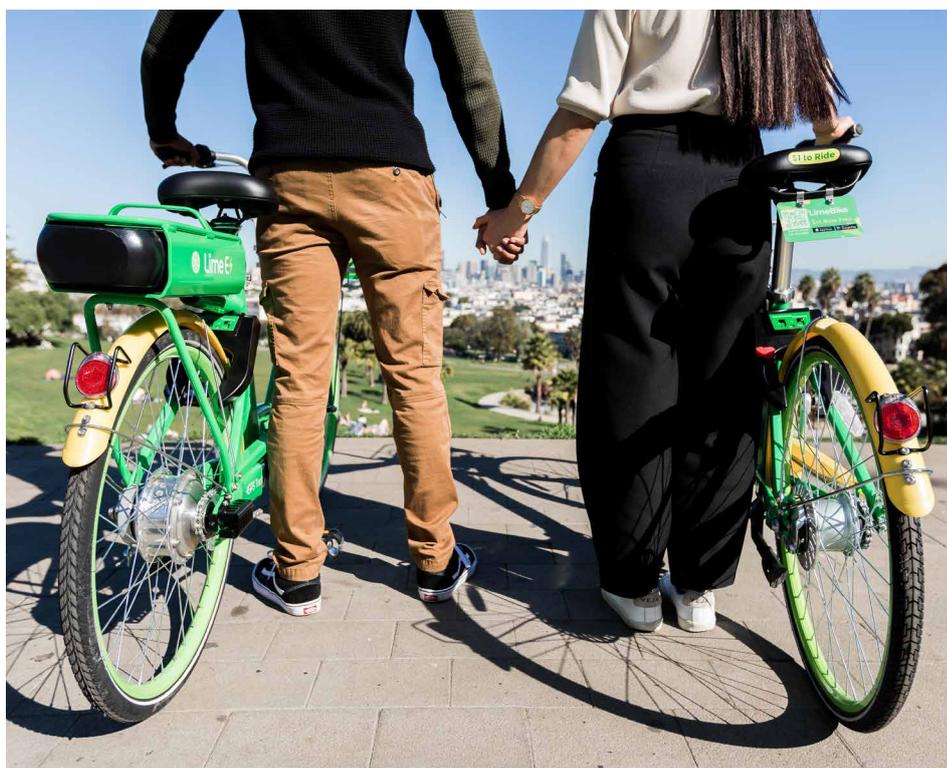


Ionity oversees a range of EV charging stations spanning highways in 24 countries

advised by T Rowe Price. Nuro has developed autonomous electric vehicles used to deliver products such as groceries or medication. It will allocate the cash to technology development, hiring and expanding the commercial deployment of its technology.

7 US-based urban mobility service Lime has raised \$523m in convertible debt and term loan financing from investors including ride hailing service Uber. Uber, investment and financial services group Fidelity, Abu Dhabi Growth Fund and Highbridge Capital Management provided \$418m in convertible debt while UBS O'Connor supplied a \$105m term loan. Founded in 2017, Lime provides electric scooter and bicycle rental services in 120 cities worldwide. It will use the capital to boost its growth and expand into more cities globally, while about \$20m of the funding will be deployed to pursue innovations that will further decarbonise its supply chain.

8 China-based autonomous driving technology developer Momenta raised \$500m in a series C-plus round featuring automotive manufacturers SAIC Motor, General Motors, Toyota and Mercedes-Benz, industrial technology manufacturer Bosch and internet group Tencent. Singaporean state-owned investment firm Temasek, Yunfeng Fund, IDG Capital, GGV Jiyuan Capital, Shunwei Capital and Cathay Capital also took part in the capital injection, which includes a \$300m investment from General Motors in September 2021. The company said its cumulative series C financing has exceeded \$1bn. Momenta has developed technology that uses deep learning software to analyse sensor



Lime provides electric scooter and bicycle rental services in 120 cities worldwide

data in cars and optimise their autonomous driving capabilities, providing comprehensive route planning and prediction.

9 China-based smart car technology manufacturer Banma Technologies secured up to ¥3bn (\$465m) in funding from investors including e-commerce group Alibaba and automotive manufacturer SAIC Motor. Private equity firm Yunfeng Capital and private equity fund manager CMG-SDIC Capital also contributed to the round, which followed a \$233m series A round in 2018 led by CMG-SDIC and backed by Yunfeng Capital and Shangqi Capital, a vehicle for SAIC Motor subsidiary SAIC Capital. Established in 2015 as a joint venture between Alibaba and SAIC Motor, Banma produces internet of things-equipped smart in-car electronics systems based on Alibaba's AliOS mobile operating system. The company's technology was deployed in SAIC's Roewe RX5 sports utility vehicle in 2016,

and it will use the latest funding to enhance its research and development capabilities.

10 US-based Bitcoin mining company Genesis Digital Assets secured \$431m in a funding round that featured cryptocurrency derivatives exchange FTX. Crypto investment firm Paradigm led the round, which was filled out by Nydig, Stoneridge, Ribbit Capital, Electric Capital, SkyBridge and Kingsway Capital, the last of which had provided \$125m for the company just two months before. Genesis aims to be the largest and most profitable Bitcoin mining operation by 2025 and claims to already account for 2.4% of the Bitcoin network, with a data centre capacity of 150 MW. The funds will be used to expand the company's mining operations using clean energy, and it expects to reach 1 GW of capacity by the end of 2023. It said the round is the largest so far disclosed by a Bitcoin miner.

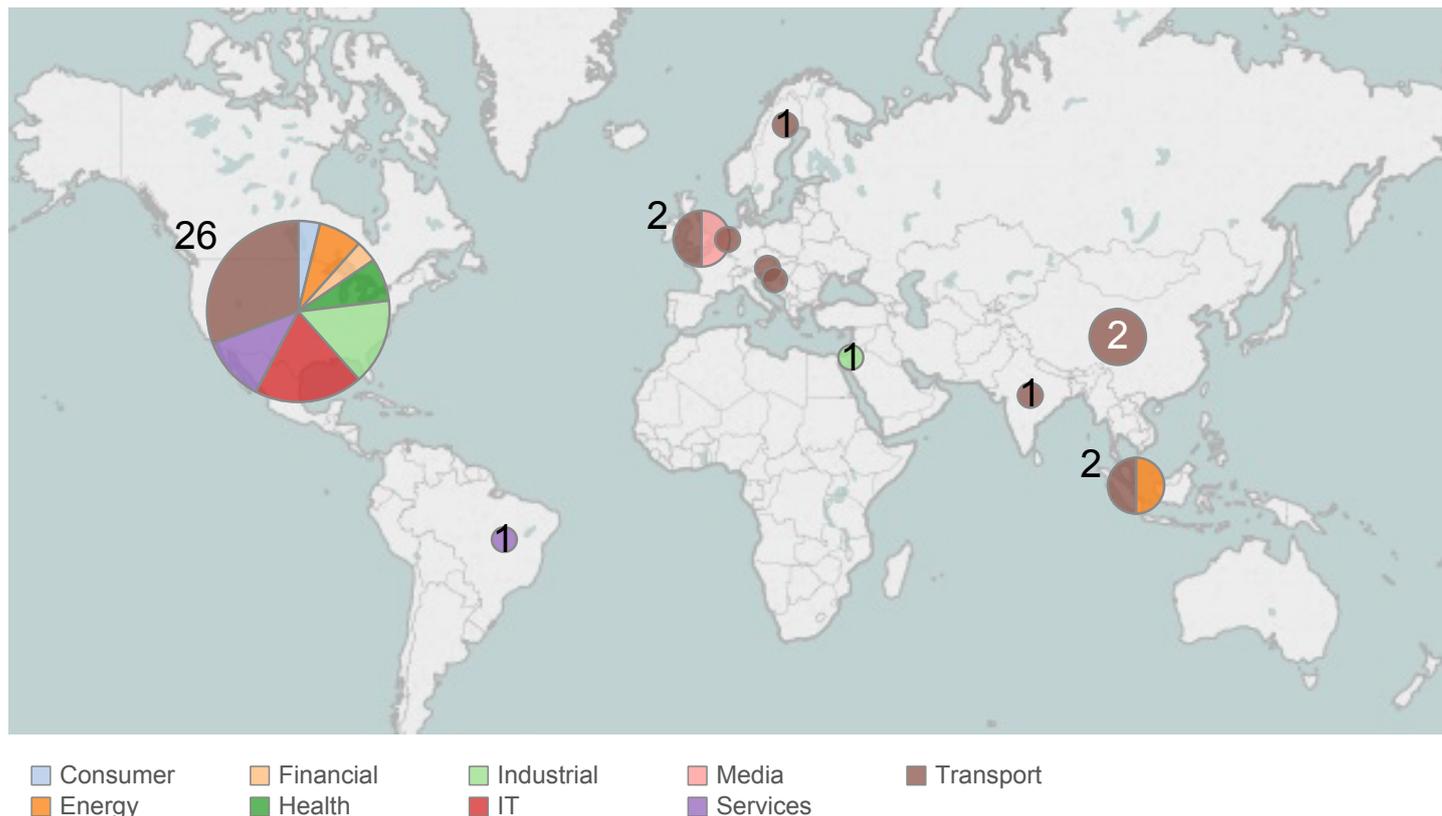
Exits

Corporate venturers from the transport sector completed 39 exits between January and mid-December 2020 – 15 acquisitions, 17 other transactions (mostly reverse merges with Spacs), six initial public offerings (IPOs) and one merger of equals. The total estimated exited capital in those transactions was \$30.7bn.

The number of exits in 2020 (24) nearly doubled the figure from the previous year (14) but more notably the total estimated capital in those exits dropped significantly from \$15.01bn to \$5.47bn. In 2021, the positive trend in such exits gathered more momentum, however.

Global view of past year's exits

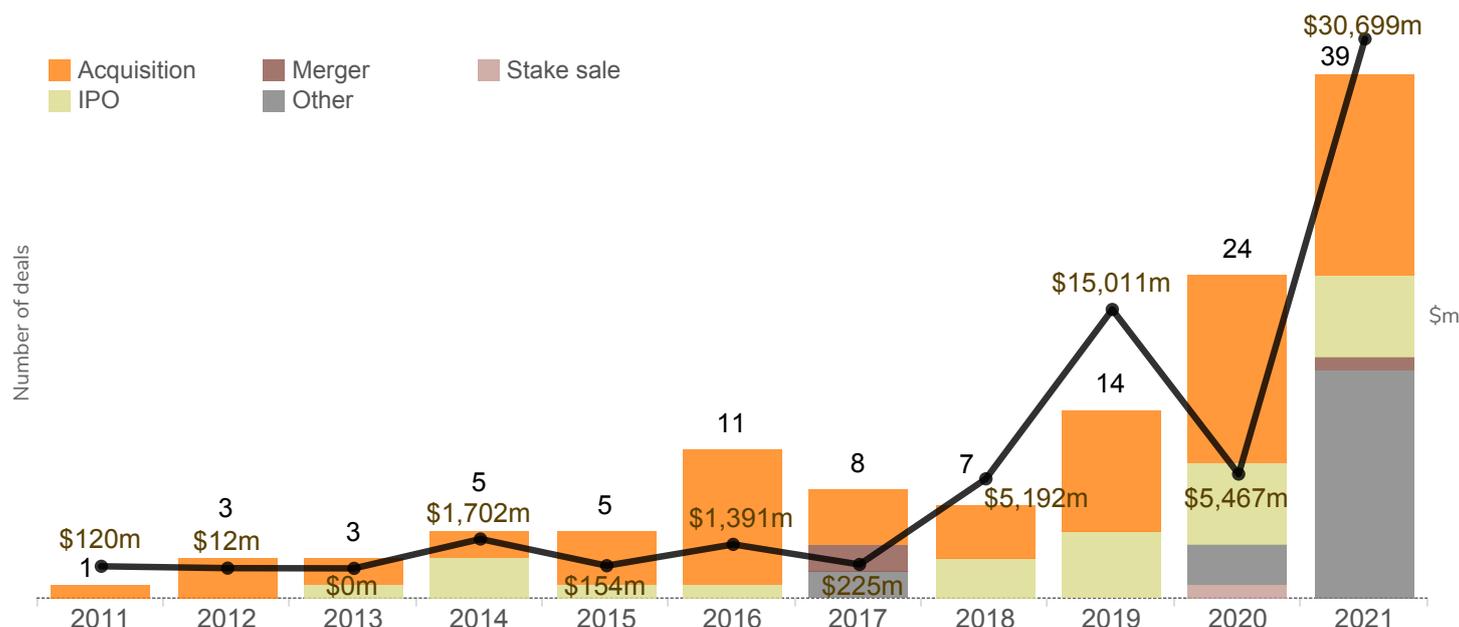
Total number of exits: 39



Source: GCV Analytics



Exits by transport corporates 2011-21



Source: GCV Analytics

Top exits by transport corporate investors in 2021

Portfolio company	Location	Sector	Exit type	Exit size (\$m)	Exiting investors
Rivian	USA	Transport	IPO	\$11.9bn	Abdul Latif Jameel Amazon Baron Capital Group Coatue Cox Enterprises D1 Capital Partners Dragoneer Investment Group Fidelity Ford Motor private investors Soros Fund Management Sumitomo Third Point Ventures undisclosed investors
Didi Chuxing	China	Transport	IPO	\$4.44bn	Alibaba Apple Bank of Communications BlackRock Booking Holdings CDC Capital International Chia Life China Investment Corporation China Merchants Bank Citic Coatue DST Global eHi Car Rental GSR Ventures Matrix Partners Mubadala New Horizon Capital Ping An Bank Silver Lake Sina SoftBank Temasek Tencent Tiger Global Management Toyota Uber
Aurora Innovation	USA	Transport	Reverse merger	\$1.85bn	Amazon Baillie Gifford Canada Pension Plan Denso Hyundai Index Ventures Morgan Stanley PACCAR Primecap Management Company Reinvent Capital Reinvent Technology Partners Y Royal Dutch Shell Sequoia Capital SoftBank T Rowe Price Toyota Uber Volvo XN Ventures
Joby Aviation	USA	Transport	Reverse merger	\$1.6bn	Baillie Gifford BlackRock Fidelity Intel JetBlue Reinvent Technology Partners Toyota Uber
Tusimple	China	Transport	IPO	\$1.35bn	VectoIQ
Grab	Singapore	Transport	Reverse merger	\$1.2bn	Altimeter Capital Management Altimeter Growth Corp BlackRock Booking Holdings Central Group Didi Chuxing Djarum Group Experian Fidelity Honda Hyundai Janus Henderson Investors Kasikornbank Mirae Asset-Naver Asia Growth Fund Mitsubishi UFJ Financial Morgan Stanley Mubadala Nuveen Real Estate Permodalan Nasional Ping An Insurance private investors Qunar Shinsegae I&C Sinar Mas SoftBank T Rowe Price Temasek TIS Intec Group Tokyo Century Corporation Toyota Uber Yamaha
Polestar (Sweden)	Sweden	Transport	Reverse merger	\$1bn	Gores Guggenheim SK Group undisclosed investors Volvo
23andMe	USA	Health	Reverse merger	\$980m	Alphabet Altimeter Capital Management Casdin Capital Fidelity Foresite Capital GSK Illumina Johnson & Johnson Roche VG Acquisition Corp Virgin WuXi AppTec
Circle	USA	Financial Services	Reverse merger	\$691m	Adage Capital Management Ark Investment Management Baidu Bitmain China Wanxiang Holdings Concord Acquisition Corp CreditEase Digital Currency Group Fidelity FTX Goldman Sachs Marshall Wace Third Point Ventures
IonQ	USA	IT	Reverse merger	\$625m	Airbus SAS Alphabet Amazon Breakthrough Energy Ventures dMY Technology Group Hewlett Packard Enterprises Hyundai KIA Motors MSD Partners Mubadala Ventures NEA Samsung Silver Lake Time Ventures

Source: GCV Analytics

1 US-based electric jeep developer Rivian went public in an \$11.9bn IPO offering that scored exits for corporates Amazon, Ford, Cox Enterprises, Sumitomo and Abdul Latif Jameel. The company increased the number of shares in the offering from 135 million to 153 million and priced them at \$78.00 each, above the \$72 to \$74 range it had set. It floated on the Nasdaq Global Select Market. Rivian began deliveries of its all-electric pickup truck, the R1T, in September 2021 and its sports utility vehicle, the R1S. It is largely pre-revenue but generated a \$994m net loss for the first six months of 2021. The offering follows about \$10.5bn in funding for the company since it was founded in 2009, \$2.5bn of which was raised through a July 2021 round co-led by Ford, Amazon's Climate Pledge Fund, D1 Capital Partners and funds and accounts advised by T Rowe Price.

2 China-headquartered ride hailing service provider Didi Global went public in a \$4.44bn IPO on the New York Stock Exchange. The company counts multiple corporates among its backers, including internet conglomerate SoftBank, internet company Tencent, e-commerce company Alibaba, insurance firms China Life and Ping An electronics producer Apple, online travel agency Booking Holdings, car rental service eHi and social media company Sina Weibo. Didi increased the number of shares in the offering from 288 million to approximately 317 million American Depositary Shares (ADSs), with four ADSs equalling one class A share. The company priced its shares at the top of the IPO's \$13 to \$14 range. Didi plans



Aurora initially aimed at the trucking market. It expects to launch its first product by 2023

to use the IPO proceeds for further investment in its technology and international expansion. Formed after the merger of peers Didi Dache and Kuaidi Dache in 2015 and formerly known as Didi Chuxing, Didi operates an on-demand ride service spanning its home country of China but has presence in Russia, Africa, Latin America, Central Asia and the Asia Pacific regions as well. It also offers food and package delivery in addition to automotive and financial services.

3 Aurora, a US-based self-driving technology developer backed by multiple corporate investors, agreed a reverse merger with special purpose acquisition company Reinvent Technology Partners Y. The combined company will have a \$13bn pro forma implied market capitalisation and will take on Reinvent's listing on the Nasdaq Capital Market,

which was secured through an \$850m IPO in March 2021. It is sponsored by investment firm Reinvent Capital. The transaction includes a \$1bn private investment in public equity (PIPE) financing featuring truck manufacturer Paccar, ride hailing service provider Uber and commercial vehicle producer Volvo Group. The PIPE includes Reinvent Capital, Baillie Gifford, XN, Primecap Management Company, Canada Pension Plan Investment Board, Index Ventures and Sequoia Capital as well as funds and accounts managed by Morgan Stanley's Counterpoint Global unit and funds and accounts advised by T Rowe Price. Formed in 2017, Aurora is working on an autonomous driving system initially aimed at the trucking market. It expects to launch its first product by 2023 and expand the application of its technology to the last-mile delivery and ride hailing sectors.

4 Joby Aviation, a US-based air taxi developer backed by corporates Intel, JetBlue, Toyota and Uber, agreed a reverse merger with special purpose acquisition company Reinvent Technology Partners. Baupost Group, funds and accounts managed by BlackRock, Fidelity and Baillie Gifford have anchored a \$835m private investment in public equity, while Uber will convert \$75m of bonds into equity. Combined with \$690m held in trust by Reinvent, Joby Aviation will receive \$1.6bn in gross proceeds and the combined business is expected to fetch a \$6.6bn post-money valuation. The merged business will trade on the New York Stock Exchange once the deal closes by the end of the second quarter of 2021. Founded in 2009, Joby is developing vertical take-off and landing aircraft to take passengers to their destinations by air. The company has conducted more than 1,000 test flights and intends to launch its service in 2024. Proceeds will allow Joby to begin its commercial flights by getting regulatory approvals and opening manufacturing sites.

5 TuSimple, a US-headquartered driverless truck producer backed by a host of corporate investors, floated in a \$1.35bn initial public offering on the Nasdaq Global Select Market. The CN, Goodyear, Kroger, Mando, Navistar, Nvidia, Sina, Traton, Union Pacific, UPS and US Xpress-backed autonomous truck producer was valued at more than \$8.5bn in the IPO. The company issued approximately 27 million class A shares priced at \$40.00 each while SunDream, a vehicle for Charles Chao, chairman and CEO of internet company Sina, sold nearly 6.8 million additional shares.



JD Logistics had a HK\$24.6bn (\$3.2bn) IPO

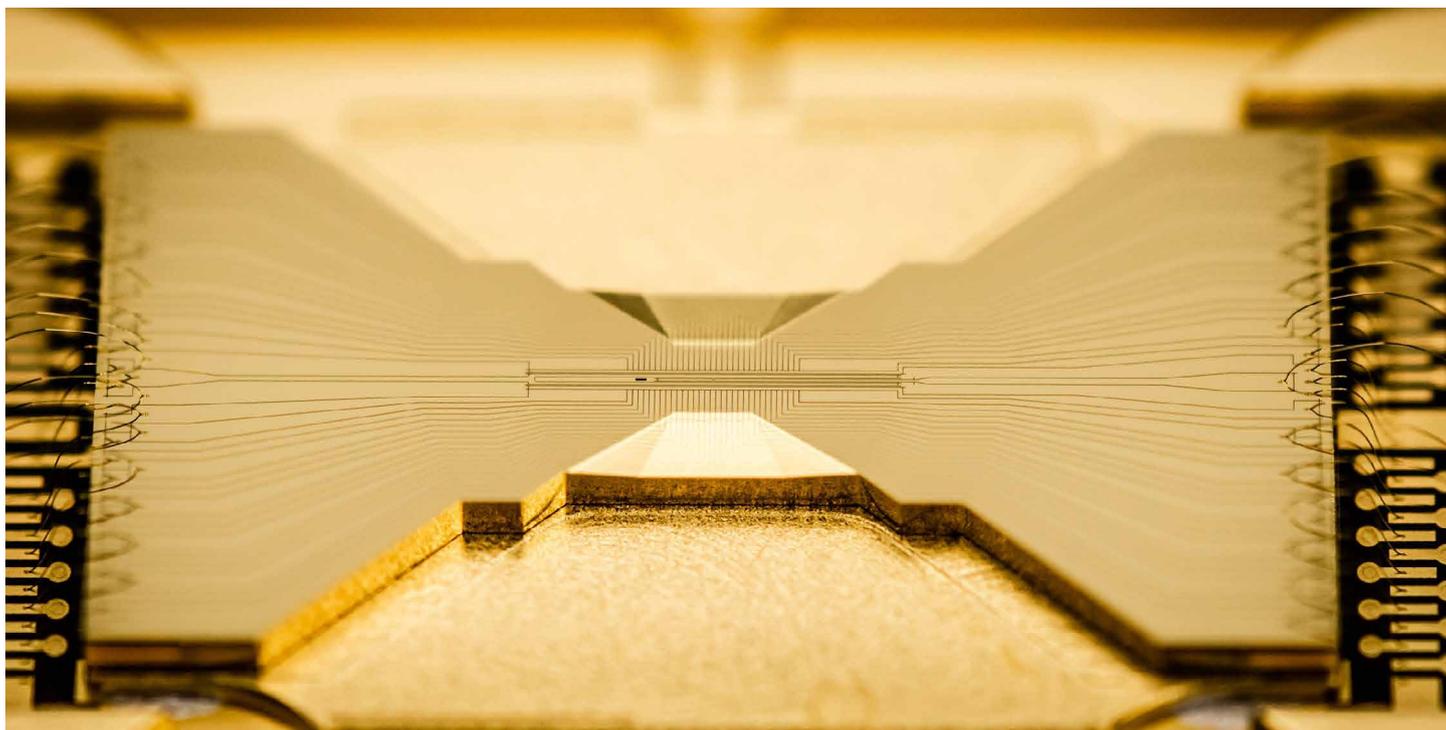
credit: Grab

The price range for the offering had been set at \$35 to \$39 and the price gave TuSimple a market capitalisation of approximately \$8.53bn. Classic Elite and entities affiliated with Perry Creek Capital Partners are providing another \$35m for the company through a concurrent private placement. Founded in 2015, TuSimple is developing self-driving vehicles from bases in the US states of Arizona, New Mexico and Texas intended for land freight transportation, and expects to commercially launch them in 2024. It is pre-revenue but made a \$178m net loss in 2020.

6 Grab, a Singapore-headquartered ride hailing service backed by range of corporate investors, agreed a reverse takeover with special purpose acquisition company Altimeter Growth Corp at an initial pro-forma equity value of \$39.6bn. The combined business will take the position secured by Altimeter Growth Corp, an affiliate of technology

investment firm Altimeter Capital Management, when it floated in a \$450m IPO in October 2020. The valuation makes this the largest ever reverse merger agreement. Funds managed by Altimeter Capital are putting up \$750m for a \$4bn private investment in public equity (PIPE) financing deal supporting the transaction that includes conglomerate Sinar Mas, clove cigarette producer Djarum and investment and financial services group Fidelity. Formerly known as GrabTaxi, Grab's core business is its on-demand ride service but it has diversified into food and package delivery as well as financial services, through an offshoot that raised more than \$300m in January 2021.

7 Polestar Performance, the Sweden-headquartered electric vehicle (EV) producer spun off by carmakers Volvo Cars and Geely, agreed to merge with special purpose acquisition company Gores Guggenheim at an expected \$20bn valuation. The merged business, Polestar Automotive Holding, will take the place on the Nasdaq Capital Market secured by Gores Guggenheim – formed by affiliates of private equity firm The Gores Group and investment adviser Guggenheim Capital – in a \$750m initial public offering in March 2021. The transaction will be supported by \$250m in private investment in public equity financing from unnamed institutional investors. Polestar has developed a hybrid electric sports car called the Polestar 1 and an electric five-door hatchback, the Polestar 2. It expects to launch three more vehicles in the next four years beginning with a sports utility vehicle in early 2022.



Quantum computing technology developer IonQ's latest-generation ion trap, before being installed in its 32 Qubit system

8 23andMe, the US-based genetic testing service backed by corporates Alphabet, WuXi AppTec, Johnson & Johnson, GlaxoSmithKline (GSK), Roche and Illumina, agreed a reverse merger with a special purpose acquisition company (SPAC). VG Acquisition Corp, which is sponsored by conglomerate Virgin Group, floated on the New York Stock Exchange in a \$480m initial public offering in October 2020, and the merged business will take its listing on the exchange. The transaction will value the company at \$3.5bn and will be supported by \$500m in financing from Virgin founder Richard Branson, 23andMe co-founder and CEO Anne Wojcicki, funds managed by investment and financial services group Fidelity, Altimeter Capital, Casdin Capital and Foresite Capital. Founded in 2006, 23andme provides home testing kits that customers send back in order to get information on genealogy and/or their potential genetic susceptibility to certain diseases.

9 Circle, a US-based blockchain payment platform developer backed by several corporate investors, agreed a reverse merger with special purpose acquisition company Concord Acquisition Corp. The combined business will be valued at \$4.5bn through the deal and will pick up Concord's listing on the New York Stock Exchange, which it acquired in a \$276m IPO in December 2020. Circle's existing shareholders will retain approximately 86% of the merged company's shares. The merger was supported by \$415m private investment in public equity financing from investors including financial services and investment group Fidelity and hedge fund managers Marshall Wace, Adage Capital Management and Third Point as well as accounts advised by Ark Investment Management. Founded in 2013, Circle operates a digital payment processing system that leverages a regulated and fully reserved dollar digital currency dubbed USD Coin. The platform has facilitated more than 100 million

transactions representing tens of billions of dollars, according to Circle's website.

10 IonQ, a US-based quantum computing technology developer exploiting University of Maryland and Duke University research, agreed to list through a reverse takeover. The company is merging with dMY Technology Group, a special purpose acquisition company that floated on the New York Stock Exchange in a \$275m IPO in November 2020. The combined business will have a pro forma implied valuation of \$2bn. The transaction will be supported by \$350m in private investment in public equity (PIPE) financing from investors including carmaker Hyundai Motor Company, its Kia subsidiary and GV, a corporate venturing subsidiary of internet and technology group Alphabet. Investment and financial services group Fidelity Management & Research, Silver Lake, Breakthrough Energy Ventures, MSD Partners and Time Ventures.

Funds

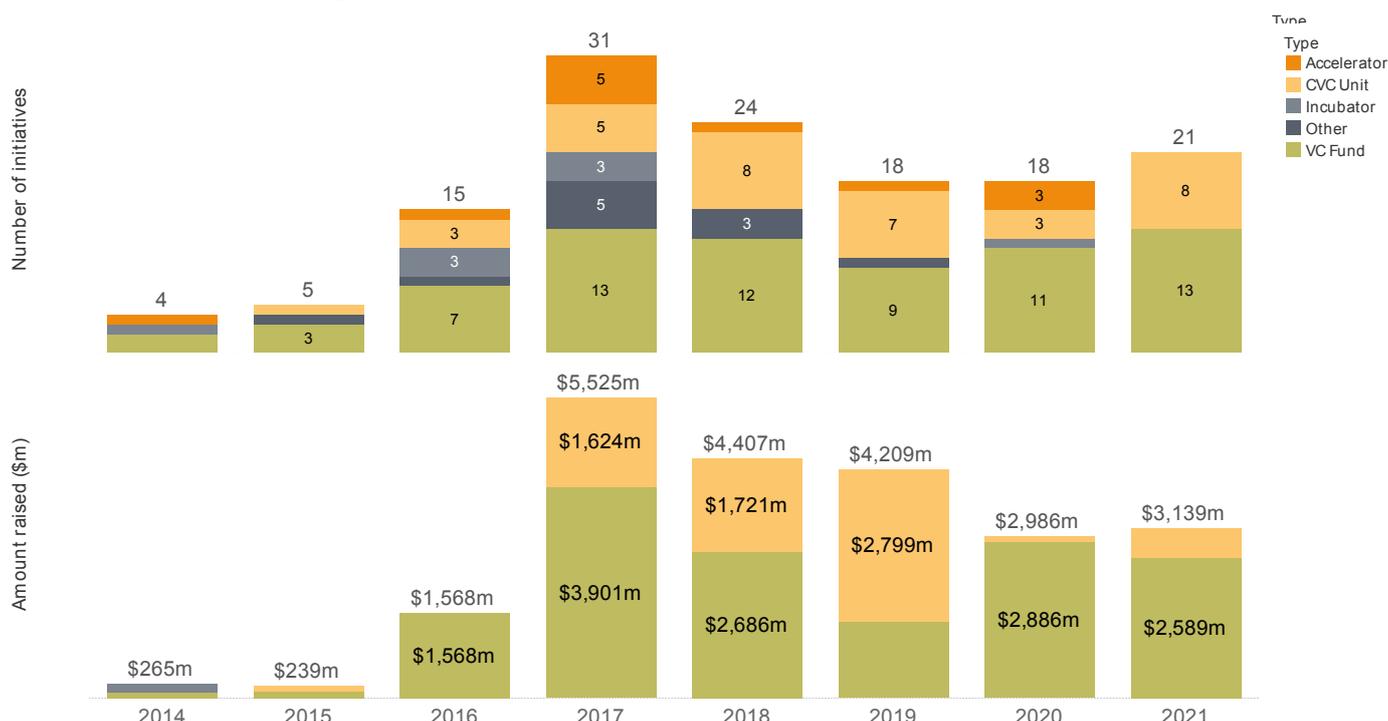
For the period between January and mid-December 2021, corporate venturers and funds investing in the transport and mobility sector secured over \$3.14bn in capital via 21 funding initiatives, which included 13 VC

funds and eight newly launched and rebranded CVC subsidiaries.

The number of funding initiatives in the transport sector stood at 18 in 2020, same as the previous year but down from the peak at

31 registered in 2017 and from the 24 in 2018. The total estimated capital also decreased slightly from \$4.20bn to \$2.99bn and this downward trend appeared to have somewhat reversed in 2021.

Transport sector funding initiatives 2011-21



Source: GCV Analytics

Top transport funding initiatives 2021

Fund name	Type	Funds raised	Location	Focus	Backers
BRV Lotus Fund III	VC Fund	\$850m	Taiwan	Transport, Health, Industrial, IT	BlueRun Ventures Fubon Life
Unnamed Volkswagen unit	CVC Unit	\$356m	Germany	Transport, Energy	Volkswagen
Energize Ventures II	VC Fund	\$330m	USA	Energy, Industrial, Transport	American Electric Power (AEP) Caisse de dépôt et placement du Québec Credit Suisse Equinor General Electric Hannon Armstrong Invenery Schneider Electric Xcel Energy
BMW i Ventures Fund II	VC Fund	\$300m	USA	Transport	BMW
Toyota Ventures III	VC Fund	\$300m	USA	Transport	Toyota
Alaska Star Ventures Fund	VC Fund	\$230m	USA	Consumer, Transport	Alaska Airlines
Boyuan Capital	CVC Unit	\$155m	China	IT, Transport, Energy	Robert Bosch Wuxi Weifu High-Technology
TDK Ventures II	VC Fund	\$150m	USA	Energy, Industrial, Transport, Health	TDK Ventures
Fontinalis III	VC Fund	\$104m	USA	Transport	Fontinalis Partners Ford Motor
Smart City II Venture fund	VC Fund	\$97m	France	Energy, Transport, Services	Duisport EDF Eurazeo Mainova RATP Sansiri Stellantis Total

1 Fubon Hyundai Life Insurance, the insurance arm of Taiwan-based financial services conglomerate Fubon Financial Holdings, is backing BlueRun Ventures' latest fund with \$20m. The commitment would represent a stake of roughly 2.4% in the BRV Lotus Fund III fund which would put the vehicle's total capitalisation at about \$850m. The firm's BRV Lotus Fund II had closed at over \$500m in 2016, a figure nearly triple the size of its predecessor, and focused on investments in China, Japan and South Korea. BlueRun invests in series A and pre-series A rounds related to areas such as autonomous vehicles, artificial intelligence, the internet of things,

smart manufacturing, medical services, with ticket sizes typically ranging between \$1m and \$10m. The firm's portfolio includes athlete management software provider Kitman Labs, computer vision developer AlwaysAI, solar lighting technology developer Petra Systems, housing co-investment provider Haus, state lottery app operator Jackpocket and gig economy platform Drum.

2 Volkswagen announced plans to set up a €300m (\$356m) corporate venture capital fund. The cash will be allocated to startup companies as well as decarbonisation initiatives, and Diess named robotic taxis, car sharing and

vehicle electrification as crucial branches in the decarbonisation of the private transport sector. The yet unnamed fund is the first to be formally launched by the carmaker. It has not been among the most frequent corporate venturers in the automotive space but has made several large late-stage investments. Volkswagen put up \$620m to co-lead a \$2.75bn private placement for advanced battery manufacturer Northvolt in June 2020, and had provided \$2.6bn in capital and assets for autonomous driving software developer Argo AI in a mid-2019 deal valuing it at \$7bn.

3 Energize Ventures, a US-based venture capital offshoot of power producer Invenery, closed a \$330m second fund featuring a host of corporate investors as limited partners (LPs). Invenery anchored the fund and was joined by backers including energy management technology producer Schneider Electric's SE Ventures vehicle and industrial and power equipment maker General Electric's GE Renewable Energy subsidiary. Energy utilities American Electric Power, Equinor (through its Equinor Ventures subsidiary) and Xcel Energy also committed capital, as did financial services firm Credit Suisse, pension fund manager Caisse de dépôt et placement du Québec and property investment trust Hannon Armstrong. Unnamed institutional investors and family offices supplied 70% of the capital. Formed in 2016, Energize Ventures has over \$700m under management and targets energy technology developers focusing on process automation, decentralisation, risk mitigation, electrification and asset optimisation.



Volkswagen announced plans to set up a €300m (\$356m) corporate venture capital fund

4 BMW i Ventures, the US-based venture capital firm formed by BMW, launched a \$300m fund that will focus on sustainability. Launched by its parent in 2016, BMW i Ventures has accumulated a portfolio of some 50 companies including Chargepoint, the vehicle charging network set to list at a \$2.4bn valuation, and manufacturing services marketplace Xometry, which floated in a \$302m IPO. The latest vehicle will operate alongside the unit's \$500m first fund and will target early and mid-stage companies concentrating on sustainability, transportation, manufacturing and supply chain technologies.

5 Toyota committed another \$300m in capital to its corporate venturing unit, also rebranding it from Toyota AI Ventures to Toyota Ventures. Toyota AI Ventures had been launched under the auspices of the company's Toyota Research Institute in 2017 with \$100m in capital. Toyota subsequently provided a further \$100m for its Fund II in late 2019. The capital will be divided evenly between two funds. One of those, Toyota Ventures Climate Fund, will concentrate on developers of innovative technologies to promote carbon neutrality, such as renewable energy and hydrogen production. Toyota Ventures Frontier Fund will invest in developers of technology in areas like artificial intelligence, cloud computing, autonomy, mobility, robotics, smart cities, digital health, advanced materials, energy and financial technology. Jim Adler, Toyota Ventures' founding managing director, said: "Startups are tackling the world's challenges, and at Toyota Ventures we want to



Toyota Ventures Frontier Fund will invest in mobility technology including Joby Aviation

credit: Joby Aviation

open even more paths to investing in them."

6 US-headquartered air carrier Alaska Airlines unveiled a corporate venture capital subsidiary dubbed Alaska Star Ventures, reportedly equipped with \$230m in capital. Alaska Airlines serves some 120 destinations across the US and internationally to Canada, Mexico and Costa Rica, and will use the fund to invest in technologies with the potential to lower its carbon emissions. The vehicle's first investment is a \$15m commitment to the \$230m debut fund for VC firm Up. Partners, which has also recruited Toyota's Woven Capital fund, industrial manufacturer Standard Industries, shipping firm OSM Maritime and property developer Hillwood as LPs. The initiative will be overseen by Pasha Saleh, the corporate's director of flight operations strategy and innovation.

7 Robert Bosch Venture Capital (RBVC), the corporate venture capital arm of Germany-headquartered industrial technology producer Robert Bosch, launched a RMB1bn (\$155m) China-based investment vehicle. The vehicle, dubbed Boyuan Capital, will be located in the city of Shanghai and will provide funding for deep technology developers. It will be headed by RBVC investment partner Hongquan Jiang as chairman and managing director. The RMB1bn figure represents the targeted close for Boyuan Capital's first fund, Bosch China RMB Growth Fund I, which is also backed by automotive component manufacturer Wuxi Weifu High-Technology. Areas of interest for the fund include automotive and mobility services, smart manufacturing, artificial intelligence, semiconductors, carbon neutrality and internet-of-things technology.

8 TDK Ventures, the corporate venturing capital subsidiary of Japan-based electronics producer TDK, closed its sophomore fund at \$150m. The unit intends to tap its second fund to build a portfolio of 50 early-stage companies over the next three years. The fund will focus on sectors including clean technology, advanced materials, industrial, robotics, energy, autonomous vehicles, electric vehicles and health technology. TDK Ventures typically invests between \$250,000 and \$5m in each funding round. Incubator Mach49 advises TDK Ventures, which launched in July 2019 with the close of its \$50m first fund. It has since exited fuel cell technology developer GenCell, laser manufacturer SLD Laser and 3D printing technology provider Origin. It has 16 companies in its portfolio and \$200m of assets under management. Nicolas Sauvage, managing director of TDK Ventures, said: “This new fund renews our commitment to supporting hard-tech entrepreneurs creating innovations for the greater good.”

9 US-based mobility-focused venture capital firm Fontinalis Partners closed its third fund, Fontinalis III, at \$104m with commitments from LPs including Ford. Over 30 limited partners made commitments into Fontinalis III, including corporate investors in the automotive and insurance industries, as well as institutional investors, family offices and individuals. The vehicle will focus on seed to series B rounds, targeting mobility specialists and enabling technologies that it deems as having an outsized impact on mobility. It has reportedly already made five series A investments and participated in six seed rounds. It took part in a \$253m equity raise for Highland Electric Transportation, a provider of electric vehicle solutions for school districts and fleets, in February 2021 alongside Vision Ridge Partners and existing investors.

10 France-based private equity firm Eurazeo raised €80m (\$97m) for the first close of its Smart City II Venture fund,

after securing commitments from several corporates. LPs include car manufacturer Stellantis, electric utilities EDF and Mainova, public transport operator RATP, energy producer Total, logistics company Duisport and real estate developer Sansiri. The fund also received capital commitments from family offices and PRO BTP, a non-profit organisation providing insurance and pension services for the French construction industry. The vehicle is set to invest in early-stage companies operating in the energy, mobility, property technology and logistics sectors globally. Matthieu Bonamy, partner at Eurazeo’s subsidiary, IldinvestPartners, said: “The smart city venture strategy aims to select and support the future global leaders in each of their sectors thanks to an expertise in our investments themes and a selectivity rate at the level of the best generalist funds.” Eurazeo’s first fund in the series, Smart City I Venture Fund, completed close to 25 investments in companies located across Europe, Asia and North America.



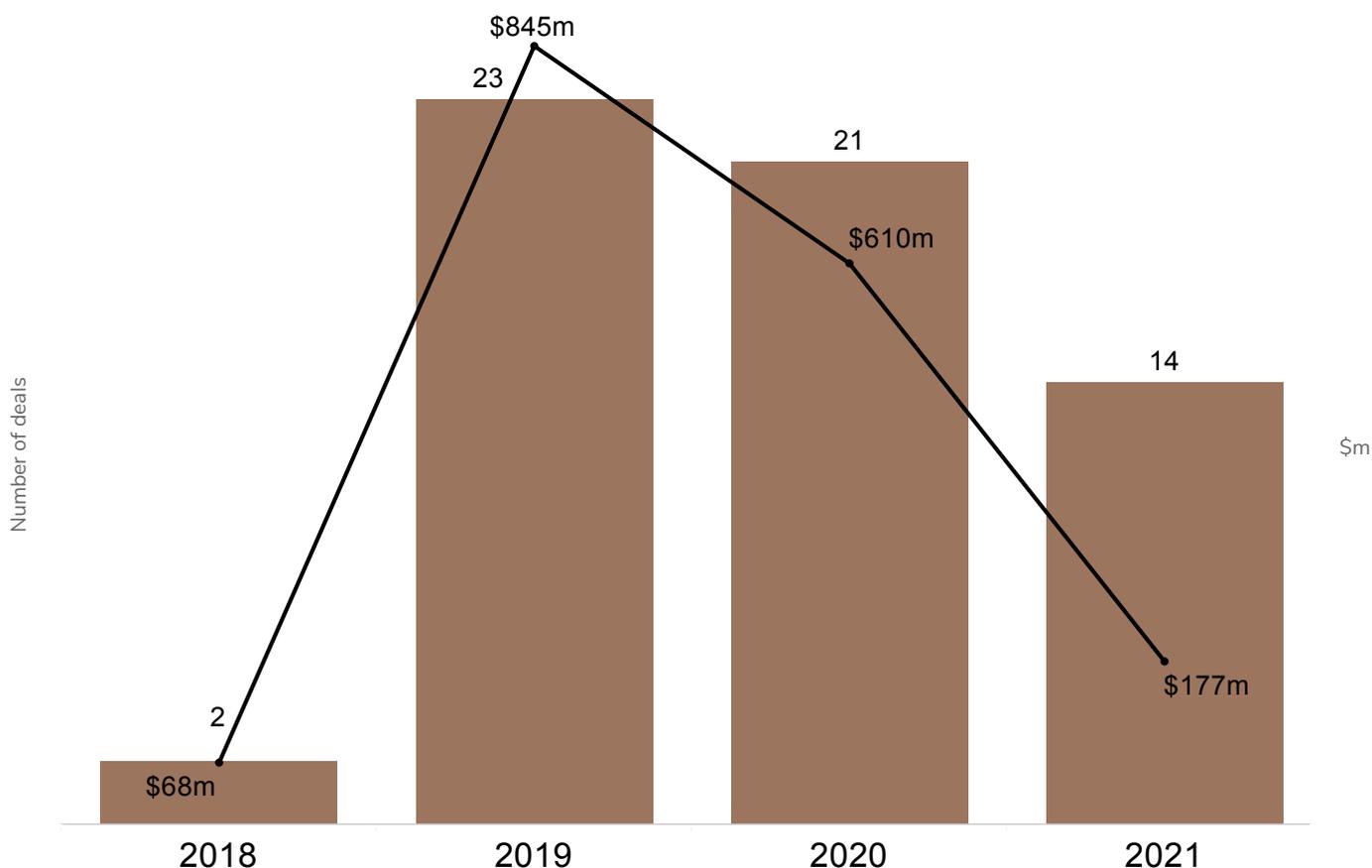
TDK Ventures recently invested in Silicon Valley-based startup Faction that develops driverless solutions based on light electric vehicles

University backing for transport companies

By the end of 2021, we had registered 14 rounds raised by university spinouts developing transport-related technologies, a decrease over the 21 recorded in the previous year. The level of estimated total capital deployed in 2021 stood at \$177m, considerably

down from \$610m in 2020. This suggests that high valuations of transport and mobility enterprises may be drying up liquidity for earlier stage deals at the moment.

Deals in university spinouts in transport 2015-21



Source: GCV Analytics

People

We reported several notable people moves in the transport and mobility sector in 2021.

US-listed airline operator JetBlue named Amy Burr president of its corporate venturing subsidiary, JetBlue



Amy Burr

Technology Ventures (JTV). Burr replaced Bonny Simi, who served at the company for 18 years, launching JTV for its parent in 2016. She took up a position as head of air operations and people at JTV-backed vertical take-off and landing aircraft developer Joby Aviation in December 2020 but will continue to advise the JTV team. Reporting to JetBlue's general counsel and corporate secretary Brandon Nelson, Burr will oversee the unit's strategic venture capital investments and corporate innovation initiatives. JTV had hired Burr as managing director of operations and partnerships in 2018 and she was involved in establishing networks and deployment opportunities for many of its portfolio companies. She was previously featured in Global Corporate Venturing's Emerging Leaders list.

Aircraft producer Boeing spun off its corporate venturing unit, HorizonX Ventures, in a secondaries deal with AE



Brian Schettler

Industrial Partners (AEI), a capital provider to the aerospace industry with \$3.5bn in assets under management. The move followed

a similar restructuring of peer Airbus's 67 innovation vehicles into the Airbus InnovationX unit under Christian Lindener and Airbus Ventures under managing partner Thomas d'Halluin, as covid-19 impacted travel. The current HorizonX Ventures team, led by Brian Schettler – a GCV Powerlist 2020 award winner – since its launch in 2017, will move to AEI HorizonX with its current portfolio. Schettler will lead the new platform and become a partner at AEI. Boeing will continue to be a long-term strategic investor in AEI HorizonX and will remain the anchor investor for the current fund in addition to AEI HorizonX's first standalone fund, which is planned for 2022.

BMW i Ventures announced its latest fund together with the appointment of Marcus Behrendt and Kasper Sage as managing partners, Behrendt having joined the unit as CEO in 2018. Sage was hired as principal in 2016 before being promoted to partner two years later. He appeared on GCV's Rising Star list in 2018 and 2019. Baris Guzel, who joined as a senior associate in 2016 before moving up to principal in early 2019, has been upgraded to partner.



Marcus Behrendt



Kasper Sage

Daniel Wedberg, founder and managing director of Sweden-based truck maker Scania's corporate venturing unit, left to join

electric vehicle startup Inzile as CEO. Wedberg set up Scania Growth Capital in early 2017 and its deals include battery provider Northvolt, which recently raised \$2.75bn. Inzile develops a fossil-free, modular transport and service and previous CEO and founder, Ragnar Åhgren, will remain within the company in business development. Wedberg said: "Inzile is a fantastic company that is perfectly positioned for the future in sustainable urban transport."



Daniel Wedberg

United Airlines, a US-based flight operator, launched its corporate venturing unit. United Airlines Ventures will focus on sustainability concepts that support the company's goal of net-zero emissions by 2050, as well as other travel-related startups. Michael Leskinen, United's vice-president of corporate development and investor relations, will oversee the venture unit as president and incorporate its initial investments in Archer Aviation, Clear and Fulcrum BioEnergy.



Michael Leskinen

Innovative region

Indian catches up on corporate venturing

- > The original report, Indian Corporate Venturing, was published in December 2021 by Confederation of Indian Industry (CII), in association with Mawsonia's Global Corporate Venturing (GCV), Accenture, Tracxn, Indian Private Equity & Venture Capital Association (IVCA) and Infosys

Abridged and adapted by James Mawson, editor-in-chief, and Liwen-Edison Fu, features and supplements editor

India's innovation ecosystem is the third largest in the world, after the United States and China. More than 50,000 startups have been founded in the past decade, which includes 100 startups that have already reached unicorn status and another 167 soon to be unicorns.

By 2025, Indian startups are expected to number 100,000 and attract \$150bn in funding. This growth will represent enormous value for India. It is estimated to exceed \$500bn in value creation for the country.

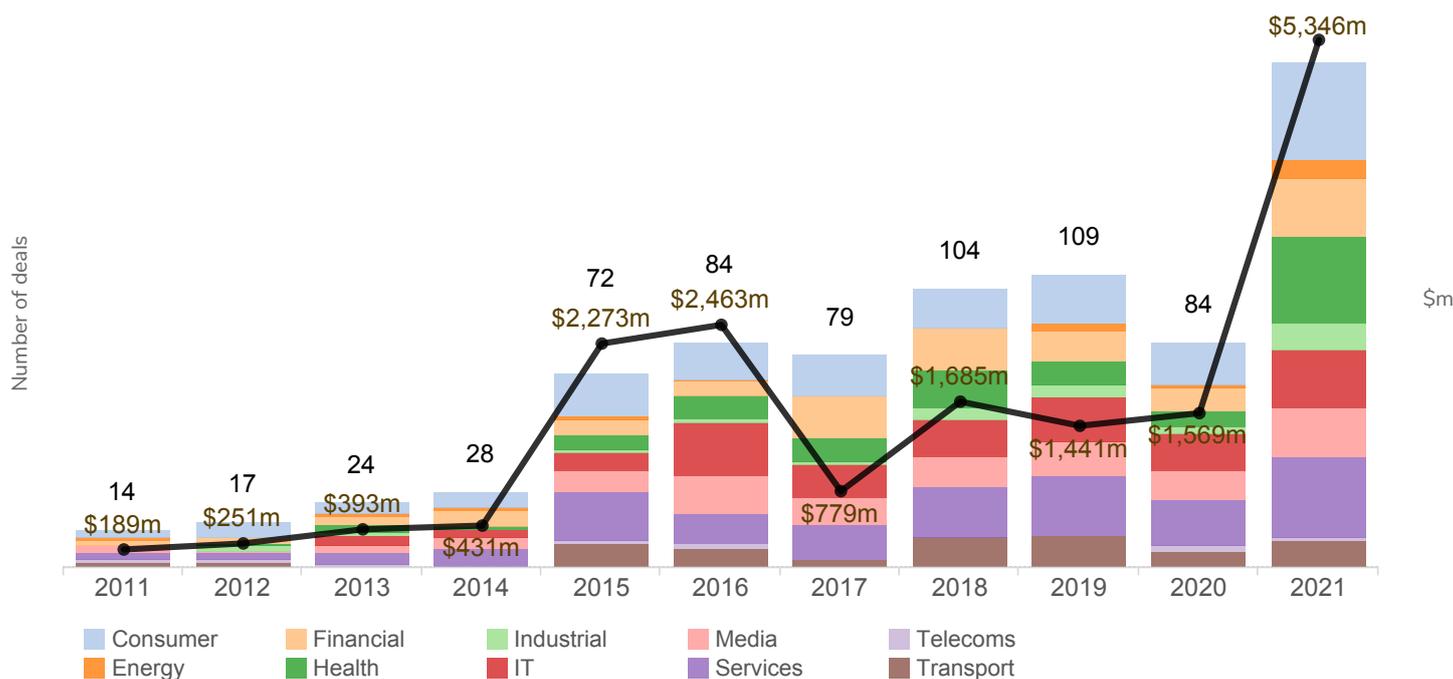
However, Indian corporates will miss out on this enormous opportunity if they do not get



Just 25% of India's CVC investment is domestic

involved in corporate venture capital (CVC). The country's startup ecosystem, similar to

Deals backed by India-based corporate venture investors 2011-21



Source: GCV Analytics

others, is primarily fuelled by venture capital funds. Corporates hesitate to follow big-bet VC valuation strategies because of their low risk tolerance.

Even though corporates across the globe share this risk aversion, Indian corporates lag behind their counterparts in corporate venturing. GCV Analytics' data

shows only 25% of India's CVC investment is domestic. While foreign investment powers India's startup ecosystem, a healthy dose of domestic corporate support can

Company name	Location	Sector	Round	Exit size (\$m)	Co-Participant List
FlipKart	India	Consumer	Acquisition	\$16bn	Accel Partners Baillie Gifford Bennett Coleman & Company DST Global GIC Greenoaks Capital Iconiq Capital International Data Group Morgan Stanley Naspers Qatar Investment Authority Sofina SoftBank Steadview Capital T Rowe Price Tencent Tiger Global Management
Ibibo	India	Services	Merger	\$1.8bn	Ctrip.com Naspers Tencent
ReNew Power	India	Energy	Other	\$1.2bn	BlackRock BNP Paribas Chubu Electric Power private investors RMG Acquisition Corporation II Sylebra Capital Tokyo Electric Power (TEPCO) TT Environmental Solutions Fund TT International Asset Management Zimmer Partners
SnapDeal	India	Consumer	Acquisition	\$1bn	Alibaba eBay Hon Hai Intel Myriad Group SoftBank
PB Fintech	India	Financial Services	IPO	\$750m	Aberdeen Global Income Fund Abu Dhabi Investment Authority Aditya Birla Group Alpha Wave Global American Funds & Trusts Axis Mutual Fund Baillie Gifford Bajaj Allianz Life Baron BlackRock Canada Pension Plan Carmignac DSP Group Fidelity Franklin Advisers Goldman Sachs HDFC Bank ICICI Prudential Life Insurance Info Edge Intel Kotak Investment Advisors Max Life Insurance New World Group Nippon Life Nomura SBI Group Schroder & Co Bank SoftBank Tencent UTI Capital Ward Ferry Management
Nykaa	India	Consumer	IPO	\$721m	Fidelity Lighthouse Financial Solutions Max Group private investors Steadview Capital TPG TVS Capital
Network18	India	Media	Acquisition	\$680m	Nokia Reliance Industries
Myntra	India	Consumer	Merger	\$330m	FlipKart
Go Fashion	India	Consumer	IPO	\$168m	Abu Dhabi Investment Authority Aditya Birla Group Axis Mutual Fund CDC Group Fidelity Government of Singapore HDFC Bank ICICI Bank ICICI Prudential Life Insurance Monetary Authority of Singapore Nomura Pksha Sparx Algorithm Fund SBI Group SBI Life Sequoia Capital
Toppr	India	Services	Acquisition	\$150m	Alteria Capital BCC Fidelity Foundation Holdings Helion Ventures Innoven Capital Kaizen Private Equity SAIF Wenlyn Global WGG International

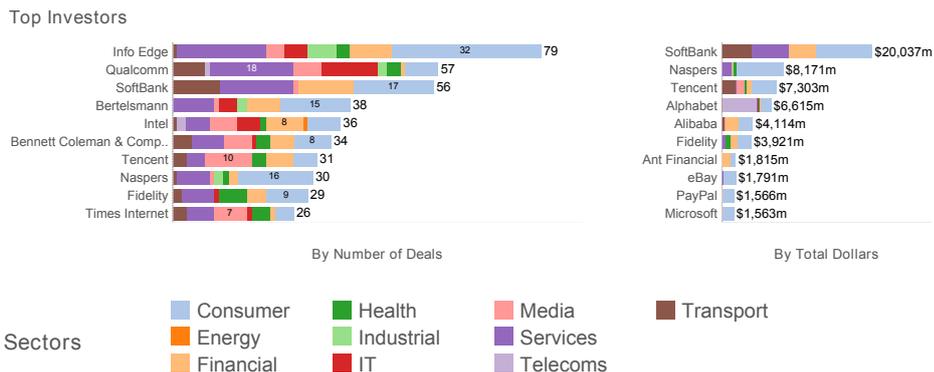
help grow startups and capture their innovation in India.

Three overarching barriers hold Indian CVC adoption back. First, there is a lack of awareness and understanding of the CVC investment model. CVC is still a new investment class in India and there is no guide to it.

Corporates must define a concrete structure for their funds to succeed. They can do this by defining an investment thesis that covers strategy and goals, focus areas, processes, and people. Corporates need to understand why and how they are investing, as well as what they want to get from investing in startups before they begin.

The second barrier relates to corporate risk aversion for startup investment. There is a misconception that the main path to startup value is through high-risk VC investment methods. In reality corporates can tap into “startup value” by working on proof of concepts with startups, exchanging knowledge and skills

Top corporate investors in India-based businesses 2011-21



with startups through accelerators programmes, or investing through less risky methods like a fund of funds. There is not a single path to capture startup value.

The third barrier is the government’s role in CVC policy and regulation. Corporates can climb over the other two barriers, but without continued progress from the government’s side, efforts will be slow. There are still change to open issues around restrictions on exits, reporting regulations, and the lack of tax parity between listed and unlisted shares. These areas can be solved through specific policy and tax

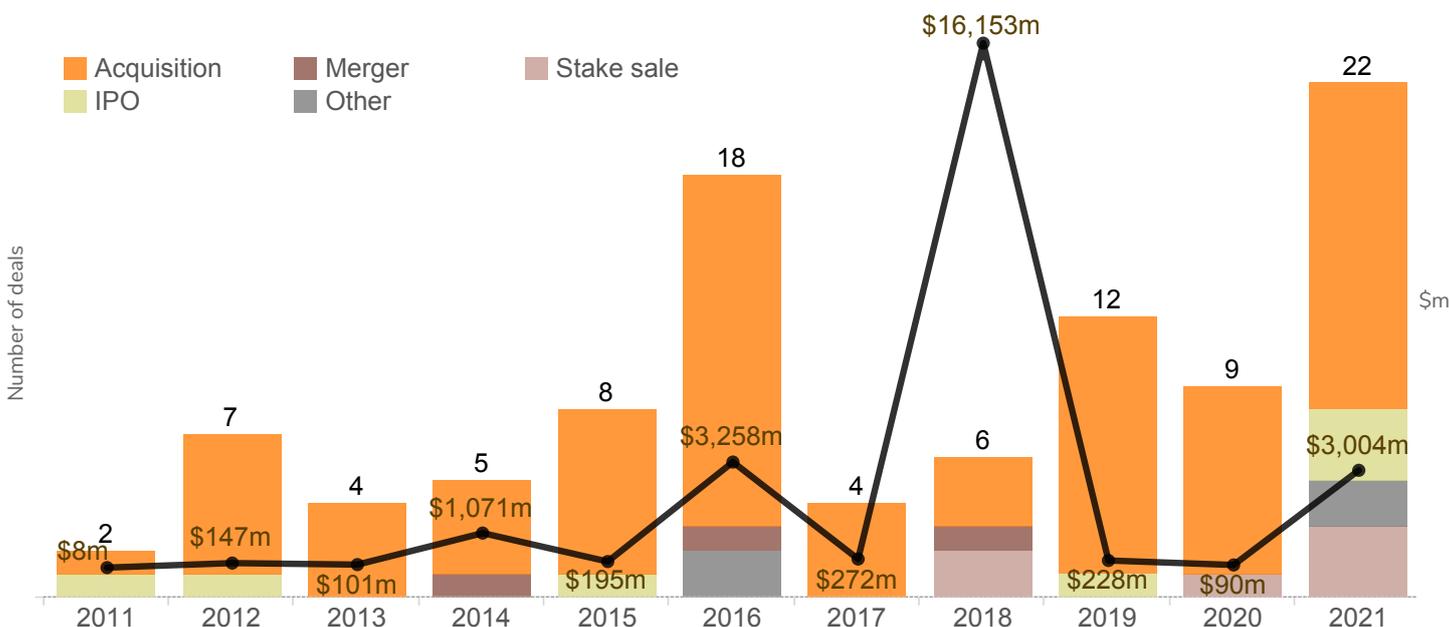
frameworks for CVC, which currently do not exist.

Change from the government will enable Indian CVC to grow with clarity and certainty. There is immense opportunity for corporates to drive the Indian startup ecosystem’s growth while capturing its innovation and financial value.

However, this value will not be fully unlocked without increased adoption of CVC by corporates and progress on the governmental side.

The full report can be accessed [here](#).

Corporate exits from India-based startups 2011-2021



India's first CVC-backed deeptech IPO

India-based digital map provider CE Info Systems, known for its brand MapmyIndia and backed by corporate venturing groups Qualcomm and Flipkart, has floated on local stock exchanges giving a boost to a wave of local unicorns (private companies worth at least \$1bn) created this past year.

CE Info listed with a premium of 53% to give a market capitalisation of Rs 84bn (\$1.1bn).

The stock opened at Rs 1,581 on the BSE against the issue price of Rs 1,033 per share, while on the National Stock Exchange, the opening price was Rs 1,565.

“The issue is valued at 27x 1HFY22 annualised enterprise value or sales, which although expensive is similar to other Indian unicorns,” Motilal Oswal told news provider [MoneyControl](#).

Revenue in financial year 2021 increased to Rs 152.46 crore from Rs 148.63 crore the year before.

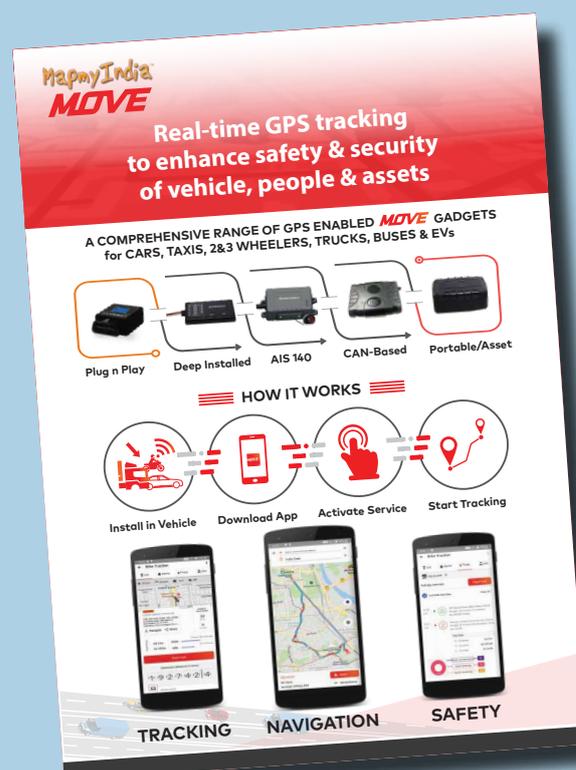
Other India-based startups potentially to follow CE Info after receiving unicorn valuations include [GupShup](#), a conversational messaging platform backed by hedge fund Tiger Global Management, [Innovaccer](#), a healthtech startup backed by Microsoft's M12, and ShareChat, a social media app trying to [build India's largest AI-powered content ecosystem](#).

In December 2015, local e-commerce company [Flipkart](#) was set to acquire a 34% stake in MapmyIndia in a deal that valued the company at about \$260m.

Founded in the 1990s, MapmyIndia provides a range of digital mapping services, including global positioning system navigation, geographical information, tracking, and location-based apps and services.

Flipkart aimed to use MapmyIndia's technology to strengthen its logistics network, and in particular its first-mile pickup and last mile delivery capabilities.

MapmyIndia's data will also help Flipkart better understand its customer behaviour, which will in turn inform the placement of its hyperlocal distribution and warehouse centres.



MapmyIndia had reportedly raised about \$30m prior to the Flipkart investment from Qualcomm Ventures, which invests on behalf of US-based chip maker Qualcomm, and Japan-based mapping company Zenrin.

Qualcomm Ventures said it had led MapMyIndia's series C round. Varsha Tagare, a managing director at Qualcomm Ventures and who leads a \$150m fund dedicated to India and cross border digital enterprise investments, by email said: “We have witnessed MapMyIndia's digital transition as they moved from building their map database from paper based mapping techniques, to satellites and mobile based mapping techniques.

“The rich mapping database has enabled key projects in the geography such as tower infrastructure rollouts, retail location rollouts and logistics rollouts. Early customers include Coca-Cola India, which began its engagement in order to locate its national network of bottlers, which was important for Coca-Cola India's legal team. That relationship expanded into geo-locating and mapping its retail network, and then its transport and logistics partners. This was important for Coca-Cola India's distribution and merchandising teams.

“Indian Space Research Organisation (ISRO) and MapmyIndia announced a path-breaking Aatmanirbhar Bharat initiative (Indian Prime Minister Narendra Modi’s self-reliant India campaign) to partner together to offer India’s best, and fully indigenous, mapping portal and geospatial services by combining the power of MapmyIndia’s digital maps and technologies with ISRO’s catalogue of satellite imagery and earth observation data.

“MapMyIndia has enabled many location-based services enabled by their deep mapping database. Their mapping service is used by enterprises in sectors like automotive. The company’s internet-of-things (IoT) platform InTouch provides APIs to customers like Phonepe and Grofers allowing them to build applications like near, real-time vehicle and

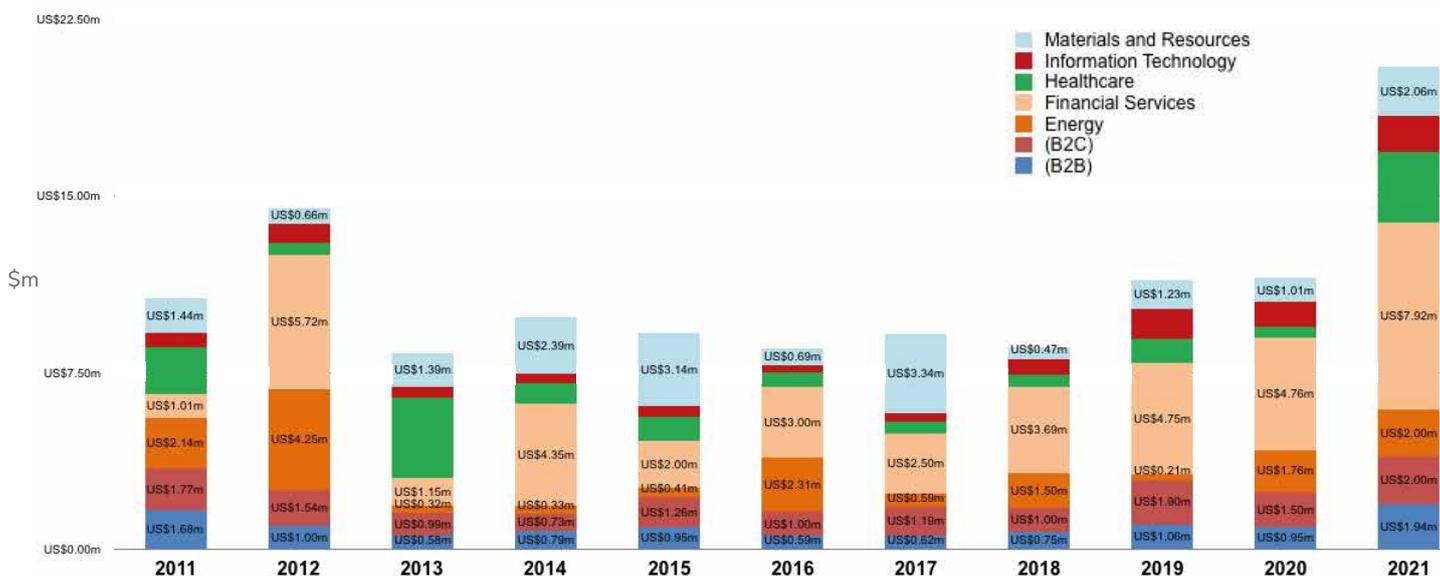
asset tracking for fleets, transport and logistics.

Today MapMyIndia also enables maps for Apple and Alexa.

“We have been a long-time investor in MapMyIndia, supporting their journey in becoming a local player with a strong business around digital maps that enable a variety of use cases in various industries including automotive, logistics and IoT. Qualcomm Ventures has a long history of investing in this sector globally including in companies such as Waze.

“We look forward to working with MMI [MapMyIndia] in various segments of auto and IoT and wish them a great journey ahead as a public company!”

Median deal size by primary sector in VC-backed, India-based companies 2011-21



Source: Pitchbook



Climate tech soars

By James Mawson
Editor-in-chief

- > **Climate tech investment is soaring this year – but might not be going to the right areas, according to accountants PwC**

The average size of a climate tech deal almost quadrupled to \$96m in the first half of 2021, up from \$27m one year prior, PwC said in its State of Climate Tech 2021 report, as the number of active climate tech investors rose from less than 900 to more than 1,600 in the first half of 2021.

Investment in companies developing technology to try to combat the climate crisis grew to \$87.5bn in the year leading up to June 30.

However, PwC said the five main solutions for carbon emissions, solar power, wind power, food waste technology, green hydrogen production, and alternative foods/low greenhouse gas proteins, received just 25% of the climate tech investment between 2013 and June 2021. This was despite technologies in these areas

representing over 80% of the emissions reduction potential by 2050.

The lion's share of climate tech funding, some \$58bn, went to mobility and transportation companies, PwC said.

To help tackle these challenges, corporations have been increasingly committing to VC funds in the energy sector.

Aviva, a UK-listed insurer, has committed £50m (\$70m) to back independent venture capital funds backing sustainable-focused technologies.

Its first commitment is into the Clean Growth Fund, which invests in early-stage UK-based technology companies in the low carbon economy, such as Indra, which manufactures and supplies smart electric vehicle chargers, and

Tepeo, which invented a zero-emission boiler.

The commitment follows Aviva's announcement earlier this year to become a net zero carbon emissions company by 2040.

Ben Lockett, who was [promoted](#) to chief innovation officer at Aviva in the summer and retains its direct CVC activities through Aviva Ventures, said: "We have seen strong growth in sustainability-focused startups as consumers become more climate conscious."

Brandon Middaugh, head of Microsoft's Climate Innovation Fund, an investor in Closed Loop Partners' funds, said: "Our investment in the Ventures Group's Fund II is a key part of our efforts toward our 2030 zero waste goals, driven by the innovators and emerging companies that help make this possible."

"Venture capital plays a key role in accelerating the circular economy, seeding the next generation of solutions to overcome legacy take-make-waste systems,

made its second commitment to US-based venture capital firm Energy Impact Partners (EIP).

As a limited partner in EIP Fund II, FirstEnergy joins with other utilities and companies to provide more than \$1bn in capital commitments to invest in heating and air conditioning, transportation electrification, energy storage and carbon capture technology, grid hardening, cyber security, and smart home and cities programmes.

This marks FirstEnergy's second investment with EIP. In July, FirstEnergy backed EIP's [Elevate Future Fund](#), which is focused on expanding venture capital access and opportunities for underrepresented sustainable energy entrepreneurs.

Steven Strah, FirstEnergy president and CEO, said: "Rather than having to develop a new product or programme on our own, we can jumpstart the process by implementing a pilot programme or partnership using technology from an EIP portfolio company to assess potential customer benefits before deploying on a wider scale."

FirstEnergy's investments in EIP funds were coordinated through the company's Emerging Technologies organisation led by executive director Meghan Geiger Beringer.

The commitments are part of FirstEnergy's plan to achieve carbon neutrality by 2050, with an interim goal of achieving a 30% reduction in greenhouse gases within the company's direct operational control by 2030.

The five main solutions for cutting carbon emissions received just 25% of the climate tech investment between 2013 and June 2021

Beverley Gower-Jones, managing partner at Clean Growth Fund, added: "Coming so soon after COP26 in Glasgow, Aviva's investment in the Clean Growth Fund is a strong and welcome strategic move."

Closed Loop Ventures Group, a US-based venture capital firm, has closed its second fund at more than \$50m from limited partners including corporations Microsoft and GS Group.

Other LPs include foundations, such as the Autodesk Foundation, and single and multi-family offices.

The Closed Loop Venture Fund II run by Danielle Joseph will invest in circular economy solutions across plastics and packaging, fashion, food and agriculture, and supply chain technology. The second fund has already invested in Partsimony, Ucrop.it and Dimpora.

encourage innovation and help transformative companies scale," added Taehong Huh, managing director of GS Futures, the corporate venture capital unit of GS Group of Korea that had previously committed to Energy Transition Ventures (ETV).

Joe Speicher, executive director of the Autodesk Foundation and head of sustainability at Autodesk, said the foundation had been an investor in Closed Loop Partners' first and second venture funds. He added: "We are proud to have been an early investor of the Closed Loop Ventures Group and are doubling down on our commitment to help scale the emerging design and manufacturing approaches that make end to end circularity possible."

FirstEnergy, a New York-listed electric distribution company, has



Tech Transfer marks 40-year milestone

By James Mawson
Editor-in-chief

The death of Bob Dole, a Republican senator and US presidential candidate, aged 98 has seen university tech transfer experts reflect on the importance one of his signature pieces of legislation, the Bayh Dole Act.

Tom Hockaday, former head of technology transfer activities at the University of Oxford for ten years from 2006 to 2016 and author of 'University Technology Transfer - What It Is and How to Do It' published last year, said Dole was "one of the grandparents of global university technology transfer. The Bayh Dole Act of 1980, effective 1981, started so much of what we see today." Reb Thomas, publisher of KnowledgeEconomy.com and attorney at Thomas Law Firm, added: "I am upset that US news media are not properly featuring this aspect of Dole's career. I do not believe it is an overstatement to say that Bayh Dole has created trillions of dollars of economic activity and dramatically fuelled the acceleration of the [#InnovationEconomy](#) in the

US and (by example) many other countries." Since its passage, the Bayh-Dole Act has bolstered US economic output by up to \$1.7trn, supported 5.9m jobs, and helped lead to more than 14,000 startup companies, according to a consortium of US-based research and scientific organisations, [Bayh-Dole 40](#).

The Economist had called it: "Possibly the most inspired piece of legislation to be enacted in America over the past half-century was the Bayh-Dole Act of 1980... More than anything, this single policy measure helped to reverse America's precipitous slide into industrial irrelevance."

Globally, there are 16 million patents that count, according to the Economist's [analysis](#). Last year, 1.6m were granted.

It cited PatentVector's figures that the US has the most active patents of any country, at 3.3m worth \$2.9trn, followed by China with 3.1m valued at \$392bn.

Annual review

Corporate venturing spikes to record highs

- > Deals count and dollars spike to record highs
- > Record highs for exits too
- > Fundraising activity went up

By Kaloyan Andonov, reporter and analyst
GCV Analytics

In 2021, GCV Analytics tracked 5,047 deals worth an estimated \$298.1bn of total capital raised. Both the deal count and the total dollars registered considerable year-on-year increases (40%

and 27%) versus the 3,607 transactions worth an estimated \$131.22bn reported in 2020. These are indubitably strong and impressive numbers for any industry, business or portfolio.

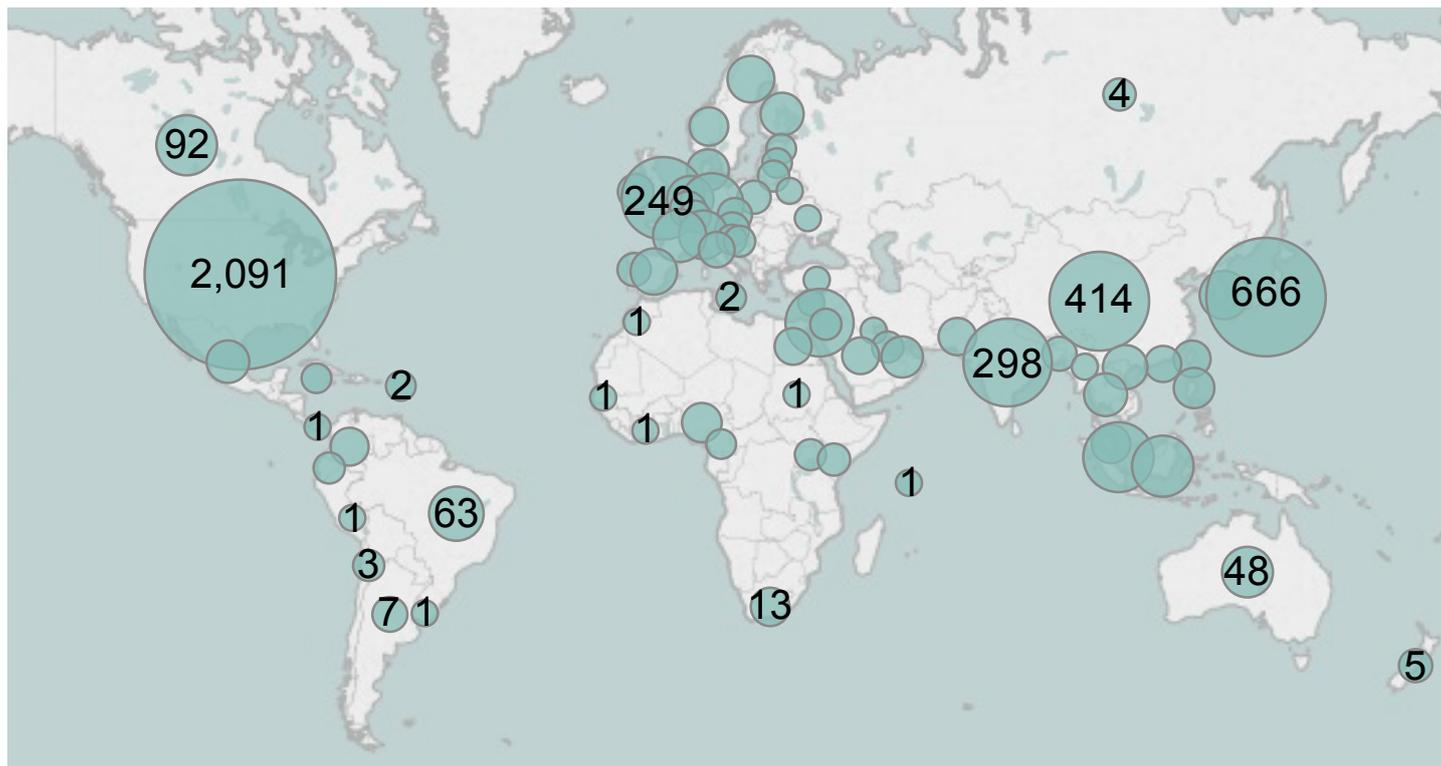
Deals
5,047

Exits
642

Funding initiatives
373

Global view of deals

Total number of deals: 5,047



■ Annual total

Source: GCV Analytics

Four out of every 10 tracked corporate-backed transactions in 2021 took place in the US (a total of 2,091). Other notable innovation geographies on the global scene were Japan (666), China (414), India (298) and the UK (249).

It would be impossible to comprehend investment developments in 2021 without talking about macroeconomics and events in 2020. It is no overstatement to say that 2020 was a tumultuous year that will be remembered for long and that brought a pandemic that is still not officially over. The covid-19 pandemic and stay-at-home orders across the globe caused an enormous economic shock which still lingers to this date, when it comes to supply chain disruptions (and not the kind of exciting

disruptions we like to talk about on the pages of this magazine).

Macroeconomic indicators in the years leading to the pandemic seemed to hint on the possibility of a looming downturn. And the downturn did come, only not the way most of us would have expected it. Unlike other economic downturns, this time authorities and central banks reacted promptly and provided an abundance of liquidity to ensure the normal functioning of markets. This clearly had a positive impact on both public and private markets that have thrived since then thanks to the lowest interest rates in history.

Far from being an unsurmountable shock, the aftermath of the pandemic appears to have been a bonanza for investors in both

public and private markets alike. In the context of asset classes, low yields on bonds made even the most conservative of investors move into riskier asset classes such as equities. For large institutional and high net worth investors – who tend to be the typical limited partners (LPs) in venture funds – this meant that alternative asset classes like venture capital were alluring with their high potential returns in the foreseeable future. As a result, there has been no dearth of funding for innovative businesses that aspire to change or disrupt.

The implications are naturally far reaching for corporate venturers as well. They will continue to play their part in serving as vehicles to provide strategic optionality in potential disruptive technologies or

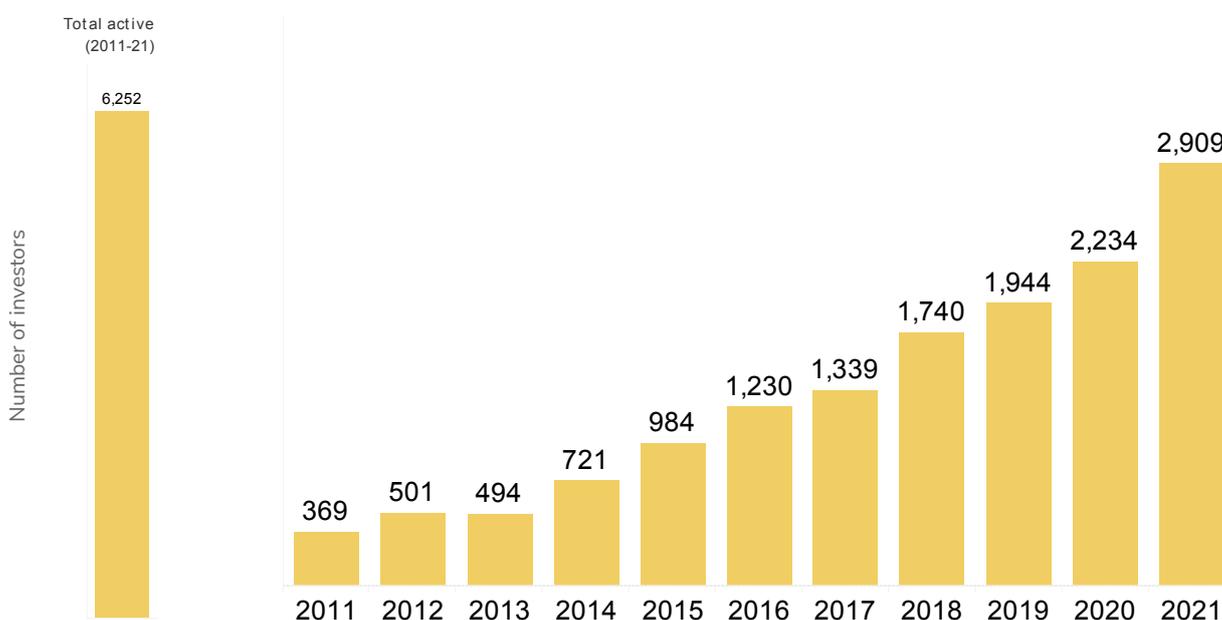
catalysts that drive the adoption of the newest and best technologies that operationally aid their parent organisations. This will likely continue to be the case as long as there is a relatively low interest rate environment.

Over the past golden decade, corporations around the globe have reaped much benefit from

venturing activity or, at the very least, have seen themselves forced to use it as part of their innovation toolkit. The growth of the number of active corporate venturers we have observed illustrates this. Since 2011, when we first started our trade publication, GCV has tracked over 6,200 distinct corporate investors – with or without a formal

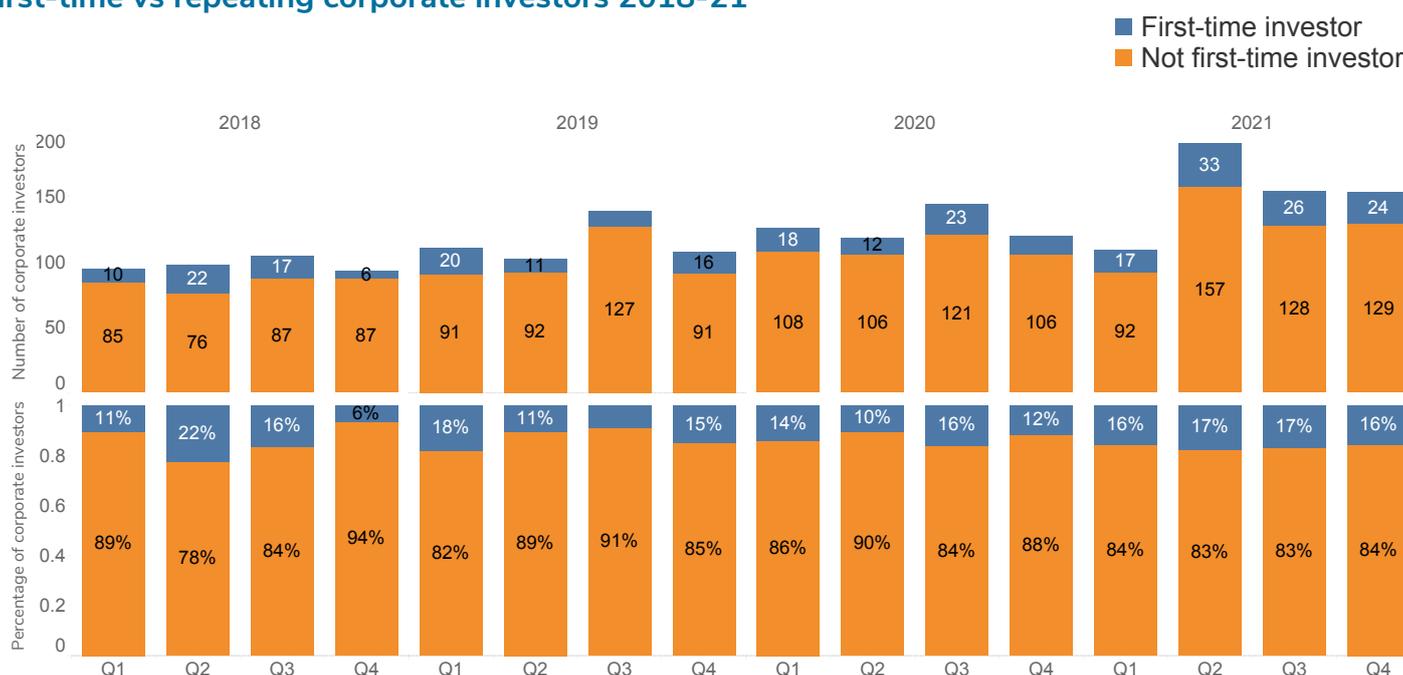
investment unit – which have taken a minority stake in at least one deal. We also saw the number of corporate venturers per given year increase several times over – from 721 in 2014 up to 2,909 in 2021. Moreover, our data suggest that 16-17% of all corporate investors we track quarterly were first-time investors in 2021.

Active corporate investors



Source: GCV Analytics

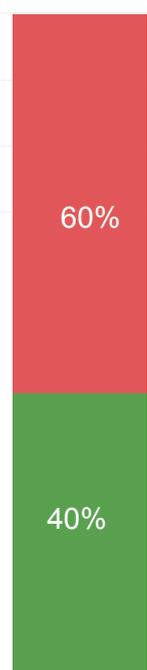
First-time vs repeating corporate investors 2018-21



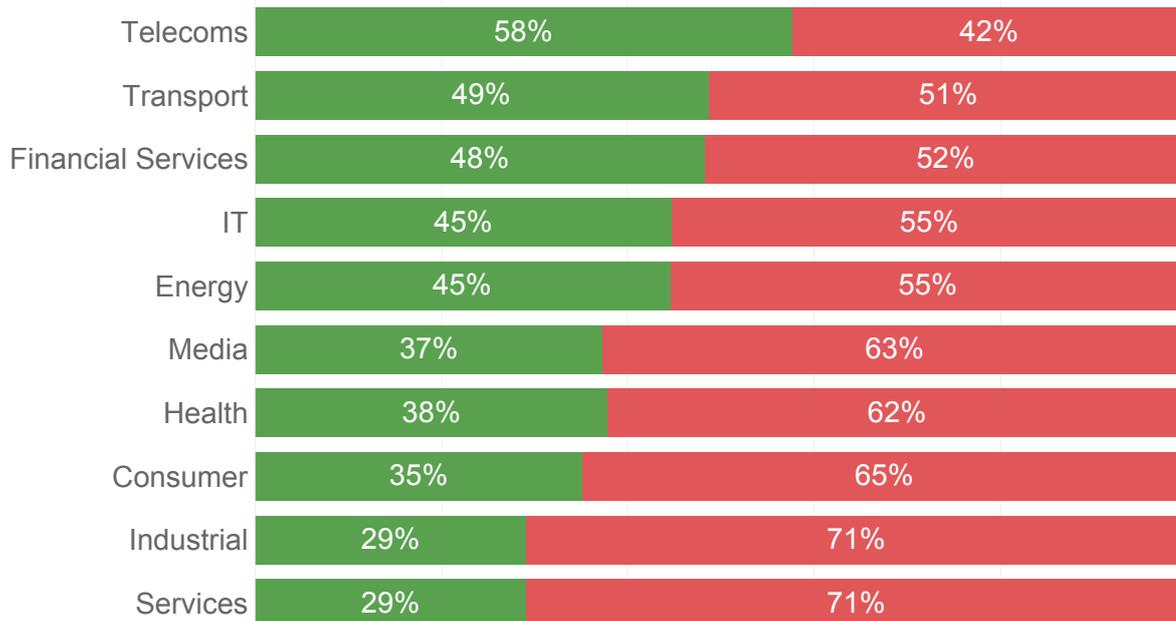
Source: GCV Analytics

Investors from 2020 returning to invest in 2021

All sectors



By sector



Invested in 2020

- No
- Yes

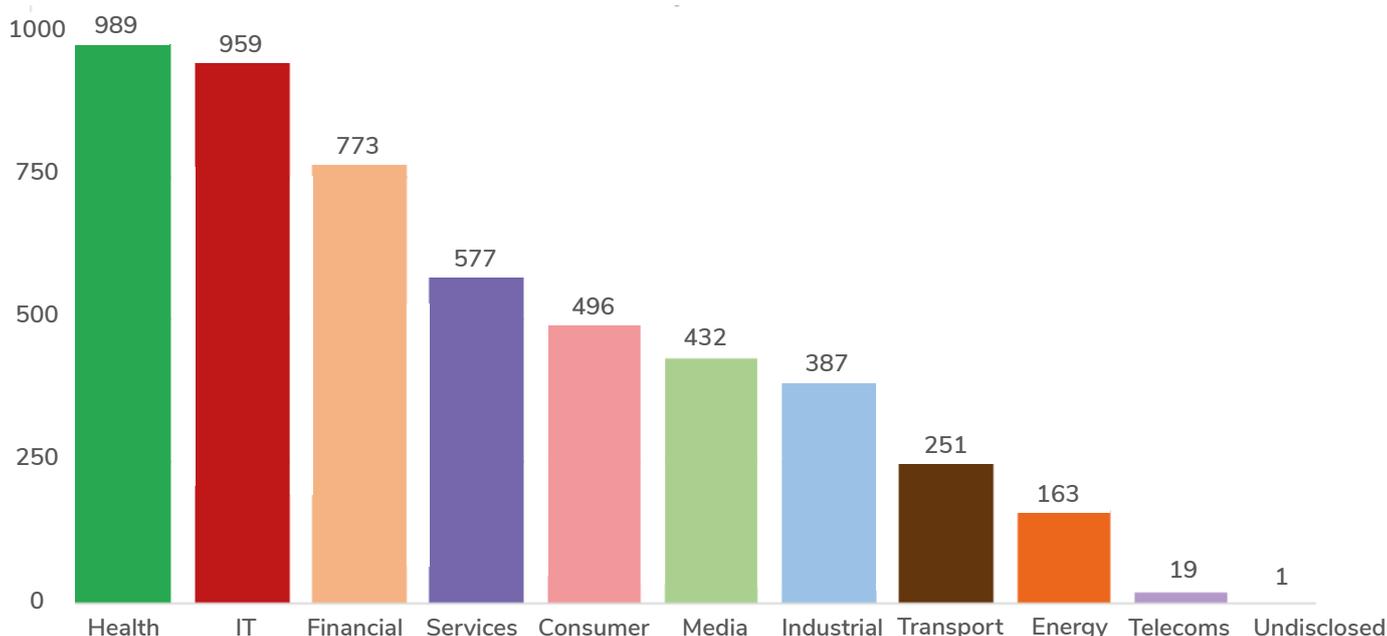
Source: GCV Analytics

Our data also suggest that, overall, roughly four out of every 10 corporate investors (40%) that had participated in at least one minority

stake round in 2020 returned as investors during 2021. In some sectors, notably, the proportion of returning investors is actually

higher – energy (45%), IT (45%), financial services (48%), transport (49%) and telecoms (58%).

Number of deals by sector 2021

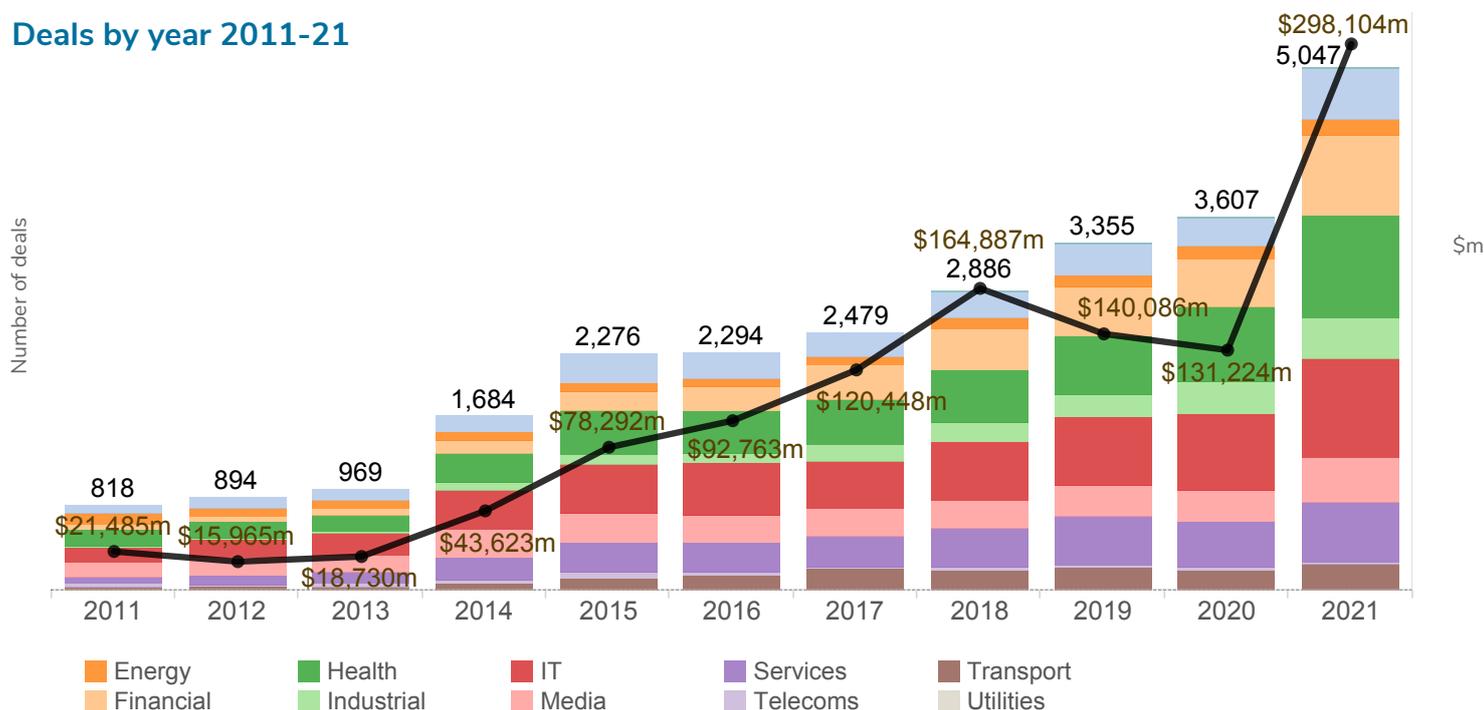


Source: GCV Analytics

Emerging businesses from six sectors raised the largest number of corporate-backed rounds – IT with 989 deals, health with 959, financial services with

773, business services with 577, media with 496 and industrial with 432.

Deals by year 2011-21

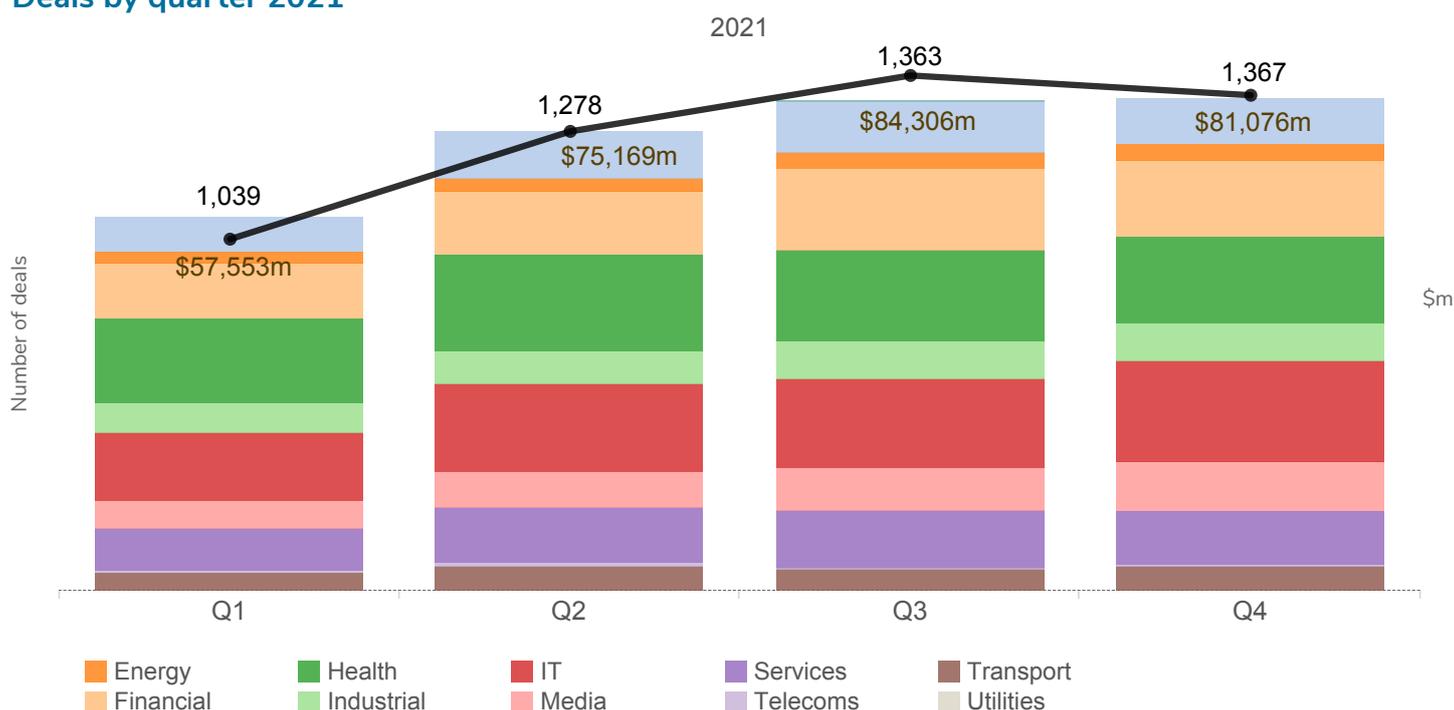


Source: GCV Analytics

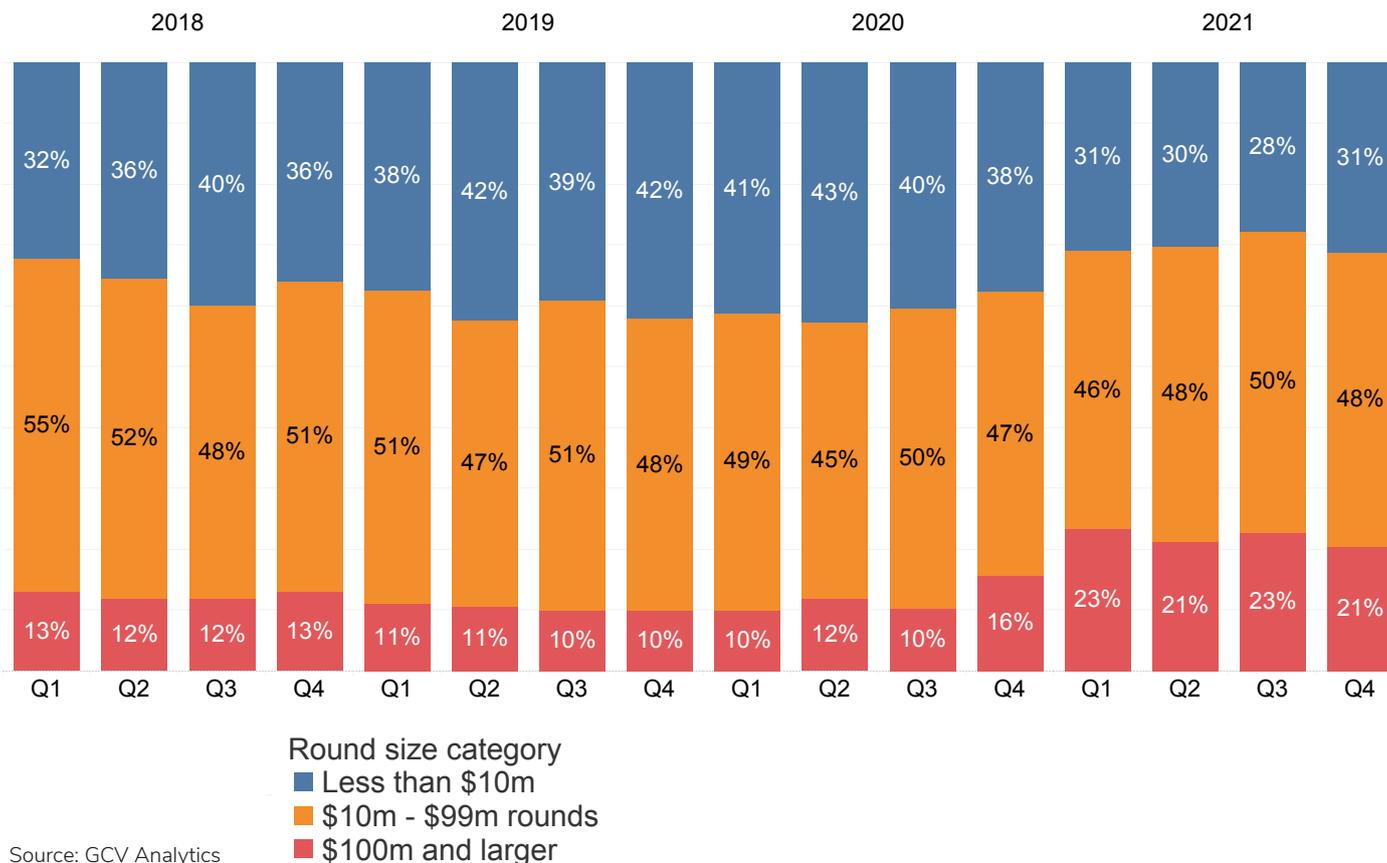
Looking at 2021 on a quarterly basis, the deal count remained stable at well above 1,000 deals in each three-month period – from 1,039 deals in Q1 up to 1,367 transactions in Q4. The total estimated capital

in corporate-backed deals went up from \$57.55bn in Q1 to \$84.3bn in the third quarter and 81.08bn in the last one.

Deals by quarter 2021



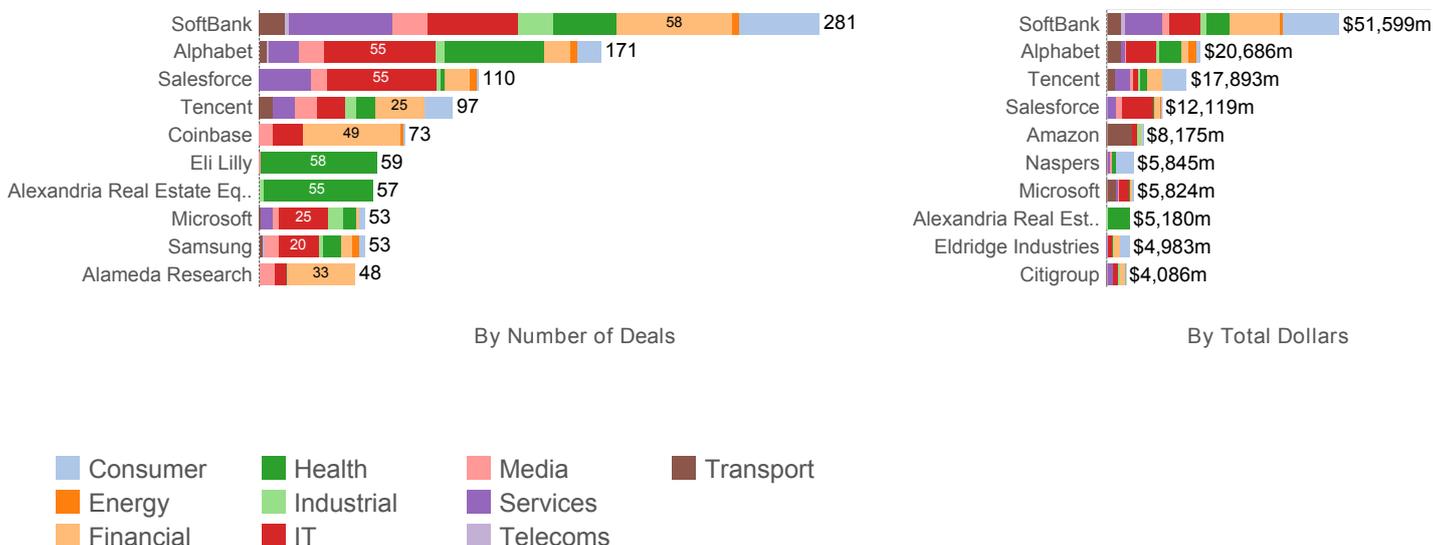
Corporate-backed deals by size 2018-21



The pandemic and the flood of liquidity in public and private markets have exerted a tangible effect on the relative proportions of deal size categories – with deals below \$10m somewhat shrinking and deals between \$10m and \$99m remaining broadly similar

to levels in 2018 and 2019. However, deals of \$100m and above in size registered a first notable spike in the last quarter of 2020 and have accounted for nearly one in every five corporate-backed deals throughout every quarter of 2021.

Top investors 2021



Source: GCV Analytics

Top corporate investors for 2021 included telecoms and internet company SoftBank with 281 deals, diversified internet conglomerate Alphabet (Google) with 171 investments, enterprise software producer Salesforce (110) and internet company Tencent (97). The top three investors involved in the largest rounds were also SoftBank, Alphabet and Tencent.

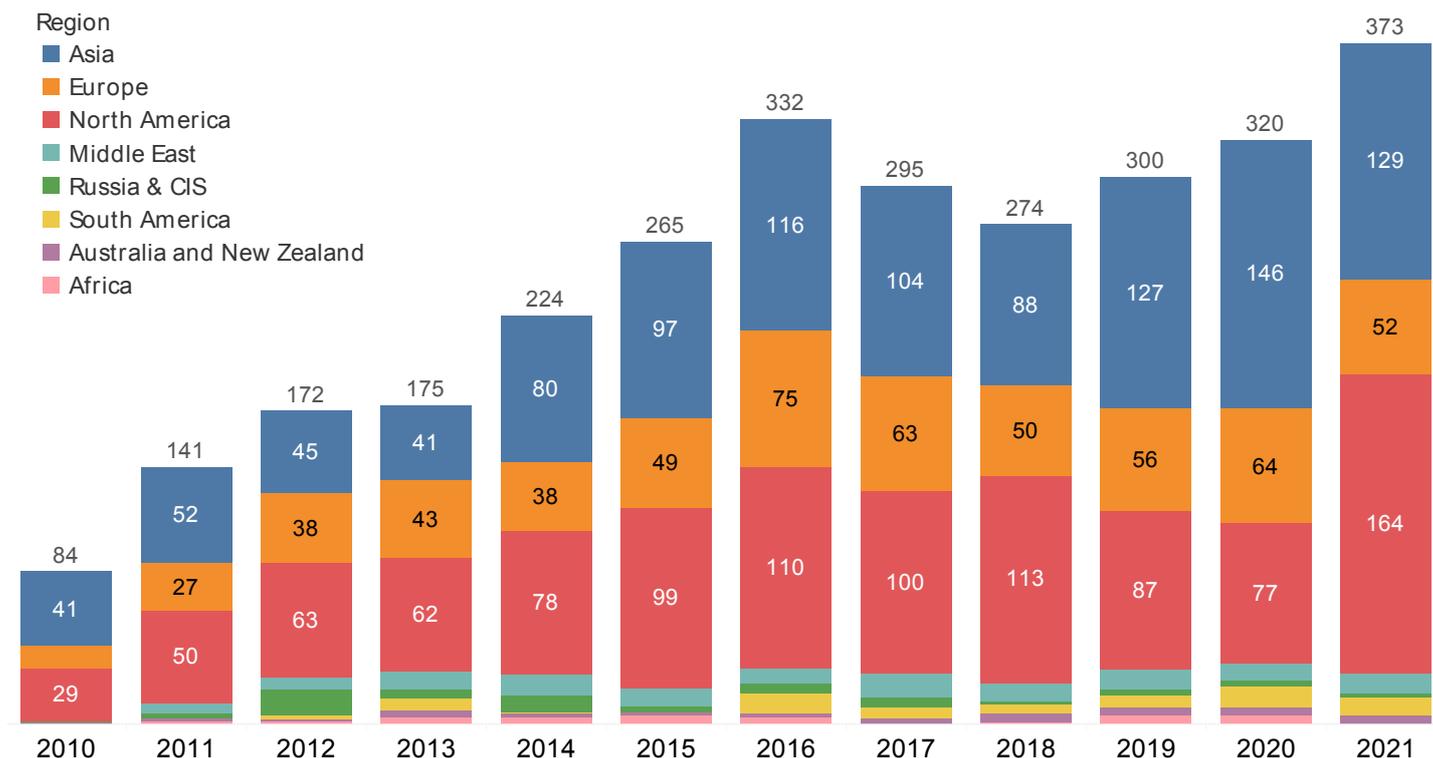
GCV tracked 373 funding initiatives that received corporate backing throughout 2020, including 230 venture funds,

96 venturing units (most of them newly launched or recapitalised), 24 corporate-backed accelerators, 17 other initiatives and six incubators. Most of these initiatives were set up in North America (164), Asia (129) and Europe (52). The countries that hosted the largest number of such initiatives were the US (157), Japan (48), China (35), India (14) and the UK (14).

The top funding initiatives we reported last year ranged in scope of their targeted sectors

from IT and health through consumer and media. One notable trend, which originated in 2020 through the prominence of the Black Lives Matter movement and which we have continued to see throughout 2021, has been impact-oriented funds. Though smaller in size, such funds attract corporate backing and focus on diversity and inclusion. They are aiming to fund underfunded and underrepresented minority groups in the innovation ecosystem.

Corporate-backed funding initiatives by region 2010-21



Source: GCV Analytics

Deals

GCV Analytics tracked many large deals through 2021. In fact, all of the top 10 deals stood well above the \$1bn mark. These sizeable rounds were raised

mostly by emerging businesses from the transport, energy and business services space.

Top deals of 2021

Portfolio company	Location	Sector	Round	Round size (\$bn)	Co-participant list
Northvolt	Sweden	Energy	Undisclosed	\$2.75bn	AMF AP1 AP2 AP3 AP4 ATP Baillie Gifford Baron Capital Group Bridford Investments Compagnia di San Paolo EIT InnoEnergy Goldman Sachs Ikea Norrskan Foundation Omers PCS Holding private investors Stena Metall Volkswagen
Rivian	USA	Transport	Undisclosed	\$2.65bn	Amazon Coatue D1 Capital Partners Fidelity T Rowe Price undisclosed investors
Waymo	USA	Transport	Undisclosed	\$2.5bn	Alphabet Andreessen Horowitz AutoNation Canada Pension Plan Fidelity Magna Mubadala Perry Creek Capital Silver Lake T Rowe Price Temasek Tiger Global Management
Rivian	USA	Transport	Undisclosed	\$2.5bn	Amazon Coatue D1 Capital Partners Dragoneer Investment Group Fidelity Ford Motor T Rowe Price Third Point Ventures
J&T Express	Indonesia	Services	Undisclosed	\$2.5bn	Boyu Capital Hillhouse Capital Management Sequoia Capital Susquehanna International Group Tencent
GM Cruise	USA	Transport	Undisclosed	\$2bn	General Motors Honda Microsoft undisclosed investors
Xingsheng Youxuan	China	Consumer	Undisclosed	\$2bn	China Evergrande FountainVest Partners KKR Primavera Capital Sequoia Capital Temasek Tencent
Lineage Logistics	USA	Services	Undisclosed	\$1.9bn	BentallGreenOak CenterSquare Investment Management Cohen & Steers D1 Capital Partners Morgan Stanley OP Trust Oxford Properties
Commonwealth Fusion Systems	USA	Energy	B	\$1.8bn	Alphabet Breakthrough Energy Ventures Coatue DFJ Growth Emerson Collective Eni Equinor Fidelity FootPrint Coalition Ventures Future Ventures Hostplus Jimco JS Capital Management Khosla Ventures Lowercarbon Capital Moore Strategic Ventures Private Investor Safar Partners Schooner Capital Senator Investment Group Soros Fund Management Starlight Ventures Temasek The Engine Tiger Global Management Time Ventures undisclosed investors
Yanolja	Singapore	Services	Undisclosed	\$1.7bn	SoftBank



Northvolt produces lithium-ion batteries for use in electric vehicles as well as drones

1 Carmaker Volkswagen invested \$620m to co-lead a \$2.75bn private placement for Sweden-headquartered battery producer Northvolt, which also included commercial vehicle producer Scania. The round was co-led by a host of other institutional investors. Founded in 2016,

Northvolt produces lithium-ion batteries for use in electric vehicles in addition to portable electronics products, such as drones, and the storage of renewable energy. The new financing will support the expansion of the company's Gigafactory from a capacity of 40 GWh per year to 60 GWh per year.

2 US-based electric truck developer Rivian raised \$2.65bn from investors including e-commerce group Amazon's Climate Pledge Fund. The round was led by funds and accounts advised by T. Rowe Price and also featured Fidelity, Coatue, D1 Capital Partners and undisclosed new and existing investors. The funding was reportedly secured at \$27.6bn valuation. Founded in 2009, Rivian has developed and produces a range of electric trucks that include an electric pick-up truck dubbed the R1T as well as the R1S, an all-terrain electric sports utility vehicle.

3 Waymo, the autonomous driving technology developer spun off by

Alphabet, raised \$2.5bn in funding from investors including its former parent company. Automotive retailer AutoNation and automotive component manufacturer Magna International also participated in the round. Initially launched in 2009, Waymo develops an autonomous driving system dubbed Waymo Driver for use in driverless vehicles in the taxi, package delivery and freight industries. It has launched an autonomous taxi service in the US city of Phoenix.

4 Amazon's Climate Pledge Fund and automotive manufacturer Ford Motor Company co-led a \$2.5bn funding round for US-based electric truck developer Rivian. The round was also co-led with investment firm D1 Capital Partners and funds and accounts advised by T Rowe Price, and included Third Point, Fidelity, Dragoneer Investment Group and

Coatue Management. Its vehicles were supplied to Amazon to serve as their last-mile delivery vans.

5 Indonesia-headquartered logistics provider J&T Express received \$2.5bn in funding from investors including Tencent. Boyu Capital, Hillhouse Capital and Sequoia Capital China also contributed to the round while one of the sources named SIG China, a subsidiary of quantitative trading firm Susquehanna International Group, as an additional participant. J&T operates an express delivery and warehousing business focused on the e-commerce space, which has boomed in Indonesia with the entry of domestic online platforms such as Tokopedia, Bukalapak and Sociolla in recent years.

6 US-headquartered autonomous driving technology developer

Cruise raised more than \$2bn from investors including software provider Microsoft and automotive manufacturers General Motors (GM) and Honda. Microsoft invested through a strategic partnership that will involve it partnering ecosystem with Cruise's to bolster the commercialisation of the latter's technology. The corporates were joined in the round by undisclosed institutional investors, and the cash was provided at a \$30bn post-money valuation. Founded in 2013, Cruise is developing autonomous driving software that will be used in all-electric vehicles forming the basis for shared taxi services, in addition to hardware such as sensors, robotics and telematics systems.

7 China-based community buying platform developer Xingsheng Youxuan secured approximately \$2bn in a funding round featuring Tencent



Amazon's Climate Pledge Fund and Ford Motor Company co-led a \$2.5bn funding round for US-based electric truck developer Rivian



Commonwealth Fusion Systems' fusion machine – named Sparc – which is expected to achieve commercially relevant net energy by 2025

and real estate developer China Evergrande Group. Sequoia Capital China led the round, which also featured FountainVest Partners, Primavera Capital Group, KKR and Temasek. It valued Xingsheng at \$6bn pre-money. Xingsheng Youxuan runs an e-commerce business that allows local communities to club together to purchase items in bulk. The company processes more than 8 million daily orders and covers more than 30,000 towns across China.

8 US-headquartered cold chain services provider Lineage Logistics secured \$1.9bn in equity funding from investors including real estate developer Oxford Properties and investment bank Morgan Stanley's MS Tactical Value and Conversant Capital vehicle. Founded in 2008, Lineage provides chilled transportation for food in addition to temperature-controlled storage through a network of 340

warehouses across five continents, utilising technology to make its activities more efficient.

9 US-based fusion energy technology developer Commonwealth Fusion Systems (CFS) raised more than \$1.8bn in its series B round featuring Alphabet and petroleum suppliers Eni and Equinor. Alphabet and Equinor participated in the round through GV and Equinor Ventures, and it was filled out by private investors Bill Gates and John Doerr, among many other investors. Founded in 2018 and spun out of Massachusetts Institute of Technology, CFS is working on nuclear fusion technology that generates electricity by fusing two nuclei – rather than splitting an atom, as in current nuclear power stations. The company will use the funding to build, commission and operate its fusion machine – named Sparc – which is expected to achieve commercially relevant net energy

by 2025. With the European Commission recognising nuclear energy as a “green” energy source, as of the beginning of 2022, it is not unlikely to see more innovation in this space in the near future.

10 SoftBank's Vision Fund 2 supplied \$1.7bn in funding for South Korea-based travel and accommodation services provider Yanolja. Yanolja will use the capital to invest in its technology and expand its technology-based services into new markets. It intends to build a global travel platform that leverages artificial intelligence technology and big data to provide more automated and personalised services. Founded in 2005, Yanolja initially began as a short-term accommodation services provider before adding hospitality, food, leisure and transportation booking services to its offering, which is accessible through a mobile app.

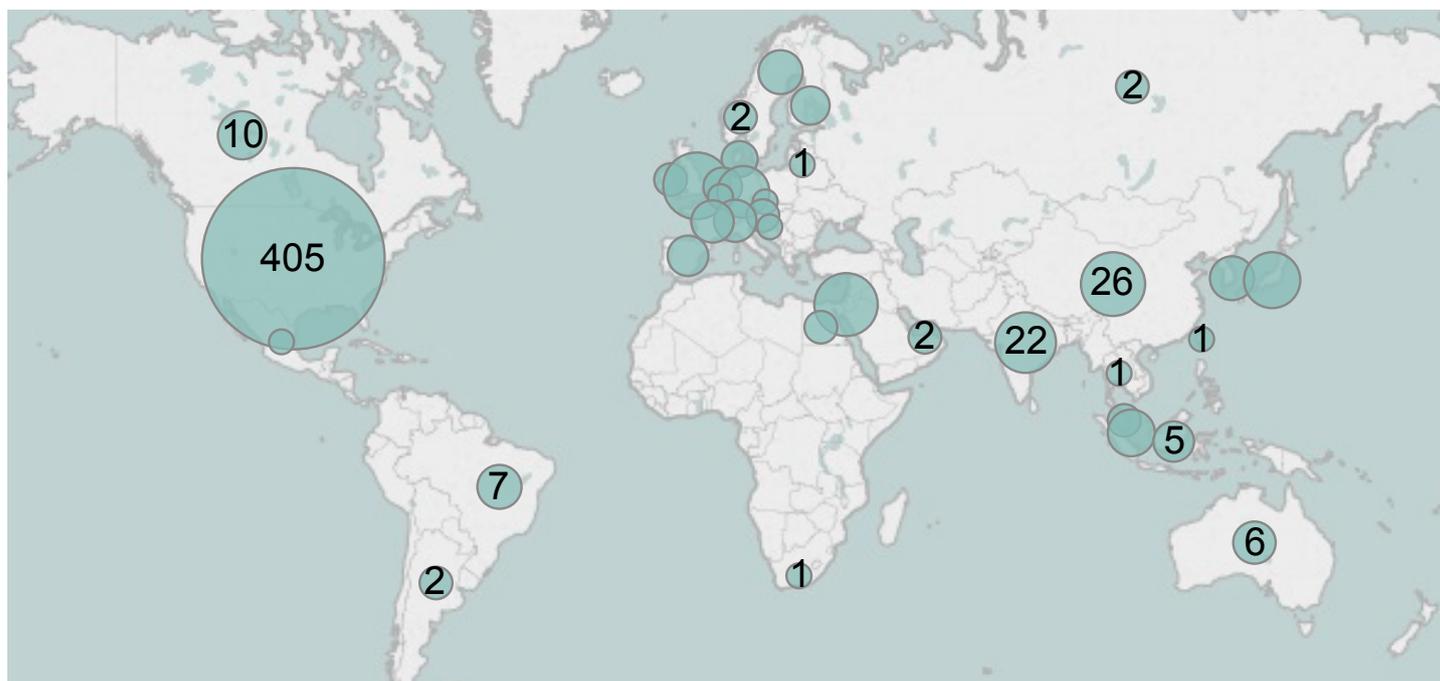
Exits

GCV Analytics tracked 642 exits involving corporate venturers and companies backed by such investors. This represents a 69% increase over the previous year's level (381). The US hosted 405 of those transactions, followed by the UK (40), China (26), Israel (25), India (22) and Japan (17). The total

estimated capital involved in the exits stood at \$207.72bn, which was 72% above the \$120.46bn registered in 2020. Most of the top exits in 2021 were acquisitions in addition to some high-profile initial public offerings (IPOs) and reverse mergers with special purpose acquisition companies (Spacs).

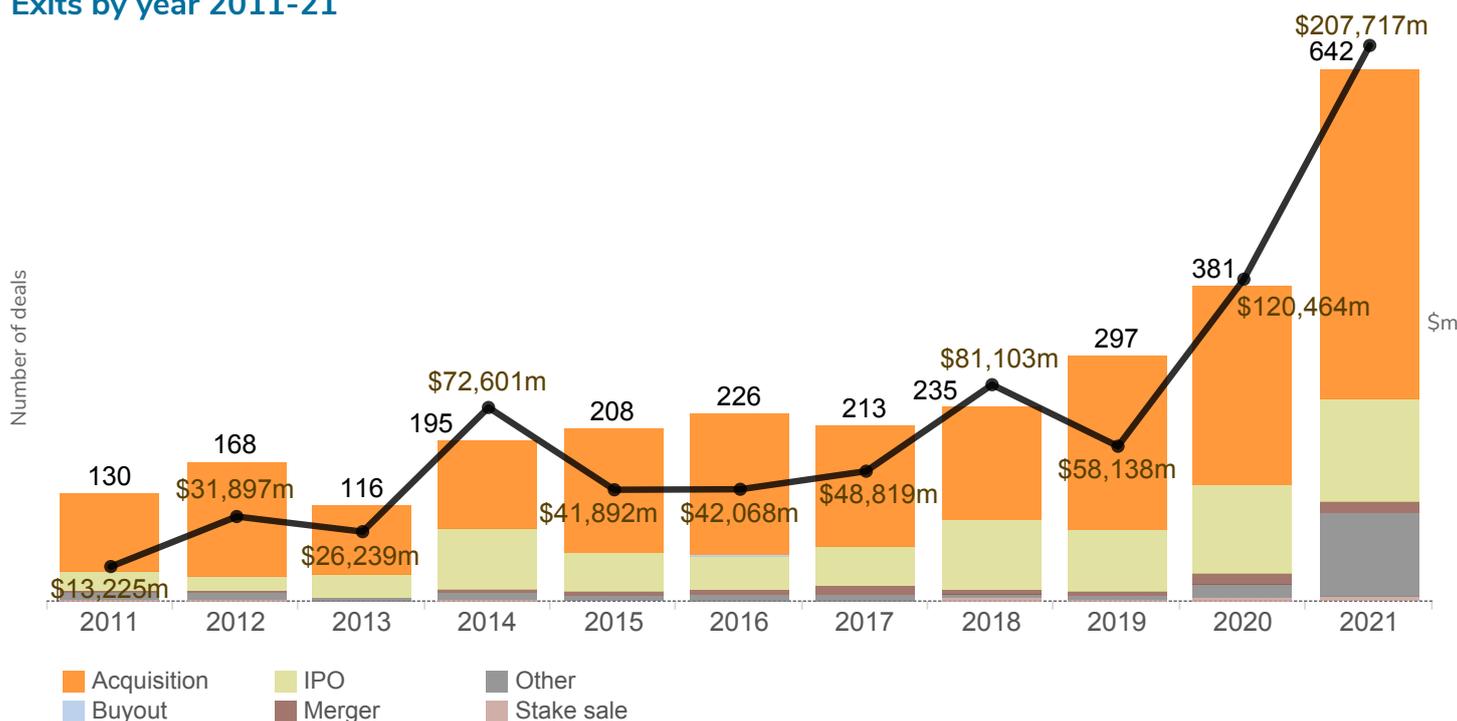
Global view of exits 2021

Total number of exits: 642



Source: GCV Analytics

Exits by year 2011-21



Source: GCV Analytics

Top exits of 2021

Portfolio company	Location	Sector	Round	Acquirer	Exit size	Exiting investors
Rivian	USA	Transport	IPO		\$11.9bn	Abdul Latif Jameel Amazon Baron Capital Group Coatue Cox Enterprises D1 Capital Partners Dragoneer Investment Group Fidelity Ford Motor private investors Soros Fund Management Sumitomo Third Point Ventures undisclosed investors
Wolt	Finland	Consumer	Acquisition	DoorDash	\$8.1bn	83North Coatue DoorDash DST Global EQT Ventures Goldman Sachs Highland Europe Iconiq KKR Lifeline Ventures Naspers Tiger Global Management Vintage Investment Partners
Auth0	USA	IT	Acquisition	Okta	\$6.5bn	Bessemer Venture Partners Deutsche Telekom K9 Ventures Meritech Capital Partners NTT Docomo NXT Corp Partners Portland Seed Fund Salesforce Sapphire Ventures Silicon Valley Bank Telstra Trinity Ventures World Innovation Lab
Kuaishou	China	IT	IPO		\$5.4bn	Boyu Capital Sequoia Capital Temasek Tencent Yunfeng Capital
VillageMD	USA	Health	Acquisition	Walgreens Boots Alliance	\$5.2bn	Adams Street Partners Athrium Capital Management Kinnevik Oak HC/FT Town Hall Ventures Walgreens Boots Alliance
Coupang	South Korea	Consumer	IPO		\$4.55bn	BlackRock Greenoaks Capital LaunchTime Rose Park Advisors Sequoia Capital SoftBank Wellington Management
Lucid Motors	USA	Transport	Other		\$4.3bn	BlackRock Churchill Capital Corp IV Fidelity Franklin Templeton Mitsui Neuberger Berman Private Equity Funds Public Investment Fund (PIF) Wellington Management Winslow Capital Management
Krafton (PUBG)	South Korea	Media	IPO		\$3.75bn	Bluehole PUBG Studio Striking Distance Studios Tencent
JD Logistics	China	Services	IPO		\$3.2bn	China Development Bank China Life Insurance China Merchants Group China Structural Reform Fund Hillhouse Capital Management Industrial and Commercial Bank of China JD.com Sequoia Capital Tencent
Paidy	Japan	Financial Services	Acquisition	PayPal	\$2.7bn	500 Startups Arbor Ventures Cherubic Ventures CyberAgent Fidelity Goldman Sachs Itochu JS Capital Management MS Capital PayPal Recruit Holdings SBI Group Soros Fund Management Susquehanna International Group Tybourne Capital Visa Wellington Management

Source: GCV Analytics

1 US-based electric jeep developer Rivian went public in an \$11.9bn IPO, giving exits to corporates e-commerce firm Amazon, automaker Ford, conglomerates Cox Enterprises and Sumitomo as well as vehicle distributor Abdul Latif Jameel. The offering follows about \$10.5bn in funding for the company since it was founded in 2009. The company increased the number of shares in the offering from 135 million to 153 million and priced them at \$78.00 each, above the \$72 to \$74 range it had set. It floated on the Nasdaq Global Select Market and the price made it the largest IPO last year. Rivian began deliveries of its all-electric pickup truck, the R1T, in September this year and its sports utility vehicle, the R1S, is scheduled to follow suit in December. It is largely pre-



DoorDash agreed to acquire Finland-based food delivery service Wolt in a €7bn all-share deal

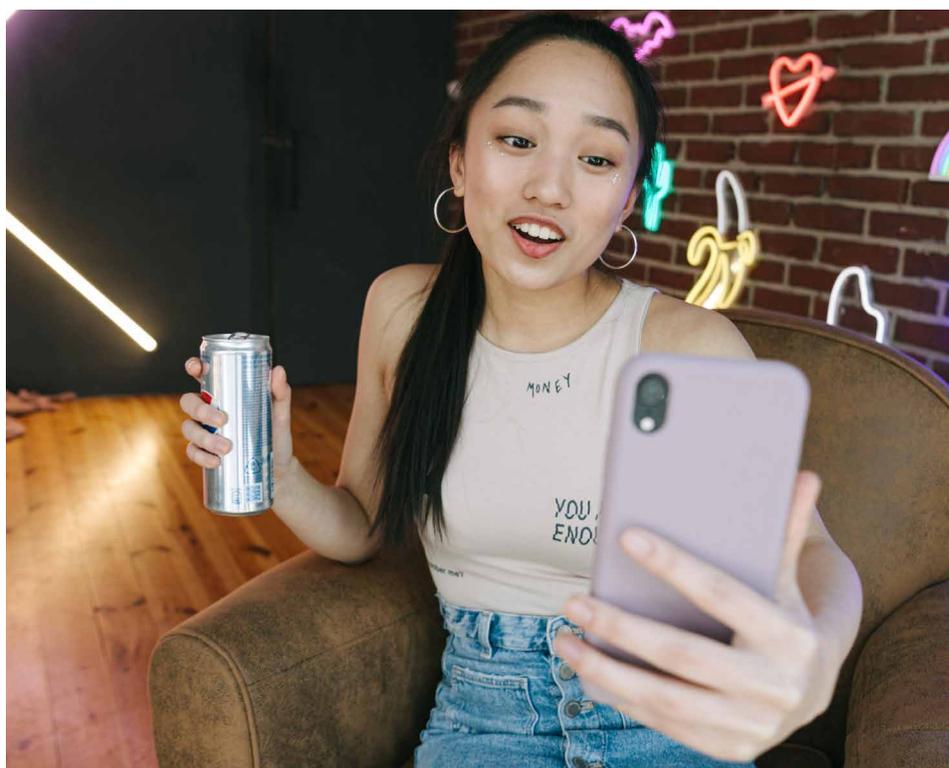
revenue but generated a \$994m net loss for the first six months of the year.

2 Online food ordering service DoorDash agreed to acquire Wolt, a Finland-based food and consumer delivery service that counts internet group Prosus as an investor, in a €7bn (\$8.1bn) all-share deal. The transaction includes a retention pool sized at about €500m for

Wolt's 4,000 employees and its management team. The company had raised approximately \$856m in funding before. Founded in 2014, Wolt operates an online platform which allows customers in 23 countries to order food, groceries and other consumer goods from local shops to be delivered to them at home. The purchase will allow DoorDash to expand its reach to a host of new markets.

3 Identity authentication technology provider Okta agreed to acquire US-based identity verification platform developer Auth0 for a total of \$6.5bn, giving an exit to telecoms firms NTT Docomo, Telstra, Deutsche Telekom as well as Salesforce. Founded in 2013, Auth0's software platform enables app development teams to secure and authorise access for users, mobile devices and other applications.

4 China-based video streaming platform developer Kuaishou Technology raised \$5.4bn in an IPO on the Hong Kong Stock Exchange that scored exits for internet groups Tencent and Baidu. The company issued about 365 million shares priced at HK\$115 (\$14.83) each. Its shares closed at HK\$300 on the first day of trading, giving it a market cap of roughly \$160bn mark. Kuaishou has built a short-form social video app with more than 300 million daily active users. Its chief rival, Douyin, is better known internationally as TikTok.



Kuaishou has built a short-form social video app with more than 300 million daily active users

5 Pharmacy operator Walgreens Boots Alliance (WBA) paid \$5.2bn to increase its stake in US-based primary care provider VillageMD from 30% to 63%. WBA had made an initial \$250m investment in VillageMD in July 2020, at the time pledging a total of \$1bn in equity and convertible debt financing over the next three years – the precise

mix of which was not disclosed – to give it a 30% stake. VillageMD operates a network of 230 primary care services providers across 15 US markets under the Village Medical brand. The company will use the proceeds to speed up an initiative to open at least 600 co-located Village Medical at Walgreens outlets by 2025 across 30 US markets, with 1,000 planned by 2027.



credit: BonnieLou2013 / WikiMedia Commons

South Korea-based Coupang runs an e-commerce platform with a same-day delivery service

6 Coupang, a South Korea-based online marketplace backed by SoftBank, floated on the New York Stock Exchange in an upsized \$4.55bn IPO. The company priced 130 million shares at \$35.00 each, above the price range of \$32 to \$34 it had set earlier. Founded in 2010, Coupang runs an e-commerce platform that offers a wide range of consumer goods through a same-day delivery service. It increased its annual revenue 91% to almost \$12bn in 2020 and cut its net loss from \$699m to \$475m.



credit: Lucid Motors

New York Stock Exchange-listed Lucid Motors, a US-based electric vehicle provider has been developing a luxury sedan dubbed the Lucid Air

7 Lucid Motors, a US-based luxury electric vehicle provider backed by diversified conglomerate Mitsui, agreed to execute a reverse merger with special purpose acquisition company Churchill Capital Corp IV, giving it a listing on the New York Stock Exchange, following Churchill's flotation in a \$1.8bn IPO in July 2020. Saudi Arabia's Public Investment Fund anchored a \$2.5bn private investment in public equity financing (PIPE) for the company at an initial pro-forma equity valuation of approximately \$24bn. Lucid has been developing a luxury sedan dubbed the Lucid Air that is slated for subsequent release. It also expects to launch a luxury sports utility vehicle dubbed Gravity in 2023. In addition to its own vehicles, it also plans to offer its technology to third parties.

8 South Korea-based computer game publisher Krafton, backed by gaming and internet group Tencent, raised KRW4.3 trillion (\$3.75bn) in its IPO. Krafton offered 8.65 million shares priced at the top

of a revised KRW400,000 to KRW498,000 (\$350 to \$436) range, making it the second largest IPO held in the country so far. The amount was about 25% smaller than the one disclosed earlier, after a regulator demanded the company amend its filings. Formed by video game producer Bluehole as a holding group in 2018, Krafton oversees subsidiaries including Bluehole Studio, PUBG Studio and Striking Distance Studios. It has sold some 70 million copies of its battle royale game, PlayerUnknown's Battlegrounds.

9 JD Logistics, the logistics offshoot of China-headquartered e-commerce group JD.com, floated on the Hong Kong Stock Exchange in a HK\$24.6bn (\$3.2bn) IPO. The offering consisted of approximately 609 million shares priced at HK\$40.36 each, towards the lower end of the IPO's HK\$39.36 to HK\$43.36 range. JD.com's stake in the spinoff was diluted from 79.1% to 64.4% in the offering. It had raised \$2.5bn from investors including internet and gaming

group Tencent and insurance firm China Life in 2018. Formed by JD.com as its delivery services arm, JD Logistics combines artificial intelligence technology with a China-wide network of warehouses to deliver e-commerce products to customers within 24 hours. The IPO proceeds will go to strengthening its logistics infrastructure.

10 Digital payment processing firm PayPal agreed to acquire one of its portfolio companies, Japan-based consumer finance service provider Paidy, for about \$2.7bn. After the acquisition is complete, the company will continue to operate under the leadership of its founder and executive chairman Russell Cumber and president and CEO Riku Sugie. Founded in 2008, Paidy provides a buy-now-pay-later service which makes it possible for customers to make instant credit purchases, which they can subsequently repay on a monthly basis. PayPal plans to use the acquisition to strengthen its capabilities and presence in the Japanese market.



Global Corporate Venturing Leadership Society



GCV Leadership Society mission:

Informing, connecting and transforming the global corporate venturing ecosystem

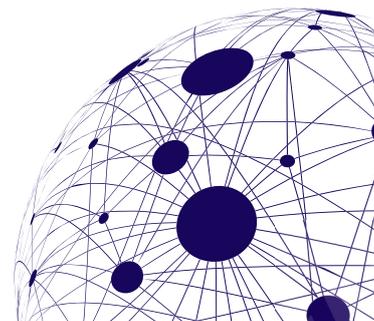
The GCV Leadership Society sets the standards for long-term sustainability of corporate venturing and innovation communities worldwide. The Society provides data, information, and benchmarking services to its members, opportunities to develop professional skills and mentor next generation leaders, platforms to find and work with the best entrepreneurs and co-investors, thereby elevating the overall success and impact of the corporate venture capital industry.

Benefits	Newly-formed CVCs (under 2 years since formation)	Premium Level	Luminary Level
GCV news / website access	2 users	Unlimited users	Unlimited users
GCV Event Tickets (annual) Additional event ticket discount*	1 15%	2 20%	4 25%
GCV Institute Credit Additional Institute course discount*	\$1,800 10%	\$2,500 10%	\$3,000 10%
Deal-flow management (GCV Connect Powered by Proseeder)	2 users	Unlimited users	Unlimited users
Event Partnership Discount	10%	15%	20%
Institute Alumni and Members-only gatherings	Included	Included	Included
Invitations to various VIP sessions	Included	Included	Included
Access to industry sector expertise	Included	Included	Included
Right to showcase membership with GCV logo	Included	Included	Included
Assistance in arranging 1:1 meetings at GCV events	Included	Included	Included
Biennial Editorial Interview / Overview of your CVC	n/a	Included	Included
Portfolio Company Showcase	n/a	2	4
Advisory Board Seat	n/a	by invitation only	1
Branding on Leadership Society Marketing Materials	n/a	n/a	Included
Annual	\$9,995	\$15,500	\$26,500
2 Years	\$17,500	\$28,000	\$50,000

*Group packages available for additional savings

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Coming in 2022

- Online Job Listings (members can post for free)
- CVC Industry Directory (Society members highlighted)
- Benchmarking Services (additional fees apply)

For more information or to apply today, contact Janice Mawson:
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