



2021

NEW YORK STOCK EXCHANGE

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from the investors at the
forefront

Space Investment Quarterly

Q1 2021



\$186.7B

Cumulative Equity Investment Since 2012

1,480

Unique Companies

\$4.5B

Q1 Investment

77

Q1 Number of Companies Receiving Investment

Front cover image courtesy of the New York Stock Exchange.

This photograph shows the New York Stock Exchange where in 2019, Virgin Galactic began trading as a publicly traded company under the ticker \$SPCE through a merger with Special Purpose Acquisition Company (SPAC) Social Capital Hedosophia, which arguably ushered in the current SPAC rush.

Q1 2021

Welcome to the Q1 2021 Edition of the Space Investment Quarterly.

Coming off a massive year of investment in the space economy, the trend towards larger late-stage deals continued in Q1, with the top 10 rounds accounting for 77% of total investment in the quarter. At the early-stage, we're seeing larger deal sizes at higher valuations and looser terms as VCs push to deploy the historical amounts of capital they raised in 2020. Given the continued bull market, 2021 is off to a frenzied start as companies race to exit.

Investors liquidated \$6.8B of value in 14 exits in Q1, driven primarily by acquisitions and IPOs in Applications. However, more exits are on the way with eight space company SPACs announced so far this year, representing an aggregate \$16.0B of equity value. Expected to close in Q2, these transactions will add \$2.9B of new cash to the target companies' balance sheets. Seven of the eight announced SPAC mergers have targeted space Infrastructure companies focused on small launch, satellite hardware, and in-space manufacturing. These companies vary significantly in terms of quality and risk; most are highly speculative from a public markets perspective, with many pre-IPO and some pre-revenue. But there are a few with significant revenue and strong fundamentals to support their billion-dollar valuations. It's worth noting that while space SPACs have received a lot of attention, they represent just 6% of the total \$54B pending SPAC mergers announced YTD. We welcome the access to additional capital that SPACs offer for Infrastructure companies, but are cautious that valuations and growth targets may be out of reach for companies that don't have a defensible data angle.

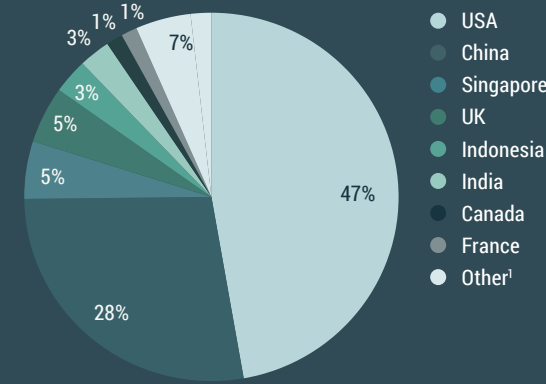
This all bodes well for public market investors who, until now, have been forced to watch the growth of the space economy from the sidelines. One new route to invest in the category is a portfolio of space stocks through ARK Investment's new space ETF (\$ARKX), which launched in early April. Cathie Wood's new ETF is already on track to be one of the most successful fund launches ever, with inflows exceeding \$445M in the first 4 days. We expect to see at least a few more space companies going public via SPAC before the end of the year, which will bolster the pool of available options to add to the ETF.

However, ARKX has received quite a bit of criticism on social media due to the makeup of its holdings. The fund includes a few big aerospace and defense contractors, the Infrastructure companies that most people associate with space, but the largest holding of the ETF is Trimble (\$TRMB), a Distribution company that brought us the first commercial GPS receivers in 1984 (see more: [The GPS Playbook](#)). The portfolio also includes holdings that left outsiders struggling to see the space connection. However, ARK's investments have significant alignment with our thesis at Space Capital, which recognizes space-based technologies as the "invisible backbone" that power our global economy. GPS, Geospatial Intelligence, and Satellite Communications play a critical role in most major industries, from agriculture and logistics to retail, marketing and finance. Our favorite pick on the ARKX ETF list is Deere & Company (\$DE). Tractors have been utilizing space tech to drive autonomously for decades and AgTech has been an early adopter of satellite imagery to enable precision farming. As we like to say: **In the same way that every company today is a technology company, every company of tomorrow will be a space company.** 

Rise of the Space Startups

CUMULATIVE EQUITY INVESTMENT FROM 2012 TO PRESENT

TOTAL INVESTMENT BY GEOGRAPHY



1,480

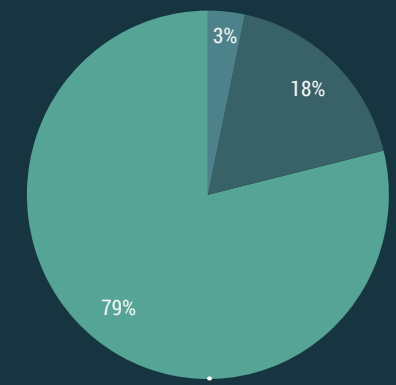
Number of Companies Receiving Investment

\$186.7B

Equity Investment in Space Companies

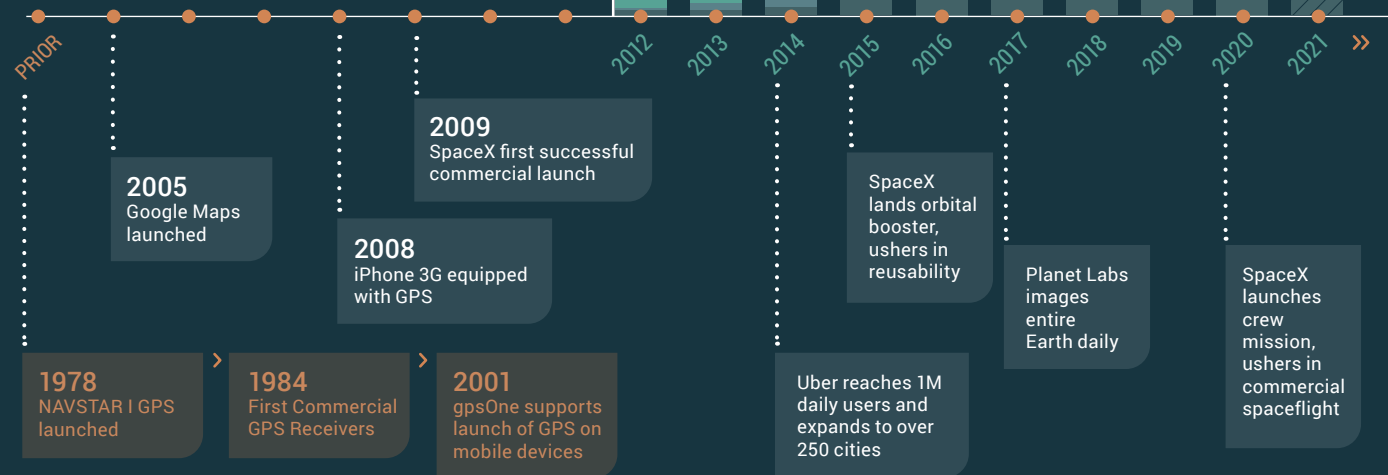
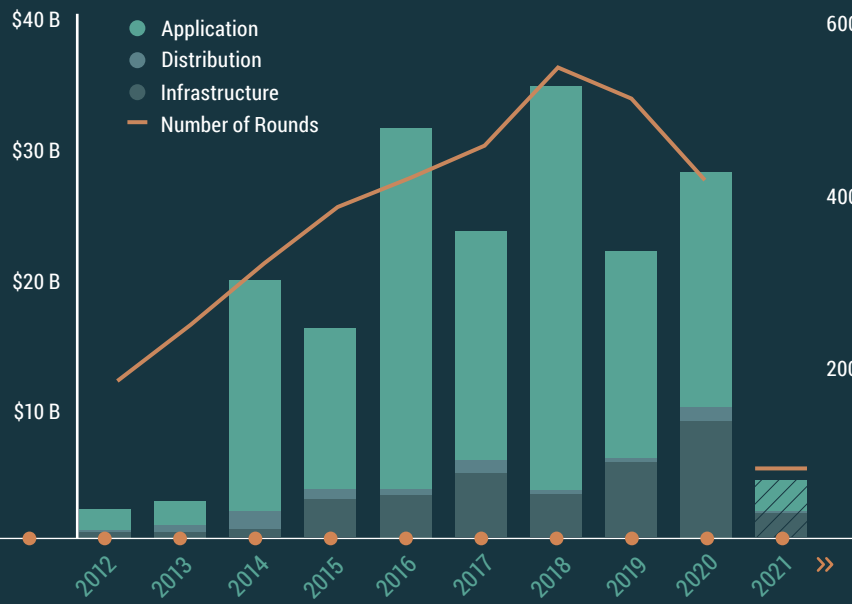
Over the last 10 years, there has been \$186.7B of equity investment across 1,480 unique companies in the space economy, led by investment in the U.S. and China, which collectively account for 75% of the global total. Investors deployed another \$4.5B into space companies in Q1, which was the fourth consecutive quarter of declining investment after a record quarter in Q2 2020. However, the trend towards larger, late-stage deals continued in Q1 with the top 10 rounds accounting for \$3.5B or (77%) of the total investment in the quarter. Early-stage activity remains healthy, accounting for 41% of rounds closed in Q1. Following a recording year of Infrastructure investment, the stack now accounts for 18% of total investment in the last 10 years.

TOTAL INVESTMENT BY STACK



\$147.6B Application
\$6.1B Distribution
\$33.4B Infrastructure

ANNUAL INVESTMENT BY STACK



1. "Other" consists of countries each representing less than 1% of funding.



Year to Date

EQUITY INVESTMENTS

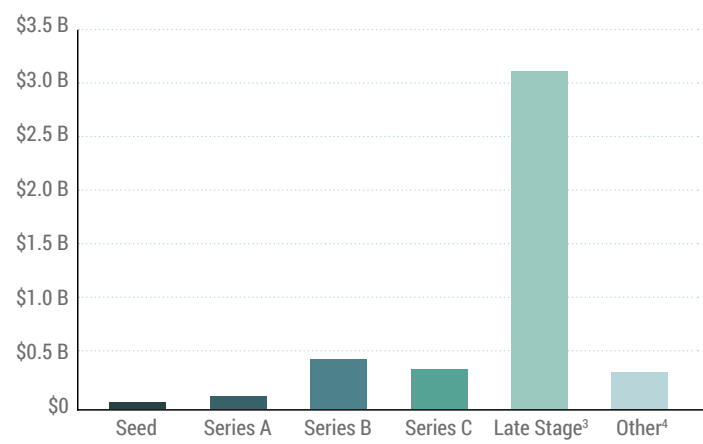
\$4.5B

NUMBER OF ROUNDS
78

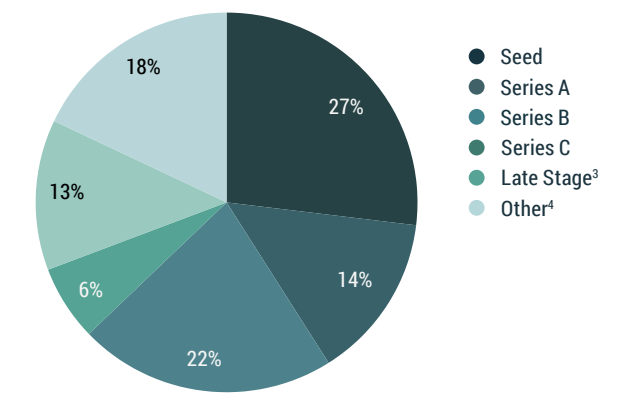
EARLY-STAGE INVESTMENT²
\$189M

EARLY-STAGE ROUNDS
32

BY STAGE • INVESTMENT AMOUNT



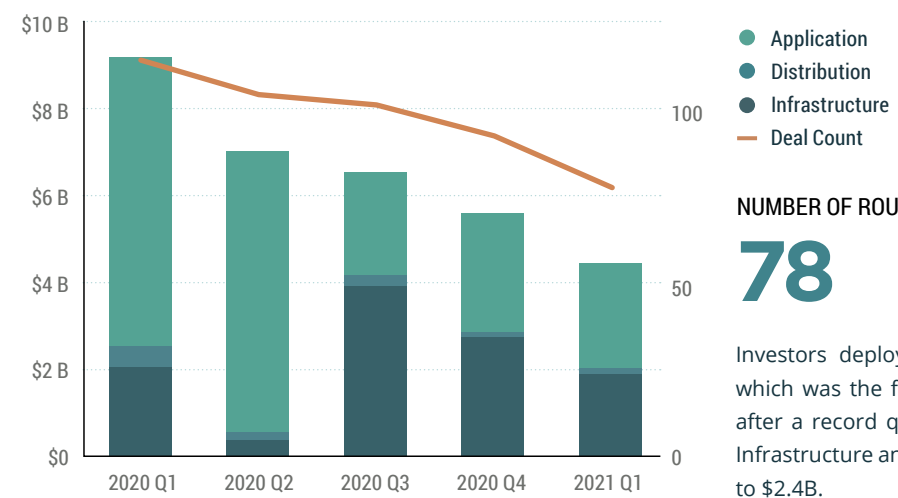
BY STAGE • ROUND SHARE



The trend towards larger, late-stage deals continued with \$3.4B invested in Late Stage/Other rounds in Q1. Overall, investment in the top 10 rounds accounted for \$3.5B, or 77% of total space investment YTD.

Another 78 rounds closed in Q1 (1% decrease Q/Q). Early-stage deal activity remained healthy with 32 rounds, accounting for 41% of all rounds closed YTD. Within Applications, the number of rounds decreased by 12% Q/Q, Infrastructure rounds decreased by 14%, and Distribution rounds increased by 33%.

BY TECH STACK • INVESTMENT AMOUNT AND DEALS BY QUARTER



NUMBER OF ROUNDS IN Q1
78

Investors deployed another \$4.5B into space companies in Q1, which was the fourth consecutive quarter of declining investment after a record quarter in Q2 2020. Another \$1.9B was invested in Infrastructure and investment in Applications decreased by 11% Q/Q to \$2.4B.

2. Early-stage consists of Pre-Seed, Seed, and Series A rounds.

3. Late-stage consists of Series D+ and Liquidity Rounds.

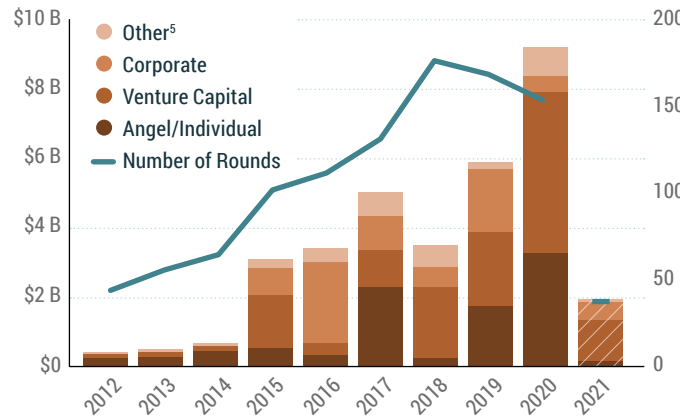
4. "Other" includes non-traditional investments and self-capitalization from Jeff Bezos, Elon Musk, Richard Branson, and Robert Bigelow who are classified as Individual investors providing large investments (hundreds of millions) in their own companies through unclassified rounds.

Infrastructure

TOTAL EQUITY INVESTMENT SINCE 2012

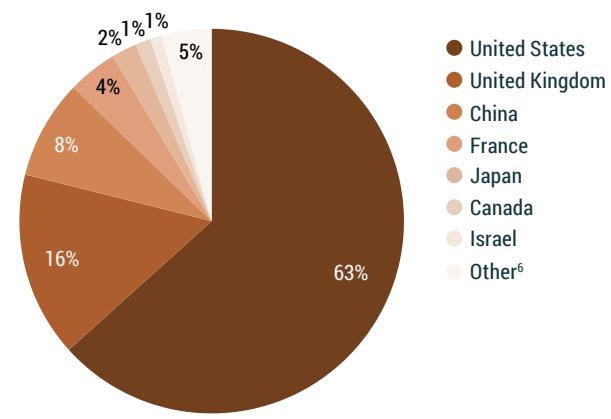
\$33.0B

ANNUAL INVESTMENT SOURCE



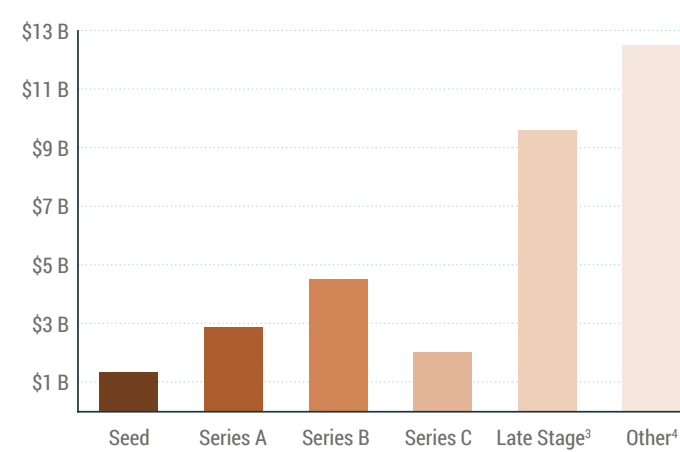
Another \$1.9B was invested in the Infrastructure stack in Q1 driven by mega-rounds in SpaceX (\$850M) and OneWeb (\$400M). Over the past decade, 447 Infrastructure companies have raised \$33.0B in cumulative equity investment that has radically increased access to orbit, enabled distributed networks of small satellites, and laid the foundation for ubiquitous global connectivity.

CUMULATIVE INVESTMENT GEOGRAPHY



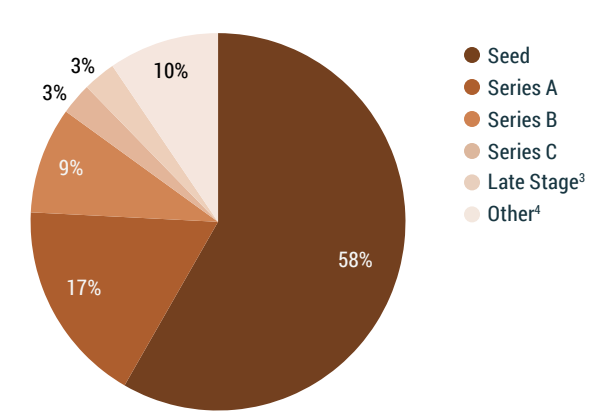
U.S. companies lead global investment in space Infrastructure accounting for 63% of the total capital since 2012. The U.K. has grown to 16% of total Infrastructure investment over the past 10 years primarily due to investments in OneWeb. China's unique approach to Infrastructure development through the Belt and Road Initiative means that space will likely continue to play an increasingly important role in the country's future.

BY STAGE • CUMULATIVE INVESTMENT AMOUNT



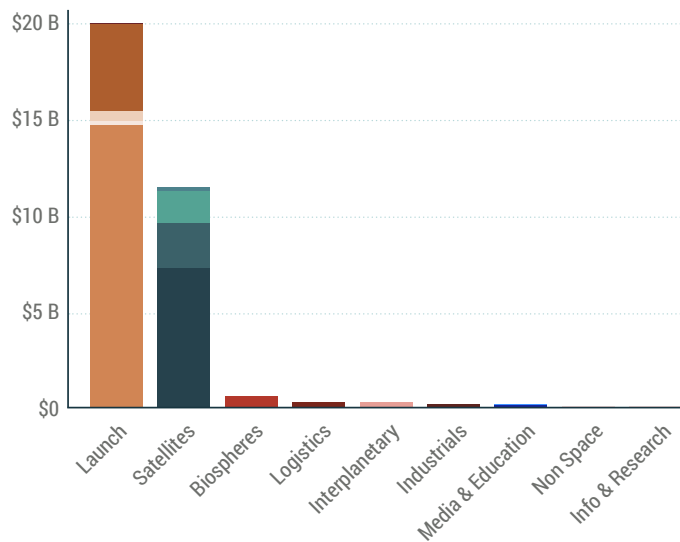
In Q1, investments in Launch and Satellites continued to be concentrated in late stage rounds, reflecting the capital intensity of those industries. Since 2012, 67% of capital invested into Infrastructure companies has gone to Late Stage and Other rounds. Early stage companies over that same period received just 13% of capital.

BY STAGE • CUMULATIVE ROUND SHARE



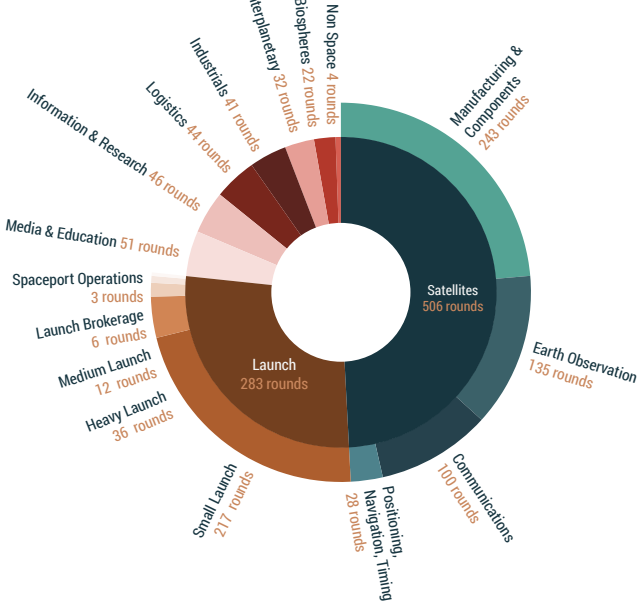
While Late Stage and Other rounds account for 67% of investment dollars since 2012, early-stage rounds have accounted for 75% of total equity rounds, reflecting a healthy pipeline of new companies that we expect to see mature over the coming years.

BY SECTOR⁷ • CUMULATIVE INVESTMENT AMOUNT



Another \$1.1B was invested in Launch in Q1, bringing the cumulative investment in the industry over the past decade to \$19.9B with 74% invested in Heavy Launch, reflecting the capital intensity of the sector. Another \$0.9B was invested in Satellites in Q1, bringing the ten year total to \$11.4B, which has resulted in a re-architecting of the sector from highly-capable single satellite nodes to low-cost distributed networks.

BY SECTOR • CUMULATIVE ROUND SHARE



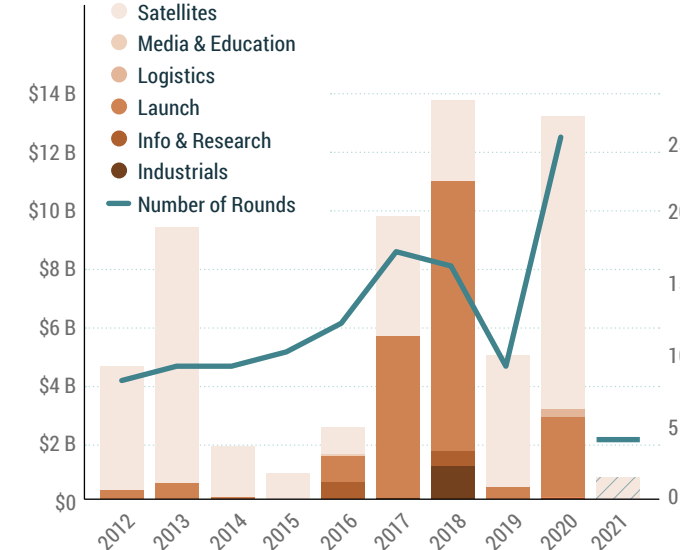
Although Launch has received the most investment since 2012, the Satellite industry has seen the most deal activity with 49% of total round share. The most active sectors include Manufacturing and Earth Observation, which account for 75% of Satellite industry rounds over the past decade. This innovation laid the foundation for distributed satellite networks and dynamic Geospatial capabilities.

TOP DEALS IN THE QUARTER

| COMPANY | ROUND | AMOUNT |
|-------------------|-----------|---------|
| SpaceX | Series O | \$850 M |
| OneWeb | Series E | \$400 M |
| ABL Space Systems | Series C | \$170 M |
| Axiom Space | Series B | \$130 M |
| Satrec Initiative | Corporate | \$97 M |
| Omnispace | Series C | \$60 M |
| Umbra Labs | Series A | \$32 M |
| PlanetiQ | Series B | \$19 M |
| GITAI | Series B | \$17 M |
| Commsat | Series C | \$15 M |

The top 10 deals in Q4 accounted for \$1.8B or 95% of total investment in the stack for the quarter with \$1.3B invested in seven U.S. companies, 72% of the total value, \$0.4B invested in one U.K. company, \$97M invested in a South Korea company and \$15M in a Chinese company.

EXITS BY SECTOR



Investors liquidated \$0.7B of value through four Infrastructure exits in Q1. Nearly all of the Infrastructure exits over the past decade have come in the form of acquisitions. However, seven more space Infrastructure SPAC mergers have been announced and are expected to close in Q2.

5. "Other" includes Foundations, Private Equity, Sovereign Wealth Funds, Mutual Funds, Crowd Platforms.

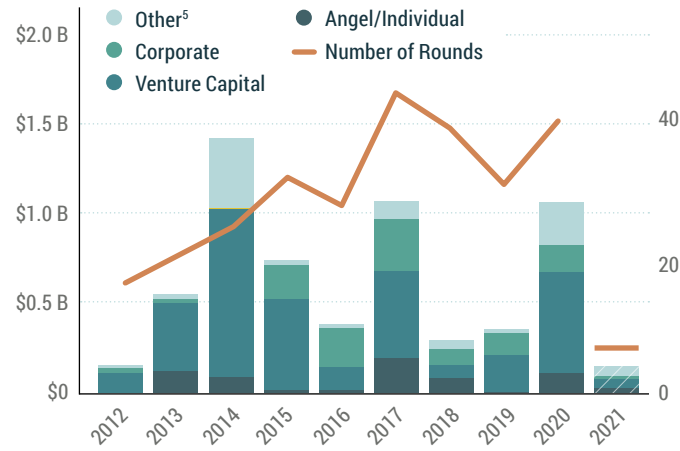
6. "Other" consists of Finland, Singapore, Argentina, and other countries which each represent less than 1% of funding.
7. See [industry segmentation chart](#).

Distribution

TOTAL EQUITY INVESTMENT SINCE 2012

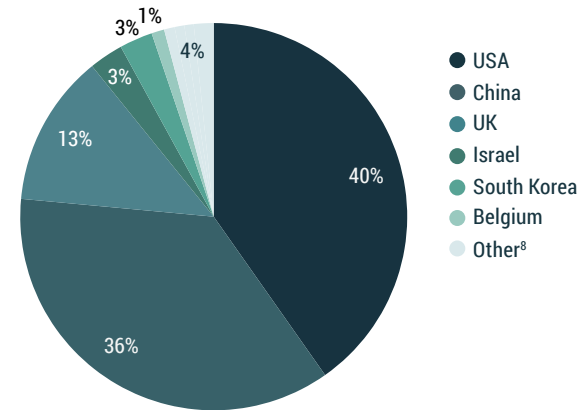
\$6.1B

ANNUAL INVESTMENT SOURCE



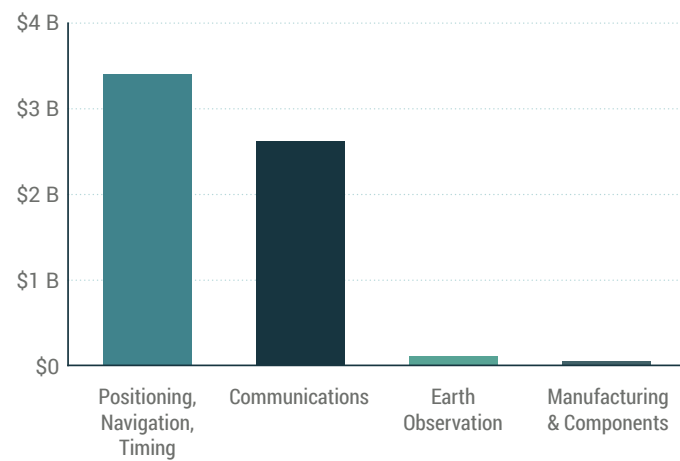
Another \$0.2B was deployed across 6 rounds in Q1 driven by venture capital investors. There has now been \$6.1B invested in Distribution companies across 265 rounds over the last 10 years. Investment at this layer of the stack includes hardware and software to connect and process data for hundreds of terrestrial use cases.

CUMULATIVE INVESTMENT GEOGRAPHY



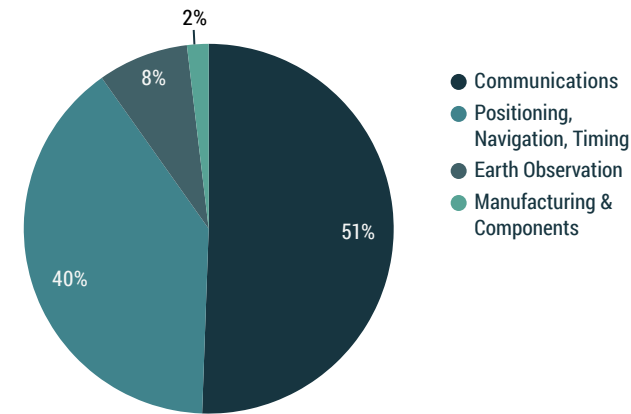
U.S. and Chinese companies have attracted the majority of capital within Distribution since 2012, accounting for 40% and 36% respectively. Investment in U.S. Distribution companies represents the majority of capital for Comms. This includes Skylo Technologies, a company using GEO satellites to provide ubiquitous IoT. Investment in Chinese Distribution companies has largely been in PNT and includes Qianxun SI, a leading high-precision positioning service provider.

BY SECTOR • CUMULATIVE INVESTMENT AMOUNT



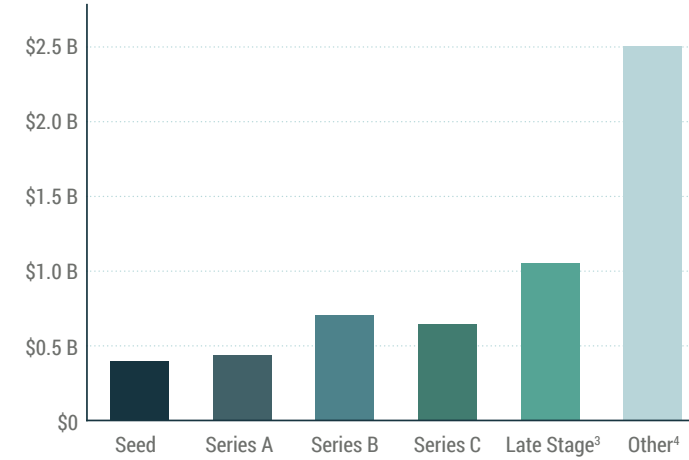
Since 2012, 57% of investment in Distribution has gone to PNT, followed by Comms with 30%. This is largely the result of location-based intelligence being added to end-user applications. While not formally tracked in this report, Amazon Location Services launched in December 2020 and could have a meaningful impact on technology at this layer of the stack.

BY SECTOR • CUMULATIVE ROUND SHARE



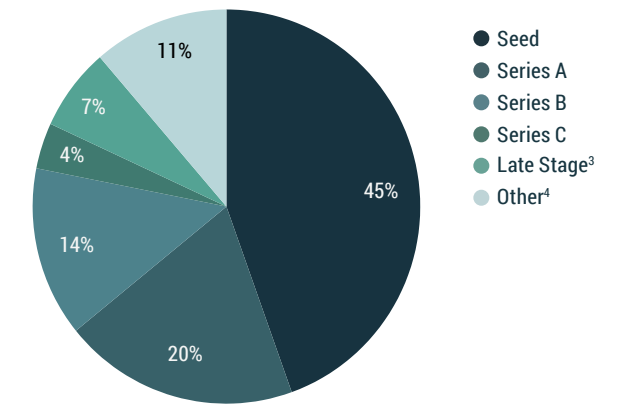
Similar to investment dollars, Comms and PNT account for 91% of all investment rounds in Distribution since 2012. Earth Observation represents a larger percentage of rounds than capital (8% vs. 1%), indicating a nascent sector with more early-stage activity. This activity includes SkyWatch, a company that provides a digital infrastructure for the distribution of Earth observation data.

BY STAGE • CUMULATIVE INVESTMENT AMOUNT



Since 2012, 64% of capital in Distribution has been invested in Late Stage and Other rounds. Early stage companies over that same period received just 13% of capital. Investments at this layer of the stack are becoming more software and big data oriented.

BY STAGE • CUMULATIVE ROUND SHARE



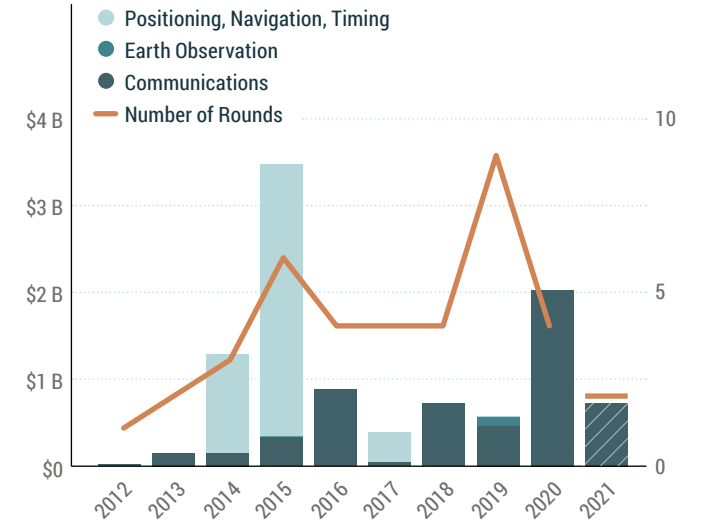
Early-stage rounds account for 65% of total equity rounds in Distribution since 2012. This may suggest a higher level of experimentation and fewer break-out companies at this layer of the stack, relative to the others.

TOP DEALS IN THE QUARTER

| COMPANY | ROUND | AMOUNT |
|-------------------------|-------------|--------|
| SafeGraph | Series B | \$45 M |
| Isotropic Systems | Series B | \$44 M |
| Lyteloop Technologies | Corporate | \$40 M |
| Focal Point Positioning | Series B | \$8 M |
| Leaf Space | Series A | \$7 M |
| Transcelestial | Undisclosed | \$2 M |

The top three deals in Q1 accounted for 88% of the total investment in the quarter. SafeGraph, focused on providing the most accurate point of interest (POI) and foot traffic data, raised a \$45M Series B while Isotropic Systems, a satellite communications company that is developing multi-service, high-bandwidth terminals, raised a \$44M Series B.

EXITS BY SECTOR



Investors liquidated \$0.7B of value in two Distribution exits in Q1. Since 2012, 90% of Distribution exits have come in the form of acquisitions with nearly all exits (98%) occurring in the Comms and PNT sectors. PNT was particularly attractive to acquirers in 2014 and 2015 for its exposure to Location Based Services. Over the past couple of years, Comms acquisitions have become more common as investors seek exposure to IoT.

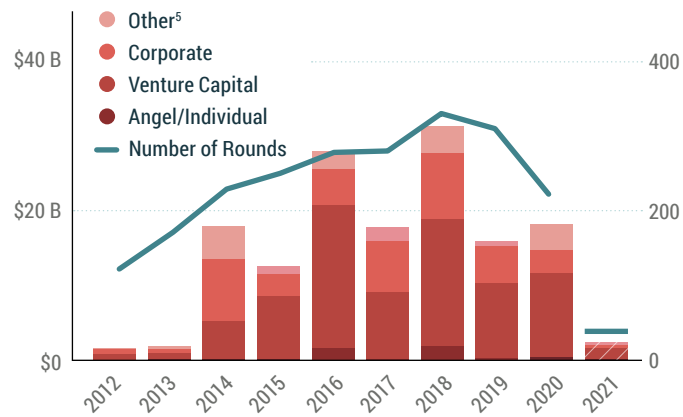
8. "Other" includes Germany, India, France, and other countries which each represent less than 1% of funding.

Applications

TOTAL EQUITY INVESTMENT SINCE 2012

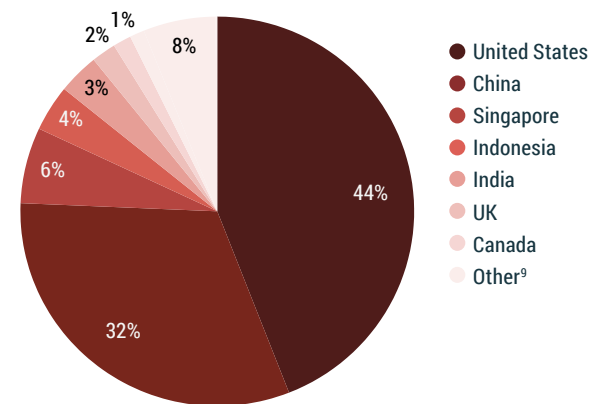
\$147.6B

ANNUAL INVESTMENT SOURCE



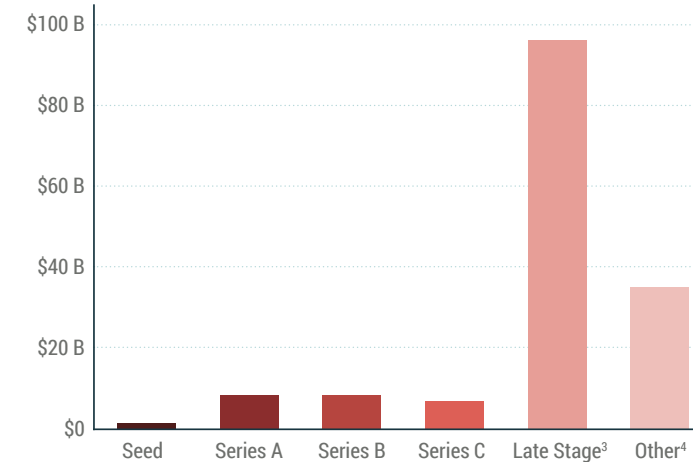
Another \$4.8B was invested across 36 rounds in the Applications stack in Q1, which was dominated by mega-rounds in PNT. There has now been \$147.6B invested into 912 companies in Applications over the past 10 years, bringing location-based intelligence to the masses through ride-hailing, on-demand delivery, and micro-mobility. The majority of investment in the quarter (62%) came from Venture Capital.

CUMULATIVE INVESTMENT GEOGRAPHY



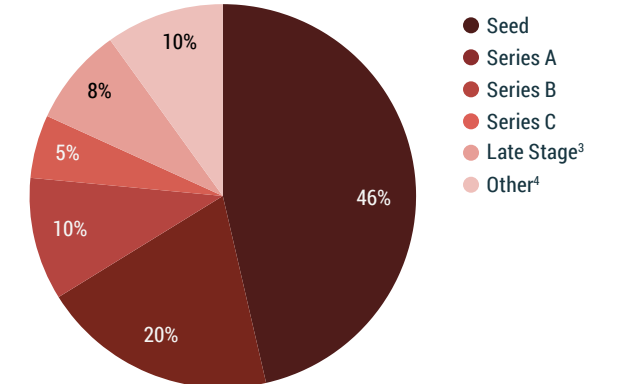
U.S. companies continue to attract the largest share of Applications investment, accounting for 44% of the total since 2012. China closely follows the U.S. with 32% of total investment in the stack.

BY STAGE • CUMULATIVE INVESTMENT AMOUNT



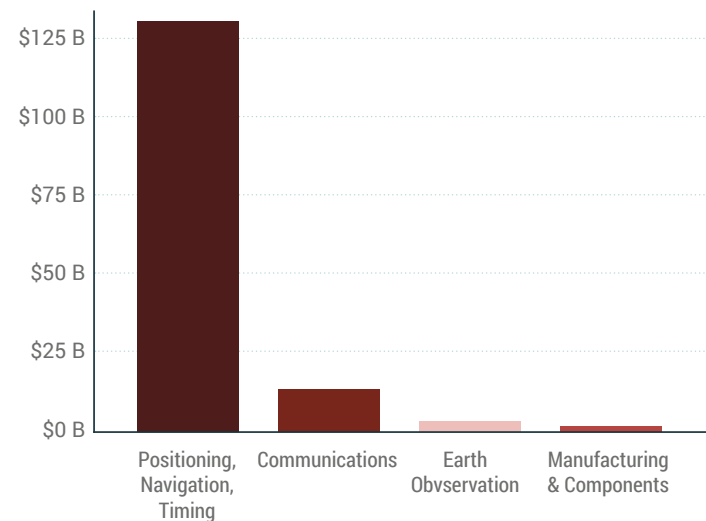
Investment in Applications continues to be concentrated in Late Stage deals (61%), as companies stay private longer and require larger amounts of capital to continue scaling operations.

BY STAGE • CUMULATIVE ROUND SHARE



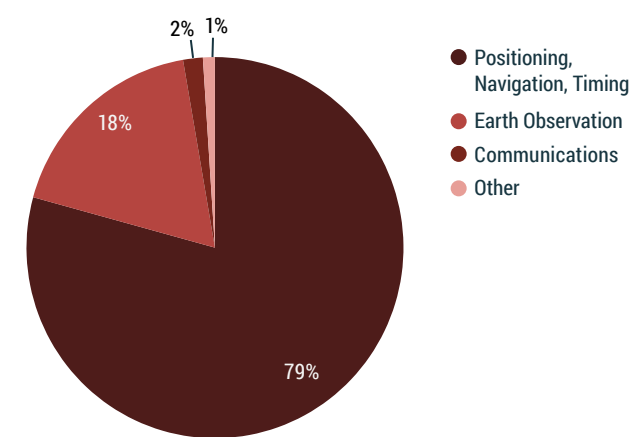
Early-stage rounds in Applications have represented 66% of the total since 2012, suggesting relatively greater success acquiring follow-on funding than Infrastructure and Distribution.

BY SECTOR • CUMULATIVE INVESTMENT AMOUNT



Capital continues to be heavily concentrated in the PNT sector, driven by investment in Location-Based Services, accounting for 87% of total Q1 investment at this layer of the stack. Applications attracted significant investment globally during the past year in response to COVID-19, particularly in the on-demand delivery and ride-hailing segments, a trend that continued in Q1.

BY SECTOR • CUMULATIVE ROUND SHARE



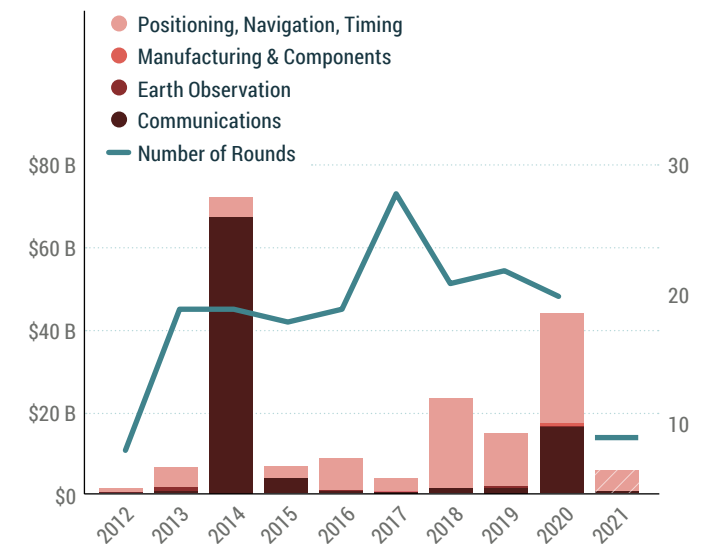
PNT also accounts for the vast majority (78%) of all investment rounds in the Applications stack since 2012. Earth Observation (EO) represents a much larger percentage of rounds than capital (18% vs. 2%), indicating a nascent sector with more early-stage activity. There are a number of notable early-stage companies actively working to unlock the full potential of EO Applications.

TOP DEALS IN THE QUARTER

| COMPANY | ROUND | AMOUNT |
|--------------------|-------------|-----------|
| GoPuff | Series G | \$1,150 M |
| Instacart | Series I | \$265 M |
| Deliveroo | Series H | \$180 M |
| Luokung Technology | PIPE | \$120 M |
| FourKites | Series D | \$100 M |
| Tomorrow.io | Series D | \$77 M |
| Budbee | Series C | \$74 M |
| Via (Automotive) | Undisclosed | \$60 M |
| DroneDeploy | Series E | \$50 M |
| Oxbotica | Series B | \$47 M |

The top 10 deals in Q1 accounted for \$2.1B or 39% of total investment for the quarter with the largest round, a \$1.2B Series G going to GoPuff, a digital delivery service operating in over 650 U.S. cities. Instacart, a grocery delivery service, raised a \$265M Series I and Deliveroo, an online food delivery company in the UK, raised a \$180M Series H. These three show that later-stage on-demand delivery businesses are continuing the fundraising momentum created since the IPO of DoorDash.

EXITS BY SECTOR



Investors liquidated \$5.6B of value in 9 Applications exits in Q1. Unlike Infrastructure and Distribution, Applications has seen a meaningful share (11%) of exits from IPOs. The largest exits this quarter were the acquisition of Fitbit by Alphabet for \$2.1B and Deliveroo's \$2.1B IPO.

⁹ "Other" includes Netherlands, France, Luxembourg, and other countries which each represent less than 1% of funding.



With another \$4.5B invested into 77 space companies in Q1, there has now been \$186.7B of equity investment into 1,480 unique companies in the space economy over the past 10 years. VCs invested another \$2.8B into 46 space companies in Q1, of which \$2.4B went to U.S. companies. Investors liquidated \$6.8B of value in 14 space company exits in Q1, driven primarily by acquisitions and IPOs in the Applications stack. Additionally, eight space company SPACs have been announced this year with an aggregate equity value of \$16.0B. Expected to close in Q2, these transactions will add \$2.9B of new cash to these companies' balance sheets. These companies vary significantly in terms of quality and risk; most are highly speculative from a public markets perspective, with many pre-IPO and some pre-revenue. But there are at least a few in the group with significant revenue and strong fundamentals to support their billion-dollar valuations.

Select Portfolio Milestones¹⁰

[ICEYE reports contracts valued at \\$50M in 2020 and announces new launches to meet demand \(Iceye\)](#)

[SpaceX prototype Starship SN10 successfully launched and landed high-altitude flight test \(SpaceX\)](#)

[Planet's Dove satellites capture the first images of the Ever Given blocking the Suez Canal \(Twitter\)](#)

[Analytical Space wins \\$26.4M to establish optical network \(SpaceNews\)](#)

[SpaceX successfully launches a total of 420 Starlink satellites across 7 missions during Q1 \(Twitter\)](#)

[AgTech company FluroSat acquires Dagan to become Regrow \(EIN Presswire\)](#)

[Nanoracks completes first SpaceX rideshare mission \(Nanoracks\)](#)

[GHGSat detected a giant methane leak \(10,000kg/h\) as it happened \(Bloomberg\)](#)

Additional Resources

The framework for this report is based on [The GPS Playbook](#), a report co-authored by Space Capital and Silicon Valley Bank, which looks at how a space-based technology has generated trillions of dollars in economic value and some of the largest venture outcomes in history. Using GPS as an analogy, we believe that Space-based Communications and Geospatial Intelligence sectors have the potential to generate over \$1 trillion in equity value over the next decade.

¹⁰ Space Capital and Space Angels portfolio companies.



Our Methodology

Space Capital launched the *Space Investment Quarterly* in 2017 with the aim of uncovering insights about investing in the space economy. The data shown in this report is gathered from a number of sources across many categories, and no single piece of data can be added to our databases until confirmed by multiple sources. Our reported data is subject to change over time as previously undisclosed deals are added to our database. Below is a select list of our data sources:

2,889
Companies Tracked

4,776
Rounds Catalogued

395
Exits Catalogued

Investment Databases

- Pitchbook
- Crunchbase
- Mattermark
- CB Insights

Crowd Platforms

- AngelList
- SeedInvest
- Kickstarter
- Indiegogo

Confidential Sources

- Diligence Process
- Company Management
- Co-Investors
- Commercial Partners
- Government Partners

Public Announcements

- Press Releases
- SEC Filings
- Events

News

- Bloomberg
- CNBC
- Fortune
- SpaceNews
- TechCrunch

About

Space Capital is a seed-stage venture capital firm investing in the Space economy, specifically focused on unlocking the value in Space technology stacks such as GPS, Geospatial Intelligence, and Communications. We are actively investing out of our [third fund](#) with \$70 million under management. Our space economy focus enables us to be a true partner to our portfolio companies and unlock significant value far in excess of our investment capital.

Assets

All charts and tables from this report are available for [download](#). This work is licensed under the Creative Commons Attribution-NoDerivatives 4.0 International License, which means content cannot be altered from its original form and must include Space Capital attribution. [Click here](#) to view a copy of this license.

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