
Construct Tech Market Update: Software and Technology Solutions for the Built Environment
April 2021

Strictly Confidential

Construction Technology Market Update

Featured Companies

Built Environment Practice Overview

Madison Park Group ("MPG") is a premier M&A and capital raising advisor to players in the global software economy. Within the industrial technology market, MPG has proven leadership in engineering software, supported by stalwart transactional success and hands on operational experience at leading software companies. In November 2020, MPG formed a strategic partnership with Ascentage Group ("Ascentage"), a business development and M&A advisory firm addressing the strategic and tactical business needs of growth-stage companies developing construction technology and software for the built environment. Ascentage's domain expertise in design, construction, infrastructure, and asset management technologies further enhances MPG's rapidly expanding industrial technology advisory practice.

MPG's and Ascentage's comprehensive knowledge of the market is built on consistent strategic dialogue with boards and executives at both emerging players and established incumbents, as well as regular ideation with global investors with vested interest in the market.

Featured Companies



Select Referenced Solutions

- ✓ Building Information Modeling (BIM)
- ✓ Generative design
- ✓ Geospatial Information Systems (GIS)
- ✓ Project planning, estimating, scheduling bidding and budgeting
- ✓ Project management/collaboration
- ✓ Pre-fabrication, modular and offsite construction
- ✓ Sustainable/new materials, including 3D printing
- ✓ Reality capture: photogrammetry, IoT and lidar
- ✓ ERP, supply chain and payments
- ✓ Facility, energy and infrastructure asset management

Our Dedicated Team

Trusted Advisors to Technology Vendors Serving the Built Environment

MADISON PARK GROUP

Ascentage

Hand-Crafted, Dedicated Advisory Team Combines Tenured Investment Bankers, Operating Executives, and Stalwart Transaction Support

R. Drew Ogden
Managing Director
Built Environment,
Robotics Practices

Tel: +1 (603) 227-0500 Ext. 21
rdogden@madisonparkgrp.com

Jeff Herriman
Managing Director
Built Environment
Practice

Tel: +1 (617) 513-9455
jherriman@madisonparkgrp.com

Michael Magruder
Managing Director
Supply Chain Management,
Manufacturing Practices

Tel: +1 (212) 660-9711
mmagruder@madisonparkgrp.com



Acquisition of



Founding Team



Recapitalization



Founding Team



Strategic Sale



BUILDING VENTURES



Strategic Sale



Founding Team



Strategic Sale



Founding Team



Strategic Sale



Founding Team



Strategic Sale



Strategic Sale



Strategic Sale



Strategic Sale



Recapitalization



Strategic Sale



Founding Team



8° EIGHT ROADS™



SCALE



Founding Team

Table of Contents

I. Industry Trends

II. Featured Companies

III. Comparable Transactions & Public Companies

I. Industry Trends

Construct Tech, Not Just Design Tech

Digital Transformation Driven by Strong Client Demand

Meeting Established Platforms, Newer Enabling Technologies and Point Tools

MADISON PARK GROUP

Ascentage



AR/VR solutions are engaging customers and stakeholders during design and sales processes, construction and to provide feedback post-commissioning



AI/ML brings speed and design alternatives to an expert-centric process that is labor and resource intensive



Photogrammetry, lidar and internet of things (IoT) tools are improving **reality capture**, complementing mobile-enabled construction management tools



Growing trend toward **industrialized construction**, including off-site production, pre-fabrication, robotics, and modular building



New material technologies offering lighter-weight, lower carbon solutions, accelerating the consolidation and digital transformation of construction supply chain



Advanced building controls and predictive maintenance systems enable better outcomes at lower costs during operation – **smart cities/smart buildings/smart infrastructure**

Design

Plan

Build

Operate

Our Thesis

Sustainable Growth - driving forces for the construct tech revolution have accelerated with the confluence of:

- climate change demanding new solutions
- continuing high demand for housing and infrastructure - renewable energy and transportation
- abysmal construction productivity and declining availability of skilled workers
- decades of underspending in innovation

Plan and Build - established construct tech platform companies - i.e., Autodesk, Bentley, Hexagon, Trimble - trace their roots to design and/or geospatial solutions. Whereas newer enabling technology-based startups have overwhelmingly focused on point tools or toolsets for planning/pre-construction and construction.

Post-COVID - the pandemic has accelerated the uptake of construct tech tools, especially those enabling collaboration, distance working and jobsite safety. Shrinking contractor backlogs and compressing margins have led to increased interest in improved productivity and cost reduction. The pandemic has also triggered longer term impacts as owners/developers rethink building and infrastructure investments.

Bottom Line - significant opportunities available for strategic and financial investors.

Dedicated Built Environment Team Leaders

R. Drew Ogden

Managing Director

rogden@madisonparkgrp.com



Jeff Herriman

Managing Director

jherriman@madisonparkgrp.com



Scott Boutwell

Business Development/Strategy

sboutwell@ascentageadvisors.com



Maturing Construct Tech Eco-System

Accelerating Strategic M&A Activity and
Well-Developed Capital Markets Raise Investor Attention

MADISON PARK GROUP

Ascentage

Cumulative Venture Funding and Landmark M&A Transactions

At the Start Autodesk's acquisition of Softdesk in December 1996 bolstered its dedicated architecture, engineering and construction (AEC) division, laying the foundation for the industry.

Strategic Activity Autodesk, Bentley, Hexagon and Trimble are serial acquirors; the selected transactions below represent the more significant milestones in their construct tech development.

Startups the current wave of built environment startups began to emerge in 2010. Today there are more than 5,000 startups globally across design, construction and asset management technologies, the lion's share are in the US.

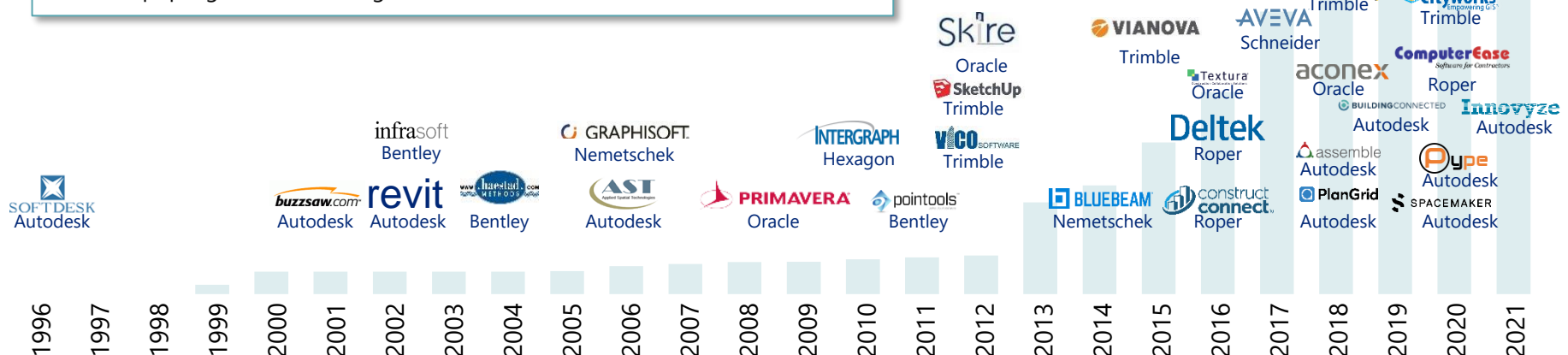
IPO/SPACs having been contemplated since 2002, Bentley IPO'd in September 2020, followed by SPAC transactions for View in November, and Matterport in February 2021. Procore has indicated an IPO for later this year.

Pivotal Years 2018 and 2019 had headline-making strategic M&A deals, plus the Softbank/Katerra mega funding event. Dedicated construct tech VC funds also began to emerge including Building Ventures, Brick and Mortar, and Blackhorn

Maturation and PE Interest – as 2010-15 vintage startups reached product/market fit, later stage funding rounds became more commonplace in 2019-20, piquing the interest of growth-oriented investment funds.

Cumulative funding for
construction startups
topped \$3.1 billion in 2020 ...

... with a further \$200 million
in Q1 2021



Robust Valuation Environment

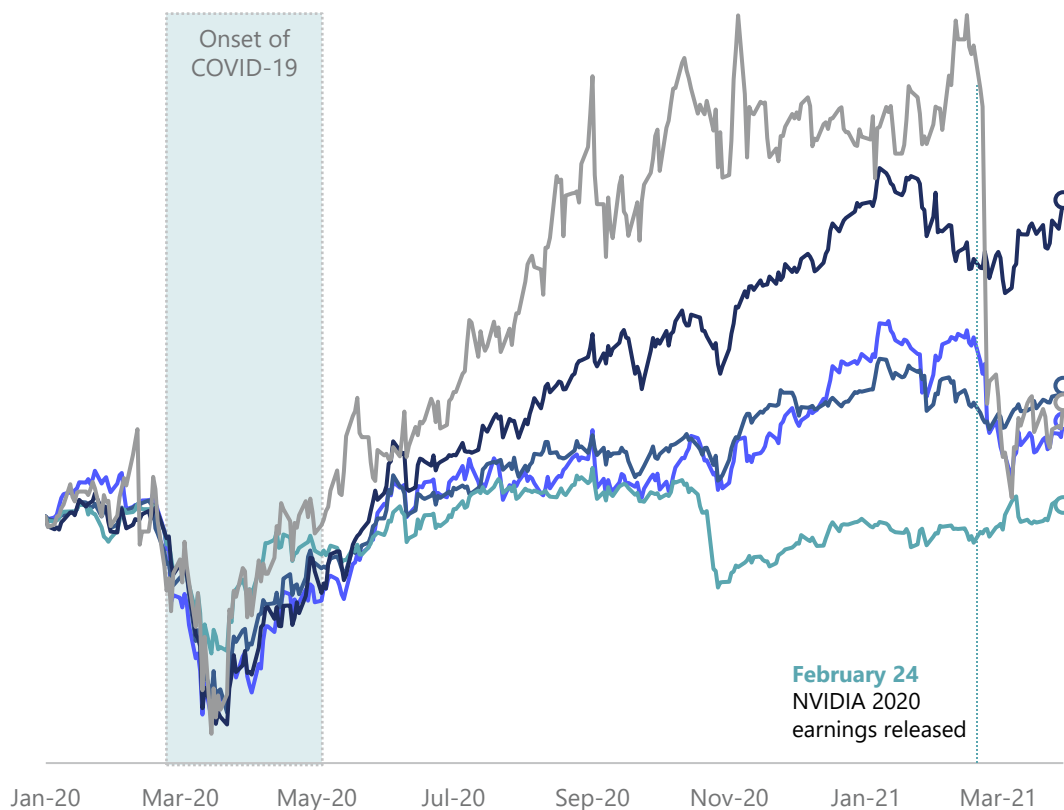
Design and GIS Firms Poised for Further Acquisitions,
But Gaming Firms Represent Credible New Acquirors

MADISON PARK GROUP

Ascentage

Public Company Forward Revenue Valuation Trending

EV / CY2021E Revenue Multiple Valuation Benchmark (Starting January 2020)



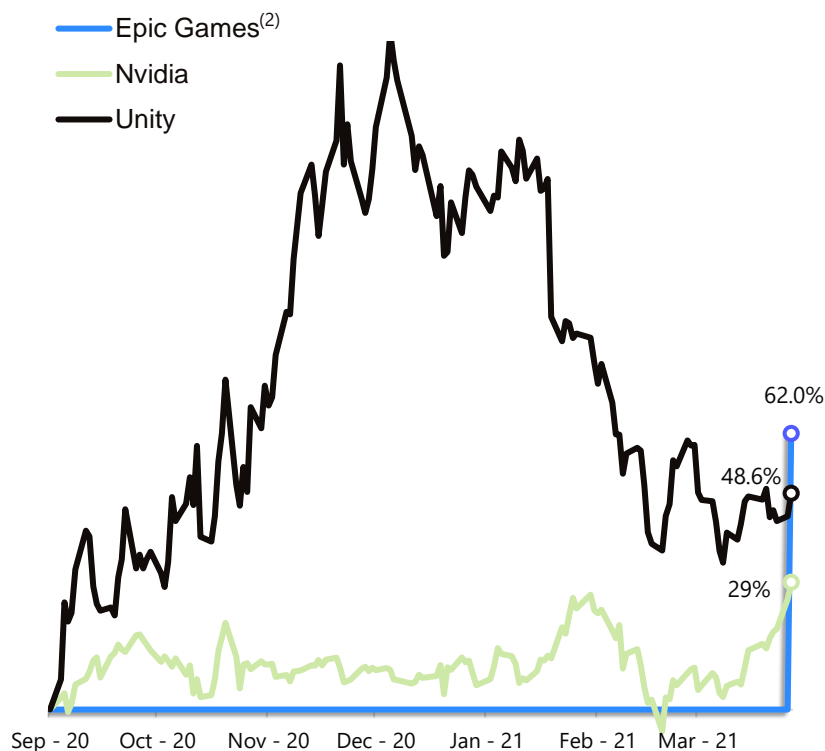
Index Group	Multiple Growth	EV / CY21E Revenue	CY21E Rev. Growth
GIS/ Hardware	51.4%	6.19x	8.3%
Industrial Technology	21.3%	4.20x	13.2%
Gaming	18.6%	15.36x	36.0%
Design	15.5%	11.85x	17.1%
ERP/ Horizontal	1.9%	3.83x	2.0%

Group	Companies			
GIS/ Hardware	FARO	HEXAGON	TOPCON	Trimble
Industrial Technology	AVEVA	Schneider Electric	FORTIVE	ROPER
Gaming	NVIDIA	unity		
Design	AUTODESK	Bentley	DASSAULT SYSTEMES	NEMETSCHEK GROUP
ERP/ Horizontal	IBM	ORACLE	sage	

Gaming Tech Vendors Emerge as Acquirers

Entering Construct Tech Via Design/Collaboration, But Credible Solutions for AR/VR Applications for Construction and Asset Management

Equity Performance: September 2020 – April 2021⁽¹⁾



Sources: Capital IQ, Pitchbook, LinkedIn, company websites, press releases

(1) Pricing from September IPO of Unity to April 13, 2021

(2) Private investment completed April 13, 2021 at an equity valuation of \$28.7 billion

Company

Built Environment



HQ: Cary, NC
Founded: 1991
Est. Employees: 1,000+
LTM Revenue (9/20): \$5 billion
EV Mar 2021: \$28.0 billion

- US video gamemaker and software company that offers its game engine technology to other developers
- Acquired Capturing Reality in March 2021 - photogrammetric software for 3D scans, allowing users to reconstruct objects from images or laser scans
- Acquired Twinmotion in 2019 - aimed at Revit (Autodesk) and SketchUp (Trimble) users



HQ: Santa Francisco, CA
Founded: 1991
Est. Employees: 3,000+
2020A Revenue: \$772 million
Market Cap: \$27.2 billion

- US video game software development company
- Acquired VisualLive in March 2020 - AR/VR solutions for AEC
- Partnered with Autodesk in 2018
- Game engine used by Revizto, 3D Repo, IrisVR, Tridify and other construct tech startups, as well as leading architectural firms



NVIDIA
HQ: Santa Clara, CA
Founded: 1993
Est. Employees: 18,000+
LTM Revenue (1/21): \$16.7 billion
Market Cap: \$377.2 billion

- Multinational chip manufacturer - designs graphics processing units (GPUs) for gaming and professional markets, and system on a chip units (SoCs) for mobile computing and automotive market
- Virtual GPU technology delivers accelerated virtual desktops that enable mobile access and secure remote collaboration for project teams in multiple locations
- Launched Omniverse Enterprise Platform in April 2021 – collaboration technology platform aimed at 3D design teams including architects and engineers

Established Incumbent Activity

Two IPOs and Numerous M&A Deals Mark Busy Year



'Business as usual' for Autodesk with six construct tech transactions

aurigo

\$8 million investment

April 2020

exposure to owner/operators of large-scale infrastructure in governments, water authorities and airports

bridgit

\$7 million investment

July 2020

investment in construction workforce planning software

Pype

acquisition

August 2020

Integrates submittal and closeout solutions with existing construction acquisitions

(Assemble, PlanGrid)

Factory_OS™

\$55 million investment

November 2020

Venture investment in producer of affordable modular homes

SPACEMAKER

\$240 million acquisition
(55.0x revenue)

November 2020

Provides AI and generative design tools for real estate development

Innovyze

\$1.0 billion acquisition
(10.0x revenue)

February 2021

Adds water infrastructure modeling, simulation, and predictive analyses

Largest acquisition in Autodesk history

MADISON PARK GROUP

Ascentage

Other Notable Transactions

Aveva acquires OSISoft

Industrial data management platform

P.16

Bentley IPO

Liquidity event for retirees and senior management

P.17

Bentley acquires Seequent

3D modeling software for geosciences

P.17

Esri acquires Zimbuni

Games engine-based visualization tools

P.19

Fortive spins out Vontier

Focus on remaining businesses including Accruent and Gordian

P.21

Hexagon acquires BlueOx

On-site cameras and construction visualization technology

P.22

Hexagon acquires Romax

Multi-physics design and simulation software

P.22

Nemetscheck acquires Dexma Energy

Energy management platform

P.24

Procore files for IPO

First VC backed Construct Tech firm to go public

P.26

Schneider acquires RIB

Construction technologies

P.29

Schneider acquires Etap

Software solutions for electrical utilities

P.29

Trimble divests non-related businesses

To MRI and Command Alkon

P.31

Sources: Capital IQ, Pitchbook, LinkedIn, company websites, press releases

Note: Does not include transactions completed in April 2021

Notable Investor Activity

Increase in Private Equity Interest in Construct Tech



Thoma Bravo emerges as platform aggregator within construction technology market



Platform Investment

April 2020

Supply chain management for heavy civil construction

Founded in 1976, with roots in providing solutions for producers of ready-mixed concrete, concrete products, aggregate, asphalt and cement.



Platform Investment

August 2020

Construction accounting software and payroll services for small- to mid-sized specialty contractors

Thoma Bravo has earlier experience in ERP for AEC industry via ownership of Deltek (2012-2016)



acquisition



November 2020

Trimble construction logistics business - provider of telematics solutions for concrete delivery



acquisition



December 2020

Trucking management software startup founded in 2017

MADISON PARK GROUP

Ascentage

Select Private Equity & Platform Transactions

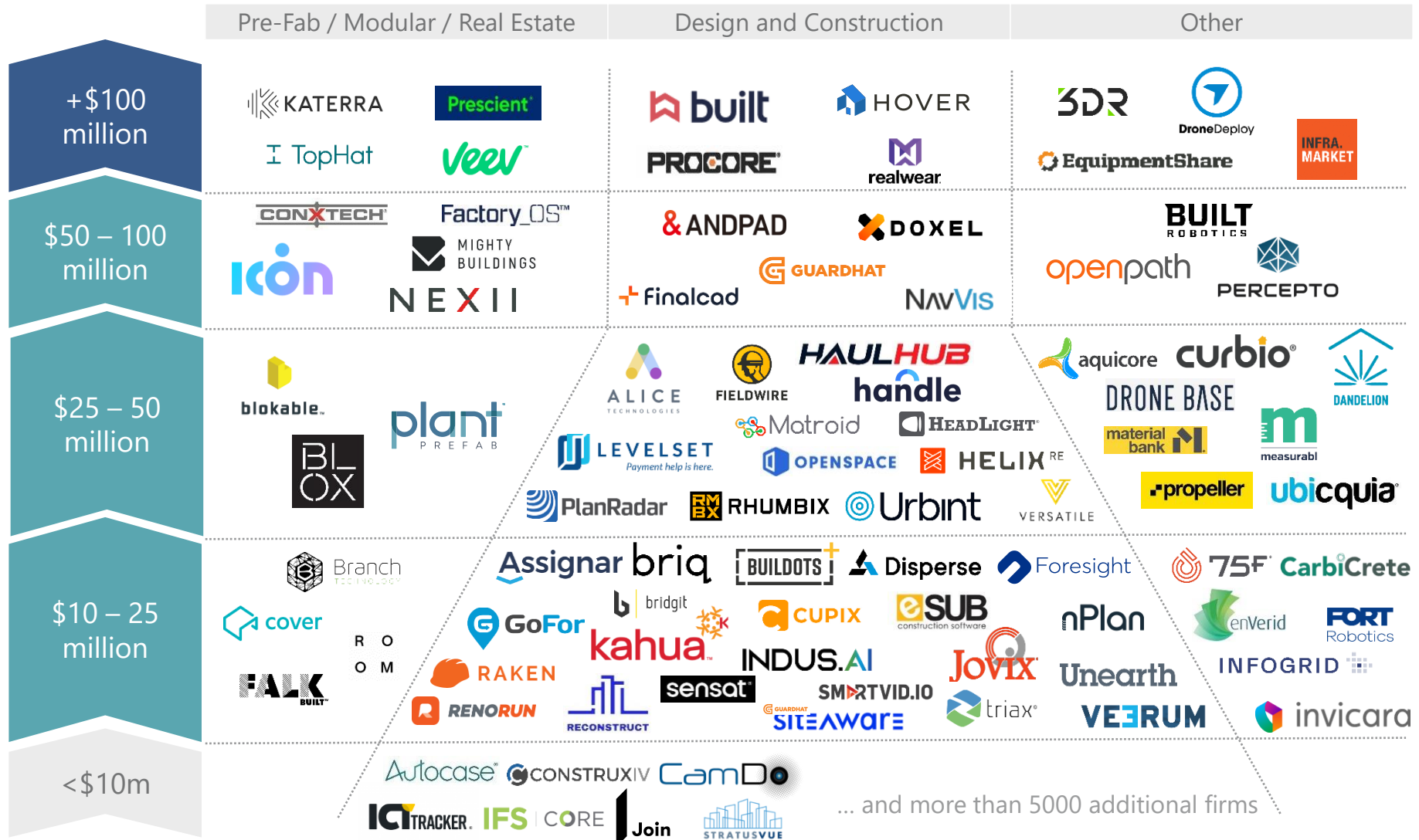
Date	Investor / Platform	Target
Feb-21	Battery NEWFORMA	BIM One
Feb-21	BainCapital BUILDERTREND	COCONSTRUCT
Jan-21	Mainsail Partners	JobNimbus
Dec-20	Riverside Acceleration Capital REDTEAM	Fieldlens
Nov-20	IEQT	thinkproject!
Nov-20	Apax PARTNERS GRAITEC	CADPOINT POWERING THE DESIGN PROCESS
Oct-20	TRUE WIND	AIA Contract Documents
Oct-20	Mainsail Partners	planHub
May-20	Apax PARTNERS eci	BuildTools
Feb-20	Battery	TECH SOFT 3D

Meaningful Venture Capital Fueling Startups

Aggregate Capital Raised Through March 2021

MADISON PARK GROUP

Ascentage



Approach to Fragmented Construction Market

Growing Market Share by Addressing Mid-Market Customers, Possibly via ERP-Funded Distribution Channels

MADISON PARK GROUP

Ascentage

Incumbent construct tech solutions focused on top half of construction market



Incumbent ERP providers cover wider range of firms with enterprise solutions



intuit **quickbooks**
Est. 250,000+ Licensees
in Construction

Historical Top-Down Go-to-Market Approach

- Emerging construct tech companies focus on 'tip of the iceberg' opportunities, ENR 400 largest US GCs and largest subcontractors, each with +\$500 million revenue and sizable employee bases
- Establishing product/market fit and lighthouse accounts with 'logos', but too few customers for expansive growth
- Total construction revenues of \$350 billion, but only 30% of the total market

Emerging Mid-Market Go-to-Market Approach

- Next stage of growth will address the broader construction marketplace and the needs of SME firms
- Potential opportunity to leverage channel and platform plays with construction ERP firms with significant installed client base and existing track record of enterprise licensing

III. Featured Companies

Autodesk

Business Overview

(\$ in millions)

Headquarters:	San Rafael, California
LinkedIn Employees (1-Yr. Growth):	12,947 (▲ 5%)
Website:	www.autodesk.com
Ownership Status:	Public (NasdaqGS: ADSK)
Acquisitions Since 2010:	60
Enterprise Value (EV):	\$61,192.4
LTM Revenue:	\$3,790.4
LTM EBITDA:	\$742.0
EV / LTM Revenue:	16.14x
EV / LTM EBITDA:	n/m
Net Debt (Cash):	\$332.4
Dry Powder:	\$15,549.6

Description:

Computer-aided design software for architecture, engineering, construction, manufacturing, and media

Select Built Environment Related Products/Businesses:

- AutoCAD
 - 2D/3D CAD
- Fusion 360
 - Cloud-based 3D CAD/CAM/CAE
- Revit
 - Building Information Modeling
- Maya
 - 3D Animation & Rendering

Autodesk Continues to Double Down in Construction Market

« Recent Acquisitions Augments and Ties Together Construction Assets

- [In February 2021](#), Autodesk acquired Innovyze, Inc., a Portland-based developer of water infrastructure modeling and simulation technology, for \$1 billion
 - ✓ Innovyze's software enable cost-effective and sustainable design of water distribution networks, water collection systems, water and wastewater treatment plants, and flood protection systems.
 - ✓ Provides comprehensive water modeling solutions that augment Autodesk's BIM offerings in civil engineering
- [In November 2020](#), Autodesk acquired Spacemaker, a Norway-based developer of AI-based building site optimization software, for \$240 million
 - ✓ Spacemaker's software allows architects and urban designers to quickly generate, optimize, and iterate on design options for building sites, taking into account design criteria and data like terrain, maps, wind, lighting, traffic, zoning, etc.
 - ✓ Spacemaker marks the fifth construction-based acquisition, joining Pype (Jul 2020), Assemble (Jul 2018), PlanGrid (Dec 2018), and BuildingConnected (Jan 2019), and thirteenth overall investment in the last three years
- [In July 2020](#), Autodesk acquired Pype, an AI-powered construction data processing platform, for an undisclosed amount
 - ✓ Autodesk intends to integrate Pype's data ingestion capabilities across the Autodesk Construction Cloud portfolio, enabling general contractors, subcontractors, and owners to automate workflows such as submittals and project closeouts

« Strategic Investments Setting Stage for Further Construction M&A Aspirations

- [In July 2020](#), Autodesk participated in a \$7 million investment round for Bridgit, a provider of construction workforce planning software
 - ✓ With the investment, Bridgit plans to integrate workflows between Bridgit Bench and Autodesk Construction Cloud, providing a critical link between preconstruction resource planning and site execution project management
- [In July 2020](#), Autodesk completed a follow-on investment in Factory_OS, a specialty modular construction services provider
 - ✓ The investment extends the last several years of collaborative efforts between Autodesk and Factory_OS in providing efficiently designed & manufactured affordable housing solutions

Aveva

Business Overview

(\$ in millions)

Headquarters:	Cambridge, England
LinkedIn Employees (1-Yr. Growth):	5,164 (▲ 8%)
Website:	www.aveva.com
Ownership Status:	Public (LSE: AVV) Schneider Electric majority
Acquisitions Since 2010:	10
Enterprise Value (EV):	\$14,183.0
LTM Revenue:	\$1,001.6
LTM EBITDA:	\$179.2
EV / LTM Revenue:	14.16x
EV / LTM EBITDA:	n/m
Net Debt (Cash):	\$5.7
Dry Powder:	\$3,725.9

Description:

Engineering design, information management, and software solutions for Oil & Gas, Marine, Power, Petrochemical & Chemical, and other markets such as AEC Fabrication, Paper & Pulp, Mining, and Pharmaceuticals

Select Built Environment Related Products/Businesses:

- Unified Project Execution
 - Construction planning and execution
- AVEVA Project Command Center
 - Capital project data and visualization with digital twin
- Detailed Engineering Design
 - Design and engineering integrated into digital twin

Aveva Focused on Industrial World

« OSLsoft Acquisition Cements Focus on Digital Transformation of Industry

- [In November 2020](#), AVEVA acquired IBM Digital Twin Partner OSI Soft, a provider of enterprise infrastructure systems for \$5 billion
 - ✓ OSL Soft provides end-to-end solutions that span edge, plant, and enterprise deployments
 - ✓ The combined company can drive greater sustainable efficiencies for many diverse essential industries, including consumer packaged goods (CPG), pharmaceutical, water and wastewater, and utilities, creating strengthened product offerings.

« Continued partnerships to strengthen AEC offerings

- [In December 2020](#), Aveva partnered with OEG to provide 3D cloud based virtual training solutions
 - ✓ The partnership integrates OEG's 3D advanced, remote learning content to optimize for safety and efficiency into AVEVA Unified Learning
- [In November 2020](#), Aveva expanded its cloud partnership with Microsoft
 - ✓ The partnership allows Aveva to utilize Azure AI and Cloud frameworks to drive digital transformation in the AEC space
- [In June 2020](#), Aveva expanded its Partnership with Schneider Electric with the launch of Industry Edge
 - ✓ The expanded partnerships and new industrial edge programs empower system integrators to leverage their domain expertise and become IT/OT convergence specialists and meet these needs for their customers
 - ✓ The Industrial Edge platform is built within the Schneider Electric Exchange platform and further solidifies the two companies' goal of digitally transforming industry

Bentley Systems

Business Overview

(\$ in millions)

Headquarters:	Exton, Pennsylvania
LinkedIn Employees (1-Yr. Growth):	4,383 (▲ 3%)
Website:	www.bentley.com
Ownership Status:	Public (NasdaqGS: BSY)
Acquisitions Since 2010:	37
Enterprise Value (EV):	\$13,718.5
LTM Revenue:	\$801.5
LTM EBITDA:	\$229.0
EV / LTM Revenue:	17.12x
EV / LTM EBITDA:	n/m
Net Debt (Cash):	\$172.7
Dry Powder:	\$3,681.5

Description:

Software solutions for engineers, architects, geospatial professionals, constructors and owner-operators for the design, construction, and operations of infrastructure

Select Built Environment Related Products/Businesses:

- MicroStation
 - Design and Modeling
- ProjectWise
 - Infrastructure Project Delivery
- AssetWise
 - Asset Performance Management
- PLAXIS
 - Simulation

AEC Leader Enters the Public Market But Maintains Tight Control

« Bentley Files for IPO after 36 Years of Family and Employee Ownership

- [In September 2020](#), Bentley announced the launch of an initial public offering (IPO) on the NASDAQ stock exchange
 - ✓ As part of the IPO, existing stockholders of Bentley sold 10,750,000 shares of Class B common stock, equivalent to roughly 4% of the company's total shares
 - ✓ Though the price of the IPO shares was initially guided to be \$17-\$19, the shares opened at \$22 on the offering date and rose to \$33.49 within the first day of trading, valuing the total company at ~\$8.7 billion
- Bentley's [S-1 IPO Prospectus](#) unveiled several strategic details about the company:
 - ✓ An "average historical annual revenue growth from acquisitions over the last six years [of] approximately 1.1%" indicates Bentley's acquisitions have been more oriented around adding product / technology capabilities than scale
 - ✓ Siemens' series of strategic investments in the company over the last several years amount to 34,764,592 shares or approximately 14% of the total Class B common stock shares

« Product-oriented Investment and M&A Strategy Continues

- [In March 2021](#), Bentley acquired Seequent, leader in 3D modeling software for geosciences for \$1.05 billion
 - ✓ The combination will add 10% to revenue and other key financial measures, and will enhance infrastructure digital twins to help understand and mitigate environmental risks
- [In November 2020](#), Bentley committed \$100 million of venture funding to accelerate infrastructure digital twin
 - ✓ The fund targets investments in transformational digital twin solutions supporting the design, simulation, construction, and/or operations of physical infrastructure.
- [In June 2020](#), Bentley acquired NoteVault, a San Diego-based provider of voice-based field automation for construction management, for an undisclosed amount
 - ✓ The acquisition expands upon Bentley's SYNCHRO digital construction environment with mobile field applications to track and manage labor, materials and equipment

Dassault Systèmes

Business Overview

(\$ in millions)

Headquarters:	Vélizy-Villacoublay, France
LinkedIn Employees (1-Yr. Growth):	17,206 (▲ 0%)
Website:	www.3ds.com
Ownership Status:	Public (PAR: DSY)
Acquisitions Since 2010:	35
Enterprise Value (EV):	\$59,781.9
LTM Revenue:	\$5,446.2
LTM EBITDA:	\$1,158.9
EV / LTM Revenue:	10.98x
EV / LTM EBITDA:	n/m
Net Debt (Cash):	\$3,283.9
Dry Powder:	\$13,917.3

Description:

3D modeling applications, simulation applications creating virtual twins of products or production systems, social and collaborative applications, and information intelligence applications

Select Built Environment Related Products/Businesses:

- Civil Infrastructure Engineering
 - Design and engineering tools
- Integrated Built Environment
 - Design collaboration
- Inclusive Urban Future
 - Visualization/collaboration - 2D, 3D, BIM and time-based
 - Virtual Singapore

Dassault Formalizes New Strategy Following Medidata Acquisition

« Dassault Unveils Strategic Direction for the Coming Years

- [In February 2020](#), CEO Bernard Charles announced Dassault's strategic plan for the next decade centered around a vision of "Things to Life"
 - ✓ Dassault's strategy centers around the vision of "Things to Life", the idea that Dassault can expand the Digital Twin concept from its current place in traditional engineered / manufactured products or "things" towards the human experience
 - ✓ To achieve this strategy, Dassault will focus on developing its leadership in Life Sciences and Healthcare, recently fortified through the 2019 acquisition of clinical trials software leader Medidata Solutions
 - ✓ Continuing emphasis on Manufacturing and Infrastructure and Cities

« 2020 Acquisitions Aimed at Strengthening Underlying Data Management & Analytics

- [In November 2020](#), Dassault acquired NuoDB, a provider of cloud-native distributed SQL database technology, for an undisclosed amount
 - ✓ The acquisition advances Dassault's 3DEXPERIENCE platform cloud and data science strategy, offering enterprise clients the ability to serve large SaaS deployments in a rapidly developing distributed SQL market
 - ✓ Dassault had held a 16% ownership interest in the company since 2013
 - ✓ NuoDB had revenues of about \$6 million in 2019
- [In July 2020](#), Dassault acquired Proxem, a provider of AI-powered semantic processing software and services, for an undisclosed amount
 - ✓ Dassault intends to leverage Proxem's data science capabilities within the modelling and simulation applications in the 3DEXPERIENCE platform
 - ✓ Proxem's main software, Proxem Studio, will be integrated into the 3DEXPERIENCE platform to complement NETVIBES EXALEAD information intelligence applications

ESRI

Business Overview

(\$ in millions)

Headquarters:	Relands, California
LinkedIn Employees (1-Yr. Growth):	5,291 (▲ 7%)
Website:	www.esri.com
Ownership Status:	Private
Acquisitions Since 2010:	11
Enterprise Value (EV):	Unknown
2016 Revenue:	\$1,100
LTM EBITDA:	n/a
EV / LTM Revenue:	n/a
EV / LTM EBITDA:	n/a
Net Debt (Cash):	n/a
Dry Powder:	n/a

Description:

Provider of Geographic Information System (GIS) mapping services intended to provide market intelligence and insights. The company captures, stores, manipulates, analyzes, manages, and presents spatial and geographic data, offering mapping and data analytics to deliver location intelligence and meet digital transformation needs for organizations of all sizes.

Select Built Environment Related Products/Businesses:

- ArcGIS
 - GIS software with Digital Twin modules
- ArcGIS Indoors
 - Smart building management
- ArcGIS Urban
 - City planning for urban development

ESRI Focuses on Next Generation of Industry

« Acquisitions Focus on 3D Capabilities

- [In December 2020](#), ESRI acquired Zimbumi, a developer of visualization, analysis, and simulation capabilities leveraging game engines for an undisclosed amount
 - ✓ ESRI will utilize the software to integrate physical modeling into advanced applications and expand their development team
- [In September 2020](#), ESRI acquired nFrames, developer of SURE™, an industry-leading imagery and lidar 3D surface reconstruction software for an undisclosed amount
 - ✓ The software will become part of the company's ArcGIS platform, allowing users to create better meshes, point clouds, and true orthos from drone imagery

« ESRI Joins Digital Twin Consortium

- [In March of 2021](#), ESRS joined the Digital Twin Consortium
 - ✓ The consortium is a community of users brings together industry, government, and academia to drive consistency in vocabulary, architecture, security, and interoperability of digital twin technology
 - ✓ ESRI will provide ArcGIS software to organizations across industries, enabling connected BIM
 - ✓ Matt Piper ESRI's Industry Direct commented "Users may have created a digital twin of a facility or plant structure in the past, but it wouldn't be connected to other systems. Esri's ArcGIS software enables organizations to see digital twins in the context of other information models, like electric and water networks or the environment."

Faro

Business Overview

(\$ in millions)

Headquarters:	Lake Mary, Florida
LinkedIn Employees (1-Yr. Growth):	1,926 (▼ 3%)
Website:	www.faro.com
Ownership Status:	Public (NASDAQ: FARO)
Acquisitions Since 2010:	11
Enterprise Value (EV):	\$1,406.9
2016 Revenue:	\$303.8
LTM EBITDA:	(\$0.6)
EV / LTM Revenue:	4.63x
EV / LTM EBITDA:	n/a
Net Debt (Cash):	(\$157.7)
Dry Powder:	\$498.5

Description:

Provider of hardware and software for 3D use cases Metrology, AEC, and Public Safety Analytics markets.

Select Built Environment Related Products/Businesses:

- As-Built
 - Reality capture to CAD and BIM models
- BuildIT
 - Measurement tool for comparison of CAD and 3D scans
- WebShare
 - Share and evaluate 3D reality data in real time

Refocusing on Core with Emphasis on Digital Twin

« Product Launches Accelerate Digital Twin

- [In November 2020](#), Faro launched an Enterprise version of the Firms WebShare Software
 - ✓ WebShare is a 3D reality data for worldwide project management and Scan-to-BIM workflows
 - ✓ The new offering will allow data to be stored on a company's private cloud or server infrastructure, ensuring full control over the security of 3D reality data
- [In September 2020](#), Faro partnered with Boston Dynamics to create a Trek, an autonomous scanning and data collection robot
 - ✓ Trek combines Faro Laser Scanner with Spot, the quadruped robot capable of remote and autonomous data capture in challenging environments
 - ✓ Trek is initially aimed at construction application but can be tapped for creation of digital twins of manufacturing facilities and for disaster mitigation purposes

« Acquisitions and Divestitures Narrow Focus to Core

- [In August 2020](#), Faro acquired ATS AB, a Swedish-based leader in 3D digital twin solution technology for an undisclosed amount
 - ✓ Enables Faro with differentiated accuracy and speed, which will accelerate the adoption of digital twin technology
- [In June 2020](#), Topcon divested its dental business to Open Tech 3D and its phototropic business to MECCO
 - ✓ The divestiture allows for the alignment of resources to providing 3D solutions to the Metrology, AEC, and Public Safety Analytics markets

Fortive

Business Overview

(\$ in millions)

Headquarters:	Everett, Washington
LinkedIn Employees (1-Yr. Growth):	15,543 (▲ 3%)
Website:	www.fortive.com
Ownership Status:	Public (NYSE:FTV)
Acquisitions Since 2010:	7
Enterprise Value (EV):	\$26,716.6
LTM Revenue:	\$4,634.4
LTM EBITDA:	\$1,017.8
EV / LTM Revenue:	5.76x
EV / LTM EBITDA:	26.2x
Net Debt (Cash):	\$2,606.6
Dry Powder:	\$7,302.7

Description:

Industrial technology conglomerate with products across field instrumentation, transportation, sensing, product realization, automation, and franchise distribution

Select Built Environment Related Products/Businesses:

- Accrue
 - Intelligent solutions for the built environment – real estate, asset and facilities management
- Gordian
 - Job contracting and construction procurement
- Fluke
 - Professional test and measurement tools

New Leadership Could Signal Push toward New M&A Activity

« Hires new SVPs of Strategy and Corporate Development

- [In February 2021](#), Reed Simmons was hired as SVP Strategy
 - ✓ Reed Simmons will lead Fortive's strategic development efforts, including as they relate to mergers & acquisitions (M&A) and investment decisions, as well as organic growth strategies across all segments at Fortive
 - ✓ Reed Simmons joins from Vista Equity Partners where he led the internal consulting practice
- [In February 2021](#), Jonathan Schwarz was hired as SVP Corporate Development
 - ✓ Jonathan Schwarz will lead Fortive's capital allocation and M&A efforts
 - ✓ Jonathan Schwarz joins from Bain & Company, where he served as a Director in its Private Equity Practice and led its Technology, Media, and Telecommunications

« Major Asset Spin Out

- [In October 2020](#), Fortive spun out Vontier as an independently traded public company
 - ✓ The spin out consisted of Fortive's mobility assets including: Gilbarco Veeder-Root, Global Traffic Technologies, Teletrac Navman, Matco Tools, and Hennessy Industries
 - ✓ Vontier will continue to drive growth in its remaining businesses, including its Intelligent Operating Solutions division, through strategic mergers & acquisitions, driving new ways to mobilize

Hexagon

Business Overview

(\$ in millions)

Headquarters:	Stockholm, Sweden
10-K Employees (1-Yr. Growth):	20,343 (▼1%)
Website:	www.hexagon.com
Ownership Status:	Public (STO: HEXA-B)
Acquisitions Since 2010:	54
Enterprise Value (EV):	\$36,741.1
LTM Revenue:	\$4,604.8
LTM EBITDA:	\$1,413.2
EV / LTM Revenue:	7.98x
EV / LTM EBITDA:	26.0x
Net Debt (Cash):	\$2,833.3
Dry Powder:	\$11,010.8

Description:

Global leader in sensor, software, and autonomous solutions for industrial, manufacturing, infrastructure, safety, and mobility applications

Select Built Environment Related Products/Businesses:

- Hexagon PPM
 - Includes former Integraph, EcoSys and BricsCAD – computer aided design tools, plus HxGN construction management suite
- Hexagon Geosystems
 - Includes former Leica, OxBlue and Tactaware – data capture, measurement and visualization tools, including hardware
- Hexagon Geospatial
 - Includes former Luciad – visualisation, mapping and planning software tools

Hexagon Actively Acquires Across Product Portfolio

« Hexagon Maintaining Active Cadence of Acquisitions

- [In December 2020](#), Hexagon Geosystems acquired OxBlue, a provider of construction visualization technology, for an undisclosed amount
 - ✓ OxBlue's high-definition time-lapse photography and live video streaming services deliver real-time visual documentation of everything that happens on a job site, both exterior and interior. Combining the latest camera technology, artificial intelligence, and machine learning algorithms, OxBlue's desktop and mobile software platform connects stakeholders to their construction job sites from anywhere, anytime.
- [In July 2020](#), Hexagon Geosystems acquired Tacticaware, a provider of 3D security surveillance capabilities, for an undisclosed amount
 - ✓ Tacticaware's Accur8vision LiDAR-based 3D surveillance delivers situational awareness of an intruder's exact location, size, speed and movement trajectory - all of which can be visualized within a 3D digital reality of the area under surveillance, for critical infrastructure and buildings.
 - ✓ D.P.'s flagship ESPRIT CAM System product provides high-performance CNC machine programming, optimization, and simulation for a broad range of precision manufacturing applications
- [In February 2020](#), Hexagon Manufacturing Intelligence acquired Romax Technology, a provider of multi-physics CAE software for electromechanical drivetrain design and simulation, for an undisclosed amount
 - ✓ Romax's Nexus platform, a cloud-enabled model-based systems engineering (MBSE) platform, provides a complete workflow for designing, simulating, and delivering the next generation of energy-efficient drive and power generation systems
 - ✓ With unique capabilities purpose-built for electromechanical systems, the acquisition of Romax expands Hexagon's footprint in key end markets undergoing the transformation to electrification, such as automotive, aerospace, wind power, marine, and rail
 - ✓ Romax generated ~€27 million in total revenue in 2019



IBM

Business Overview

(\$ in millions)

Headquarters:	New York, New York
LinkedIn Employees (1-Yr. Growth):	523,806 (▲ 3%)
Website:	www.ibm.com
Ownership Status:	Public (NYSE:IBM)
Acquisitions Since 2010:	104
Enterprise Value (EV):	\$172,466.3
LTM Revenue:	\$73,621.0
LTM EBITDA:	\$15,279.0
EV / LTM Revenue:	2.34x
EV / LTM EBITDA:	11.3x
Net Debt (Cash):	\$53,257.0
Dry Powder:	\$46,954.1

Description:

Diversified IT solutions, services, and software provider for large enterprises and governments.

Select Built Environment Related Products/Businesses:

- Digital Twin Exchange
 - Resource for asset-intensive industries
- IBM Maximo Enterprise Asset Management.
 - Track, asses, manage, and optimize assets

IBM Focuses on Digital Twin and Product Lifecycle

« Partnerships and Organic Product Development Drive Strategy

- [In April 2021](#), IBM, Red Hat and Cobuilder announced a global collaboration to co-develop OpenBuilt, a new platform designed to help securely connect fragmented construction industry supply chains
- [In November 2020](#), IBM Partnered with ASPI Tech and Fincantieri NexTech to deploy a New AI and IoT-based system for monitoring civil infrastructure
 - ✓ The joint platform will allow monitoring of static and dynamic structural engineering parameters
 - ✓ The platform allow experimentation at a scientific level, which will further the development of new models, algorithms and parameters for infrastructure security
- [In June 2020](#), IBM and Siemens Deliver Service Lifecycle Management Solution
 - ✓ Combines elements of Siemens' Xcelerator portfolio and IBM Maximo to continuously improve product performance, maintenance, and operations
 - ✓ The joint solution from Siemens and IBM creates a single source of information designed to help OEMs and equipment owner/operators improve many aspects about how they design, maintain, and service their assets

Business Overview

(\$ in millions)

Headquarters:	Munich, Germany
LinkedIn Employees (1-Yr. Growth):	2,478 (▲ 8%)
Website:	www.nemetschek.com
Ownership Status:	Public (XTRA: NEM)
Acquisitions Since 2010:	8
Enterprise Value (EV):	\$7,462.7
LTM Revenue:	\$730.2
LTM EBITDA:	\$169.5
EV / LTM Revenue:	10.22x
EV / LTM EBITDA:	44.0x
Net Debt (Cash):	\$71.7
Dry Powder:	\$2,250.8

Description:

Software for planning, designing, building and managing buildings and real estate, as well as for media and entertainment

Select Built Environment Related Products/Businesses:

- Planning and Design
 - Centered on Graphisoft and Allplan design software tools
- Build and Construct
 - Centered on BlueBeam for construction collaboration/workflow
- Operate and Maintain
 - Centered on MCS and SpaceWell asset management

Nemetschek Continues Core Product Expansion

« Recent Acquisitions Broaden Core Product Portfolio

- [In March 2021](#), Nemetschek subsidiary Maxon acquired Forger, a Digital 3d sculpting and texture painting application
 - ✓ Forger allows professional-level sculpting workflows on any device, utilizing powerful remeshing algorithms.
 - ✓ The acquisition offers an attractive entrance into portable workflows
- [In December 2020](#), Nemetschek subsidiary Spacewell acquired Dexma Energy, an energy management platform designed to monitor consumption and measurement
 - ✓ The companies offer a combined solution for smart building, facility and energy management, that effectively integrates Spacewell's smart building management solutions with Dexma's energy management software
- [In May 2020](#), Nemetschek subsidiary RISA acquired Adapt, a structural analysis, design, and investigation software for structural engineering
 - ✓ ADAPT-Builder offers a fully integrated 3D modeling approach for all reinforced concrete and post-tensioned building projects including the design of multi-story buildings, individual concrete slabs, mat foundations and concrete slabs on expansive soils
 - ✓ The acquisition expands RISA's construction solutions to include comprehensive concrete and steel design solutions

Oracle

Business Overview

(\$ in millions)

Headquarters:	Austin, Texas
LinkedIn Employees (1-Yr. Growth):	186,655 (▲ 2%)
Website:	www.oracle.com
Ownership Status:	Public (NYSE:ORCL)
Acquisitions Since 2010:	78
Enterprise Value (EV):	\$255,563.2
LTM Revenue:	\$39,691.0
LTM EBITDA:	\$17,649.0
EV / LTM Revenue:	6.44x
EV / LTM EBITDA:	14.5x
Net Debt (Cash):	\$46,978.0
Dry Powder:	\$82,836.6

Description:

Database and ERP software provider operating in numerous enterprise verticals including construction, engineering, and manufacturing.

Select Built Environment Related Products/Businesses:

- P6/Primavera
 - Project management - planning and scheduling
- Aconex
 - Design and construction coordination
- Unifier
 - Asset lifecycle management
- Textura Payment Management
 - Subcontractor invoicing and payment
- Construction Intelligence Cloud
 - AI and analytics

Construction and Engineering Continues as a Focus

« Internal Product Development

- [In February 2021](#), Oracle launches construction AI advisor
 - ✓ The offering will improve decision-making at all levels of the organization by optimizing estimating, identify the impact of delays, and improve scheduling processes
 - ✓ These machine learning solutions utilize Primavera scheduling data and will improve in accuracy over time
- [In April 2019](#), Oracle launched Full BIM model coordination
 - ✓ Eliminates lack of collaboration, reliance on multiple applications, and missing integrations by enabling design and project professionals to manage BIM models collaboratively across entire project teams

« Major Acquisitions

- Acquisitions have focused on other industries since the major construction acquisitions of Aconex and Textura
 - ✓ [In December 2017](#), acquired Aconex, a comprehensive cloud offering for construction projects for \$1.2 billion
 - ✓ [In April 2016](#), acquired Textura, a construction contracts and payment management software for \$663 million
- Aconex and Textura were combined with the industry leading Primavera project management suite and Unifier (formerly Skire) to form Oracle's Construction and Engineering Global Business Unit

Procore

Business Overview

(\$ in millions)

Headquarters:	Everett, Washington
LinkedIn Employees (1-Yr. Growth):	2,149 (▲ 1%)
Website:	www.procore.com
Ownership Status:	VC-Backed
Acquisitions Since 2010:	5
Enterprise Value (EV April 2020):	\$4,850.0
LTM Revenue:	\$400.3
LTM EBITDA:	(\$38.1)
EV / LTM Revenue:	12.13x
EV / LTM EBITDA:	n/a
Net Debt (Cash):	n/a
Dry Powder:	n/a

Description:

Holistic construction management software encompassing all portions of the construction process.

Select Built Environment Related Products/Businesses:

- Preconstruction
 - Estimating, prequalification and bid management
- Project Management
 - Project management, BIM, Quality & Safety, and design coordination
- Training Management
 - Training center and certification center
- Resource Management
 - Field productivity software

Procore Has Emerged as Leader in Construction Technology

« Procore Take Steps to Go Public

- [In March 2021](#), Procore filed an amendment to their S1 Registration
 - ✓ The purposed share offering will be used to increase capitalization and financial flexibility
 - ✓ The funds may also be used for the purpose of acquisitions or investments
 - ✓ 2019 Revenue was \$289 million up 55% YoY
 - ✓ The company sees the variability of projects, the mobility and decentralized nature of the workforce, project stakeholder dynamics, and project changes to be the major challenges with serving the construction industry
 - ✓ The adoption of construction technology is being driven by accessibility of mobile devices, labor shortages, regulatory on contractual complexities, and data underutilization

« Growth Strategies

- The Procore S1 included the company's growth strategies which includes the following:
 - ✓ Acquisitions: Make targeted acquisitions focused on adding innovative and functional product features and accelerating the creation of an end-to-end cloud-based platform for construction
 - ✓ Expand Opportunities: Look to expand international, only 13% of 2019 revenue was from outside the united state
 - ✓ Maintain Tech Advantage: Continue investments in R&D to provide a superior centralized platform
 - ✓ Customers: Acquire new customers and increase spend from existing customers by selling additional existing and new products



Roper

Business Overview

(\$ in millions)

Headquarters:	Sarasota, Florida
Pitchbook Employees:	18,400
Website:	www.ropertech.com
Ownership Status:	Public (NYS: ROP)
Acquisitions Since 2010:	26
Enterprise Value (EV):	\$51,868.8
LTM Revenue:	\$5,527.1
LTM EBITDA:	\$1,951.9
EV / LTM Revenue:	9.38x
EV / LTM EBITDA:	26.6x
Net Debt (Cash):	\$9,542.5
Dry Powder:	\$8,773.6

Description:

Provider of engineering and other software for assorted global niche markets.

Select Built Environment Related Products/Businesses:

- Deltek
 - ERP for project-based enterprises, especially architecture and engineering firms
- ComputerEase
 - Construction accounting and job costing
- Construction Connect
 - Pre-construction tools – bidding and takeoff
 - Building products electronic catalog

Major Acquisitions Lead Expansions into New Markets

« Roper Makes Infrequent but Major Acquisitions to enter Niche Markets

- [In September 2020](#), Roper acquired Vertafore, an insurance technology solution for property and casualty for \$5.3 billion
 - ✓ Vertafore's dominant position in the niche property and casualty insurance technology fits with the company's historic strategy
 - ✓ Expands the insurance offerings acquired in the 2019 Internet Pipeline acquisition
- [In June 2020](#), Roper acquired Team TSI, a provider of subscription-based data analytics serving long term health care facilities, for an undisclosed amount
 - ✓ Team TSI holds a leading position in software for long term care facilities
- [In August 2019](#), Roper acquired Internet Pipeline for \$1.9 billion
 - ✓ iPipeline's suite of SaaS-based applications provides workflow automation and seamless integration across a broad network of approximately 150 carriers, 1,350 distributors, and over 500,000 agents

« Construction Assets Focus on Organic and Partnership Growth

- In December 2020, Construction Connect enters partnership with COMPASS and Bespoke Metrics, to expand preconstruction platform
 - ✓ The partnership will allow customers to mitigate subcontractor project and counterparty risk
 - ✓ Future co-development will focus on creating smarter workflows between estimators, operations, and risk managers
- In June of 2019, Construction Connect launched a bid management module in the Preconstruction Platform
 - ✓ The module will allow customers to identify business development opportunities, manage ITBs, and ensure complete bid coverage

Sage

Business Overview

(\$ in millions)

Headquarters:	Newcastle, England
LinkedIn Employees (1-Yr. Growth):	15,245 (▲1%)
Website:	www.sage.com
Ownership Status:	Public (LSE:SGE)
Acquisitions Since 2010:	15
Enterprise Value (EV):	\$9,390.8
2016 Revenue:	\$2,460.9
LTM EBITDA:	\$717.7
EV / LTM Revenue:	3.82x
EV / LTM EBITDA:	13.1x
Net Debt (Cash):	\$205.6
Dry Powder:	\$5,219.9

Description:

Accounting and ERP software provider. The company has specialized offerings for the construction and real estate industries.

Select Built Environment Related Products/Businesses:

- Intacct Construction
 - Accounting software for construction
- Sage 300 Construction and Real Estate (Timberline)
 - Cloud-connected ERP
- Sage 100 Contractor (MasterBuilder)
 - Accounting, project management, estimating and service management
- Sage 50 Accounting (Peachtree)
 - Bookkeeping for small businesses

Construction ERP Software Market Leader

« Broadest Construction Market Coverage Based on 4 Key Acquisitions over 20+years

- [In March 2020](#), Sage announced Sage Intacct Construction, combining the features of Intacct with Sage 300
- [In July 2017](#), Sage acquired Intacct Corporation, a leading North American provider of cloud Financial Management Solutions.
 - ✓ The transaction brought native cloud product offering
- [In July 2003](#), Sage acquired publicly listed Timberline Software for \$91 million
 - ✓ Construction estimating toolkit primarily focused on larger contractors – later rebadged as Sage 300 Construction and Real Estate
- [In May 2006](#), Sage acquired MasterBuilder from Intuit, and privately held Contractor Anywhere, Inc.
 - ✓ Access to small and mid-sized contractors – 20-200 employees – later rebadged as Sage 100 Contractor
- [In March 1999](#), Sage acquired Peachtree Software from ADP for \$145 million
 - ✓ Access to small business market - <20 employees – later rebadged as Sage 50

Schneider Electric

Business Overview

(\$ in millions)

Headquarters:	Munich, Germany
LinkedIn Employees (1-Yr. Growth):	69,126 (▼ 2%)
Website:	www.se.com
Ownership Status:	Public (ENXTPA: SU)
Acquisitions Since 2010:	55
Enterprise Value (EV):	\$94,214.6
LTM Revenue:	\$30,775.5
LTM EBITDA:	\$5,203.7
EV / LTM Revenue:	3.06x
EV / LTM EBITDA:	18.1x
Net Debt (Cash):	\$5,674.6
Dry Powder:	\$37,292.3

Description:

Provider of energy and industry automation digital solutions for efficiency and sustainability of homes, data centers, infrastructure and industries

Select Built Environment Related Products/Businesses:

- RIB – full suite of construction software for buildings and infrastructure
- ETAP – electrical systems design
- EcoStruxure - Industrial edge asset solutions
- Planon – real estate and facility asset management (25% stake acquisition in 2020)
- Aveva – industrial solutions

Energy Management and Industry 4.0 Remains as Focal Point

« Aggressive M&A Strategy Related to Core Businesses

- [In January 2021](#), Schneider Electric acquired DC Systems, a provider of electrical destruction systems for microgrids, for an undisclosed amount
 - ✓ The transaction will allow Schneider to offer increased simplicity and resilience for microgrids
- [In November 2020](#), Schneider Electric acquired a majority stake in ETAP, a provider of software for electrical power systems modeling and simulation, for an undisclosed amount
 - ✓ The joint ETAP and Schneider Electric offering will utilize digital twin-enabled data models to protect staff, improve system uptime, increase operational performance, and improve real time awareness of new energy resources
- [In August 2020](#), Schneider Electric acquired Larsen & Toubro Electrical & Automation for \$1.87 billion
 - ✓ Further expands core electric hardware and automation in rapidly growing geography
- [In July 2020](#), Schneider Electric acquired RIB Software, a construction and building software for \$1.58 billion
 - ✓ RIB will complement Schneider Electric's existing Electric EcoStruxure suite due to common target customer and expand early customer engagement
 - ✓ Positions Schneider Electric for the future All-Digital all Electric world

« Expanded Partnership with Aveva to Achieve Digital Transformation of Industry

- [In June 2020](#), Schneider Electric expanded its Partnership with Aveva with the launch of Industry Edge
 - ✓ The expanded partnerships and new industrial edge programs empower system integrators to leverage their domain expertise and become IT/OT convergence specialists and meet these needs for their customers
 - ✓ The Industrial Edge platform is built within the Schneider Electric Exchange platform and further solidifies the two companies' goal of digitally transforming industry

Topcon

Business Overview

(\$ in millions)

Headquarters:	Tokyo, Japan
Pitchbook Employees:	4,939
Website:	www.topcon.co.jp
Ownership Status:	Public (TKS: 7732)
Acquisitions Since 2010:	3
Enterprise Value (EV):	\$1,625.2
LTM Revenue:	\$1,271.1
LTM EBITDA:	\$120.5
EV / LTM Revenue:	1.28x
EV / LTM EBITDA:	13.5x
Net Debt (Cash):	\$335.0
Dry Powder:	\$522.9

Description:

Ophthalmic instruments, medical equipment, and machine control, GIS-related systems, and software for construction and GIS related usecases

Select Built Environment Related Products/Businesses:

- MAGNET
- Edgewise

Topcon Continues to Emphasize Internal Development

« Nascent Software Reinforced by Hardware Innovation

- [In January 2021](#), Topcon launched Topcon Point Manager as a plug-in for AutoDesk AutoCAD and Autodesk Revit Users
 - ✓ The new solution will simplify the BIM-to-field process with, more seamless point creation experience from within the design platform, reducing the time and cost of layout
 - ✓ Point Manager will connect with Topcon MAGNET wirelessly to send points to the field for layout and back to the office to update models to match built conditions
- [In October 2020](#), Topcon announced a new flagship GT Series robotic total station
 - ✓ The stations are a total solution for survey, construction, and machine-controlled applications
 - ✓ The new stations preform faster, with numerous software and usability enhancements

« Targeted Acquisitions Expand Company Into Software

- [In February 2018](#), Topcon acquired ClearEdge3D, a 3D modeling and construction verification software, for an undisclosed amount
 - ✓ The EdgeWise software platforms prowess was combined with leading in the survey and precision instrument hardware to market a wholistic 3D offering
 - ✓ The acquisition was Topcons first software acquisition signaling a movement towards expanding the company's market into software products complementary their hardware capabilities

Trimble

Business Overview

(\$ in millions)

Headquarters:	Sunnyvale, California
LinkedIn Employees (1-Yr. Growth):	6,532 (▲ 2%)
Website:	www.trimble.com
Ownership Status:	Public (NAS: TRMB)
Acquisitions Since 2010:	80
Enterprise Value (EV):	\$21,031.6
LTM Revenue:	\$3,147.7
LTM EBITDA:	\$665.7
EV / LTM Revenue:	6.68x
EV / LTM EBITDA:	31.6x
Net Debt (Cash):	\$1,452.5
Dry Powder:	\$5,791.5

Description:

Electronic design automation (EDA) tools, IP portfolio for chip designs, and comprehensive suite of verification tools and hardware to verify the chip, package, board, and system design

Select Built Environment Related Products/Businesses:

- Design/BIM, including SketchUp, Tekla, Vico and Gehry Technologies
- ViewPoint construction management software
- Cityworks - enterprise asset management (EAM) software for utilities and local government

Connected and Scale 2025 Initiative Drives Strategy

« Connected Construction Focus of M&A Activity

- [In February 2021](#), Trimble divested their Manhattan real-estate and workplace solutions to MRI Software, for an undisclosed amount
- [In October 2020](#), Trimble divested their construction logistics business to Command Alkon, for an undisclosed amount
 - ✓ The divestitures will allow Trimble to focus on business areas core connected construction capabilities

« Frequent Partnerships and Product Launches

- [In March 2021](#), Trimble launched Tekla 2021 Structural BIM software solutions
 - ✓ New Tekla software features and enhancements continue to power data-driven, collaborative and connected workflows across all project phases
- [In March 2021](#), Trimble launched Siteworks SE Starter Site positioning software
 - ✓ The simplified version of Trimble Siteworks Software will allow the company to service to smaller contractors
- [In October 2020](#), Trimble entered a strategic alliance with Boston Dynamics to extend the use of autonomous robots in construction
 - ✓ The alliance integrates the Spot robot's autonomous mobility with Trimble's data collection sensors and field control
 - ✓ The alliance's turnkey solution will streamline operation of the robot and provide quality control for missions, enabling construction project managers to easily get a clear picture of jobsite progress on an ongoing basis.
 - ✓ Trimble technologies integrated with the robot enable accurate, scalable and rapid data acquisition while Trimble's construction collaboration platforms provide a continuous flow of information between field and office

III. Comparable Transactions & Public Companies

Last Five Years Precedent M&A Transactions

Autodesk, Aveva, Bentley

MADISON PARK GROUP

Ascentage

Autodesk	Nemetschek
Aveva	Oracle
Bentley	Procore
Dassault	Roper
ESRI	Sage
Faro	Schneider Electric
Fortive	Topcon
Hexagon	Trimble
IBM	

(\$ in Millions)		Target Overview			Transaction Statistics		
Announced	Target	Description	Revenue	EBITDA	Deal Value	Deal Value / Revenue	Estimated EBITDA
Autodesk			Total Disclosed M&A Deal Value: \$2,270.8 Million				
04/15/2021	Upchain	Product lifecycle management software	n/a	n/a	n/a	n/a	n/a
03/31/2021	Innovyze	Smart water infrastructure modeling	n/a	n/a	\$1,000.0	n/a	n/a
11/17/2020	Spacemaker	AI for real estate development and site planning	n/a	n/a	\$240.0	n/a	n/a
10/05/2020	CAMplete Solutions	Manufacturing processing and verification software	n/a	n/a	n/a	n/a	n/a
08/17/2020	Pype	Construction management software	n/a	n/a	n/a	n/a	n/a
01/23/2019	BuildingConnected	Construction bid management platform	n/a	n/a	\$253.2	n/a	n/a
12/20/2018	PlanGrid	Construction productivity software	n/a	n/a	\$777.6	n/a	n/a
07/03/2018	Assemble Systems	Building information modeling software	n/a	n/a	n/a	n/a	n/a
06/27/2016	Cadsoft Computer	CAD for circuit board design	n/a	n/a	n/a	n/a	n/a
04/18/2016	Solid Angle	Animation and visual effects software	\$5.0	n/a	n/a	n/a	n/a
01/01/2016	Autodesk Substation Design	CAD software	n/a	n/a	n/a	n/a	n/a
Aveva Group			Total Disclosed M&A Deal Value: \$9,218.8 Million				
11/06/2020	OSIsoft	Enterprise infrastructure asset management	\$488.5	n/a	\$5,000.0	10.24x	n/a
04/17/2019	MaxGrip (software assets)	Asset management performance solutions	n/a	n/a	\$28.2	n/a	n/a
03/01/2018	Schneider Electric (Software Unit)	Schneider software business unit	n/a	n/a	\$4,190.6	n/a	n/a
Bentley Systems			Total Disclosed M&A Deal Value: \$1,050.0 Million				
04/14/2021	INRO Consultants	Mobility simulation and modeling software	n/a	n/a	n/a	n/a	n/a
03/12/2021	Seequent	3d geological modeling and visual data	n/a	n/a	\$1,050.0	n/a	n/a
02/25/2021	E7	Field-based construction delivery services	n/a	n/a	n/a	n/a	n/a
07/13/2020	Cohesive	Asset management software	n/a	n/a	n/a	n/a	n/a
06/03/2020	NoteVault	Field automation application for construction	n/a	n/a	n/a	n/a	n/a
03/10/2020	GroupBC	Construction document management software	n/a	n/a	n/a	n/a	n/a
10/21/2019	Orbit GeoSpatial Technologies	Geospatial software for 3D mapping	\$2.3	\$0.3	n/a	n/a	n/a
10/20/2019	Citilabs	Mobile analytics for communities and organizations	n/a	n/a	n/a	n/a	n/a
05/13/2019	Keynetix	Geotechnical data management software	n/a	n/a	n/a	n/a	n/a
02/11/2019	SignCAD	CAD/CAM for transportation	n/a	n/a	n/a	n/a	n/a
11/29/2018	Alworx	Machine learning and IoT	n/a	n/a	n/a	n/a	n/a
11/12/2018	ACE Enterprise	ERP and EAM for industrial sectors	n/a	n/a	n/a	n/a	n/a
10/15/2018	Agency9	3d GIS visualization software	\$1.7	\$0.4	n/a	n/a	n/a
10/15/2018	LEGION	Pedestrian simulation software	n/a	n/a	n/a	n/a	n/a
06/20/2018	Synchro	Digital construction software	n/a	n/a	n/a	n/a	n/a
04/26/2018	Plaxis	Geotechnical software	n/a	n/a	n/a	n/a	n/a
04/26/2018	SoilVision	3D soil engineering software	n/a	n/a	n/a	n/a	n/a
12/01/2017	S-Cube Futuretech	Engineering process automation and integration	n/a	n/a	n/a	n/a	n/a
10/10/2017	Action Modulers	Software, protection, and safety planning consulting	n/a	n/a	n/a	n/a	n/a
11/01/2016	Comply Serve	Infrastructure compliance software for assurance	n/a	n/a	n/a	n/a	n/a

Last Five Years Precedent M&A Transactions

Dassault, ESRI, Faro, Fortive

MADISON PARK GROUP

Ascentage

Autodesk	Nemetschek
Aveva	Oracle
Bentley	Procore
Dassault	Roper
ESRI	Sage
Faro	Schneider Electric
Fortive	Topcon
Hexagon	Trimble
IBM	

(\$ in Millions)		Target Overview			Transaction Statistics		
Announced	Target	Description	Estimated Revenue	Estimated EBITDA	Deal Value	Deal Value / Revenue	Estimated EBITDA
Dassault Systems		Total Disclosed M&A Deal Value: \$7,191.5 Million					
11/25/2020	NuoDB	Cloud database platform	n/a	n/a	n/a	n/a	n/a
07/23/2020	Proxem	Big data analysis software	\$3.6	\$0.5	n/a	n/a	n/a
10/28/2019	Medidata	Clinical development software for life sciences	\$684.6	\$79.1	\$5,382.7	7.86x	n/m
03/05/2019	Argosim	System requirements validation software	\$1.1	\$0.8	\$32.7	n/m	n/m
02/11/2019	Elecworks	Electrical automation software	n/a	n/a	n/a	n/a	n/a
01/03/2019	IQMS	MES and ERP software	\$59.8	\$25.0	\$472.3	7.90x	18.9x
07/24/2018	Centric	Product lifecycle management services	n/a	n/a	\$421.6	n/a	n/a
06/20/2018	No Magic	Systems based engineering and modeling solutions	n/a	n/a	\$77.5	n/a	n/a
11/17/2017	Exa	Simulation software for engineering processes	\$72.7	\$0.7	\$429.8	5.91x	n/m
06/20/2017	Outscale	Enterprise-class cloud services	n/a	n/a	n/a	n/a	n/a
12/07/2016	XFlow CFD	Simulation software for fluid dynamics	n/a	n/a	n/a	n/a	n/a
07/21/2016	Computer Simulation Tech	Electromagnetic simulation software	n/a	n/a	\$326.9	n/a	n/a
06/02/2016	Ortems	Advanced planning for supply-chain planning	\$6.7	\$3.5	\$48.1	7.21x	13.6x
04/01/2016	3DPLM	Business process management	n/a	n/a	n/a	n/a	n/a
ESRI		Total Disclosed M&A Deal Value: \$0 Million					
12/07/2020	Zibumi	Geospatial simulations and analyses lab	n/a	n/a	n/a	n/a	n/a
09/09/2020	nFrames	3D reconstruction software	n/a	n/a	n/a	n/a	n/a
09/01/2019	REIN	Insurtech platform connecting online ecosystems	n/a	n/a	n/a	n/a	n/a
02/28/2019	indoo.rs	Indoor positioning and navigation technology	n/a	n/a	n/a	n/a	n/a
02/23/2018	ClearTerra	Geospatial and activity based intelligence software	n/a	n/a	n/a	n/a	n/a
FARO Technologies		Total Disclosed M&A Deal Value: \$40.2 Million					
08/21/2020	Advanced Technical Solutions	Laser technology distance measurement solutions	n/a	n/a	\$7.0	n/a	n/a
07/16/2018	Opto-Tech	3D scanners for 3D modeling and CAD applications	\$1.2	\$0.3	n/a	n/a	n/a
07/09/2018	Lanmark Controls	Laser marking control board	n/a	n/a	n/a	n/a	n/a
11/15/2017	Dustin Forensics	3D scanning systems and imaging devices	n/a	n/a	n/a	n/a	n/a
04/01/2017	Nutfield Technology	Laser scanning products	n/a	n/a	\$5.5	n/a	n/a
12/01/2016	MWF-Technology	Mobile augmented reality software	n/a	n/a	\$6.6	n/a	n/a
08/01/2016	Laser Projection Technologies	3D laser projection and measurement	n/a	n/a	\$17.2	n/a	n/a
07/12/2016	BuildIT Software and Solutions	Process-configurable 3D metrology software	n/a	n/a	\$3.9	n/a	n/a
Fortive		Total Disclosed M&A Deal Value: \$6,223.9 Million					
10/31/2019	Censis Technologies	Surgical asset management software	n/a	n/a	n/a	n/a	n/a
04/01/2019	Advanced Sterilization Products	Infection prevention technologies	\$800.0	n/a	\$2,700.0	3.38x	n/a
09/11/2018	Accruent	Enterprise content management software	\$270.0	n/a	\$2,000.0	7.41x	n/a
07/27/2018	Gordian Group	Construction software for all stages of construction	\$130.0	n/a	\$775.0	5.96x	n/a
10/19/2017	Landauer	Radiation safety products	\$153.4	\$43.6	\$748.9	4.88x	17.2x
08/25/2017	Industrial Scientific	Gas detection products	n/a	n/a	n/a	n/a	n/a
07/05/2016	Tektronix	Electronic testing equipment	n/a	n/a	n/a	n/a	n/a

Last Five Years Precedent M&A Transactions

Hexagon, IBM

MADISON PARK GROUP

Ascentage

Autodesk	Nemetschek
Aveva	Oracle
Bentley	Procore
Dassault	Roper
ESRI	Sage
Faro	Schneider Electric
Fortive	Topcon
Hexagon	Trimble
IBM ⁽¹⁾	

(\$ in Millions)		Target Overview			Transaction Statistics		
Announced	Target	Description	Estimated Revenue	EBITDA	Deal Value	Deal Value / Estimated Revenue	EBITDA
Hexagon		Total Disclosed M&A Deal Value: \$855.6 Million					
04/01/2021	CADLM	Engineering design software	n/a	n/a	n/a	n/a	n/a
12/18/2020	OxBlue	Construction camera systems and services	\$37.0	n/a	n/a	n/a	n/a
11/04/2020	PAS Global	Safety, cybersecurity & asset reliability software	\$38.8	n/a	n/a	n/a	n/a
10/29/2020	DP Tech	CAM for programming CNC	n/a	n/a	n/a	n/a	n/a
07/01/2020	TACTICAWARE	LiDAR-based 3D surveillance software	\$2.8	n/a	n/a	n/a	n/a
04/30/2020	COWI	Mapping and geospatial data services	\$15.7	n/a	n/a	n/a	n/a
03/17/2020	CAEfatigue	Mechanical fatigue simulation solutions	n/a	n/a	n/a	n/a	n/a
02/28/2020	Romax Tech	CAE software for electromechanical drivetrain	n/a	n/a	n/a	n/a	n/a
01/08/2020	Geopraevent	Sensor and measuring software	n/a	n/a	n/a	n/a	n/a
12/01/2019	Volume Graphics	Industrial computed tomography testing software	\$29.1	n/a	n/a	n/a	n/a
07/01/2019	Melown Technologies	3D visualization software	n/a	n/a	n/a	n/a	n/a
04/12/2019	Thermopylae Sciences and Tech	Geospatial mapping technologies	\$48.0	n/a	n/a	n/a	n/a
01/17/2019	j5	Operation management software for heavy industry	n/a	n/a	\$16.6	n/a	n/a
01/01/2019	Etalon	Geometric analysis and monitoring software	n/a	n/a	n/a	n/a	n/a
10/23/2018	Bricsys	Engineering software for 3D modeling in .dwg	n/a	n/a	n/a	n/a	n/a
09/01/2018	AutonomouStuff	Sensors, GPS and computing for autonomy systems	n/a	n/a	n/a	n/a	n/a
08/02/2018	Guardvant	Mine safety solutions to improve performance	n/a	n/a	n/a	n/a	n/a
06/19/2018	Spring Technologies	CNC software to virtually build real life environment	\$9.5	\$0.5	n/a	n/a	n/a
05/15/2018	Nextsense	Non-contact profile measurement and inspection	\$13.5	n/a	n/a	n/a	n/a
04/23/2018	Licom Systems	CAD and CAM programming for various materials	n/a	n/a	n/a	n/a	n/a
04/05/2018	ProCAM Group	CAD software for mechanical industries	\$2.6	\$0.1	n/a	n/a	n/a
03/15/2018	Agtek	Construction cost estimation software	n/a	n/a	n/a	n/a	n/a
10/04/2017	Luciad	Geospatial software for public safety	\$21.7	\$3.9	n/a	n/a	n/a
06/05/2017	FASys	DIN 2D/3D operational resource management	n/a	n/a	n/a	n/a	n/a
05/05/2017	Catavolt	Application development platform	n/a	n/a	\$5.0	n/a	n/a
04/26/2017	MSC	Computer aided engineering software	\$230.0	n/a	\$834.0	3.63x	n/a
08/31/2016	Apodius	Measurement products for OEMs and suppliers	n/a	n/a	n/a	n/a	n/a
08/15/2016	Multivista	Visual documentation for construction and facilities	n/a	n/a	n/a	n/a	n/a
06/14/2016	Ingegneria (GeoRadar Division)	Radar systems engineering services	\$20.0	n/a	n/a	n/a	n/a
03/30/2016	AICON 3D	Optical camera-based 3D metrology systems	n/a	\$2.5	n/a	n/a	n/a
03/23/2016	Forming Technologies	Manufacturing software for manufacturers	n/a	n/a	n/a	n/a	n/a
02/16/2016	Sigma Space	LiDAR and aerospace instrument developer	\$25.0	n/a	n/a	n/a	n/a
01/13/2016	SCCS	Survey equipment provider	n/a	n/a	n/a	n/a	n/a
IBM		Total Disclosed M&A Deal Value: \$0 Million					
06/15/2018	Oniqua MRO Analytics	Maintenance, repair, and ops analytics software	n/a	n/a	n/a	n/a	n/a
05/03/2018	Armanta	BI platform for enterprise infrastructure	n/a	n/a	n/a	n/a	n/a
06/27/2016	EZSource	Dependency analysis software	n/a	n/a	n/a	n/a	n/a

(1) Only AEC related transactions shown
Source: Pitchbook, CapiQ, corporate websites, press releases

Last Five Years Precedent M&A Transactions

Nemetschek, Oracle, Procore, Roper, Sage

MADISON PARK GROUP

Ascentage

		(\$ in Millions)		Target Overview			Transaction Statistics			
		Announced	Target	Description	Estimated Revenue	EBITDA	Deal Value	Deal Value / Estimated Revenue	EBITDA	
Autodesk	Nemetschek	Nemetschek Group							Total Disclosed M&A Deal Value: \$301.3 Million	
Aveva	Oracle ⁽¹⁾	01/11/2019	Axxerion	Software for workplace and facility automation	\$14.2	n/a	\$96.8	6.84x	n/a	
		08/28/2018	Spacewell	Digital real estate, wrk and facility mgmt. software	\$17.7	n/a	\$56.9	3.22x	n/a	
		10/13/2017	RISA Tech	Structural design and optimization software	\$7.5	n/a	\$24.3	3.23x	n/a	
		01/04/2017	dRofus	Planning and data management for software building	\$3.9	\$1.0	\$27.1	6.89x	n/m	
		08/01/2016	Design Data	Steel detailing software	\$10.0	n/a	\$49.0	4.90x	n/a	
Bentley	Procore	01/01/2016	Solibri	BIM for architectural and construction firms	\$4.4	\$1.1	\$47.2	10.73x	n/m	
		Oracle							Total Disclosed M&A Deal Value: \$10,943.2 Million	
Dassault	Roper	04/01/2020	LiveData Utilities	Real-time data solutions for utility companies	n/a	n/a	n/a	n/a	n/a	
		03/28/2018	Aconex	Construction collaboration and doc mgmt. software	\$131.9	\$9.1	\$1,181.0	8.96x	n/m	
		11/07/2016	NetSuite	ERP software for businesses	\$897.5	(\$56.3)	\$8,638.9	9.63x	n/m	
		09/06/2016	LogFire	Platform for supply chain execution	n/a	n/a	\$36.0	n/a	n/a	
		05/17/2016	Opower	Big data analytics for utilities	\$152.0	(\$32.9)	\$471.2	3.10x	n/m	
		04/28/2016	Textura	Business collaboration software for construction	\$92.2	(\$5.4)	\$616.0	6.68x	n/m	
		Procore							Total Disclosed M&A Deal Value: \$164.8 Million	
ESRI	Sage ⁽¹⁾	10/27/2020	Esticom	Contractor take of and estimating software	n/a	n/a	n/a	n/a	n/a	
		01/01/2020	Avata Intelligence	AI and ML analytics for enterprises	n/a	n/a	\$3.8	n/a	n/a	
		12/01/2019	Honest Buildings	Project management platform for construction	n/a	n/a	\$161.0	n/a	n/a	
		08/08/2019	Construction BI	Data analytics and reporting solutions	n/a	n/a	n/a	n/a	n/a	
		09/25/2018	Zimfly	Visual collab platform for construction mgmt.	n/a	n/a	n/a	n/a	n/a	
Faro	Schneider Electric	Roper Technologies							Total Disclosed M&A Deal Value: \$12,352.2 Million	
Fortive	Topcon	09/03/2020	Vertafore	Cloud-based insurance software	n/a	n/a	\$5,398.6	n/a	n/a	
		06/15/2020	Team TSI	Healthcare data systems software	n/a	n/a	n/a	n/a	n/a	
		08/23/2019	Internet Pipeline	Sales distribution software	\$157.5	n/a	\$1,625.0	10.32x	n/a	
		04/18/2019	The Foundry Visionmongers	Computer graphics and visual effects software	\$61.0	\$21.9	\$537.0	8.80x	24.6x	
		06/04/2018	PowerPlan	Asset-centric financial forecasting and monitoring	n/a	n/a	\$1,111.4	n/a	n/a	
Hexagon	Trimble	12/28/2016	Deltek	Enterprise software for project-based organizations	n/a	n/a	\$2,800.0	n/a	n/a	
		10/31/2016	ConstructConnect	Bid and pre-construction management software	n/a	n/a	\$632.0	n/a	n/a	
		01/20/2016	CliniSys Group	Laboratory information management services	\$25.5	\$4.7	\$248.3	9.73x	n/m	
		Sage							Total Disclosed M&A Deal Value: \$817.2 Million	
IBM		08/03/2017	Sage Intacct	Cloud financial management software & accounting	\$67.0	n/a	\$817.1	12.20x	n/a	

(1) Only AEC related transactions shown

Source: Pitchbook, CapiIQ, corporate websites, press releases

Last Five Years Precedent M&A Transactions

Schneider Electric, Topcon

MADISON PARK GROUP

Ascentage

Autodesk	Nemetschek
Aveva	Oracle
Bentley	Procore
Dassault	Roper
ESRI	Sage
Faro	Schneider Electric
Fortive	Topcon
Hexagon	Trimble
IBM	

(\$ in Millions)		Target Overview			Transaction Statistics		
Announced	Target	Description	Revenue	EBITDA	Deal Value	Deal Value / Estimated Revenue	
Schneider Electric			Total Disclosed M&A Deal Value: \$8,589.9 Million				
01/11/2021	DC	Hybrid AC/DC microgrid distribution systems	n/a	n/a	n/a	n/a	n/a
11/16/2020	ETAP	Power system optimization & automation software	n/a	n/a	n/a	n/a	n/a
08/31/2020	Larsen & Toubro (Electrical unit)	Electrical and automation services	n/a	n/a	\$1,870.9	n/a	n/a
08/04/2020	ProLeiT	Automation and process control software	n/a	n/a	n/a	n/a	n/a
07/10/2020	RIB Software	Construction & infra management software	\$270.8	\$84.2	\$1,719.9	6.35x	20.4x
02/01/2019	Itris Automation Square	Platform and language independent dev tools	\$1.6	\$2.2	n/a	n/a	n/a
11/07/2017	IGE Plus XAO	CAD software for industrial design and maintenance	\$35.0	\$10.2	\$185.1	5.28x	18.1x
11/01/2017	Asco Power Technologies	Elevator, compressor, and generator controls	n/a	n/a	\$1,258.0	n/a	n/a
06/30/2017	nxtControl	Building, machine & process automation software	n/a	n/a	n/a	n/a	n/a
04/01/2017	ABN Braun	Electrical installation systems	n/a	(\$2.5)	n/a	n/a	n/a
02/02/2017	MWPowerlab	3D visualization software that utilizes AR & VR	\$0.9	(\$0.0)	n/a	n/a	n/a
01/18/2017	Renewable Choice Energy	Clean energy products and services	n/a	n/a	n/a	n/a	n/a
10/31/2016	MaxEAM	Application software and integration services	n/a	n/a	n/a	n/a	n/a
10/24/2016	Applied Instrument Technologies	Process analytical instruments for manufacturing	n/a	n/a	n/a	n/a	n/a
06/15/2016	Aveva Group	Engineering design & info management software	\$302.4	\$53.1	\$2,738.9	9.06x	n/m
Topcon			Total Disclosed M&A Deal Value: \$0 Million				
04/01/2018	Topcon Healthcare	Medical imaging software	\$0.8	n/a	n/a	n/a	n/a
02/15/2018	ClearEdge3D	3D modeling software for plants and buildings	n/a	n/a	n/a	n/a	n/a
12/08/2016	Mirage Technologies	Cloud services to stream and visualize 3D data	n/a	n/a	n/a	n/a	n/a

Last Five Years Precedent M&A Transactions

Trimble

MADISON PARK GROUP

Ascentage

Autodesk	Nemetschek
Aveva	Oracle
Bentley	Procore
Dassault	Roper
ESRI	Sage
Faro	Schneider Electric
Fortive	Topcon
Hexagon	Trimble
IBM	

(\$ in Millions)		Target Overview			Transaction Statistics		
Announced	Target	Description	Estimated Revenue	EBITDA	Deal Value	Deal Value / Estimated Revenue	
Trimble		Total Disclosed M&A Deal Value: \$1,899.1 Million					
09/14/2020	MidStates VRS	Kinematic quality corrections for construction	n/a	n/a	n/a	n/a	n/a
01/09/2020	Kuebix	Transportation management systems	n/a	n/a	\$201.8	n/a	n/a
12/03/2019	AllTerra (iBase Network)	Virtual reference station network services	n/a	n/a	n/a	n/a	n/a
12/03/2019	Cansel (Can-Net Network unit)	VRS networks and single-base solutions	n/a	n/a	n/a	n/a	n/a
10/03/2019	Cityworks	Public asset and land management software	n/a	n/a	n/a	n/a	n/a
09/04/2019	3LOG Systems	Timber management software	n/a	n/a	n/a	n/a	n/a
10/02/2018	Veltec Soluções Tecnológicas	Fleet management platform	n/a	n/a	n/a	n/a	n/a
07/02/2018	Viewpoint (Construction unit)	Project management for construction industry	\$200.0	n/a	\$1,212.1	6.06x	n/a
04/20/2018	FabSuite	Steel fabrication management software	n/a	n/a	n/a	n/a	n/a
02/02/2018	e-Builder	Construction program management software	\$43.4	n/a	\$485.2	11.18x	n/a
01/04/2018	Stabiplan	Design software and MEP engineering services	n/a	n/a	n/a	n/a	n/a
09/13/2017	10-4	Supply chain visibility technology	n/a	n/a	n/a	n/a	n/a
09/01/2017	Müller-Elektronik	Electronic applications for agricultural machinery	\$57.8	\$8.0	n/a	n/a	n/a
06/13/2017	Innovative Software Engineering	Software development and fleet services	n/a	n/a	n/a	n/a	n/a
04/10/2017	Bos Forestry	Forestry operations and production software	n/a	n/a	n/a	n/a	n/a
03/03/2017	Silvadata	Forestry collab & workflow automation software	n/a	n/a	n/a	n/a	n/a
02/08/2017	Beena Vision	Vision-based automatic wayside inspection systems	n/a	n/a	n/a	n/a	n/a
11/07/2016	Building Data	Business productivity software for MEP contractors	n/a	n/a	n/a	n/a	n/a
08/01/2016	Axio-Net	Navigation and satellite system services	n/a	n/a	n/a	n/a	n/a
02/08/2016	Sefaira	High-performance building design software	n/a	n/a	n/a	n/a	n/a
Total High						12.20x	24.6x
Total Low						3.10x	13.6x
Total Average						7.16x	18.8x
Total Median						6.89x	18.5x

Public Comparable Companies

GIS/Hardware, Industrial Technology, Design, ERP

MADISON PARK GROUP

Ascentage

(\$ Million Ex. Per Share Amounts)	Share Price	% 52-Wk	Market	Enterprise	Revenue Metrics (2)			Profitability Margins (2)			EV / Revenue		EV / EBITDA (3)	
Company (1)	4/18/2021	High	Cap	Value	CY20E	CY21E	Y/Y Growth	LTM GM	C20E EBITDA	C21E EBITDA	CY20E	CY21E	CY20E	CY21E
GIS/Hardware														
Faro	\$86.71	88.6%	\$1,567	\$1,409	\$304	\$349	14.8%	52.6%	(0%)	11%	4.64x	4.04x	n/m	38.0x
Hexagon	\$102.96	100.0%	\$37,775	\$40,626	\$4,605	\$4,909	6.6%	63.3%	31%	37%	8.82x	8.28x	28.7x	22.6x
Trimble	\$81.97	96.6%	\$20,630	\$22,085	\$3,362	\$3,621	7.7%	58.8%	24%	25%	6.57x	6.10x	27.8x	24.8x
Topcon	\$13.76	97.7%	\$1,448	\$1,797	\$1,208	\$1,263	4.6%	49.6%	9%	11%	1.49x	1.42x	16.1x	13.3x
Industrial Technology														
AVEVA Group	\$52.64	71.0%	\$15,832	\$15,837	\$1,087	\$1,595	46.7%	76.6%	27%	32%	14.57x	9.93x	n/m	31.4x
Fortive	\$72.38	88.1%	\$24,708	\$27,323	\$4,634	\$5,050	9.0%	56.5%	22%	24%	5.90x	5.41x	26.8x	22.3x
Roper	\$423.29	92.9%	\$44,420	\$53,962	\$5,527	\$6,311	14.2%	64.1%	35%	35%	9.76x	8.55x	27.6x	24.1x
Schneider Electric	\$164.71	99.6%	\$91,303	\$100,775	\$30,776	\$32,701	6.3%	40.4%	17%	19%	3.27x	3.08x	19.4x	16.5x
Design														
Autodesk	\$300.16	93.5%	\$65,913	\$66,245	\$3,721	\$4,262	14.5%	91.9%	30%	34%	17.80x	15.54x	n/m	45.8x
Bentley Systems	\$50.65	92.7%	\$14,625	\$14,798	\$802	\$906	13.0%	79.3%	29%	32%	18.46x	16.33x	n/m	n/m
Dassault Systèmes	\$229.34	99.1%	\$60,519	\$63,858	\$5,446	\$5,727	5.2%	83.2%	21%	34%	11.73x	11.15x	n/m	32.4x
Nemetschek Group	\$71.44	80.2%	\$8,252	\$8,340	\$730	\$774	6.0%	51.3%	23%	29%	11.42x	10.77x	49.2x	37.4x
PTC	\$146.16	97.9%	\$17,073	\$17,869	\$1,521	\$1,755	15.4%	78.2%	24%	33%	11.75x	10.18x	48.6x	31.0x
ERP/Horizontal														
Sage Group	\$8.90	83.2%	\$9,659	\$9,865	\$2,487	\$2,589	4.1%	93.4%	27%	22%	3.97x	3.81x	14.5x	17.0x
IBM	\$133.59	97.5%	\$119,375	\$170,088	\$73,621	\$73,962	0.5%	48.6%	21%	24%	2.31x	2.30x	11.1x	9.4x
Oracle	\$78.95	99.5%	\$234,711	\$282,426	\$39,777	\$40,912	2.9%	80.6%	47%	51%	7.10x	6.90x	15.1x	13.6x
Mean		92.4%	\$47,988	\$56,081	\$11,225	\$11,668	10.7%	66.8%	24.2%	28.3%	8.72x	7.74x	25.9x	25.3x
Median		95.0%	\$22,669	\$24,704	\$3,541	\$3,942	7.2%	63.7%	23.9%	30.2%	7.96x	7.59x	26.8x	24.1x

Sources: Company releases, CapitalIQ, Pitchbook, Wall Street research

(1) Currency normalized to USD, on share price date

(2) Wall Street consensus estimates

(3) EV / EBITDA multiples in excess of 50.0x or less than 0.0x are considered not meaningful

Selected Fundraising Transactions

Firms Raising +\$5 Million

MADISON PARK GROUP

Ascentage

(\$ in Millions)				Fundraise Summary			
Company Overview							
Date	Company	Description	Lead Investor(s)	Type	Amount Raised	Pre-Money Valuation	Raised To Date
Apr-21	Archistar.ai	AI tool to identify development sites, assess feasibility and generate architectural designs	Skip Capital	Series A	\$4.6	-	\$13.9
Mar-21	nPlan	AI to provide schedule certainty for projects	GV	Series A	\$18.4	-	\$22.4
Mar-21	Ecomedes	SaaS platform that helps manufacturers, designers, builders, and building owners	M12	Seed	\$3.3	-	\$6.0
Feb-21	Infra.Market	Online procurement marketplace for construction	Tiger Global Management	Series C	\$100.0	\$900.0	\$161.5
Feb-21	GoContractor	Digital onboarding and subcontractor management platform	Building Ventures, Ironspring	Series A	\$5.0	-	\$7.3
Feb-21	Mighty Buildings	3D printing technology and automation platform for housing	Khosla Ventures, Zeno Ventures	Series B	\$40.0	-	\$75.8
Feb-21	Isotropic Systems	Multi-service, high-bandwidth, low power terminals designed to support satellites	SES S.A.	Series B	\$40.0	-	\$60.0
Jan-21	Swapp	AI-driven end-to-end planning service.	Entree Capital, Point72 Ventures	Seed	\$7.0	-	\$7.0
Jan-21	TraceAir	Drone data to help construction teams streamline their building projects.	XTX Ventures	Series A	\$3.5	-	\$6.9
Jan-21	Cupix	Cloud based software to map 360 photos and create 3D models	Atinum Investment	Series B	\$12.0	-	\$20.6
Dec-20	OnSiteIQ	OnSiteIQ is a computer vision platform for construction risk assessment	ValueStream Ventures	Series A	\$4.0	-	\$12.4
Dec-20	Versatile	Machine learning and AI to optimize construction and industrial processes.	Insight Partners	Series A	\$20.0	-	\$28.5
Nov-20	ALICE Technologies	Scheduling software for general contractors, subcontractors, and real estate developers	Future Ventures	Debt Financing	\$4.6	-	\$38.3
Oct-20	Agora	Materials management platform for construction companies.	BVC	Series A	\$7.2	-	\$11.3
Oct-20	Atmos	Online homebuilding process	Khosla Ventures	Seed	\$4.0	\$21.0	\$6.2
Oct-20	Andpad	Construction management application	Minerva Growth Partners	Series C	\$19.0	-	\$94.3
Oct-20	SiteAware	Quality control for construction exteriors	Axon Ventures, Robert Bosch Venture Capital	Series A	\$10.0	-	\$11.5
Oct-20	Vita Inclinata Technologies	Technology to eliminate the swing during helicopter hoisting and sling load missions.	Keiretsu Forum	Series B	\$20.0	\$150.0	\$27.3
Sep-20	AirWorks	Aerial mapping software designed to help land developers and engineers.	MetaProp	Seed	\$2.7	\$16.9	\$5.3
Sep-20	RedTeam	Project management, document control and construction financial for commercial GCs		Series A	\$5.0	-	\$6.9
Sep-20	SenseHawk	SaaS platform that helps improve processes and saves cost for solar sites.	Falcon Edge Capital	Series A	\$5.1	-	\$7.1
Sep-20	Mosaic	Technology-focused construction company	Andreessen Horowitz	Series A	\$14.3	-	\$37.2
Sep-20	Urban Umbrella	Alternative to the scaffolding industry		Series B	\$6.8	-	\$20.3
Jul-20	Address Japan	Co-living at fixed prices	Bonds Investment Group	Series B	\$3.1	-	\$6.2
Jul-20	Buildots	Tool to manage construction sites	TLV Partners	Series A	\$13.0	-	\$16.0
Jul-20	Cover Technologies	Prefab home builder	Founders Fund, Lennar Corporation	Series A	\$10.0	-	\$11.6
Jul-20	OpenSpace	Photo documentation tied to plan location with AI.	Menlo Ventures	Series B	\$16.0	-	\$33.5
Jun-20	CompanyCam	Photo solution for contractors to monitor projects	Blueprint Equity	Series A	\$6.0	-	\$8.0
Jun-20	Urbint	Predicts threats to workers and critical infrastructure	Energy Impact Partners, Piva Capital	Series B	\$25.0	-	\$40.0
Jun-20	DroneBase	DroneBase is an aerial data analytics platform that provides aerial drone services.		Series C	\$7.5	-	\$26.5
Jun-20	Ambar Technologies	Affordable housing with unique technology	Brasil Venture Debt	Debt Financing	\$1.1	-	\$9.7
May-20	Stack Construction Technologies	Web-based construction takeoff and estimating software for contractors		Series B	\$2.0	-	\$9.3
May-20	Hearth	Financial technology for home improvement industry		Series A	\$16.1	-	\$24.8
May-20	Quartz Systems	Quartz identifies, tracks, and understands everything that moves on a construction site	Baseline Ventures, Lemnos VC	Seed	\$7.8	-	\$7.8
May-20	Briq	Construction decision cloud applications	Blackhorn Ventures	Series A	\$10.0	-	\$16.0
Apr-20	Helix.re	Platform to create and share accurate building plans and photo documentation		Seed	\$1.0	-	\$45.4
Apr-20	Modumate	3D design tool		Venture	\$4.0	-	\$5.5
Apr-20	BigRentz	Online construction equipment rental marketplace	ITOCHU Corporation	Series B	\$15.0	-	\$31.1
Mar-20	StructionSite	Intelligent project tracking via cameras and AI	D20 Capital	Series A	\$7.0	-	\$8.5
Mar-20	Gonghui	Construction delivery service provider		Series B	\$7.0	-	\$14.4

Selected Fundraising Transactions

Firms Raising +\$5 Million

MADISON PARK GROUP

Ascentage

(\$ in Millions)		Company Overview			Fundraise Summary			
Date	Company	Description	Lead Investor(s)	Type	Amount Raised	Pre-Money Valuation	Raised To Date	
Mar-20	PlanRadar	SaaS solution for documentation and communication in construction and real estate	Insight Partners	Series A	\$33.9	-	\$35.2	
Mar-20	HaulHub	Platform for heavy construction companies that powers transportation/digital ticketing	Durable Capital Partners, T. Rowe Price	Series B	\$30.0	-	\$35.0	
Mar-20	XYZ Reality	AR solution able to reduce project costs by up to 20%	Amadeus Capital Partners, Hoxton Ventures	Series A	\$6.4	-	\$9.2	
Jan-20	Capmo	Construct tech	Capnamic Ventures	Series A	\$5.5	-	\$7.6	
Jan-20	Matera	Enables co-owners to manage their own building	Index Ventures	Series A	\$11.2	-	\$12.9	
Dec-19	Levelset	Construction finance/payment platform	Horizons Ventures	Series C	\$30.0	-	\$46.8	
Nov-19	Iotic	Digital twin technology	Breed Reply, IQ Capital, Talis Capital	Series A	\$8.3	-	\$8.3	
Nov-19	Dusty Robotics	Automates construction's BIM->field workflow via autonomous layout robots.	NextGen Venture Partners	Seed	\$5.0	\$15.0	\$7.2	
Nov-19	Renoveru	Housing design, renovation, and real estate brokerage.	NTT Urban Development	Series E	\$36.8	-	\$63.9	
Nov-19	RenoRun	Construction materials marketplace	Inovia Capital, Obvious Ventures	Series A	\$17.1	-	\$21.1	
Oct-19	Disperse.io	AI tools for improving on-site productivity	Northzone	Series A	\$15.0	-	\$16.7	
Oct-19	City Lift Parking	Automated parking systems.	Dundon Capital Partners	Series C	\$22.5	-	\$24.9	
Oct-19	hemea (ex-Travauxlib)	SaaS-enabled marketplace for home renovation	Daphni	Series A	\$5.5	-	\$7.5	
Sep-19	Building Radar	Detailed information on construction projects and the companies involved	PropTech1 Ventures	Series A	\$5.5	-	\$5.5	
Sep-19	Project Etopia	More economical and environmental developments through technology	Simon Reuben	Series A	\$23.6	-	\$27.6	
Sep-19	Built Robotics	Transforms heavy equipment into autonomous robots for earthmoving	Next47	Series B	\$33.0	-	\$48.0	
Sep-19	INDUSAI	SaaS 3D computer vision platform for construction	Millennium Technology Value Partners	Series A	\$8.0	-	\$11.7	
Sep-19	Fieldwire	Construction field management platform	Menlo Ventures	Series C	\$33.5	-	\$41.2	
Sep-19	Unearth	Collaboration software powered by IoT and remote sensing	Vulcan Capital	Series A	\$7.0	-	\$11.3	
Aug-19	Skylight	Fully integrated and technology powered home renovation service	Bow Capital	Series A	\$9.8	-	\$13.8	
Aug-19	Blokable	Tech-enabled multi-family housing/real estate company	Vulcan Capital	Series A	\$23.0	-	\$30.4	
Aug-19	Homebound	Custom homebuilder	Fifth Wall	Series B	\$35.0	-	\$53.0	
Jul-19	Zhongneng United	Engineering equipment for aerial work	Bank Of Jiangsu, China Merchants Bank, ICBC	Series C	\$145.3	-	\$225.8	
Jul-19	Sukedachi	Providing on-demand matching service between construction jobs and workers	SPARX Group	Series B	\$4.6	-	\$11.8	
Jun-19	Wizzcad	Construct tech	Join Capital	Series A	\$5.7	-	\$5.7	
Jun-19	Rhumbix	Construction field data and workflows	Blackhorn Ventures, Tenfore Holdings	Series B	\$14.3	-	\$34.9	
Jun-19	SafeAI	Retrofit autonomous solutions for heavy equipment in construction and mining	Autotech Ventures	Seed	\$5.0	-	\$5.0	
Jun-19	Tenderd	Construction machinery procurement/management marketplace	BECO Capital, Y Combinator	Seed	\$5.8	-	\$5.8	
Jun-19	Inertia	Location-driven construction management platform		Debt Financing	\$5.7	-	\$5.7	
May-19	Block Renovation	Home renovation platform	New Enterprise Associates	Series A	\$17.0	-	\$21.5	
May-19	eSUB Construction Software	Cloud-based project management software solution	Catalyst Investors	Series B	\$12.0	-	\$20.0	
May-19	Urbanbase	VR/AR tools for architecture and interior design	Woomi construction corporation	Series A	\$0.8	-	\$5.1	
May-19	Connect Homes	Prefab home builder	Brick & Mortar Ventures, Virgo Investment Group	Series A	\$10.8	-	\$19.8	
May-19	Reconstruct	Construct tech	Cultivation Capital	Series A	\$7.7	-	\$10.1	
Apr-19	IrisVR	Immersive collaboration tool for design and construction teams	Valar Ventures	Series A	\$4.0	-	\$13.7	
Apr-19	iMod Structures	Pre-fabricated, relocatable, steel-frame classrooms.	Goldman Sachs Urban Investment Group	Series A	\$11.0	-	\$15.2	
Apr-19	ProTenders	B2B platform for construction bidding	Hamda Saeed Al Otaiba	Seed	\$2.0	\$13.5	\$5.3	
Apr-19	HammerTech Global	Construct tech	Arrowroot Capital Management	Series A	\$10.0	-	\$10.0	
Apr-19	Datamate	Construct tech	RSBG Ventures	Seed	\$5.0	-	\$10.0	
Mar-19	Dvele	Prefab and modular homes	Crescent Real Estate	Series A	\$14.0	-	\$14.0	
Mar-19	Jianzhugang.com	Construction industry information service platform		Series A	\$7.5	-	\$7.5	

Selected Fundraising Transactions

Firms Raising +\$5 Million

MADISON PARK GROUP

Ascentage

(\$ in Millions)								
Company Overview			Fundraise Summary					
Date	Company	Description	Lead Investor(s)	Type	Amount Raised	Pre-Money Valuation	Raised To Date	
Mar-19	Kaarta	3D reality capture for the built and natural world	GreenSoil Building Innovation Fund	Series A	\$6.5	-	\$6.5	
Mar-19	Hesus	Construct tech	Demeter	Series B	\$11.4	-	\$14.7	
Feb-19	Craft Bank	Construct tech	DCM Ventures	Series A	\$8.8	-	\$9.8	
Feb-19	Rabbet	Construction finance platform	QED Investors	Series A	\$8.0	-	\$8.1	
Dec-18	Sweeten	Homebuilding construction labor marketplace	New Voices Fund	Series A	\$12.7	-	\$19.7	
Dec-18	FINALCAD	Construct tech	Cathay Innovation, Draper Esprit	Series C	\$40.0	-	\$63.0	
Sep-18	Plant Prefab	Prefabricated home factory dedicated to sustainable construction.	Obvious Ventures	Series A	\$5.1	-	\$8.6	
Aug-18	Assignar	SaaS platform for construction contractors	Tola Capital	Series A	\$6.2	-	\$10.7	
Jul-18	Prescient	Integrated design, engineering, manufacturing, and construction solution platform	Eldridge	Series E	\$50.0	\$650.0	\$105.4	
Jun-18	Raken, Inc.	Construct tech	U.S. Venture Partners	Series A	\$10.0	-	\$12.0	
Jun-18	Emagispace	Prefab - reusable wall system	Alpha Edison	Series B	\$5.1	-	\$9.3	
May-18	Forwell Parking	Forwell Parking is a parking management services company.	Binfu Capital	Series B	\$3.1	-	\$5.0	
Apr-18	TRUX	Logistics management software toolset		Series A	\$5.5	-	\$5.9	
Feb-18	HABX	Digital home designing startup	Idinvest Partners, XAnge	Series A	\$12.3	-	\$12.3	
Dec-17	Banglide	Transportation services platform for driver, trucks, construction machinery and equipment		Series B	\$3.0	-	\$5.0	
Dec-17	Cehome	Second-hand construction machinery service platform	Qiming Venture Partners	Series D	\$44.0	-	\$73.5	
Nov-17	Buildup	Collaboration tool for task management, punch list and inspections	TLV Partners	Series A	\$7.0	-	\$8.6	
Aug-17	Chongchong	Power bank sharing		Series A	\$75.1	-	\$75.1	
Jul-17	Urbanbase	VR/AR tools for architecture and interior design	CKD Venture Capital Corporation	Series A	\$3.3	-	\$5.1	
Jun-17	FullStack Modular	Turnkey modular solutions for developers of multifamily buildings, hotels and dorms	McCourt Global	Series A	\$6.0	-	\$6.0	
May-17	BuildZoom	Construct tech	BVC	Series A	\$9.0	-	\$23.7	
Dec-16	Electro Scan Inc.	Next generation sensor probes and SaaS applications to assess existing & new pipelines		Series B	\$5.0	\$30.0	\$12.0	
Nov-16	Leshoufu.com	Architecture and interior design services		Series A	\$11.8	-	\$13.1	
Apr-16	Tiebaobei	Second-hand engineering machine trading platform.	Genesis Capital	Series C	\$30.9	-	\$47.1	

Sources and Disclosure Statement

Advisors to the Industrial Software Economy

Sources & Notes

Data Sources

1. Pitchbook
2. CapitalIQ
3. LinkedIn
4. Public company filings & earnings transcripts
5. Press releases

Journals & Other Media

1. The Wall Street Journal
2. Gartner
3. Forrester Research
4. TechCrunch

Disclosures

Madison Park Group, LLC

3 Park Avenue, 31st Floor
New York, NY 10016

225 Franklin Street, 26th Floor
Boston, MA 02110

555 Lancaster Ave, Suite 500
Wayne, PA 19087

36 Maplewood Avenue
Portsmouth, NH 03801

www.madisonparkgrp.com



This presentation has been prepared by Madison Park Group and may only be used for informational purposes. This presentation provides an evaluation of the construction technology market and is not intended to be taken by, and should not be taken by, any individual recipient as investment advice, a recommendation to buy, hold or sell any security, or an offer to sell or a solicitation of offers to purchase any security. Past performance may not be indicative of future results. Different types of investments involve varying degrees of risk, and there can be no assurance that the future performance of any specific investment, investment strategy, or product made reference to directly or indirectly in this document, will be profitable, equal any corresponding indicated historical performance level(s), or be suitable for your portfolio. Acceptance of this information further constitutes your acknowledgement and agreement that Madison Park Group does not make any express or implied representation or warranty as to the accuracy or completeness of the information contained herein and shall have no liability to the recipient or its representatives relating to or arising from the use of the information contained herein or any omissions therefrom. Any use, disclosure, distribution, dissemination, copying or reproduction of this information without prior written consent or approval from Madison Park Group is strictly prohibited. Any third-party trademarks, service marks, logos, and trade names included in the report are property of their respective owners.

Madison Park Group, LLC provides independent financial advice on mergers, acquisitions, financial restructurings, private capital raising and similar corporate finance matters. Madison Park Group is not a retail broker-dealer. This communication is not intended for retail consumption. The firm does not conduct underwriting activities, provide research or analyst reports or solicit or carry accounts for, or offer or sell securities products to retail customers. Madison Park Group is regulated by the Financial Industry Regulatory Authority, Inc. ("FINRA") as a FINRA Member Firm. The information and services provided in this presentation are not provided to and may not be used by any person or entity in any jurisdiction where the provision or use thereof would be contrary to applicable laws, rules or regulations of any governmental authority or regulatory or self-regulatory organization or where Madison Park Group is not authorized to provide such information or services.