

MPG | MADISON PARK GROUP

Insights

Market Update
Engineering Software

March 2023

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Engineering Software Market Update

MADISON PARK GROUP

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I.



Industry Trends


Trusted Advisor to the Industrial Software Market

History of Successful Transactions Supported by Broad Coverage Model


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Growing Momentum with Tier-1 Clients

PE-Backed

 **ENVASE**

Strategic Sale

 **wisetech global**


PE-Backed

 **intellect**


Financial Sale

 **STRATTAM CAPITAL**


PE-Backed

 **Romax TECHNOLOGY**


Strategic Sale

 **HEXAGON**


Founding Team

 **operix**


Growth Investment

 **M33 GROWTH**

Founding Team

 **AgileAssets**

Strategic Sale

 **Trimble**

Founding Team

 **VISTAGY**
engineer success™

Strategic Sale

 **SIEMENS**

Continuous Dialogue with Market Leaders & Key Executives within the Industrial Tech Ecosystem

Supply Chain

 **alpega**  **AMERICAN SOFTWARE**  **basware**  **BlueYonder**  **BLUME**

 **C.H. ROBINSON**  **CommerceHub**  **coupa**  **DESCARTES**  **e2open**

 **Elemica**  **EPICOR**  **flexport**  **FOURKITES**  **GEP**





 **IFS Acumatica**  **ivalua**  **JAGGAER**  **J.B. HUNT**  **MERCELL**





 **MERCURYGATE**  **nShift**  **ORACLE**  **pitney bowes**  **project44**






 **RELEX**  **samsara**  **SAP**  **SPS COMMERCE**  **TELUS**





 **Tradecraft**  **TRANSPLACE**  **TUNISIAN NETWORK**  **wisetech global**  **XEEVA**

Construct Tech

 **AVEVA**  **Bentley**  **DASSAULT SYSTEMES**  **esri**

 **FARO**  **FORTIVE**  **HEXAGON**  **IBM**

 **NEMETSCHKE GROUP**  **ORACLE**  **PROCORE**  **proper**  **Deltak**

 **sage**  **Schneider Electric**  **TOPCON**  **Trimble**

Manufacturing

 **ABB**  **Aptean**  **aspentech**  **AUTODESK**  **AVEVA**

 **DASSAULT SYSTEMES**  **DÜRR**  **eci**  **EMERSON**  **EPICOR**

 **FORTERTERRO**  **GE Digital**  **HEXAGON**  **Honeywell**  **IFS Acumatica**

 **infor**  **ORACLE**  **ptc**  **QAD**  **revalize**

 **Rockwell Automation**  **roper**  **SANDVIK**  **SAP**  **Seeq**

 **SIEMENS**  **WERUM**

EHSQ

 **Alcumus**  **BENCHMARK ESO | CrossSolutions**  **cority**  **EcoOnline**  **enhesa**




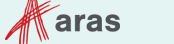
 **etq**  **EVOTIX**  **FORTIVE**  **hsi Health & Safety Institute**  **Honeywell**





 **Ideagen**  **ISO METRIX**  **KPA**  **LEAR CORPORATION**  **MasterControl**





 **ProcessMAP**  **Quentic**  **SafetyCulture**  **sphera**  **UL**





 **VectorCollisions**  **VelocityEHS**  **veriforce**  **Verisk**  **Wolters Kluwer**


Engineering

 **ALTAIR**  **Altium**  **Ansys**  **aras**

 **AUTODESK**  **Bentley**  **cādence**  **DASSAULT SYSTEMES**

 **esi**  **GAMMA TECHNOLOGIES**  **HEXAGON**  **jama software**

 **ptc**  **revalize**  **SIEMENS**  **SYNOPSYS**

 **ZUKEN**

Note: Vistagy sale to Siemens represents proprietary transaction completed by MPG principal

Market Drivers

Increasing Product Complexity Continues to Demand Improved Collaboration Capabilities and Specialized Engineering Knowledge

Select Identified Underlying Trends

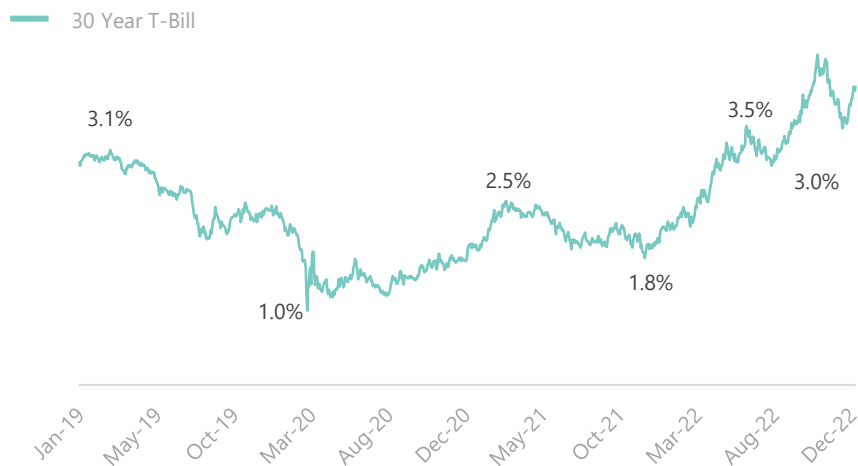
- 1 Industrial equipment manufacturers are folding EHSQ guidelines into their designs and looking for products to help them address these needs. This introduces opportunities, as well as challenges for engineering software providers. The same is true as manufacturers look for ways to aggregate and analyze carbon roll-up and sustainability as part of their designs.
- 2 Private equity firms across the spectrum are expanding their thesis and interest in the engineering software space. Many are looking for a base platform on which they can provide a broad product offering using acquisitions.
- 3 There continues to be significant interest and discussion around the concept of digital twin and the real-life applications of this technology. However, many components are still required to make digital twins truly effective for predictive maintenance and repair. This is an interesting opportunity for those in the market.
- 4 The management of downstream supplier quality is at the forefront of the initiatives of many software providers, and most are addressing this through acquisition.
- 5 Artificial Intelligence and Machine Learning offerings are beginning to be a component of product offerings, however, they have yet to significantly impact the offerings or revenue of companies in the space.
- 6 The need for products for complex battery simulation, thermal simulation of batteries, and the unique requirements for protective structure for batteries is opening up a new set of challenges and opportunities in engineering software industry. Many solutions to these problems are coming from smaller players within the ecosystem.
- 7 All the providers of traditional design, PLM, and CAE tools are pursuing acquisition strategies to expand out of their traditional (e.g., structural, CFD, etc.) markets. Broad themes of expansion include electronics, supply chain management, and general data analytics.

Deal Activity Remains Strong

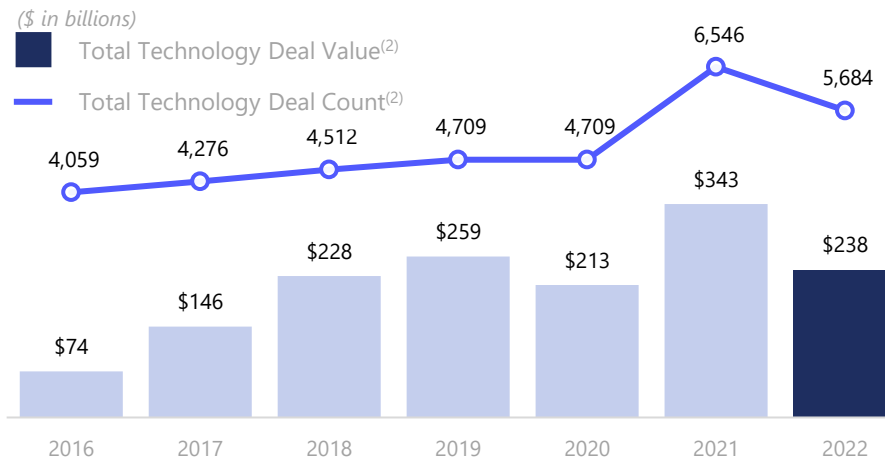
Strategics and Investors Still Continue to Pursue Opportunities in the Space

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Due to the continuous interest rate increases throughout the year...

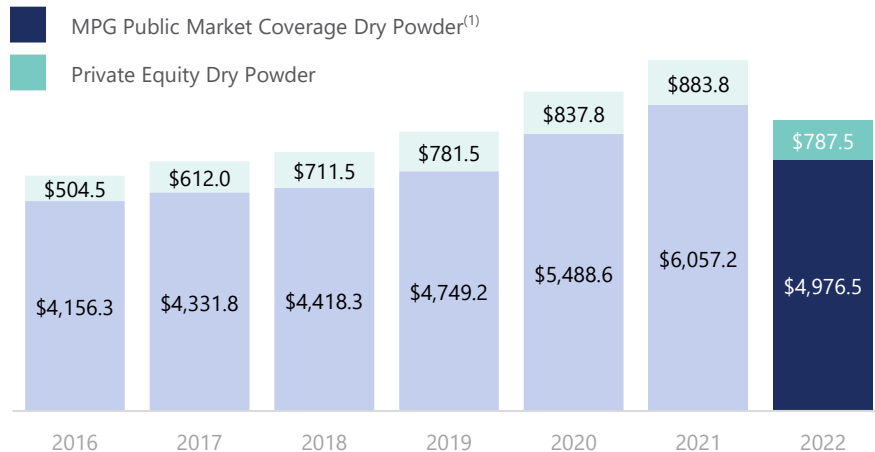


...2022 transaction activity returns closer to pre-pandemic levels...



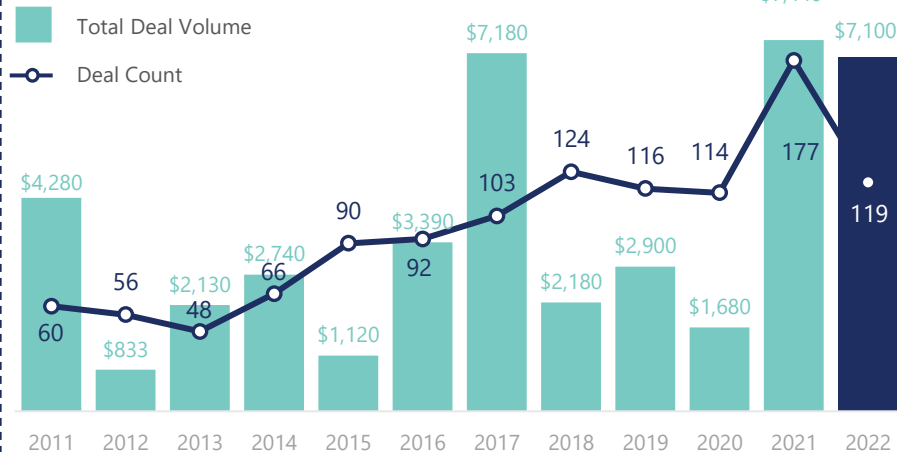
...PE's and strategics still remain active with dry powder near historic levels...

As of December 31 (\$ in billions)



...so engineering software transaction activity should continue upward

(\$ in millions)



Note: (1) Includes Seed, Angel, Early Stage, and Later Stage VC activity

Source: Pitchbook, Capital IQ, corporate websites, press releases

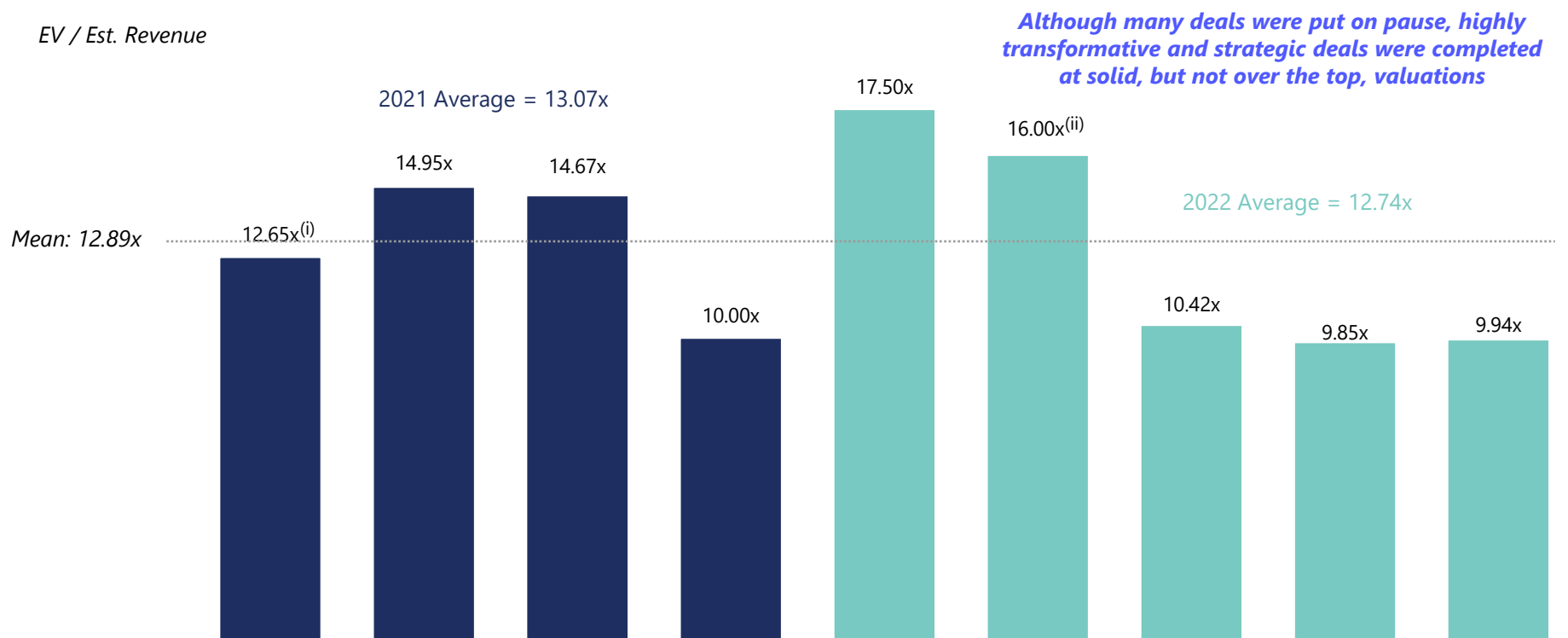
Aggressive Offensive Acquisitions

M&A Slowed in the Latter Part of 2022, However Game-Changing Acquisitions Continue to Close, Regardless of Market Uncertainty

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Representative Engineering and Manufacturing Software Acquisitions Since June 2021

EV / Est. Revenue



Target	SEEQUENT	infor EAM	PLEX	Supplyframe	POWER LINE SYSTEMS INC.	etq ¹	Brightly	SERVICE MAX	TRANSPOREON
Buyer	Bentley	HEXAGON	Rockwell Automation	SIEMENS	Bentley	HEXAGON	SIEMENS	ptc	Trimble
Date	Jun-21	Jul-21	Aug-21	Aug-21	Jan-22	Feb-22	Aug-22	Dec-22	Dec-22
Size (\$M)	\$1,050	\$2,750	\$2,220	\$700	\$700	\$1,200	\$1,875	\$1,460	\$1,980

Source: Pitchbook, Capital IQ, corporate websites, press releases, MPG proprietary knowledge

(i) Estimates based on "10% of Bentley Systems' key financial metrics (ARR, annual revenue, EBITDA)" in transaction PR derived as 10% of Bentley's LTM Mar-21 revenue of \$828.9m and EBITDA of \$245.9m

(ii) Estimated \$40m total revenue assumes "\$30m of subscription revenue" reported in transaction PR represents 75% of total revenue

Engineering & Manufacturing M&A in 2022

Tracking Large and Under-the-Radar Strategic Acquisitions with Market-Moving Impacts

















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Date	Acquirer	Target	Relevant Industrial Technology Transactions
December 2022			Schneider Electric acquired remaining share of Aveva <i>Engineering design, information management, and software solutions</i>
December 2022			Faro acquired SiteScope <i>LiDAR 3D scanning software solutions for the AEC and O&M markets</i>
December 2022			Lectra acquired TextileGenesis <i>Traceability platform for textile ecosystem</i>
October 2022			Stratasys acquired Riven <i>3D scanning and proprietary algorithms providing manufacturing insights</i>
October 2022			Aspentech acquired inmation <i>Industrial information management system solutions</i>
September 2022			CADMATIC acquired CLA <i>Construction management and engineering data management software</i>
September 2022			Tech Soft 3D acquires Redway3D <i>Photo-realistic visualization software</i>
July 2022			Ensono acquired AndPlus <i>Data engineering & digital transformation services</i>
July 2022			Signia Aerospace acquired Mezzo Technologies <i>Manufacturer of microtube heat exchangers</i>
July 2022			Matterport acquired VHT, Inc <i>Convenient photography and image management services</i>
June 2022			NOTE acquired Dynamic Precision Solutions <i>R&D Development of software & hardware designs</i>
June 2022			NAFEMS acquired ASSESS <i>Software for Engineering Simulation</i>
June 2022			Altair acquired Concept Engineering <i>Electronic system visualization software</i>
June 2022			Altair acquired Gen3D <i>Software and consulting systems</i>

Engineering & Manufacturing M&A in 2022

Tracking Large and Under-the-Radar Strategic Acquisitions with Market-Moving Impacts

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Date	Acquirer	Target	Relevant Industrial Technology Transactions
June 2022	 ZEBRA	 MATROX IMAGING	Zebra Technologies acquired Matrox Imaging Division <i>Software solutions for OEMs and integrators in imaging</i>
May 2022	 Schneider Electric	 xcelgo <small>Virtual Automation Technologies</small>	Schneider Electric acquired Xcelgo <i>3D Modeling software</i>
May 2022	 CT	 infodream	CT Engineering Group acquired Infodream <i>Manufacturing execution system (MES) software</i>
May 2022	 ptc	 INTLAND SOFTWARE	PTC acquired Intland Software <i>Application lifecycle management platform</i>
April 2022	 software AG	 StreamSets	Software AG acquired StreamSets <i>Data ops & integration platform</i>
March 2022	 Inceptra	 NobleTek	Inceptra acquired NobleTek <i>Aerospace engineering services</i>
February 2022	 AUTODESK	 prodsmart	Autodesk acquired Prodsmart <i>Real-time tracking application</i>
January 2022	 VDA	 telkonet	VDA Group acquired Telkonet <i>IIoT platform for intelligent automation solutions</i>

Reference Investment Transactions

Investor Interest in Engineering Software Spans Early-Stage Growth to Late-Stage Buyout

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(\$ in millions)

Target	Lead Investor	Date	Comments & Observations	Deal Type	Amount Raised ⁽ⁱ⁾	Pre-Money Valuation ⁽ⁱ⁾	Amount Raised To-Date ⁽ⁱ⁾
 ELECTRA VEHICLES	 united ventures	Feb-23	<ul style="list-style-type: none"> Electra will use the funds to support scaling operations and to deploy software technology to solve several problems in the electrification industry 	Later Stage	\$21.3	-	\$25.8
 snaptrude	 Accel	Jan-23	<ul style="list-style-type: none"> Snaptrude is attempting to disrupt Autodesk in the building design space, giving customers modern and broader sets of features at a more affordable cost 	Seed	\$6.6	-	-
 XSCAPE PHOTONICS	 ALTAIR	Dec-22	<ul style="list-style-type: none"> The investment allows Altair to collaborate with the innovators at Xscape and make further advancements in high-performance computing (HPC) hardware 	Seed	\$10.0	\$20.0	\$5.0
 SAMP	 Turenne GROUPE	Oct-22	<ul style="list-style-type: none"> Samp plans to use the funds it just raised to expand outside of France 	Early VC	\$3.9	-	-
 CloudNC	 AUTODESK	Jun-22	<ul style="list-style-type: none"> The additional capital raised will be used to further develop CloudNC's AI manufacturing technology 	Series B	\$66.7	\$92.3	\$108.9
 AKSELOS	 Shell Ventures	May-22	<ul style="list-style-type: none"> With this investment Akselos acquires an investor base to support their ongoing global growth, enabling it to scale both its team and solutions 	Series A	\$17.1	\$46.1	\$27.8
 MORAI	 Atinum INVESTMENT	Feb-22	<ul style="list-style-type: none"> MORAI will use new capital to focus on hiring quality talent and enhance technological edge for global competitiveness 	Series C	\$20.9	-	\$22.6
 GAMMA TECHNOLOGIES	 INSIGHT PARTNERS	Feb-22	<ul style="list-style-type: none"> Insight joins existing investors TA Associates and Cove Hill, who made a significant new investment in the business 	Minority	-	-	-
 QbD Vision	 S3 VENTURES	Feb-22	<ul style="list-style-type: none"> The funding round will accelerate QbD Vision's mission to shape the digital future of life science manufacturing and drive expansion of its commercial market 	Series A	\$15.0	-	-

Source: Pitchbook, Capital IQ, corporate websites, press releases, MPG proprietary knowledge

(i) \$ in millions

Electric Vehicles are Changing Engineering Design

New Physical Assets and Technologies Present Challenges for Engineers and Engineering Software Providers

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Simulation software is being utilized to solve the complex problems which arise from designing and deploying electric vehicles at scale



Battery Simulation

- ✓ EVs rely on complex battery systems that require sophisticated modeling which can simulate performance under different stresses including loads, temperature, battery chemistries, and mileage
- ✓ The batteries which power EVs are susceptible temperature variations, and can generate significant amounts of heat, ultimately affecting the vehicles range and performance and requiring new types of CFD analysis
- ✓ Simulation software aims to understand how to better insulate batteries from outdoor temperatures and create adequate heatsinks which dissipate heat from vulnerable pieces of electronics and protect the battery



Crash Simulation

- ✓ Due to the structural differences between EVs and traditional vehicles, engineers are actively looking for, and creating, better methods of ensuring the safety of passengers
- ✓ EVs primary difference is the large battery and electric engine which react differently during a collision than a combustible engine
- ✓ These challenges create unique problems for FEA and simulation software solutions



Charging Infrastructure

- ✓ With increased public and private demand for EVs, countries and private organizations are investing in charging infrastructure
- ✓ In order to manage the shift away from traditional combustible engines, engineers are modeling the power flow between EVs and charging stations, accounting for power ratings, vehicles' battery levels, and charging rates
- ✓ By integrating simulation software with charging infrastructure, engineers can design EVs that are optimized for fast, efficient, and safe charging. This will help accelerate the adoption of electric vehicles globally



Environmental Impact

- ✓ EVs are generally considered more environmentally friendly than alternatives because they produce fewer tailpipe emissions. However, they still generate emissions during the manufacturing process, the disposal of the battery, and through the electricity use to charge them
- ✓ Simulation software is being utilized to evaluate the overall environmental of a vehicle, and identifying opportunities to improve sustainability while minimizing its carbon footprint



Cost Simulation

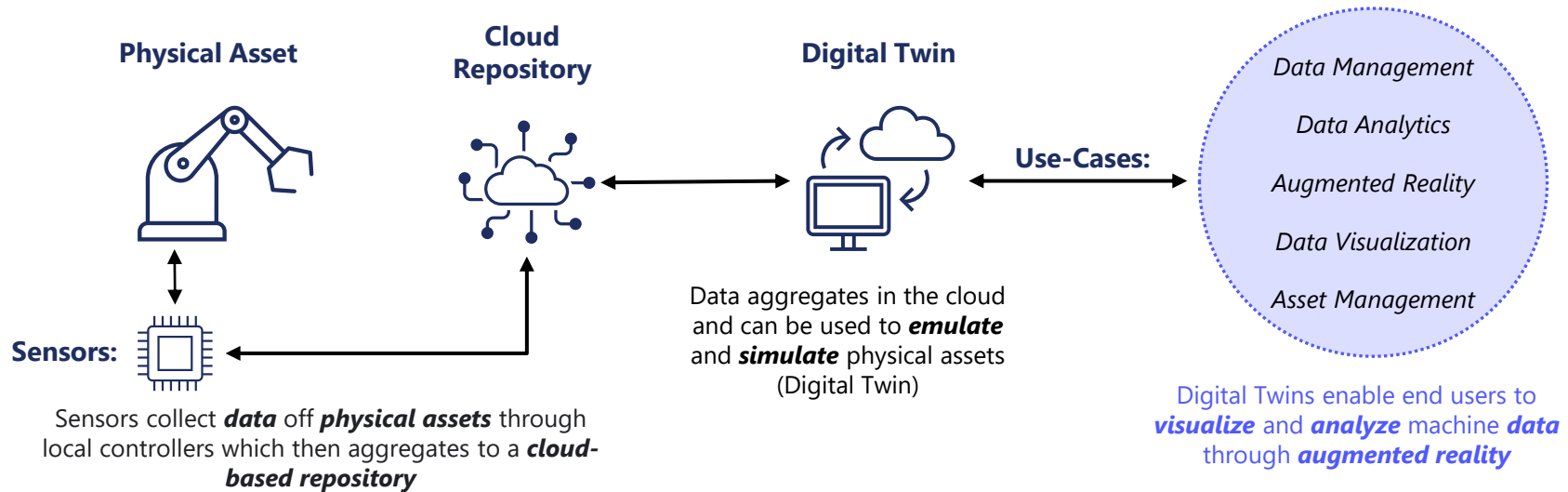
- ✓ EVs require several rare earth commodities which are sensitive to economic and geopolitical factors that ultimately affect the bottom-line during production
- ✓ Cost simulators are being utilized to obtain a more granular and accurate understanding of the quantity of materials necessary during manufacturing, optimizing the production process and the overall cost to consumer

Digital Twin Ecosystem

Digital Twins Enhance Workplace Efficiencies Through Unparalleled Data Visibility, But Rely Heavily On Domain Expertise And Planning

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Visualizing the Digital Twin Integration



Key Features:

Real-time monitoring: Digital twins provide real-time data regarding a physical system which allows for continuous monitoring and analysis of a system's performance. This can help identify issues or inefficiencies that would otherwise go unnoticed

Predictive Maintenance: By analyzing data collected through digital twins, the user can identify underlying issues and resolve them before they interrupt a process, saving costly machine downtime

Simulation & Optimization: Digital twins are used to enumerate through different potential scenarios and optimize the performance of a system, leading to decreased costs and improved efficiency

Design & Testing: Digital twins are used to design and test new systems and products within a virtual environment, ultimately reducing the need for physical prototypes and accelerating the design and engineering phases of production

Digital Twin and Predictive Maintenance Ecosystem

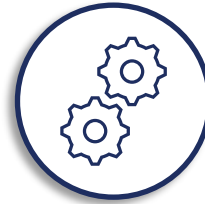
Successful Implementation of Predictive Maintenance Using Digital Twins Requires a Broad Ecosystem of Integrated Technologies

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Transportation & Logistics Management

- ✓ To optimize enterprise integration and usage of digital twins and predictive maintenance capabilities, a strong transportation and logistics management system tracking physical assets is required
- ✓ A strong logistics management system enables companies to ensure necessary parts are on site when a digital twin alerts of potential failures or production flaws
- ✓ The predictive maintenance capabilities of a digital twin are not effective without this essential component of the value chain



Inventory Management

- ✓ Once necessary parts have been transported to the engineering and manufacturing floor on-site, the company must have the capability to keep accurate records of quantity, location, and price
- ✓ The inventory management system plays a pivotal role with digital twins and their predictive maintenance capabilities. When a machine is on the verge of failure, the right part needs to be in stock and locatable
- ✓ The digital twin's alerts and capabilities provide little value without an inventory management system which ensures parts with a high probability of failure are readily available



Employee Management & Training

- ✓ While transporting and storing spare parts is necessary to complementing and completing a digital twin's capabilities, having the right people in place at the right time is just as critical
- ✓ Organizations must ensure that when a system fails, an employee with the right training and expertise is on-sight to address these failure
- ✓ Without the proper physical assets and sufficiently trained employees, digital twins serve little purpose for an organization's efficiency because predictive maintenance capabilities require the coordination of multiple complementary systems

II.



Featured Companies

Altair

Business Overview

(\$ in millions)

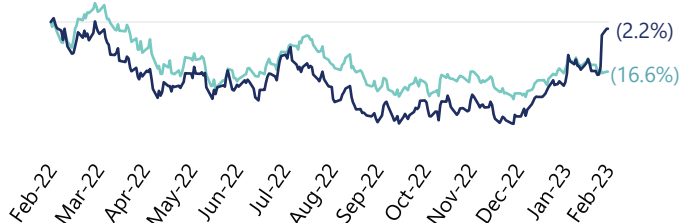
Headquarters:	Troy, MI
LinkedIn Employees (1-Yr. Growth):	3,465 (▲9%)
Website:	altair.com
Ownership Status:	Public (NasdaqGS: ALTR)
Acquisitions:	38
Enterprise Value (EV):	\$4,901.8
TTM Revenue:	\$524.8
LTM EBITDA:	\$46.2
EV / TTM Revenue:	9.34x
EV / TTM EBITDA:	106.10x

Description:

Provider of software and cloud solutions in the areas of product development, high performance computing (HPC), and data analytics

TTM January 2023 Market Pricing

— NASDAQ — ALTR



« Acquisition Provides Altair with General Data Set Analytics and Design Technology Expansion

- In [September 2022](#), Altair announced the completion of the acquisition of RapidMiner, a low-code platform for data analytics and machine learning
 - This acquisition expands Altair's offering into general analytics of large, complex data sets
 - Although we expect Altair to initially point this offering to its traditional analysis markets, we expect it to be offered as a general analytics tool for a variety of domains
- In [June 2022](#), Altair announced the acquisition of Concept Engineering, a provider of software for visualizing electronic systems for the design, production, and maintenance of intricate electronic and electrical systems
 - With the acquisition of Concept Engineering, Altair will offer customers visual representations of complex system models and debug capabilities for electronic systems
- In [June 2022](#), Altair acquired Gen3D, expanding design technology for additive manufacturing
 - Gen3D's technology provides a means for creating geometry using implicit modeling methods which traditional boundary representation (BREP) solid methods cannot achieve
- In [March 2022](#), Altair expanded its electronic system design technology with the acquisition of Powersim
 - PSIM, which is Powersim's main product provides tools for electronics and motor drive simulation and design software, delivers unrivaled simulation speed and precise system-level results
- In [February 2022](#), Altair acquired CassiniPLM to advance development of digital thread technology
 - The comprehensive view of digital thread activities in the simulation portion of the PLM value chain is strengthened by incorporating Cassini's solution via the Altair One cloud platform
 - The acquisition also provides a broader foundation for Altair's expansion in Simulation Lifecycle Management

« Altair Eyes HPC Advancements with Xscape Photonics Investment

- In [December 2022](#), Altair led a seed funding round for Xscape Photonics with a \$10M investment
 - Photonic chips made by Xscape Photonics feature patent-pending technology for ultrahigh-bandwidth connections in data centers and high-performance computing (HPC) systems



Altium

Business Overview

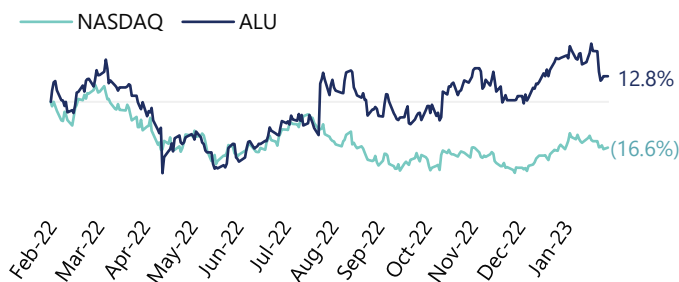
(\$ in millions)

Headquarters:	La Jolla, CA
LinkedIn Employees (1-Yr. Growth):	891 (▲8%)
Website:	altium.com
Ownership Status:	Public (ASX:ALU)
Total Acquisitions:	12
Enterprise Value (EV):	\$3,522.2
TTM Revenue:	\$220.5
TTM EBITDA:	\$83.56
EV / TTM Revenue:	15.97x
EV / TTM EBITDA:	42.2x

Description:

Printed circuit board (PCB) design software products and electronic component data management

TTM January 2023 Market Pricing



« Altium Focused on Executing Next Generation of Electronic Designers

- In [March 2022](#), Altium launched Electronic Design Program for university students
 - With this new program, Altium intends to prepare students to advance industry-level printed circuit board design and manufacturing careers
- In [January 2022](#), Nexar, a business unit of Altium, announced a new partnership with SiliconExpert
 - The partnership aims to address component lifecycle issues faced by PCB designers by integrating part data from SiliconExpert into the Altium PCB design tool workflows
- In [January 2022](#), Altium and MacroFab partnered to launch integrated PCB “Design WITH Manufacturing” application
 - Altitude, which is available on MacroFab's fully digital, elastic manufacturing platform and is connected directly to the Altium 365 cloud platform, enables customers to get an instant quote and place an order to produce their PCB assembly without ever leaving their design environment

« Altium’s Business Unit, Nexar, Launches New Product in 2022

- In [July 2022](#), Nexar, a business unit of Altium, announced the launch of the Octopart CAD Model Marketplace
 - Nexar is a free database made up of a repository of computer aided design (CAD) models for electronic components
 - Octopart, part of the Nexar ecosystem, is an electronic component search engine powered by part data and intelligence from the Nexar API
 - Octopart’s new CAD Model Marketplace streamlines PCB design and part selection workflows to create a single unified user experience that aggregates CAD models

Ansys

Business Overview

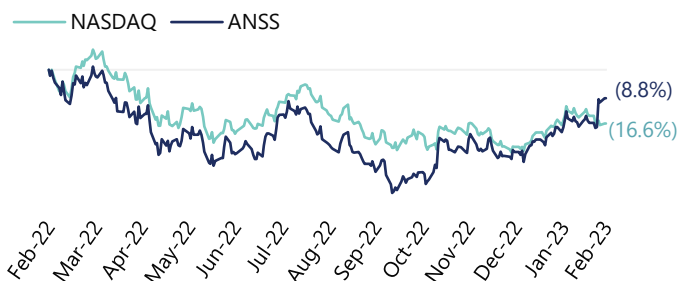
(\$ in millions)

Headquarters:	Canonsburg, PA
LinkedIn Employees (1-Yr. Growth):	6,628 (▲9%)
Website:	ansys.com
Ownership Status:	Public (NasdaqGS: ANSS)
Acquisitions Since 2010:	39
Enterprise Value (EV):	\$24,609.2
TTM Revenue:	\$2,027.1
TTM EBITDA:	\$835.3
EV / TTM Revenue:	12.25x
EV / TTM EBITDA:	28.7x

Description:

Engineering simulation software solutions for product design and development across aerospace & defense, automotive, electronics, semiconductors, energy, and more

TTM January 2023 Market Pricing



« Ansys Continues to Build Out Simulation Capabilities

- In [January 2023](#), Ansys acquired particle dynamics simulation software Rocky
 - RockyDEM provides tools to aid in resolving design issues involving discrete solids and intricate multi-physics interactions
 - Rocky DEM's representation of application-specific particle shapes is focused on the engineering of bulk materials handling equipment
- In [December 2022](#), Ansys and automotive simulation company DYNAmore signed a definitive acquisition agreement
 - DYNAmore is a longtime channel and software development partner of Livermore Software Technology Corporation (LSTC), which Ansys acquired in 2019
 - According to ANSYS, the company's software and services are used by more than 150 universities and has nearly 800 industrial customers
- In [May 2022](#), Ansys acquired Motor Design Limited, a provider of design and simulation tools for motors and electric machines
 - The acquisition of Motor Design Limited (MDL) builds on the existing partnership and collaboration between the two companies
 - Ansys and Motor Design are quite familiar with one another as they were previously distribution partners for a number of years prior to the acquisition
- In [April 2022](#), Ansys signed a definitive agreement to acquire OnScale, a provider of cloud simulation technology
 - OnScale will help provide a cloud-native, web-based user interface (UI) for device-independent access to Ansys' extensive array of simulation technologies once it is incorporated into the company's existing cloud portfolio

« CFO of Teradata Joins Ansys Board of Directors

- In [December 2022](#), Ansys appointed Claire Bramley to the board of directors
 - Claire is the current Chief Financial Officer at Teradata Corporation, a data platform for enterprise analytics company

Aras

Business Overview


(\$ in millions)

Headquarters:	Andover, MA
LinkedIn Employees (1-Yr. Growth):	544 (▲ 13%)
Website:	aras.com
Ownership Status:	PE-backed (GI Partners)
Total Acquisitions:	4
Enterprise Value (EV):	n/a
TTM Revenue:	n/a
TTM EBITDA:	n/a
EV / TTM Revenue:	n/a
EV / TTM EBITDA:	n/a

Description:

Open product lifecycle management platform that connects users in all disciplines and functions to critical product data and processes across the lifecycle and throughout the extended supply chain

Select Funding / Transaction History

Date	Lead Investor	Amount
Apr-21	GI PARTNERS	n/a (buyout)
Nov-18		\$70.0 million (Series D)
Oct-18		\$1.5 million (Series C?)
Sep-17	SILVERLAKE	\$39.5 million (Series C)
Nov-17		\$2.79 million (Series B)

Sources: Pitchbook, Capital IQ, corporate websites, press releases, LinkedIn, market data as of 1/31/2023

« Merger Focused on Industry-Specific Applications for Medical Technology

- In [January 2022](#), Aras announced the merger with Minerva for PLM Functionality focused on the Medical Devices and High-Tech Electronics industries
 - The merger provides vertical industry knowledge in the production of automotive, aerospace, defense, and industrial equipment, and will provide Aras a direct, local presence in the Netherlands and the Nordics
 - Minerva's products were already built on the Aras platform

« AVEVA Partnership Leads to Innovative Cloud-Based Asset Lifecycle Management Solutions

- In [September 2022](#), Aras announced a Strategic Licensing Partnership with AVEVA
 - This partnership will integrate Aras's portfolio of applications with AVEVA Unified Engineering and AVEVA Asset Information Management
 - The partnership brings Aras' PLM product closer to meeting the needs of Asset Lifecycle Management

« Digital Twin Deployment

- In [June 2022](#), Bureau Veritas and Aras Deploy Digital Twin Pilots
 - The maritime industry will benefit from this collaboration, which will provide Aras customers with a more advanced and enhanced digital experience for all services

Autodesk

Business Overview

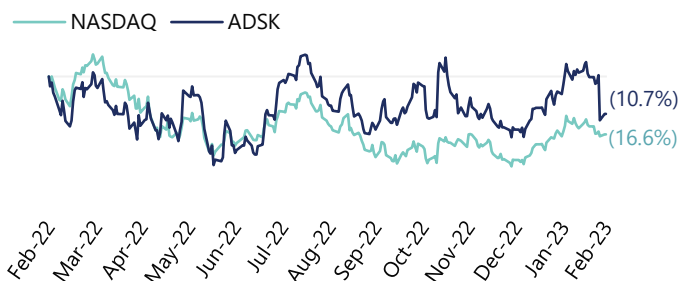
(\$ in millions)

Headquarters:	San Rafael, CA
LinkedIn Employees (1-Yr. Growth):	13,965 (▲3%)
Website:	autodesk.com
Ownership Status:	Public (NasdaqGS: ADSK)
Total Acquisitions:	110
Enterprise Value (EV):	\$50,473.5
TTM Revenue:	\$4,898.4
TTM EBITDA:	\$1,784.9
EV / TTM Revenue:	10.30x
EV / TTM EBITDA:	28.1x

Description:

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

TTM January 2023 Market Pricing



« Autodesk Enters New Era of AI-Powered Design Tools

- In [October 2022](#), Autodesk AI Lab continued to expand their efforts within AI-powered design tools
 - Formed in 2018 as a part of Autodesk Research, the Autodesk AI Lab conducts fundamental and applied research in AI and machine learning with an aim to unlock a new era of AI-powered design tools for Autodesk customers
 - In [September 2022](#), Autodesk announced advancements in cloud-based solutions that extend the digital thread and drive sustainability
 - With Autodesk Tandem, iOffice + SpacelQ, and Innovyze, Autodesk is expanding its support for the building lifecycle downstream into the owner-operators' market
 - In [February 2022](#), Autodesk acquired Prodsmart, a real-time system of record for data collection, management, and analysis
 - Prodsmart provides production managers with information from order to shipping
 - This address a critical need of manufacturers by providing them insight into and management of their supply chain, which affects overall manufacturing efficiency
- In [February 2022](#), Autodesk also acquired the IP assets of CIMCO, best known for its industry-leading machine communication software and G-Code Visualization
- This technology provides Autodesk the ability to enhance machinists' connection to the larger product development cycle

« Enhanced Requirements Capabilities Through Partnerships

- In [September 2022](#), Autodesk announced Fusion 360 extensions, partnerships, broader online availability announced at AU 2022
 - Extending Fusion 360's capabilities will meet requirements throughout the entire product design and manufacturing process

« New Addition to Board of Directors

- In [August 2022](#), Autodesk appointed Rami Rahim to Board of Directors
 - Rahim is the Chief Executive Officer at Juniper Networks, a market leader in secure, AI-driven networks that provides solutions and insight into automation, and security

Bentley Systems

Business Overview

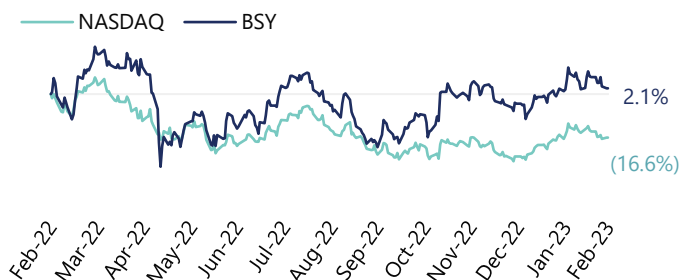
(\$ in millions)

Headquarters:	Exton, PA
LinkedIn Employees (1-Yr. Growth):	4,674 (▲4%)
Website:	bentley.com
Ownership Status:	Public (NasdaqGS: BSY)
Total Acquisitions:	44
Enterprise Value (EV):	\$13,942.9
TTM Revenue:	\$1,079.9
TTM EBITDA:	\$348.6
EV / TTM Revenue:	12.87x
EV / TTM EBITDA:	39.6x

Description:

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

TTM January 2023 Market Pricing



« Bentley Eyes Expansion into IoT Space

- In [February 2023](#), Bentley acquired EasyPower, an electrical engineering design and analysis software maker
 - This broadens Bentley's comprehensiveness in infrastructure engineering by expanding integrated and iterative power system design and analysis for all kinds of infrastructure digital twins
- In [December 2022](#), Seequent, a Bentley company, acquired DRIVER, an innovative solution for 3D analysis of geochemical data for insights and anomaly detection from Minerva Intelligence
 - Seequent's acquisition of DRIVER adds to the portfolio's growing technological capability by utilizing data science to provide deeper data insights, workflow optimization, and improved project outputs
- In [August 2022](#), Bentley Acceleration Initiative announced the acquisition of eagle.io, a cloud-based environmental Industrial Internet of Things (IIoT) platform
 - With this acquisition, Bentley will be able to enhance its infrastructure IIoT offerings and expand its presence in Australia, New Zealand, and the Asia-Pacific
- In [April 2022](#), Bentley Systems announced the acquisition of ADINA, developer of finite element analysis software
 - The acquisition will extend nonlinear simulation throughout infrastructure engineering
 - With the ability to simulate the entire behavior of structures, users of infrastructure digital twins will have a more complete analysis than designs that are simply analyzed to meet prescribed code standards

« 2022 Product Focus on Infrastructure Lifecycle and Value Chain

- In [November 2022](#), Bentley Systems launched iTwin Experience, iTwin Capture, and iTwin IoT to Extend iTwin platform
 - The iTwin platform is a platform of APIs and libraries for digital twin applications
 - The platform handles data integration, visualization, change tracking, security, and analytics of digital twins for infrastructure assets

Cadence Design Systems

Business Overview

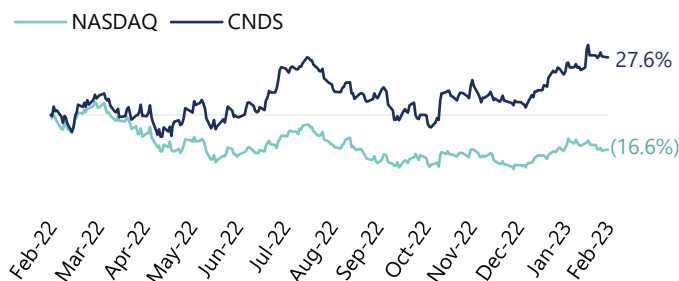
(\$ in millions)

Headquarters:	San Jose, CA
LinkedIn Employees (1-Yr. Growth):	8,619 (▲2%)
Website:	cadence.com
Ownership Status:	Public (NasdaqGS: CDNS)
Total Acquisitions:	49
Enterprise Value (EV):	\$51,667.8
LTM Revenue:	\$3,434.9
LTM EBITDA:	\$1,453.7
EV / LTM Revenue:	15.05x
EV / LTM EBITDA:	35.5x

Description:

Cadence is a full-service contract manufacturing partner, providing initial product design and development through complete manufacturing. The Company also provides 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 design

TTM January 2023 Market Pricing



« Acquisitions Provide Cadence with Medical Device and Commercial Components

- In [January 2023](#), Cadence announced the acquisition of Utitec, Inc. a manufacturer specializing in miniature, deep drawn medical device and commercial components
 - This acquisition positions Cadence to enter the medical device contract manufacturing market
- In [November 2022](#), Cadence closed its acquisition of Antrim Design Systems, maker of analog design tools
 - Thanks to the Antrim acquisition, Cadence's Analog Design Environment now supports behavioral characterization, modeling, and rapid analog prototyping
- In [July 2022](#), Cadence acquired computational molecular design company OpenEye Scientific for \$500M
 - The deal is expected to add approximately \$40M revenue in fiscal 2023 and will close in Q3 2022
 - This acquisition is another data point of Cadence's expansion out of its traditional markets
- In [July 2022](#), Cadence completed the acquisition of Future Facilities, a company focused on CFD and operational management of data centers for \$100M
 - The Cadence Intelligent System Design strategy supports its multi-physics system analysis and computational fluid dynamics (CFD) portfolios are expanded by the addition of Future Facilities' technologies and expertise

« Major Partnership with McLaren Formula 1 Team

- In [May 2022](#), Cadence was named an Official Technology Partner of the McLaren Formula 1 Team
 - McLaren plans to leverage Cadence's simulation technology in the area of CFD

Dassault Systèmes

Business Overview

(\$ in millions)

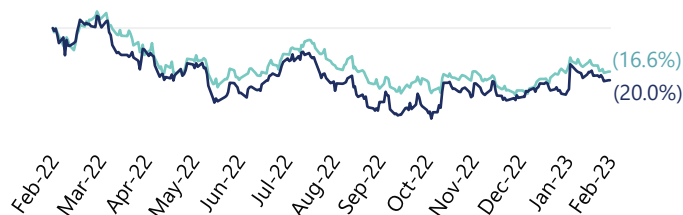
Headquarters:	Vélizy-Villacoublay, France
LinkedIn Employees (1-Yr. Growth):	23,146 (▲9%)
Website:	3ds.com
Ownership Status:	Public (PAR: DSY)
Total Acquisitions:	54
Enterprise Value (EV):	\$49,106.7
TTM Revenue:	\$5,895.7
TTM EBITDA:	\$2,232.8
EV / TTM Revenue:	8.33x
EV / TTM EBITDA:	21.9x

Description:

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

TTM January 2023 Market Pricing

— NASDAQ — DSY



« Bringing Augmented Reality and Field Control Technology to its Manufacturing Customers

- In [September 2022](#), Dassault Systèmes acquired Diota, developer of assembly assistance and quality control software solutions for manufacturing and operations
 - The acquisition will enhance Dassault Systèmes' 3DEXPERIENCE platform with shop floor-based actionable virtual twin experiences, enabling other industries, including aerospace and defense, industrial equipment, transportation and mobility, and others, to improve the efficiency of intricate industrial processes
 - Dassault Systèmes will integrate Diota's solutions into its DELMIA applications

« Significant Partnerships Shape 2022 for Dassault Systèmes

- In [November 2022](#), Dassault Systèmes announced that Blue Spirit Aero, an aviation startup utilizing the power of hydrogen fuel cell technology, is utilizing the cloud-based Dassault Systèmes 3DEXPERIENCE platform to accelerate the development of its hydrogen-electric light aircraft and advance the certification of accessible clean aviation
 - From concept to certification, the aircraft's development on the 3DEXPERIENCE platform will support the hydrogen economy and demonstrate the viability of cleaner aviation solutions
- In [October 2022](#), Dassault Systèmes Partnered with Sanofi to Optimize Tech Transfer and Industrialization at Its Future "EVolutive Facilities"
 - Sanofi will use the 3DEXPERIENCE platform to design, implement, qualify, and operate modular production lines at its new "EVolutive Facilities" (EVF) in Singapore and France

Gamma Technologies

Business Overview

(\$ in millions)

Headquarters:	Westmont, IL
LinkedIn Employees (1-Yr. Growth):	213 (▲ 16%)
Website:	gtisoft.com
Ownership Status:	PE-backed (TA , Insight)
Acquisitions:	3
Enterprise Value (EV):	n/a
TTM Revenue:	n/a
TTM EBITDA:	n/a
EV / TTM Revenue:	n/a
EV / TTM EBITDA:	n/a

Description:

Multi-physics CAE system simulation software spanning fluid flow, thermal, mechanical, electrical, magnetic, chemistry, and controls primarily for engines, vehicle systems & components, and more

Select Funding / Transaction History

Date	Lead Investor	Amount
Feb-22		n/a (minority transaction)
May-18		n/a (secondary transaction)
Jun-15		n/a (buyout)

« GT Acquisitions Center Around High Efficiency, Decarbonization, and Zero-Emissions

- In [November 2021](#), Gamma Technologies announced it has entered into an agreement to acquire FEMAG Software
 - FEMAG technologies, integrated within the GT-SUITE system simulation platform, enable optimization of motor performance and propulsion efficiency
 - Gamma will establish a Global Center of Excellence for Electric Machines in Basel, Switzerland to extend the FEMAG software technologies and related industry solutions
- In [November 2021](#), Gamma Technologies acquired Exothermia S.A.
 - The acquisition of GT enables the development of next-generation systems with a focus on high efficiency, decarbonization, and zero-emission vehicles

« Insight Partners Provides Key Investment to Continue Growth Mission

- In [February 2022](#), Gamma Technologies received a strategic growth investment from Insight Partners
 - Insight Partners joins existing investors TA Associates and Cove Hill Partners
 - The majority shareholder in Gamma Technologies is still TA, which made its initial investment in the business in 2015; Cove Hill, an investor since 2018, and Insight Partners will each hold significant minority stakes

« GT and KULR Technology Partners Ink Partnership

- In [October 2022](#), Gamma Technologies announced a partnership with KULR Technology Partners
 - As a result of the partnership, KULR will incorporate Gamma Technologies' GT-SUITE multi-scale, multi-physics analysis platform into its robust, all-encompassing product and service portfolio. Using GT-SUITE's simulation capabilities, KULR can create highly optimized designs for the next generation of batteries to ensure that its customers have access to cutting-edge solutions

Hexagon

Business Overview

(\$ in millions)

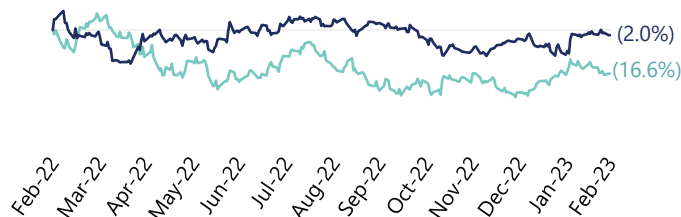
Headquarters:	Stockholm, Sweden
LinkedIn Employees (1-Yr. Growth):	3,461 (▲ 10%)
Website:	hexagon.com
Ownership Status:	Public (STO: HEXA-B)
Acquisitions:	108
Enterprise Value (EV):	\$34,719.1
TTM Revenue:	\$5,376.2
TTM EBITDA:	\$2,040.9
EV / TTM Revenue:	6.46x
EV / TTM EBITDA:	17.0x

Description:

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

TTM January 2023 Market Pricing

— NASDAQ — HEXA B



« Hexagon Goes On Acquisition Spree Under New CEO

- In [January 2023](#), Hexagon purchased Projectmates to expand its construction offering
 - Projectmates recently reinvented itself as a SaaS-based platform to manage planning through handover in one central repository
- In [December 2022](#), Hexagon announced the acquisition of Oognify, provider of Physical Security and Enterprise Incident Management software solutions
 - Oognify was formed in 2015 when Battery Ventures acquired the physical security division of NICE Systems
- In [April 2022](#), Hexagon completed the acquisition of ETQ
 - ETQ provides a platform for automating the collection and delivery of manufacturing quality control data, non-conformance reports, customer feedback
 - ETQ will operate within Hexagon's Manufacturing Intelligence division
- In [April 2022](#), Hexagon furthered its commitment to innovation in the Operations & Maintenance segment with the acquisition of Innovatia Accelerator
 - Procedure Lifecycle Management (PLCM), a Connected Worker Platform (CWP), a Learner Experience Platform (LXP), and a Component Content Management System (CCMS) are all components of the AcceleratorKMS solution
- In [January 2022](#), Hexagon announced the acquisition of Minnovare, provider of drilling technology that improves the speed, cost and accuracy of underground drilling
 - A crucial strategic fit exists between the cutting-edge mining solutions offered by Minnovare and Hexagon's solid core technical expertise

« Hexagon Appoints New President and CEO

- In [January 2022](#), Hexagon appointed Paolo Guglielmini as new President and CEO of Hexagon
 - Paolo Guglielmini succeeded Ola Rollén as President and CEO of Hexagon AB, effective 31 December 2022

Jama Software

Business Overview

(\$ in millions)

Headquarters:	Portland, OR
LinkedIn Employees (1-Yr. Growth):	252 (▲9%)
Website:	jamasoftware.com
Ownership Status:	PE-backed (Insight)
Total Acquisitions:	1
Enterprise Value (EV):	n/a
LTM Revenue:	n/a
LTM EBITDA:	n/a
EV / LTM Revenue:	n/a
EV / LTM EBITDA:	n/a

Description:

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




« Jama Software and Sterling PLM Form Partnership

- In [December 2022](#), Jama software partnered with Sterling PLM
 - This partnership expands Jama's Lifecycle Management and Live Traceability expertise offerings

« Jama Connect Gets New Face Lift

- In [December 2022](#), Jama Software launched Jama Connect for robotics
 - Jama Connect for Robotics is a comprehensive collection of frameworks, example projects, and procedural, export, and configuration documentation that aids teams in accelerating deployment, ensuring best practices are adopted, and increasing innovation success rates
- In [October 2022](#), Jama Software released Jama Connect Advisor, the industry's first native Natural Language Processing (NLP) Advisor to improve and manage requirements
 - Leveraging NLP Jama is working towards making the definition of requirements more straightforward and efficient.
 - Additionally, as part of this offering, Jama is providing a subset of the INOSE (International Council on Systems Engineering) Guide for Writing Requirements v3 recommended guidelines

Select Funding / Transaction History

Date	Lead Investor	Amount
Jun-18	 INSIGHT PARTNERS	\$200.0 million (majority)
May-17	n/a	\$10.0m (Series B2)
Mar-15	 updatea PARTNERS	\$19.5 million (Series B1)
Aug-13	 Trinity VENTURES	\$2.79 million (Series B)

PTC

Business Overview

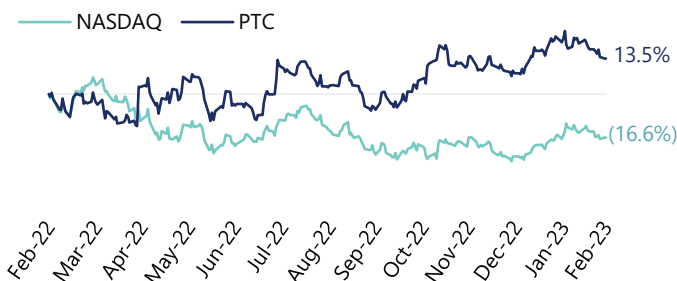
(\$ in millions)

Headquarters:	Boston, MA
LinkedIn Employees (1-Yr. Growth):	6,958 (▼3%)
Website:	ptc.com
Ownership Status:	Public (NasdaqGS: PTC)
Total Acquisitions:	40
Enterprise Value (EV):	\$16,796.4
TTM Revenue:	\$1,941.5
TTM EBITDA:	\$791.9
EV / TTM Revenue:	8.65x
EV / TTM EBITDA:	21.2X

Description:

Portfolio of computer-aided design (CAD) modeling, product lifecycle management (PLM), service lifecycle management (SLM) and industrial-focused AR / VR and IoT solutions

TTM January 2023 Market Pricing



« Extending The Digital Thread To Outside The Factory Floor Through Acquisition

- In [November 2022](#), PTC announced the acquisition of field service management provider ServiceMax for \$1.5B
 - ServiceMax provides a suite of cloud-native FSM capabilities for servicing complex long-lifecycle products, including managing information about serviced products, creating and managing work orders, and scheduling and dispatching technicians
 - The acquisition adds field service management (FSM) capabilities PTC's PLM and IIoT capabilities
- In [May 2022](#), PTC completed the acquisition of Intland Software for \$278.1M
 - PTC's Application Lifecycle Management (ALM) footprint will be expanded by Intland's Software across safety-critical and regulated industries like automotive, life sciences, consumer electronics, and aerospace and defense
 - PTC intends to offer its Windchill and Arena PLM products alongside the Intland Codebeamer ALM suite

« PTC and Schaeffler Ink Partnership

- In [January 2022](#), PTC announced a strategic alliance with Schaeffler, a global automotive and industrial supplier
 - PTC's solutions will be used by Schaeffler to standardize the IT landscape and develop digitally advanced capabilities for product development

« Various Executive Changes Within PTC

- In [May 2022](#), PTC expanded roles for executive team members
 - Mike DiTullio, a veteran PTC executive who is currently the president of PTC's Velocity group, will take over as the president of the larger Digital Thread group
 - In addition, Catherine Kniker, who is currently in charge of strategy at PTC, will take on a new position as chief strategy and sustainability officer, which will allow her to broaden the scope of her charter
 - After a period of transition, Troy Richardson, who has led PTC's Digital Thread group for the past year, will leave the company

Revalize

Business Overview




(\$ in millions)

Headquarters:	Jacksonville, FL
LinkedIn Employees (1-Yr. Growth):	350 (▲1%)
Website:	revalizesoftware.com
Ownership Status:	PE-backed (TA)
Acquisitions:	11
Enterprise Value (EV):	n/a
LTM Revenue:	n/a
LTM EBITDA:	n/a
EV / LTM Revenue:	n/a
EV / LTM EBITDA:	n/a

Description:

Configure, price, quote, and supply chain software helping manufacturers streamline and accelerate their revenue processes

Select Funding / Transaction History

Date	Lead Investor	Amount
Nov-21	 Hg	\$25.5 million
Jun-21	 ASSOCIATES	n/a (buyout)
Dec-18	 CAPITAL PARTNERS	n/a (buyout)

« New Platform Completes Ten Acquisitions in Debut Year

- In [August 2021](#), Revalize announced the acquisition of four companies that extends the reach of the Company's solution portfolio and increases their global customer base to 9,000+ users
 - **Attainia** a medical equipment planning solution, connecting hospitals, suppliers, consultants, and group purchasing organizations (GPOs) with a catalog that includes over 70,000 medical devices and healthcare equipment
 - **BCA Technologies** a platform connecting building product manufacturers to the architecture, engineering, and construction (AEC) value chain
 - **LeadMethod** a lead management solution that strengthens distributor engagement
 - **MicroD** a platform with eCommerce, CPQ, and visualization capabilities, that connects home furnishing manufacturers with distribution channels

This expands on the previous acquisitions of:

- **AutoQuotes**, a CPQ (configure, price, quote) and product design analytics software platform, ultimately forming a new cloud-based platform for manufacturers
- **Procad Group** a developer of a product and document lifecycle management platform designed to digitalize business processes in product development and management
- **SpecPage** is a developer of PLM and quality assurance solutions for recipe-based, process manufacturers
- **Tenado** provider of computer-aided design (CAD) software solutions for the metal and wood fabrication trades, mechanical engineering, fire protection and traffic management sectors
- **Sofon** provider of Guided Selling and CPQ software solutions

Siemens

Business Overview

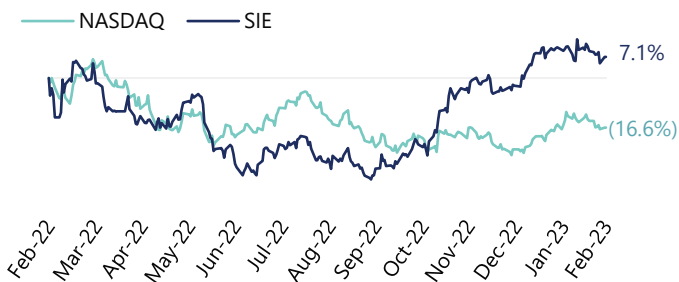
(\$ in millions)

Headquarters:	Munich, Germany
LinkedIn Employees (1-Yr. Growth):	206,223 (▲7%)
Website:	siemens.com
Ownership Status:	Public (ETR: SIE)
Total Acquisitions:	68
Enterprise Value (EV):	\$168,246.3
TTM Revenue:	\$77,875.3
TTM EBITDA:	\$10,844.4
EV / TTM Revenue:	2.16x
EV / TTM EBITDA:	15.5x

Description:

Silicon chip design, verification, IP integration, and application security testing solutions

TTM January 2023 Market Pricing



« Siemens Expands Its Integrated Circuit Portfolio

- In [November 2022](#), Siemens acquired Avery Design Systems, enabling system and SOC design teams to achieve functional verification productivity improvements
 - As part of its suite of electronic design automation (EDA) integrated circuit (IC) verification offerings, Siemens intends to include Avery's technology in the Siemens Xcelerator portfolio

« New Products With a Heavy Focus on Simulation Capabilities

- In [November 2022](#), Siemens expanded access to advanced simulation with Simcenter Cloud HPC
 - Simcenter Cloud HPC software brings scalable, on-demand, high-performance simulation capabilities to Siemens Xcelerator as a Service (XaaS)
 - New Simcenter Cloud HPC provides instant on, rapidly scalable cloud-based high performance computing (HPC) for complex simulation studies, hosted on AWS

« Siemens Launches Partnership for ESG Data

- In [September 2022](#), Siemens announced its collaboration with Sustamize GmbH, a company providing professional technology, data and software solutions enabling companies to measure, optimize and manage CO2 emissions
 - Siemens and Sustamize collaborate to add carbon emissions data to Siemens Xcelerator
- In [March 2022](#), Siemens announced a strategic partnership with Roboze, a machine vendor for high-end finished 3D printed parts for the industrial, aerospace, and automotive sectors
 - The partnership brings together the expertise of both companies to create comprehensive workflows for the industrialization of 3D printing and to broaden production opportunities for companies in the energy, mobility, and aerospace industries

« Siemens Opens New Technology Hub in Charlotte

- In [April 2022](#), Siemens opened a new technology hub in Charlotte, NC
 - Siemens' customers' plans for the industrialization of additive manufacturing (AM) will be aided by this brand-new strategic research and development center, which is now independently operated and led by Siemens Digital Industries, Siemens Technology, and Siemens Energy

Synopsys

Business Overview

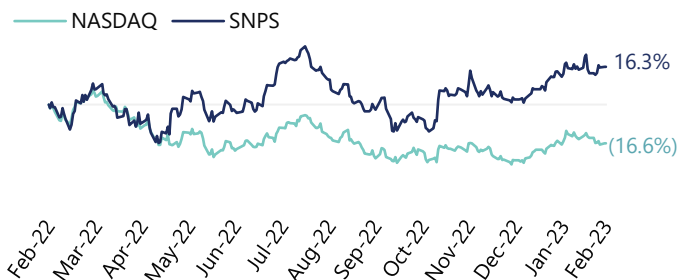
(\$ in millions)

Headquarters:	Mountain View, CA
LinkedIn Employees (1-Yr. Growth):	17,206 (▲ 13%)
Website:	synopsys.com
Ownership Status:	Public (NasdaqGM: SNPS)
Total Acquisitions:	80
Enterprise Value (EV):	\$49,342.4
TTM Revenue:	\$4,204.2
TTM EBITDA:	\$921.8
EV / TTM Revenue:	11.74x
EV / TTM EBITDA:	53.5x

Description:

Silicon chip design, verification, IP integration, and application security testing solutions

TTM January 2023 Market Pricing



« Synopsys Makes Key Acquisition from NTT

- In [April 2022](#), Synopsys acquired WhiteHat Security from NTT
 - Synopsys will now offer a complete portfolio for application security testing thanks to WhiteHat Security's significant SaaS capabilities and market-leading dynamic application security testing (DAST) technology

« Partnerships Further Semiconductor and System-Level Innovation

- In [October 2022](#), Synopsys and TSMC worked together to create the most comprehensive multi-die design solutions for TSMC's cutting-edge technologies, enabling system innovation
 - In order to help mutual customers, meet the stringent power and performance requirements for complex multi-die systems, Synopsys collaborates with TSMC on the 3Dblox™ standard and 3DFabric™ technologies to provide a system-wide strategy that includes production-tested solutions
- In [June 2022](#), Synopsys and Arm expanded their partnership to advance Arm's total compute solutions' Next-Gen Mobile SoCs
 - In accordance with Arm Total Compute's principles, Synopsys and Arm continue to deepen and broaden their collaboration activities to accelerate time-to-market through silicon-ready, highly optimized system design and implementation solutions
- In [April 2022](#), Synopsys and Juniper Networks closed a deal to form a new, separate company that will offer an open silicon photonics platform to the industry to meet the growing demand for photonics
 - Integrated lasers, optical amplifiers, and a comprehensive collection of photonic components will make up the new company's open silicon photonics platform, which will be accessible through a Process Design Kit (PDK)

« Synopsys Introduces Industry's First Board-Scale SaaS Solution

- In [March 2022](#), Synopsys launched industry's first Broad-Scale Cloud SaaS solution to transform chip development landscape
 - This will drive significantly greater productivity and efficiency for increasingly complex chip designs

Other Companies Our Engineering Practice is Tracking

MADISON PARK GROUP

Limited Deal Activity in 2022, but Still on Our Radar

menschmaschine

CAD as CAD can

(\$ in millions)

Business Overview

Headquarters:	Wessling, Germany
LinkedIn Employees (1-Yr. Growth):	161 (▲6%)
Website:	mum.de
Ownership Status:	Public (ETR: MUM)
Total Acquisitions:	6
Enterprise Value (EV):	\$868.9
LTM Revenue:	\$325.0
LTM EBITDA:	\$54.4
EV / LTM Revenue:	2.67x
EV / LTM EBITDA:	15.9x

Description:

Computer Aided Design, Manufacturing and Engineering, Product Data Management and Building Information Modelling/Management solutions



(\$ in millions)

Business Overview

Headquarters:	Paris, France
LinkedIn Employees (1-Yr. Growth):	1,780 (▼2%)
Website:	esi-group.com
Ownership Status:	Public (PAR: ESI)
Total Acquisitions:	19
Enterprise Value (EV):	\$475.3
TTM Revenue:	\$158.8
TTM EBITDA:	\$56.6
EV / TTM Revenue:	3.03x
EV / TTM EBITDA:	8.4x

Description:

Virtual prototyping software that simulates a product's behavior during testing, manufacturing, and real-life use

NEMETSCHEK GROUP

(\$ in millions)

Business Overview

Headquarters:	Munich, Germany
LinkedIn Employees (1-Yr. Growth):	3,019 (▲9%)
Website:	nemetschek.com
Ownership Status:	Public (ETR: NEM)
Total Acquisitions:	14
Enterprise Value (EV):	\$6,580.0
LTM Revenue:	\$850.2
LTM EBITDA:	\$290.8
EV / LTM Revenue:	7.73x
EV / LTM EBITDA:	22.6x

Description:

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

ZUKEN®

(\$ in millions)

Business Overview

Headquarters:	Yokohama, Japan
Employees (1-Yr. Growth):	407 (▲5%)
Website:	zuken.com
Ownership Status:	Public (TKS: 6497)
Acquisitions:	3
Enterprise Value (EV):	\$337.6
TTM Revenue:	\$257.8
TTM EBITDA:	\$41.4
EV / TTM Revenue:	1.31x
EV / TTM EBITDA:	8.2x

Description:

Software products and consulting services for electrical and electronic engineering design processes

III.



Market Comparables

Public Companies

Engineering & Design

MADISON PARK GROUP

Company(1)	Share Price 2/28/2023	% 52-Wk High	Market Cap	Enterprise Value	Revenue Metrics ⁽²⁾				Profitability Margins ⁽²⁾			EV / Revenue		EV / EBITDA ⁽³⁾		Dry Powder(4)	Last 24M Acqs.
					CY22E	CY23E	Y/Y	% Rec	TTM GM	TTM EBITDA	CY22E	CY22E	CY23E	CY22E	CY23E		
Altair Engineering	\$64.06	93.0%	\$5,397	\$5,421	\$558	\$619	10.9%	74.7%	78.5%	5.0%	20.5%	9.71x	8.76x	n/m	42.7x	\$1,772	7
Altium	\$25.88	92.5%	\$3,407	\$3,205	\$233	\$275	18.1%	60.0%	53.0%	34.7%	37.4%	13.76x	11.64x	38.6x	31.1x	\$1,276	-
ANSYS	\$303.61	90.9%	\$26,570	\$26,845	\$2,026	\$2,289	13.0%	46.2%	91.2%	34.7%	43.8%	13.25x	11.73x	31.2x	26.8x	\$9,037	3
Autodesk	\$198.69	84.5%	\$42,871	\$43,590	\$4,948	\$5,389	8.9%	91.8%	91.6%	21.6%	37.8%	8.81x	8.09x	23.8x	21.4x	\$15,290	6
Bentley Systems	\$40.46	88.5%	\$12,685	\$14,438	\$1,094	\$1,208	10.4%	91.9%	78.4%	25.5%	34.0%	13.20x	11.95x	39.7x	35.2x	\$3,836	6
Cadence Design Systems	\$192.94	95.1%	\$52,989	\$53,031	\$3,547	\$4,035	13.8%	94.5%	89.6%	34.1%	44.5%	14.95x	13.14x	34.5x	29.5x	\$17,410	4
Dassault Systèmes	\$38.83	78.6%	\$51,386	\$52,022	\$6,024	\$6,387	6.0%	71.8%	83.8%	33.8%	35.8%	8.64x	8.15x	22.7x	22.7x	\$20,462	2
ESI	\$81.32	100.0%	\$470	\$485	\$144	\$150	4.2%	82.7%	76.3%	10.2%	22.8%	3.37x	3.23x	16.9x	14.2x	\$265	-
Hexagon	\$11.14	82.8%	\$29,970	\$33,627	\$5,502	\$5,616	2.1%	40.0%	65.1%	33.8%	37.0%	6.11x	5.99x	17.0x	16.2x	\$13,294	12
Mensch Maschine	\$50.42	77.1%	\$855	\$873	\$336	\$352	4.6%	-	51.3%	16.6%	17.5%	2.60x	2.48x	15.7x	14.2x	\$441	-
Nemetschek Group	\$56.99	56.6%	\$6,582	\$6,551	\$860	\$897	4.3%	-	54.5%	27.2%	30.6%	7.62x	7.30x	23.6x	23.9x	\$2,533	-
PTC	\$125.33	89.6%	\$14,822	\$15,985	\$1,967	\$2,169	10.3%	87.9%	80.1%	29.5%	40.5%	8.13x	7.37x	22.3x	18.2x	\$5,291	3
Siemens	\$153.61	95.1%	\$121,742	\$169,428	\$72,183	\$82,207	13.9%	-	36.2%	13.9%	17.4%	2.35x	2.06x	14.9x	11.9x	\$42,812	2
Synopsys	\$363.76	93.0%	\$55,904	\$55,482	\$5,204	\$5,915	13.7%	84.0%	80.3%	24.4%	36.8%	10.66x	9.38x	29.9x	25.5x	\$18,650	5
Zuken	\$25.75	90.3%	\$599	\$402	\$253	\$263	4.1%	-	68.8%	15.7%	n/m	1.59x	1.53x	40.5x	n/a	\$461	-
Mean		87.2%	\$28,417	\$32,092	\$6,992	\$7,851	9.2%	55.0%	71.9%	24.0%	32.6%	8.32x	7.52x	26.5x	23.8x	\$10,189	5
Median		90.3%	\$14,822	\$15,985	\$1,967	\$2,169	10.3%	71.8%	78.4%	25.5%	36.3%	8.64x	8.09x	23.7x	23.3x	\$5,291	5

Source: CapitalIQ

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

(2) Wall Street consensus estimates

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

(4) Dry Powder - Greater of: [(125% of Rec. Rev. less Debt) + (50% of Cash & C.E.) + (20% of Mkt. Cap.)) or [(6x EBITDA less Debt) + (50% of Cash & C.E.) + 20% of Mkt. Cap.]]

Precedent Engineering & Design M&A Transactions

Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)	Target Overview				Transaction Statistics	
			Date	Target	Description	Estimated Revenue	Estimated EBITDA	Deal Value / Estimated Revenue
Altair	Gamma Technologies	Altair	Total Disclosed M&A Deal Value: \$382.2 Million					
Altium	Hexagon	Sep-22	RapidMiner	Low-code platform for data analytics and machine learning	n/a	n/a	\$100.0	n/a
		Jun-22	Concept Engineering	Visualization software for design, production, & maintenance systems	n/a	n/a	\$27.3	n/a
		Jun-22	Gen3D	Software and consulting system for additive manufacturing	n/a	n/a	n/a	n/a
		Mar-22	Powersim	Electronic system design technology	n/a	n/a	\$4.3	n/a
		Feb-22	Magnitogorsk Iron & Steel Works	Russian steel producer	n/a	n/a	n/a	n/a
		Feb-22	Cassini	Unified cloud product lifecycle management platform	n/a	n/a	n/a	n/a
Ansys	Jama Software	Dec-21	World Programming	Data analytics software	n/a	n/a	n/a	n/a
		Aug-21	S-Frame Software	Structural analysis and design software solutions	n/a	n/a	n/a	n/a
		Feb-21	GE Aviation (Flow Simulator Software)	Integrated flow, heat transfer, and combustion design software	n/a	n/a	n/a	n/a
		Oct-20	M-Base	Material information systems	n/a	n/a	n/a	n/a
		Sep-20	Ellexus	Input/output (I/O) analysis	n/a	n/a	n/a	n/a
		Sep-20	Univa	Enterprise-grade workload management	n/a	n/a	n/a	n/a
Aras	PTC	Jul-20	S&WISE	Polyurethane foaming simulation software	n/a	n/a	n/a	n/a
		May-20	WRAP	Spectrum management and radio network planning	n/a	n/a	n/a	n/a
		Jan-20	newFASANT	Electromagnetic simulation software	n/a	n/a	n/a	n/a
		Oct-19	Polliwog Co.	EDA verification and evaluation	n/a	n/a	n/a	n/a
		Apr-19	Cambridge Collaborative	High-frequency noise and vibration simulation	n/a	n/a	n/a	n/a
		Nov-18	Datawatch	Enterprise data preparation & visualization	\$41.7	(\$9.3)	\$183.43	4.40x
Autodesk	Revalize	Oct-18	SIMSOLID	Structural analysis simulation software	n/a	n/a	\$22.1	n/a
		May-18	FluidDyna GmbH	Fluid dynamics simulation software	n/a	n/a	\$2.7	n/a
		Mar-18	CANDI Controls	Real-time device control and data management	n/a	n/a	\$2.4	n/a
		Sep-17	Runtime	EDA software optimizing application computing	n/a	n/a	\$25.5	n/a
		Sep-17	Componeeering	Composites analysis and design software	n/a	n/a	n/a	n/a
		Jun-17	Carriots	IoT device enablement platform	n/a	n/a	\$6.7	n/a
Bentley	Siemens	May-17	MODELiiS	EDA for circuit modelling & systems design	n/a	n/a	\$2.0	n/a
		Sep-16	Solid Iris Technologies	Rendering software for architecture applications	n/a	n/a	n/a	n/a
		May-16	CEDRAT	Simulation software for mechatronic systems	n/a	n/a	\$5.1	n/a
		Mar-16	Awe Communications	Product design software for cellular devices	n/a	n/a	n/a	n/a
		Sep-15	Click2Cast	Casting process simulation software	n/a	n/a	\$0.7	n/a
		Apr-15	Multiscale Design Systems	Modeling, simulation, and testing software	n/a	n/a	n/a	n/a
Cadence	Synopsys	Jul-14	Visual Solutions	Commercial simulation software	n/a	n/a	n/a	n/a
		Dec-13	EM Software & Systems	Consulting services for electromagnetic analysis	n/a	n/a	n/a	n/a
		Nov-12	Synopsis Consulting	Business consulting services for product dev.	n/a	n/a	n/a	n/a
		Jan-11	ACUSIM Software	Computation fluid dynamics software	n/a	n/a	n/a	n/a
		Oct-10	SimLab Corporation	Auto industry modeling and simulation software	n/a	n/a	n/a	n/a
		Jan-07	solidThinking	Integrated rendering engine design software	n/a	n/a	n/a	n/a
Dassault	Zuken	Jan-07	Hiqube	Simulation-driven business analytics suite	n/a	n/a	n/a	n/a
		Mar-03	PBS Works	Secure workload management for computing	n/a	n/a	n/a	n/a
		Altium	Total Disclosed M&A Deal Value: \$54.1 Million					
		Apr-19	Gumstix	Hardware development and manufacturing	\$2.3	n/a	\$4.9	2.13x
		Jul-18	PCB:NG	PCB manufacturing	n/a	n/a	\$4.8	n/a
		May-18	FluidDyna	Predictive aerodynamic simulation tools	n/a	n/a	n/a	n/a
ESI Group		May-18	CANDI Controls	Data protocol management for edge devices	n/a	n/a	n/a	n/a
		Feb-18	TES International	Thermal solutions for complex flow mapping	n/a	n/a	n/a	n/a
		Aug-17	Upverter	Online circuit design platform	n/a	n/a	\$5.6	n/a
		Jan-17	Premier EDA Solutions	Electronic design automation	n/a	n/a	\$4.0	n/a
		Sep-16	Transfer	Electronics design software	n/a	n/a	\$1.8	n/a
		Aug-16	Perception Software	Engineering productivity application	n/a	n/a	\$7.9	n/a
		Aug-15	Octopart	Electronics parts search	n/a	n/a	\$18.0	n/a
		Aug-15	Ciiva	Electronic component management	n/a	n/a	\$4.0	n/a
		Sep-10	Morfik Technology	Cloud application development	n/a	n/a	\$3.1	n/a

Precedent Engineering & Design M&A Transactions

Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview		Transaction Statistics		
		Date	Target	Description	Estimated Revenue	Estimated EBITDA	Deal Value	Deal Value / Estimated Revenue
Altair	Gamma Technologies							
Altium	Hexagon							
Ansys	Jama Software							
Aras	PTC							
Autodesk	Revalize							
Bentley	Siemens							
Cadence	Synopsys							
Dassault	Zuken							
ESI Group								

ANSYS		Total Disclosed M&A Deal Value: \$4.5 Billion						
Jan-23	Rocky DEM	Particle dynamics simulation software	n/a	n/a	n/a	n/a	n/a	n/a
Dec-22	DYNAmore	Automotive simulation	n/a	n/a	n/a	n/a	n/a	n/a
Oct-22	C&R Technologies	Thermal-centric software	n/a	n/a	n/a	n/a	n/a	n/a
May-22	Motor Design	Design and simulation tools for motors & electric machines	n/a	n/a	n/a	n/a	n/a	n/a
May-22	OnScale	Cloud simulation technology	n/a	n/a	n/a	n/a	n/a	n/a
Oct-21	Zemax	Optical imaging and photonics simulation	n/a	n/a	\$411.5	n/a	n/a	n/a
May-21	Phoenix Integration	Process integration and design optimization	n/a	n/a	n/a	n/a	n/a	n/a
Oct-20	Analytical Graphics Inc.	Mission-driven simulation, testing, and analysis	\$80.0	n/a	\$722.5	9.03x	n/a	n/a
Mar-20	Lumerical	Photonic simulation software	\$11.3	n/a	\$107.5	9.49x	n/a	n/a
Oct-19	Dynardo	Process integration and design tools	n/a	n/a	\$33.2	n/a	n/a	n/a
Sep-19	Livermore Software	Multi physics simulation software	\$62.5	n/a	\$777.8	12.44x	n/a	n/a
May-19	DFR Solutions	EDA design reliability analysis software	n/a	n/a	n/a	n/a	n/a	n/a
Feb-19	Granta Design	Engineering materials information management	\$20.0	\$2.0	\$208.7	10.44x	n/m	n/a
Jan-19	Helic	Electro-magnetic cross-talk analysis software	n/a	n/a	n/a	n/a	n/a	n/a
Mar-18	Optis World	Optics engineering & simulation software	\$24.7	n/a	\$291.0	11.78x	n/a	n/a
Nov-17	3DSIM	Additive manufacturing process software	n/a	n/a	n/a	n/a	n/a	n/a
Jul-17	Computational Engineering	Scientific data visualization software	n/a	n/a	\$6.0	n/a	n/a	n/a
Mar-17	CLK Design Automation	Static timing and power analysis software	n/a	n/a	n/a	n/a	n/a	n/a
Nov-16	KPIIT	Automotive engineering software	n/a	n/a	n/a	n/a	n/a	n/a
Sep-15	Delcross	CEM & RF analysis software	n/a	n/a	n/a	n/a	n/a	n/a
Jul-15	Gear Design	Semiconductor & electric design solutions	n/a	n/a	\$30.0	n/a	n/a	n/a
Feb-15	Newmerical	In-flight icing simulation software	n/a	n/a	\$10.9	n/a	n/a	n/a
Nov-14	Parsec Holdings	Technology-driven engineering services	n/a	n/a	\$8.4	n/a	n/a	n/a
May-14	SpaceClaim	3D direct modeling software	\$18.0	n/a	\$85.0	4.72x	n/a	n/a
Jan-14	Reaction Design	Chemical modeling & simulation software	n/a	n/a	\$19.1	n/a	n/a	n/a
May-13	Tedaka Technologies	Telecom transmission & networking	n/a	n/a	\$2.8	n/a	n/a	n/a
Apr-13	Evolutionary Engineering	Aerospace and mechanical engineering	n/a	n/a	\$8.1	n/a	n/a	n/a
Jul-12	Esterel Technologies	Embedded software design	\$21.0	n/a	\$58.2	2.77x	n/a	n/a
Jun-11	Apache Design	Semiconductor design and verification	\$44.0	n/a	\$314.0	7.13x	n/a	n/a
Aug-08	Ansoft	Electronic design automation software	\$103.4	\$41.7	\$823.8	7.97x	19.7x	n/a
Nov-07	Emerging Signals	Railway signaling services	n/a	n/a	\$2.2	n/a	n/a	n/a
May-06	Fluent	Computational fluid dynamics	n/a	n/a	n/a	n/a	n/a	n/a
Feb-06	Aavid Thermal Technologies	Thermal management software solutions	n/a	n/a	\$565.0	n/a	n/a	n/a
Dec-05	Harvard Thermal	Thermal management software solutions	n/a	n/a	n/a	n/a	n/a	n/a
Jan-05	Century Dynamics	Hydro-dynamics simulation	n/a	n/a	\$10.0	n/a	n/a	n/a
Feb-03	CFX Group	Computational fluid dynamics software	\$19.0	n/a	\$21.7	1.14x	n/a	n/a
Mar-02	IceBreaker	Online informational management software	n/a	n/a	n/a	n/a	n/a	n/a
Nov-01	Cadoc	CAD & acoustic testing	n/a	n/a	\$3.9	n/a	n/a	n/a
Aug-00	ICEM CFD	Aeronautics & automobile design	\$6.8	n/a	\$12.4	1.82x	n/a	n/a
Aras Corporation		Total Disclosed M&A Deal Value: n/a						
Jan-22	Minerva Group	PLM for medical devices and high-tech electronics companies	n/a	n/a	n/a	n/a	n/a	n/a
Sep-18	Comet Solutions	Process automation for CAE / simulation	n/a	n/a	n/a	n/a	n/a	n/a
Aug-18	SoftTech (Italy)	Public administration information systems	n/a	n/a	n/a	n/a	n/a	n/a
Jan-18	Info Spectrum (Impressa)	MRO management suite	n/a	n/a	n/a	n/a	n/a	n/a
Autodesk		Total Disclosed M&A Deal Value: \$4.5 Billion						
Mar-22	The Wild	Collaboration platform designed to create and share VR/AR experiences	n/a	n/a	n/a	n/a	n/a	n/a
Feb-22	Prodsmart	Real-time system of record for data collection, management, and analysis	n/a	n/a	n/a	n/a	n/a	n/a
Jan-22	Moxion	Digital media platform for filmmaking process	n/a	n/a	n/a	n/a	n/a	n/a
Dec-21	ProEst	Construction estimating and digital takeoff software	n/a	n/a	n/a	n/a	n/a	n/a
Nov-21	Tangent Labs	Production software pipeline tool for artists and studios	n/a	n/a	n/a	n/a	n/a	n/a
Sep-21	iOFFICE	Workplace experience and asset management software	n/a	n/a	n/a	n/a	n/a	n/a
May-21	Upchain	Cloud product lifecycle management	n/a	n/a	\$139.8	n/a	n/a	n/a
Mar-21	Innovyze	Business analytics and performance monitoring software	n/a	n/a	\$1,038.3	n/a	n/a	n/a
Nov-20	Spacemaker	Generative design for real estate project sites	n/a	n/a	\$252.9	n/a	n/a	n/a

Precedent Engineering & Design M&A Transactions

Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview			Transaction Statistics	
		Date	Target	Description	Revenue	EBITDA	Deal Value	Deal Value / Estimated Revenue / EBITDA
Altair	Gamma Technologies	Autodesk						
		Total Disclosed M&A Deal Value: \$4.5 Billion						
Altium	Hexagon	Aug-20	Pype	Construction data ingestion	n/a	n/a	n/a	n/a
		Jan-19	BuildingConnected	Preconstruction planning solutions	n/a	n/a	\$253.2	n/a
		Nov-18	PlanGrid	Digital blueprint solutions	\$100.0	n/a	\$777.6	7.78x
		Jul-18	Assemble Systems	BIM solutions for construction management	n/a	n/a	\$93.6	n/a
		Nov-17	BioLite	Carbon credit license permits	n/a	n/a	n/a	n/a
Ansys	Jama Software	Nov-16	Seebo	IoT development modules	n/a	n/a	n/a	n/a
		Jun-16	CadSoft	PCB Design	n/a	n/a	n/a	n/a
		Apr-16	Solid Angle	Animation & visual effects rendering	n/a	n/a	n/a	n/a
		Feb-16	Monolith	Voxel modeling	n/a	n/a	n/a	n/a
		Jan-16	Autodesk Substation Design	AutoCAD software developer	n/a	n/a	n/a	n/a
Aras	PTC	Jan-16	SDS	AutoCAD software systems	n/a	n/a	n/a	n/a
		Oct-15	Configure One	CPQ software	n/a	n/a	n/a	n/a
		Oct-15	Indeeo	Apple graphic design applications	n/a	n/a	n/a	n/a
		Sep-15	NetFabb	3D printing software and services	\$18.6	n/a	\$44.5	2.39x
		Aug-15	SeeControl	IoT business applications platform	n/a	n/a	n/a	n/a
Autodesk	Revalize	Feb-15	Tweak Software	PLM software hosting	n/a	n/a	n/a	n/a
		Jan-15	Syntheticity	Urban planning data processing	n/a	n/a	n/a	n/a
		Dec-14	Magestic Systems	3D nesting of composites	\$3.0	n/a	\$10.0	3.33x
		Nov-14	Terrible Labs	Mobile and web application development	n/a	n/a	n/a	n/a
		Nov-14	TeamUp Technologies	Three dimensional cloud platform	n/a	n/a	\$60.0	n/a
Bentley	Siemens	Nov-14	Lagoa	3D rendering platform	n/a	n/a	\$60.0	n/a
		Oct-14	Modio	Character animation software	n/a	n/a	n/a	n/a
		Oct-14	Robobat Polska	Structural engineering software	n/a	n/a	n/a	n/a
		Jun-14	Shotgun Software	Animation & creative software	n/a	n/a	\$54.5	n/a
		Jun-14	The Living	Building design studio	n/a	n/a	n/a	n/a
Cadence	Synopsys	Jun-14	Bitsquid	Mobile game engine	n/a	n/a	n/a	n/a
		May-14	Within Technologies	Engineering design optimization	n/a	n/a	\$88.8	n/a
		May-14	NEI Nastran Solver	Engineering analysis and simulation	n/a	n/a	n/a	n/a
		Apr-14	Ilesfay Technology	PLM data replication	n/a	n/a	n/a	n/a
		Mar-14	Creative Market Labs	Digital content design marketplace	n/a	n/a	n/a	n/a
Dassault	Zuken	Feb-14	Delcam	Automated multi-vertical CAD/CAM	\$75.6	n/a	\$285.4	3.78x
		Jan-14	Schrauwen Bruneel	Electronic circuits design software	n/a	n/a	n/a	n/a
		Jan-14	Circuits.io	Application for designing electronic circuits	n/a	n/a	n/a	n/a
		Jan-14	Majestic Systems	Industrial manufacturing software	n/a	n/a	n/a	n/a
		Dec-13	Azaliient	Traffic simulation modeling	n/a	n/a	n/a	n/a
ESI Group		Dec-13	Graitec Innovation	Structural building construction CAD	n/a	n/a	\$88.1	n/a
		Nov-13	Virtual Shape	Automotive modeling & design	n/a	n/a	n/a	n/a
		Oct-13	for-each	Software focused on mobile development	n/a	n/a	n/a	n/a
		Aug-13	Betech Systems	Bridge span analysis	n/a	n/a	n/a	n/a
		Aug-13	Savoy Computing	Transportation path analysis	n/a	n/a	n/a	n/a
		May-13	Tinkercad	Cloud-based 3D design tools	n/a	n/a	n/a	n/a
		Mar-13	Firehole Technologies	Composite materials design	n/a	n/a	\$10.0	n/a
		Jan-13	Allpoint	3D data processing	n/a	n/a	n/a	n/a
		Jan-13	PI-VR	Automotive visualization	n/a	n/a	\$49.3	n/a
		Oct-12	Qontext	Enterprise social collaboration	n/a	n/a	\$26.0	n/a
		Oct-12	HSMWorks	Computer aided manufacturing	n/a	n/a	n/a	n/a
		Aug-12	Inforbix	Product data searching	n/a	n/a	n/a	n/a
		Aug-12	Exotic Matter	3D fluid solver and dynamics framework	n/a	n/a	n/a	n/a
		Jul-12	Socialcam	Video data capture	n/a	n/a	\$60.0	n/a
		Jun-12	Vela Systems	Construction field software	n/a	n/a	\$76.0	n/a
		Dec-11	T-Splines	Surface modeling software	n/a	n/a	n/a	n/a
		Dec-11	Horizontal Systems	BIM platform	n/a	n/a	n/a	n/a
		Nov-11	GRIP Entertainment	Artificial intelligence games	n/a	n/a	n/a	n/a
		Oct-11	Micro Application	CAD/CAM for fabrication & construction	n/a	n/a	\$23.0	n/a
		Aug-11	Numenus	High-end visualization	n/a	n/a	n/a	n/a
		Aug-11	Darwin Dimensions	3D character modeling	n/a	n/a	n/a	n/a

Precedent Engineering & Design M&A Transactions

Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview				Transaction Statistics		
		Date	Target	Description	Revenue	EBITDA	Deal Value	Deal Value / Estimated Revenue		
Altair	Gamma Technologies									
		Autodesk							Total Disclosed M&A Deal Value: \$4.5 Billion	
Altium	Hexagon	Aug-11	Instructables	User-generated DIY content	n/a	n/a	\$30.2	n/a	n/a	
		Jul-11	Code Mine	Cloud-based image tools and utilities	n/a	n/a	n/a	n/a	n/a	
		May-11	Datastay	PLM software	n/a	n/a	n/a	n/a	n/a	
		Mar-11	Blue Ridge Numerics	Fluid dynamics and simulation	n/a	n/a	\$39.0	n/a	n/a	
		Mar-11	Scaleform	UI software for consumer electronics	n/a	n/a	\$36.0	n/a	n/a	
Ansys	Jama Software	Dec-10	Sim Ops	3D gaming technology	n/a	n/a	n/a	n/a	n/a	
		Jul-10	Illuminate Labs	Game lighting technology	n/a	n/a	n/a	n/a	n/a	
		May-10	3am Solutions (Assets)	Project visualization	n/a	n/a	n/a	n/a	n/a	
		Dec-09	PlanPlatform	2D & 3D engineering software	n/a	n/a	\$25.0	n/a	n/a	
		Aug-09	Boss International	Water analysis & engineering	n/a	n/a	n/a	n/a	n/a	
Aras	PTC	Jan-09	ALGOR	Mechanical/civil engineering software	n/a	n/a	\$30.4	n/a	n/a	
		Dec-08	BIMWorld	BIM solutions	n/a	n/a	n/a	n/a	n/a	
		Dec-08	Logimatrix	Design/engineering automation	n/a	n/a	n/a	n/a	n/a	
		Nov-08	SoftImage	3D animation	n/a	n/a	\$36.0	n/a	n/a	
		Sep-08	Bigvan	Develops Computer Aided Design software	n/a	n/a	n/a	n/a	n/a	
Autodesk	Revalize	Sep-08	3D Geo	3D urban modeling software	n/a	n/a	n/a	n/a	n/a	
		Aug-08	ECS	Digital schematic prototyping	n/a	n/a	n/a	n/a	n/a	
		Jul-08	Moldflow	Design-to-manufacture automation	\$61.3	\$10.3	\$267.3	4.36x	n/m	
		Jun-08	Square One Research	Architectural software	n/a	n/a	n/a	n/a	n/a	
		May-08	Kynogon	Interactive application intelligence	n/a	n/a	n/a	n/a	n/a	
Bentley	Siemens	May-08	Realviz	Digital content creation	n/a	n/a	n/a	n/a	n/a	
		Jan-08	Carmel Software	HVAC mechanical engineering software	n/a	n/a	n/a	n/a	n/a	
		Jan-08	Hanna Strategies	AutoCAD and AutoDesk software	n/a	n/a	\$13.5	n/a	n/a	
		Oct-07	Skymatter	Mudbox 3D modelling software	n/a	n/a	\$19.0	n/a	n/a	
		Oct-07	Intellisolve	Hydrology and hydraulic analysis software	n/a	n/a	n/a	n/a	n/a	
Cadence	Synopsys	Aug-07	PlassoTech	3D simulation application software	n/a	n/a	n/a	n/a	n/a	
		Aug-07	Opticore	Graphics communication software	\$12.9	\$7.3	n/a	n/a	n/a	
		Aug-07	NavisWorks	Computer-aided design software	\$3.9	\$2.0	\$26.2	6.76x	13.3x	
		Aug-07	Cumulate Labs	CAD diagramming software	n/a	n/a	n/a	n/a	n/a	
		Oct-06	ImpactXoft	Product development software	n/a	n/a	n/a	n/a	n/a	
Dassault	Zuken	Mar-06	Constructware	Construction collaboration	n/a	n/a	\$45.7	n/a	n/a	
		Jan-06	Alias Systems	Digital content creation	n/a	n/a	\$197.0	n/a	n/a	
		Oct-05	Engineering Intent	Enterprise engineering automation services	n/a	n/a	n/a	n/a	n/a	
		Aug-05	Solid Dynamics	Kinematics and dynamics technology	\$1.3	\$0.0	n/a	n/a	n/a	
		Jul-05	c-plan	Geographic information systems	n/a	n/a	n/a	n/a	n/a	
ESI Group		Mar-05	Compass Systems	Data management services	n/a	n/a	\$17.2	n/a	n/a	
		Mar-04	VIA Development	Engineering automation software	n/a	n/a	n/a	n/a	n/a	
		Feb-04	Mechsoft	Automated component creation software	n/a	n/a	n/a	n/a	n/a	
		Mar-03	Linus Technologies	CAD connectivity	n/a	n/a	n/a	n/a	n/a	
		Dec-02	TruEInnovations	File and data management software	n/a	n/a	n/a	n/a	n/a	
		Aug-02	CAiCE Software	Surveying and engineering applications	n/a	n/a	\$10.0	n/a	n/a	
		Feb-02	Revit Technology	AEC parametric building modeler	n/a	n/a	\$133.0	n/a	n/a	
		Aug-01	Buzzsaw	Construction data management	n/a	n/a	\$15.0	n/a	n/a	
		Mar-97	Softdesk	Integrated AEC software	\$34.5	n/a	\$90.6	2.63x	n/a	
		Mar-87	Cadetron	Solids modeling	n/a	n/a	\$6.0	n/a	n/a	
		Bentley							Total Disclosed M&A Deal Value: \$1.8 Billion	
		Feb-23	EasyPower	Design and analysis software tools	n/a	n/a	n/a	n/a	n/a	
		Dec-22	Minerva Intelligence	Artificial intelligence software automating and accelerate 3D modeling	n/a	n/a	\$0.8	n/a	n/a	
		Jul-22	Eagle.io	Cloud-based environmental Industrial Internet of Things (IIoT) platform	n/a	n/a	n/a	n/a	n/a	
		Apr-22	ADINA	Finite element analysis software	n/a	n/a	n/a	n/a	n/a	
		Nov-21	Power Line Systems	Structural and geometric design software for electric power lines	\$40.0	n/a	\$725.0	18.13x	n/a	
		Jun-21	Sequent	3D geological modeling and visual data software	\$83.0	n/a	\$1,050.0	12.65x	n/a	
		Jun-21	Spida software	Utility engineering and business processes software	n/a	n/a	n/a	n/a	n/a	
		May-21	Sensemetrics	Centralized sensor data software	n/a	n/a	n/a	n/a	n/a	
		Apr-21	Vista Data Vision	Instrumentation data monitoring and management software	n/a	n/a	n/a	n/a	n/a	

Precedent Engineering & Design M&A Transactions

Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview			Transaction Statistics			
		Date	Target	Description	Revenue	EBITDA	Deal Value	Deal Value / Revenue	Estimated EBITDA	
Altair	Gamma Technologies	Bentley								Total Disclosed M&A Deal Value: \$1.8 Billion
Altium	Hexagon	Apr-21	Inro Consultants	Mobility simulation and modeling for transport sector	n/a	n/a	n/a	n/a	n/a	
		Feb-21	E7	Field-based construction delivery solutions	n/a	n/a	n/a	n/a	n/a	
		Jul-20	Cohesive Solutions	IBM Maximo reseller	n/a	n/a	n/a	n/a	n/a	
		Jun-20	Notevault	Voice-based field automation application	n/a	n/a	n/a	n/a	n/a	
		Mar-20	GroupBC	Document and information management tools	n/a	n/a	n/a	n/a	n/a	
Ansys	Jama Software	Oct-19	Citilabs	Mobile analytics platform	n/a	n/a	n/a	n/a	n/a	
		Oct-19	Orbit GeoSpatial Technologies	Geospatial 3D mapping software	n/a	n/a	n/a	n/a	n/a	
		May-19	Keynetix	Geotechnical data management software	n/a	n/a	n/a	n/a	n/a	
		Feb-19	SignCAD Systems	Traffic sign design software	n/a	n/a	n/a	n/a	n/a	
		Nov-18	Alworx	Machine learning & IoT technologies	n/a	n/a	n/a	n/a	n/a	
Aras	PTC	Oct-18	Agency9	Advanced digital twin modelling	n/a	n/a	n/a	n/a	n/a	
		Oct-18	Legion	Pedestrian simulation software	n/a	n/a	n/a	n/a	n/a	
		Jun-18	Synchro Software	4D building information modelling	n/a	n/a	n/a	n/a	n/a	
		Apr-18	Plaxis	Geotechnical software tools	n/a	n/a	n/a	n/a	n/a	
		Apr-18	SoilVision Systems	Software database for geotechnical engineers	n/a	n/a	n/a	n/a	n/a	
Autodesk	Revalize	Jan-18	S-Cube Futuretech	Structural engineering management tools	n/a	n/a	n/a	n/a	n/a	
		Oct-17	ACTION Modulers	Water Modeling Software Business	n/a	n/a	n/a	n/a	n/a	
		Nov-16	Comply Serve	Infrastructure compliance management	n/a	n/a	n/a	n/a	n/a	
		Sep-15	E-On Software	3D system simulation	n/a	n/a	n/a	n/a	n/a	
		Mar-15	EADOC	Construction project management software	n/a	n/a	n/a	n/a	n/a	
Bentley	Siemens	Feb-15	Acute3D	High-resolution 3D modelling	n/a	n/a	n/a	n/a	n/a	
		Jan-15	C3 Global	Asset performance improvement applications	n/a	n/a	n/a	n/a	n/a	
		Sep-14	BLUERIDGE Analytics	3D civil / site design software	n/a	n/a	n/a	n/a	n/a	
		Nov-13	Engineering Systems	Structural analysis & design software	n/a	n/a	n/a	n/a	n/a	
		Nov-12	EuResearch	Software for pressure vessels & exchangers	n/a	n/a	n/a	n/a	n/a	
Cadence	Synopsys	Sep-12	IVARA Corporation	Asset performance management software	n/a	n/a	n/a	n/a	n/a	
		May-12	InspectTech Systems	Mobile inspection & asset management solutions	n/a	n/a	n/a	n/a	n/a	
		Mar-12	Hannappel Software	CAD software for electrical installations	n/a	n/a	n/a	n/a	n/a	
		Nov-11	Pointools	Point cloud conversion applications and plug-ins	n/a	n/a	n/a	n/a	n/a	
		Nov-11	Formation Design Systems	3D modelling & analysis software	n/a	n/a	n/a	n/a	n/a	
Dassault	Zuken	Mar-11	Engineering Dynamics	Offshore simulation software	n/a	n/a	n/a	n/a	n/a	
		Jul-10	BLUERIDGE Analytics	3D civil / site design software	n/a	n/a	n/a	n/a	n/a	
		Feb-10	Enterprise Informatics	Document and records management software	n/a	n/a	n/a	n/a	n/a	
		Feb-10	Exor Corporation	Infrastructure asset management software	n/a	n/a	n/a	n/a	n/a	
		Oct-09	gINT Software	Environmental and geotechnical software	n/a	n/a	n/a	n/a	n/a	
ESI Group		Cadence Design								Total Disclosed M&A Deal Value: \$4.4 Billion
		Jan-23	Utitec, Inc.	Manufacturer specializing in miniature medical device & components	n/a	n/a	n/a	n/a	n/a	
		Nov-22	Antrim Design Systems	Analog design software	n/a	n/a	n/a	n/a	n/a	
		Aug-22	OpenEye Scientific Software	Computational molecular design	\$40.0	n/a	\$474.5	11.86x	n/a	
		Jul-22	Future Facilities	Simulation software for data center design	n/a	n/a	\$100.1	n/a	n/a	
		Nov-21	Verifyter	Automatic debugger platform for software & hardware failure	n/a	n/a	n/a	n/a	n/a	
		Apr-21	Pointwise	Mesh generation software	n/a	n/a	\$31.4	n/a	n/a	
		Jan-21	NUMECA	Computational fluid dynamics software	n/a	n/a	\$198.8	n/a	n/a	
		Aug-20	InspectAR	Augmented reality platform for circuit board mfgs.	n/a	n/a	n/a	n/a	n/a	
		Feb-20	Integrand Software	RF solution for analysis and abstraction based	n/a	n/a	n/a	n/a	n/a	
		Jan-20	AWR Corp	Electronic design automation software	n/a	n/a	\$160.0	n/a	n/a	
		Nov-17	nusemi	Communications IP Developer	n/a	n/a	n/a	n/a	n/a	
		Jul-16	Rocketick	Chip verification software	n/a	n/a	\$38.0	n/a	n/a	
		Jan-16	Sibridge Technologies	Media software designer	n/a	n/a	n/a	n/a	n/a	
		Jun-14	Jasper Design Automation	Electronic design automation technology	n/a	n/a	\$139.4	n/a	n/a	
		Feb-14	Forté Design Systems	Semiconductor design software	n/a	n/a	n/a	n/a	n/a	
		Feb-14	TranSwitch	Intellectual Property Service	n/a	n/a	n/a	n/a	n/a	
		Jun-13	Evatronix	Mixed signal intellectual property developer	n/a	n/a	n/a	n/a	n/a	
		May-13	Cosmic Circuits	Silicon based IP cores manufacturer	n/a	n/a	\$48.0	n/a	n/a	
		Apr-13	Tensilica	Provider of controllers, CPU, and specialty DSP processor cores	n/a	n/a	\$326.0	n/a	n/a	

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Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview		Transaction Statistics		
		Date	Target	Description	Revenue	EBITDA	Deal Value	Deal Value / Estimated Revenue
Altair	Gamma Technologies							
Altium	Hexagon	Jul-12	Sigrity	Signal and power integration technology provider	n/a	n/a	\$78.5	n/a
		Jul-11	Azuro	Electronic design automation software	n/a	n/a	n/a	n/a
		May-11	Altos Design Automation	Electronic data automation service	n/a	n/a	n/a	n/a
		Jun-10	Denali Software	Electronic design automation software	\$41.9	n/a	\$309.4	7.39x
		Mar-10	Taray	Computer system designer	n/a	n/a	n/a	n/a
Ansys	Jama Software	Mar-08	Chip Estimate	Integrated circuit prediction technology	n/a	n/a	n/a	n/a
		Aug-07	Clear Shape Technologies	DFM software	n/a	n/a	\$41.3	n/a
		Jul-07	Invarium	Advanced layout print service	n/a	n/a	n/a	n/a
		Jan-06	CommandCAD	Integrated circuits layout optimization	n/a	n/a	\$25.8	n/a
		Apr-05	Verisity	Verification process automation	\$58.0	(\$5.6)	\$325.4	5.61x
Aras	PTC	Apr-04	Neolinear	Analog silicon design software	n/a	n/a	\$78.1	n/a
		Jan-04	Q Design Automation	Integrated circuit layout provider	n/a	n/a	n/a	n/a
		Aug-03	Verplex Systems	Functional verification software	n/a	n/a	\$85.1	n/a
		May-03	K2 Technologies	Semiconductor design software	n/a	n/a	n/a	n/a
		Apr-03	Get2Chip	Architectural platform for chip manufactures and IP Provider	n/a	n/a	n/a	n/a
Autodesk	Revalize	Mar-03	SpinCircuit	B2B e-commerce portal operator	n/a	n/a	n/a	n/a
		Jan-03	Celestry	Physical design software	n/a	n/a	\$64.4	n/a
		Nov-02	Antrim Design Systems	Analog design software	n/a	n/a	n/a	n/a
		Jun-02	Simplex Solutions	Electronic chip design and verification software	n/a	n/a	\$329.7	n/a
		Apr-02	Plato Design Systems	Routing and physical design optimization solution	n/a	n/a	\$75.0	n/a
Bentley	Siemens	Dec-01	Silicon Perspective	Electronic design automation software	n/a	n/a	n/a	n/a
		Feb-01	CadMos Design Technology	Noise analysis products	n/a	n/a	\$105.3	n/a
		Mar-00	Westport Technology	IP Development Services	n/a	n/a	\$3.5	n/a
		Dec-99	Diablo Research Company	High tech product development services	n/a	n/a	\$80.8	n/a
		Jul-99	OrCAD	Electronic design software	\$11.6	\$17.2	\$122.2	10.55x
Cadence	Synopsys	May-99	Quickturn Design Systems	Level verification solutions	n/a	n/a	\$253.0	n/a
		Sep-98	Ambit Design Systems	EDA software for electronic design	n/a	n/a	\$255.0	n/a
		May-97	Cooper & Chyan Technology	Semiconductor designer	n/a	n/a	\$422.0	n/a
		Dec-91	Valid Logic	CAD Equipment Manufacturer	n/a	n/a	\$200.0	n/a
		Oct-89	Gateway Design Automation	CAE Software	n/a	n/a	n/a	n/a
Dassault	Zuken							
		Oct-22	StyleSage	Image recognition & retail analytics platform	n/a	n/a	n/a	n/a
		Sep-22	Diota	Assembly assistance & quality control software	n/a	n/a	n/a	n/a
		Jul-22	Wave Six	Noise simulation & vibration analysis software for aerospace	n/a	n/a	n/a	n/a
		Nov-21	Armonica Retail	Cloud retail planning software	n/a	n/a	n/a	n/a
ESI Group		Jul-21	Iterop	Business process management software	n/a	n/a	n/a	n/a
		Nov-20	NuoDB	Cloud-based SQL database platform	\$6.0	n/a	n/a	n/a
		Jul-20	Proxem	Big data semantic analysis	n/a	n/a	n/a	n/a
		Jun-19	Medidata Solutions	Cloud-based solutions for clinical development	\$661.0	\$85.4	\$5,763.8	8.72x
		Mar-19	Argosim	System requirements validation software	n/a	n/a	n/a	n/a
		Feb-19	Trace Software (Assets)	Electrical design and automation software	n/a	n/a	n/a	n/a
		Dec-18	IQMS	Mid-market manufacturing ERP / MES	\$56.0	n/a	\$425.0	7.59x
		Jun-18	Centric Software	Lifecycle management software	\$61.0	n/a	n/a	n/a
		Oct-17	No Magic	Model-based systems for engineering design	n/a	n/a	n/a	n/a
		Sep-17	Exa Corporation	Simulation software for vehicle manufacturers	\$72.7	\$1.5	\$400.3	5.51x
		Jun-17	Outscale	Cloud security and operations management	n/a	n/a	n/a	n/a
		Jun-17	AITAC	Marine and offshore engineering software	n/a	n/a	n/a	n/a
		Dec-16	Xflow CFD	Dynamic fluid flow simulation	n/a	n/a	n/a	n/a
		Jul-16	Computer Simulation	Multiphysics simulation	\$51.2	n/a	\$247.3	4.83x
		Jun-16	Ortems	Production scheduling and dispatching	\$5.4	n/a	n/a	n/a
		Apr-16	3DPLM Software	Product development and QA	n/a	n/a	n/a	n/a
		Apr-15	Modelon	Transportation & mobility modeling	n/a	n/a	n/a	n/a
		Sep-14	Quintiq	Production, logistics, and workforce	\$97.6	n/a	\$322.7	3.31x
		Jul-14	Simpack	Multi-body industrial simulation	n/a	n/a	n/a	n/a
		Jan-14	Accelrys	Process discovery & simulation	\$168.5	(\$2.2)	\$750.0	4.45x

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Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview			Transaction Statistics			
		Date	Target	Description	Revenue	EBITDA	Deal Value	Deal Value / Revenue	Estimated EBITDA	
Altair	Gamma Technologies	Dassault Systemes							Total Disclosed M&A Deal Value: \$11.0 Billion	
Altium	Hexagon	Dec-13	RTT	3D visualization technology	\$111.1	\$9.0	\$274.1	2.47x	n/m	
		Sep-13	Safety Technology	Product durability simulation	n/a	n/a	\$1.0	n/a	n/a	
		Jul-13	SFE	Transportation & mobility modeling	n/a	n/a	n/a	n/a	n/a	
		Jul-13	Apriso	Manufacturing operations execution	n/a	n/a	\$205.0	n/a	n/a	
		Apr-13	Archivideo	3D images & maps	n/a	n/a	n/a	n/a	n/a	
Ansys	Jama Software	Apr-13	Fe-Design	Non-parametric optimization	n/a	n/a	n/a	n/a	n/a	
		Apr-13	Simpoe	Plastic injection-molding simulation	n/a	n/a	n/a	n/a	n/a	
		Jan-13	SquareClock	3D space planning	n/a	n/a	n/a	n/a	n/a	
		Dec-12	Tuscany Design Automation	Visualization services for circuit design	n/a	n/a	n/a	n/a	n/a	
		Dec-12	Pinpoint	Semiconductor design collaboration	n/a	n/a	n/a	n/a	n/a	
Aras	PTC	Jul-12	Gemcom	Supply chain planning and optimization	\$80.4	n/a	\$354.9	4.41x	n/a	
		Feb-12	Netvibes	Personalized dashboard publishing	n/a	n/a	n/a	n/a	n/a	
		Oct-11	Elsys	Electrical engineering schematics	n/a	n/a	n/a	n/a	n/a	
		Oct-11	Simulayt	Draping simulation technology	n/a	n/a	n/a	n/a	n/a	
		Apr-11	Enginuity PLM	Chemical product development	n/a	n/a	n/a	n/a	n/a	
Autodesk	Revalize	Mar-11	Intercim	Supply chain operations management	n/a	n/a	\$36.5	n/a	n/a	
		Oct-10	Inceptra LLC	Product lifecycle management solutions	n/a	n/a	n/a	n/a	n/a	
		Jun-10	Geensoft	Embedded systems development	n/a	n/a	\$6.7	n/a	n/a	
		Jun-10	Exalead	Unified search platform	n/a	n/a	\$164.9	n/a	n/a	
		Apr-10	IBM (PLM)	PLM sales & support operations	n/a	n/a	\$600.0	n/a	n/a	
Bentley	Siemens	Jul-08	Engineous	Process integration & design software	n/a	n/a	\$40.0	n/a	n/a	
		Jan-08	Deneb Robotics	Multi-computer manufacturing CAD	n/a	n/a	\$105.0	n/a	n/a	
		Sep-07	Seemage	Automotive & aerospace ALM	n/a	n/a	n/a	n/a	n/a	
		Jun-07	ICEM	Automotive & industrial visualization	n/a	n/a	\$108.2	n/a	n/a	
		May-06	MatrixOne	Collaborative PLM	\$135.5	(\$18.2)	\$410.0	3.03x	n/m	
Cadence	Synopsys	Oct-05	Abaqus	Advanced finite element analysis	\$100.0	n/a	\$413.0	4.13x	n/a	
		Jul-05	Virtools	3D application development	\$3.1	n/a	\$14.5	4.63x	n/a	
		Nov-00	Spatial	Data translation and visualization technology	n/a	n/a	n/a	n/a	n/a	
		Jan-00	SRAC	CAD analysis programs	n/a	n/a	\$22.0	n/a	n/a	
		Jul-97	Solidworks	Mechanical design software	n/a	n/a	\$325.0	n/a	n/a	
Dassault	Zuken	ESI Group							Total Disclosed M&A Deal Value: \$35.7 Million	
		Feb-17	Scilab Enterprises	Numerical computation platform	n/a	n/a	n/a	n/a	n/a	
		Sep-16	Correct Checks	Background screening services	n/a	n/a	n/a	n/a	n/a	
		Feb-16	Mineset	Technological data management	n/a	n/a	\$4.7	n/a	n/a	
		Jan-16	ITI	Simulation tools & software	n/a	n/a	\$19.3	n/a	n/a	
ESI Group		May-15	Amoebe Technologies	Cooling simulation & design optimization	n/a	n/a	n/a	n/a	n/a	
		Apr-15	Ciespace	Web-based CAE modeling solutions	n/a	n/a	n/a	n/a	n/a	
		Apr-15	Picviz Labs	Data mining & cybersecurity services	n/a	n/a	n/a	n/a	n/a	
		Mar-15	Civitec	Embedded perception system design	n/a	n/a	n/a	n/a	n/a	
		Feb-14	Cam Mechanical Solutions	Technical assistance services	n/a	n/a	n/a	n/a	n/a	
		Oct-13	CyDesign Labs	Modelling systems for engineers	n/a	n/a	n/a	n/a	n/a	
		Sep-12	OpenCFD	Open source CFD software package	n/a	n/a	\$3.1	n/a	n/a	
		Dec-11	Efield	Integrated modelling & simulation environments	\$0.5	n/a	n/a	n/a	n/a	
		Aug-11	ICIDO	Virtual reality engineering solutions	n/a	n/a	n/a	n/a	n/a	
		Apr-11	Comet Technology	Vibro-acoustic simulation software	n/a	n/a	n/a	n/a	n/a	
		Dec-08	Mindware Engineering	Engineering & customized software services	\$5.6	n/a	\$5.6	1.00x	n/a	
		Dec-08	Vdot	Project management & execution platform	n/a	n/a	n/a	n/a	n/a	
		Aug-06	ATE Technology International	Contract for difference (CFD) product distributor	n/a	n/a	n/a	n/a	n/a	
		Sep-02	Vibro-Acoustic Sciences	Digital high-frequency noise simulation software	n/a	n/a	\$3.0	n/a	n/a	
		Aug-01	Liquid Process Performance	Materials & composites simulation software	n/a	n/a	n/a	n/a	n/a	
Gamma Technologies							Total Disclosed M&A Deal Value: n/a			
		Nov-21	Exothermia	Exhaust systems simulation software	n/a	n/a	n/a	n/a	n/a	
		Jul-21	Power Forge	Electrical engineering software	n/a	n/a	n/a	n/a	n/a	
		Feb-18	AutoLion	Lithium-ion battery simulation software	n/a	n/a	n/a	n/a	n/a	

Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview			Transaction Statistics			
		Date	Target	Description	Estimated		Deal Value	Deal Value / Estimated		
					Revenue	EBITDA		Revenue	EBITDA	
Altair	Gamma Technologies	Hexagon		Total Disclosed M&A Deal Value: \$8.8 Billion						
Altium	Hexagon	Jan-23	Projectmates	Construction program management software	n/a	n/a	n/a	n/a	n/a	
		Dec-22	Qognify	Enterprise incident management platform	n/a	n/a	n/a	n/a	n/a	
		Oct-22	LocLab Consulting	Digital twin system for modeling & analyzing operational scenarios	n/a	n/a	n/a	n/a	n/a	
		Oct-22	Avvir	Automated construction verification and progress monitoring	n/a	n/a	n/a	n/a	n/a	
		Sep-22	iConstruct	Building information modeling (BIM) software	n/a	n/a	n/a	n/a	n/a	
		Apr-22	Innovatia Accelerator	Knowledge management system	n/a	n/a	n/a	n/a	n/a	
Ansys	Jama Software	Feb-22	ETQ	Manufacturing quality control data	\$75.0	n/a	\$1,200.0	16.00x	n/a	
		Jan-22	Minnovare	Industrial drilling technology and software	n/a	n/a	n/a	n/a	n/a	
		Oct-21	Infor Global Solutions	Enterprise asset management software	n/a	n/a	\$2,820.0	n/a	n/a	
		Sep-21	Jovix	Material tracking software	n/a	n/a	n/a	n/a	n/a	
		Jul-21	Immersal	Spatial mapping and visual positioning solutions	n/a	n/a	n/a	n/a	n/a	
		Apr-21	CADLM	Engineering design software	n/a	n/a	n/a	n/a	n/a	
Aras	PTC	Dec-20	OxBlue	High resolution conruction camera systems	n/a	n/a	n/a	n/a	n/a	
		Nov-20	PAS Global	Process safety & cybersecurity	\$39.8	n/a	n/a	n/a	n/a	
		Oct-20	DP Technology	CAM software for CNC machine tools	\$39.2	n/a	n/a	n/a	n/a	
		Jul-20	Tacticaware	LIDAR-based 3D surveillance software	n/a	n/a	n/a	n/a	n/a	
		Mar-20	CAEfatigue	Mechanical fatigue simulation solutions	n/a	n/a	n/a	n/a	n/a	
		Feb-20	Romax Technology	Electromechanical drivetrain design and simulation services	\$30.4	n/a	n/a	n/a	n/a	
Autodesk	Revalize	Jan-20	COWI	Mapping and geospatial data services	\$15.8	n/a	n/a	n/a	n/a	
		Jan-20	Blast Movement	Blast movement monitoring technology	\$21.4	n/a	n/a	n/a	n/a	
		Jan-20	Geopraevent	Sensors and measuring technologies for navigating natural hazards	n/a	n/a	n/a	n/a	n/a	
		Jan-20	Volume Graphics	Software for testing industrial computed tomograph	\$29.3	n/a	n/a	n/a	n/a	
		Jun-19	AMendate	Generative design for additive manufacturing	n/a	n/a	n/a	n/a	n/a	
		Feb-19	Thermopylae	Govt. & defense geospatial applications	\$48.0	n/a	n/a	n/a	n/a	
Bentley	Siemens	Jan-19	j5 International	Operational risk management software	n/a	n/a	n/a	n/a	n/a	
		Jan-19	Etalon	Machine / equipment calibration solutions	n/a	n/a	n/a	n/a	n/a	
		Oct-18	Bricsys	CAD software for AEC market	\$14.7	\$1.5	n/a	n/a	n/a	
		Sep-18	External-Array Software	Metrology software for CMM manufacturers	n/a	n/a	n/a	n/a	n/a	
		Jun-18	Geocloud (Assets)	Ski slope infrastructure measurement	n/a	n/a	n/a	n/a	n/a	
		Jun-18	SPRING Technologies	Machine tool simulation & verification software	\$9.5	\$0.4	n/a	n/a	n/a	
Cadence	Synopsys	Jun-18	AutonomouStuff	Integrated autonomous vehicle solutions	\$45.0	n/a	n/a	n/a	n/a	
		May-18	Nextsense	Non-contact profile measurement & inspection	\$13.5	n/a	n/a	n/a	n/a	
		Apr-18	Licom Systems	German distributor of Alphacam CAM software	n/a	n/a	n/a	n/a	n/a	
		Apr-18	ProCAM Group	Italian distributor of Vero Software	n/a	n/a	n/a	n/a	n/a	
		Mar-18	AGTEK	Construction project modeling software	n/a	n/a	n/a	n/a	n/a	
		Jan-18	Plant Design Solutions	Distributor of CADWorx & Analysis software	n/a	n/a	n/a	n/a	n/a	
Dassault	Zuken	Jan-18	Industrial Business Solutions	Digital project completion & commissioning	n/a	n/a	n/a	n/a	n/a	
		Oct-17	Luciad	Real-time geospatial information visualization	\$21.7	n/a	n/a	n/a	n/a	
		Jun-17	InfraMeasure	Laser-based rail measurement system	n/a	n/a	n/a	n/a	n/a	
		Jun-17	DST Computer Services	Pipe stress analysis software	n/a	n/a	n/a	n/a	n/a	
		Jun-17	FASys Industrie	System integration specialist for production tasks	n/a	n/a	n/a	n/a	n/a	
		May-17	VIRES	Driver-assisted & autonomous simulation	n/a	n/a	n/a	n/a	n/a	
ESI Group		May-17	Catavolt	Mobile app development & edge computing	n/a	n/a	n/a	n/a	n/a	
		Apr-17	MSC Software	Computer aided engineering software	\$230.0	n/a	\$834.0	3.63x	n/a	
		Jan-17	MiPlan Consulting	Mobile mine production management software	n/a	n/a	n/a	n/a	n/a	
		Sep-16	GISquadrat	Location-based geospatial software	n/a	n/a	n/a	n/a	n/a	
		Aug-16	Apodius	Composite component measurement solutions	n/a	n/a	n/a	n/a	n/a	
		Aug-16	Multivista	Construction visual documentation services	n/a	n/a	n/a	n/a	n/a	
		Aug-16	p3d systems	Laser scanning system & 3D modeling software	n/a	n/a	n/a	n/a	n/a	
		Jun-16	Ingegneria dei Sistemi (Assets)	Radar solutions for structural health monitoring	\$20.0	n/a	n/a	n/a	n/a	
		Jun-16	Nestix	Prefabrication and production control software	n/a	n/a	n/a	n/a	n/a	
		Mar-16	AICON 3D Systems	Industrial 3D optical measuring systems	\$21.1	\$1.8	n/a	n/a	n/a	
		Mar-16	Forming Technologies (FTI)	Manufacturing software for sheet metal forming	n/a	n/a	n/a	n/a	n/a	
		Mar-16	M&P Survey Equipment	Surveying equipment & construction lasers	n/a	n/a	n/a	n/a	n/a	
		Feb-16	Sigma Space	Optoelectronic aerospace instrumentation	\$25.0	n/a	n/a	n/a	n/a	
		Jan-16	SCCS	Provider of survey equipment for Leica	\$15.0	\$7.8	n/a	n/a	n/a	

Source: Pitchbook, Capital IQ, corporate websites, press releases

Precedent Engineering & Design M&A Transactions

Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview			Transaction Statistics			
		Date	Target	Description	Revenue	EBITDA	Deal Value	Deal Value / Estimated Revenue	EBITDA	
Altair	Gamma Technologies	Hexagon								Total Disclosed M&A Deal Value: \$8.8 Billion
Altium	Hexagon	Apr-15	Q-Das	Statistical process control (SPC) services	n/a	n/a	n/a	n/a	n/a	
		Jul-14	Vero Software	CAD/CAM software	\$106.2	n/a	n/a	n/a	n/a	
		Jul-14	Geodata Diffusion	Real time kinematic correction services	\$4.0	\$1.8	n/a	n/a	n/a	
		Jun-14	North West Geomatics	Digital remote sensing/aerial photography	\$13.5	n/a	n/a	n/a	n/a	
		Jun-14	iLab Sistemas	Planning/optimization for agro-businesses	n/a	n/a	n/a	n/a	n/a	
Ansys	Jama Software	Jun-14	Mintec	Software services for mining industry	n/a	n/a	n/a	n/a	n/a	
		Apr-14	Arvus Tecnologia	Software services for agro businesses	n/a	n/a	n/a	n/a	n/a	
		Mar-14	Veripos	Satellite position software/hardware/services	\$44.0	\$15.8	n/a	n/a	n/a	
		Mar-14	SAFEmine	Traffic safety products and services	\$17.2	n/a	n/a	n/a	n/a	
		Feb-14	Aibotix	Manufacturer of flying robots	n/a	n/a	n/a	n/a	n/a	
Aras	PTC	Dec-13	Pixis	Provider of digital engineering services	n/a	n/a	n/a	n/a	n/a	
		Oct-13	Devex Tecnologia e Sistemas	Mine-management software services	n/a	n/a	n/a	n/a	n/a	
		Jun-13	Geosoft	Software for cartography/photogrammetry	n/a	n/a	n/a	n/a	n/a	
		May-13	Navgeokom	Surveying and mapping products	n/a	n/a	n/a	n/a	n/a	
		Apr-13	Manfra & Companhia	Topography software systems	\$9.2	n/a	n/a	n/a	n/a	
Autodesk	Revalize	Jan-13	LISTECH	Developer of construction software	n/a	n/a	n/a	n/a	n/a	
		Jan-13	New River Kinematics	3D analysis software for metrology application	\$13.3	n/a	n/a	n/a	n/a	
		Dec-12	GTA Geoinformatik	Provider of 3D city mapping technologies	n/a	n/a	n/a	n/a	n/a	
		Jan-12	Microsurvey Software	Developer of surveying and mapping software	\$2.6	n/a	n/a	n/a	n/a	
		Aug-11	Sisgraph	Supplier of engineering and geospatial software	\$14.3	n/a	n/a	n/a	n/a	
Bentley	Siemens	Jul-10	Intergraph	Engineering and geospatial software	n/a	n/a	\$2,130.0	n/a	n/a	
		Dec-09	MYCRONA	Manufacturer of multi-sensor machines	n/a	n/a	n/a	n/a	n/a	
		Oct-09	Mahr Multisensor	Industrial measuring instruments	n/a	n/a	n/a	n/a	n/a	
		Oct-08	Rinex Technology	Yield mapping tools for agro businesses	\$4.5	n/a	n/a	n/a	n/a	
		Jul-08	Serein Metrology	Manufacturer of precision measuring equipment	\$4.0	n/a	n/a	n/a	n/a	
Cadence	Synopsys	Jun-08	m&h Group	Manufacturer of machine tool probes	\$13.3	n/a	n/a	n/a	n/a	
		Jun-08	Messtechnik Wetzlar	Software for quality control of mechanical parts	\$3.3	n/a	n/a	n/a	n/a	
		Jun-08	Viewserve	Web based fleet management system	\$1.1	n/a	n/a	n/a	n/a	
		Jun-08	Advanced Metrology Solutions	Distributor of precision metrology products	\$4.5	n/a	n/a	n/a	n/a	
		Feb-08	Santiago & Cintra	Positioning applications for construction/agro	\$20.7	n/a	n/a	n/a	n/a	
Dassault	Zuken	Feb-08	Haselbach Surveying Instruments	Distributor and seller of surveying equipment	\$750.0	n/a	n/a	n/a	n/a	
		Feb-08	Surveyors Service Company	Distributor of surveying equipment	n/a	n/a	n/a	n/a	n/a	
		Dec-07	Leica Geosystems Hungary	Surveying and construction equipment	n/a	n/a	n/a	n/a	n/a	
		Nov-07	NovAtel	Satellite system components	\$76.0	\$17.8	\$438.9	5.78x	24.6x	
		Nov-07	Junglas	Construction and machine control equipment	n/a	n/a	n/a	n/a	n/a	
ESI Group		Nov-07	Rudolf & August Rost Vertriebs	Surveying and construction equipment	n/a	n/a	n/a	n/a	n/a	
		Nov-07	Elcome Technologies	GPS and navigation surveying services	\$14.8	n/a	n/a	n/a	n/a	
		Sep-07	CogniTens	3D non-contact measurement systems	\$8.0	n/a	\$20.0	2.50x	n/a	
		Jul-07	Jingjiang Measuring Tools	Manufacturer of linear measuring tools	\$10.9	n/a	n/a	n/a	n/a	
		Jun-07	IONIC Software	Software for geospatial information systems	\$12.6	n/a	n/a	n/a	n/a	
		May-07	Transmetal	Distributor of metrology products	\$5.4	n/a	n/a	n/a	n/a	
		May-07	Jigsaw Technologies	GPS-based machine automation software	\$9.0	n/a	n/a	n/a	n/a	
		May-07	GAMFI International	Construction laser tools and instruments	\$1.5	n/a	n/a	n/a	n/a	
		May-07	D&P Systems	Developer of multidimensional systems	n/a	n/a	n/a	n/a	n/a	
		May-07	Allen Precision Equipment	Surveying and construction products	\$24.0	n/a	n/a	n/a	n/a	
		Apr-07	Topolaser System	Distributor of survey equipment	n/a	n/a	n/a	n/a	n/a	
		Apr-07	Acquis	Data editing and management software	\$3.0	n/a	n/a	n/a	n/a	
		Jan-07	Svensk ByggnadsGeodesi	Software systems for measuring and planning	\$6.8	\$0.8	n/a	n/a	n/a	
		Jan-07	Willi Geßwein	Manufacturer of surveying instruments	\$1.3	n/a	n/a	n/a	n/a	
		Oct-05	Leica Geosystems	Surveying and mapping equipment	n/a	n/a	\$1,140.0	n/a	n/a	
		May-02	Newport	Metrological tools and technology	n/a	n/a	n/a	n/a	n/a	
		May-01	Brown & Sharpe	Manufacturer of metrological tools	n/a	n/a	\$170.0	n/a	n/a	
Jama Software					Total Disclosed M&A Deal Value: n/a					
		Jan-18	Notion Data	Product development intelligence	n/a	n/a	n/a	n/a	n/a	

Precedent Engineering & Design M&A Transactions

Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview			Transaction Statistics			
		Date	Target	Description	Revenue	EBITDA	Deal Value	Deal Value / Revenue	Estimated EBITDA	
Altair	Gamma Technologies	PTC							Total Disclosed M&A Deal Value: \$5.0 Billion	
Altium	Hexagon	Jan-23	ServiceMax	Asset-centric field service management software	\$171.0	n/a	\$1,460.0	8.54x	n/a	
		Sep-22	CloudMilling	CAM software	n/a	n/a	n/a	n/a	n/a	
		Apr-22	Inland Software	Application lifecycle management platform	n/a	n/a	\$278.1	n/a	n/a	
		Jan-22	RE'FLEKT	Interactive VR technology	n/a	n/a	n/a	n/a	n/a	
		Dec-20	Arena Solutions	Cloud-based PLM platform	\$50.0	n/a	\$715.0	14.30x	n/a	
Ansys	Jama Software	Sep-20	ioxp	Augmented reality content creation software	n/a	n/a	n/a	n/a	n/a	
		Nov-19	Onshape	Cloud-based 3D CAD platform	n/a	n/a	\$470.0	n/a	n/a	
		Jun-19	TWNKLS	Augmented reality solutions & services	n/a	n/a	n/a	n/a	n/a	
		Apr-19	Factora Solutions	Manufacturing execution & operations mgmt.	n/a	n/a	n/a	n/a	n/a	
		Nov-18	Frustum	Topology optimization & generative design	n/a	n/a	\$69.6	n/a	n/a	
Aras	PTC	Feb-18	Waypoint Labs	Augmented reality for frontline workers	\$20.0	n/a	n/a	n/a	n/a	
		Jan-16	Kepware	Manufacturing device connectivity	\$20.0	n/a	\$118.0	5.90x	n/a	
		Nov-15	Vuforia	Vision-based AR platform	n/a	n/a	\$64.8	n/a	n/a	
		May-15	ColdLight Solutions	Machine learning predictive analytics	\$7.1	n/a	\$103.8	14.56x	n/a	
		Jan-15	Caugmate	Augmented reality technologies services	n/a	n/a	n/a	n/a	n/a	
Autodesk	Revalize	Jul-14	ITA Holdings	Sensor connectivity	n/a	n/a	\$170.0	n/a	n/a	
		Jul-14	Atego	Model-based systems applications	\$20.0	n/a	\$49.3	2.47x	n/a	
		Dec-13	ThingWorx	IoT platform for machines	\$6.0	n/a	\$130.0	21.67x	n/a	
		Sep-13	NetIDEAS	Product development and PLM	\$1.0	n/a	\$20.0	20.00x	n/a	
		Jul-13	Enigma	Manufacturing content management	n/a	n/a	\$10.0	n/a	n/a	
Bentley	Siemens	Oct-12	Servigistics	Strategic service management	\$80.0	n/a	\$220.0	2.75x	n/a	
		Sep-11	4CS	Warranty lifecycle management	n/a	n/a	\$14.9	n/a	n/a	
		Jan-11	Mortice Kern Systems	Configuration management software	\$67.9	\$10.1	\$304.0	4.48x	n/m	
		Feb-10	Planet Metrics	Carbon information management	n/a	n/a	n/a	n/a	n/a	
		Jun-09	Relux	Reliability analysis software	n/a	n/a	\$24.3	n/a	n/a	
Cadence	Synopsys	Feb-09	Synapsis	Manufacturing supply chain optimization	n/a	n/a	\$7.5	n/a	n/a	
		Dec-08	Synapsis Technology	Software applications and consulting services	n/a	n/a	\$7.5	n/a	n/a	
		Feb-08	Digital Human	Human simulation model	n/a	n/a	\$1.1	n/a	n/a	
		Dec-07	CoCreate Software	Flexible CAD & PLM for electronics	\$78.0	n/a	\$247.5	3.17x	n/a	
		Nov-07	LBS	Integrated logistics support software	n/a	n/a	n/a	n/a	n/a	
Dassault	Zuken	Sep-07	NetRegulus	Enterprise regulatory management	n/a	n/a	\$2.3	n/a	n/a	
		May-07	NC Graphics	High-speed machining and engineering tools	n/a	n/a	n/a	n/a	n/a	
		Apr-06	Mathsoft	Calculation management	\$24.0	\$0.9	\$63.0	2.62x	n/m	
		Nov-05	Cadtrain	E-learning courses for engineers	n/a	n/a	n/a	n/a	n/a	
		Jul-05	Arbortext	Code authoring & publishing	\$40.0	n/a	\$190.0	4.75x	n/a	
ESI Group		Jun-05	Aptavis Technologies	Life cycle management software	n/a	n/a	n/a	n/a	n/a	
		Apr-04	OHIO Design Automation	Electronics design collaboration software	n/a	n/a	\$12.0	n/a	n/a	
		Mar-99	Auxilium	Manufacturing collaboration	n/a	n/a	\$79.0	n/a	n/a	
		Oct-98	InPart	Industrial 3D CAD	n/a	n/a	\$26.4	n/a	n/a	
		Aug-95	Rasna	Design optimization & simulation	\$22.7	n/a	\$163.4	7.19x	n/a	
Revalize				Total Disclosed M&A Deal Value: n/a						
		Nov-21	Procad	Product and document lifecycle management (PDM and PLM) platform	n/a	n/a	n/a	n/a	n/a	
		Nov-21	Tenado	Computer-aided design (CAD) software for 2D and 3D technical drawings	n/a	n/a	n/a	n/a	n/a	
		Oct-21	Sofon	Uided Selling and configure price quote software	n/a	n/a	n/a	n/a	n/a	
		Oct-21	Specpage	Product lifecycle management and product data management software	n/a	n/a	n/a	n/a	n/a	
		Aug-21	Attainia	Capital equipment planning software	n/a	n/a	n/a	n/a	n/a	
		Aug-21	BCA Technologies	Cloud pricing and quoting software	n/a	n/a	n/a	n/a	n/a	
		Aug-21	LeadMethod	Channel sales management software	n/a	n/a	n/a	n/a	n/a	
		Aug-21	MicroD	Website development and digital marketing services	n/a	n/a	n/a	n/a	n/a	
		Jun-21	Configure One	Configure, price, and quote (CPQ) software	n/a	n/a	n/a	n/a	n/a	
		Jun-21	FPX	Cloud-based configure-price-quote (CPQ) platform intended for manufacturer	n/a	n/a	n/a	n/a	n/a	
		Nov-18	Axonon	Cloud-based quoting, ordering and configuration solutions	n/a	n/a	n/a	n/a	n/a	

Precedent Engineering & Design M&A Transactions

Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview		Transaction Statistics		
		Date	Target	Description	Revenue	Estimated EBITDA	Deal Value	Deal Value / Estimated Revenue
Altair	Gamma Technologies							
			Siemens		Total Disclosed M&A Deal Value: \$17.0 Billion			
		Dec-22	Vendigital	Supply chain consulting services	n/a	n/a	n/a	n/a
		Aug-22	Brightly Software	Operations management software	\$180.0	n/a	\$1,880.0	10.44x
		Jul-22	Zona Technology	Engineering services for aerospace industry	n/a	n/a	n/a	n/a
		Jul-22	Innovation Strategies	IT strategy & application development	n/a	n/a	n/a	n/a
		Jul-22	Radica Software	Electrical CAD software	n/a	n/a	n/a	n/a
		Jun-22	Senseye	Machine monitoring & diagnostics platform	n/a	n/a	n/a	n/a
		Oct-21	Wattsense	IoT management software	n/a	n/a	n/a	n/a
		Aug-21	SupplyFrame	Design-to-source intelligence	n/a	n/a	\$700.0	n/a
		Aug-21	Sqills	Freight railway management and maintenance workflow software	n/a	n/a	\$650.4	n/a
		Jun-21	Nextflow Software	Computational fluid dynamics simulation software	n/a	n/a	n/a	n/a
		May-21	Padam Mobility	TAD software to facilitate public transport system	n/a	n/a	n/a	n/a
		Feb-21	Fourkind	Management consulting and advisory services	n/a	n/a	n/a	n/a
		Nov-20	Culgi	Computational chemistry software for material simulation	n/a	n/a	n/a	n/a
		Jul-20	Avatar Integrated Systems	IC place and route software	n/a	n/a	n/a	n/a
		Jun-20	UltraSoC Technologies	System-on-chip analytics software	n/a	n/a	n/a	n/a
		Jun-20	Vizendo	Virtual operator training for CAD & PLM systems	n/a	n/a	n/a	n/a
		Jan-20	C&S Electric	Manufacturer of low voltage products	n/a	n/a	n/a	n/a
		Jan-20	AIT Goehner	IT consultancy and development service	n/a	n/a	n/a	n/a
		Nov-19	MultiMechanics	Materials modeling and simulation software	n/a	n/a	n/a	n/a
		Nov-19	Atlas 3D	3D printing parts design software	n/a	n/a	n/a	n/a
		Jul-19	Process Systems Enterprise	Advanced modeling software	n/a	n/a	n/a	n/a
		Jul-19	Innovation Systems (IST)	Industrial transport planning software	n/a	n/a	n/a	n/a
		Jun-19	ESTEQ (South Africa)	Developer and distributor of PLM and MOM	n/a	n/a	n/a	n/a
		Jun-19	Saab Medav (Assets)	NVR testing products and services	n/a	n/a	n/a	n/a
		Dec-18	Comsa	Wire-harness engineering software	n/a	n/a	n/a	n/a
		Oct-18	Mendix	Low code application development platform	n/a	n/a	\$579.7	n/a
		Sep-18	Lightwork Design	3D rendering designs and visualization systems	n/a	n/a	n/a	n/a
		Jul-18	Omativ	Factory optimization system	n/a	n/a	n/a	n/a
		Jun-18	Comfy	Smart building management software	n/a	n/a	n/a	n/a
		Jun-18	Austemper Design	Electronic design tools for circuit components	n/a	n/a	n/a	n/a
		Mar-18	Agilion	Real-time location systems (RTLS)	n/a	n/a	n/a	n/a
		Feb-18	Sarokal Test Systems	Testing equipment platform for ASIC & FPGA	n/a	n/a	n/a	n/a
		Jan-18	Milanovic Engineering	Engineering and manufacturing services	n/a	n/a	n/a	n/a
		Dec-17	Solido Design Automation	Variation-aware design and characterization	n/a	n/a	n/a	n/a
		Oct-17	Mentor Infolytica	Electromagnetic and thermal analysis	n/a	n/a	n/a	n/a
		Oct-17	Wi-Tronix	Predictive maintenance for rail services	n/a	n/a	n/a	n/a
		Aug-17	Tass International	Design and testing software for automotive	n/a	n/a	n/a	n/a
		Mar-17	Mentor Graphics	Electronic design automation	\$1,282.5	\$267.2	\$4,500.0	3.51x
		Nov-16	Conworx Technology	Lab device interfaces	n/a	n/a	n/a	n/a
		Mar-16	CD-adapco	Specialized simulation based on CFD	\$190.0	n/a	\$970.0	5.11x
		Mar-16	Neo New Oncology	Medical diagnostic technology	n/a	n/a	n/a	n/a
		Nov-15	Polarion Software	Application lifecycle management	n/a	n/a	n/a	n/a
		Jul-15	Zenco Systems	Traffic enforcement technology	n/a	n/a	n/a	n/a
		Mar-15	AxIT	Order management & logistics	n/a	n/a	n/a	n/a
		Oct-14	Camstar	Manufacturing execution systems	n/a	n/a	\$160.0	n/a
		Jan-14	IBS	Industrial productivity software	n/a	n/a	n/a	n/a
		Dec-13	TESIS PLMware	Product lifecycle management	n/a	n/a	n/a	n/a
		Jun-13	Sky Eye	Transport fleet management	n/a	n/a	n/a	n/a
		Jun-13	Preactor	Manufacturing planning & scheduling	n/a	n/a	n/a	n/a
		May-13	Invensys Rail	Railway design & system automation	\$1,179.5	n/a	\$2,660.0	2.26x
		Nov-12	LMS	PLM simulation & testing	\$241.7	n/a	\$870.0	3.60x
		Sep-12	VRcontext	Visualization technology	n/a	n/a	n/a	n/a
		Jan-12	eMeter	Energy information management	n/a	n/a	n/a	n/a
		Dec-11	Vistagy	Specialized engineering environments	\$18.0	n/a	n/a	n/a
		Aug-11	Advanced Telemetry	Energy management	n/a	n/a	n/a	n/a
		Oct-09	Energy4u	Energy IT services	n/a	n/a	n/a	n/a
Altium	Hexagon							
Ansys	Jama Software							
Aras	PTC							
Autodesk	Revalize							
Bentley	Siemens							
Cadence	Synopsys							
Dassault	Zuken							
ESI Group								

Source: Pitchbook, Capital IQ, corporate websites, press releases

Precedent Engineering & Design M&A Transactions

Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview			Transaction Statistics			
		Date	Target	Description	Revenue	EBITDA	Deal Value	Deal Value / Estimated Revenue	EBITDA	
Altair	Gamma Technologies	Siemens								
		Total Disclosed M&A Deal Value: \$17.0 Billion								
Altium	Hexagon	Sep-09	YSNC	Machine engineering	n/a	n/a	n/a	n/a	n/a	
		Apr-09	Elan Software	Process control software	n/a	n/a	n/a	n/a	n/a	
		Nov-08	Syncos	Digital manufacturing engineering	n/a	n/a	n/a	n/a	n/a	
		May-07	UGS	2D & 3D PLM and industry automation	\$1,150.0	n/a	\$3,500.0	3.04x	n/a	
		Feb-07	ETM	Supervisory & data acquisition systems	n/a	n/a	n/a	n/a	n/a	
Ansys	Jama Software	Oct-06	VistaScope	Surveillance video analysis	n/a	n/a	n/a	n/a	n/a	
		Sep-05	Garderos	Local area network management	n/a	n/a	n/a	n/a	n/a	
		Aug-05	Transmitton	Railway infrastructure management	n/a	n/a	n/a	n/a	n/a	
		Apr-05	Myrio	IP video networking	n/a	n/a	\$50.0	n/a	n/a	
		Dec-04	Chantry Networks	Mobility-enabled wireless networking	n/a	n/a	\$85.0	n/a	n/a	
		Apr-03	Cycos	Unified messaging systems	n/a	n/a	\$45.6	n/a	n/a	
		Apr-02	Symbian	Mobile operating system	n/a	n/a	\$309.0	n/a	n/a	
		Synopsys								
		Total Disclosed M&A Deal Value: \$4.3 Billion								
Aras	PTC	Jun-22	NTT Application Security	Risk management platform	n/a	n/a	\$330.1	n/a	n/a	
		Jan-22	FishTail Design Automation	Management of design constraints for chip-implementation progresses	n/a	n/a	n/a	n/a	n/a	
		Nov-21	Concertio	System performance optimization tools	n/a	n/a	n/a	n/a	n/a	
		Sep-21	BISTel	Manufacturer of semiconductor and flat panel display systems	n/a	n/a	n/a	n/a	n/a	
		Jun-21	Code Dx	Application security platform	n/a	n/a	n/a	n/a	n/a	
Autodesk	Revalize	May-21	MorethanIP	Intellectual properties for multi-gigabit high-speed telecom and datacom	n/a	n/a	n/a	n/a	n/a	
		Nov-20	Light Tec	Optical scattering measurements and measurement equipment	n/a	n/a	n/a	n/a	n/a	
		Nov-20	Moortec Semiconductor	Embedded sensor and monitoring technologies	n/a	n/a	n/a	n/a	n/a	
		Jun-20	Qualtera	Industrial big-data analytics platform	n/a	n/a	n/a	n/a	n/a	
		Feb-20	Terrain EDA	Electronic design automation technologies	n/a	n/a	n/a	n/a	n/a	
Bentley	Siemens	Feb-20	Invacas	Certain IP assets; Logic Library, Embedded Memory, Interface and Analog IP	n/a	n/a	n/a	n/a	n/a	
		Jan-20	eSilicon	Embedded Memory IP And Interface IP assets	n/a	n/a	\$24.0	n/a	n/a	
		Jan-20	Tinfoil Security	Website and application programming interface (API) security	n/a	n/a	n/a	n/a	n/a	
		Nov-19	The Dini Group	Digital circuit based hardware and applications	n/a	n/a	n/a	n/a	n/a	
		Oct-19	Qtronic	Automotive virtual prototyping solutions	n/a	n/a	n/a	n/a	n/a	
Cadence	Synopsys	Aug-18	Source III	Developer of specialist simulation and test data management tools	n/a	n/a	n/a	n/a	n/a	
		Mar-18	Silicon and Beyond	Developer of SerDes technology used in data-intensive applications.	n/a	n/a	n/a	n/a	n/a	
		Feb-18	Phoenix Software	Provider of manufacturing automation software	n/a	n/a	n/a	n/a	n/a	
		Jan-18	Kilopass	SoC system developer	n/a	n/a	\$49.0	n/a	n/a	
		Dec-17	Black Duck	Provider of open source security and license management software	\$75.0	n/a	\$565.1	7.53x	n/a	
Dassault	Zuken	Oct-17	Sidense	Silicon-proven embedded non-volatile memory intellectual property (IP)	n/a	n/a	n/a	n/a	n/a	
		Sep-17	QuantumWise	Provider of simulation tools for materials modeling designing.	n/a	\$35.0	n/a	n/a	n/a	
		Jan-17	Forcheck	Developer of security software	n/a	n/a	n/a	n/a	n/a	
		Nov-16	Cigital	Provider of software security consulting services.	n/a	n/a	n/a	n/a	n/a	
		Nov-16	Codiscope	Developer of complementary security tools	n/a	n/a	n/a	n/a	n/a	
ESI Group		May-16	Gold Standard Simulations	Provider of simulation tools for design technology	n/a	n/a	n/a	n/a	n/a	
		May-16	Simpleware	Provider of 3D image processing software	n/a	n/a	n/a	n/a	n/a	
		Mar-16	WinterLogic	Provider of electronic design automation software products.	n/a	n/a	n/a	n/a	n/a	
		Dec-15	Red Lizard Software	Developer of source code analysis tools	n/a	n/a	n/a	n/a	n/a	
		Nov-15	Protecode	Provider of license management tools for managing open source software	n/a	n/a	n/a	n/a	n/a	
		Aug-15	Atrenta	Provider of realization services for the semiconductor and electronic systems in	n/a	n/a	n/a	n/a	n/a	
		Jul-15	Seeker Security	Provider of computer security services	n/a	n/a	n/a	n/a	n/a	
		Jun-15	Codenomicon	Automated tools for testing the interfaces of mission critical software	\$11.1	n/a	n/a	n/a	n/a	
		Jun-15	Elliptic Technologies	Provider of security software and semiconductor Internet Protocol engines	n/a	n/a	n/a	n/a	n/a	
		Mar-14	Coverity	Provider of source code analysis tools	\$70.0	n/a	\$375.0	5.36x	n/a	
		Feb-14	Brandenburg	Developer of automotive design software	n/a	n/a	n/a	n/a	n/a	
		Feb-14	Target Compiler Technologies	Software tools for the design, programming, and verification of processors	n/a	n/a	n/a	n/a	n/a	
		Oct-12	EVE-USA	Provider of emulation platforms for SoC verification	n/a	n/a	n/a	n/a	n/a	
		Aug-12	Ciranova	Provider of electronic design automation software	n/a	n/a	n/a	n/a	n/a	
		May-12	RSoft Design Group	Developer of designing software	n/a	n/a	n/a	n/a	n/a	
		Feb-12	Magma Design Automation	Provider of chip-design software	\$146.4	\$16.3	\$523.0	3.57x	n/m	
		Feb-12	Luminescent Technologies	Provider of lithography enhancement services	n/a	n/a	n/a	n/a	n/a	

Precedent Engineering & Design M&A Transactions

Public Companies & Leading Platforms

MADISON PARK GROUP

		(\$ in Millions)		Target Overview			Transaction Statistics			
		Date	Target	Description	Revenue	EBITDA	Deal Value	Deal Value / Revenue	Estimated EBITDA	
Altair	Gamma Technologies	Synopsys							Total Disclosed M&A Deal Value: \$4.3 Billion	
Altium	Hexagon	Jan-12	ExpertIO	Provider of internet protocol verification services	n/a	n/a	n/a	n/a	n/a	
		Jan-12	Mojave Design	Physical verification technology for 90 and 65 nanometer designs	n/a	n/a	n/a	n/a	n/a	
		Oct-11	Extreme DA	Operator of an electronic design automation company	n/a	n/a	n/a	n/a	n/a	
		Sep-11	nSys Design Systems	Provider of business verification services	n/a	n/a	n/a	n/a	n/a	
		Oct-10	Optical Research Associates	Developer of software used for optical application	n/a	n/a	n/a	n/a	n/a	
Ansys	Jama Software	Jun-10	Virage Logic	Provider of semiconductor intellectual property (IP) and services	\$72.0	(\$5.6)	\$315.0	4.38x	n/m	
		Jun-10	Synfora	Provider of algorithmic synthesis tools	n/a	n/a	n/a	n/a	n/a	
		Jun-10	Nusym Technology	Provider of verification closure solutions	n/a	n/a	n/a	n/a	n/a	
		Mar-10	CoWare	Supplier of platform-driven electronic system-level design software	n/a	n/a	n/a	n/a	n/a	
		Feb-10	VaST Systems Technology	Provider of tools and models for embedded system design automation	n/a	n/a	n/a	n/a	n/a	
Aras	PTC	Nov-09	Gemini Design Technology	Developer of electronic design automation (EDA) software	n/a	n/a	n/a	n/a	n/a	
		May-09	Chipidea Mikroelektronika	Analog and mixed-signal semiconductor circuit designs software	n/a	n/a	\$22.0	n/a	n/a	
		May-09	MIPS Technologies (Analog Business)	Software based designing services for the semiconductor industry in USA	n/a	n/a	\$22.0	n/a	n/a	
		Dec-08	Pro Design Electronic (CHIPit Business)	Provider of hardware verification services	n/a	n/a	n/a	n/a	n/a	
		Oct-07	Sandwork Design	Developer of transistor-level debugging and waveform analysis tools	n/a	n/a	\$24.0	n/a	n/a	
Autodesk	Revalize	Jun-07	ArchPro Design Automation	Developer of advanced electronic design automation (EDA) products	n/a	n/a	\$13.0	n/a	n/a	
		Jan-07	TeraRoute	Developer of routing software	n/a	n/a	n/a	n/a	n/a	
		Dec-05	Hpl Technologies	Developer of yield optimization software	\$9.3	(\$27.2)	\$13.0	1.39x	n/m	
		May-05	Nassda	Developer of full-chip circuit verification software	\$45.6	(\$70.8)	\$200.2	4.39x	n/m	
		Jan-05	TriCN Associates	Accounting, tax, and finance service	n/a	n/a	n/a	n/a	n/a	
Bentley	Siemens	Nov-04	Integrated Systems Engineering	Provider of Technology CAD (TCAD) software products	n/a	n/a	\$107.5	n/a	n/a	
		Nov-04	Leda Design	Digital library platform developer	n/a	n/a	n/a	n/a	n/a	
		Oct-04	Cascade IP	Provider of digital intellectual property (IP) services	n/a	n/a	n/a	n/a	n/a	
		Oct-04	Monterey Design Systems	Provider of SoCs software	n/a	n/a	n/a	n/a	n/a	
		Mar-04	IRoC (Memory BIST Division)	Electronic design automation (EDA) tool	n/a	n/a	n/a	n/a	n/a	
Cadence	Synopsys	Feb-04	Analog Design Automation	Developer of automated circuit optimization software	n/a	n/a	\$13.0	n/a	n/a	
		Feb-04	Accelerant Networks	Manufacturer of computer transceivers	n/a	n/a	\$22.5	n/a	n/a	
		Jan-04	Progressant Technologies	Manufacturer of negative differential resistance transistor	n/a	n/a	n/a	n/a	n/a	
		Jun-03	InnoLogic Systems	Equivalence checking technology for memory and custom blocks	n/a	n/a	n/a	n/a	n/a	
		Mar-03	Numerical Technologies	Developer and marketer of proprietary technologies and software	n/a	n/a	\$250.0	n/a	n/a	
Dassault	Zuken	Jul-02	InSilicon	Manufacturer of communications products	n/a	n/a	\$74.6	n/a	n/a	
		Jun-02	Avanti	Provider of engineering and environmental regulatory support services	n/a	n/a	\$735.0	n/a	n/a	
		Mar-02	Co-Design	Developer of design language and tools	n/a	n/a	\$36.0	n/a	n/a	
		Nov-01	C Level Design	Graphic design and web marketing service	n/a	n/a	n/a	n/a	n/a	
		Nov-98	Everest Design Automation	Software solutions that solves complex problems of chip assembly	n/a	n/a	n/a	n/a	n/a	
ESI Group		Mar-97	EPIC Design	Developer of simulation and analysis tools for chip management	n/a	n/a	\$427.1	n/a	n/a	
		May-95	Silicon Architect	Designer of Structured ASIC Methodology	n/a	n/a	n/a	n/a	n/a	
		Feb-94	Logic Modeling	Provider of high-level design automation software	n/a	n/a	\$118.0	n/a	n/a	
		Zuken							Total Disclosed M&A Deal Value: n/a	
		Jan-19	Vitech	Systems engineering solutions	n/a	n/a	n/a	n/a	n/a	
		Jan-18	Alphatech	CAD Provider in Japan	n/a	n/a	n/a	n/a	n/a	
		Dec-15	CAETEK	Schematic red liner design and implementation software	n/a	n/a	n/a	n/a	n/a	
		Total Average							6.44x	16.3x
		Total Median							4.72x	16.8x

IV.



About MPG

Growth Stage

FOCUSED ON TRANSACTIONS WITH \$100-500 MILLION ENTERPRISE VALUE

200+

COMPLETED TRANSACTIONS

\$30+

BILLION IN DEAL VALUE

~30%

CROSS-BORDER DEALS ⁽¹⁾

40%+

SPONSOR-BACKED CLIENTS

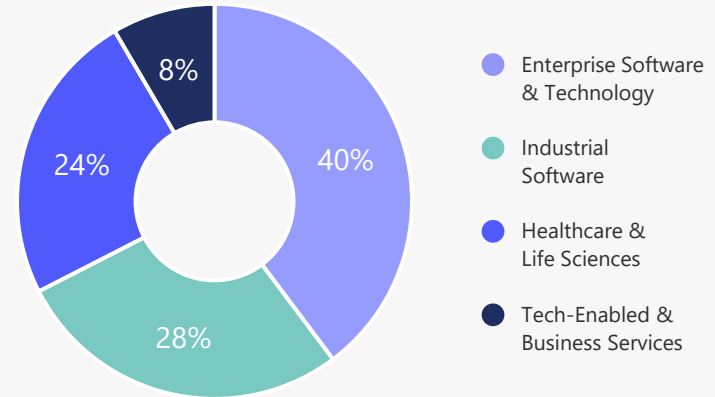
30%+

REPEAT CLIENTS ⁽²⁾

20+

DEDICATED ADVISORS

Our Deep Sector Expertise Drives Better Outcomes ⁽¹⁾



(1) Select deals completed in the last ten years

(2) Calculated as total clients divided by clients completing more than one transaction with MPG over client relationship, inclusive of investor relationships



FOCUS

We partner with global technology clients across North America and Europe



EXPERTISE

We specialize in impacting growth strategies to optimize shareholder value creation



STRATEGY

We marry thoughtful corporate strategy planning with stalwart transactional execution







































RESOURCES

Domain experts with active relationships across +1,500 global investors

Select Recent Transactions

Right People, Right Narrative, Right Time

MADISON PARK GROUP

<p>Founder-owned</p>  <p>Strategic Sale</p> 	<p>PE-Backed</p>  <p>Strategic Sale</p> 	<p>VC-Backed</p>  <p>Debt Placement</p> 	<p>Founder-owned</p>  <p>Growth Investment</p> 	<p>PE-Backed</p>  <p>Acquisitions Of</p> 	<p>Founder-owned</p>  <p>Financial Sale</p> 
<p>Founder-owned</p>  <p>Financial Sale</p> 	<p>PE-Backed</p>  <p>Financial Sale</p> 	<p>Founder-owned</p>  <p>Strategic Sale</p> 	<p>VC-Backed</p>  <p>Strategic Sale</p> 	<p>PE-Backed</p>  <p>Strategic Sale</p> 	<p>Founder-owned</p>  <p>Financial Sale</p> 
<p>Founder-owned</p>  <p>Minority Investment</p> 	<p>PE-Backed</p>  <p>Strategic Sale</p> 	<p>Founder-owned</p>  <p>Financial Sale</p> 	<p>PE-Backed</p>  <p>Financial Sale</p> 	<p>VC-Backed</p>  <p>Strategic Sale</p> 	<p>PE-Backed</p>  <p>Financial Sale</p> 

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Public Market Coverage



Cybersecurity



GRC



Marketing Tech



Supply Chain Planning



M&A Market Coverage



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