



Technology Group

Data Infrastructure and Analytics Software

MARKET OVERVIEW AND OPPORTUNITIES
SEPTEMBER 2022



Houlihan Lokey

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Houlihan Lokey Credentials in Data Infrastructure and Analytics Software



Data Infrastructure and Analytics Software Houlihan Lokey Team

Houlihan Lokey is a preeminent advisor in data infrastructure and analytics software, with deep knowledge in the field and extensive experience advising on M&A and capital-raising transactions.

Data Infrastructure and Analytics Software Investment Banking



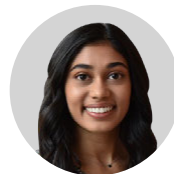
Vik Pandit
Managing Director
New York



Ali Masoud
Vice President
New York



Daniel Liu
Associate
New York



Sonum Patel
Analyst
Los Angeles

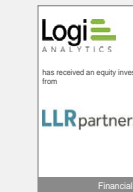
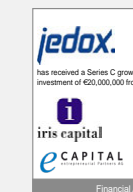
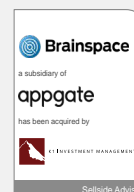
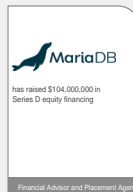
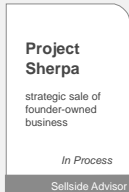
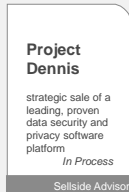


Sean Fitzgerald
Managing Director
New York



Chris Hastings
Managing Director
New York

Global Equity Capital Markets



Software Global Leadership



Rob Louv
Managing Director and
Chairman of U.S. Technology
San Francisco



Sascha Pfeiffer
Managing Director and
Co-Head of European Technology
Frankfurt



Kevin Salmi
Managing Director and
Head of Private Equity Coverage
New York



Andrew Morrow
Managing Director
Los Angeles

Financial Sponsors

*Selected transactions were executed by Houlihan Lokey professionals while at other firms acquired by Houlihan Lokey or by professionals from a Houlihan Lokey joint venture company. Tombstones included herein represent transactions closed from 2013 forward.

Our Tech M&A Team Is No. 1 Globally With Unparalleled Reach

North America

Atlanta
Boston
Chicago
Dallas
Houston
Los Angeles

Miami
Minneapolis
New York
San Francisco
Washington, D.C.

Europe and Middle East

Amsterdam
Dubai
Frankfurt
London
Madrid
Manchester

Milan
Munich
Paris
Stockholm
Tel Aviv
Zurich

Asia-Pacific

Beijing
Gurgaon
Ho Chi Minh City
Hong Kong SAR
Mumbai
Nagoya

Osaka
Shanghai
Singapore
Sydney
Tokyo

2021 Investment Banking Rankings – All Global Technology Transactions

Rank	Advisor	Deals
1	Houlihan Lokey	124
2	Goldman Sachs	114
3	JP Morgan	91
4	Morgan Stanley	87
5	William Blair	67

Source: Refinitiv. Excludes accounting firms and brokers.

13
LOCATIONS
WORLDWIDE

200
TECHNOLOGY
BANKERS

40+
MANAGING
DIRECTORS

250+
TECHNOLOGY
DEALS IN CY 21

Local Technology team

Houlihan Lokey is the trusted advisor to more top decision-makers than any other independent global investment bank.



Corporate Finance

- No. 1 Global M&A Advisor
- Leading Capital Markets Advisor Raising More Than \$100 Billion in Past Five Years

2021 Investment Banking Rankings All Global Transactions

Rank	Advisor	Deals
1	Houlihan Lokey	549
2	Goldman Sachs	511
3	JP Morgan	508

Source: Refinitiv.
Excludes accounting firms and brokers.



Financial Restructuring

- No. 1 Global Restructuring Advisor
- \$3.0 Trillion of Aggregate Transaction Value Completed

2021 Global Distressed Debt & Bankruptcy Restructuring Rankings

Rank	Advisor	Deals
1	Houlihan Lokey	63
2	Rothschild	38
3	Moelis	34

Source: Refinitiv.



Financial and Valuation Advisory

- No. 1 Global M&A Fairness Opinion Advisor
- 1,000+ Annual Valuation Engagements

2002 to 2021 Global M&A Fairness Opinion Advisory Rankings

Rank	Advisor	Deals
1	Houlihan Lokey	952
2	JP Morgan	890
3	Duff & Phelps, A Kroll Business	882

Source: Refinitiv.
Announced or completed transactions.



Financial Sponsors Coverage

- No. 1 Global Advisor to Private Equity Firms
- 1,000+ Sponsors Covered Globally

2021 Most Active Global Investment Banks to Private Equity Firms

Rank	Advisor	Deals
1	Houlihan Lokey	323
2	Deloitte	218
3	William Blair	183

Source: PitchBook.

Houlihan Lokey is a leading global investment bank with expertise in mergers and acquisitions, capital markets, financial restructuring, and financial and valuation advisory.

Key Facts and Figures



34
LOCATIONS
WORLDWIDE

2,200
TOTAL FINANCIAL
PROFESSIONALS

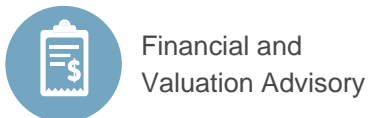
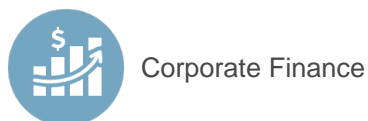
300+
MANAGING
DIRECTORS⁽¹⁾

2,000+
CLIENTS SERVED ANNUALLY

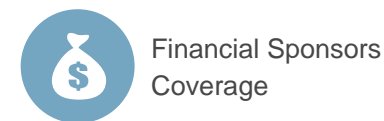
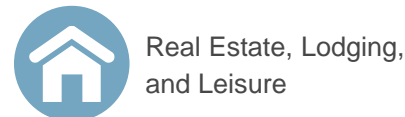
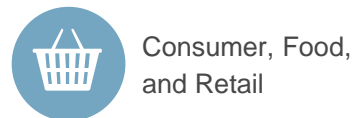
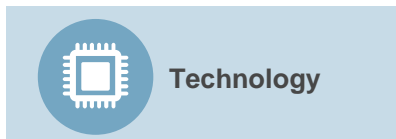
\$5.5B
MARKET
CAPITALIZATION⁽²⁾

\$2.3B
REVENUE

Our Services



Our Coverage Areas



(1). As of June 30, 2022, excludes corporate MDs.

(2) As of September 2022.

Market Leader in Data Infrastructure and Analytics Software: M&A and Capital Raising

We have unmatched transaction experience in data infrastructure and analytics software.

In past 12 months

Project Dennis

strategic sale of a leading, proven data security and privacy software platform

In Process

Sellside Advisor

Data Privacy Software

\$75m Capital Raise for Data Fabric Software Provider

Financial Advisor*

Data Fabric Software

MariaDB

has raised \$104,000,000 in Series D equity financing

Financial Advisor and Placement Agent

Relational Database Management Software

exago

has been acquired by

insightsoftware

Sellside Advisor

BI/Analytics Software

KINGLAND

has received a minority investment from

abry partners

Financial Advisor and Placement Agent

Master Data Management Software

Brainspace
a subsidiary of

appgate

has been acquired by

FT INVESTMENT MANAGEMENT

Sellside Advisor

Real Time Analytics

epi
a portfolio company of

AKKR

has been acquired by

INSIGHT VENTURE PARTNERS

Financial Advisor

Digital Marketing and E-Commerce Analytics

PRICESPIDER

has received a significant growth investment from

Frontier Capital

Financial Advisor

Retail Analytics

NETBASE
\$33,000,000 Series E Preferred Stock and Term Loan

Led by:

SPRING LAKE EQUITY PARTNERS

With participation from:

ORIX THOMVEST
ALLOS

Placement Agent

CEM Analytics

EPISERVER

has been acquired by

ACCEL **KKR**

Sellside Advisor

Digital Marketing and E-Commerce Analytics

INTELLIRESPONSE

has been acquired by

[24]7

Sellside Advisor

Customer Analytics

infotrieve

has been acquired by

Copyright Clearance Center

Sellside Advisor

License and Content Analytics

>ifbyphone

Series E Convertible Preferred Stock

Led by:

APEX VENTURE PARTNERS

With participation from existing investors:

Apex Venture Partners, SSM Partners, Origin Ventures, River Cities Capital Funds, and IZA Fund

\$30,000,000

Placement Agent

Marketing and Call Analytics

nettime solutions
cloud-based time and attendance

has been acquired by

PAYCHEX

Sellside Advisor

Time and Attendance Analytics

Social Solutions
transforming human services

has been acquired by

Vista Equity Partners

Sellside Advisor

Public Sector Case Management

Market Metrix

has been acquired by

CLARABRIDGE

Sellside Advisor

CEM Analytics

SRD

has been acquired by

IBM

Sellside Advisor*

Government Analytics

PeopleAnswers
Better insight. Better people.

has been acquired by

infor

Sellside Advisor*

Talent Analytics

Logi
ANALYTICS

has received an equity investment from

LLRpartners

Financial Advisor*

Web-Based BI

CHANNEL INTELLIGENCE

has been acquired by

Google

Sellside Advisor*

E-Commerce Analytics

PowerAdvocate

has been acquired by

Verisk Analytics

Sellside Advisor*

Market and Cost Analytics

a portfolio company of

HG Capital

has been acquired by

Verisk Analytics

Sellside Advisor*

Broking Analysis and Claims Management

CLARABRIDGE

has raised \$80 million equity financing from

General Catalyst Partners
and
SUMMIT PARTNERS

Financial Advisor*

CEM Analytics

Evaluate

has received an investment from

HG Capital

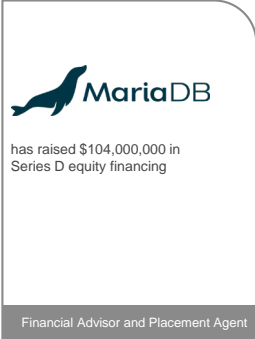
Sellside Advisor*

Life Science Intelligence

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Recent Houlihan Lokey Deal: MariaDB

Open-Source Database Software



Company Profile

- Founded in 2013 with dual headquarters in Espoo, Finland, and Redwood City, California, MariaDB is one of the most popular and fastest growing open-source database management software providers in the world.
- MariaDB has a strong existing base of blue-chip customers, including 75% of Fortune 500 companies.
- MariaDB’s features allow it to compete favorably with legacy databases, such as IBM Db2 and Oracle, and with databases provided by the public clouds, including Amazon Web Services, Microsoft Azure, and Google Cloud.

Maximizing Value Through Buyer Education and Competitive Tension

Our Role

- Houlihan Lokey served as lead financial advisor and placement agent to MariaDB and assisted in marketing, structuring, and negotiating the transaction on behalf of the company.

Transaction Snapshot

- MariaDB engaged Houlihan Lokey to pursue a strategic alternatives process with the aim of finding the ideal partner for MariaDB’s next chapter of growth.
- Houlihan Lokey contacted a range of growth equity investors as well as a select group of high-likelihood strategic buyers, which ultimately yielded both actionable minority investment and control offers.
- The process provided MariaDB with a significant growth equity investment to fuel ongoing growth while also aligning strategic vision between the new investor and the current management team and board of directors.

Houlihan Lokey’s Success and Momentum in Advising Companies in the Data Management Space

- This is the fifth transaction within the past 12 months in the data infrastructure software space. Houlihan Lokey has also advised:
 - Kingland Systems on their \$100 million capital raise
 - Brainspace on their sale to K1 investment management
 - Exago on their sale to insightsoftware
 - Capital raise for Project Sherpa (in market)
- MariaDB traded at **~14.5x ARR**.

MariaDB by the Numbers

**\$40M
ARR**

**145%
DBaaS Revenue CAGR**

**50%+
Enterprise License
Rev. CAGR**

**500+
Customers
(75% of F500)**

**60M+
Reach via Linux Distros**

**1B+
Docker Hub Downloads**

Recent Houlihan Lokey Deal: Exago

Embedded Business Intelligence Software



Company Profile

- Exago Inc. (Exago) was founded in 2006 with the objective of helping SaaS providers give their users an easy, flexible, powerful, ad hoc reporting and analytics solution.
- Today, the company's flagship product is the premier embedded business intelligence (BI) solution for leading companies like Walmart, Deloitte, Lockheed Martin, Datto, Kronos-UKG, Transactis-Mastercard, DealerSocket, Vivify Health, and KPMG, who chose Exago for its embedding and seamless integration with their customer-facing web applications.

Maximizing Value Through Buyer Education and Competitive Tension

Our Role

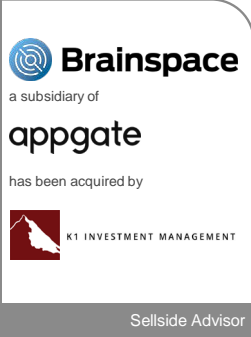
- Houlihan Lokey served as the financial advisor to Exago and assisted in structuring and negotiating the transaction on behalf of the company.
- This deal further demonstrates Houlihan Lokey's leading position in advising premier enterprise software and data management software providers globally.

Transaction Snapshot

- Houlihan Lokey ran a broad auction process, contacting ~55 software strategic buyers and ~25 private equity firms.
- Houlihan Lokey worked on positioning Exago with the strategic buyers by demonstrating the fit of Exago's embedded analytics software in their tech stack and how Exago would fit with their GTM.
- For the private equity firms, Houlihan Lokey worked on demonstrating the platform value of Exago's embedded analytics business and also developed an inorganic growth story by creating a narrative around growth via consolidation between embedded analytics providers.
- Given this buyer education, Houlihan Lokey was able to create significant demand and competitive tension, thereby garnering bids from several strategic buyers and private equity firms and attaining a premium valuation.

Recent Houlihan Lokey Deal: Brainspace

ML-Based Data Analytics and Visualization Software



Company Profile

- Brainspace is a leading data analytics and visualization platform in the legal technology space, providing eDiscovery, information governance, and compliance software to its clients.
- The company serves many of the world’s largest legal service providers, law firms, and Global 1000 enterprise companies.
- Its platform enables legal and compliance organizations to find better-quality insights faster when reviewing documents with machine-learning-powered search and visualization capabilities.

Maximizing Value Through Buyer Education and Competitive Tension

Our Role

- Our role involved advising Cyxtera Technologies (dba AppGate) and BC Partners on the divestiture of BrainSpace, a subsidiary of AppGate.
- This transaction highlights Houlihan Lokey’s expertise in navigating complex carve-out transactions while solidifying its long-standing reputation as a premier advisor to the data analytics and legal technology sectors.
- Houlihan Lokey also enabled the transaction to be completed in a compressed timeline, further demonstrating its deal execution capabilities.

Transaction Snapshot

- Cyxtera Technologies (dba AppGate) engaged Houlihan Lokey to conduct a sales process for its subsidiary, Brainspace, with the aim to raise growth capital for and focus on its cybersecurity assets.
- Houlihan Lokey conducted a targeted sales process, reaching out to carefully selected strategic and financial buyers in order to maintain competitive tension and reach an optimal outcome for all shareholders.
- Houlihan Lokey also navigated Brainspace through a complex carve-out transaction, providing guidance on the Transition Services Agreement, standalone financials, and other carve-out considerations.

Recent Houlihan Lokey Deal: Kingland

Enterprise Data Management Software and Services



Company Profile

- Founded by David Kingland in 1992, Kingland has grown to become one of the premier providers of software used to manage data and comply with regulations around the globe.
- Kingland is the largest independent tech-enabled services provider for Fortune 500 and government enterprises to manage data related to conflicts management and independence compliance.
- It supports more than 600,000 business users operating in more than 160 countries.

Maximizing Value Through Buyer Education and Competitive Tension

Thoughtful Buyer Approach

- Houlihan Lokey leveraged relationships with the key partners to tease out who could best match Kingland's objectives.
- Ideally, Houlihan Lokey sought an investor that could be proactive in helping with their product and sales and marketing strategies, not just a capital provider.

Competitive Process

- Houlihan Lokey ran a broad initial process to quickly screen for the right buyer given the complexity and esoteric nature of the company's business model.
- Houlihan Lokey reached out to a comprehensive pool of financial sponsors and a select group of high-likelihood strategic buyers.
- The competitive second round narrowed the process to four parties, putting them on equal footing to maximize terms and allowing for management to interview their ideal for their next partner.

Educating the Buyer Universe

- Additional time to educate and dive deep was critical because the technology that Kingland provides is not easy to see and understand.
- The company's willingness to spend more time on tech DD, coupled with case studies to illuminate the stickiness of the client's revenue associated with those technology deployments, was key to tightening the bid range and bringing the final value up substantially.
- Education was also key because the business lacked many, if any, direct comps.




Ideal Process Outcome

- Houlihan Lokey secured multiple control and minority offers, allowing Kingland to optimize its structure and terms while simultaneously aligning qualitative aspects such as strategic vision.
- Houlihan Lokey also assisted in navigating Kingland's complex carve out and reorganization associated with the transaction, providing guidance on the Transition Services Agreement, standalone financials, and other reorganization considerations.









Data Analytics and Business Intelligence Market Dynamics



Key Trends in Data Infrastructure and Analytics Software

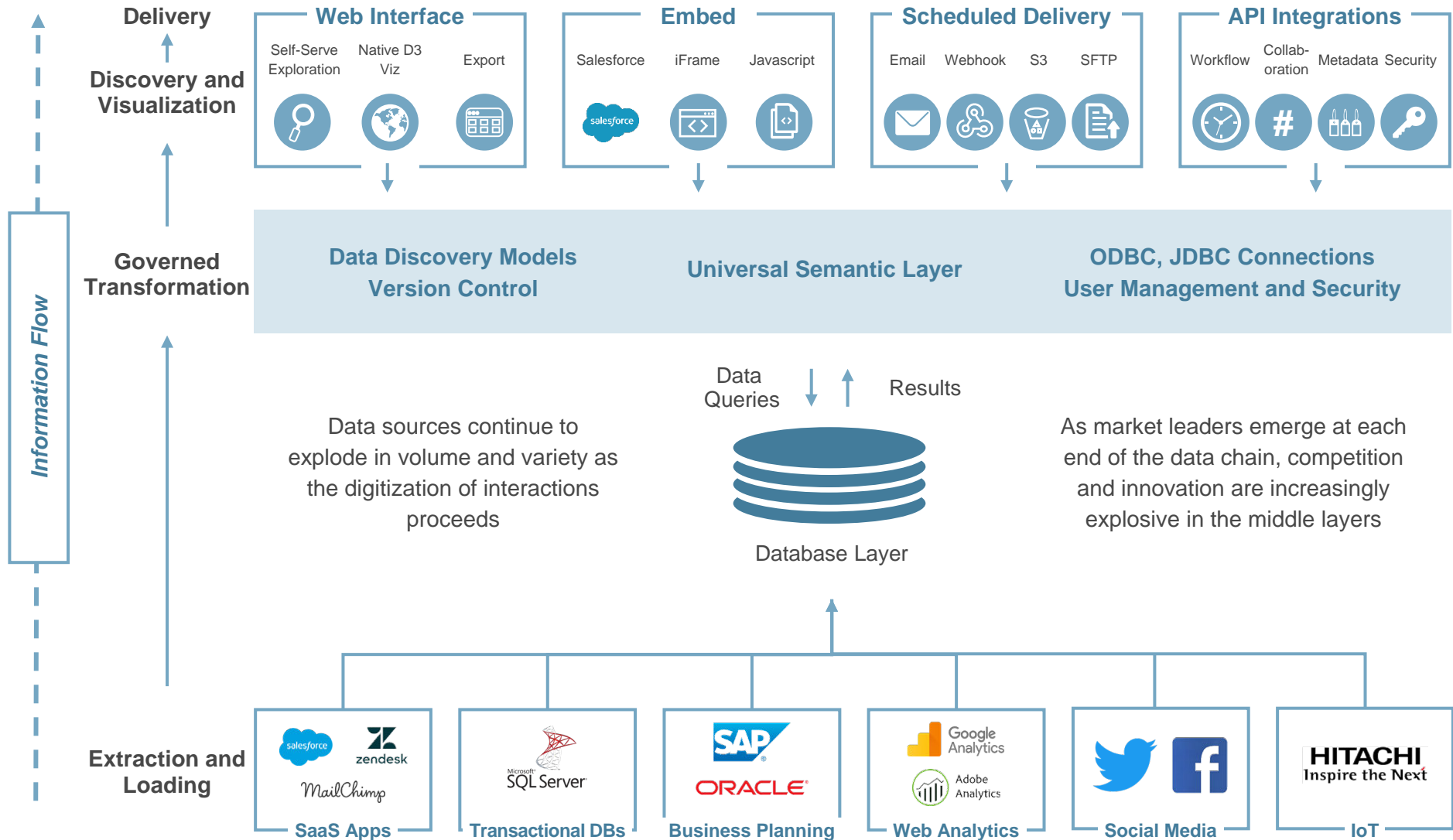
Trends	Drivers	Description	Implications	Representative Companies
<p>The evolution of data storage and data warehouses</p>	<ul style="list-style-type: none"> Enterprises moving away from on-premise data warehouses toward cloud native data warehouses, data lakes, data lakehouses 	<ul style="list-style-type: none"> Cloud-native storage platforms built on new and emerging architectures, such as cloud data warehouses, cloud data lakes, and cloud lakehouses, provide performant and easily scalable solutions 	<ul style="list-style-type: none"> Infinitely scalable cloud computing, serverless cloud services, and turnkey cloud-native integration tools foster a healthy and rich ecosystem to address enterprise data management needs 	
<p>Need for real-time data and operational analytics driving streaming pipelines</p>	<ul style="list-style-type: none"> Software for streaming (real-time) data and operational analytics becoming critical, as enterprises start focusing on real-time data 	<ul style="list-style-type: none"> Traditional data warehouse architectures were ideal for historical data analysis “What is happening now?” class of queries becoming more important; examples include in-app personalization, churn prediction, inventory forecasting, and fraud detection 	<ul style="list-style-type: none"> Increasing number of companies are investing in real-time infrastructure as they go from being data-driven (making decisions based on historical data) to becoming data-led (making decisions based on real-time and historical data) 	
<p>Rise of product-led growth becoming a key GTM for companies in the Modern Data Stack</p>	<ul style="list-style-type: none"> Changing GTM for companies in this sector from direct/channel-based sales to product-led growth (PLG) 	<ul style="list-style-type: none"> Usage-based pricing, open source, and the affordability of software have pushed purchasing decisions to the end users Cloud marketplaces via AWS, GCP, and Azure are emerging as the best first step as businesses evolve toward the future of digital selling 	<ul style="list-style-type: none"> It is becoming a norm for developer tooling companies—including startups in the Modern Data Stack—to deploy different levels of PLG motions (free/freemium/free trial version of the product) 	

Key Trends in Data Infrastructure and Analytics Software (cont.)

Trends	Drivers	Description	Implications	Representative Companies
<p>Need for metadata management and data catalog software to create a central definition of data attributes</p>	<ul style="list-style-type: none"> ▪ Distributed architectures, domain-specific data pipelines necessitate a metadata and management and governance layer 	<ul style="list-style-type: none"> ▪ Enterprises need master data management and catalog solutions to centrally define, access, and govern that data without running into chaos ▪ Helps organizations discover, understand, and consume data better while serving as a single source of truth for any data item 	<ul style="list-style-type: none"> ▪ These master data management and data catalog software tools provide a centralized data ontology across the enterprise and/or Line of Business and are usually managed by data stewards within the enterprise 	 Alation  Collibra  Databand  Datafold  MC MONTE CARLO
<p>Data mesh architectures gaining importance</p>	<ul style="list-style-type: none"> ▪ New philosophy of decentralizing data pipelines and data stewardship by LOB/domain/data consumer within an enterprise 	<ul style="list-style-type: none"> ▪ Supports distributed, domain-specific data consumers and views “data as a product,” with each domain handling their own data pipelines ▪ The tissue connecting these domains and their associated data assets is a universal interoperability layer that applies the same syntax and data standards 	<ul style="list-style-type: none"> ▪ This tissue is typically called a “data mesh” 	 K2 VIEW.  denodo  Starburst

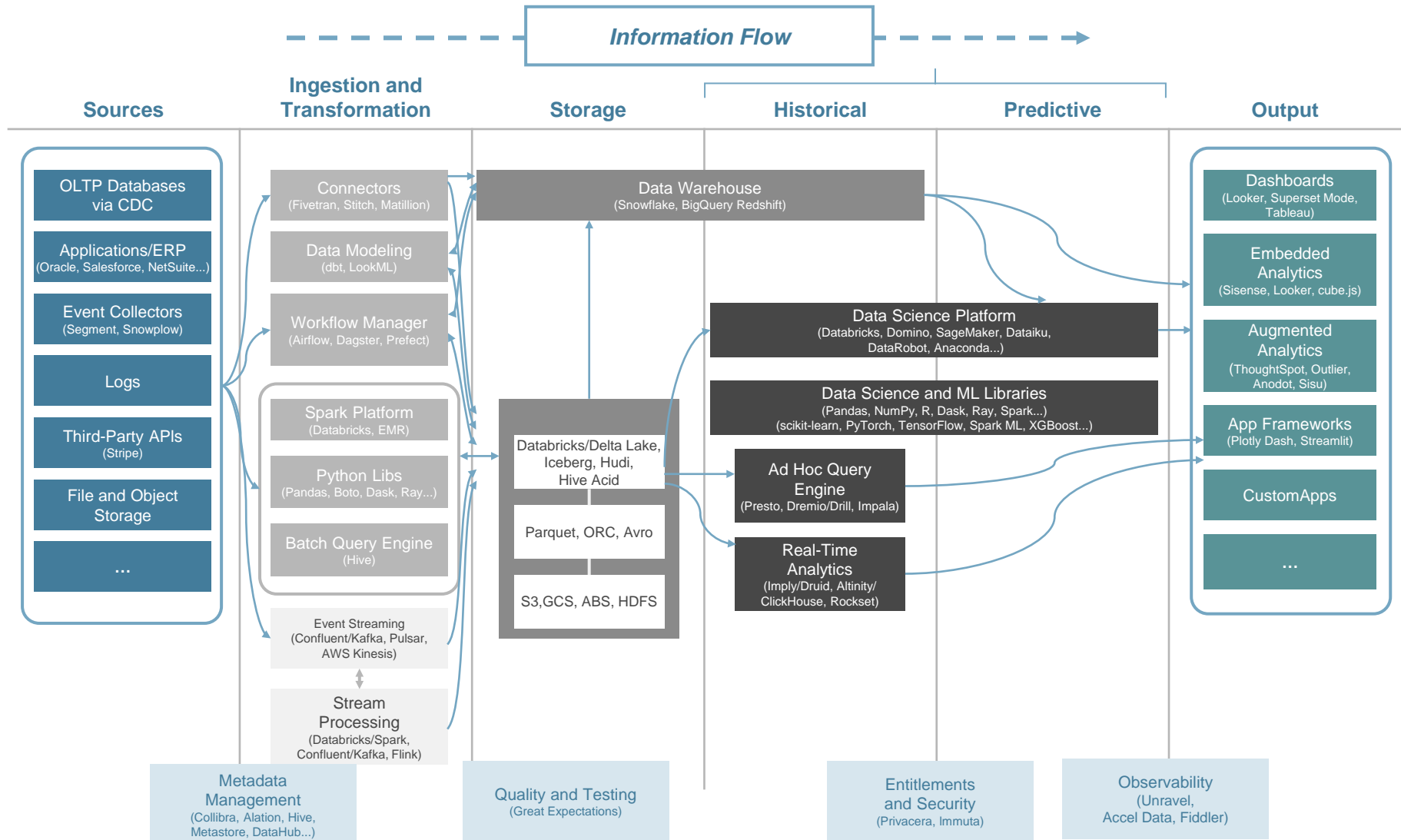
Traditional Enterprise Data Infrastructure and Analytics Ecosystem

...used for historical analysis, typically controlled by the IT department.



Modern Enterprise Data Infrastructure and Analytics Ecosystem

...is significantly more complex than the traditional ecosystem, as it's used for real-time and historical analysis with far more complex workflows, controlled by IT and Line of Business owners.



Machine Learning, Artificial Intelligence, and Data Landscape

Storage amazon S3 Azure Storage Google Cloud Storage	Hadoop amazon EMR CLUSTERNA Google Cloud Dataproc	Data Lakes AZURE Data Lake Storage databricks dremio	Data Warehouses amazon REDSHIFT Pivotal snowflake	Streaming/ In-Memory amazon Kinesis databricks Google Cloud Dataflow	Integrated Software Suites amazon web services ORACLE Microsoft
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RDBMS IBM DB2 ORACLE SAP ASE	NoSQL Databases Amazon DocumentDB amazon DynamoDB Google Cloud Bigtable	NewSQL Databases Amazon Aurora nuodb SAP HANA	Real Time Databases SingleStore [ROCKSET] imply	Graph DBs Amazon Neptune IBM neo4j
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MPP DBs TERADATA VERTICA IBM data warehouse systems	ETL/ELT/Data Transformation alteryx dbt talend	Reverse ETL Census hightouch Grouparoo	Data Integration Informatica SAP Data Services segment	Data Governance and Access IBM Informatica SailPoint
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Privacy and Security VERY GOOD SECURITY PRIVACERA Cyral	Data Observability MANTA datakin Data Quality Bigeye SODA talend	MGMT/Monitoring Amazon CloudWatch DATADOG New Relic	Serverless Microsoft Azure AWS Lambda Google Cloud Functions	Cluster SVCS Amazon ECS IBM IBM Power Systems
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Analytics

BI Platforms Microsoft Power BI amazon QuickSight looker	Visualization Power BI SAP Lumira tableau
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Data Analyst Platforms alteryx Microsoft pentaho	Augmented Analytics anodot ThoughtSpot si su
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Data Catalog and Discovery metaphor atlan data.world	Metrics Store GoodData Trace Supergrain	Log Analytics IBM Google Cloud Logging splunk
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Query Engine dremio Starburst ahana	Search amazon Kendra elasticsearch ORACLE ENDECA
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Machine Learning and Artificial Intelligence

Data Science Notebooks binder Deepnote jupyter	Data Science Platforms MathWorks SAS Palantir	ML Platforms datmo Pachyderm OctoML	Model Building Determined AI KASKADA SIGOPT
Feature Store HOPWORKS TACTON FEAST	Computer Vision onfido Microsoft Azure deepomatic	Speech cogito MindMeld SoundHound Inc.	Synthetic Media AI FOUNDATION descript synthesia

Applications — Enterprise

Sales Clearbit enigma HEADSUP	Marketing B2B App Annie sense tubular	Marketing B2C Amplitude mixpanel Google Analytics	Human Capital Beamery textio pymetrics
Legal everlaw DISCO Relativity	Finance Pigment botkeeper TRADESHIFT	Security StackPath DATAVISOR TANIUM	Partnerships CROSSSTREAM DATA REPUBLIC INFOSUM

Applications — Industry

Advertising Appier xandr gungum	Education KORBIT Lullishuo Geclara	Real Estate GEOPHY Operadoor REDFIN	Commerce grabango instacart STITCH FIX
Healthcare innovacer TEMPUS spring health	Life Sciences ConcertAI verily zymergen	Transportation APTIV moovit UBER	Agriculture prospera semios Granular

Open Source

Frameworks Spark TEZ RedHat	Format ICEBERG Parquet orc	Query/Data Flow Spark presto trino	Data Access Amundsen Uber Databook magda	Databases MySQL mongoDB Influxdb
Orchestration Airflow Flyte PREFECT	Infrastructure MESOS argo	Data Ops MARQUEZ OpenLineage great_expectations	Streaming and Messaging beam STORM PULSAR	Stat Tools and Languages python Scala pandas
ML Ops and Infra miflow Kubeflow DVC	Search elasticsearch Solr Lucene	Logging and Monitoring elasticsearch kibana SENTRY	Visualization Superset matplotlib Metabase	Security Apache Ranger Sentry accumulo

Data Sources and APIs

Data Marketplaces and Discovery snowflake data.world DAWEX	Financial and Economic Data Bloomberg DOW JONES Quandl	Air/Space/Sea Orbital Insight WINDWARD RS Metrics	People/Entities zoominfo melissa SAFE GRAPH	Location Intelligence FOURSQUARE Mapillary pitneybowes
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Data Resources

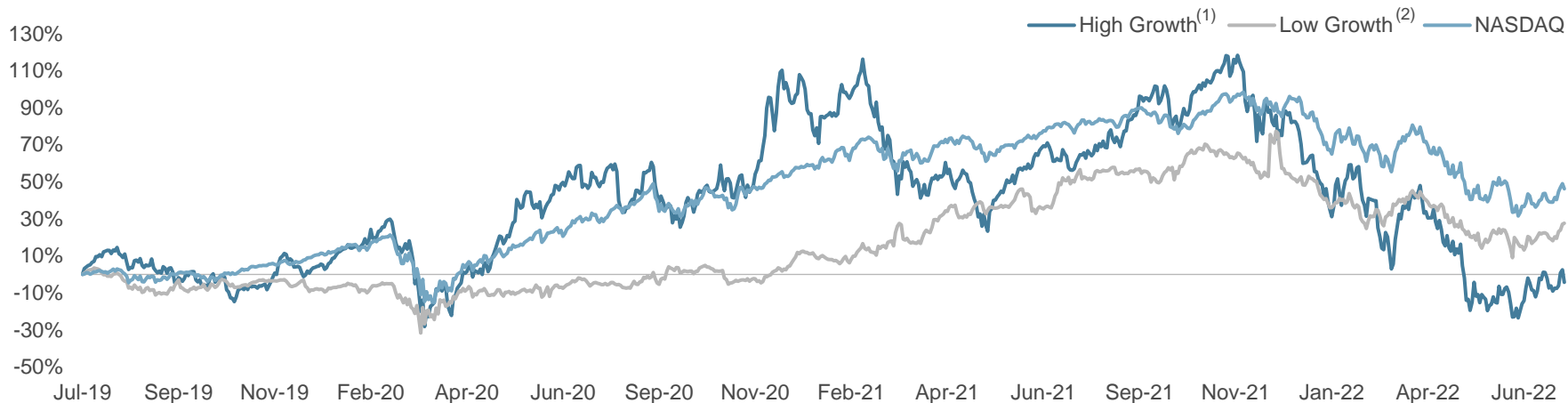
Data Services QUANTUMBLACK BOOZ ALLEN HAMILTON kaggle	Incubators and Schools PLURALSIGHT DataCamp DataElite	Research OpenAI Google Research facebook research
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Valuation/M&A Perspectives



After a Period of Trading at Attractive Multiples, the Sector Has Recently Seen a Significant Pullback

Three-Year Relative Performance



EV/NTM Revenue Multiple



Source: S&P Capital IQ as of July 22, 2022.

(1) Low Growth: SUMO, BASE, INFA, ORCL, MSTR, TDC.

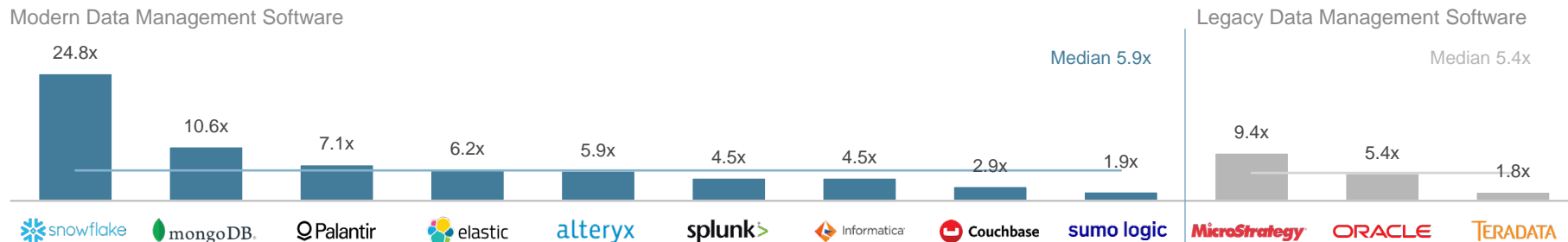
(2) High Growth: SNOW, MDBB, AYX, SPLK, ESTC, PLTR.

(3) Data Management Software: SNOW, MDB, AYX, SPLK, ESTC, PLTR, SUMO, BASE, INFA, ORCL, MSTR, TDC.

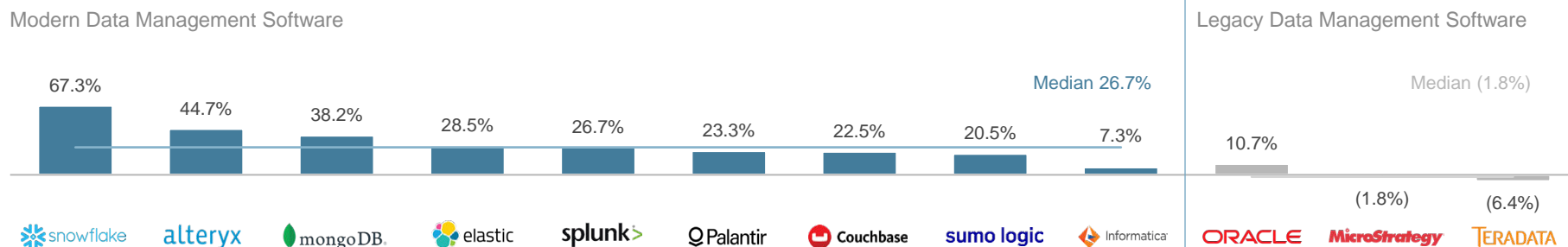
(4) Enterprise Software: CRM, SHOP, WDAY, CSU, PAYC, CDAY, PCTY, ZEN, MNDY, SGE, MANH, SMAR, DSG, ZD, PLAN, WK, PYCR, SPSC, MSP, ESMT, AVDX, EXFY, TNE, BIGC, AI, ENGH, VTEX, WKME, UPLD, AMSW.A, OPRA, BNFT, SNCR, SREV, PCYG.

Valuations for Modern Data Management Software Have Reset

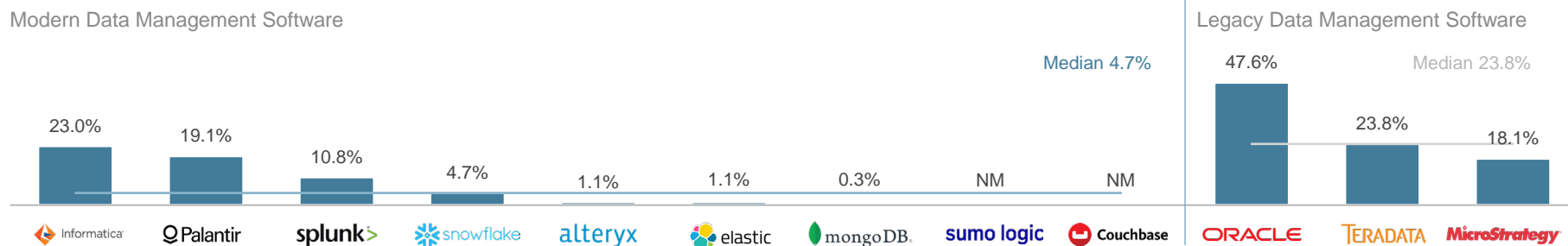
EV/2022E Revenue Multiple



2021A–2022E Revenue Growth



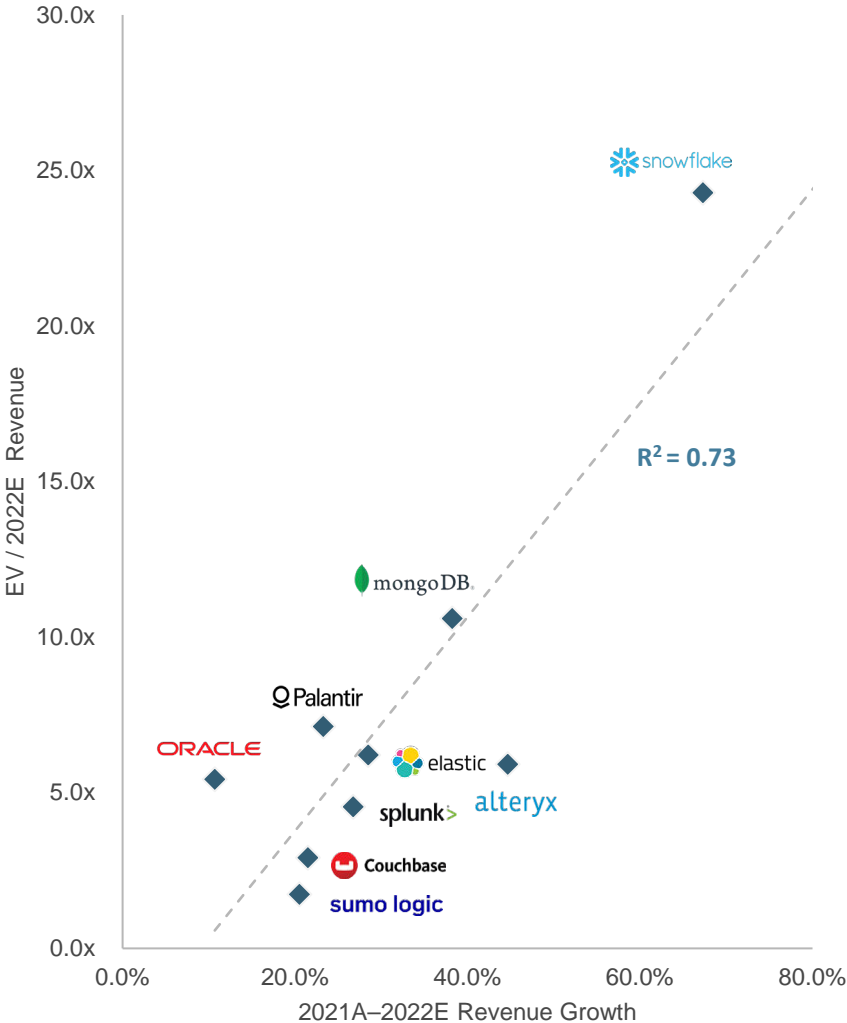
2022E EBITDA Margin



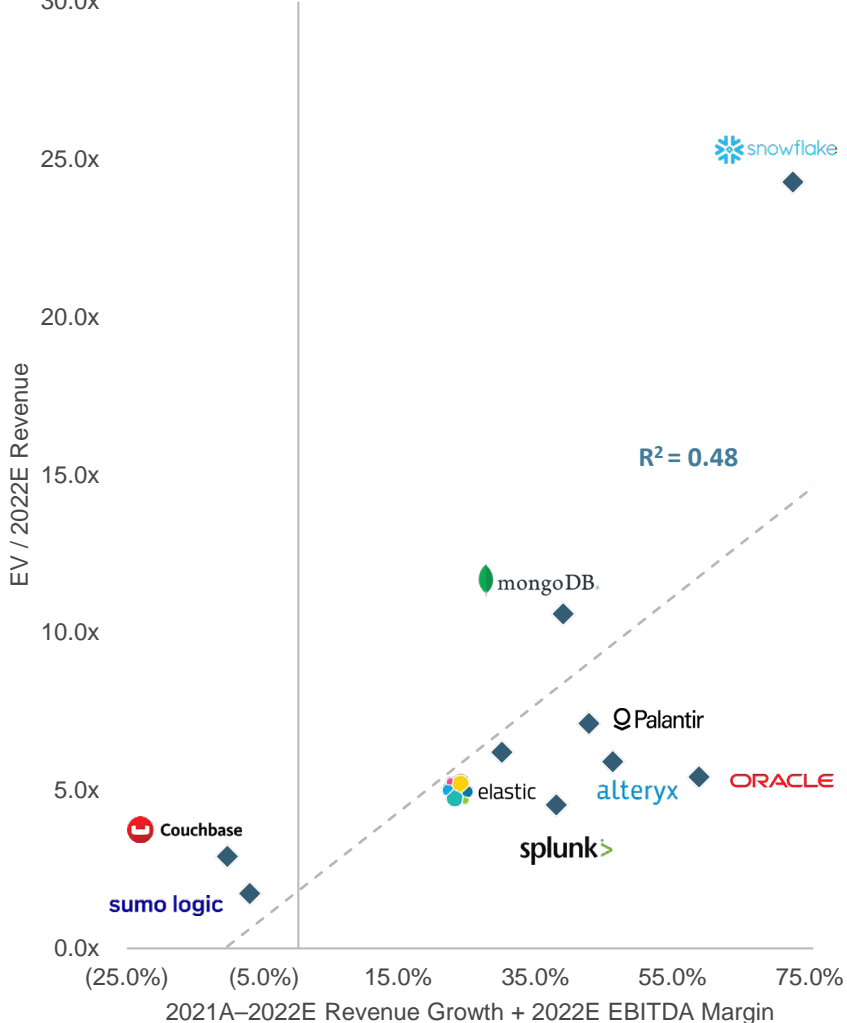
Source: S&P Capital IQ as of September 27, 2022.
 "NM" if margins are negative.

Public Markets Value Software on Both Revenue Growth and EBITDA Margins

Revenue Growth



Revenue Growth + EBITDA Margin



Source: S&P Capital IQ as of September 27, 2022.
























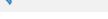










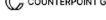




Data Infrastructure and Analytics Software Funding Environment Has Remained Steady in 2022

Key Takeaways

- Continued interest in financings for cloud-ready data management companies built on modern tech stacks
- Investor belief in the massive market for data integration and management
- With the pandemic, enterprises have an additional driver to move faster off legacy databases to save costs

Notable Transactions

(\$ in Millions)

Date	Target	Lead Investor(s)	Subsector	Last Round	Post Valuation	ARR Multiple
6/22/2022	 ataccama	 BainCapital TECHOPPORTUNITIES	Master Data Management	\$150	NA	NA
6/15/2022	 DataStax	 Goldman Sachs	NoSQL Database	\$115	\$1,715	NA
6/8/2022	 MMUTA	 NIGHT DRAGON	Data Governance	\$100	\$950	NA
5/24/2022	 Cribl	 TIGERGLOBAL	Data Observability	\$150	\$2,450	NA
5/18/2022	 glean	 SEQUOIA	Enterprise Search	\$100	\$1,000	NA
5/17/2022	 imply	 THOMABRAVO	Streaming Database	\$100	\$1,115	NA
5/11/2022	 aiven	 eurazeo	Open-Source Database	\$210	\$3,200	NA
4/5/2022	 data.world	 Goldman Sachs	Data Catalog	\$50	\$350	NA
3/23/2022	 ASTRONOMER	 INSIGHT PARTNERS	Data Orchestration	\$213	\$1,350	NA
2/22/2022	 TIMESCALE	 ICON VENTURES	Open-Source Database	\$109	\$1,000	NA
2/2/2022	 MariaDB	 ANGEL POND HOLDINGS CORPORATION	Open-Source RDMBS	\$104	\$672	~12x
2/1/2022	 Starburst	 ALKEON DIGITAL MANAGEMENT	Data Analytics	\$250	\$3,350	NA
1/18/2022	 dremio	 Adams Street	Data Analytics	\$160	\$2,160	NA
12/16/2021	 Cockroach Labs	 GREE NOAKS	Open-Source Database	\$278	\$5,380	NA
12/14/2021	 snapLogic	 SIXTH STREET	IPaaS	\$165	\$1,180	~15x
11/9/2021	 collibra	 SEQUOIA	Data Catalog	\$250	\$5,250	NA
10/28/2021	 Reltio	 BRIGHTON PARK CAPITAL	Cloud MDM	\$120	\$1,620	~17x
9/20/2021	 Fivetran	 andressen.horowitz	ETL	\$565	\$5,600	NA
9/15/2021	 MATILLION	 GENERAL ATLANTIC	ETL	\$233	\$1,500	~20–25x
8/31/2021	 databricks	 COUNTERPOINT GLOBAL	Database Analytics	\$1,600	\$38,000	NA
6/3/2021	 Alation	 RIVERWOOD CAPITAL	Data Catalog	\$110	\$1,200	NA
4/7/2021	 redis	 TIGERGLOBAL	Open-Source Database	\$110	\$2,000	NA
2/3/2021	 TEALIUM	 SILVERLAKE	Data Analytics	\$96	\$1,150	NA

M&A Activity Has Been Strong, Especially for More Mature and Higher Quality Companies

M&A Themes

- Acquisition of newer, cloud-native capability sets (Software AG/ Streamsets, Splunk/ SignalFx, etc.) by legacy providers
- Consolidation of mature businesses to achieve synergies and capabilities across the stack (e.g., Tibco/ Information Builders)
- PEs buying more mature platforms to help with technology transitions and inorganic growth/ consolidation (KKR/ Cloudera, Thoma Bravo/ Talend, Francisco Partners and TPG/Boomi)
- Larger, integrated software players acquiring specific capabilities (Salesforce/ Tableau, Google/ Looker)

Notable Transactions

(\$ in Millions)

Date	Acquirer	Target	Subsector	EV	EV/Rev
7/6/2022	 IBM	 Databand	Data Observability	NA	NA
2/28/2022	 software ^{AG}	 StreamSets	DataOps Platform	\$591	16.9x
2/22/2022	 alteryx	 TRIFACTA	Data Engineering Platform	\$224	NA
11/29/2021	 NEWQUEST	 Quest	Cloud Management SaaS	\$5,400	4.9x
9/20/2021	 Fivetran	 HVR	Data Integration	\$700	20.0x
6/1/2021	 KKR	 CLOUDERA	Data Management	\$5,300	6.4x
5/2/2021	 TPG	 FP	boomi	\$4,000	16.0x
4/7/2021	 insightsoftware	 Logi ^{ANALYTICS}	Data Analytics	NA	NA
3/10/2021	 THOMABRAVO	 talend	Data Integration	\$2,400	8.3x
10/13/2020	 Idera, Inc.	 Qubole	Data Management	\$75	NA
10/7/2020	 VECTOR CAPITAL	 MarkLogic	Data Integration and Management	\$250	1.7x
9/14/2020	 MEDALLIA	 sense360	Data Analytics	\$44	14.7x
8/25/2020	 AVEVA	 osisoft.	Data Management	\$5,000	10.2x
2/27/2020	 DocuSign	 Seal	Data Analytics	\$188	5.9x
8/21/2019	 splunk>	 SignalFx	Data Analytics and Monitoring	\$1,050	21.0x
6/10/2019	 salesforce	 + tableau	Data Visualization	\$15,542	12.6x
6/6/2019	 Google	 Looker	Data Analytics	\$2,600	28.9x
12/4/2018	 TIBCO	 Orchestra SOFTWARE	Master Data Management	\$140	4.0x

Appendix



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Vik Pandit

Managing Director
New York

Mr. Pandit is a member of Houlihan Lokey's Technology Group. He has an extensive background in TMT investment banking, with more than 50 announced transactions representing over \$100 billion in aggregate consideration. Over his career in investment banking, Mr. Pandit has advised CEOs, CFOs, and boards of directors on strategic and capital markets alternatives. He focuses on the cloud services, data analytics, and infrastructure software sectors.

Prior to joining Houlihan Lokey, Mr. Pandit was a Director in J.P. Morgan's TMT Investment Banking group, which he joined in 2009. Prior to J.P. Morgan, he worked in business development and product management at Nimaya Inc., an enterprise cloud analytics provider. He was instrumental in several rounds of fundraising for Nimaya and in designing and deploying Nimaya's real-time, cloud-based analytics software.

Before joining Nimaya, Mr. Pandit worked at MicroStrategy, a provider of business intelligence, mobile software, and cloud-based services.

Mr. Pandit holds a B.S. in Engineering from the College of Engineering, Pune, an M.S. in Engineering from Ohio State University, and an MBA from the University of Virginia's Darden School of Business.

Qualifications

B.S.	College of Engineering, Pune
M.S.	Ohio State University
MBA	University of Virginia
PAST	J.P. Morgan Securities Nimaya MicroStrategy



Rob Louv

Chairman of U.S. Technology
San Francisco

Mr. Louv is a Managing Director and Chairman of U.S. Technology within Houlihan Lokey's Technology Group. He has an extensive background in TMT investment banking with more than 250 M&A/private placement transactions announced, representing nearly \$225 billion in aggregate consideration. Mr. Louv has advised on a broad range of transactions, from raising capital for fast-growing, market-disruptive companies to the largest North American hostile defense transaction. He is also an entrepreneur, founding ArchPoint Partners (an investment bank focused on TMT sold to Houlihan Lokey) and supporting future entrepreneurs with the Long & Louv Entrepreneurial Scholarship Fund at Vanderbilt University.

Mr. Louv advises companies in a broad range of TMT domains, including being a pioneer focusing on software-as-a-service (SaaS) companies, technology-enabled services, vertical application solutions (including areas such as the fintech, edtech, travel, legal, and nonprofit sectors), data analytics, human capital management, enterprise software, supply chain, mobility (including IoT), infrastructure software (including security software), marketing automation (including VoC), e-commerce (B2C and B2B), sports, and digital publishing.

Before joining Houlihan Lokey, Mr. Louv was a founder and Managing Partner of ArchPoint Partners. Since beginning his investment banking career, he has provided strategic counsel on acquisitions, sales and divestitures, restructuring, recapitalizations, leverage/management buyouts, minority buyouts, special committee assignments, hostile defense, and placement of equity, debt, and structured securities.

Qualifications

B.S.	University of Florida
MBA	Vanderbilt University
PAST	ArchPoint Partners
	Montgomery & Co.
	J.P. Morgan
	SunTrust



Rob Louv (cont.)

Primary Role

Prior to founding ArchPoint Partners, Mr. Louv was a Managing Director and Co-Head of Technology Banking at Montgomery & Co., where he served on the Board of Directors, Executive Committee, Board of Managers, Compensation Committee, and as Chairman of the Fairness Opinion Review Committee.

Prior to joining Montgomery & Co., Mr. Louv was a senior banker in the Global Mergers and Acquisitions Group with J.P. Morgan Securities, Inc., supporting clients in TMT. Additionally, he led the firm's West Coast M&A efforts for the software, technology-enabled services, and internet sectors.

Before attending graduate school, Mr. Louv worked for SunTrust as an Assistant Vice President, executing leveraged loans and providing financial advisory services.

Mr. Louv holds a Bachelor of Science in Business Administration, with a major in Finance, from the University of Florida and earned an MBA from Vanderbilt University, graduating in the top 5% of his class. He attended both universities on academic scholarship. Mr. Louv is a former member of the Vanderbilt University Owen Board.



Ali Masoud

Vice President
New York

Mr. Masoud is a member of Houlihan Lokey's Technology Group. His experience includes working with technology and financial technology companies in M&A and financing capacities.

Previously, Mr. Masoud was a Vice President at GCA Advisors, which was acquired by Houlihan Lokey in 2021. Prior to GCA, he was a Vice President at Cambridge Wilkinson.

Mr. Masoud holds a master's degree in International Finance and Economics from Columbia University.










































































Qualifications

M.S. Columbia University

PAST GCA Advisors
Cambridge Wilkinson

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Advisory Across the Global Technology Corporate Lifecycle

<h2>Equity Growth Financings</h2>	 <p>has received a Series C growth equity investment of €20,000,000 from</p>  <p>Financial Advisor</p>	 <p>has received an equity investment from</p>  <p>Financial Advisor</p>	 <p>has received an equity investment from</p>  <p>Financial Advisor</p>	 <p>received a significant investment from</p>  <p>Financial Advisor</p>	 <p>\$275,000,000 Series E Preferred Stock</p>  <p>Placement Agent*</p>	 <p>Sales D Convertible Preferred Stock</p>  <p>Placement Agent*</p>	 <p>has raised \$10 million equity financing from</p>  <p>Financial Advisor</p>
<h2>Majority Recaps</h2>	 <p>has received a significant investment from</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has received an equity investment from</p>  <p>Financial Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>a portfolio company of</p>  <p>Financial Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>
<h2>Private Company Sales</h2>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p> <p>International Business Machines Corporation</p> <p>Fairness Opinion</p>	 <p>has been acquired by</p>  <p>Sellside Advisor*</p>	 <p>has been acquired by</p>  <p>Sellside Advisor*</p>	 <p>has been acquired by</p> <p>Williams-Sonoma, Inc.</p> <p>Sellside Advisor</p>	
<h2>Public Company Sales and Take Privates</h2>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p> <p>a consortium led by Actions Semiconductor's former CEO and certain affiliated entities</p> <p>Sellside Advisor & Fairness Opinion</p>	 <p>has been acquired by</p>  <p>Sellside Advisor*</p>	 <p>has sold substantially all its assets, pursuant to Section 363 of the U.S. Bankruptcy Code, to</p>  <p>Company Advisor</p>	 <p>has acquired</p>  <p>SEC Reporting Advisory</p>		
<h2>Divestitures and Spinoffs</h2>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>a wholly-owned subsidiary of</p>  <p>has been acquired by</p>  <p>has sold substantially all its assets, pursuant to Section 363 of the U.S. Bankruptcy Code, to</p> <p>Sellside Advisor</p>	 <p>has completed the sale of</p>  <p>Sellside Advisor*</p>	 <p>a wholly owned subsidiary of</p>  <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>a business unit of</p>  <p>has been acquired by</p>  <p>Sellside Advisor</p>	
<h2>Restructuring</h2>	 <p>has confirmed a "pre-packaged" Chapter 11 Plan of Reorganization</p> <p>Term Loan Group Advisor</p>	 <p>\$50 Million Common Stock Financing</p> <p>Placement Agent*</p>	 <p>has successfully confirmed a Chapter 11 Plan of Reorganization in conjunction with plan sponsor Quantum Partners LP, a private investment fund managed by:</p>  <p>Soros Fund Management</p> <p>Company Advisor</p>	 <p>has confirmed a "pre-packaged" Chapter 11 Plan of Reorganization</p> <p>First Lien Steering Committee Advisor</p>	 <p>has sold substantially all its assets, pursuant to Section 363 of the U.S. Bankruptcy Code, in separate transactions to:</p>  <p>HALO CAPITAL</p>  <p>HILLAIR CAPITAL</p> <p>Company Advisor</p>	 <p>has sold substantially all its assets, pursuant to Section 363 of the U.S. Bankruptcy Code, to</p>  <p>UNIVISION</p> <p>Company Advisor</p>	 <p>Allen Systems Group's First Lien Creditors sold their position at par plus accrued interest and acceleration premium</p> <p>Secured Creditor Advisor</p>


*Selected transactions were executed by Houlihan Lokey professionals while at other firms acquired by Houlihan Lokey or by professionals from a Houlihan Lokey joint venture company. Tombstones included herein represent transactions closed from 2013 forward.

Significant Advisory Track: Record in Data Analytics and Intelligence

We have unmatched transaction experience with data analytics and intelligence transactions closed.



has been acquired by



Sellside Advisor

Real Time Analytics




has received a significant growth investment from




Financial Advisor

Retail Analytics



has received a Series C growth equity investment of €20,000,000 from




Financial Advisor

Enterprise Performance Mgmt.



has been acquired by




a portfolio company of




Sellside Advisor

Healthcare Analytics






\$33,000,000 Series E Preferred Stock and Term Loan

Led by:



With participation from:

Placement Agent

CEM Analytics



has been acquired by



Sellside Advisor

Digital Marketing and E-Commerce Analytics




has been acquired by




Sellside Advisor

Customer Analytics




has been acquired by




Sellside Advisor

License and Content Analytics



Series E Convertible Preferred Stock

Led by:




With participation from existing investors:

Apex Venture Partners, SSM Partners, Origin Ventures, River Cities Capital Funds, and IZA Fund

\$30,000,000

Placement Agent

Marketing and Call Analytics




has been acquired by




Sellside Advisor

Time and Attendance Analytics



has been acquired by



Sellside Advisor

Public Sector Case Management




has been acquired by




Sellside Advisor

CEM Analytics



has been acquired by



Sellside Advisor

Government Analytics




has been acquired by




Sellside Advisor

Talent Analytics



has received an equity investment from



Financial Advisor

Web-Based BI



has raised \$80 million equity financing from




and




Financial Advisor

CEM Analytics



has been acquired by



Sellside Advisor

E-Commerce Analytics




has been acquired by

Verisk Analytics

Sellside Advisor

Market and Cost Analytics



a portfolio company of


HG Capital

has been acquired by

Verisk Analytics

Sellside Advisor

Broking Analysis and Claims Mgmt.




has received an investment from

HG Capital

Sellside Advisor

Life Science Intelligence



has been acquired by


Lexis Nexis Legal & Professional

a division of


RELX Group

Sellside Advisor

SEC Intelligence and Analytics



has been acquired by




Sellside Advisor

Financial Sector Data Analytics

*Selected transactions were executed by Houlihan Lokey professionals while at other firms, or by professionals from a Houlihan Lokey joint venture company. Tombstones included herein represent transactions closed from 2009 forward.

Significant Advisory Track: Record in Tech-Enabled Data Services


We have unmatched transaction experience with tech-enabled data services and consulting transactions closed.



has been acquired by
Vermeg Group N.G.

Sellside Advisor*


Regulatory Risk
Management



has sold its Advertising Intelligence
business to
Nielsen

Sellside Advisor*


Adtech
Intelligence



has acquired
Karmov Group
from
GMT Communications Partners

Buyside Advisor*


Legal Data
Solutions



has received an investment from
Francisco Partners

Sellside Advisor*

Fintech Solutions



has been acquired by
Informa PLC

Sellside Advisor*


Medical Data
Provider



has made an investment in
Inspired

Financial Advisor*


Education
Services



has been acquired by
**Five Arrows Principal
Investments**

Sellside Advisor*


Insurance
Brokerage



has been acquired by
Equiniti Group PLC

Sellside Advisor*


Fintech Solutions



has been acquired by
Verisk Analytics

Sellside Advisor*


Consulting
Services



has merged with
PetroVR

Financial Advisor*


Risk Modeling
Solutions



has been acquired by
Broadridge

Sellside Advisor*


Market Trade
Data Solutions



has been acquired by
Verisk Analytics

Sellside Advisor*


Healthcare and
Risk Management



has been acquired by
Lexis Nexis Legal & Professional
a division of
RELX Group

Sellside Advisor*


Compliance Mgmt.
and Services



has been acquired by
Reed Business Information's
Flight Global
a division of
RELX Group

Sellside Advisor*


Travel Data
Services



has been acquired by
Verisk Analytics

Sellside Advisor*


Utility Information
Services



has been acquired by
Sterling Talent Solutions

Sellside Advisor*


Research
Services Firm



has been acquired by
S&P Global Platts

Sellside Advisor*


Drilling Industry
Data Services



has been acquired by
Technights
a division of
AXJO Data Group
a portfolio company of
Electra Partners

Sellside Advisor*

IP and Technical
Insight Services



a portfolio company of
Pollen Street Capital
has been acquired by
Tech Mahindra

Sellside Advisor*


IP and Technical
Insight Services



has completed an investment in
Vistair Systems Limited

Buyside Advisor*


Workflow Mgmt.
Solutions



has been acquired by
Lexis Nexis Legal & Professional
a division of
RELX Group

Sellside Advisor*


Legal Data
Solutions



has been acquired by
Lexis Nexis Legal & Professional
a division of
RELX Group

Sellside Advisor*


Legal Data
Solutions



has received an investment from
Growth Capital Partners

Placement Agent*


Workflow Mgmt.
Solutions



has been acquired by
Boeing

Sellside Advisor*

Asset Mgmt.
Solutions



has been acquired by
Vaisala Corporation

Sellside Advisor*

Utility Information
Services



has been acquired by
Thomson Reuters

Sellside Advisor*


Research Mgmt.
Services



has been acquired by
WGSN Group
a division of
Top Right Group

Sellside Advisor*

Info Services and
Consultancy



has acquired the assets of
Elsevier Business Intelligence
from
Reed Elsevier





































































Buyside Advisor*

Business Intelligence
Services

*Selected transactions were executed by Houlihan Lokey professionals while at other firms acquired by Houlihan Lokey or by professionals from a Houlihan Lokey joint venture company. Tombstones included herein represent transactions closed from 2013 forward.

SaaS Advisory Track Record

We have unmatched SaaS transaction experience with more than 90 SaaS sellside transactions closed—more than any other investment bank.

 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>a portfolio company of</p> <p>NORWEST VENTURE PARTNERS</p> <p>has been acquired by</p>  <p>a portfolio company of</p>  <p>Sellside Advisor</p>	 <p>a portfolio company of</p>  <p>has been acquired by</p>  <p>a portfolio of companies owned by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has received a significant growth investment from</p>  <p>Financial Advisor</p>	 <p>a portfolio company of</p>  <p>has been acquired by</p>  <p>Financial Advisor</p>	 <p>has received an equity investment from</p>  <p>Financial Advisor</p>	 <p>has been acquired by</p>  <p>an operating subsidiary of</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>a portfolio company of</p>  <p>Sellside Advisor</p>
Real Time Analytics	Travel Technology	Content Lifecycle Management	Customer Experience Management	Retail Analytics	Web Content Management	Nonprofit CRM and Fundraising	Manufacturing Content Management	Talent Management
 <p>has received an equity investment from</p>  <p>Financial Advisor</p>	 <p>has been acquired by</p>  <p>a portfolio company of</p>  <p>Sellside Advisor</p>	 <p>has received an equity investment from</p>  <p>Financial Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has received an equity investment from</p>  <p>a portfolio company of</p>  <p>Financial Advisor</p>	 <p>has received an equity investment from</p>  <p>Financial Advisor</p>
Digital Workplace	Healthcare Analytics	Security Software	Talent Management	Contact Center Workforce Optimization	Supply Chain Network	Recruiting and Onboarding	Mobile Advertising	Marketing Automation
 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>a wholly-owned subsidiary of</p>  <p>has been acquired by</p>  <p>a wholly-owned subsidiary of</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>a portfolio company of</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>has been acquired by</p>  <p>Sellside Advisor</p>	 <p>Series D Convertible Preferred Stock</p>  <p>With participation from existing investors:</p>    <p>\$25,000,000</p> <p>Placement Agent</p>
Financial Technology	Workplace Management	Web Content Management	Outcomes Management	Outcomes Management	CRM and Call Center	Marketing Automation	E-Signature	Social Recruiting

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Machine Learning, Artificial Intelligence, and Data (MAD) Landscape 2021

Infrastructure

<p>Storage: A set of hardware and software that combines the organization's data into a single system</p>	<p>Hadoop: An open-source software framework for storing data and running applications</p>	<p>Data Lakes: A centralized repository designed to store, process, and secure large amounts of data</p>	<p>Data Warehouses: A system that aggregates data from different sources into a single, central, consistent data store</p>	<p>Streaming/In-Memory: A data store designed to collect, process, and/or enrich an incoming series of data points in real time</p>
<p>RDBMS: Stores data in a row-based table structure that connects related data elements</p>	<p>NoSQL Databases: Enables the storage and querying of data outside the traditional structures found in relational databases</p>	<p>NewSQL Databases: A modern relational database system that bridges the gap between SQL and NoSQL</p>	<p>Real Time Databases: A data store that collects, processes, and/or enriches incoming data in real time</p>	<p>Graph DBs: A specialized, single-purpose platform for creating and manipulating graphs</p>
<p>MPP DBs: A storage structure designed to handle the coordinated processing of program operations by multiple processors</p>	<p>ETL/ELT/Data Transformation: Data integration processes that move raw data from a source system to a target database</p>	<p>Reverse ETL: Enables companies to transform data from cloud warehouses into business applications</p>	<p>Data Integration: Allows clients to combine data from disparate sources into meaningful and valuable data sets</p>	<p>Data Governance and Access: The process of managing the availability, usability, integrity, and security of the data in an enterprise system</p>
<p>Privacy and Security: Safeguarding of user identity and data</p>	<p>Data Observability: Understanding the health and the state of data in the system</p> <p>Data Quality: Measure of the condition of data based on factors such as accuracy</p>	<p>MGMT/Monitoring: Involves collecting and reviewing data associated with the various components of an enterprise's computing system</p>	<p>Serverless: Allows developers to build and run code without managing servers and without paying for idle cloud infrastructure</p>	<p>Cluster SVCS: A system component used to control failover cluster activities on a single node</p>

Analytics

<p>BI Platforms: Helps businesses to analyze, understand, and visualize large quantities of data related to business operations</p>	<p>Visualization: Graphical representation of information and data</p>
<p>Data Analyst Platforms: Provides services and technologies to perform analysis on data as well as helps retrieve, combine, interact, explore, and visualize data from various sources</p>	<p>Augmented Analytics: Uses machine learning (ML) and AI technologies to assist with data preparation, insight generation, and insight explanation</p>
<p>Data Catalog and Discovery: Facilitate metadata management and data reliability</p>	<p>Metrics Store: A centralized and governed place for organizations to store key metrics</p>
<p>Query Engine: A software component positioned on top of a database or server to execute queries against data</p>	<p>Search: Analysis and aggregation of search engine statistics for use in search engine marketing (SEM) and search engine optimization (SEO)</p>

Machine Learning, Artificial Intelligence, and Data (MAD) Landscape 2021 (cont.)

Machine Learning and Artificial Intelligence

Data Science Notebooks: An interface to execute code, visualize, and share insights	Data Science Platforms: Enables data exploration, model development, and distribution	ML Platforms: Automate data workflows, accelerate data processing, and optimize functionality	Model Building: Creation, training, and deployment of ML algorithms for logical decision-making
Feature Store: A data management layer with an explicit purpose of being used to either train models or make predictions	Computer Vision: A system that processes, analyzes, and visualizes data	Speech: A solution that allows humans to use their voices to speak with a computer interface	Synthetic Media: A creative process of artificially generating video, voice, images, and text

Applications — Enterprise

Sales: Allows businesses to streamline, optimize, and speed up products sales	Marketing B2B: Delivers mass-oriented content with a focus on educating and nurturing leads	Marketing B2C: Uses built-in intelligence to capture real-time customer behaviors to produce marketing campaigns	Human Capital: Transforms the traditional administrative functions to drive engagement
Legal: Helps in-house legal departments manage legal department operations and workflows	Finance: Helps with invoice management, analyzing finances, and submitting expenses reports	Security: Protects enterprise applications from external attacks, privilege abuse, and data theft	Partnerships: Applicants get full details of the business and the terms and get help to apply for partnership

Applications — Industry

Advertising: Helps the user stay connected to campaigns while on the go	Education: Helps individuals with remote learning of any kind	Real Estate: Requires sellers and buyers to register themselves before proceeding to buy or sell any property	Commerce: Facilitates online purchasing
Healthcare: Offers health-related services and allows healthcare professionals to keep track of patients	Life Sciences: Used for patient monitoring, drug discovery, and personalized medicine	Transportation: Used for cashless payments for travel and baggage transportation	Agriculture: Provides a personalized crop calendar for farms as well as useful agriculture data

Open Source

Frameworks: A template for software development designed by a network of software developers	Format: A file format with an openly published specification that anyone can use	Query/Data Flow: Allows users to ingest, transform, and load data into a common data service environment	Data Access: Research data that is freely available without any legal or financial restrictions	Databases: Application with a codebase that is free to view, download, distribute, and reuse
Orchestration: Brings infrastructure, networking, and security into the cloud	Infrastructure: Integration of open alternatives for all the different forms that compute storage and networking	Data Ops: A collaborative data management practice focused on improving the communication, integration, and automation of data flows	Streaming and Messaging: Involves a continuous flow of information	Stat Tools and Languages: Helps to understand a range of statistical concepts and terms with simple explanations
ML Ops and Infra: Allows data, development, and production teams to work collaboratively and utilize automation	Search: Derives data and information that is available to the general public	Logging and Monitoring: Identifies unauthorized security-related activities that have been attempted or performed on a system or application	Visualization: An open-source JavaScript library used for visualizing and analyzing data	Security: Tools and processes used to secure and manage OSS and compliance

Data Sources and APIs

Data Marketplaces and Discovery: Provides access to a variety of data that is categorized based on location, domain, or customer profiles	Financial and Economic Data: Covers more than 150 countries and more than 6,500 historical and current data series	Air/Space/Sea: The largest maritime exposition in the U.S.	People/Entities: Any individual, corporation, company, partnership, joint stock company, group of organizations, or state or local government	Location Intelligence: Process of deriving insights from location data to answer spatial questions
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Data Resources

Data Services: Collection of small, independent, and loosely coupled functions that enhance, organize, share, or calculate information collected and saved in data storage volumes	Incubators and Schools: A small, 21st-century learning community that provides its students with the support, skills, mindsets, mentors, resources, technology, social connectivity, and ethics to launch the entrepreneurial teams of tomorrow	Research: A process of systematic inquiry that entails the collection of data, documentation of critical information, and analysis and interpretation of that data/information
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