



## RESEARCH REPORT

### TEBS: Technology Enabled Business Services

- SaaS/Software
- Information/Data
- Business Process Services
- Infrastructure

#### INSIDE THIS REPORT

- Description of the Technology Enabled Business Services Segments
- Business Model Advantages
- Valuation Metrics and Public Company Performance
- Mergers and Acquisitions

## EXECUTIVE SUMMARY

Cherry Tree has advised entrepreneurs, CEOs, strategic and financial investors, and leaders of Technology Enabled Business Services (TEBS) companies for more than 40 years. TEBS companies are defined as those that:

- Offer a solution, product or service that is delivered or enhanced via technology
- Generate revenue primarily from other businesses (B2B)
- Use their own intellectual property to differentiate their solution

We track trends and activity in the space, including M&A transactions and the valuations and performance of an index of 100 publicly-traded Technology Enabled Business Services companies (the TEBS 100). The four main segments of the TEBS 100 are:

- **SAAS/SOFTWARE** companies offer business software applications that focus on either a vertical market or a business domain.
- **INFORMATION/DATA** companies create or aggregate information and process it for vertical markets or functional needs.
- **BUSINESS PROCESS SERVICES** companies use technology and leverage economies of scale to provide outsourced capabilities for a customer's operations.
- **INFRASTRUCTURE** companies offer capacity and access to both virtual and physical technology hardware, networks, and solutions as an outsourced service.

As companies seek to automate more of their business processes with technology solutions, TEBS companies will continue to see strong demand for their offerings. There will also likely be strong demand from potential acquirers, as companies like those in the TEBS 100 supplement their own organic growth initiatives with acquisitions. Many strategic acquirers have solid balance sheets and are looking to acquire new solutions, new customers and new talent. Meanwhile, Private Equity firms are active buyers in the space. TEBS companies with differentiated solutions and strong financials will likely garner significant interest and attractive valuations.

## BUSINESS MODEL ADVANTAGES

Technology Enabled Business Services companies are consistently valued at a premium to the overall market due to fundamental advantages of the companies' solutions and their typical business models.

**Recurring Revenue**—Most TEBS companies operate under recurring revenue business models, often as subscriptions or managed service contracts. The recurring revenue streams generally result in less volatility of business results and can offer favorable cash flow dynamics.

**Operating Leverage**—Typically, TEBS companies require limited variable expenditures, generating high gross margins. Investments in fixed expenses allow capacity for growth with limited incremental investment, generating accelerating profit margins as revenue increases.

### TEBS 100 Segments: Median Gross Margin

SaaS/Software	67.5%
Information/Data	66.6%
Business Process Services	35.2%
Infrastructure	63.7%
S&P 500	45.2%

Source: Cherry Tree Research, Capital IQ; 06/30/22

**Business to Business**—Most solutions in the space are critical for business customers and switching costs are typically high, limiting short-term sensitivity to changing economic conditions. New customer acquisition may be slow and expensive, but new relationships represent a small share of revenue in any given period. Also, a high gross margin reduces the likelihood of fundamental business failure as compared to more volatile, lower margin business sectors. Because of the predictable business models and profitability potential of TEBS companies, they consistently receive premium valuation multiples.

### TEBS 100 Segments: Median Valuation Multiples

	EV/Revenue	EV/EBITDA
SaaS/Software	5.8x	18.8x
Information/Data	6.5x	20.5x
Business Process Services	2.1x	13.0x
Infrastructure	3.7x	19.2x
S&P 500	3.2x	13.2x

Source: Cherry Tree Research, Capital IQ; 06/30/22

## SEGMENT ANALYSIS

### Segment #1: SaaS/Software

SaaS/Software providers are typically focused on a vertical market or a specific business process used in many vertical markets. Providers leverage their expertise in that market or process to create configurable applications to guide workflows and automate the manual processing of information, either internally generated or externally provided.

#### TEBS 100: SaaS/Software – Key Metrics

	Revenue Growth	Gross Margin	EBITDA Margin	EV/Revenue	EV/EBITDA
25th Percentile	8.7%	54.7%	-5.2%	3.3x	11.5x
Median	20.9%	67.5%	9.1%	5.8x	18.8x
75th Percentile	27.7%	76.3%	21.3%	9.2x	25.5x

Source: Cherry Tree Research, Capital IQ: 06/30/22

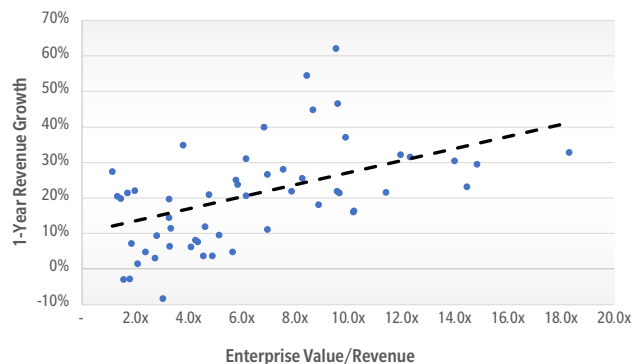
#### COMPANY SPOTLIGHT – SPS COMMERCE

SPS Commerce provides cloud-based supply chain management and fulfillment solutions to suppliers, grocers, distributors, and logistics firms. The software permits these businesses to automate fulfillment, exchange information, and have greater visibility of orders. SPS Commerce has maintained consistent revenue growth and margin expansion over the last five years and was valued at 9.6x revenue as of 6/30/2022.

Software continues to become easier and cheaper to create, so providers need to be aware of potential threats from non-traditional players in their markets that could disrupt the value chain and create software solutions.

For publicly-traded Software companies, a key driver of value is revenue growth. Since most Software companies have a high gross margin and profit potential, companies that are growing the fastest are usually those valued the highest.

#### SaaS/Software Valuation Comparison



Source: Cherry Tree Research, Capital IQ: 06/30/22

### Segment #2: Information/Data

Information/Data companies create information themselves or aggregate it from other sources and process it for vertical markets or functional needs. Technology-enabled delivery of the information allows for high margins and profit potential as the fixed expense of creating the information is spread over many customers.

#### TEBS 100: Information/Data – Key Metrics

	Revenue Growth	Gross Margin	EBITDA Margin	EV/Revenue	EV/EBITDA
25th Percentile	8.1%	59.1%	29.5%	4.7x	17.2x
Median	13.9%	66.6%	33.0%	6.5x	20.5x
75th Percentile	20.9%	72.7%	44.0%	9.8x	27.5x

Source: Cherry Tree Research, Capital IQ: 06/30/22

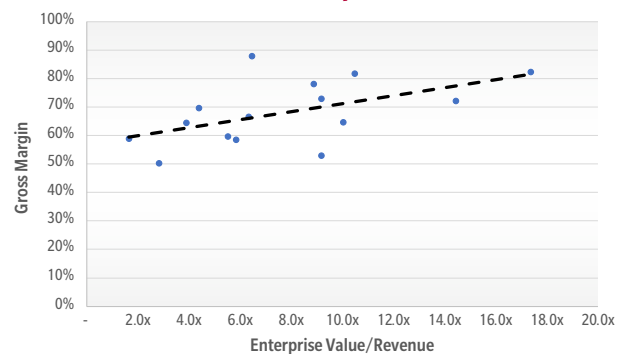
#### COMPANY SPOTLIGHT – FAIR ISAAC

Fair Isaac develops data management products and services that allow businesses to automate, enhance, and connect decisions. The company operates through two segments: Scores and Software. Fair Isaac has shown consistent gross margin improvement over the last five years, reaching 78.1% in 2022.

Vast amounts of new information is being created every day, but processing and verifying that information is challenging. Artificial intelligence and blockchain technologies can help, but productizing information and data is necessary for an optimal business model.

For publicly-traded Information/Data companies, a key driver of value is gross margin. Companies that are able to efficiently consolidate the information that they resell, and spread the costs of that consolidation across many buyers, are usually valued the highest.

#### Information/Data Valuation Comparison



Source: Cherry Tree Research, Capital IQ: 06/30/22

### Segment #3: Business Process Services

Business Process Services companies provide outsourced capabilities for customers' business functions, and move beyond basic Business Process Outsourcing by using technology to automate and deliver their solutions.

#### TEBS 100: Business Process Services –Key Metrics

	Revenue Growth	Gross Margin	EBITDA Margin	EV/Revenue	EV/EBITDA
25th Percentile	5.2%	23.5%	9.8%	1.0x	12.1x
Median	11.0%	35.2%	16.1%	2.1x	13.0x
75th Percentile	15.0%	46.5%	20.1%	4.5x	19.4x

Source: Cherry Tree Research, Capital IQ: 06/30/22

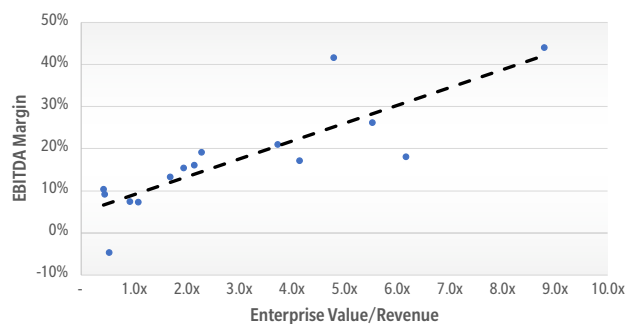
#### COMPANY SPOTLIGHT – TTEC

TTEC designs, develops, and delivers customer experience technology to clients worldwide. Services include orchestration of customer relationship management and intelligent automation to ensure customer experience outcomes. Despite relatively low gross margins, TTEC is able to convert more than half of its Gross Profit to EBITDA.

The development of proprietary intellectual property, or investment in hardware and software, allows these companies to generate higher margins than traditional services companies. Given the nature of the business functions they provide, these companies will likely never be fully replaced by software, although they do need to invest in technology to continue offering a strong value proposition.

For publicly-traded Business Process Services companies, a key driver of value is EBITDA Margin. The companies that are able to yield high rates of EBITDA from their gross profit (since gross margin is typically lower than other TEBS segments) usually receive the highest valuations.

#### Business Process Services Valuation Comparison



Source: Cherry Tree Research, Capital IQ: 06/30/22

### Segment #4: Infrastructure

Infrastructure companies offer capacity and access to virtual and physical technology hardware, networks, and solutions as an outsourced service of critical functions. These companies leverage economies of scale and network effects to provide the technology infrastructure that allows businesses to operate in the modern economy.

#### TEBS 100: Infrastructure – Key Metrics

	Revenue Growth	Gross Margin	EBITDA Margin	EV/Revenue	EV/EBITDA
25th Percentile	7.5%	52.6%	4.4%	2.7x	15.9x
Median	13.8%	63.7%	17.8%	3.7x	19.2x
75th Percentile	28.6%	70.9%	30.4%	6.4x	22.5x

Source: Cherry Tree Research, Capital IQ: 06/30/22

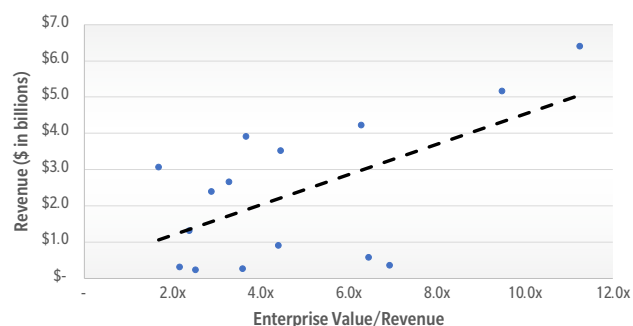
#### COMPANY SPOTLIGHT – ZOOM

Zoom Video Communications, Inc. provides HD video, voice, chat, and content sharing through mobile devices, desktops, laptops, telephones, and conference room systems. Zoom grew more than 10x from 2019-2022 and the company's operating leverage allowed bottom line profitability to increase to nearly 30% EBITDA margins.

Infrastructure companies could run the risk of being commoditized if they simply resell access or capacity to investments they have made in technology assets. The companies that will likely be valued the highest over the long-term are those that augment the infrastructure they provide with virtualization and value-added services and support, productize their offerings, and leverage technology to continually improve efficiency.

For publicly-traded Infrastructure companies, a key driver of value is usually size (measured in revenue). Greater scale allows for both higher margins and higher valuations.

#### Infrastructure Valuation Comparison

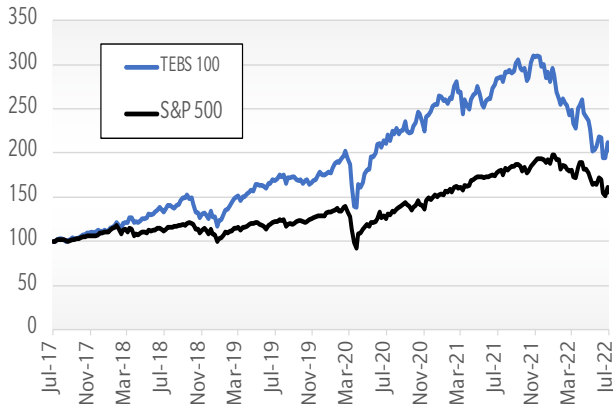


Source: Cherry Tree Research, Capital IQ: 06/30/22

## PUBLIC COMPANIES

Cherry Tree tracks the performance of 100 publicly-traded Technology Enabled Business Services companies (the TEBS 100). Despite a recent pullback in technology stock prices, these companies have outperformed the broader market over the last five years, in large part due to the business model advantages that the companies enjoy.

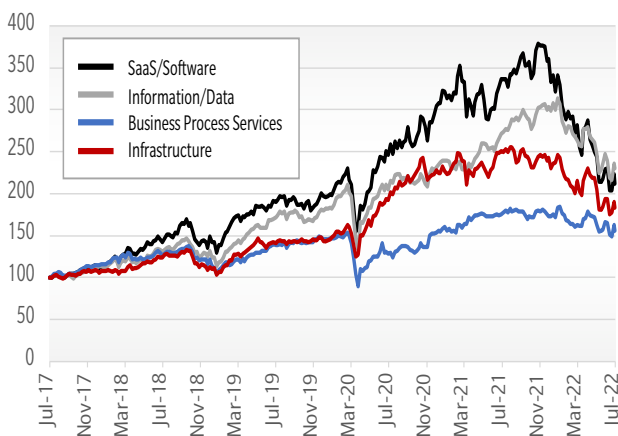
### TEBS 100 Index vs. S&P 500



Source: Cherry Tree Research, Capital IQ: 06/30/22

The four segments of the TEBS 100 Index have performed directionally with each other over the last five years. While Information/Data and SaaS/Software have outperformed Business Process Services and Infrastructure, all four segments have matched or exceeded the S&P 500.

### TEBS 100 Segments



Source: Cherry Tree Research, Capital IQ: 06/30/22

## Initial Public Offerings

Due to the volatility and relative immaturity of companies that have recently gone public, the TEBS 100 index does not include companies that have had an IPO within the past year. However, there are a number of companies that went public or filed to go public in the last year that will be excellent candidates to join the index in the future.

### Select IPOs

Date	Company	IPO Size (\$M)	Revenue (\$M)	EBITDA (\$M)
9/14/21	Thoughtworks Holding, Inc.	\$774	\$901	\$162
9/15/21	ForgeRock, Inc.	\$275	\$157	(\$13)
9/21/21	Freshworks Inc.	\$1,026	\$308	(\$5)
9/21/21	Toast, Inc.	\$870	\$1,183	(\$131)
9/22/21	EngageSmart, Inc.	\$378	\$183	\$30
9/23/21	Clearwater Analytics Holdings	\$540	\$226	(\$22)
10/12/21	AvidXchange Holdings, Inc.	\$660	\$232	(\$32)
10/12/21	Copperleaf Technologies Inc.	\$174	\$80	(\$1)
10/12/21	Healthcare Triangle, Inc.	\$19	\$35	(\$1)
10/14/21	Gitlab Inc.	\$800	\$253	(\$127)
10/20/21	Enfusion, Inc.	\$319	\$103	\$7
10/26/21	Informatica Inc..	\$841	\$1,414	\$294
10/29/21	Udemy, Inc.	\$421	\$516	(\$72)
11/3/21	NerdWallet, Inc.	\$131	\$337	\$3
11/9/21	Expensify, Inc.	\$263	\$128	\$19
11/10/21	Backblaze, Inc.	\$100	\$63	\$1
11/10/21	Weave Communications, Inc.	\$120	\$108	(\$35)
11/16/21	Braze, Inc.	\$520	\$211	\$45
11/16/21	UserTesting, Inc.	\$140	\$134	(\$36)
11/24/21	Coveo Solutions Inc.	\$272	\$115	(\$36)
12/8/21	HashiCorp, Inc.	\$1,224	\$286	(\$54)
12/14/21	Samsara Inc.	\$805	\$379	(\$104)
1/14/22	Cerberus Cyber Sentinel Corp.	\$10	\$22	(\$23)

Source: Cherry Tree Research, Capital IQ: 06/30/22

## Valuations

Because of the predictable business models and profitability potential of TEBS companies, they consistently receive premium valuation multiples.

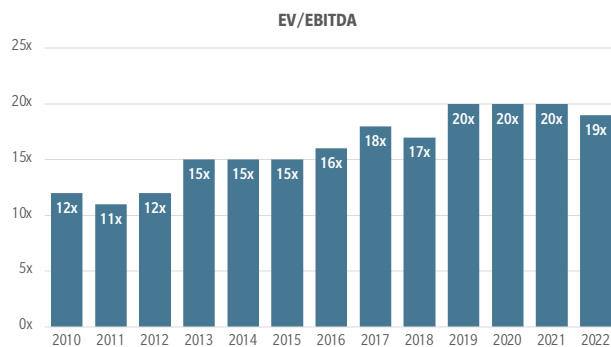
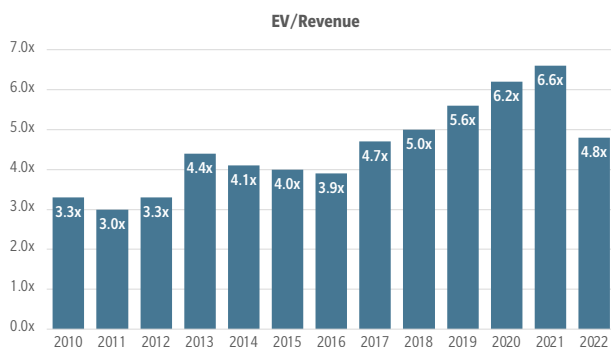
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Source: Cherry Tree Research, Capital IQ: 06/30/22

TEBS valuation multiples reached record highs within the last year. And while recent declines in technology stocks essentially eliminated the valuation multiple expansion over the last five years, TEBS companies are valued at a premium to the broader market. However, companies in the TEBS 100 index will need to execute on their growth and profitability plans to maintain or expand these valuations in the future.

### TEBS 100: Historical Median Valuation Metrics



Source: Cherry Tree Research, Capital IQ: 06/30/22

## Valuation Differentiators

When considering investments and acquisitions in the TEBS space, investors and buyers often have specific criteria that are unique to their situation. However, there are a few differentiating characteristics that have a significant impact on valuations of almost all companies.

**Revenue Growth and Visibility** – Because of the significant operating leverage potential of TEBS companies, investors expect fast growth to lead to even faster profit growth over time. The other important valuation factor related to revenue is future visibility. If a company is growing quickly, but its sales do not include recurring revenue, investors will likely be skeptical about the company’s ability to maintain and grow revenue year after year.

### TEBS 100 Revenue Growth vs. Valuation

Rev Growth	# of TEBS 100	EV/Revenue	EBITDA Margin
<10 %	30	3.2x	19.3%
10-20%	30	4.5x	19.4%
>20%	40	7.0x	4.0%

Source: Cherry Tree Research, Capital IQ: 06/30/22

**Operating Leverage** – Operating Leverage is a company’s ability to grow profits faster than revenue by spreading incremental revenue over a base of fixed costs. This is most easily represented by gross margin. Companies with a high gross margin can yield high profit from every incremental dollar of revenue, and are therefore often valued higher.

### TEBS 100 Gross Margin vs. Valuation

Gross Margin	# of TEBS 100	EV/Revenue	EV/EBITDA
<50 %	25	2.3x	13.4x
50-70%	38	4.6x	18.4x
>70%	37	7.0x	21.8x

Source: Cherry Tree Research, Capital IQ: 06/30/22

**Profitability** – For companies that are not yet profitable, being able to demonstrate a “profit formula” is the key to achieving attractive valuations. If a company can correlate the investments it makes in product development or customer acquisition to future cash flow, investors can justify a premium valuation. In the absence of significant growth, attractive valuations can still be generated when a company has profitability and cash flow.

**Size** – There is a strong correlation between the size of a company and the valuation multiples the company receives. Larger companies are generally less risky than smaller companies, can weather downturns better, and can take advantage of a wider range of opportunities.



## TEBS 100 Index

SAAS/SOFTWARE	ENTERPRISE VALUE (\$mm)	REVENUE (\$mm)	GROSS MARGIN	EBITDA MARGIN	EV/ REVENUE	EV/ EBITDA	REVENUE GROWTH
8x8, Inc.	\$922	\$638	61.2%	-19.5%	1.4x	n/m	19.9%
AppFolio, Inc.	\$3,035	\$386	60.1%	-4.0%	7.9x	n/m	21.9%
Appian Corporation	\$3,266	\$395	71.8%	-23.1%	8.3x	n/m	25.5%
ACI Worldwide, Inc.	\$3,956	\$1,408	54.2%	21.6%	2.8x	13.0x	9.4%
Adobe Inc.	\$170,143	\$16,693	87.9%	39.9%	10.2x	25.5x	16.0%
Allscripts Healthcare Solutions	\$2,015	\$1,512	49.5%	9.1%	1.3x	14.7x	20.5%
American Software, Inc.	\$416	\$128	59.4%	11.1%	3.3x	29.5x	14.5%
Asure Software, Inc.	\$138	\$81	61.5%	4.2%	1.7x	n/m	21.4%
Atlassian Corporation Plc	\$47,641	\$2,603	83.5%	-0.5%	18.3x	n/m	32.8%
Benefitfocus, Inc.	\$404	\$259	52.2%	6.0%	1.6x	25.9x	-2.9%
Blackbaud, Inc.	\$3,953	\$966	52.0%	5.2%	4.1x	n/m	6.3%
BlackLine, Inc.	\$4,325	\$447	76.2%	-6.3%	9.7x	n/m	21.5%
Bottomline Technologies, Inc.	\$5,702	\$755	58.4%	-14.0%	7.6x	n/m	28.1%
Citrix Systems, Inc.	\$14,888	\$3,267	83.9%	18.3%	4.6x	24.9x	3.7%
Commvault Systems, Inc.	\$2,538	\$770	85.2%	6.6%	3.3x	n/m	6.4%
Ebix, Inc.	\$1,121	\$991	29.8%	13.5%	1.1x	8.4x	27.4%
Enghouse Systems Limited	\$1,065	\$350	70.8%	31.9%	3.0x	9.5x	-8.3%
Fiserv, Inc.	\$76,626	\$16,609	50.7%	35.6%	4.6x	13.0x	11.9%
Five9, Inc.	\$6,481	\$654	54.2%	-3.2%	9.9x	n/m	37.0%
Fortinet, Inc.	\$44,276	\$3,587	75.5%	21.0%	12.3x	n/m	31.5%
GTY Technology Holdings Inc.	\$386	\$63	62.5%	-25.0%	6.1x	n/m	25.9%
HealthStream, Inc.	\$619	\$259	65.1%	11.5%	2.4x	20.8x	4.8%
HubSpot, Inc.	\$13,599	\$1,415	80.4%	-2.1%	9.6x	n/m	46.6%
Intuit Inc.	\$111,673	\$12,873	83.2%	28.6%	8.7x	30.4x	44.8%
Jack Henry & Associates, Inc.	\$13,302	\$1,910	41.5%	27.3%	7.0x	25.5x	11.2%
Mandiant, Inc.	\$4,437	\$499	46.4%	-52.2%	8.9x	n/m	18.2%
Manhattan Associates, Inc.	\$7,016	\$686	55.2%	21.9%	10.2x	n/m	16.4%
Mimecast Limited	\$11,124	\$929	83.1%	13.1%	12.0x	n/m	32.1%
NextGen Healthcare, Inc.	\$1,111	\$596	55.8%	5.5%	1.9x	33.8x	7.1%
NortonLifeLock Inc.	\$14,392	\$2,796	85.4%	47.3%	5.1x	10.9x	9.6%
Okta, Inc.	\$13,970	\$1,464	68.6%	-50.6%	9.5x	n/m	62.0%
Oracle Corporation	\$240,607	\$42,440	79.1%	43.6%	5.7x	13.0x	4.8%
Paycom Software, Inc.	\$15,927	\$1,137	87.7%	28.4%	14.0x	n/m	30.5%
Pegasystems Inc.	\$4,173	\$1,274	73.2%	-4.1%	3.3x	n/m	19.6%
PROS Holdings, Inc.	\$1,256	\$257	58.8%	-24.4%	4.9x	n/m	3.7%
Q2 Holdings, Inc.	\$2,459	\$516	45.0%	-9.0%	4.8x	n/m	20.9%
RingCentral, Inc.	\$6,492	\$1,710	70.4%	-11.8%	3.8x	n/m	34.8%
Salesforce.com, inc.	\$161,699	\$27,940	73.1%	9.6%	5.8x	n/m	25.0%
ServiceNow, Inc.	\$92,881	\$6,258	77.3%	11.4%	14.8x	n/m	29.5%
Shopify Inc.	\$33,072	\$4,827	53.0%	3.3%	6.9x	n/m	40.0%
Skillsoft Corp.	\$1,152	\$642	70.4%	19.4%	1.8x	9.2x	-2.9%
Splunk Inc.	\$16,655	\$2,846	73.1%	-31.9%	5.9x	n/m	23.9%
SPS Commerce, Inc.	\$3,837	\$400	65.8%	20.9%	9.6x	n/m	21.9%
SS&C Technologies Holdings	\$21,791	\$5,113	48.3%	37.1%	4.3x	11.5x	8.1%
Sumo Logic, Inc.	\$508	\$256	66.1%	-46.9%	2.0x	n/m	22.0%
Tecsys Inc.	\$356	\$107	42.1%	6.9%	3.3x	n/m	11.5%
Teradata Corporation	\$4,006	\$1,922	62.0%	19.9%	2.1x	10.5x	1.5%
The Descartes Systems Group	\$5,054	\$442	76.1%	41.5%	11.4x	27.5x	21.6%
Tyler Technologies, Inc.	\$14,823	\$1,754	43.2%	19.7%	8.5x	n/m	54.5%
Upland Software, Inc.	\$842	\$307	67.5%	14.6%	2.7x	18.8x	3.0%
Veeva Systems Inc.	\$27,827	\$1,922	72.6%	27.7%	14.5x	n/m	23.1%
VMware, Inc.	\$56,289	\$12,945	81.9%	22.3%	4.3x	19.5x	7.6%
Workday, Inc.	\$33,319	\$5,398	72.3%	3.7%	6.2x	n/m	20.6%
Workiva Inc.	\$3,269	\$469	76.3%	-7.4%	7.0x	n/m	26.7%
Zendesk, Inc.	\$8,825	\$1,429	79.7%	-11.1%	6.2x	n/m	31.1%
<b>25th Percentile</b>	<b>\$1,636</b>	<b>\$445</b>	<b>54.7%</b>	<b>-5.2%</b>	<b>3.3x</b>	<b>11.5x</b>	<b>8.7%</b>
<b>Median</b>	<b>\$5,054</b>	<b>\$991</b>	<b>67.5%</b>	<b>9.1%</b>	<b>5.8x</b>	<b>18.8x</b>	<b>20.9%</b>
<b>75th Percentile</b>	<b>\$16,291</b>	<b>\$2,699</b>	<b>76.3%</b>	<b>21.3%</b>	<b>9.2x</b>	<b>25.5x</b>	<b>27.7%</b>

Source: Cherry Tree Research, Capital IQ: 06/30/22

INFORMATION/DATA	ENTERPRISE VALUE (\$mm)	REVENUE (\$mm)	GROSS MARGIN	EBITDA MARGIN	EV/ REVENUE	EV/ EBITDA	REVENUE GROWTH
Alteryx, Inc.	\$3,718	\$575	88.0%	-28.8%	6.5x	n/m	13.9%
CoStar Group, Inc.	\$20,995	\$2,002	81.8%	29.8%	10.5x	35.2x	16.1%
Equifax Inc.	\$27,991	\$5,074	59.6%	33.0%	5.5x	16.7x	15.8%
FactSet Research Systems Inc.	\$16,118	\$1,756	52.9%	34.3%	9.2x	26.8x	12.4%
Fair Isaac Corporation	\$12,017	\$1,352	78.1%	38.0%	8.9x	23.4x	1.5%
First Advantage Corporation	\$2,180	\$770	50.3%	29.4%	2.8x	9.6x	45.2%
Forrester Research, Inc.	\$831	\$506	58.9%	11.3%	1.6x	14.5x	10.8%
Gartner, Inc.	\$21,498	\$4,893	69.6%	23.7%	4.4x	18.6x	16.9%
IHS Markit Ltd.	\$36,918	\$2,125	82.3%	57.2%	17.4x	30.4x	20.9%
Moody's Corporation	\$56,323	\$6,140	72.9%	48.7%	9.2x	18.8x	8.1%
Morningstar, Inc.	\$10,293	\$1,764	58.5%	21.1%	5.8x	27.7x	20.9%
Nielsen Holdings plc	\$13,686	\$3,514	64.5%	31.0%	3.9x	12.5x	3.9%
S&P Global Inc.	\$125,134	\$8,670	72.1%	51.9%	14.4x	27.8x	13.0%
TransUnion	\$20,150	\$3,183	66.6%	33.2%	6.3x	19.1x	25.2%
Verisk Analytics, Inc.	\$30,585	\$3,048	64.7%	45.9%	10.0x	21.8x	8.1%
<b>25th Percentile</b>	<b>\$12,434</b>	<b>\$955</b>	<b>59.1%</b>	<b>29.5%</b>	<b>4.7x</b>	<b>17.2x</b>	<b>8.1%</b>
<b>Median</b>	<b>\$20,150</b>	<b>\$2,125</b>	<b>66.6%</b>	<b>33.0%</b>	<b>6.5x</b>	<b>20.5x</b>	<b>13.9%</b>
<b>75th Percentile</b>	<b>\$29,936</b>	<b>\$3,042</b>	<b>72.7%</b>	<b>44.0%</b>	<b>9.8x</b>	<b>27.5x</b>	<b>20.9%</b>

BUSINESS PROCESS SERVICES	ENTERPRISE VALUE (\$mm)	REVENUE (\$mm)	GROSS MARGIN	EBITDA MARGIN	EV/ REVENUE	EV/ EBITDA	REVENUE GROWTH
Amdocs Limited	\$10,065	\$4,403	35.2%	19.1%	2.3x	12.0x	4.5%
Automatic Data Processing, Inc.	\$89,077	\$16,108	44.9%	26.2%	5.5x	21.1x	10.0%
Broadridge Financial Solutions, Inc.	\$20,600	\$5,518	27.7%	21.0%	3.7x	17.8x	14.4%
Cimpres plc	\$2,598	\$2,816	48.1%	7.4%	0.9x	12.5x	18.8%
CSG Systems International, Inc.	\$2,061	\$1,058	48.2%	15.4%	1.9x	12.7x	6.0%
Conduent Incorporated	\$1,792	\$4,079	23.9%	9.2%	0.4x	4.8x	-1.5%
ExlService Holdings, Inc.	\$4,930	\$1,190	37.9%	17.2%	4.1x	24.2x	22.2%
Exela Technologies, Inc.	\$1,234	\$1,146	23.2%	7.3%	1.1x	14.7x	-6.6%
Genpact Limited	\$8,907	\$4,145	35.5%	16.1%	2.1x	13.4x	11.0%
Global Payments Inc.	\$41,693	\$8,690	56.6%	41.6%	4.8x	11.5x	15.7%
Paychex, Inc.	\$40,564	\$4,612	70.6%	44.1%	8.8x	20.0x	13.7%
PFSweb, Inc.	\$112	\$212	22.3%	-4.7%	0.5x	n/m	-2.0%
R1 RCM Inc.	\$9,356	\$1,518	21.5%	18.0%	6.2x	34.2x	17.4%
Startek, Inc.	\$302	\$708	13.3%	10.3%	0.4x	4.1x	10.2%
TTEC Holdings, Inc.	\$3,913	\$2,323	26.0%	13.3%	1.7x	12.7x	13.0%
<b>25th Percentile</b>	<b>\$1,927</b>	<b>\$1,168</b>	<b>23.5%</b>	<b>9.8%</b>	<b>1.0x</b>	<b>12.1x</b>	<b>5.2%</b>
<b>Median</b>	<b>\$4,930</b>	<b>\$2,816</b>	<b>35.2%</b>	<b>16.1%</b>	<b>2.1x</b>	<b>13.0x</b>	<b>11.0%</b>
<b>75th Percentile</b>	<b>\$15,332</b>	<b>\$4,508</b>	<b>46.5%</b>	<b>20.1%</b>	<b>4.5x</b>	<b>19.4x</b>	<b>15.0%</b>

INFRASTRUCTURE	ENTERPRISE VALUE (\$mm)	REVENUE (\$mm)	GROSS MARGIN	EBITDA MARGIN	EV/ REVENUE	EV/ EBITDA	REVENUE GROWTH
A10 Networks, Inc.	\$926	\$258	79.1%	17.7%	3.6x	20.3x	13.8%
Akamai Technologies, Inc.	\$15,704	\$3,522	63.2%	33.7%	4.5x	13.2x	7.5%
Box, Inc.	\$4,010	\$910	72.5%	6.2%	4.4x	n/m	15.3%
Cogent Communications Holdings, Inc.	\$3,708	\$574	63.6%	35.5%	6.5x	18.2x	2.9%
Edgio, Inc.	\$566	\$224	39.0%	-3.9%	2.5x	n/m	0.0%
Equinix, Inc.	\$71,961	\$6,398	44.1%	37.8%	11.2x	29.7x	10.8%
F5, Inc.	\$8,727	\$2,655	80.8%	20.9%	3.3x	15.7x	7.6%
GoDaddy Inc.	\$14,369	\$3,917	63.7%	17.8%	3.7x	20.6x	14.3%
Gogo Inc.	\$2,456	\$355	69.3%	42.4%	6.9x	16.3x	30.1%
Palo Alto Networks, Inc.	\$49,015	\$5,170	69.3%	0.0%	9.5x	n/m	29.7%
Pure Storage, Inc.	\$6,891	\$2,389	67.7%	2.5%	2.9x	n/m	38.1%
Rackspace Technology, Inc.	\$5,136	\$3,059	31.6%	20.7%	1.7x	8.1x	10.0%
Tucows Inc.	\$680	\$315	32.6%	6.3%	2.2x	34.6x	5.5%
Wix.com Ltd.	\$3,121	\$1,310	61.1%	-25.5%	2.4x	n/m	21.7%
Zoom Video Communications, Inc.	\$26,490	\$4,217	75.1%	27.1%	6.3x	23.2x	28.6%
<b>25th Percentile</b>	<b>\$2,789</b>	<b>\$465</b>	<b>52.6%</b>	<b>4.4%</b>	<b>2.7x</b>	<b>15.9x</b>	<b>7.5%</b>
<b>Median</b>	<b>\$5,136</b>	<b>\$2,389</b>	<b>63.7%</b>	<b>17.8%</b>	<b>3.7x</b>	<b>19.2x</b>	<b>13.8%</b>
<b>75th Percentile</b>	<b>\$15,036</b>	<b>\$3,720</b>	<b>70.9%</b>	<b>30.4%</b>	<b>6.4x</b>	<b>22.5x</b>	<b>28.6%</b>



## M&A ACTIVITY

The M&A outlook for TEBS companies will likely be strong for companies with solid financials and differentiated solutions. We believe that strategic buyers will continue to rely on M&A for revenue and earnings growth, and that financial buyers such as private equity firms will continue to provide additional demand as their investment criteria continues to broaden beyond manufacturing and distribution companies. On the supply side, strong deal flow in recent years will likely limit the crop of companies that are looking to sell, as fewer companies have matured to a point to seek exit strategies. Companies that have achieved strong financial profiles and enviable strategic positions in their markets are likely to see robust buyer interest and strong valuations in an M&A process.

### Select M&A Activity

DATE	TARGET	ACQUIRER	ENTERPRISE VALUE (\$mm)	EV/ REVENUE	EV/ EBITDA	REVENUE	EBITDA	EBITDA MARGIN
<b>SaaS/Software</b>								
07/23/21	Connexity, Inc.	Taboola, Inc.	\$743.7	4.0x	16.8x	\$188.1	\$44.4	23.6%
07/26/21	Medallia, Inc.	Thoma Bravo, L.P.	\$6,530.3	13.2x	-	\$495.9	-	-
07/27/21	Feedonomics LLC	BigCommerce Omni, LLC	\$145.0	7.6x	-	\$19.0	-	-
08/11/21	Periscope Holdings, Inc.	mdf commerce inc.	\$207.3	9.0x	-	\$23.1	-	-
08/19/21	Inovalon Holdings, Inc.	Insight Venture Mgmt; Nordic Capital	\$7,315.3	10.2x	32.9x	\$718.7	\$222.2	30.9%
10/06/21	MoPub, Inc.	AppLovin Corporation	\$1,050.0	5.6x	-	\$188.0	-	-
10/11/21	Aspen Technology, Inc.	Emerson Electric Co.	\$11,011.7	15.1x	28.2x	\$730.4	\$391.0	53.5%
11/08/21	Zix Corporation	Open Text Corporation	\$829.7	3.4x	17.4x	\$245.6	\$47.7	19.4%
11/16/21	SimpleNexus, LLC	nCino, Inc.	\$1,169.3	28.1x	-	\$41.6	-	-
12/01/21	Fuze, Inc.	8x8, Inc.	\$250.0	1.9x	-	\$129.8	-	-
12/17/21	Bottomline Technologies, Inc.	Thoma Bravo, L.P.	\$2,615.9	5.4x	-	\$482.6	\$46.1	9.5%
12/20/21	Cerner Corporation	Oracle Corporation	\$29,348.6	5.1x	20.1x	\$5,707.5	\$1,462.8	25.6%
01/04/22	MarkeTouch Media, Inc.	OmniceLL, Inc.	\$82.0	5.9x	-	\$14.0	-	-
01/05/22	Castlight Health, Inc.	Vera Whole Health Inc.	\$380.1	2.2x	-	\$172.0	-	-
01/11/22	Wind River Systems, Inc.	Aptiv PLC	\$4,300.0	10.8x	-	\$400.0	\$44.0	11.0%
01/31/22	Citrix Systems, Inc.	TIBCO Software; Evergreen Coast Cap. Corp.	\$17,182.1	5.2x	26.1x	\$3,317.0	\$659.3	18.0%
03/01/22	Microdesk, Inc.	Symetri AB	\$50.0	0.5x	-	\$109.9	-	-
03/02/22	Allscripts Hos. & Large Phy. Prac.	N. Harris Computer Corporation	\$700.0	0.8x	4.8x	\$928.4	\$144.9	15.6%
03/08/22	Mandiant, Inc.	Google LLC	\$7,550.9	11.1x	-	\$681.5	-	-
03/14/22	RailComm LLC	Tracsis plc	\$14.2	2.4x	-	\$6.0	-	-
03/20/22	Anaplan, Inc.	Thoma Bravo, L.P.	\$10,753.4	17.7x	-	\$609.3	-	-
04/06/22	Tufin Software Technologies Ltd,	Turn/River Management, L.P.	\$547.5	4.2x	-	\$130.4	-	-
04/11/22	SailPoint Tech. Holdings, Inc.	Thoma Bravo, L.P.	\$7,465.9	15.2x	-	\$491.2	-	-
04/29/22	GTY Technology Holdings Inc.	GI Manager L.P.	\$428.5	6.6x	-	\$64.9	-	-
05/26/22	VMware, Inc.	Broadcom Inc.	\$72,804.0	5.3x	22.3x	\$13,736.6	\$3,264.8	23.8%
06/24/22	Zendesk	Hellman & Friedman, Permira, Others	\$9,890.9	6.9x	-	\$1,428.9	-	-
			<b>Median</b>	<b>5.8x</b>	<b>21.2x</b>			

Source: Cherry Tree Research, Capital IQ; 06/30/22

DATE	TARGET	ACQUIRER	ENTERPRISE VALUE (\$mm)	EV/ REVENUE	EV/ EBITDA	REVENUE	EBITDA	EBITDA MARGIN
<b>Information/Data</b>								
08/05/21	Risk Mgmt. Solutions, Inc.	Moody's Corporation	\$1,985.4	5.9x	37.5x	\$337.2	\$52.9	15.7%
08/11/21	CareLinx Incorporated	Sharecare, Inc.	\$65.0	13.0x	-	\$5.0	-	-
11/11/21	Scryer, Inc.	ARGUS Software, Inc.	\$198.5	10.8x	-	\$18.3	-	-
12/27/21	CUSIP Global Svcs. Operation	FactSet Research Systems Inc.	\$1,925.0	11.0x	-	\$175.0	-	-
01/27/22	Boardroom Insiders, Inc.	Euromoney Institutional Investor PLC	\$25.0	5.2x	35.7x	\$4.8	\$0.7	14.6%
01/31/22	InfoSec Institute, Inc.	Education To Go	\$190.8	6.2x	-	\$31.0	-	-
02/22/22	Verisk Financial	TransUnion	\$515.0	3.6x	12.6x	\$143.1	\$41.0	28.7%
03/29/22	Nielsen Holdings plc	Brookfield L.P.; Evergreen Coast Capital Corp.	\$16,142.6	4.5x	13.4x	\$3,587.2	\$1,208.3	32.0%
05/04/22	Black Knight, Inc.	Intercontinental Exchange, Inc.	\$16,382.9	10.8x	19.4x	\$1,516.9	\$844.5	55.7%
06/20/22	Infomedia Ltd	Solera Holdings, Inc.	\$458.3	5.5x	-	\$84.9	\$10.8	12.7%
			<b>Median</b>	<b>6.1x</b>	<b>19.4x</b>			

DATE	TARGET	ACQUIRER	ENTERPRISE VALUE (\$mm)	EV/ REVENUE	EV/ EBITDA	REVENUE	EBITDA	EBITDA MARGIN
<b>Business Process Services</b>								
08/17/21	Emakina Group SA	EPAM Systems, Inc.	\$142.9	1.2x	16.8x	\$119.1	\$8.5	7.1%
10/18/21	Sirius Computer Solutions	CDW LLC	\$2,500.0	1.2x	-	\$2,035.0	-	-
12/14/21	CompuGain LLC	Unisys Corporation	\$87.3	1.5x	-	\$58.0	-	-
12/14/21	Tungsten Corporation plc	Kofax, Inc.	\$74.9	1.5x	13.3x	\$49.8	\$5.6	11.3%
12/20/21	Edgile, LLC	Wipro Limited	\$230.0	5.2x	-	\$44.1	-	-
03/14/22	MediaAgility Inc.	Persistent Systems Limited	\$71.7	2.8x	-	\$25.5	-	-
04/26/22	Rizing, LLC	Wipro Limited	\$540.0	2.7x	-	\$200.0	-	-
05/09/22	ServiceSource International, Inc.	Concentrix Corporation	\$201.7	0.9x	-	\$234.5	\$2.6	1.1%
05/16/22	ManTech International Corp.	The Carlyle Group Inc.	\$4,397.8	1.7x	13.7x	\$2,586.9	\$321.0	12.4%
06/01/22	Datum Consulting Group, LLC	Alithya Group Inc.	\$45.6	2.5x	7.6x	\$18.2	\$6.0	32.9%
			<b>Median</b>	<b>1.6x</b>	<b>13.5x</b>			

DATE	TARGET	ACQUIRER	ENTERPRISE VALUE (\$mm)	EV/ REVENUE	EV/ EBITDA	REVENUE	EBITDA	EBITDA MARGIN
<b>Infrastructure</b>								
08/10/21	Avast Plc	NortonLifeLock Inc.	\$7,655.6	8.2x	15.6x	\$931.1	\$489.9	52.6%
09/23/21	KEMP Technologies, Inc.	Progress Software Corporation	\$257.8	3.7x	-	\$70.0	-	-
11/15/21	CyrusOne Inc.	KKR & Co.; Global Infrastructure Mgmt.	\$15,182.8	13.1x	26.8x	\$1,155.7	\$565.9	49.0%
11/22/21	Vonage Holdings Corp.	Ericsson	\$6,315.9	4.9x	-	\$1,295.7	\$135.6	10.5%
12/07/21	Mimecast Limited	Permira Advisers Ltd.	\$5,540.6	10.0x	39.9x	\$553.3	\$138.8	25.1%
12/10/21	ITRenew, Inc.	Iron Mountain Incorporated	\$905.3	2.2x	12.0x	\$415.0	\$75.4	18.2%
02/09/22	Tripwire, Inc.	HelpSystems, LLC	\$350.0	3.3x	-	\$106.7	\$4.0	3.7%
02/09/22	Data Glove, Inc.	Persistent Systems Limited	\$85.6	1.8x	-	\$48.9	-	-
03/07/22	EdgeCast, Inc.	Limelight Networks, Inc.	\$319.2	1.1x	-	\$285.0	-	-
06/23/22	Datto Holding Corp.	Kaseya Limited	\$6,219.6	9.0x	-	\$691.1	\$129.6	18.8%
			<b>Median</b>	<b>4.3x</b>	<b>21.2x</b>			

Source: Cherry Tree Research, Capital IQ: 06/30/22

## ABOUT CHERRY TREE

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### **History and Background**

Cherry Tree is a private investment banking and wealth management firm headquartered in Minneapolis, Minnesota. Our firm specializes in serving middle market companies and their owners, whether private, public, or divisions of larger corporations. Founded in 1980, Cherry Tree managed several successful institutional private funds focusing on platform acquisitions. Those funds led to more than 300 financings, 26 public offerings, and 41 strategic sales. In 1996 the firm diversified into investment banking services to take advantage of our long history and position in the market. In 2003, we added wealth management to our operations by acquiring and growing our existing business. Our professionals collectively have been members of more than 80 boards of directors, worked with more than 250 different companies, and advised on hundreds of financings and M&A transactions.

### **Broad Market Expertise**

Cherry Tree has been working with middle market companies for more than 40 years. Our core M&A activity is sell-side engagements with middle market companies where ownership wants to achieve some liquidity goals or desires to recapitalize its business to better position the company for future growth. Additionally, we represent buy-side clients attempting to add acquisition strategies to complement their organic growth efforts. We are experts in the capital markets, having previously managed four private funds. Our firm primarily has been focused on investment banking transactions since 1996 and has an exceptional team of dedicated investment banking professionals. Collectively, our senior bankers represent more than 200 years of transaction and operating experience.

### **Research**

We distinguish our firm by conducting comprehensive research and publishing our findings in reports that provide in-depth analyses of selected industries and overall market conditions. For each client assignment, we apply our internal research capabilities and our deep domain expertise in relevant markets in order to provide the highest value to our clients. Some of our industry research is sponsored by our clients with an interest in specific industry segments.

### **Contacts**

For more information or to inquire about receiving our monthly TEBS newsletter please contact Cherry Tree at 952.893.9012, [info@cherrytree.com](mailto:info@cherrytree.com), or visit our website at [www.cherrytree.com](http://www.cherrytree.com)

#### **Mik Gusenius, Managing Director**

TEBS Team Lead  
[mgusenius@cherrytree.com](mailto:mgusenius@cherrytree.com)  
952.253.6005

#### **Elmer Baldwin, Senior Executive Director**

IT Services Team Lead  
[ebaldwin@cherrytree.com](mailto:ebaldwin@cherrytree.com)  
952.253.6001



301 Carlson Parkway, #103  
Minnetonka, MN 55305

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