Instructure Inc.

William Tylko

Executive Summary

Between July 18th and October 8th 2018, Instructure's shares fell 36% to $31.62, giving Instructure an enterprise value of $984mm. The company trades at 5.2x EV to run-rate recurring revenue, and 3.67x FY19 estimated total revenue. The sell-off is the result of sales growth slowing faster than expected with profitability far from reach. Instructure is most known for Canvas, an educational learning management system.

While a change in valuation after lackluster growth is warranted, we believe Instructure is an attractive investment for the following reasons:

- Canvas is successfully executing on an attractive legacy refresh narrative, which has pushed their primary competitor to the verge of bankruptcy
- Instructure has successfully pivoted from a single product company and is now positioned to cross-sell additional value-add products to its captive customer base.
- Bridge, Instructure's corporate LMS, has enormous potential
- Instructure has the ingredients to become a highly profitable software company
- Instructure's valuation is an anomaly in the SaaS market, creating an opportunity for multiple expansion with limited valuation downside risk.

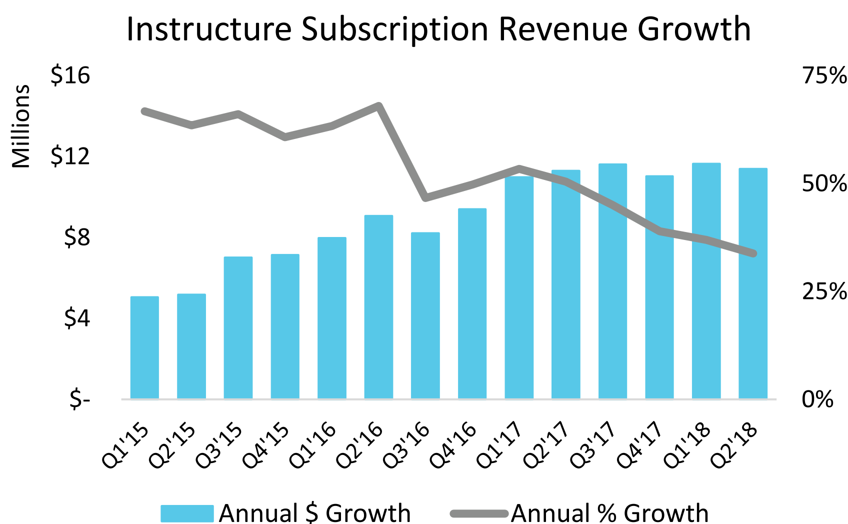
An appendix at the bottom of this report includes a full LMS market analysis.

Background

Instructure creates software-as-a-service learning management systems (LMS) for both educational and business environments.

Canvas is the largest and fastest growing LMS in education. Their rapid success (30% market share, >70% win rate, $160mm TTM recurring revenue) is the result of an innovative product integrating a SaaS solution with a simple user design, in an underinvested market vertical controlled by one dominant player.

The market's concern with Instructure is that on a Y/Y basis Canvas's growth is decelerating quickly despite a low TAM saturation, suggesting a decline in Instructure product attractiveness. Management attributes this decline as the result of the educational market having an "annual limited TAM", where only 20-30% of all customers are eligible to switch to a different LMS every year due to the nature of contact duration in LMS (3-5 years). Only a certain percentage of the LMS market looks to change providers each year, and despite Canvas capturing 70% of these customers, the continued year growth captures a similar dollar amount,



Page 17 contains important disclosures regarding this paper.

which appears as a smaller Y/Y growth percentage. On a dollar basis, Canvas continues to grow at a very constant rate.

As Canvas contributes an estimated 95% of Instructure's revenue, the deceleration has greatly impacted Instructure's top-line, making investors worried. Investors however, are excited about the other 5% of revenue which is growing at an estimated >80% Y/Y: Bridge.

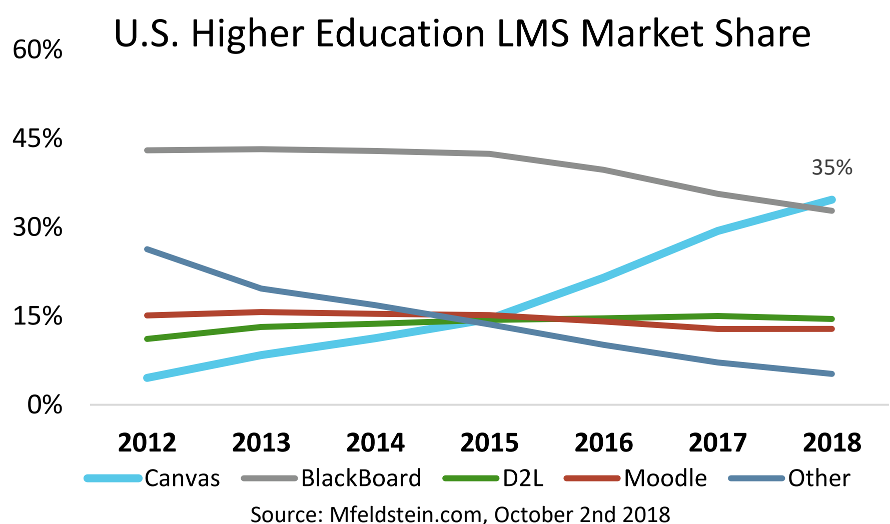
Bridge is an LMS solution for corporations, designed to improve employee management, with capabilities ranging from employee-manager relationship management, video content delivery, and corporate skills assessment. Like Canvas, Bridge has an extremely user-friendly design which positions the product to be used by the intended end users. Bridge is a small portion of Instructure's total revenue (est. $10M TTM), but the potential is huge—management believes Bridge's TAM is around $10B, which is nearly 7x that of Canvas. Regarding Bridge's growth and timeline, Steve Kaminsky, Instructure's CFO of 6 years, commented that within "five or seven years from now, Bridge will be more than half of our revenue. We're certain of that." Piecing this together with the rest of management's guidance, Instructor's management implies that Instructure could be doing $1B in annual recurring sales within 7 years.

Instructure currently generates $200mm run-rate revenue (30% Y/Y, >90% recurring, >100% retention), has a TTM gross margin and income margin of 71% and -27%, which Instructure plans to bring to +75% and +23% in the long term.

Thesis 1: Canvas is executing on an attractive legacy refresh narrative

The $1.8B educational LMS market resides in three markets: U.S. Higher Education, U.S. K12 and International. The evolution of these LMS segments has resulted in different competitive environments and solutions. Canvas is the fastest growing educational LMS and is estimated to control 35% of the U.S. Higher Education market, 22% of the U.S. K-12 market, and 5% of the entire Ex-U.S. LMS market.

The Educational LMS was first developed for the Higher Education market in the late 1990s, originally as an expensive custom on-premise solution. These solutions helped students submit assignments, view grades, and enroll in classes. Only within the last 10 years has widespread use of LMS appeared in K-12, as LMS has become more affordable and useful. The international market is generally untapped. The largest LMS solution providers are Canvas, BlackBoard, Moodle, D2L, Schoology and Google Classroom. BlackBoard and Moodle were the first solutions in the marketplace, while Canvas, D2l, Schoology, and Google Classroom are disrupters to BlackBoard and Moodle.



BlackBoard primarily makes LMS solutions that target the Higher Education market. Founded in 1997, Blackboard was the first mover and eventually went on to own 65% of the market by 2008. BlackBoard's widespread market dominance quickly functioned as a large moat, disincentivizing Blackboard from innovating in the educational LMS, eventually leading to their products becoming obsolete, segmented, and widely hated by their entire customer base. In 2012, TechCrunch called BlackBoard "one of the most disliked — even detested — companies in

education." Instructure saw the opportunity for an off-premises SaaS solution and came to market with Canvas in 2010.

Moodle has historically dominated the K-12 LMS market, solely because the solution is free to use. However, as premium K-12 LMS solutions have increased their features at the same time as lowering costs, many K-12 schools have been opting for premium LMS solutions such as Canvas and Schoology. Google Classroom also competes with Moodle for customers not willing to pay for solutions.

Historically, BlackBoard and Moodle's products are on-premise solution. This solution left many implementations running old software and required school IT departments to specialize in supporting the system. By developing a cloud-based SaaS solution and focusing on a consumer-friendly interface, Canvas eliminated many of the problems that have historically plagued BlackBoard and Moodle. A one size fits all approach simplified support operations, while off-premises installations controlled the daily reliability of the LMS product. In recent years, BlackBoard and Moodle have launched competitive solutions to Canvas; however, they have yet to yield meaningful results.

Canvas's most significant advantage is its capital structure, which enables a large cash burn on sales and marketing. Canvas's competitors, BlackBoard and Moodle are capital constrained, preventing them from competing: BlackBoard has been pushed into distressed status, evident by their public subordinated bonds due early 2021 yielding over 23%. Moodle does not generate any meaningful revenue, preventing them from improving their product or reaching new customers. This lack of competitive environment enables Canvas to market unchallenged, evident through their 70% win rate. The LMS market has been left undefended, and Canvas is taking advantage of this.

With an innovative product and being able to outspend competitors, Canvas has seen astronomical growth. In the past three years, Canvas Higher Ed has grown from 15% of the market to 33%, while Canvas K-12 has grown to a 22% market share after just 6 years.

We estimate TTM recurring revenue for Higher Ed US Canvas, K12 US Canvas, and International canvas to be $86mm, $40mm and $31mm, respectfully. From an analysis of 45 Canvas subscription agreements, Instructure charges a base rate of about $12 per Higher Ed student, and $5 per K12 student, for the most basic Canvas package. When applicable, Canvas can charge an additional 30% in support packages. On a weighted average basis, Canvas subscriptions increase by 3.9% Y/Y in Higher Ed and 2% Y/Y in K12. A year of Canvas has approximately the same cost as a school lunch.

Canvas Projections (base case):

Our base case assumes that the remaining portion of the market with legacy on-premises solutions are converted to SaaS solutions within 5 years, and that Canvas has a smaller win rate. Specifics are detailed in the in-depth Canvas market share analysis attached the bottom.

Higher Ed: We estimate that if Canvas is able to grow its market share from 33% to 48% (lower win rate with only legacy LMS switching) in 2023, while seeing price inflation of 4% YoY, Higher Education revenues could grow from an estimated $82mm in 2017 to $166mm, a 12% CAGR. This analysis has Higher Ed Canvas growing at $14mm per year, despite management estimate's that it will grow by $20mm per year[1]. This also assumes Canvas will take an additional 3% of the market share per year in the next 5 years, while Canvas has historically increased its market share by an additional 6% per year for the last three years.

K12: We estimate that if Canvas is able to grow its market share from 22% to 33.5% in 2023, K-12 revenues could grow from an estimated $30mm in 2017 to $65mm, a 14% CAGR. This analysis assumes

---

[1] David Bell (Instructure IR) @ D.A Davidson Vertical Tech Day, September 9th 2018: "In the U.S. you're going to see that kind of level off and we might get $20-something-million of new business in the high ed market or something in the U.S. each year ongoing"

that many K-12 LMS schools will adopt a premium LMS for the first time, as has been the trend for the last few years. These growth assumptions are below Canvas's K-12 historical growth. Since coming to market in 2012, Canvas has acquired market share at a rate of 3.6% per year; this analysis assumes Canvas will be able to grow market share 2.3% for the next 5 years.

International: We estimate that if Canvas is able to increase its market share from 5% to 15% in 2023, International revenues could grow from an estimated $31mm TTM Q2 18 to $100mm, a 24% CAGR. This is possible because Canvas has less than 5% market share, and the market is controlled by the same legacy peer set that previously controlled the U.S. market. This analysis has International revenues growing at an incremental rate of $13.8mm per year, while the last T12M incremental revenues for the international segment increased by $16.2mm.

Overall, this analysis has Canvas growing at a very reasonable rate of 15% CAGR for the next 5 years.

Thesis 2: Instructure has successfully pivoted from a single product company and is now poised to cross-sell

While Instructure is likely to generate most Canvas related revenue growth in the near term from market share expansion, Canvas also has a large opportunity to increase average revenue per user (ARPU) in the long term through price inflation and selling additional products.

In the long term, we would expect Instructure to increase the price of Canvas at a premium to inflation; however in the short term, we found little evidence that Canvas was able to reliably negotiate a step up into all of their contracts. From an analysis of 46 publicly available documents, we found evidence that several schools were able to remove inflation step-ups during their initial contract negotiation. Several contracts had fine print stating terms that Instructure would increase the cost by at least 5% per year, and contracts written before 2016 were unlikely to include an automatic pricing step-up. As previously discussed, the average Canvas rate increased by 3.9% Y/Y in Higher Ed and 2% Y/Y in K12. We anticipate that as Instructure extends these deals, it should be able to continue to increase the price and step up for inflation. As management often likes to comment, the cost per student for one year is equivalent to just one lunch.

Instructure can also increase ARPU by pushing add-on Canvas integrated products, such as Arc and Gauge, to its existing user base. These products are both higher margin and have a lower customer acquisition cost.

Arc is a video streaming add-on for Canvas. Arc enables student interaction with video through unique solutions such as enabling your students to publicly comment on the timeline of the video. Arc tracks and reports statistics surrounding engagement and content retention to course administrators. From our analysis, when Canvas was able to cross-sell Arc, they increased ARPU by 48% at one district with 4K users and by 11% at another district with 50-60k users. We estimate the larger district only purchased Arc for ¼ of their total user base. We believe Arc will be a big hit in Higher Education as the product allows students to be given video assignments, while the course administrators get crucial metrics (feedback, data, statistics) on if students are actually learning. We think it would be reasonable to assume Instructure will be able to sell this product to 50% of Canvas's Higher Education base and to 20% of Canvas's K12 customers both at an increased ARPU of 25%. This would increase revenues from Higher Education by $22MM, which would bring our High Education revenue estimate in line with that of management. Additional revenue from Arc in K-12 would be $4MM by year 2025.

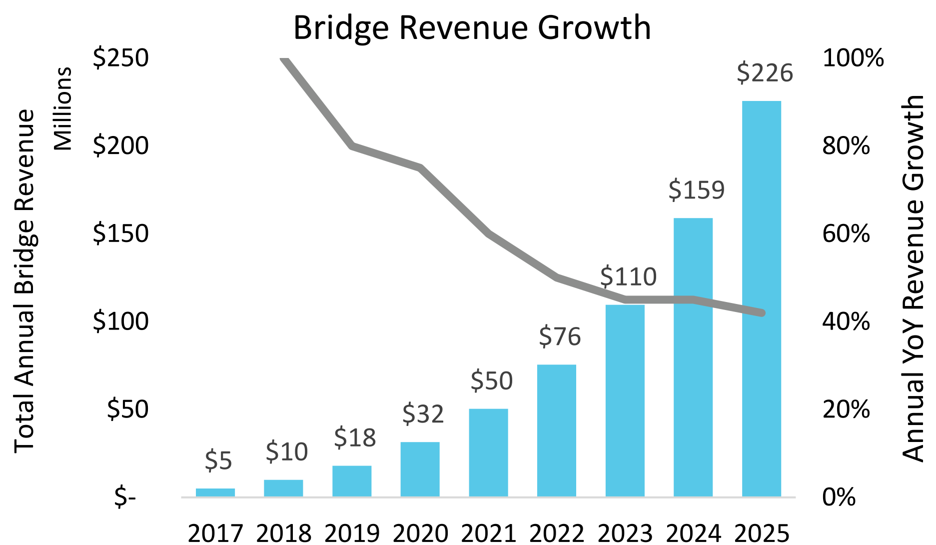
Gauge is an add-on assessment management system targeted at K-12. Gauge delivers robust analytics regarding student performance and can be used to deliver district-wide secure custom tests securely. The idea is that with the use of a system like this, the administration can track students' progress to better prepare them for standardized tests. Despite being a relatively new add-on, Gauge has high praise by its adopters and a great use case. While we only found billing information for one school district (50-60K users) using this product, the additional charge for Gauge increased their ARPU by 23%, with the price

quoted as an early adopter discount. We think Instructure will be able to push Gauge to 40% of its K-12 market, with an average increase ARPU increase of 28%. We do not believe Gauge will catch on in the Higher Ed market as value-add for a campus wide tests is less. Through this analysis, Gauge could add $9MM of revenue to K-12 by 2025. Management believes Gauge's U.S. K-12 TAM is near $300mm.

Thesis 3: Bridge is a fast-growing product with huge potential

Bridge is Instructure's LMS solution for corporations. Bridge has several key features including performance management, employee-manager relationship tracking, self-guided video learning, and skills assessments. Bridge is able to communicate the results of all of these features to management to help visualize how employees and managers are interacting. Instructure has positioned Bridge to help with employee relations, with the ultimate goal of improving employee retention, which is a sought-after skill ability in a market environment where wages are growing fast.

The actual demand from companies for this type of product is growing fast: management estimates Bridge's current TAM at $9B, with plans to expand it to $25B in the near future through the development of additional add-on products.



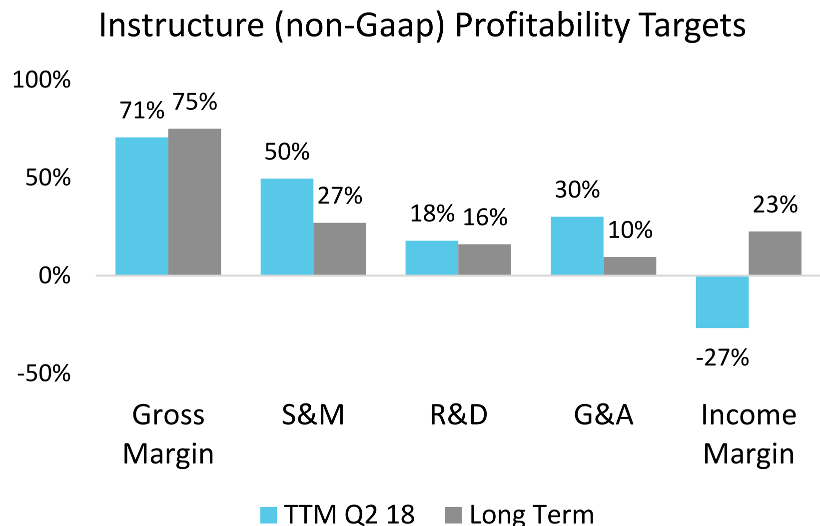
Bridge is a suite of three products: Bridge Perform, Bridge Practice and Bridge Learn. Bridge Perform visualize employee goals, timing and feedback. Bridge Practice is a platform that teaches employees how to manager interactions, with courses from soft skills to providing feedback to others or even interacting with difficult customers. After watching video lessons, employees upload their own reply to the interaction, and their manager reviews the content. Bridge Learn is a platform that delivers courses to employees, which are followed up with quizzes to help employees retain knowledge. The lessons can be purchased or created, many companies have used this product to push company culture courses.

After only two years on the market, Bridge has 500 different corporate customers, and Instructure's management expects Bridge to make up 15-20% of new billings by year end 2018. Bridge starts at $25/user with a minimum deployment of 500 users. Implementation costs for Bridge are much lower than for Canvas because most employers do not already have an corporate LMS that needs conversion.

In the second half of 2018, Instructure will focus on retooling Bridge sales. They have planned to switch to a large customer focused sales generated approach in the larger employer market which will likely increase win rates, instead of the current lead generation approach. Bridge will also focus on building vertical use cases by industry and geography to increase attractiveness. We estimate Bridge is growing at above 80% per year and had TTM revenue of $8M in Q2 2018. Management recently noted that for the next year, they expect Bridge sales to grow by nearly 80%. In August 2018, Steven Kaminsky, Instructure's CFO noted: "five or seven years from now, Bridge will be more than half of our revenue". If Bridge made up 50% of Instructure's revenue in 2025, Bridge would be close to a $500MM recurring product. Our expected case scenario assumes that Bridge grows to be $106mm TTM recurring revenue in 2023.

Thesis 4: Instructure has the ingredients to be a highly profitable software company

Instructure is currently not profitable. For the 12 months prior to Q2 2018, Instructure's operating loss was -26.8%, which was an improvement of 800bps Y/Y. Instructure gross margin in the period was 70.5%, with recurring revenue grossing 75.2% and service revenue grossing 34%.



As a percent of revenue, GAAP operating expenses for the 12 months prior to Q2 2018 were 97.4%. The largest expenses as a percent of revenue were sales and marketing, at 49.5%, general and administrative, at 17.9% and R&D, at 30.1%. Instructure's long-term Non-GAAP goal is to increase its gross margin to 75%, while reducing S&M to 26-28%, G&A to 9-10% and R&D to 15-17%, which would result in an operating margin of 20-25%. Instructure's contribution margin is 60%. The bulk of this profitability will be driven by a reduction in S&M as a percent of revenue, which is made possible by the stickiness of the product. Similar business models have been proven to work at other companies over time.

As revenue growth has slowed, the timeline to profitability conversion has been extended. Based on our analysis of Instructure's financials, we think the company will become profitable by year end 2022. After 2nd quarter earnings, management has been discussing several cost cutting measures to help improve near term profitability. During the 1st half of 2018, Instructure management noted that they would be spending slightly more on R&D for both Bridge and Canvas, to speed up innovation.

On a cash flow basis, the near term is cloudy. Instructure appears to be in the process of expanding their working capital to levels near their competitors. Canvas's cashflows are somewhat unique, with a large percentage of customers preferring to move their billing collection period to the middle of the summer, as this is the beginning of the fiscal year for many schools. Nearly all Canvas contracts we examined had their contracts beginning in the summer. Once Instructure is able to normalize their working capital ratios, there should be a significant amount of cash provided to the business from billing for annual services a whole year in advance. We expect Instructure to become FCF positive by year end 2021, if their payables continue to expand at the current rate.

The market has likely overlooked several short-term issues, which has caused non-optimal performance.

Instructure's sales team is currently going through a big reorganization. Within the last year, both the Head of Marketing and Head of Global Sales departed the company, likely making a short term impact on sales leadership. Instructure also changed its Go-To-Market (GTM) strategy from a marketing driven approach (where clients come to Instructure) to a sales-generated approach (where the company hunts for clients). Instructure's sales team will also become more aggressive in the larger scale enterprise market and will focus on efficient sales. Instructure's growth is likely being impacted by K-12 negative churn caused by including support packages for only the first year of the contract (discussed in the Appendix). Management has previously noted that the 16-17 school year was a large year for K-12.

The new accounting standard, ASC606, is likely having an impact on Analyst's ability to interpret patterns in revenue. Management has noted that the largest change would impact recognition of implementation revenue, with this revenue being recognized on project completion rather than amortized over the length of the customer. Implementation revenue slightly accelerated in Q2, with YoY growth at 50bps, compared to YoY growth of -100bps in Q1. Both of these quarters saw much lower growth compared to Q4 2017, where implementation revenue grew at 43% YoY. In addition, Bridge has lower implementation costs than Canvas, so the interpretation of future revenue growth based on this metric is likely flawed.

The company has also recently announced that they plan to step up reinvestment in both Canvas and Bridge in 2H18. This will lead to an increase in future growth prospects, but will also increase short term R&D spend. The company is also pursuing a cost saving strategy simultaneously by moving some basic customer service functions abroad.

Return Analysis: Returns at minimum should be revenue growth, with large upside potential from multiple expansion at free cash flow breakeven around 2021/22.

Current Multiple Analysis:

Instructure's current valuation is in line with market valuations that fit the SaaS "rule of 40 "framework", which rewards higher multiples to companies with higher Y/Y revenue growth and larger free cash flow profitability. The "Rule of 40" comes from the belief that SaaS companies should be either high growth or highly profitable, and the companies you want to own have a free cash flow yield and revenue Y/Y growth adding up to a number greater than 40. A regression analysis below shows a high correlation among 20 different SaaS company EV/revenue valuations over the course of 5 years using the rule of 40 analysis, giving us an equation for an implied multiple. Under this approach, Instructure's TTM multiple would range between 5.3x and 6.45x, higher than Instructure's current multiple of TTM multiple of 5.16x.

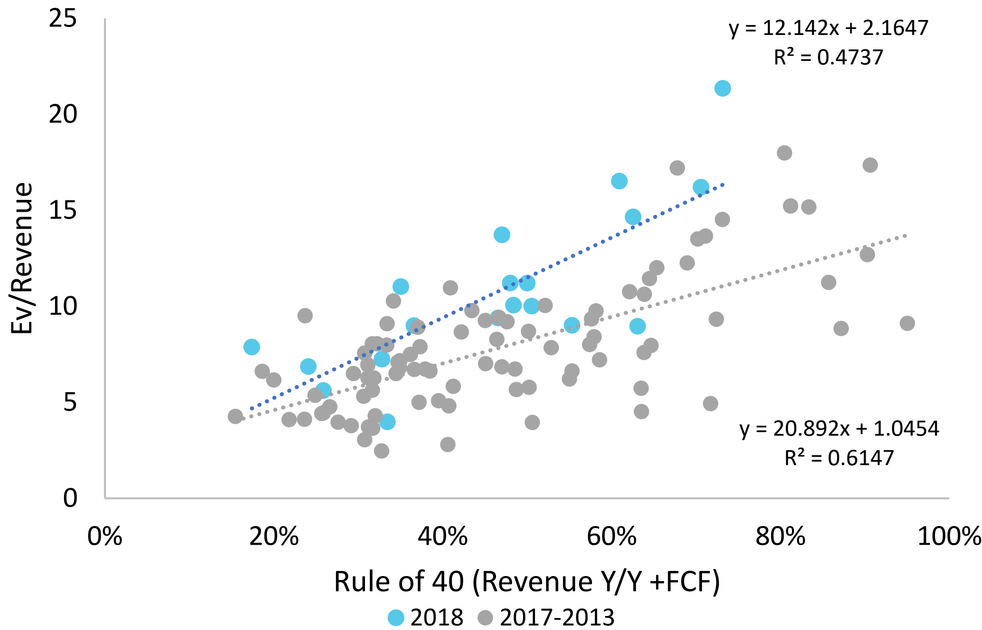
Instructure has a large amount of public peer SaaS companies. There are also a few public companies that had similar products as Bridge have been recently bought out by private company. Instructure's peer set supports our thesis that Instructure should have a higher multiple, but Instructure's lower multiple could be justified by their below average gross margin and EBITDA.

COMPARABLES ANALYSIS

					Mutiples 10/18						CAGR (CY18-CY20)			Margins (CY18)	
					EV/Sales			EV/EBITDA			Sales	GP	EBITDA	GM	EBITDA
Name	Ticker	Share Price	Market Cap	EV	CY18	CY19	CY20	CY18	CY19	CY20	CY18-CY20			CY18	
CornerStone OnD	CSOD	$ 52.21	3,068	2,965	5.6x	5.2x	4.6x	30.7x	22.5x	13.4x	11%	11%	51%	74%	18%
WorkDay	WDAY	$ 132.42	28,735	26,927	9.7x	7.8x	6.4x	63.1x	42.9x	31.6x	24%	25%	41%	74%	15%
Salesforce.com	CRM	$ 148.65	112,483	112,732	8.1x	7.1x	6.0x	35.5x	28.9x	23.6x	16%	20%	23%	73%	23%
Ultimate Software	ULTI	$ 291.22	9,086	8,957	7.9x	6.6x	5.5x	32.5x	27.2x	21.8x	19%	21%	22%	64%	24%
PluralSight	PS	$ 25.93	3,503	3,787	16.4x	12.3x	9.4x	-78.9x	-102.4x	-315.6x	32%	33%	-50%	76%	-21%
Guidewire	GWRE	$ 95.10	7,666	6,904	9.2x	8.0x	6.8x	46.6x	38.4x	26.7x	16%	18%	32%	60%	20%
Veeva	VEEV	$ 95.07	13,739	12,728	15.1x	12.8x	10.9x	44.2x	36.8x	30.1x	18%	19%	21%	73%	34%
Aspen Tech	AZPN	$ 105.70	7,506	7,624	13.8x	13.0x	11.9x	27.4x	26.2x	23.2x	8%	7%	9%	90%	50%
MongoDB	MDB	$ 70.86	3,700	3,388	14.7x	10.8x	8.3x	-47.7x	-62.7x	-130.3x	33%	33%	-39%	73%	-31%
Coupa	COUP	$ 67.37	3,912	3,637	14.8x	12.0x	9.3x	727.4x	259.8x	79.1x	26%	28%	203%	72%	2%
SerivceNow	NOW	$ 180.26	32,068	31,257	12.0x	9.3x	7.3x	46.7x	34.0x	25.1x	28%	30%	36%	80%	26%
Real Page	RP	$ 58.14	5,455	5,772	6.6x	5.8x	5.2x	24.9x	20.2x	17.2x	13%	14%	20%	64%	27%
Splunk	SPLK	$ 105.00	15,396	14,504	8.6x	6.9x	5.6x	57.1x	41.0x	27.7x	24%	24%	43%	83%	15%
Instructure	INST	$ 31.82	1,108	937	4.4x	3.5x	2.9x	-43.9x	-70.9x	518.1x	25%	25%	NM	71%	-10%
Average				18,553	11.0x	9.0x	7.5x	77.6x	31.7x	-9.7x	21%	22%	32%	74%	16%
Median				7,624	9.7x	8.0x	6.8x	35.5x	28.9x	23.6x	19%	21%	23%	73%	20%

Name	Ticker	EV to ... RR Sales	RR Gross Profit	RR EBITDA	Y/Y Sales Growth	Gross Margin	EBITDA Margin	Date
Callidus	CALD	9.5	15.5	NM	22%	61%	-0.3%	1/30/2018
Xactly	XTLY	5.7	9.5	NM	6%	60%	-12.7%	5/30/2017
Apptio	APTI	8.2	11.8	NM	26%	69%	-6.2%	11/12/2018

Instructure has the lowest multiple out of the 16 SaaS companies highlighted above. We see this as temporary, and believe a multiple expansion will occur.

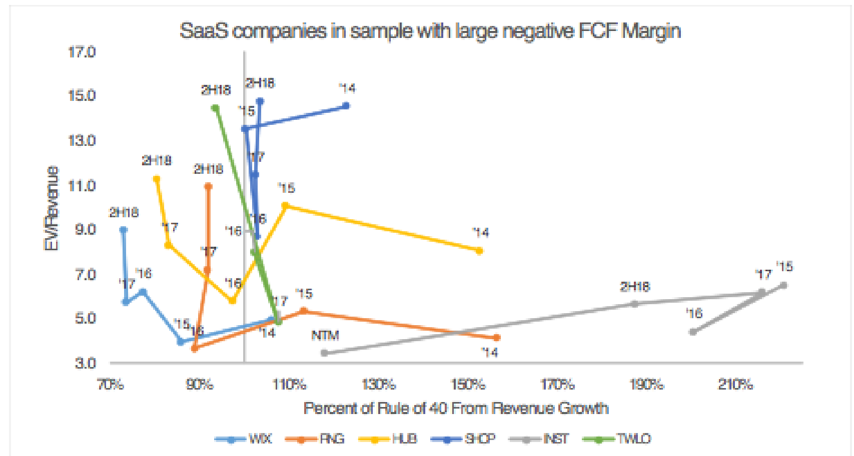


Future Multiple Analysis:

Despite justifying current multiples with “The Rule of 40”, we believe the rule can be somewhat discriminatory against companies currently arriving at scale. Since Instructure is not profitable, and their slowing y/y revenue growth component contributes 167% of its “Rule of 40” score, the company’s “Rule of 40” score will fall faster than a profitable company experiencing the same growth slow down. But the “Rule of 40” does not take into consideration that companies can control profitability easier than they can control revenue growth rates. The model does not reward companies for the possibility of reaching profitability, which is likely as that is the goal of every management team. For example, if Instructure cut their entire marketing team today, their revenue would likely stay flat, while their free cash flow margin would reach 40%, which would correlate to a 7-9x revenue multiple.

As illustrated in the chart below, as companies reach FCF positive, multiples tend to explode. We expect large multiple expansion to occur when Instructure reaches profitability - likely in the year 2020 or 2021.

Since Instructure's current multiple is far below the range of multiples from the rule of 40 analysis, and that of or those of its peers, we think Instructure's revenue multiple can only increase. Once Instructure reaches profitability, the multiple will have significant room to expand.



From this analysis, Instructure's multiple as it approaches free cash flow profitability in 1-2 years should be around 9x recurring and 8x total revenue. If Instructure becomes profitable more quickly and growth accelerates, these multiples will be pushed into the 10x range.

ProForma and Return Analysis

We anticipate Instructure's revenues will be within three expected revenue projections, a bear, expected and bull case. Canvas's projections do not change between the three models, however, Bridge's revenue varies significantly between the three. Our bull case aligns Bridge's revenue with management commentary, our bear case assumes a flop, and our expected case is in between the two. The model assumes that after maturity Instructure will be able to continue to raise prices by 3-4% indefinitely.

We also assume that in our expected model Instructure will make serious progress over the next 7 years towards becoming profitable. In the 7th year, we are assuming that Instructure will be close to, but not at its management published long term profitability goals.

Assuming the multiples and financials previously discussed, these would be the returns expected in a 4 year and 6 year time period. The returns use an average price of $31.62, the price we acquired Instructure at.

Bottom line: Solid continued revenue growth combined with multiple expansion at profitability makes Instructure an attractive investment.

RETURNS			
	At 12/31/2022		
	Bear	**Base**	**Bull**
Fwd. Revenue	$ 439	510	$ 583
Implied CAGR (18-23	*15%*	*19%*	*22%*
(x) Multiple	3.5x	5.5x	6.5x
Enterprise Value	$1,537	$2,807	$3,787
Fwd. FCF	50	82	103
Implied Margin	11%	16%	18%
(x) Ex-Cash FCF Mult	31.0x	34.1x	36.7x
Net Cash	126	253	328
(/) FD Share Count	47	47	47
Cash per Share	2.69	5.38	6.99
Share Price	35	**65**	88
% Change	*12%*	***106%***	*177%*
% IRR	*3%*	***19%***	*28%*

RETURNS			
	At 12/31/2024		
	Bear	**Base**	**Bull**
Fwd. Revenue	$ 483	672	$ 880
Implied CAGR (18-23	*12%*	*18%*	*22%*
(x) Multiple	3.5x	6.5x	8.5x
Enterprise Value	$1,690	$4,367	$7,482
Fwd. FCF	87	173	249
Implied Margin	18%	26%	28%
(x) Ex-Cash FCF Mult	19.4x	25.3x	30.0x
Net Cash	275	551	716
(/) FD Share Count	47	47	47
Cash per Share	5.86	11.72	15.24
Share Price	42	**105**	174
% Change	*32%*	***231%***	*452%*
% IRR	*5%*	***22%***	*32%*

Revenue Build

	FISCAL YEAR ENDED (expected)												
	FYE December 31,												
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Subscription & Support	$ 22	$ 38	$ 58	$ 97	$ 140	$ 191	$ 242	$ 297	$ 351	$ 409	$ 472	$ 544	$ 629
US Canvas HE					$ 82	$ 98	$ 113	$ 127	$ 141	$ 154	$ 166	$ 174	$ 182
US Canvas K12					$ 30	$ 42	$ 51	$ 59	$ 63	$ 66	$ 69	$ 71	$ 74
International Canvas			$ 4	$ 10	$ 23	$ 40	$ 56	$ 70	$ 83	$ 93	$ 101	$ 108	$ 116
Guage/ARC			$ -	$ -	$ 1	$ 1	$ 4	$ 9	$ 14	$ 20	$ 26	$ 31	$ 32
Bridge					$ 5	$ 10	$ 18	$ 32	$ 50	$ 76	$ 110	$ 159	$ 226
Professional Services	4	6	11	14	19	20	23	26	30	35	38	42	43
Total Revenue	$ 26	$ 44	$ 73	$ 111	$ 159	$ 211	$ 264	$ 323	$ 381	$ 444	$ 510	$ 586	$ 672
'+ Growth													
Subscription & Support		$ 16	$ 20	$ 39	$ 43	$ 51	$ 51	$ 55	$ 55	$ 57	$ 63	$ 72	$ 86
US Canvas HE						$ 16	$ 15	$ 14	$ 14	$ 13	$ 12	$ 8	$ 8
US Canvas K12						$ 12	$ 9	$ 8	$ 4	$ 3	$ 3	$ 2	$ 2
International Canvas				$ 6	$ 12	$ 17	$ 16	$ 14	$ 13	$ 10	$ 8	$ 7	$ 8
Guage/ARC					$ 1	$ 1	$ 3	$ 5	$ 5	$ 6	$ 6	$ 5	$ 1
Bridge					$ 5	$ 5	$ 8	$ 14	$ 19	$ 25	$ 34	$ 49	$ 67
Professional Services		6	11	14	19	1	3	3	4	5	3	4	1
Total New Revenue		$ 18	$ 29	$ 38	$ 48	$ 53	$ 53	$ 58	$ 58	$ 63	$ 66	$ 76	$ 86
Bridge as % of percent of new revenue					10%	10%	15%	23%	32%	40%	51%	65%	78%
Canvas as % of percent of new revenue					90%	90%	85%	77%	68%	60%	49%	35%	22%
% Growth													
Subscription & Support			52%	68%	44%	36%	27%	23%	19%	16%	15%	15%	16%
US Canvas HE						20%	15%	13%	11%	9%	8%	5%	4%
US Canvas K12						40%	21%	16%	7%	5%	5%	3%	3%
International Canvas				127%	122%	75%	40%	25%	19%	12%	9%	7%	7%
Guage/ARC						100%	300%	125%	56%	43%	30%	19%	3%
Bridge						100%	80%	75%	60%	50%	45%	45%	42%
Professional Services			71%	28%	37%	8%	15%	11%	15%	15%	9%	11%	3%
Total Revenue			65%	51%	43%	33%	25%	22%	18%	17%	15%	15%	15%

	FISCAL YEAR ENDED (Bear Bridge)												
	FYE December 31,												
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Subscription & Support	$ 22	$ 38	$ 62	$ 97	$ 140	$ 191	$ 239	$ 285	$ 326	$ 363	$ 397	$ 425	$ 449
Canvas					$ 135	$ 181	$ 224	$ 265	$ 301	$ 333	$ 362	$ 385	$ 404
Bridge					$ 5	$ 10	$ 15	$ 20	$ 25	$ 30	$ 35	$ 40	$ 45
Professional Services	$ 4	$ 6	$ 11	$ 14	$ 19	20	24	27	31	33	36	38	39
Total Revenue	$ 26	$ 44	$ 73	$ 111	$ 159	$ 211	$ 263	$ 313	$ 357	$ 397	$ 433	$ 463	$ 488

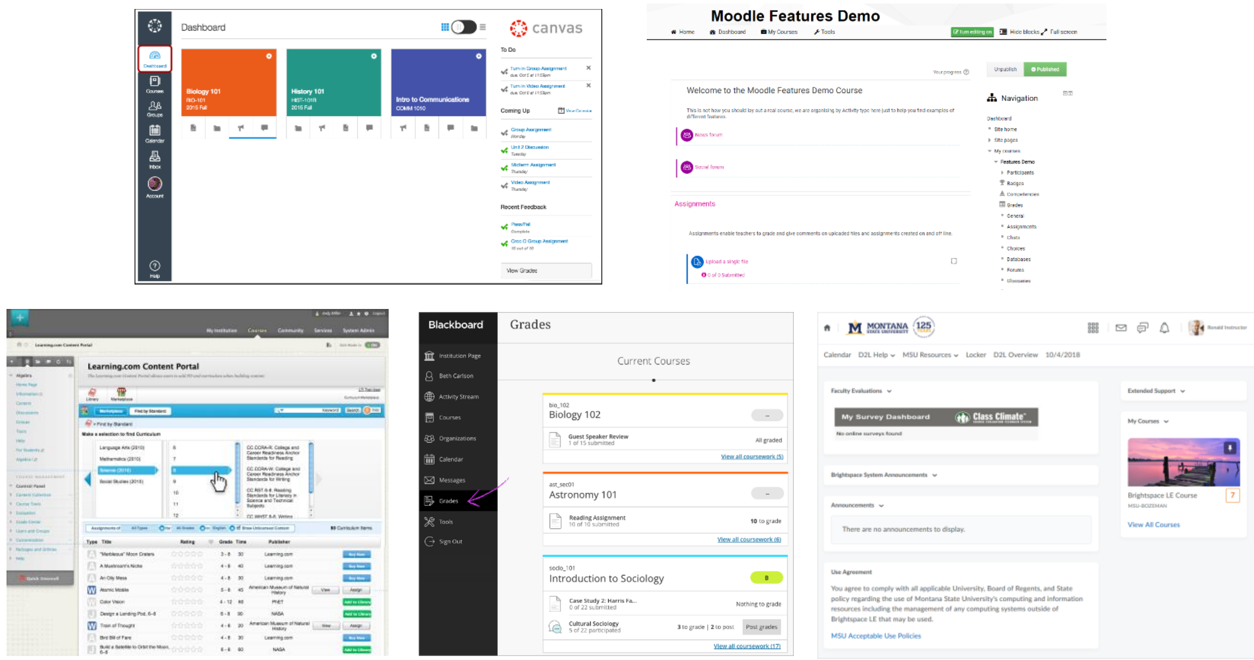
	FISCAL YEAR ENDED (Bull Bridge)												
	FYE December 31,												
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Subscription & Support	$ 22	$ 38	$ 62	$ 97	$ 140	$ 191	$ 242	$ 297	$ 357	$ 428	$ 519	$ 636	$ 794
Canvas		$ 38	$ 62	$ 96	$ 135	$ 181	$ 224	$ 265	$ 301	$ 333	$ 362	$ 385	$ 404
Bridge				$ 1	$ 5	$ 10	$ 18	$ 32	$ 56	$ 95	$ 157	$ 252	$ 390
Professional Services	$ 4	$ 6	$ 11	$ 14	$ 19	20	25	30	36	44	54	67	83
Total Revenue	$ 26	$ 44	$ 73	$ 111	$ 159	$ 211	$ 267	$ 327	$ 393	$ 472	$ 573	$ 703	$ 877

Highlighted metrics: Expected

	FISCAL YEAR ENDED (expected)												
	FYE December 31,												
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Subscription & Support	$ 22	$ 38	$ 62	$ 97	$ 140	$ 191	$ 242	$ 297	$ 351	$ 409	$ 472	$ 546	$ 629
Professional Services	4	6	11	14	19	20	23	26	30	35	38	41	43
Total Revenue	$ 26	$ 44	$ 73	$ 111	$ 159	$ 211	$ 264	$ 323	$ 381	$ 444	$ 510	$ 586	$ 672
% Growth													
Subscription & Support		*69.6%*	*64.0%*	*55.5%*	*44.1%*	*36.6%*	*26.4%*	*22.8%*	*18.3%*	*16.5%*	*15.6%*	*15.5%*	*15.2%*
Professional Services		*73.9%*	*71.4%*	*28.3%*	*37.2%*	*6.8%*	*12.9%*	*14.9%*	*15.7%*	*17.2%*	*7.3%*	*6.8%*	*6.4%*
Total Revenue		*70.2%*	*65.0%*	*51.5%*	*43.2%*	*33.1%*	*25.1%*	*22.1%*	*18.1%*	*16.5%*	*14.9%*	*14.9%*	*14.6%*
Subscription & Support	9	12	18	24	34	46	57	68	79	91	103	116	131
Professional Services	2	3	6	8	12	15	18	21	25	29	31	33	35
Total COGS	11	15	24	33	46	61	75	90	104	120	134	149	166
Subscription & Support	14	26	45	73	106	145	185	228	271	318	370	429	498
Professional Services	2	3	4	5	7	5	5	5	6	7	7	8	8
Total Gross Profit	15	29	49	78	112	150	190	233	277	325	377	437	506
Subscription & Support - Gross Margin	*61.8%*	*68.2%*	*71.7%*	*75.0%*	*75.5%*	*76.0%*	*76.5%*	*76.9%*	*77.4%*	*77.8%*	*78.3%*	*78.7%*	*79.2%*
Prof. Services - Gross Margin	*43.3%*	*52.4%*	*40.4%*	*38.3%*	*36.3%*	*25.8%*	*22.0%*	*18.6%*	*18.6%*	*18.6%*	*18.6%*	*18.7%*	*18.7%*
Total Gross Margin	*59.2%*	*65.9%*	*67.1%*	*70.5%*	*70.8%*	*71.2%*	*71.8%*	*72.2%*	*72.7%*	*73.1%*	*73.8%*	*74.5%*	*75.3%*
S&M	21	35	53	70	84	104	123	140	154	166	180	195	211
R&D	11	21	24	36	48	62	75	87	97	107	115	123	131
G&A	5	11	23	26	31	36	39	41	45	48	50	52	59
Other Opex													
EBIT	$ (22)	$ (39)	$ (52)	$ (53)	$ (51)	$ (52)	$ (47)	$ (35)	$ (19)	$ 4	$ 31	$ 67	$ 105
% Margin	*(83.8%)*	*(87.3%)*	*(71.0%)*	*(48.1%)*	*(32.0%)*	*(24.5%)*	*(17.9%)*	*(11.0%)*	*(5.0%)*	*0.9%*	*6.1%*	*11.4%*	*15.6%*
Interest Income	0	0	0	0	0	1	-	-	-	-	-	-	-
Interest Expense	(0)	(0)	(0)	(0)	(0)	(0)	-	-	-	-	-	-	-
Other	(1)	(3)	(1)	(0)	0	(0)	-	-	-	-	-	-	-
PBT	$ (23)	$ (41)	$ (53)	$ (53)	$ (50)	$ (51)	$ (47)	$ (35)	$ (19)	$ 4	$ 31	$ 67	$ 105
Income Tax Expense (Benefit)	-	0	0	0	(0)	0	-	-	-	-	-	-	-
Net Income	$ (23)	$ (41)	$ (54)	$ (54)	$ (50)	$ (52)	$ (47)	$ (35)	$ (19)	$ 4	$ 31	$ 67	$ 105
% Margin													
FD Sharecount	4	6	9	28	29	36	39	42	45	47	49	52	55
EPS	$ (6.26)	$ (7.50)	$ (6.07)	$ (1.92)	$ (1.69)	$ (1.42)	$ (1.20)	$ (0.84)	$ (0.42)	$ 0.09	$ 0.63	$ 1.28	$ 1.91
D&A	2	2	3	4	7	12	15	18	21	25	28	33	37
GAAP EBITDA	(20)	(37)	(49)	(49)	(44)	(40)	(33)	(17)	2	29	60	99	142
% Margin													
Cash Flow from Operations	(9)	(20)	(20)	(22)	(21)	(11)	(2)	15	39	70	106	152	203
Capex	1	2	7	7	16	13	15	16	17	20	24	27	30
FCF	(10)	(22)	(27)	(28)	(37)	(24)	(17)	(1)	22	50	82	125	173
FCF/Share	$ (2.72)	$ (3.97)	$ (3.01)	$ (1.01)	$ (1.26)	$ (0.66)	$ (0.44)	$ (0.02)	$ 0.49	$ 1.06	$ 1.66	$ 2.41	$ 3.15
Expense Metrics													
% of Revenue													
S&M	*79.5%*	*79.8%*	*73.0%*	*63.1%*	*52.7%*	*49.4%*	*46.4%*	*43.3%*	*40.3%*	*37.3%*	*35.3%*	*33.3%*	*31.3%*
R&D	*43.1%*	*48.0%*	*33.0%*	*32.4%*	*30.4%*	*29.5%*	*28.5%*	*27.0%*	*25.5%*	*24.0%*	*22.5%*	*21.0%*	*19.5%*
G&A	*20.4%*	*25.4%*	*32.1%*	*23.0%*	*19.6%*	*16.8%*	*14.8%*	*12.8%*	*11.8%*	*10.8%*	*9.8%*	*8.8%*	*8.8%*
D&A	*5.9%*	*4.7%*	*4.1%*	*4.0%*	*4.3%*	*5.6%*	*5.6%*	*5.6%*	*5.6%*	*5.6%*	*5.6%*	*5.6%*	*5.6%*
Tax Rate													
FD Sharecount Growth (PoP)		*51.4%*	*60.0%*	*215.0%*	*5.6%*	*23.1%*	*8.9%*	*7.2%*	*5.6%*	*5.3%*	*5.3%*	*5.3%*	*5.3%*

Appendix 1. Competitive LMS Market Analysis

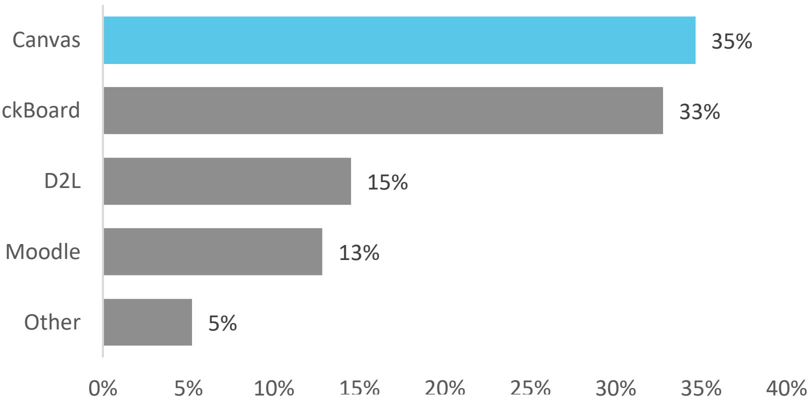
Visual Representation of LMS Market



From top left to bottom right: Canvas, Moodle, BlackBoard Learn (majority of BlackBoard user's experience), BlackBoard Ultra and D2L BrightSpace.

Market Overview: US Higher Education

Instructure estimates that domestic Higher Education LMS market has a TAM of close to $1B. Instructure's largest competitors in this market are Canvas, BlackBoard, D2L and Moodle, with market shares of 35%, 33%, 15% and 13% according to eLiterate. While the market looks like a fair competition, Canvas and D2L have a serious advantage: Their products are modern, and both are backed by healthy institutions. Blackboard and Moodle, which control nearly half of the domestic Higher Ed, LMS market, are both in rapidly deteriorating situations, detailed below. Higher Ed LMS solutions cost similar amounts, around $10-15 per student with 24 million students in the market. LMS contracts are signed in 3-5 year intervals and are considered extremely sticky. In Higher Education, institutions use LMS to integrate the classroom with the internet. A typical LMS provides a landing page for the class, organizes class documents, collects assignments, delivers quizzes and posts grades.



Canvas

The largest competitor in the U.S. Higher Education LMS market is Canvas. Canvas is able to separate itself from the competition through the user-

friendly experience they deliver to their customers, evident by Canvas's Amazon equivalent net promoter score of 69. Canvas delivers a seamless experience through the use of a cloud based multi-tenant architecture, which is an environment where all customers are on the same version of the product which is centrally hosted off-premises with no custom built solutions. This one size fits all approach enables effortless support operations and guaranteed uptime previously not possible in the old LMS model.

From our analysis of 50 publicly available Canvas subscription agreements, we found that Instructure charges a variable rate per student, on average $12.5 but ranging from $8 to $30, depending on the contract size. Most contracts ranged between 3 and 5 years, had a $20,000 yearly minimum, and saw rates automatically increasing on average 3.9% YoY. Canvas is able to increase the average revenue per user to $15.7 by selling support packages and additional add-on products. The rates Canvas charges are similar to competitors.

BlackBoard
BlackBoard, founded in 1997, was the original leader in LMS solutions with BlackBoard Learn. When the product was created, an on-premises installation with custom built websites for each school was state of the art, and this enabled BlackBoard Learn to take a nearly 65% market share by 2008. But instead of attempting to maintain this market through continuous innovation, BlackBoard focused on other add-on areas such as payment and physical hardware solutions, and this pivot and lack of investment in LMS eventually made its customers hate them. In 2011, Providence Equity Partners acquired BlackBoard and their mission was quickly changed from products to profitability, which eventually led to a complete stop of investment in the LMS space.

In 2018, BlackBoard held onto an estimated 33% of the U.S. Higher Education LMS market. They are pushing two relatively new products: BlackBoard Ultra (a face lift) and BlackBoard SaaS (a real Canvas competitor). Much of Blackboard's market share is likely still left undefended, as approximately 30-35% of their customers use legacy on premise solutions, while only 10-15% of all BlackBoard customers have upgraded to BlackBoard SaaS. Despite these changes, even in 2018, customers completely hate the product, and this is a big problem from BlackBoard.

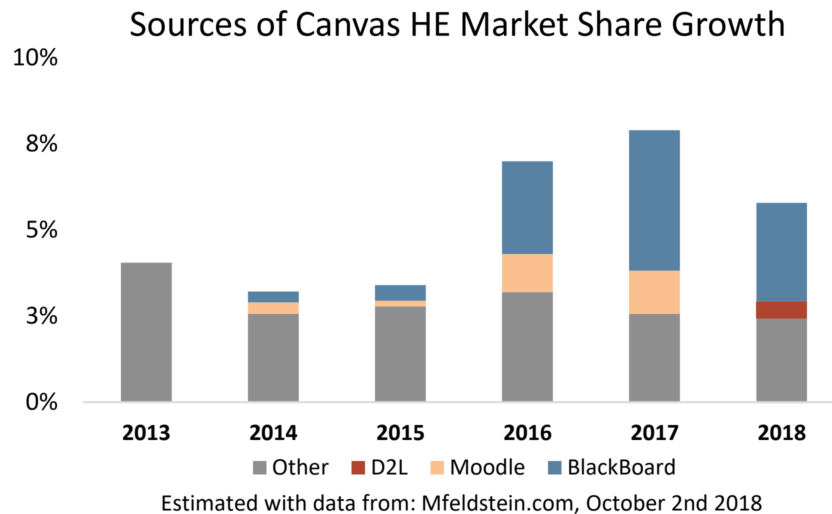
Regardless of the success of BlackBoard SaaS, BlackBoard cannot afford to continuously fend off competitors–they simply do not have the cash. BlackBoard's balance sheet is levered 11x Debt/Ebitda, with $350mm of debt due April 2019 currently yielding 23%. The market is pricing these bonds as if bankruptcy is imminent, and their private equity owner, Providence, which has had several other large educational bankruptcies, has been looking for to sell the business for years.

Moodle (13% of market):
Moodle is a very popular open source LMS used extensively in both Higher Ed and K-12. Where Moodle lacks functionality, it makes up in price–in most cases Moodle is free. Moodle can be installed on-premises and maintained by the school at no charge, or it can be purchased as a SaaS solution through a product such as MoodleRooms or MoodleCloud.

Moodle outlook is poor: Current metrics indicate that Moodle's user base is ripe for disruption: 50% of Moodle users are running obsolete versions, while 55% of users are using on-premise solutions. 1/3rd of Moodle's stickiest users, the ones in the cloud, are using Moodlerooms, a product sold and supported by BlackBoard. Moodle's open source platform limits new functionality to user contribution and any possible improvements to the official Moodle platform are funded by small fees Moodle receives when a consultant or integrator provides a customer with Moodle, limiting the resources Moodle can spend on the product to compete with Canvas and Blackboard. By lacking a direct sales force, it is nearly impossible for Moodle to win an additional customers. Of the institutions in 2016 that had Moodle and went to another LMS, 80% went to Canvas. Moodle's UI is pretty, but not advanced; the technical capabilities are similar to WordPress and are far behind Canvas and BlackBoard.

In August of 2018, BlackBoard and Moodle ended an agreement allowing BlackBoard to use the Moodle brand for MoodleRooms. BlackBoard has stated that they will continue to support legacy MoodleRooms

products, and it is likely BlackBoard will attempt to convert MoodleRoom users to BlackBoard Learn. In Moodle's 18th year (2017), Moodle raised $6mm of funding. Moodle also has their own SaaS solution: MoodleCloud. MoodleCloud is growing, but as a proportion of Moodle users, it is largely stagnant and irrelevant.



We estimate that in the next 5 years, LMS customers with on-premises installations and MoodleRoom users will look for a new LMS provider. Applying a slightly lower win rate for Canvas to the market share as described above, Canvas should be able to increase their market share by 15% over the next 5 years. This growth would be slightly below management's estimate that the U.S. Higher Ed Canvas market should continue to grow at $20m a year in the future.

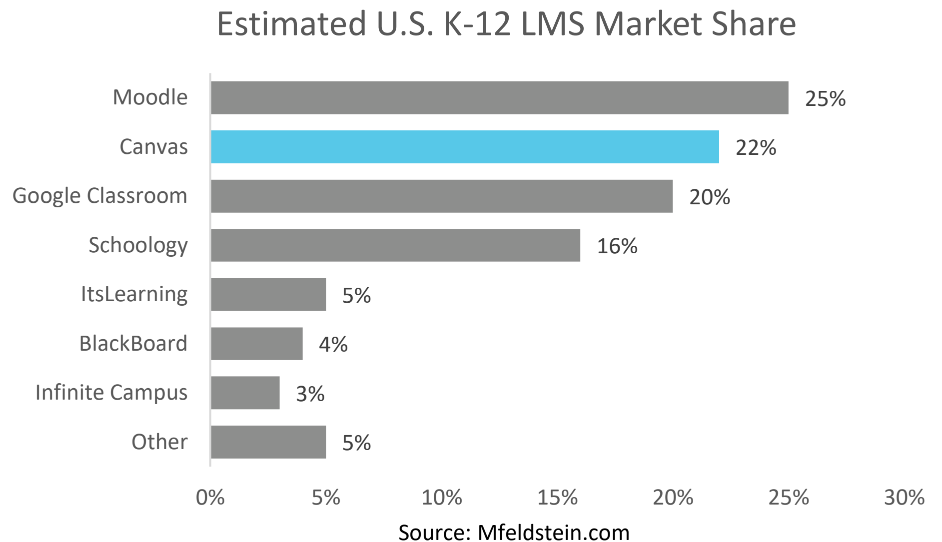
Market Overview: K-12

Compared to the Higher Education market, the K-12 LMS market is more competitive, with many smaller firms competing for a niche. Instructure estimates the K-12 TAM at $300mm, and recently doubled it to $600mm when considering add-on products such as Arc and Gauge. The four largest competitors in K-12 control 83% of the market vs. 91% in Higher Ed. The largest competitors are Moodle (25%), Canvas (22%), Google Classroom (20%) and Schoology (16%).

Historically, the K-12 LMS market has been more cost restricted, with no value-add for a fancy computer system. However, technological advancements have increased this value-add in recent years through functionalities such as auto-grading homework assignments, which can reduce teacher's workloads significantly. For example, a teacher who spends one-minute grading two multiple choice assignments per week with 200 students would spend 7 hours per week grading, while an LMS can do this process within a minute. Some LMS platforms are rolling out functionality to grade grammatical mistakes, while many already use an add-in program to detect plagiarism. Auto-grading enables students to get instant feedback on assignments and can see a detailed correct answer with a distribution visualizing their score compared to others. Once a teacher spends time to integrate their assignments with an LMS, they can easily roll the class over next year, but only if your school doesn't change their LMS provider. This is a nice feature of an

LMS: the more content a teacher posts, the more frustrated they would be if their school changed LMS platforms.

Google Classroom and Moodle are the least expensive and least advanced solutions for K-12. Google Classroom tilts more towards a document management system which integrates with existing Google Services, but it does provide basic LMS functions as well. Schoology is an advanced niche competitor in this market, with a service that is essentially the same as Canvas that but is solely focused on the K-12 market.



Canvas is slightly deterred from being more aggressive in the K-12 environment as these schools have fewer users and smaller contracts. When Canvas does compete, they often sign contracts with entire school districts. A sample of publicly available documents shows that Canvas charges K-12 institutions between $4 and $9 per student, varying based on the total number of students in the deal, significantly less than they charge Higher Ed institutions. The weighted average deal for K-12 was $4.62 per user. The lower price point is a reflection that Canvas charges less for K-12 and districts often pay for all K-12 students, even though it is unlikely that lower grades use the product. Adjusting to remove grades K-3, the average price per head is likely $6.69 per actual user. Schoology is priced at a similar rate and is willing to compete for smaller districts. Within K-12, Instructure has >100% retention ratio, a CAC of below 2, and a higher gross margin is than compared to the Higher Education business.

A worrisome trend discovered in the analysis of K-12 contracts revealed that about 40% of Canvas's K-12 customers purchased a "reoccurring support service" package in year 1, but this support package was not auto renewed in future contract years. The fee for this support ranges from 20-30% of the annual cost of the contract, so removing it appears to have a negative skew on revenue retention. Revenue retention often shows how sticky a product is, but in Instructure's case, this negative skew likely makes it appear that revenue retention is artificially lower in the first year of assessment. While a significant amount of K-12 deals we found had declining average revenue in the first year due to significant cancelation of support packages, this trend will eventually lead to a longer term healthier momentum. Management has previously highlighted that K-12 sales were very strong in the summer of 2017.

The market opportunity in K-12 is more restrictive for Canvas. Google Classroom and Moodle will likely bleed market share, while Canvas and Schoology will take it. The industry will likely see further consolidation, similar to what occurred in Higher Ed. We estimate that going forward Canvas's win ratio will be lower in this market, considering the near identical products being offered by Schoology and other firms. We think that on-premises Moodle customers are likely to consider alternative LMS solutions, and that Google Classroom use could shrink by 25% as customers get more familiar with the value add from a premium LMS. If it is likely Canvas can win 50% of the market share coming up for renewal outlined above, we estimate Canvas could grow their K-12 market share by an additional 11.25%.

Market Overview: International

The international market for K-12 and Higher Ed is Canvas's final growth frontier. The market has similar characteristics to domestic Higher Ed, with a small amount of SaaS penetration and market domination by Moodle, BlackBoard, and an additional Moodle like competitor, Sakai. The International LMS market is

largely a greenfield option, with the most difficult part according to management being the sales and marketing approach. The cost to expand Canvas to a new region is minimal, with the company stating it only costs Instructure $30K to code an additional language. 19% of Instructure's revenues are International related, with International's run rate revenue increasing 16mm Y/Y in the latest period. Instructure estimates the total Canvas International Higher Ed and K12 market TAM at $600mm and that Canvas currently has less than 5% market penetration.

High Ed: Competitive Environment Fallout:

BlackBoard's PE owners, Providence Equity Partners, have pushed BlackBoard into a terrible position through years of focus on profits over R&D. In order to salvage the small amount of their remaining market share, BlackBoard needs to literally flood the market with R&D and S&M. But this is not possible, as Providence Equity Partners gave BlackBoard the gift of $1.7B in debt (80% floating rate), an amount that weighs in at 11x their 2017 EBITDA. As the situation continues to spiral out of control (Q1'18 EBITDA -15% Y/Y), yields on their unsecured debt due 2019 and 2020 have skyrocketed to 22%. S&P has effectively ticked Blackboard's outlook down three different times year to date, with the last rating in September at CCC with negative outlook. S&P expects continued negative free operating cash flow "over the next serval years" and believes that Blackboard's capital structure is "unsustainable". BlackBoard has hired a restructuring firm, but its options appear "Toys-R-Us" limited; being that although the entity is cash flow positive, no possible split up could create the needed cash to pay obligations while keeping equity attractive. BlackBoard is apparently considering selling their payments business, but it is unclear if that would flush BlackBoard with enough cash to pay obligations. BlackBoard has at least $350mm in debt due early 2019.

Since institutions pay BlackBoard for services a year in advance, a default by BlackBoard would likely cause concern, and as unsecured creditors of BlackBoard, nearly all customers would likely receive some kind of notice, possibly accelerating the rate at which institutions look for a replacement.

These serious issues, combined with the fact that Canvas is a very attractive product, make it even more likely that a large portion of BlackBoard and Moodle market share, could be turned over to Canvas within the next 5 years. Our projections do not account for this.

Stickiness:

The best part about system wide consumer software, is the stickiness. Educational software is no different: Between 2008 and 2018 BlackBoard lost only half of their market share in a period where nearly all of their customers absolutely hated the product. Instructure has noted that of the 30% of contract proposals they lose, nearly all of the contracts go to the incumbent, solely because the school doesn't want to change at the current time.

Sticky products strive in bureaucratic empires, and the educational system is the mother of all bureaucratic empires: it is home to inefficiently allocated capital, labor unions, and tenured professors. These environments naturally build walls to disincentivize change and make it incredibly burdensome on the individual who demands it. For example, many institutions require board approval for large contracts over 100k, which means a full proposal and a newly formed committee are needed. A committee will ask each user what they want, and each user will not want to relearn a new system reprogram their entire class.

The uphill battle for an individual to replace an LMS essentially requires convincing every single person who works at the school that it would be worth it worthwhile, a difficult task especially if the current product is not that much different from the competition.

As long the current LMS keeps up with LMS trends, it is unlikely that they can be replaced. With SaaS solutions such as Canvas and Schoology, where the product is updated for all of their users nearly every single day, it is difficult to imagine an environment where these systems fail to innovate.

Important Disclosures/Information:

I and other parties that I advise own this stock. I and these other parties may change our view without informing the readers of this paper. This paper will likely not be updated.

This paper was written in October of 2018, and made publicly available in late December 2018, and thus, is not updated for the latest current information. This pitch was written for my personal use.

All information and data in this document is for informational purposes only, intended for my personal use. I make no representations as to the accuracy, completeness, suitability, or validity, of any information. I will not be liable for any errors, omissions, or any losses, or damages arising from its display or use.

Investments involve the risk of permanent loss of capital.

Contact: williamtylko@me.com