VOSS CAPITAL

10/18/2019

Rosetta Stone (RST) | $16.90 | Market Cap: $407M | EV: $404M | EV/2020 Recurring Revenue: 2.0x

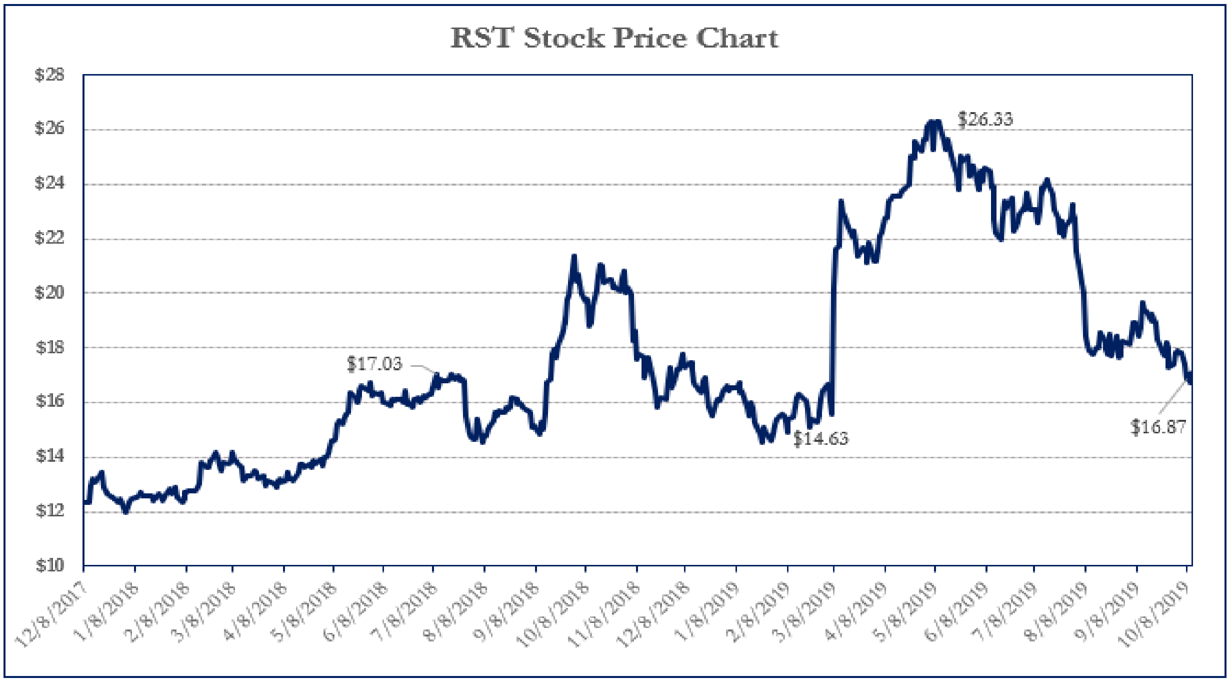
Executive summary: We believe **Rosetta Stone has the best risk/reward ratio of any of the US publicly traded software firms**. The stock has over 90% upside in our Base Case, only about 17% downside in our punitive Bear Case and 244% upside in our Bull Case (which is close to management's guidance) which still puts it at about half the valuation of its trading comp group (4.3x EV/Sales versus ~8x for software firms growing 30%). **In fact, this scenario reminds us of our first write-up on PAR Technology (PAR), whereby a tremendous growth story gets consistently overlooked for all the wrong reasons.**

On Slacktide's 2021 Estimates	Bear Case	Base Case	Bull Case
Target Price	$ 13.98	$ 34.24	$ 56.22
Implied EV	$ 252,000	$ 653,000	$ 1,075,000
EV/Sales	1.5x	3.0x	4.3x
EV/Gross Profit	1.9x	4.1x	5.4x
EV/EBITDA	14.0x	20.7x	26.9x
EV/FCF	20.2x	19.5x	23.9x
~EBITDA	$18,000	$31,504	$40,000
~Gross Profit	$134,400	$173,600	$200,000
~FCF	$20,000	$33,504	$45,000

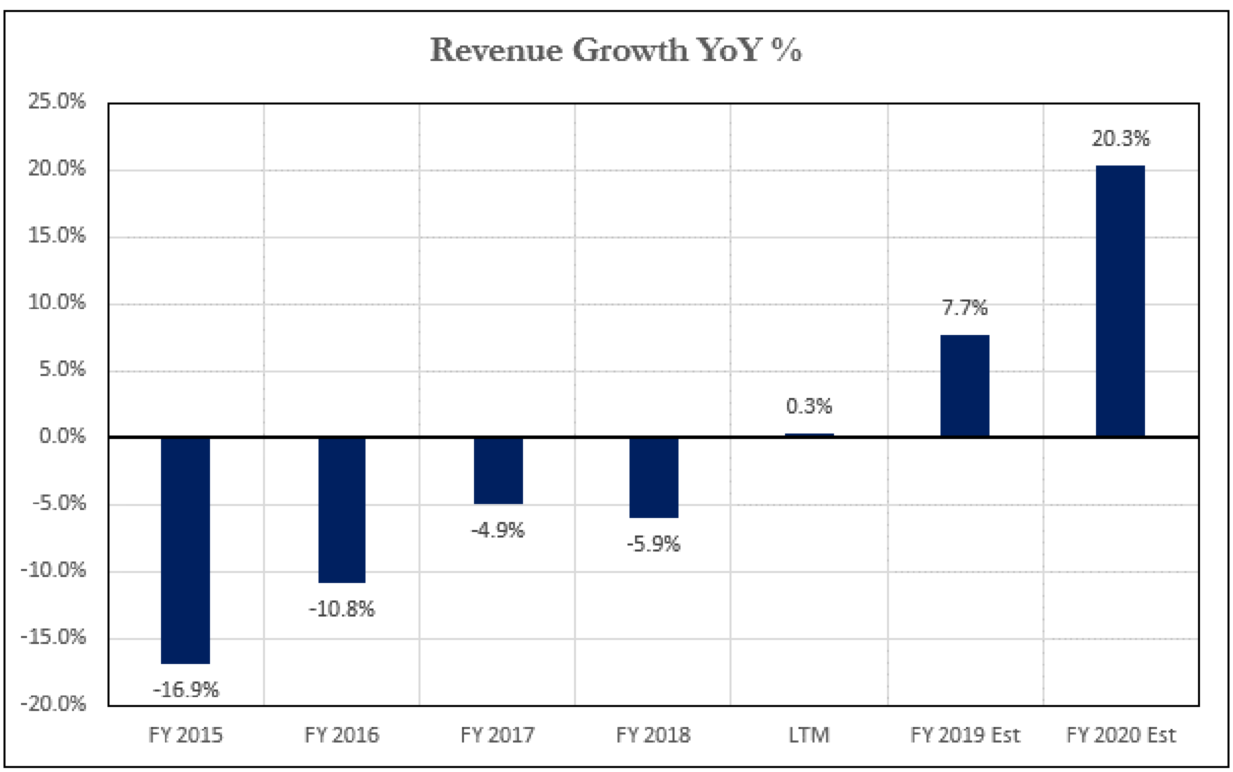
Rosetta Stone hasn't yet been able to shake the negative stigma and jaundiced image from the time they were burning lots of cash and selling the ubiquitous yellow language CD boxes in mall kiosks. Many on the buy side react in disgust at the mention of the name and believe their consumer language learning business is "going away" or "worth zero." Contrary to this misinformed and consensus view, they have in fact been growing the subscriber base at a brisk 23% CAGR the last four years.

In addition to the growing Language business, RST owns the leading Literacy software franchise, Lexia, which we believe the market is currently under valuing as well as missing the critically important and large opportunity forthcoming from their new English Language Learning (ELL) product that is launching in 2020. Rosetta is starting to screen better, as the company will return to 15-20% consolidated year-over-year revenue growth in 2020, with the more valuable business, Lexia, likely growing billings over 30% next year. With Lexia billings approaching $100 million next year, along with a 90% recurring mix with >100% revenue retention along with emerging profitability and evangelical user support, we believe Lexia on its own is worth $600-$800 million. Given the activist ownership and board representation, along with the upcoming ELL split, we believe the company will move to unlock this value in 2020 by either selling the company in two pieces, selling the entire company, or spinning off Lexia as its own public entity.

Key Statistics ($ in millions)					
52-Week Range	$14.3 - $26.87	$ in Millions	LTM	FY 2019	FY 2020
Avg. Daily Volume (3-mo)	166,916	Revenue	$177.9	$187.0	$225.0
Market Cap	$407.6	% Change y/y	$0.0	$0.1	$0.2
Enterprise Value	$404.6	EBITDA	($35.0)	$6.1	$21.0
Shares Outstanding	24.03M	% Margin	-19.7%	3.3%	9.3%
Float %	93.1%	EV/Sales	2.3x	2.2x	1.8x
Institutional	95.3%	EV/EBITDA	-	66.1x	19.2x
Analyst Coverage	3 analysts	Consensus Price Target		$29.33	

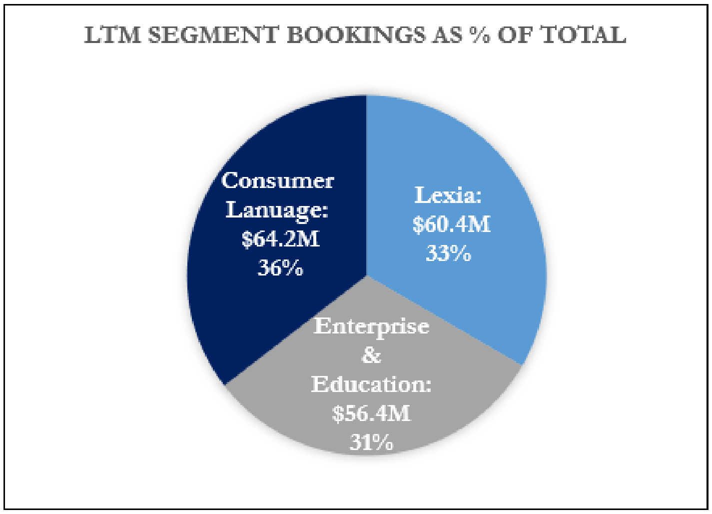


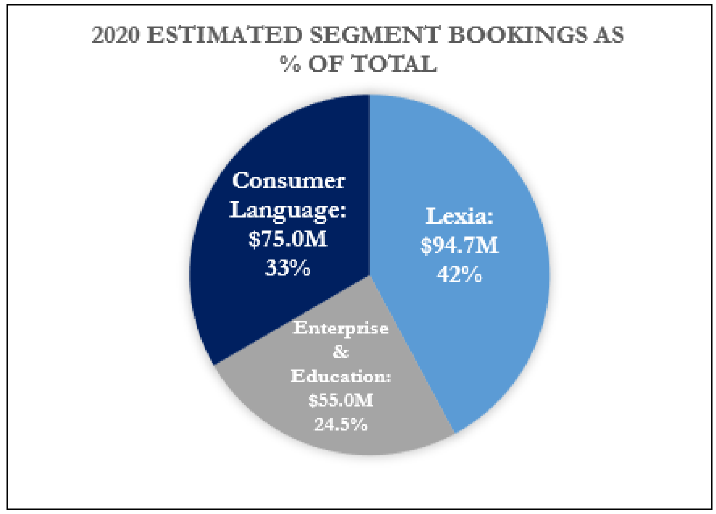
For several years now, RST has been screening poorly and hasn't looked appealing to investors taking only a cursory glance. It hasn't appealed to growth-oriented software investors as they've undergone a SaaS transition that has hurt revenue growth, and it hasn't appealed to value investors who are screening on EBITDA or FCF. This is about to change as the company will begin to show accelerating revenue growth and expanding profitability simultaneously. If history is any guide, this combination in software stocks has been a recipe for our largest investment winners ever. While the stock did not get the respect or high multiple of the software high-flyers, it has caught all the downside in the internet and enterprise software stock correction of late. This initial reaction has created a very attractive entry point right as we believe the rubber will meet the road in their all-important third quarter. **Namely, we believe the stock has already priced in a material miss in Q3 and has de-risked ahead of the quarter due to extreme investor skepticism over their ability to hit prior guidance.**



Segment Analysis

Rosetta is really three distinct businesses in one, although two have a lot of overlap, those being Education & Enterprise (E&E) and Consumer Language.





As we will discuss in detail below, Lexia will balloon to likely over 40% of total billings from 33% last twelve months and less than 7% when it was acquired.

Lexia ("Literacy")

Lexia is undoubtedly the crown jewel of Rosetta. It teaches children how to read with gamified software. The company was founded over 35 years ago and started as a product primarily for students with significant reading disabilities but has since evolved to become a product that entire classes use as a critical part of their reading curriculum. They have two literacy products--their Core5 product that covers kindergarten through 5th grade, and their PowerUP product that covers 6th to 12th grade, while also having a reading assessment product called RAPID and their portal product, MyLexia.

Core5, the undisputed flagship product, has a systematic and structured approach and targets six reading areas, which include:

1. Phonological Awareness (Pre-K through kindergarten)
2. Phonics (Pre-K through second grade)
3. Structural Analysis (third grade through fifth grade)
4. Fluency (Pre-K through fifth grade)
5. Vocabulary (Pre-K through fifth grade)
6. Comprehension (Pre-K through fifth grade)

Core5 is arguably tackling a national crisis. The National Center for Education Statistics claims that two-thirds of 4th grade students in the US are "non-proficient readers," meaning they don't read at their grade level. Once students fall significantly behind in their reading proficiency, there is strong correlation to future negative adverse events in their future.

US policy is encouraging the adoption of technology in the classroom, especially adaptive, personalized learning products. The now ubiquitous use of tablets and computers in classrooms promotes interactive courses and gamification of learning, all of which play to Lexia's strengths. Here is a link to the National Education Technology Plan, the "flagship educational technology policy document for the United States": https://tech.ed.gov/netp/

Summary of some key highlights from the report that are relevant to Lexia:

- The #1 goal is empowering learning through technology
- Educators are shifting away from a "one size fits all approach" - A focus will be given to using tech to personalize learning – one of the core strengths of Lexia

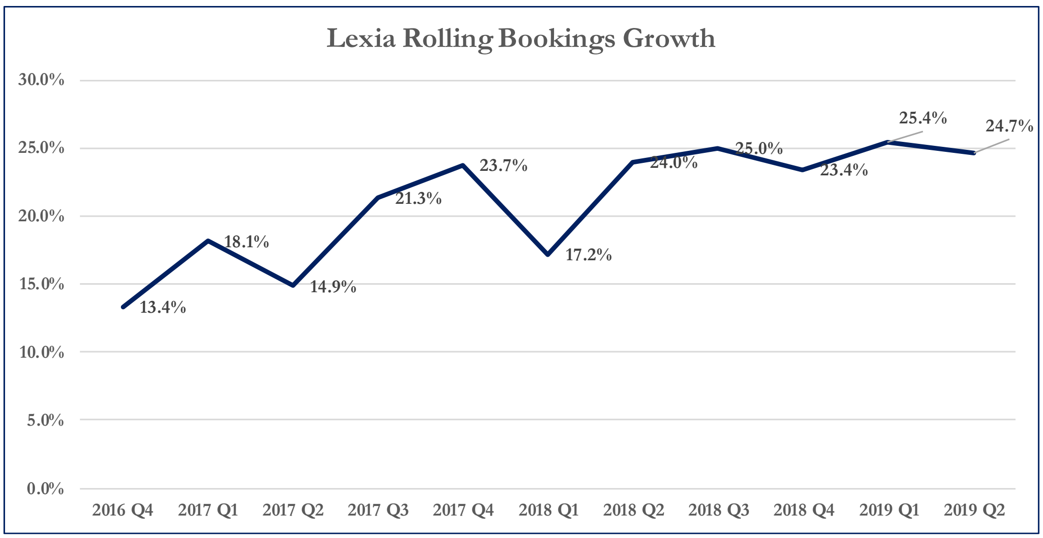
- Increase the use of "sophisticated software" that allows for adaptive real-time assessment of each individual student's progress that comes with personalized instructions/lesson plans for the teacher—this pretty much sums up what Lexia aims to accomplish: Personalized, adaptive, data-driven (and patented) "assessments without testing."

For Core5, assessment is incorporated throughout the content, meaning there is no pausing to take an extra assessment test. It offers dynamic feedback student-by-student, and the teacher can monitor and receive suggested lesson plans to help students with their weaknesses. Per the report linked above, many school districts have been left behind "which underscores the need to accelerate and scale up adoption of effective technologies."

We believe part of Lexia's competitive moat is the 17 peer reviewed studies supporting Lexia's validity and efficacy claims. Lexia is proven to help close the achievement gap.

Lexia primarily competes against small, private companies like Curriculum Associates, iStation, and Imagine Learning, each of which have their own strengths and weaknesses. iStation and Curriculum Associates for instance are known for their strong assessment products, while Imagine Learning is known for its strong English language learning (ELL) product.

Lexia has shown rolling billings growth of 24-25% for the past several quarters and we believe this will continue in 2019 and into 2020/2021. We believe they will approach $100 million in 2020 billings (~$95mm) and over $80 million in ARR by the end of 2020, clocking in at a 25-30% growth rate.



We believe if you look at the profile of Lexia in isolation, you are looking at a business that is currently worth at least $400 million and could easily grow to in excess of a billion-dollar valuation over the next few years with continued sharp execution.

Consider Lexia's attractive business characteristics:

- Underlying customer retention: low to mid 90%, which is extremely high in the Ed Tech space
- Revenue retention: at 100% but will likely move materially higher in 2020/2021 with their ELL launch
- ~90% of bookings are pure recurring, high margin software revenue, with the remaining 10% training revenue also highly recurring (~70%)
- Aggregate gross margins (we believe) in the 75-80% range and climbing as they scale
- Emerging profitability with management citing incremental revenue dollars coming in at 40-50% margin
- A large TAM with a large opportunity to develop or acquire adjacent products (for instance, a math product) and become a platform play
- Strong growth visibility due to its go to market approach of infiltrating districts in one school, showing efficacy at that school, then getting rolled out to the full district over time
- A newly upgraded direct salesforce that is now much larger and fully seasoned since they transitioned away from resellers
- Relatively strong moat in that this product has been built and iterated upon for over 35 years and has many PhDs in language and language development. In other words, you won't get a couple Silicon Valley bros in a garage coming up with a product that disintermediates this product over a weekend (or a year)

- A product that is:
    - tackling a core problem facing the US today
    - at the core of most curriculums--reading is consistently cited as the most important and challenging elementary school subject
    - has scientific and state-wide studies showing strong efficacy and usage of the product
    - unusually beloved by its users, boding well for product upsell
    - can be seen (and should be marketed by Rosetta from an IR standpoint) as a socially responsible product
    - not in danger of becoming obsolete (reading will always be an important skill)

Taking this all together, we believe Lexia should be worth **at least** 4x 2020 billings (~$100 million*4= $400 million). With the current EV of the whole company at around $350 (end of year cash balance of ~$42 million from seasonal low point in Q2), we believe this significantly de-risks the story even if growth comes up a little short or if software/internet multiples continue to compress. However, we view that $400 million valuation on Lexia alone as quite conservative. If Lexia were a public company and didn't have the Rosetta Stone "stink" associated with it, we believe Lexia would be valued in the $600-$800 million range right now, or 6-8x 2020 billings, taking all of the characteristics listed above and comparing to other 25-30% software growers (see 10/14 DDOG initiation by Goldman Sachs showing 30% software growers at 16x sales).

Below we touch on and expand on some of the areas described above to help clarify the opportunity and visibility.

Lexia History and Progression

When Lexia was acquired by Rosetta Stone in July of 2013 (for 4.75x trailing revenue), it looked very different from the company it is now and the company we believe it will become in 2019-2021. At that time, Core5, the flagship product that has resulted in an explosion of growth the last few years, was just being released for the first time. The company primarily sold their product as a perpetual license (as opposed to subscription), sold mostly through the channel (versus direct salesforce), and was primarily selling on a per student basis as opposed to a school wide license.

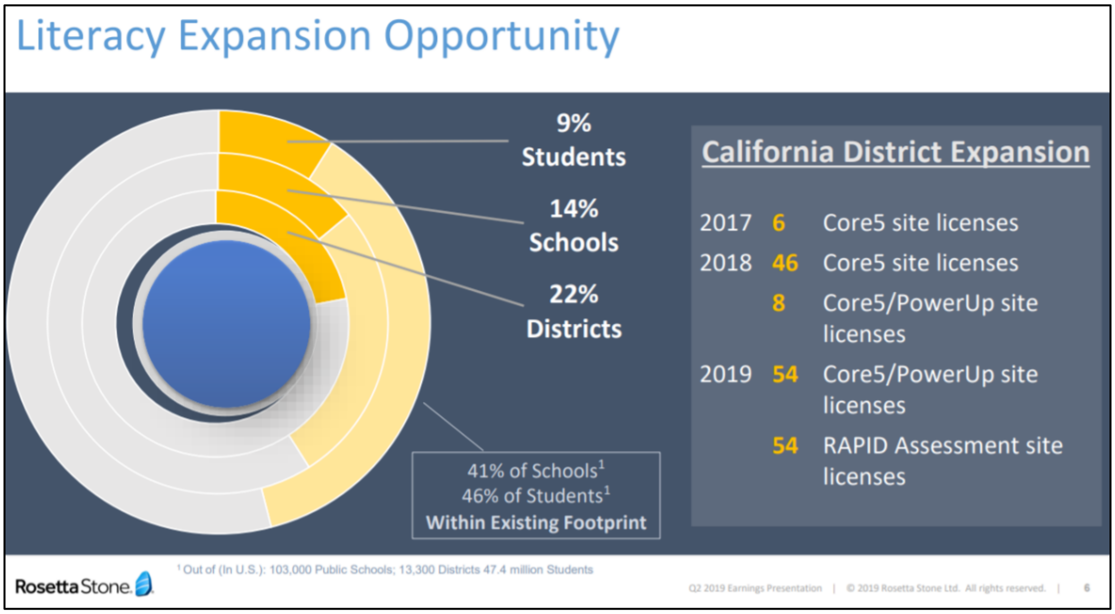
We believe the company made a lot of difficult decisions that we are now starting to see the fruits of, including:

- Significant ramp in R&D investments, consistently encompassing close to 30% of sales, to build out new products and improve the Core5 product, resulting in an industry leading Literacy product, a strong Assessment product in RAPID (2016), a strong middle school and high school product in PowerUP (2018), and in 2020 an ELL product.
- Completely building out a direct sales force and removing all but the most successful channel sellers, temporarily disrupting sales. We believe 2019 is the first year a fully polished, larger direct sales force is selling their product base.
- Completely moving to a subscription model, something they are still seeing reverberations from as they move perpetual license customers to a subscription model (modestly elevated churn)
- Aggressively moving from a per student revenue model to a full school site license model, increasing the product's stickiness

In retrospect these seem like the obvious right decisions, but at the time they were painful in the short term and risky. We applaud the management team for going through with them and building a sustainable franchise the right way, organically, at a time when Rosetta Stone as a company was in deep turmoil burning a lot of cash.

We believe the chess pieces have been placed and will see, shortly, how successful these major efforts were in the form of a large Q3 season. The third calendar quarter is by far the biggest quarter for Lexia. The product gets sold in the summer months, mostly July and August, in order to roll the product out for the school year starting in September. To this point, as a function of Lexia becoming more strategic with larger school districts, Q3 became by far the primary growth driver in 2018 and will become even more so in 2019. Some customers that might have used the product just for children with reading disabilities and bought the product on a per student basis are now waiting to renew in Q3 and upsize to a full school license.

The company does a reasonably good job in their presentation materials outlining the multiple levers for growth and how they believe they have more visibility than ever given a lot of the growth comes from expanding within the school and in turn expanding within the base.

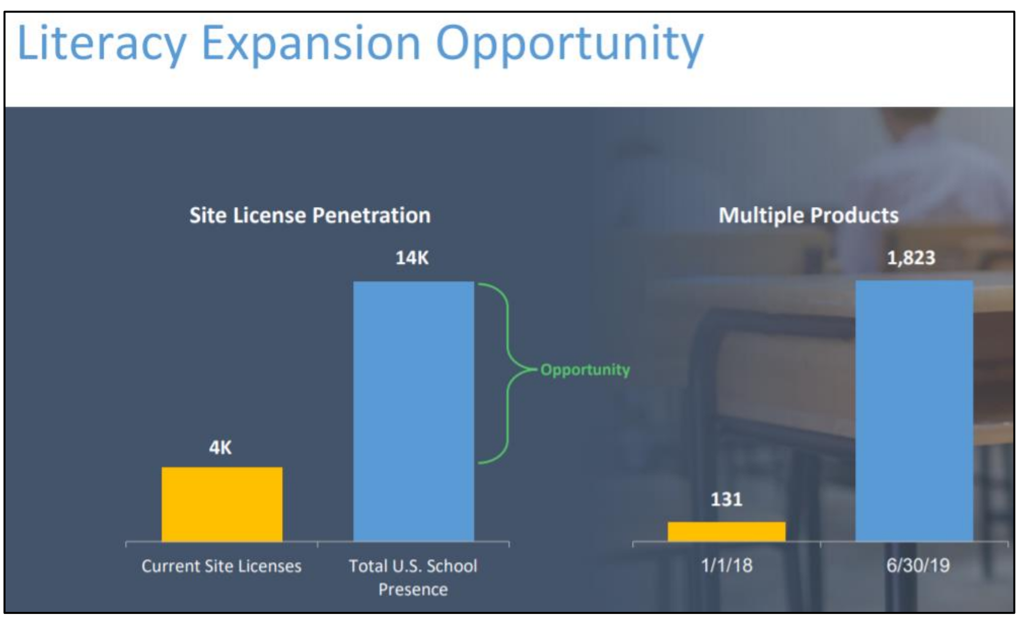


Consider the following:

- Lexia has a presence in 14,000 elementary schools (17,000 total schools) but only 4,000 have site wide licenses.
- Only 1,823 schools have multiple products (e.g. have been cross sold either PowerUP or RAPID), although this is up from 131 at the beginning of 2018.
- They have roughly 9% of students, 14% of schools, and 22% of districts on Lexia, but if they were to fully penetrate just the districts where they already have schools, they would cover 41% of total schools and 46% of students.

We estimate the average price they are getting where they don't have a full site wide license (sold on a per student basis or for a limited number of seats) is around $2,000-$3,000, while a site wide school license is $8,800 just for the software. Thus, each school that converts to using Lexia site wide is an added ~$6,500/school/year, on average. Said another way, if they just converted all their schools with student licenses to site licenses, it would add an incremental $65 million in ARR (effectively doubling 2019 ARR).

President Nick Gaehde was asked where the focus was this year, and he noted that the focus the last couple years had been to land in new districts, while in 2019 they are emphasizing expanding out within their existing base:



"So it's really both, obviously we see the bigger opportunity in expanding and the footprint we are in right now and have certainly created a sales channel and a strategy to expand in the districts we are in. It's one of the reasons we are so excited now by having a comprehensive portfolio of curriculum and assessment because we can come to the district and talk about their needs as I said before from kindergarten through 12th grade. So that is absolutely a focus. But we also know that we need to continue to drive into districts that we're not in yet. And so we do both, but certainly this year there is more emphasis on expanding in the districts that we are already in than previously."

Management claims they can go from $4k/year in revenue from a new school district in year one up to as high as $120k/year by year four.
Sample progression of school district relationship and penetration potential:

- Average school district has 10 elementary schools, 2 middle schools, 1 high school
  - Year 1: $4k in sales from small pilot of Core5 at one school
  - Year 2: $40k in sales from 4 unlimited use site licenses + some Implementation Services revenue
  - Year 3: ~$78k in sales from renewal of previous schools + four more elementary schools, + 1 PowerUP and RAPID pilot of 100 licenses at a single middle school
  - Year4: ~$120k in sales from all ten elementary schools on Core5, PowerUP and RAPID at 2 middle schools and 1 high school (30x increase over year 1)
    - Note we believe this is how management can forecast their projected growth with reasonable precision, as they are constantly rolling out larger implementations across districts

Finally, we would point out that this should be very high margin incremental revenue, as all upsell revenue generally is, and is supportive of their 40% incremental margin target for 2020 and 50%+ in 2021.

The ELL Opportunity

In late 2018, Rosetta made a material announcement at its investor day. They announced that in 2019 they would be developing an English Language Learning (ELL) product that would roll out for the 2020 school season. As we move into late 2019, we believe this becomes a critical part of the Lexia and Rosetta story (that the market is missing) for five reasons:

- It combines Rosetta and Lexia salesforce into an integrated force on the "school" side, meaning the company can gain S&M efficiencies and effectively doubles the size of their sales force for Lexia and the Education language business.
- It finally cleanly cuts the company into two distinct parts, which is the first step towards an eventual sale or split up of the company.
- It materially expands Lexia's TAM. ELL students are expected to be 25% of the total US student population by 2025 (from <10% currently).
- It makes Lexia stickier and "core" to school's budgeting as it offers yet another piece of the overall curriculum pie, which should improve customer retention. It also opens Lexia up to more federal and state funding that is made available for English Language Learners (e.g. Title 3 funding)
- It will be the first major opportunity to upsell product at the individual school level, which should improve net revenue retention/expansion to above 100%.

In order to understand how large the English Language Learning (ELL) opportunity could be for Lexia in 2020 we spoke with a couple of sales executives at competitor Imagine Learning, one on the west coast and one in the Midwest. When we were comparing competitor pricing, it seemed like Imagine Learning stuck out like a sore thumb. While other competitors like Curriculum Associates and iStation were in the same general ballpark as Lexia (around $8-$10k a school/year), Imagine Learning was often reporting per school licenses at price 4x times that number, in the $35-$40k range. Is Imagine Learning just a much better product? We don't believe so. Rather, the delta seems to be primarily that Imagine Learning has an excellent ELL product, and they can charge a massive premium for this product because there is not a lot of viable competitors out there. We also believe in some regions there may be lots of extra funding available, sometimes in separate budgets that must be spent (Title III funding), that allows schools to pay Imagine Learning what seems like an exorbitant amount. The Imagine Learning salesperson commented that the "reason it's more expensive is there was a huge amount of cost to develop the program, to have 15 languages fully supported other than English."

Well that's interesting to us. What's another company that already has extensive curriculum built in many different languages? It's Rosetta Stone, and we believe over the past year they've taken their admittedly weak ELL product on the Rosetta Stone side and built it anew under the Lexia umbrella. They allude to this project on conference calls as being a reason for elevated R&D

spending that could be tempered. Here are the President of Lexia, Nick Gaehde's comments on the ELL opportunity from the Q2 call:

> "You know, the short answer to how is that need being met in the market right now is not very well. Unfortunately, there are not many products whether it's printed or digital that do a good job of supporting those emerging bilinguals. And that's especially true where the bulk of the market is in the K-6 segments, so products that are geared to those young learners that are appropriate for their age and yet build the skills they need to be successful in school and to access the rest of the curriculum. As John said in his remarks, it is the fastest growing segment of the student population. And we see just a phenomenal opportunity given our experience both on the literacy and language side and the strength of our brand to meet the needs of those students and meet the needs of schools who are increasingly, I think, struggling with how to help those students succeed."

Assuming they're able to release a compelling product, for which there is certainly an execution risk, they have a huge gap in pricing between the number one player, Imagine Learning, and themselves. If they were to bundle their Core5 product with the ELL and charge $19-$20k, it would save the schools ~$20k a year and would consolidate their vendor list as well. Channel checking with a few school principals and decision makers, they seem genuinely excited to try out Lexia's forthcoming ELL product.

With Lexia in 14,000 elementary schools as of Q2 2019, we can do a little math on how much ARR could be added at various penetration levels:

Incremental ARR with ELL Upsell Opportunity

		Existing Customer Take Rate			
		10%	20%	30%	40%
Incremental Pricing	$4,000	$5,600,000	$11,200,000	$16,800,000	$22,400,000
	$6,000	$8,400,000	$16,800,000	$25,200,000	$33,600,000
	$8,000	$11,200,000	$22,400,000	$33,600,000	$44,800,000
	$10,000	$14,000,000	$28,000,000	$42,000,000	$56,000,000
	$12,000	$16,800,000	$33,600,000	$50,400,000	$67,200,000

Just getting 10% of their base to spend an extra $4,000 a year would result in an incremental $5.6 million in ARR, which seems extremely conservative given the implicit $20-$30k that Imagine Learning charges for ELL alone. That $5.6 million, though could be the growth driver that moves them from 25% growth to 30% growth.

We also believe there is potential for some "revenue multiple arbitrage," as a portion of Rosetta Stone Language revenue will be converted (or they will attempt to convert) or re-classified to Lexia, which we believe will be ascribed a higher multiple than if the revenue was under the Rosetta Stone E&E umbrella. Of the ~$50 million of Enterprise & Education language revenue, we believe $25-30 million is K-12 and 50% of this is English language learning. We aren't sure what percentage of this $12.5-$15.0 million is for elementary schools, as we believe a majority is likely middle school and up, but this means that potentially $5+ million of revenue could go from getting a 1-2x revenue multiple to 5-6x in most investors' sum of the parts valuation.

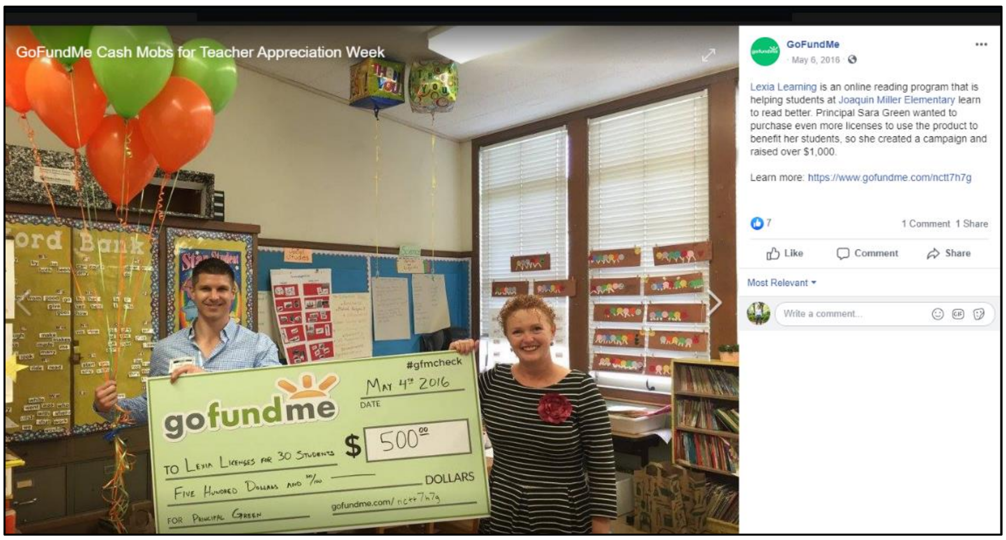
The Texas and Other State Opportunities

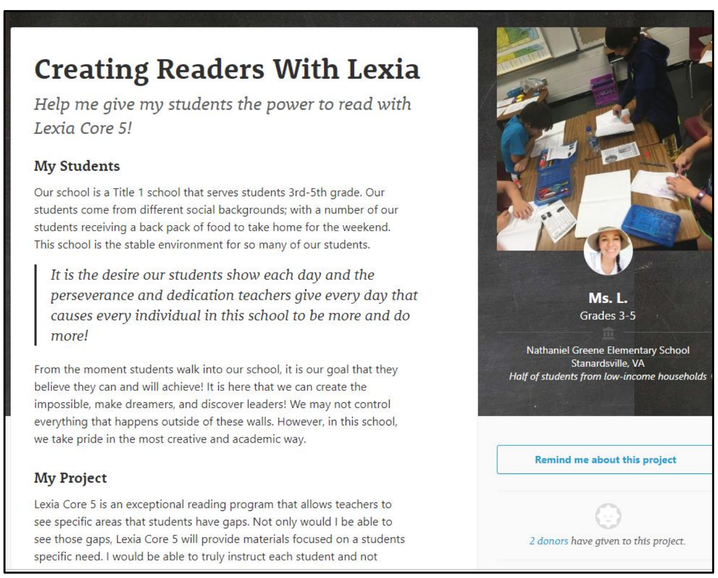
We believe another shift that is occurring is states are moving away from forcing schools to package their reading assessment tools with their core digital curriculum tools. For example, as we understand it, for several years in the state of Texas a company called iStation effectively won a blanket mandate to use both iStation's Reading Assessment product and their Reading product. This year, that market has materially opened up as teachers and administrators were simply not seeing the efficacy on the reading side.

In other words, iStation has a very good Reading Assessment product, but not such a great actual Literacy product, and there is no true reason you need to package both together. Since Lexia is able to demonstrate both efficacy and strong student/teacher engagement in various studies, we believe shifts like this are a great opening for Lexia to take market share. While other companies like Curriculum Associates are likely also taking advantage of this and winning business, management indicated on their Q2 call that they believe their "investment in Texas" would likely "pay off."

Awards, Efficacy, and Passion for Lexia

One thing we were struck by when researching Lexia was how much teachers love it. The principals who implemented Lexia in their school were equally devout and passionate about the product. It tends to repeatedly win Educational awards from teachers. Lexia was voted #1 in every category by the teachers in a recent poll on the most popular education website. And the answers had to be written in, (not multiple choice) which shows they have great mind share and name recognition. Heck, there are even GoFundMe pages pleading to get funding for Lexia (it is unfortunate they aren't getting funding by other means, but it does highlight the lengths they go to get Lexia-we donated :-).





Here are a few comments from the principals we spoke with:

> "We love the product very much. I've been in education a long time, and it's probably my favorite digital product that we've used. It just... It really made a difference for our kids, and that's the key piece. Our reading growth and achievement has just gone through the roof and it's been an important part of that. It's not the only part of that, but that's really ultimately what it's about, where it's trying to make a difference for kids and we

know that if kids leave third grade, and they can't read, there's all sorts of horrible correlations with dropping out of high school and going to prison, it's awful, it's terrifying as an educator. And we really take that very seriously. And so our goal is for all of our third graders to read at grade level and we are way closer to that than we ever have been. I mean our third grade proficiency rates at the school in our zone that uses Lexia the best, kids are... Across the school are above 90% proficient, which is almost unheard of. I mean it's just really, really phenomenal."

-Colorado Springs Principal

"Well, the price, at some point, became too much and we didn't have the funds for it, so we lost Lexia for a couple of years. And during that time, staff were doing everything they could to get it back. Our PTO, our parent organization, they paid for it for Kindergarten for a little while. Teachers did some fundraising and they got it for first grade and people were just really working hard to get it back. So then we got some additional funds because we were a high poverty school, and when I said to the staff, "We have a lot of choices how we can spend these funds." Everybody said, "We need Lexia back, we need it back. That's the number one priority." So we did that…"

-North Seattle Area Principal

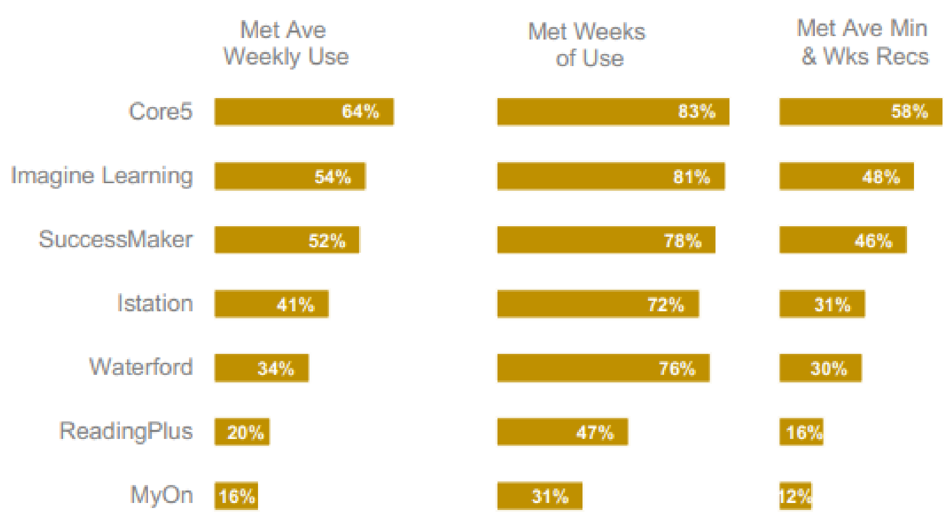
We started using it a couple of years ago and just the Core5, at that point, and the kids just made amazing growth. I would say the average growth was about a year and a half, if not more. And the kids stuck with it, they would get on, they weren't saying, "Oh, are we done with this? Can I quit?"

-Eastern Washington Principal

These are all anecdotal cases on their own, yet they speak volumes as to an established trend. We have yet to find a user of the product who has negative things to say about Core5, and in our experience it's unusual for users of software to be so universally positive about a software product. Usually they are inclined to complain– as we've seen countless times from our past deep dives into software plays.

To reinforce the idea of happiness correlating with engagement, the Utah State Board of Education releases an annual report titled "Early Intervention Reading Software Program Report" that analyzes vendors' engagement and levels of success on their reading products. Below is a chart showing Lexia's Core5 engagement versus other vendors. Note also, the sample size of Lexia is greater than the rest of the products combined.

Figure 2: Students who met vendors minimum dosage recommendations



N: Istation (926); Waterford (5,712); IL (23,997); SM (1,220); Core5 (32,136); RP (174); MyOn (1,512)

Core5 was the most consistently utilized. The study showed the more a student used the program, the better the outcomes were. For first graders, for example, "students in the highest dosage cohort had slightly more than four-fold the effects size when compared to the lowest dosage sample." Highest dosage here is defined as meeting vendors' recommendations for at least 80% of the weeks the program was used and using it for the total length recommended by vendors. Given the usage breakdown shown above, it is highly likely a disproportionate number of students in the high dosage cohort were users of Core5, which explains the significant improvement in literacy outcomes.

We bring all these quotes and awards up to hammer home that we believe Lexia will have success upselling, and has a number of opportunities either organic or through acquisition to build out their product set to compete with players who may have a larger product portfolio like Curriculum Associates. For instance, the principals we spoke with were not even aware that Lexia was launching a new ELL product in 2020. Here are two sample comments:

> "Oh man. So I have not heard of that, but my first thought is, "I'll bet you that would be Cracker Jack". I mean, I bet you that would be... based on what I've seen of Lexia, I'm excited to hear that. I think that the kids who use Imagine Learning, now these are the kids who are just learning English and for those kids Lexia can be, it's just out of their reach a little bit. For kids who just arrived in the country and they don't have enough English, Lexia is... That's not a strength so those kids really enjoy Imagine Learning and I think we found some good success with that but I would be very interested in seeing the Lexia EL product. I think that would be... I'd really wanna see that. Yeah."
>
> Question: "So, when Lexia rolls out their ELL program, I guess, would you be quick to jump on and pilot that or try to use it?
>
> "Oh man, yeah. Yeah, I would personally instantaneously volunteer for that. Yes. Yeah, that one's really clear to me."
>
> - Seattle Area Principal
>
> "I would be interested in it just because I like the Lexia program so well…Just because it's easy... Yeah, it's easy to use and as I said, the biggest thing is kids don't move on until they've mastered something. It's exciting, it's engaging. I would be interested in looking at an ELL side of it."
>
> – Eastern Washington Principal

A former Rosetta employee cited in a transcript we reviewed summarized it well:

> "And Lexia's an interesting one too, in the sense that one year, so the Bill Gates Foundation, they give out two awards to technology companies that can make a transformative difference in education. And Lexia was one of those companies that won it. And so Lexia has got a lot of commendations for being very robust and having efficacy. So I think that there's also a lot of potential for Lexia to go beyond just reading…And I think that once you've got a seat at the table, it's really, like I said, reading is just the beginning, in my perspective, because you're trusted now. And as long as you approach everything else with that same sort of rigor, and it won't happen instantly, but I think in that sort of medium to long-term, Lexia has an opportunity to be more than reading. I don't know that they'd call it Lexia, because obviously the phrase Lexia is pretty specific to reading, but I feel that Lexia has a voice at the table now and much like that sort of halo effect that different companies like Google and Apple, they get in and then they spread out into different verticals. I think that Lexia has that same opportunity, too."
>
> – Former Rosetta senior employee

Potential expansion into Math

In addition to Assessment, PowerUP, and ELL, where could Lexia go? Well, based on our conversations, the obvious second product to add would be a math product. We believe the company is already looking at adding a math product as a serious possibility, most likely through acquisition or potentially some kind of Joint Venture/Strategic alliance. For instance, on Rosetta's board is the CEO of Dreambox, Jessee Woolley-Wilson, which raised $130 million from TPG to scale out their math product and is backed by Bono from U2 and Reed Hastings from Netflix. Another potentially cheaper option might be ST Math, which is a very highly regarded math product based on the principals we have spoken with that is run through a non-profit. We were told it might be possible ST Math could sell off its math product while keeping its non-profit status.

What is the TAM?

We believe a digital curriculum including a core reading product (the backbone of the curriculum), a reading assessment product, and ELL product, and a math product generally costs a school $40k a year. This is coming from an Imagine Learning executive:

> "If it's just one building, we can provide all of our products for, I would say, closer to $40,000 to include all the math, our pre-K through eight math, our assessment piece and our literacy piece. It's gonna get them closer to $40,000. But if it's just language and literacy, what we call the language and literacy product... Then that product we can get that down to about $30,000 a building pretty quickly."- Imagine Learning Midwest Regional Manager

So if you have this portfolio, you can take the roughly 90,000 elementary schools in the US and come up with a TAM.

Product	**ARPU**
Core Literacy (Core5/Power UP)	$9,000
Rapid Assessment	$2,000
ELL Product	$22,000
Potential Math Product	$7,000
Total	**$40,000**
# of Elementary Schools	90,000
TAM	$ 3,600,000,000
TAM ex-Math	$ 2,970,000,000

So, while this $3.6 billion might overstate the TAM somewhat given that not all elementary schools will have $40k a year for their digital curriculum, we believe it's a decent ballpark to triangulate around. This also does not include the PowerUP market, e.g. middle schools and high schools. In general, we believe the overall Ed Tech pie is growing larger as digital becomes more and more engrained in the curriculum, so all things equal we believe if anything the TAM is likely to expand over time.

Consumer Language

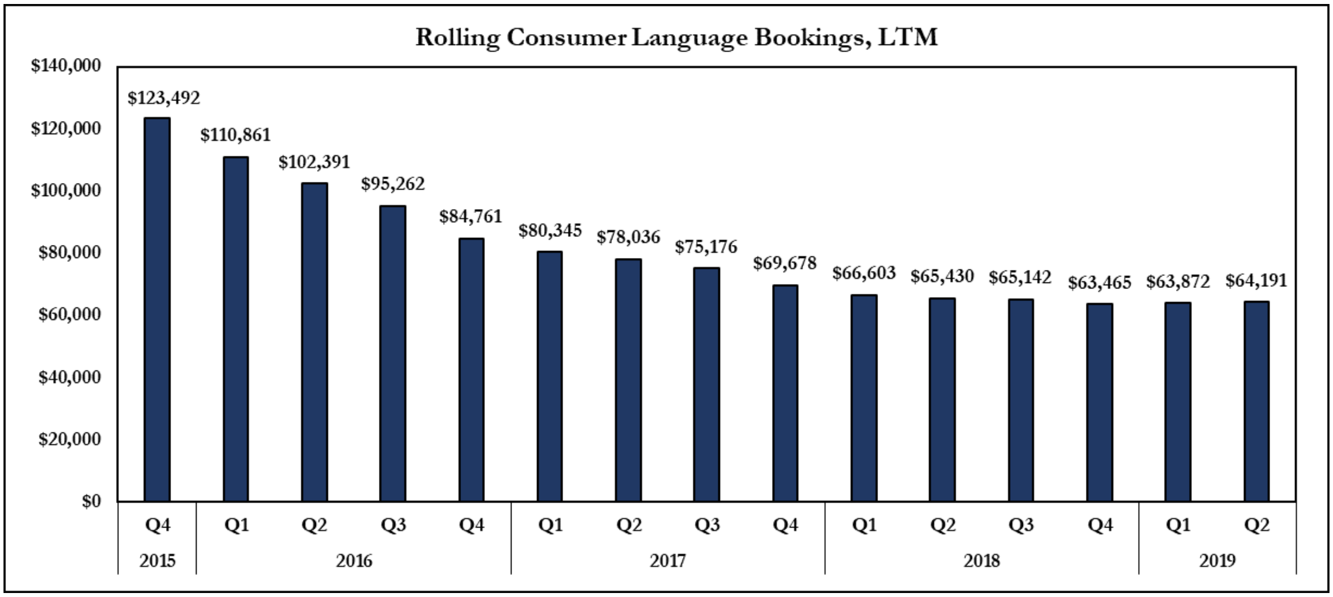
Consumer Language is the original Rosetta Stone business, the "yellow CD" business that has transformed into a 100% online subscription business. Their current business model charges an upfront fee for a certain subscription length, with higher monthly fees for shorter timeframes and lower fees for longer timeframes. For instance, if you ordered a yearlong subscription package, you might pay $84 at time of purchase, or $7/month. The Consumer Language business competes primarily with Duolingo and Babbel. Duolingo made their claim to fame by offering their product for free but has now introduced a full-fledged business model around advertising and subscription services while looking at an IPO in 2020. Babbel is a recent European challenger who has been aggressively spending to grow.

The unit economics of this business remain the worst of the three businesses, as churn is undoubtedly higher (although not disclosed) and competition is fiercer. Indeed, we believe implied run-off margins for this business are materially worse than the E&E and Lexia business, probably in the 20-25% range vs. 40%+ for the other two businesses.

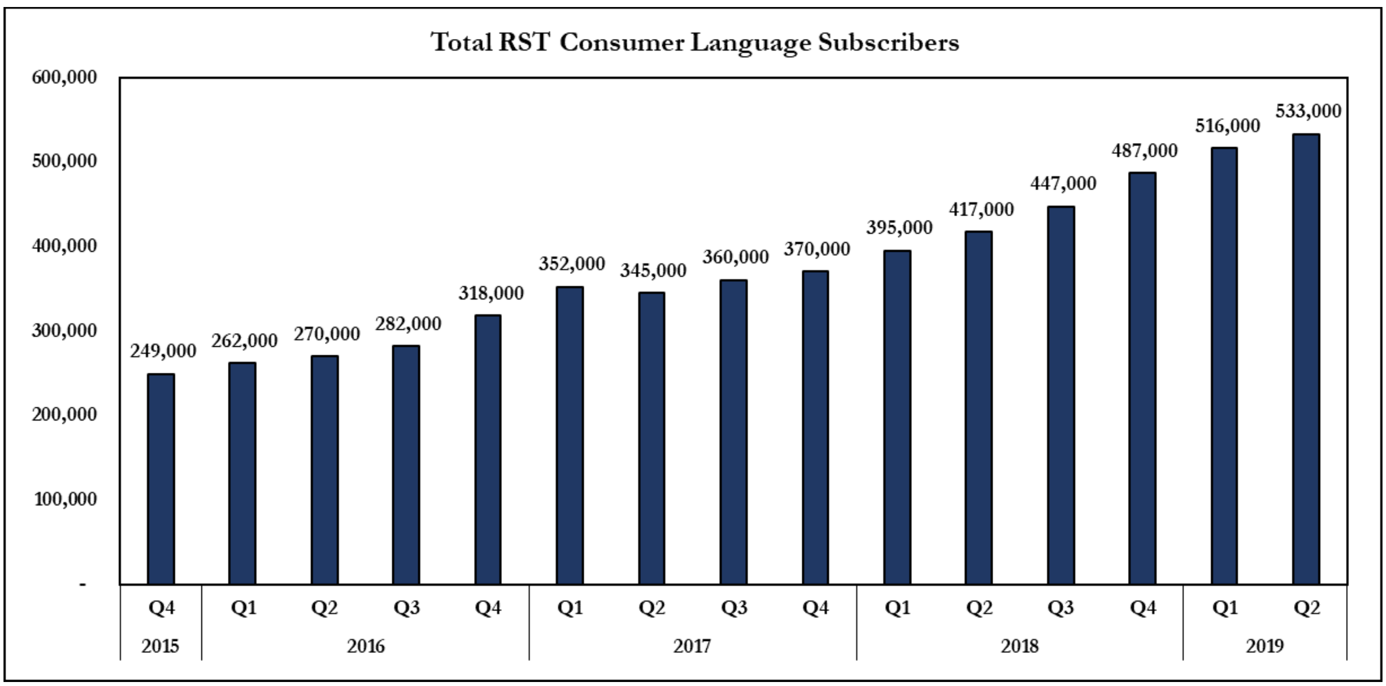
We believe the Consumer Language business will do in the range of $75-$80 million in subscription revenue in 2020.

To start, we want to make clear that we believe Lexia and the E&E business are better fundamental businesses, with better unit economics and potentially better opportunity sets (certainly with Lexia that is the case). Nevertheless, some we have spoken with have implied or outright stated that Rosetta's Consumer Language business is "a zero". This we disagree with and believe it is precisely this misperception and extreme negative sentiment that is holding back the shares and mistakenly preventing many institutional investors from taking a harder look at the stock.

Optically, the Consumer Language business, Rosetta's original flagship business and what most people still associate the company with, is still struggling. Here are their rolling bookings numbers, indicating the business has roughly been cut in half since 2015:



However, perhaps let us posit a different chart with a better spin to it, underlying subscriber growth:



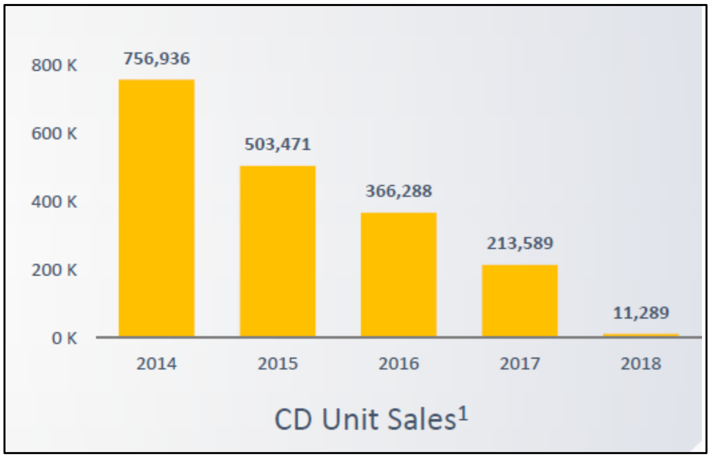
Their end of year guidance number on subscribers is ~600,000, implying a more than healthy 23% y/y growth.

That's right, in the same period where bookings have halved, subscribers have more than doubled. What explains this discrepancy? For the most part, it is explained by four factors:

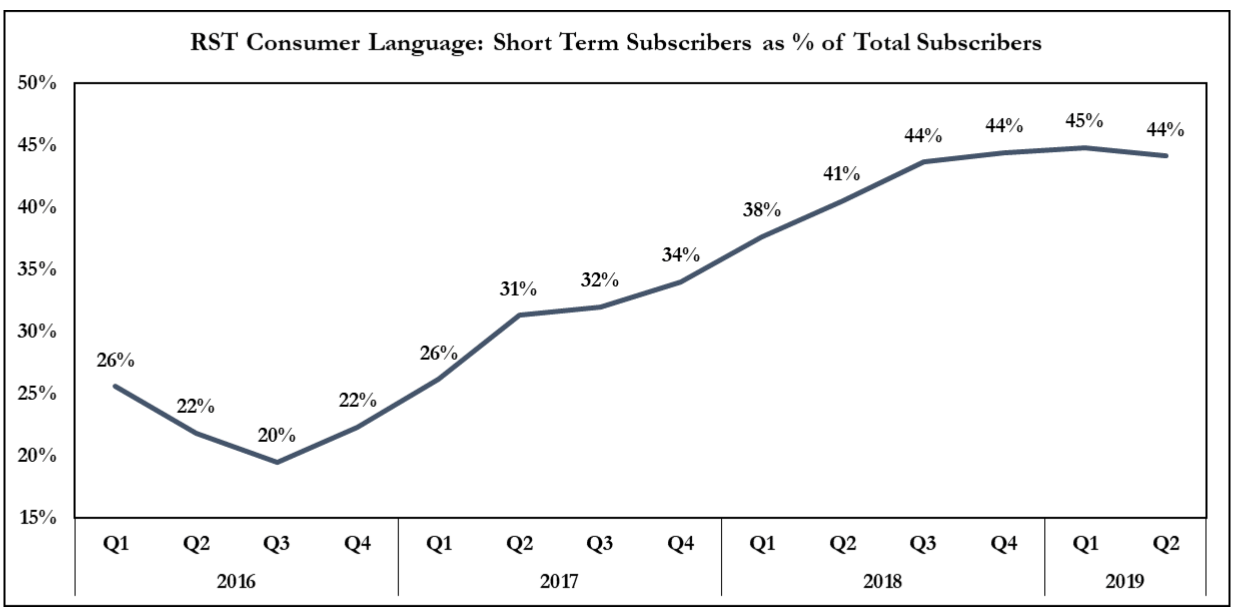
1. SaaS conversion: Moving from perpetual product bookings (i.e. the yellow CDs) to a monthly subscription rate. Instead of getting ~$300 one time, for a subscriber they are now booking 3 to 12-month contracts that can renew, in some cases collecting only $30 or so dollars upfront.

2. Length of Subscription: Ongoing shift in growth to shorter term subscribers versus longer term subscribers. Shorter term subscribers pay more on a monthly rate (around $11-13/month) vs. Longer term subscribers (around $6-8/month).
3. General Pricing: In aggregate, pricing has dropped for both long term and short-term subscribers, making each new subscriber less revenue generative. E.g. the ARPU is dropping.
4. Fit Brains Decommission

Regarding the product transition to SaaS, in 2015 the company reported $65 million in Product revenue, an amount that has gone to under $1 million dollars over the last twelve months and literally zero dollars in 2019. That has been a massive headwind to bookings as the company tries to build out a more consistent and predictable subscription-based revenue stream. The value creation and strength of Lexia has also been obscured by this elimination of product sales. The company illustrates this point better than we can:



To the second point, while both short term (3-6 months) and long term (1-2 years) subscribers have been growing, short term has been growing more quickly. Last quarter, total subscribers grew 27%, with short term growing 39% and long term growing 20%. We will note that sequentially in Q2, Long Term Subscriber growth outpaced Short Term and has been fairly consistent over the last few quarters, meaning this headwind may be slowing down.

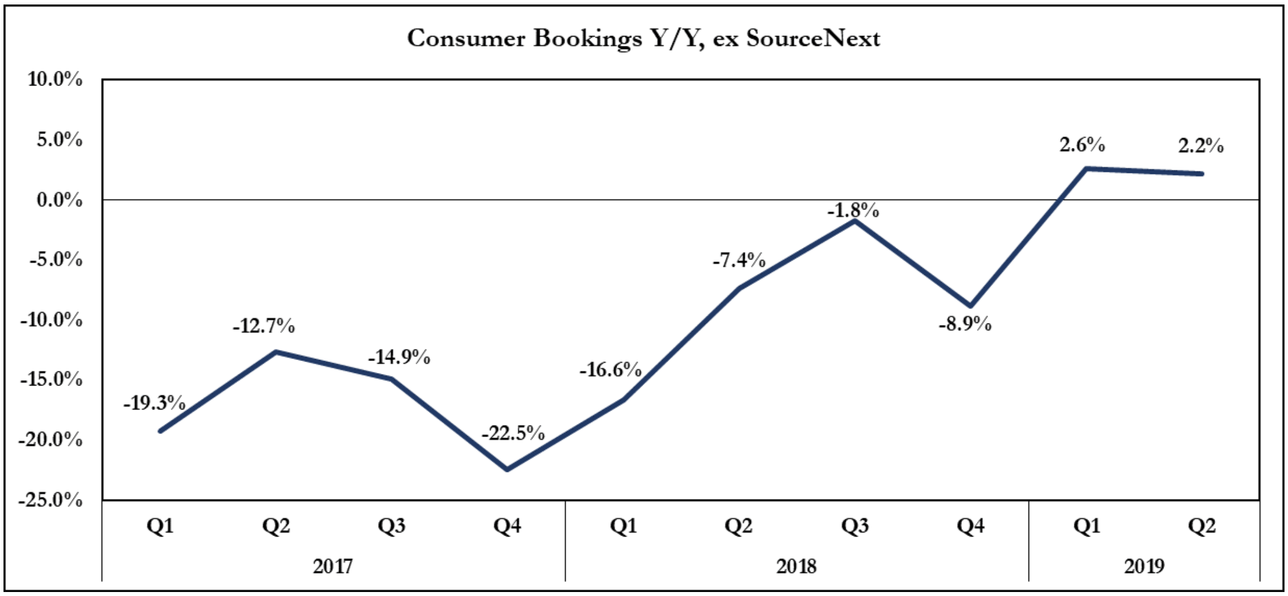


The third point is the biggest risk to the valuation of the Consumer Business, in our view. The average initial price has dropped from $112 to $93, which has lowered the overall lifetime value of the customer. Given the shift to shorter duration, one would have hoped that the price would have *gone up*, not down, which implies to us there is some real pricing pressure, which is easily confirmed looking at pricing from a year ago versus today. We do believe that the most recent price cuts are putting Rosetta Stone very close to parity with Babbel and Duolingo. Comparing a one-year subscription across all three platforms, Rosetta ($7.99/month) is only one dollar higher than Babbel and Duolingo ($6.99/month).

Finally, the company had decommissioned a small app called FitBrains that was generating roughly $500k a quarter in revenue. The company commented the Consumer Revenue grew 9% ex-FitBrains vs. 5% as reported. This headwind should also dissipate over the coming quarters.

There is already emerging evidence that the inflection point towards mid to high single digits bookings growth is emerging. As you can see below, Consumer Bookings in the last two quarters have been positive for the first time in several years.

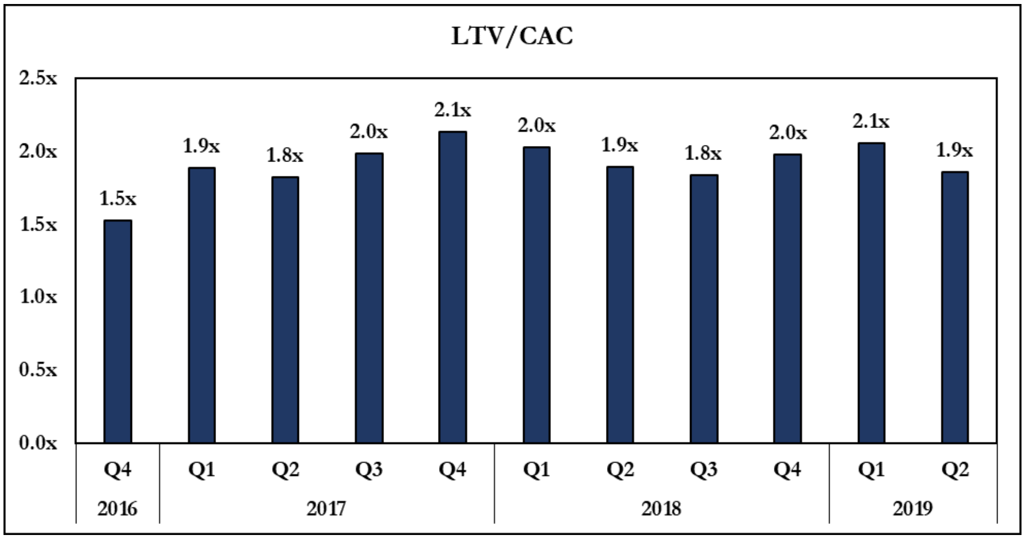
The company's guidance is for around $67 million in Consumer bookings, or 7% total bookings growth, which was reiterated on the Q2 call. ***This implies a 9% back half of the year guide for bookings*** and is more reflective of the underlying subscriber growth.



Beyond Bookings

Ultimately what will drive the value of the Consumer business is not just an inflection in bookings growth, but sustained contribution margin which should show up in their LTV/CAC analysis. We believe the company manages closely to LTV/CAC, while occasionally (like in Q2) doing supplemental advertising experiments.

In the last quarter, the LTV/CAC actually slipped to the 1.5 range, but management stated they had done a $1.5 million dollar TV spend as a one-time experiment, from which they would "study the long term effects" of the campaign before determining if it warrants additional spend. If you take out that $1.5 million, you see it's pretty clear the company is managing to LTV/CAC and raising or throttling back variable marketing spend as it is warranted



Throughout the rest of the year, management intends to go back to the 1.9-2.0x range as they "optimize net LTV":

> "Because it will take time to study these effects, we are not expecting to spend additional marketing dollars on TV brand advertising this year. We will focus on optimizing net LTV, targeting our historical LTV to CAC ratios through the remainder of 2019."- John Hass, Q2

Is a 2x LTV/CAC great? No, it's not. Is it worthless? No, it's not.

Consumer Base Case

Taking it all together, we believe this business can run in the $75-$80 million revenue range in 2020, with a 15-20% contribution margin (including shared services).

Here is a summary of our value of the Consumer business in a Base Case.

Average Subscribers (2020 ests)	625,000
Blended Monthly ARPU	$10.00
Revenue	$75,000,000
Contribution Margin %	17.50%
Margin $	$13,125,000
Multiple	8.0x
Value	$105,000,000
Implied EV/Sales Multiple	1.4x

Upside and Downside

Downside in the Consumer business comes into play if competition continues to erode the price of the product, sub growth deteriorates, or if the subscription base starts to decline. This would imply their LTC/CAC would deteriorate significantly below the 1.8-2.0x they have generally held or if their net LTV added were to go negative. In this case we still think the business would have some value, but we would lower our value to around $31 million, based on a declining sales base of $62 million and a 0.5x multiple.

One area of upside could come from higher sustained sub growth, since we are modeling a pretty material slowdown in subscriber growth in 2020. The other area of upside could come internationally. The company is currently putting their toe in the South Korea market, where they already have both strong brand awareness and where the opportunity for English learning is very strong. Language President Matt Hullett commented on the opportunity and thinking in the last conference call:

> "We think that obviously APAC is the largest language learning market by far. It's 40% of overall learners are learning some form of language in APAC, and that's primarily English. So we think APAC is generally good opportunity, and Korea has been an interesting spot for us because of the relatively high aided awareness of Rosetta Stone, and it's a market that you feel like we can better enter and with not as much capital to be deployed, but as you think APAC in general is a huge opportunity for us. In our EMEA business Consumer is also something that we spend a little bit more time looking out as well. We've been more U.S. centric as you know in our businesses. Most of our businesses in Consumer is United States. So, we have been spending more time thinking about different price and offering bundles, but Korea is really the focus right now."

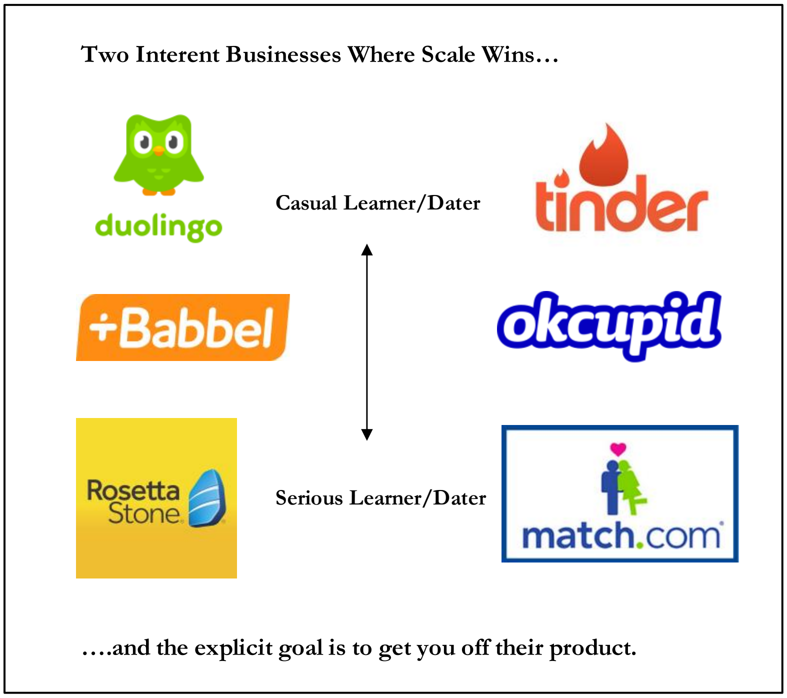
Now that the Rosetta is fully digital, international efforts should take far less capital to employ, and the company seems committed to primarily marketing through the digital channel. We don't put much value on this initiative currently, and management has factored "very little" success into its guidance, but we do see it as a call option for additional value and also as a hedge if the US business falters.

Competitive Thought Bubble

Babbel and Duolingo are Rosetta Stone's two biggest competitors in the language learning space. Babbel comes from Europe and has been advertising aggressively over the last year or so. Duolingo made its claim to fame by offering its language product for free, although recently has started monetization by incorporating ads into the curriculum or charging a monthly fee for an ad-free experience, with an eye towards a 2020 IPO. In its last financing round (July 2017, $25M Series E) Duolingo was valued at $700 million, although we fully expect them to seek a much higher valuation at IPO. Their Series E funding round valued them at over 20x their 2018 revenue estimates (and little of that is subscription based).

Our point here is to say you have two competitors who are motivated to show growth, which could work both for and against Rosetta Stone. On the one hand, Babbel's increase in advertising is almost certainly a negative, as it's a new aggressive competitor who is likely driving down pricing across the industry. On the other hand, Duolingo has made its name by being free, and the brand is at risk of suffering as they try to stuff ads into the products or try and rope people into paying for a subscription. To get that $1 billion IPO, they will need to show a real ramp up in revenue, and it could be a turn off to the user base.

In either case, we would argue that scale is critical in this business, and that there is a good chance of consolidation if either Babbel or Duolingo wanted to scale up before an IPO, while also easing competitive pressures. We compare this situation to another internet powerhouse, IAC, who has gobbled up various dating products to build an online dating empire. For what it's worth, and we admit the comparison is not perfect given greater moat/network effects in the dating world, Match trades at 10x NTM sales and 24x NTM EBITDA, due to its competitive dominance and scale.



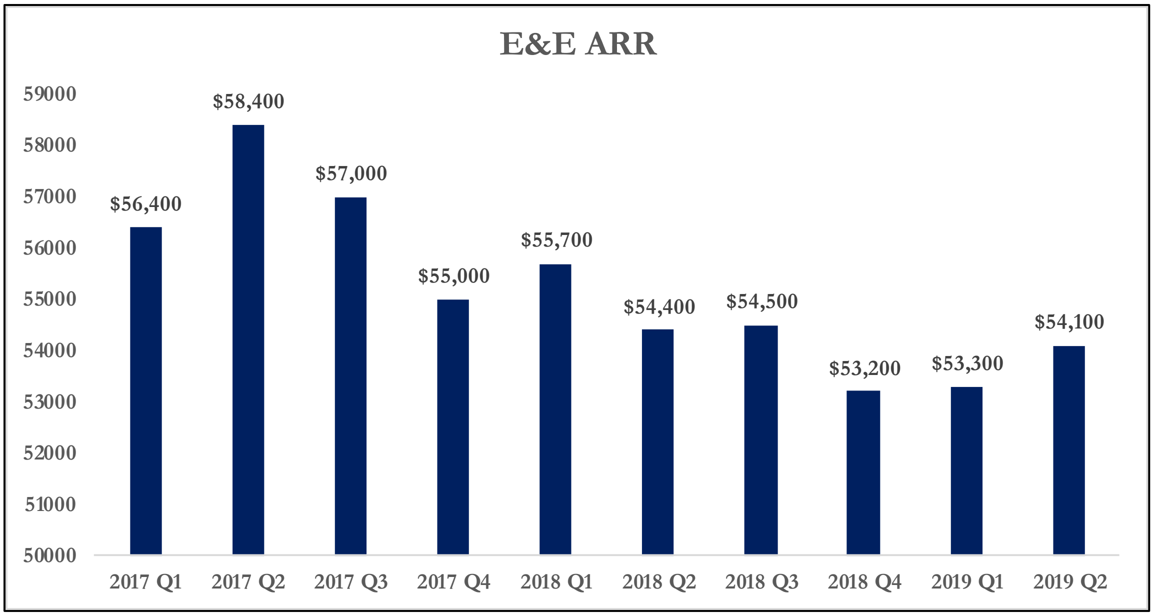
Ultimately if you think of Rosetta Stone Consumer as an internet business, its valuation probably should fall somewhere between the more transactional players with less brand equity (say TRUE, or CARG), and the Matches of the world, which have network effects, subscription model, and strong brand equity.

While this is not part of our explicit Base Case, if and when Rosetta decides to explore strategic alternatives and split up their Literacy and Language businesses, we could easily see a Duolingo or Babbel making a bid to significantly scale their revenue base and likely generate multiple arbitrage ahead of an IPO.

Enterprise and Education Business (E&E)

In investors' minds, RST's E&E business seems to be mistakenly lumped in with the Consumer Language segment despite being higher quality and having much higher contribution margins.

E&E takes the basic Consumer Language materials, packages it for companies, organizations, and schools that want to provide it to their employees and students, and adds significant additional features, content, and reporting to cater to schools and various industries. This justifies the higher price a school or company would pay on a per unit basis. As of Q2, the E&E business was running at a $56 million bookings rate, and a $54 million Annual Recurring Revenue (ARR) rate, a number that has just started increasing again after modest declines in 2017 and 2018.



Because this business has also offered some more one time "custom content" deals that they do not include in their ARR (including the recently announced $7 million bookings deal with a Native American tribe), the billings and revenue numbers can be more lumpy, but we believe the true underlying recurring revenue has been reasonably steady, if modestly declining. For instance, last quarter showed a headline

Renewal rates have trended up in the last 6 quarters or so, going from 74% to 79%, not great by any means but moving in the right direction. Margins here, and particularly incremental margins, are extremely high, with contribution margin in the 40% range vs. 25% for consumer. While management has forecast modest growth in this business in 2019-2021, even with the removal of the ELL revenue, we are taking a slightly more conservative viewpoint and assuming 2020 ARR (and going forward) is around $50 million as we do not have the same visibility on this business as we do with Lexia, and there is likely to be some cannibalization of revenues as Lexia rolls out their ELL product in 2020-2021.

In terms of valuing this business, there are not a lot of great comps out there, but the combination of strong margins and a stabilizing recurring revenue stream make us believe it should be worth at least 2x ARR, or at least $100 million. A more bullish valuation could come if they are actually able to grow the business through the transition to ELL, something we are not currently forecasting. A more bearish valuation could be realized if billings and ARR take another leg down. The company recently had a major product announcement announcing an upgrade to their Enterprise product, which we hope keeps improving retention, renewals, and growth, but our core thesis is not predicated on it.

Segment Accounting Review

Rosetta's management is more transparent on their segment profitability than they likely need to be. The disclosed numbers allow us to piece together the underlying cost structure and get a handle on, at the segment level, how profitability is trending (with a couple of caveats).

Rosetta reports "Contribution Margin" for each of its three core segments (Consumer, E&E, and Lexia).

Contribution margins incorporate all costs directly associated with each segment including COGS, S&M, expensed R&D, and any direct G&A. Because there are shared resources between Consumer Language and E&E, they also report a Shared Services line, which is essentially shared R&D between their Consumer Language and E&E product. Per their Supplementary Materials report:

> "One note of clarification about the segment contribution data for the E&E Language segment, the Consumer Language segment and the two Language segments combined. Language Research & Development (R&D) expense is a shared service cost that is not allocated to either Language segment, but is

included in combined Language—therefore, it is the combined Language view that is comparable to the Lexia segment contribution."

In addition, there are quarterly Corporate Costs that fall outside of Segment Contribution. These are not spelled out but is easy to back into by taking their reported Segment Contribution and Adjusted EBITDA. The difference represents Corporate Costs.

EBITDA can be calculated with the following equation:

Lexia Contribution Margin

+Consumer Language Contribution Margin

+E&E Contribution Margin

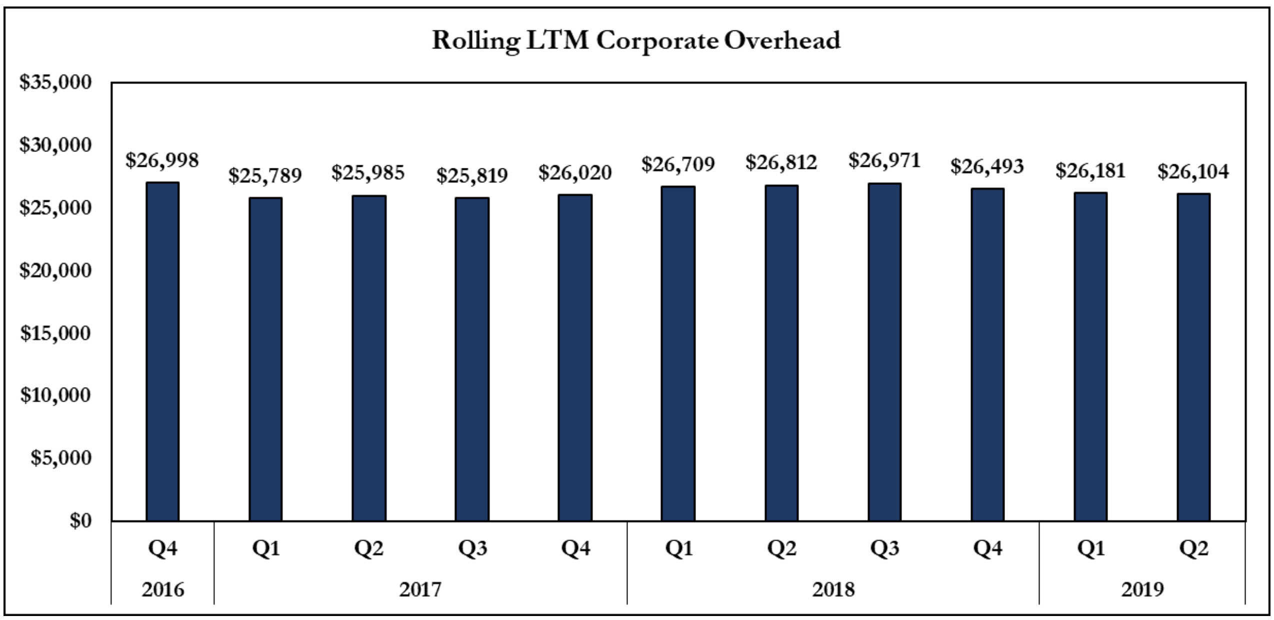
-Shared Language Services

-Corporate Costs

= Adjusted EBITDA

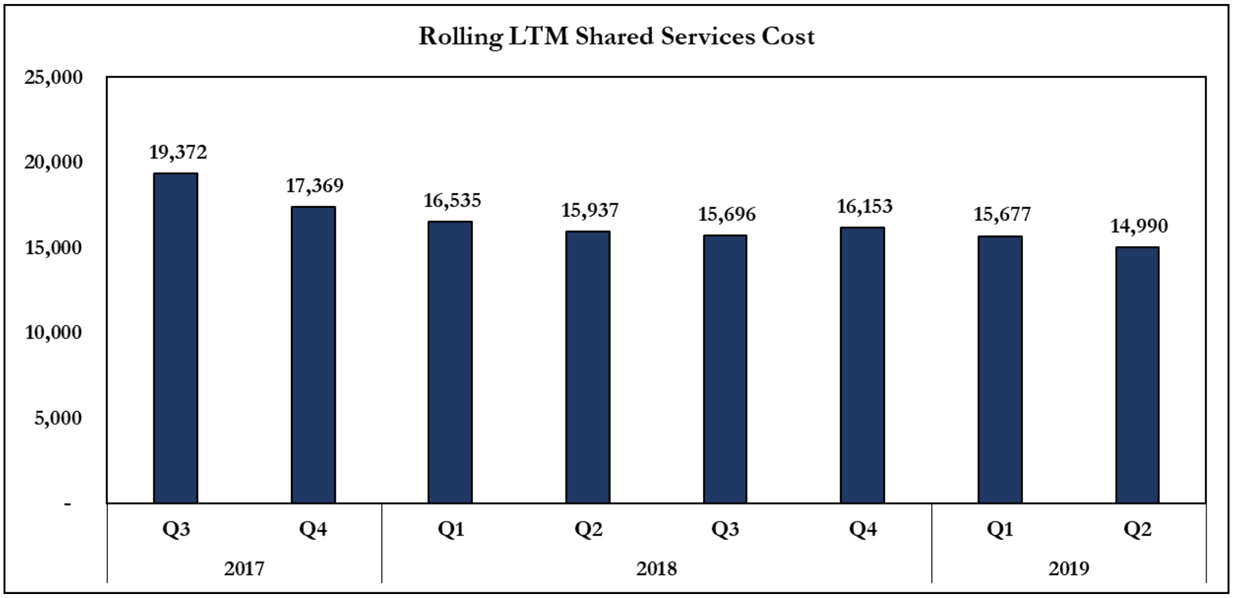
A worry we might have is that the company could play with Corporate Costs to smooth out their Segment Contribution Margin.

What we see is a pretty consistent implied Corporate Cost Structure:



Basically it's ~$26 million a year, which we admit seems high, but it's been quite consistent.

The Shared Services costs, which are simply shared R&D costs between the Consumer and E&E business, have been declining over time:

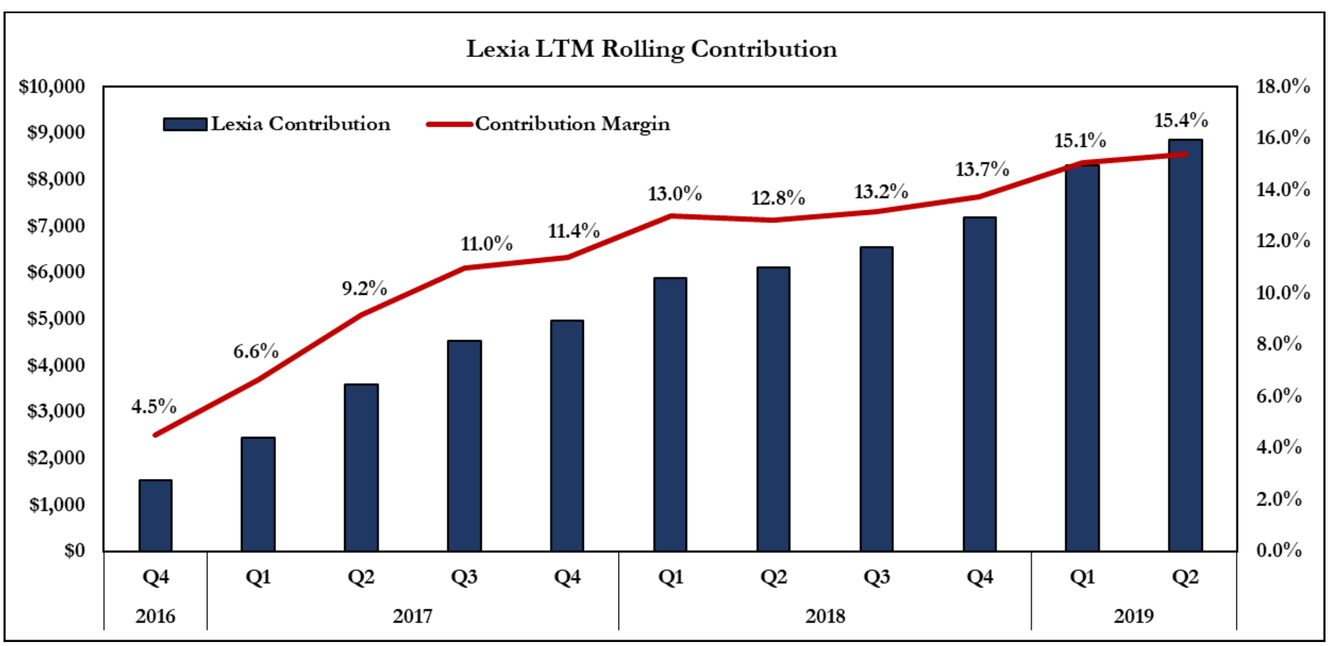


The point of this dissection is to show that we are reasonably comfortable with the Contribution Margin metric as a way to view trending profitability, although we will mention two caveats that impact cash margins materially, one positive and one negative, both primarily involving Lexia:

1) Capitalized R&D: Lexia has a lot of capitalized R&D, and some of the Capex may also be Language Capitalized R&D (hence the decline in Shared Services Cost could be a bit misleading, if they are capitalizing more development costs). Management has guided this to decline over time, and we believe maintenance capex is actually pretty low.
2) Deferred Revenue: Lexia is growing quite quickly and gets paid upfront for a full year of revenue from the schools. Thus, their billings are higher than their recognized revenue. This means on a cash basis some of the capitalized R&D is being offset by deferred revenue growth. We believe this will be particularly noticeable in Q3, however for the full year billings are likely to be $13-$14 million higher than revenue.

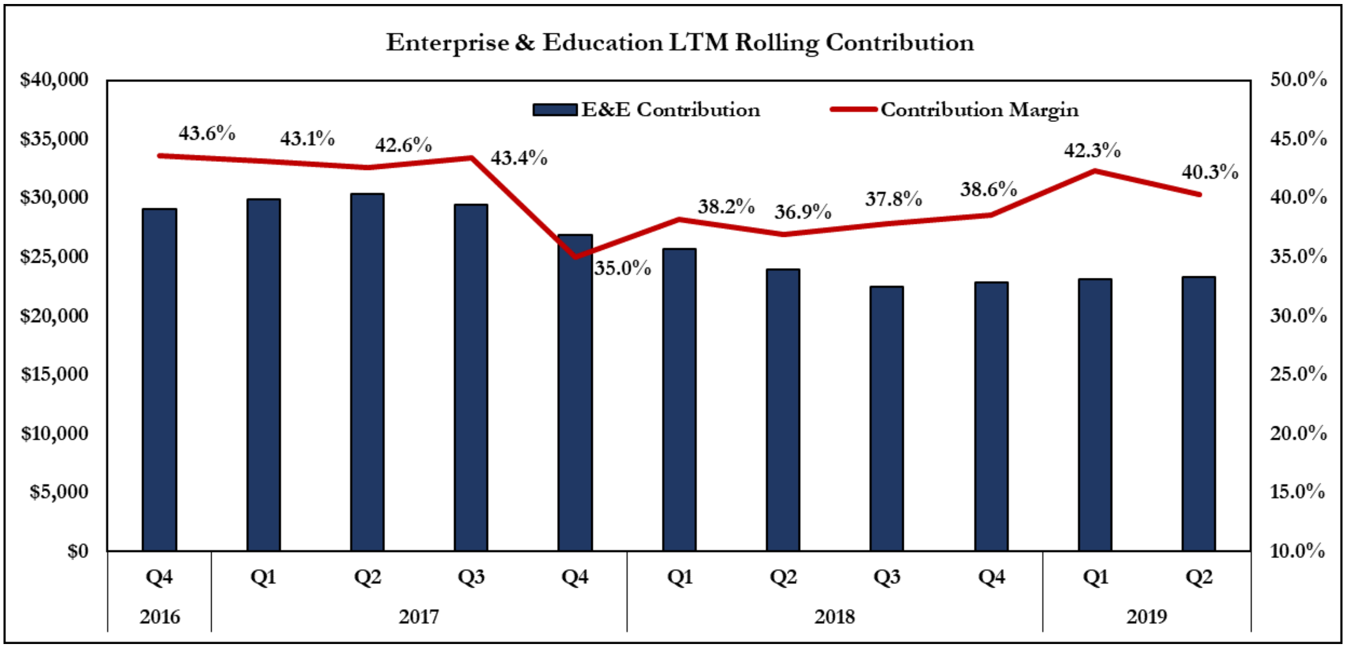
Segment Economics

With these things in mind, you can see a clear and persistent uptrend in Lexia's Contribution Margin over time, and we expect this to continue to improve into 2020 and beyond:

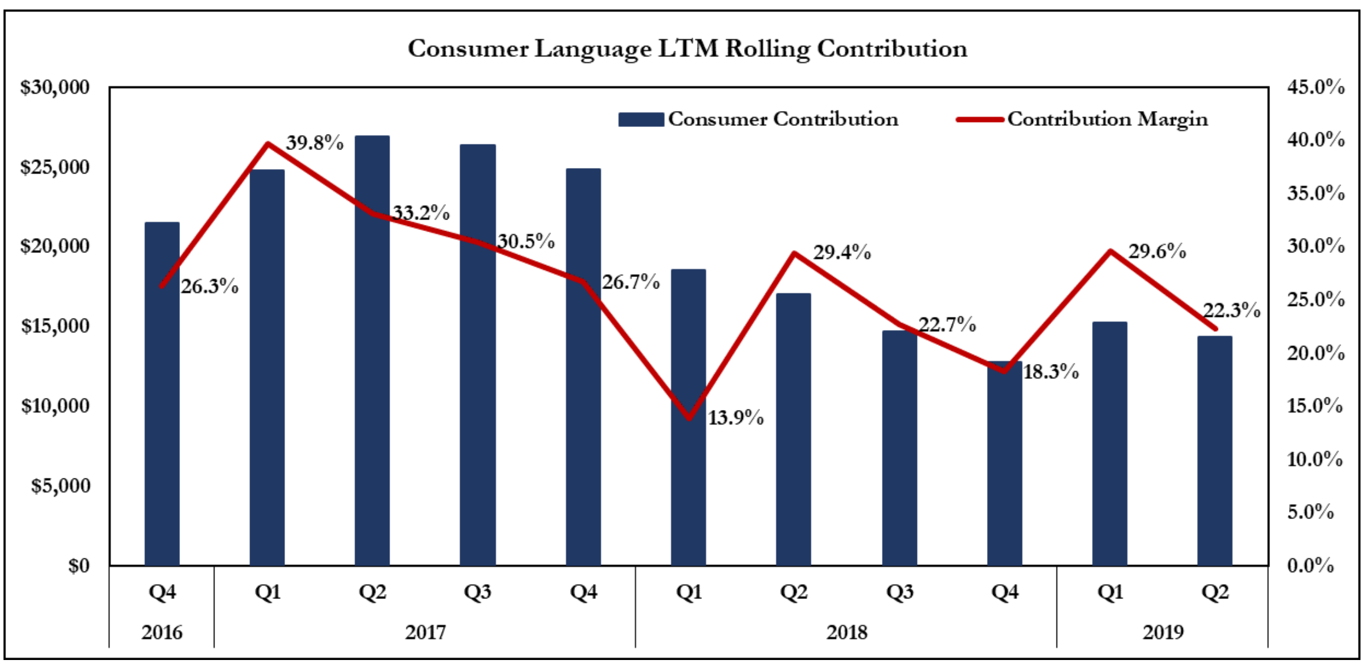


We believe as Lexia scales up to $100 million in annual revenue and beyond, this number can move materially higher, up to the 30-40% range while still maintaining material growth.

On the Education & Enterprise side, you see a more consistent ~40% contribution margin, something we expect to stay relatively static but could improve somewhat given the recent launching of some new revamped products on the Enterprise side.

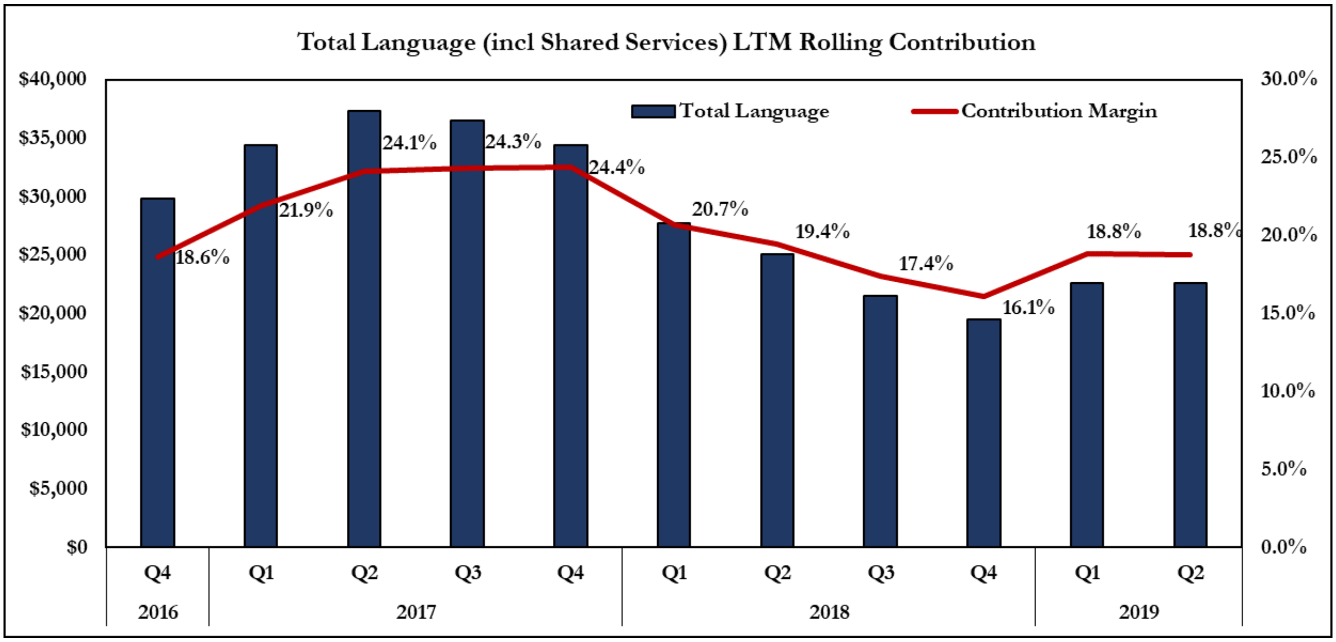


On the Consumer Side, the Contribution Margin is lower as there is higher continuous sales and marketing expense to build the subscriber base, and likely substantially higher churn.



Note that the 2016 and 2017 timeframe is distorted by a higher percentage of revenue being product sales. In late 2018 and early 2019 I believe you are seeing the Contribution margin bottoming, stabilizing, and then should start growing again in the back half of 2019 and into 2020.

If we add in shared services, here is what the overall Language Business looks like:



Valuing Rosetta Stone

Valuing Rosetta Stone is a bit tricky because a) there really are not a lot of great comps, neither in Language nor Literacy b) Their profitability is inflecting so that they still look expensive on a pure trailing EBITDA basis and c) We believe it is inevitable that the company is split up between Language and Literacy in the relatively near future.

Taking these things into account, our primary valuation technique is a Sum of Total Parts, although we do think it is backed up by traditional FCF metrics, specifically by 2021, and some transaction comps. Finally, we would note that Rosetta currently trades below 2x consensus 2020 gross profit, **a level usually reserved for companies with large gaping flaws like major cash burn, high debt levels, materially declining revenue, or some other major disruption**.

Base Case Valuation

In our Base Case valuation, we assume the following:

- Lexia hits their 2019 ARR guidance of $64 million and is able to increase that growth to 30% in 2020 (versus management guidance of 33%), getting a few million in incremental ARR from their ELL initiatives and also transferring a few million in ARR from their K-6 language business. Excluding the $3 million transfer, we assume ~25% growth.
- Consumer is able to grow around 10%, a slowdown from the back half of what we believe we will see in 2020, and then another incremental slowdown in 2021.
- E&E moves to $47 million in ARR between now and 2021, a part of which is the transfer of ARR from E&E to Lexia. We would note this is materially below management's forecast of mid-single digit growth.
- Cash rises $12 million in 2020, and $25 million in 2021, on the back of lower capex, strong deferred revenue, and ~50% incremental margins. This is still below management forecasts.

The delta in our total 2020 growth of 12.5% vs. consensus/management at 20% is mostly on the E&E side, although modestly on the Consumer/Lexia side as well. While we would like to be pleasantly surprised, we think there could be more disruption in the K-12 business than anticipated as the ELL transition happens and salesforce get adjusted.

Note if Lexia actually does execute to these numbers and show rapidly rising contribution margin as we anticipate, we believe our Lexia valuation could be quite low (e.g. a 6-8x ARR multiple may be warranted).

Base Case	2016	2017	2018	2019	2020	2021	Multiple	Value	Per Share	
Language ARR	**101,468**	**97,224**	**110,960**	**120,000**	**124,000**	**127,000**	**1.56x**	**$ 194,000**	**$ 8.27**	
K-12	29,142	23,000	22,000	20,000	17,000	15,000	2.00x	$ 30,000	$ 1.28	
Enterprise	40,502	34,000	32,500	32,000	32,000	32,000	2.00x	$ 64,000	$ 2.73	
Consumer	31,824	40,224	56,460	68,000	75,000	80,000	1.25x	$ 100,000	$ 4.26	
Lexia ARR	**37,200**	**43,200**	**50,500**	**64,000**	**83,000**	**98,000**	**5.00x**	**$ 490,000**	**$ 20.89**	
Total ARR	**138,668**	**140,424**	**161,460**	**184,000**	**207,000**	**225,000**	**3.30x**	**$ 684,000**	**$ 29.16**	
Cash	36,195	42,964	38,092	38,092	50,000	75,000	1.00x	$ 75,000	$ 3.20	Upside
Growth		*1.3%*	*15.0%*	*14.0%*	*12.5%*	*8.7%*			**$ 32.36**	90.4%

Bear Case Valuation

In our Bear Case valuation, we assume the following:

- Lexia misses their $64 million ARR target by $4 mm, comes in at $60 at the end of the year (19% growth), guides for 15% billings growth in 2020 (vs. 33% previously).
- Consumer subscriber growth comes to a standstill in 2020 while there are ongoing pressures on pricing and term length, causing modest revenue declines.
- E&E continues to decline, with ARR moving closer to $40 million from $55 million now.
- Cash dwindles from $38 million end of year to $30 million as the company decides to plow more expenses to drive growth, which does not materialize.

This results in the following SOTP valuation, which we believe is punitive to all three businesses:

Bear Case	2016	2017	2018	2019	2020	2021	Multiple	Value	Per Share	
Language ARR	**101,468**	**97,224**	**110,960**	**110,000**	**104,000**	**98,000**	**0.92x**	**$ 96,000**	**$ 4.17**	
K-12	29,142	23,000	21,280	19,000	17,000	15,000	1.50x	$ 25,500	$ 1.11	
Enterprise	40,502	34,000	31,920	29,000	27,000	25,000	1.50x	$ 40,500	$ 1.76	
Consumer	31,824	40,224	56,460	62,000	60,000	58,000	0.50x	$ 30,000	$ 1.30	
Lexia ARR	**37,200**	**43,200**	**50,500**	**60,000**	**66,000**	**71,000**	**3.00x**	**$ 213,000**	**$ 9.08**	
Total ARR	**138,668**	**140,424**	**161,460**	**170,000**	**170,000**	**169,000**	**1.82x**	**$ 309,000**	**$ 13.41**	
Cash	36,195	42,964	38,092	38,000	35,000	30,000	1.00x	$ 35,000	$ 1.52	Downside
Growth		*1.3%*	*15.0%*	*5.3%*	*0.0%*	*-0.6%*			**$ 14.93**	-12.2%

These numbers would be wildly off from management's forecasts, and we believe even if these numbers came to fruition, our multiples are still conservative. The point is, we had to work pretty hard to get 10%+ downside from today's $17 stock price.

Bull Case Valuation

In our Bull Case valuation, we assume the following:

- Lexia beats their $64 million by two million, then grows ARR 32% in 2020 and 25% in 2021, and gets an 8x multiple in that 2021 ARR. This would likely require a retention uptick.
- Consumer goes to a mid-teens revenue growth trajectory, as pricing stabilizes in the industry, renewals modestly improve, and the company gets modest uptake on their Korea initiative.
- The Enterprise side of E&E does show mid-single digits growth while K-12 shows only modest declines.
- Because of the beats in Consumer in particular, cash flow is stronger than expected ($25 million 2020, $45 million in 2021).

This case is closest to management's 2020-2021 guidance, which we continue to believe is a stretch, so we still slightly discount it.

Bull Case	2016	2017	2018	2019	2020	2021	Multiple	Value	Per Share	
Language ARR	**101,468**	**97,224**	**110,960**	**126,000**	**138,000**	**150,000**	**2.61x**	**$ 360,000**	**$ 15.63**	
K-12	29,142	23,000	21,280	22,000	22,000	20,000	3.00x	$ 60,000	$ 2.60	
Enterprise	40,502	34,000	31,920	34,000	36,000	40,000	3.00x	$ 120,000	$ 5.21	
Consumer	31,824	40,224	56,460	70,000	80,000	90,000	2.00x	$ 180,000	$ 7.81	
Lexia ARR	**37,200**	**43,200**	**50,500**	**66,000**	**87,000**	**109,000**	**8.00x**	**$ 872,000**	**$ 37.85**	
Total ARR	**138,668**	**140,424**	**161,460**	**192,000**	**225,000**	**259,000**	**5.48x**	**$ 1,232,000**	**$ 53.48**	
Cash	36,195	42,964	38,092	45,000	70,000	115,000	1.00x	$ 115,000	$ 4.99	Upside
Growth		*1.3%*	*15.0%*	*18.9%*	*17.2%*	*15.1%*			**$ 58.47**	244.0%

Transaction Comps:

By far the most recent and relevant transaction comp in our view is Veritas Capital Fund Management acquiring Cambium Learning Group (ABCD) in December 2018 for $686 million. It was acquired at 21x NTM EBIT and 4.1x NTM sales. We believe this is a good comp for Lexia because Cambium does have two distinct SaaS products making up around 70% of bookings. Through Q3 in 2018, their collective SaaS bookings were growing 13%, while total bookings were growing 7% (due to a 5%, ongoing decline in their paper curriculum products). We believe the below table is instructive about the what eventual margins can be for Lexia:

Cambium (2018 YTD, 9 Months)

	SaaS	Printed	Total
Bookings	$ 92,973	$ 42,868	$ 135,841
Growth	13.1%	-5.1%	6.6%
Cash Income	$ 40,896	$ 14,871	$ 55,767
Margin	44.0%	34.7%	41.1%

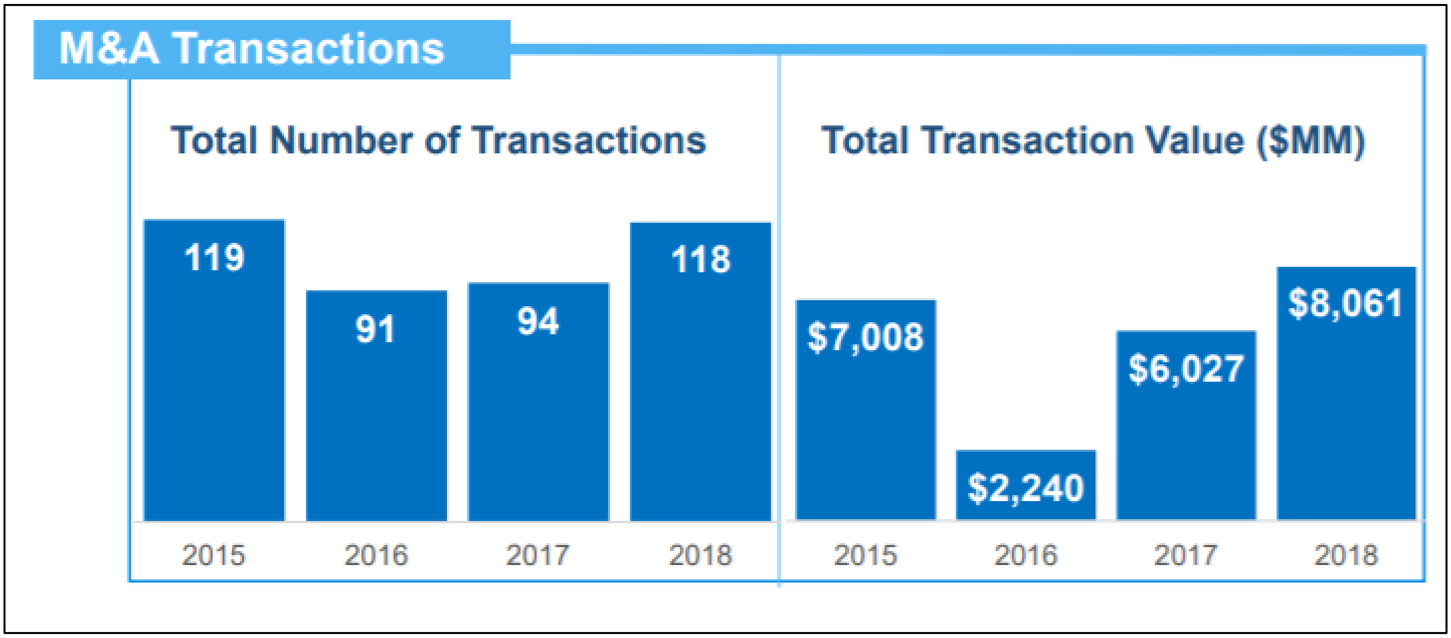
We also believe Lexia is a superior business that should command a higher multiple, specifically as they continue to scale closer to Cambium's revenue base and show margins closer to Cambium. Why is Lexia a superior business?

- Cambium's revenue growth was 2.1% and even SaaS bookings growth was roughly half of what Lexia's was.
- Cambium has large portions of its revenue in paper curriculum, ~30% vs. 0% of Lexia revenue, that seems to be in perpetual decline.
- We believe churn was materially higher for Cambium and would implicitly always be higher given their go to market approach. Cambium would market to the teacher individually and either have the teacher pay for the product out of his/her own pocket, or lobby to get reimbursed. Lexia, on the other hand, is working at the school and district level to become a more strategic partner.

We believe Cambium was over-earning in 2018, whereas Rosetta and Lexia have been aggressively investing for growth. The run-off margins for the businesses, though, are similar, particularly as Lexia crosses the $100 million annual bookings number.

Turning to private valuations, the below is from an AGC Capital (a boutique investment bank focused on software and EdTech) presentation in January 2019:

"PE firms, in particular, have been very aggressive establishing beachheads in the space, using platform companies and rapid-fire add-ons to consolidate key sub-segments of the market."



Details of relevant transaction comps we could find data on:

RST Transaction Comps

Date	Target	Acquirer	Deal Size (EV)	EV/Sales	EV/ EBITDA	Revenue Growth	Gross Margins	EV/FCF	Notes
Feb-17	NetDimensions	Learning Technologies Group (LTG LN)	$52mm GB	2.6x	n/a	-1.0%	85.0%		EBITDA breakeven, FCF negative, better comp for Consumer Language
Mar-17	Nearpod Apps	Instructure INST		4.0x					Minority stake - presentation sharing software
Oct-11	Renaissance Learning	Permira Private Equity	$455mm	3.3x	10.4x	5.7%	79.1%		Accelerated Reader, bidding war w/ Thoma Bravo
Mar-14	Renaissance Learning	Hellman & Friedman	$1.1 billion		12.0x				Permira flipped to Hellman for 4x ROI.
Mar-12	Archipelago Learning (ARCL)	Edmentum Holdings	$324mm	4.4x	15.9x	9.8%	91.0%	14.4x	
May-10	Edmentum Holdings	Thoma Bravo	$139mm	1.7x	10.3x	1.2%	57.0%	10.9x	Massively negative revenue growth in years preceding buyout
Mar-11	Education Development (EDD LN)	Pearson PSON LN	$103mm	3.5x	10.1x	3.0%	74.0%		Steadily negative revenue growth for prior 5 years
Oct-11	Cambium Learning (ABCD)	Veritas Capital	$734mm	4.6x	18.2x	2.1%	83.1%	18.3x	28% of sales is printed materials, not SaaS pureplay; 1x net debt/EBITDA
Average				**3.4x**	**11.7x**	**3.5%**	**78.2%**	**14.5x**	
		Rosetta Stone		**2.1x**		**20.3%**	**79.8%**		

Note that many of these had steadily declining revenue for up to five years in a row prior to being acquired at premiums to where RST is today.

Trading Comps:

For trading comps, we first home in specifically on Lexia and compare it to other software companies.

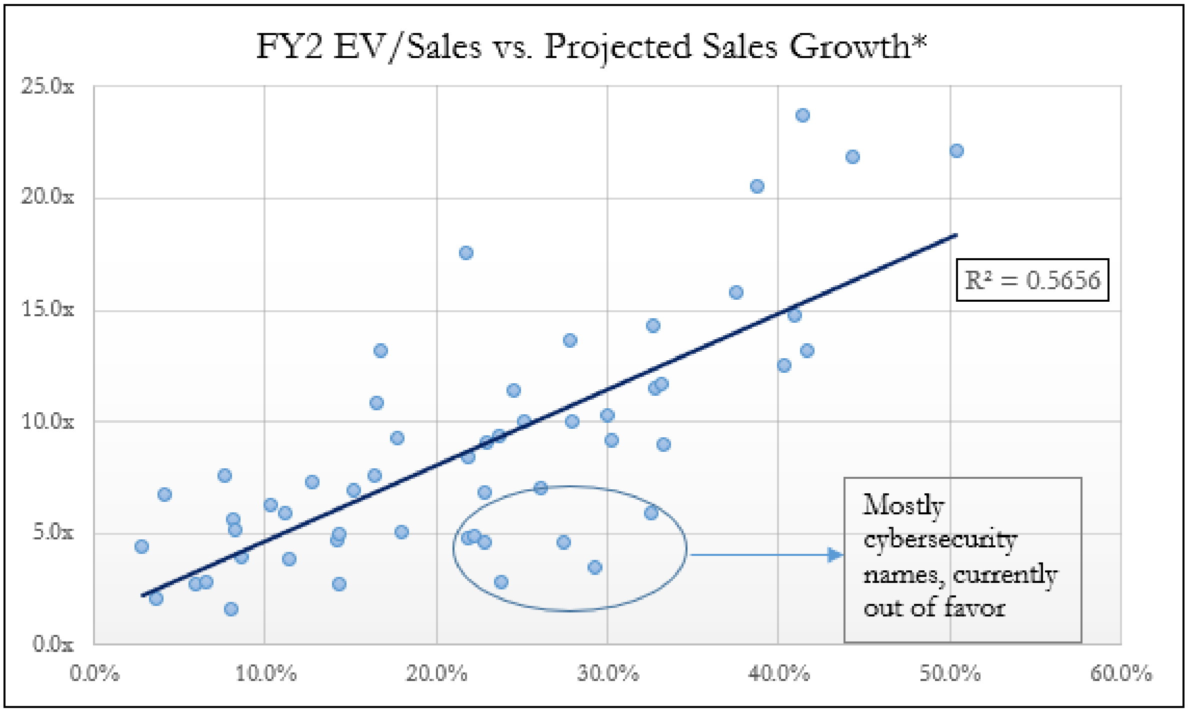
When a software company is aggressively investing to build its base of recurring business, its customer acquisition cost structure is front loaded (if it's successful), while its tail end revenue stream from a recurring customer for the next 10-20 years is backloaded. Traditional metrics like EV/EBITDA or P/E may not quite do the stock justice in this circumstance. Thus, the market will instead look at several other factors, including but not limited to:

Factor	Comment
Organic Sales Growth (and proforma sales growth for acquisitions)	The higher the better; probably most important factor
Gross Margin	Underrated, specifically need to understand gross margin on the recurring revenue base and its ultimate trajectory

Recurring Revenue Mix	High SaaS mix will get much higher multiples than perpetual license/hardware/professional services mixes
Rule of 40 (EBITDA/FCF margin+ sales growth)	Suggestive of eventual unit economics, also some names will get dinged for excessive cash burn
Churn	Target 2-10% customer retention, under 0% for revenue retention
Debt Levels	Lower is better
TAM	Bigger is better
Horizontal vs. Vertical	In general, we find vertical niche software commands higher multiples vs. horizontal one size fits all software
Current Scale	Smaller names will get discounts to larger names, as emerging scale should show up sooner
Barriers to Entry	Highly subjective but higher barriers equals higher multiple
Revenue Acceleration vs. Deceleration	Acceleration from a previous year will often have outsized positive effects on a sales multiple
Billings Growth vs. Revenue Growth	If billings growth is outpacing revenue growth, that implies strong future revenue growth

There are many others, we are quite sure, but our quick and dirty starting point for an appropriate sales multiple is to simply compare the EV/Sales multiple with its underlying revenue growth rate, then make both objective and subjective adjustments around how the stock we are looking at compares to the "average" stock on other factors. When doing this, we make an adjustment for recent "beat history." While this is a potentially slippery slope to go down, as beating recently does not necessarily mean beating in the future, we want to normalize a little bit for the companies who are playing the sandbagging, beat and raise game. Additionally, we make modifications to the Enterprise Value, using JP Morgan's great work around options/convertibles/other dilution.

As you can see below, if you make these adjustments, there are about 50 stocks in JP Morgan's universe with EVs below $25 billion that we can look at, shown below:



Recent beat history adjusted for both growth and FY2 sales

Based on this linear regression, with .57 R^2, a software stock would achieve the following EV/Sales FY2 multiple for each of the following levels of growth (FY2/FY1 Est.):

Revenue Growth Rate	EV/FY2 Sales Multiple				
FY2/FY1 Ests.	**Regression**	**Avg**	**Median**	**High**	**Low**
10% and less	4.7x	4.3x	4.2x	7.6x	1.6x
10-15%	6.3x	5.2x	5.1x	7.4x	2.9x
15-20%	8.0x	9.1x	8.6x	13.4x	5.2x
20-25%	9.7x	8.3x	7.9x	18.1x	2.9x
25-30%	11.4x	8.3x	8.6x	13.6x	3.5x
30-40%	13.1x	12.0x	11.5x	20.5x	5.9x
40%+	14.8x	18.1x	18.3x	23.8x	12.6x

Just based on the regression of public comps (25-30% growth range), Lexia on its own would trade at 11.4x FY2 revenue, with comps at a median of 8.6x (in the blue shaded cells). Outside of scale, which we believe to be emerging and more evident in 2020 as they approach $100 million in billings, we believe Lexia stacks up very well on all other factors that we evaluate to determine a reasonable multiple. All of Lexia's growth has been organic and built out through heavy investment, gross margins are reasonably high, Rule of 40 should begin to emerge favorably in 2020, underlying customer retention should continue in 90%+ range with revenue retention accelerating above 100%, there is no debt, it's a classic "Vertical" stock that specializes in a very specific industry, barriers to entry are quite high given Lexia's decades long work and efficacious results, revenue growth may be accelerating, and billings growth is significantly above revenue growth.

Key Risks and Concerns

After speaking with several other investors, and management, about the concerns they have or the concerns being brought forth to management, we believe the following risks are keeping the stock down (indeed, it is now down 10% y/y versus the Nasdaq up 24%):

a) Perceived aggressive guidance: Management has an OK--not great, track record on hitting guidance. We believe a number of investors are hanging on the sideline to see how the Q3 quarter shakes out, as well as how 2020 guidance comes in. Sell side is roughly at management's 20% aggregate growth in 2020, a number that does strike us as high. Indeed, we would prefer management would have set a lower bar, as we have some difficulty coming to the E&E numbers they are forecasting, absent further data, and did not think they necessarily had to advertise 33% billings growth for Lexia in 2020, even if they think they can hit it.

b) Lack of urgency on strategic alternatives: We believe in 2020 the time will come to split the Language and Literacy businesses up, but management has not fully committed to this, only acknowledging "at some point" they will have to decide what kind of "company they want to become." We believe John Hass is keenly focused on shareholder value, and will do the right thing, but it's possible the timing disappoints investors.

c) Competition on Consumer Side: Our wide range in valuation on the Consumer Language side, from ~$30 million in a Bear Case to $120 million in Base case, partly hinges on competition not intensifying further from here. If Babbel or Duolingo were to take a scorched earth position and start acting irrationally just to show subscriber growth, it could push Rosetta's Consumer business towards a Bear Case value.

d) Customer Retention at Lexia: There are several things going on that could in theory pressure the headline retention numbers, which have been dipping from 94% to 89% in the most recent quarter. The biggest one, which management discussed, is they are completing moving some perpetual license customers to full subscription customers, and some customers paying very little for Lexia on grandfathered contracts decided to move on.

e) Shelf offering registration: In concert with the Q2 numbers, management filed a mix shelf offering for $200 million, which we believe really cooled sentiment on the name. John Hass has since apologized for the timing of the offering (which we believe was poor as the stock had already dropped materially and sentiment is hinging on a strong Q3), relaying that they have nothing imminent that would require that kind of capital. From our perspective, if they get the opportunity to acquire a great math product to round out their offerings, we have no issue with a raise, but do think the timing was poor.

Conclusion

In sum, we believe Lexia is a terrific business, E&E is a good business, and Consumer is an okay business, and the market is valuing all three segments several notches below their true value to a private market buyer. We believe at an aggregate level Rosetta can grow 15-20% for the next couple years with rapidly rising profitability and cash generation. The market is undervaluing the strategic value of this franchise and underestimating the impact their new ELL product will have in 2020 and beyond. The shares could be re-rated higher with the Q3 earnings report or when the company announces they are running a process of strategic alternatives to maximize shareholder value. The stock has over 90% upside in our conservative base case, 240% upside in our bull case, and about 15% downside in our punitive bear case.

If you agree that Lexia is worth at least $400 million, E&E is worth ~$100 million, Consumer is worth ~$50 million, and that there is $40 million of normalized net cash on the balance sheet, there is still 50% upside in the name (~$25 target). If you buy into the thinking that Lexia can become much larger over time or is worth more than 4x revenue, as we have attempted to outline, there is far more upside.

Just as Hester Prynne carried a shameful reminder of the past with a scarlet letter A, RST's is the yellow CD boxes. Unlike Prynne, RST is not doomed to retain this negative stigma forever. They've shed the CDs and entirely transformed the business model. Shares should re-rate higher soon as the market narrative transforms as well. **We cannot emphasize enough that RST is currently our highest conviction idea in the stock market by a substantial margin.**

Appendix:

Recent Charter School Applications where Lexia is Mentioned as Part of Core Curriculum or Used Daily:

Lexia seems to be popular among charter schools and is being listed as part of their core curriculum. You can find charter school applications online that use it as part of their charter proposals.

Brooklyn - August 2018 - http://www.p12.nysed.gov/psc/startcharter/2018/Round2FA/BrookRiseRd2FA18.pdf

"We are adopting a blended learning literacy program during our small group literacy rotations and have chosen to use Lexia Core 5 because of its proven effectiveness with student language development."

"Given the flexible nature of our program, we can provide gifted and talented students with additional challenging coursework during small group instruction, opportunities to engage with adaptive digital learning platforms (i.e. ST Math and Lexia Core 5), and increasingly more complex texts to continue to push their literacy development"

"For the Lower Academy (K-2), we plan to purchase the Lexia Core 5 program, a computer-adaptive program that supports literacy development based on individual students' demonstrated skill gaps and proven effective specifically with ELL students."

"At 8:50am, the class transitions from the rug to the first of three 30-minute literacy rotations. Martin's group works independently on class computers using Lexia Reading Core 5, a computer adaptive software program that helps him to strengthen his literacy skills by reinforcing phonics, phonemic awareness, decoding, sight words, and other components of early literacy"

Texas - January 2019 - http://castro.tea.state.tx.us/charter_apps/content/downloads/Nocdn/24-5.pdf

"Technology will also be incorporated into instruction to support skill development of Third Ward students, many of whom do not have access to technology tools and platforms outside of school. All grade levels will have a dedicated chrome book cart and students will work with chrome books and software platforms daily, including such programs as Lexia and Reading A to Z."

"Madison transitions to her last station. There are a group of eight Chromebooks set up at a table for the blended learning station. Most of the students in Madison's class get really excited for this station. She's in class and practicing letter sounds and letter recognition but it feels more like a game! She likes Lexia the best. She goes on Lexia during Choice time a lot. A bell chimes."

"Madison and her classmates love Choice time. They get to choose which academic activity they work on during this block. Madison usually goes for the letter magnets and tries to make new words. But she also loves to go on Lexia and practice letter recognition."

Using Lexia in the above examples is especially interesting because it sounds like the school will be using Lexia, Reading A - Z and iReady but they repeatedly call out Lexia in their examples as hypothetical students' favorites.

Indiana - March 2019
- https://www.in.gov/icsb/files/Attachment%2019%20Application(HIMbyHERCollegSchoolArts)%20Pt%201.pdf

"During reading rotations, students rotate in small groups between teachers and laptops. We will use Lexia (ST Math during Math block), an individualized computer program to give students on-grade-level literacy practice."

"In grades K-4, students will have three 30-minute literacy rotations daily, with two rotations in a small group with a teacher. This allows for students to receive targeted phonemic and comprehension instruction, with focused teacher attention. The third literacy rotation will be a blended learning rotation, during which students will use an adaptive program, such as Lexia, to continue building foundational reading skills."

Mississippi - March 2019 - https://www.charterschoolboard.ms.gov/SiteAssets/Pages/2018-RFP-Process---Ambition-Preparatory/Ambition%20Preparatory_Redacted.pdf

"We assume seven computers (for adaptive learning rotational group) per classroom, a document camera, and projector per classroom. Also included in the technology assumption is money for software programs such as Lexia and STMath, which will be used daily in our literacy rotation and our math small group. Based on national charter schools, we budgeted $60 per student plus start-up fees for technology."

"In our daily student schedule, we have a 30-minute literacy block for students to work on adaptive learning technology. Lexia Core 5 is a research-based blended learning program that accelerates the skills of literacy."

California - July 2019
- https://www.ridgecrestcharterschool.org/uploaded/PARENTS_CORNER/FINAL_RCS_Renewal_Petition_and_Appendices_2019-24_FINAL_Combined.pdf

"As the school's enrollment continues to grow, Ridgecrest Charter School has a continuing need to maintain and purchase new technology and resources to support 21st century learning... During the 2017-18 school year, Ridgecrest Charter School purchased 90 laptop PCs, 25 iPads, iPad protective cases, 4 charging carts, and 1 Mac computer. RCS also purchased user licenses for the following programs: Lexia, Fast Math, NWEA, STAR Reading and Math, Accelerated Reader, Accelerated Math, ESGI, iReady, and others to support student learning."

California 2018 - https://www.scoe.org/files/2018-19_Cinnabar_Charter.pdf

"Grades 2-8 students use Lexia as extra practice in developing their English skills as EL learners in our ELD program with their ELD teacher."

"The cost of Imagine Learning was approximately $6,000 for 2 classes. Lexia's cost was $7,000 for grades 1-5 plus 3 free training annually."

Nevada 2018 - http://charterschools.nv.gov/uploadedFiles/CharterSchoolsnvgov/content/News/2019/190118-Nevada-Connections-Academy-Elementary-Improvement-Plan-5-2-18.pdf

"Lexia Reading Core5 will be implemented for the 2018-19 school year. Lexia's assessment without testing technology provides teachers and administrators ongoing progress monitoring data without a test event. Student data monitoring helps support teacher effectiveness; predict students' overall likelihood of reaching end-of-year, grade-level benchmarks based on the students' monthly performance; as well as track performance on rigorous reading standards, such as the Common Core State Standards."

"All NCA students in grades K-5 will participate in the Lexia Reading Core5 initiative"

"In multiple studies published in peer-reviewed journals,19 Lexia Reading Core5 has been found to accelerate the development of reading skills, improve standardized test scores for elementary school students and help close the reading gap for targeted populations such as students that have been identified as low performers as well as English Learners."

Indiana July 2018 - https://www.doe.in.gov/sites/default/files/grants/invent-2018-application.pdf

"Personalized learning during math and literacy block will take place during small group instruction. Remediation and enrichment will take place during block times supported by our co-teaching model. During literacy block, students will use the programs Lexia (grades K-2 and 3-5 as needed) and Achieve 3000 (grades 3-8)."

"Lexia Reading Core 5 and Achieve 3000 will be used to support personalized learning in reading. Lexia will be used with all K-2 students and with grades 3-5 as needed for students still working on foundational reading. Achieve 3000 will be used with all students starting in third grade and with second grade students as-needed for enrichment beyond what Lexia provides"

"$9,900.00 will purchase Lexia reading software. This program provides targeted reading instruction in grades K-2 and beyond if necessary."

California - 2017

https://achieve.lausd.net/cms/lib/CA01000043/Centricity/Domain/106/LEARNING%20BY%20DESIGN%200000%20Petition%20New%20Term%202018-2023.pdf

"Classroom structure will include a flex-rotational model, with students rotating through "stations," in addition to whole class instructional time. Each classroom of approximately 25 students will be staffed with a certified teacher and a teacher assistant (TA). In one station, the TA may work with a small group ("Learning Hub") of students, grouped by ability level, on reading strategies in our Readers' Workshop model. At the same time, another group of students is working on tablets in engaging interactive and adaptive online curricula from programs like Lexia Core 5 Reading."

"Several of these programs have been shown to be particularly effective with English Learners and students with special needs by including images and visual content, sound and more. Programs such as, Lexia Core 5's literacy program include specific ELD support, including instructions given via audio in multiple languages and targeted strategies in developing phonological awareness, vocabulary and comprehension skills."

"Bria and six other students know that this is the day that their first station is online learning on their Chromebooks. So, they go to the computer area and sign-in to begin their individual online lessons. Bria is working on "Parts of a Sentence" on Lexia while a few other students are watching Brain Pop videos. Five other students join the teacher for a Readers' Workshop lesson."

Additional quotes:

"The big 'aha' moment we had last year, is that our reading intervention teachers, who are, I refer to them as surgeons. They're the ones who know exactly what a child needs to be working on, whether it's a blend of two sounds together or whatever it is, they are very, very specific. And time and time again, we had them starting to notice, "Wait a second. I was teaching a child this skill today and they said, 'Oh I'm working on that Lexia.' So then they were going to Lexia and they would notice that it was the exact same discrete specific skill where the child was struggling in their group, they were also working on that in Lexia, and we found that it was so precise and so aligned. It was like, "Are you kidding me? This is amazing." But not only is it available for those kids who are struggling the most, that level of precision is happening for every child who's using the program and most of those kids are not getting those reading interventions.

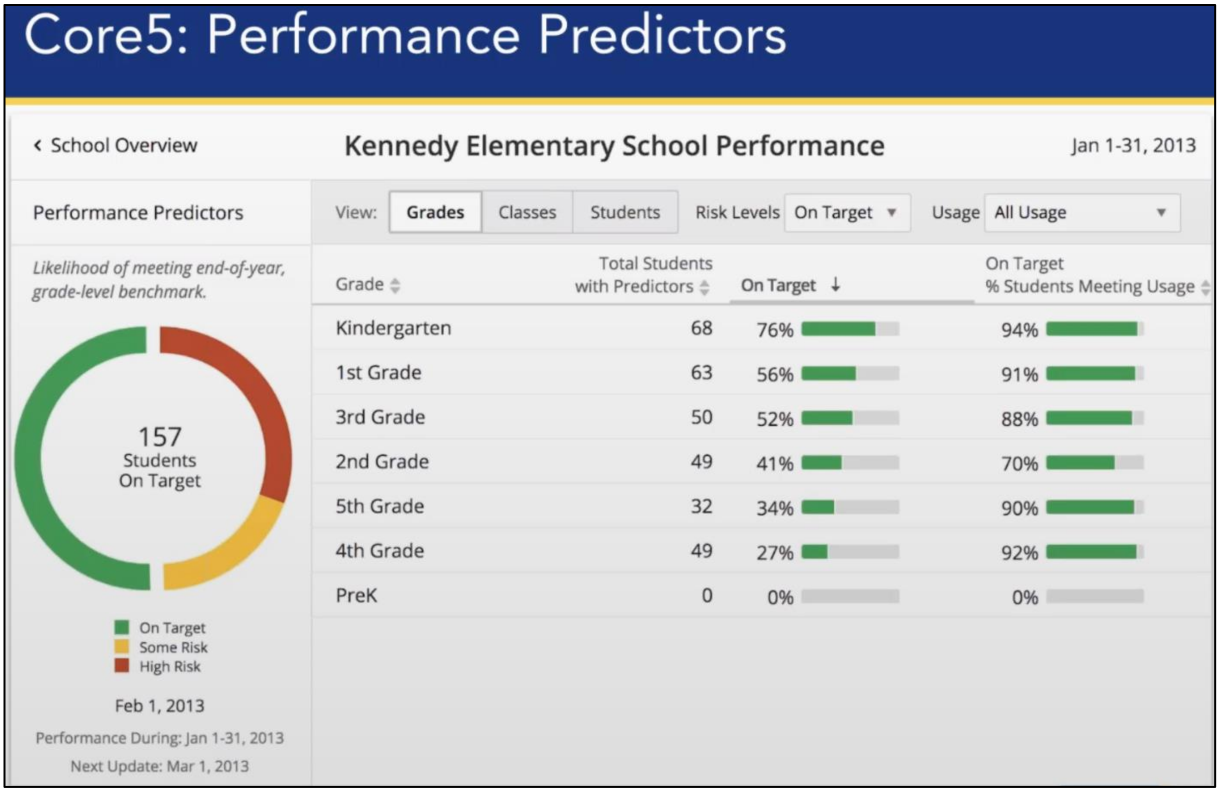
So every kid is getting that kind of instruction through Lexia that we could never provide to each individual kid. And so it really helps. And in sixth grade, their work, if they missed some skills back in third grade, Lexia catches that and they're working on that, those specific skills. And then as a teacher, if a kid gets really hung up, I see that as I'm looking at the data right away and it gives me a lesson plan that I can work on with that child or that small group to help them get past that hurdle so that their reading can really start to run. So, because the thing is that in an older grade, when kids are struggling with their reading, a lot of times they missed something before, they missed something at a younger grade, and those are not, so sixth grade teachers aren't teaching how to read. We're working on science and social studies and using the reading, but Lexia makes it, so now I am also able to provide that really specific reading instruction. So that's what's really powerful about it."

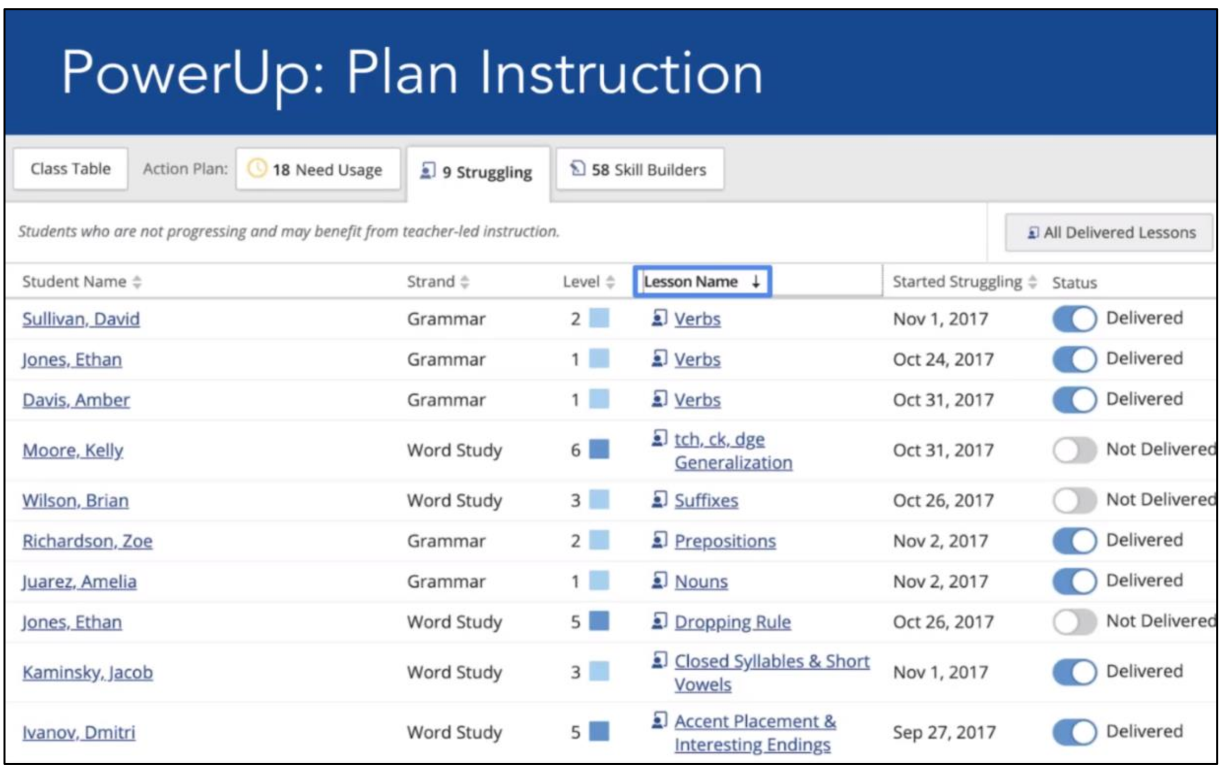
– Principal at Mountlake Terrace Elementary at Edmonds School District

RST ownership base:

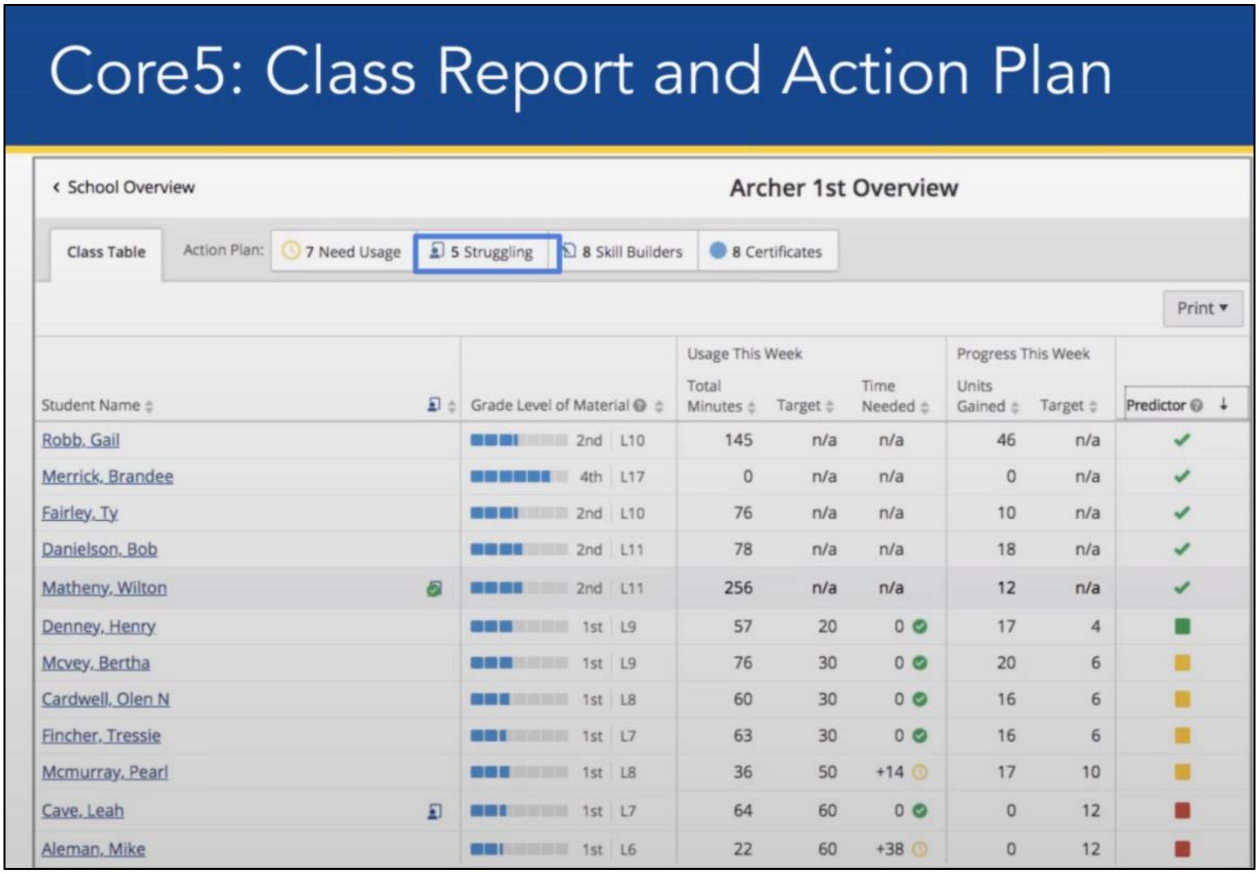
Top 20 Owners:	TOP 20 ALL						
Holder Name	Position	Position Change	Market Value	Ownershi	Report Date	Source	Country
T ROWE PRICE GROUP I	3,879,288	996,513	65,773,328	16.14%	6/30/2019	ULT-AGG	United States
RENAISSANCE TECHNOLO	1,782,300	0	30,218,896	7.42%	6/30/2019	13F	United States
TIMESSQUARE CAPITAL	1,711,615	100,890	29,020,432	7.12%	6/30/2019	13F	United States
BLACKROCK	1,467,385	39,326	24,879,513	6.11%	6/30/2019	ULT-AGG	United States
OSMIUM PARTNERS LLC	1,308,257	-247,198	22,181,497	5.44%	6/30/2019	13F	United States
VANGUARD GROUP	1,092,643	121,224	18,525,762	4.55%	6/30/2019	ULT-AGG	United States
NIERENBERG INVESTMEN	621,634	-92,859	10,539,804	2.59%	5/14/2019	Form 4	United States
SCHWARTZ INVESTMENT	609,309	0	10,330,834	2.54%	6/30/2019	13F	United States
ALLIANZ SE	583,131	65,953	9,886,986	2.43%	6/30/2019	ULT-AGG	Germany
ARIEL INVESTMENTS LL	523,530	-223,322	8,876,451	2.18%	6/30/2019	13F	United States
G2 INVESTMENT PARTNE	499,177	241,878	8,463,546	2.08%	6/30/2019	13F	United States
DIMENSIONAL FUND ADV	494,781	-36,504	8,389,012	2.06%	6/30/2019	13F	United States
STATE STREET CORP	464,652	63,083	7,878,175	1.93%	6/30/2019	ULT-AGG	United States
Hass A John	450,994	-751	7,646,603	1.88%	9/24/2019	Form 4	n/a
TWO SIGMA	442,894	75,982	7,509,268	1.84%	6/30/2019	ULT-AGG	United States
PRUDENTIAL FINANCIAL	397,825	395,310	6,745,123	1.66%	10/7/2019	ULT-AGG	United States
STEPHENS INV MGMT GR	348,258	348,258	5,904,714	1.45%	6/30/2019	13F	United States
AMG FUNDS LLC	342,078	6,000	5,799,932	1.42%	8/30/2019	MF-AGG	United States
ACADIAN ASSET MANAGE	333,213	254,791	5,649,626	1.39%	6/30/2019	13F	United States
MANULIFE FINANCIAL C	316,185	-22,609	5,360,917	1.32%	6/30/2019	ULT-AGG	Canada

Screenshot of teacher's data dashboard within Core5 and PowerUP:





The program identifies students in real time that need the same lesson that can then be grouped together for a special lesson, which is provided with specific instructions by Lexia as well.



Student Name	Grade Level of Material		Usage This Week: Total Minutes	Usage This Week: Target	Usage This Week: Time Needed	Progress This Week: Units Gained	Progress This Week: Target	Predictor
Robb, Gail	2nd	L10	145	n/a	n/a	46	n/a	✓
Merrick, Brandee	4th	L17	0	n/a	n/a	0	n/a	✓
Fairley, Ty	2nd	L10	76	n/a	n/a	10	n/a	✓
Danielson, Bob	2nd	L11	78	n/a	n/a	18	n/a	✓
Matheny, Wilton	2nd	L11	256	n/a	n/a	12	n/a	✓
Denney, Henry	1st	L9	57	20	0	17	4	
Mcvey, Bertha	1st	L9	76	30	0	20	6	
Cardwell, Olen N	1st	L8	60	30	0	16	6	
Fincher, Tressie	1st	L7	63	30	0	16	6	
Mcmurray, Pearl	1st	L8	36	50	+14	17	10	
Cave, Leah	1st	L7	64	60	0	0	12	
Aleman, Mike	1st	L6	22	60	+38	0	12	

Here are some links showing PE interest in EdTech and literacy software, including some PE firms that are launching funds specifically for this niche.

https://www.cnbc.com/video/2019/09/19/rockcreek-founder-afsaneh-beschloss-on-why-sustainable-investing-is-on-the-rise.html

https://www.pehub.com/2018/02/private-equity-investors-betting-digital-education/

https://www.edsurge.com/news/2019-01-15-us-edtech-investments-peak-again-with-1-45-billion-raised-in-2018

- Sterling Partners: Education Opportunities Fund
    - https://www.sterlingpartners.com
- Education Growth Partners
    - https://edgrowth.com/

Transaction comps from AGC:

Acquirer	Number of Acquisitions	Notable Transaction	Representative Acquisitions
INSIGHT VENTURE PARTNERS	11	Jul-18 - Announced 5-way merger to created Illuminate (ND)	Gradescope, Illuminate, Alpine, SchoolCity, KDS, Teachscape, Solutions In Mind, Centris, Excent, eSPED.com, School Network Improvement
VISTA PRIVATE EQUITY	10	Aug-17 - Acquired The Advisory Board's education business, aka EAB ($1.5B)	EAB, Powerschool, SunGard Public Sector, InfoSnap, Maximus, Haiku Learning, SRB Education, Chalkable, TeacherMatch, Performance Matters
WELD NORTH	6	Jan-18 - Sale of Weld North Education (KKR to Silver Lake, $950M)	Intellify Learning, Performance Matters, Big Brainz, Think Through Learning, Reasoning Mind, CompassLearning
PROVIDENCEEQUITY	4	Dec-18 - Acquired Tes Global from TPG (ND)	Scenario Learning, Convergence Training , Tes Global, Blue Canary Data Analytics
LEEDS EQUITY PARTNERS	4	Sep-18 - Acquired Campus Management Corp (ND)	DecisionHealth, Pass Perfect Associates, Idenizen Smartware, Educaiton Partners
REVELSTOKE MOUNTAIN RESORT	4	10-16 - Acquired Medic-CE.com (ND)	Career Step, Emergency Certifications, Code3 CME, Medic-CE
FP FRANCISCO PARTNERS	3	5-16 - Acquired Renaissance Learning from Hellman & Friedman (ND)	myON, Discovery Education, Renaissance Learning
BRENTWOOD ASSOCIATES	3	8-18 - Acquired LifeCubby (ND)	ChildCare Education Institute, Frog Street Press, LifeCubby
THOMA BRAVO	2	8-17 - Acquired Frontline Technologies from Insight Venture Partners (ND)	Frontline Technologies, Prologic Technology Systems
Riverside	2	5-18 - Acquired Destiny Solutions	n2y LLC, Destiny Solutions

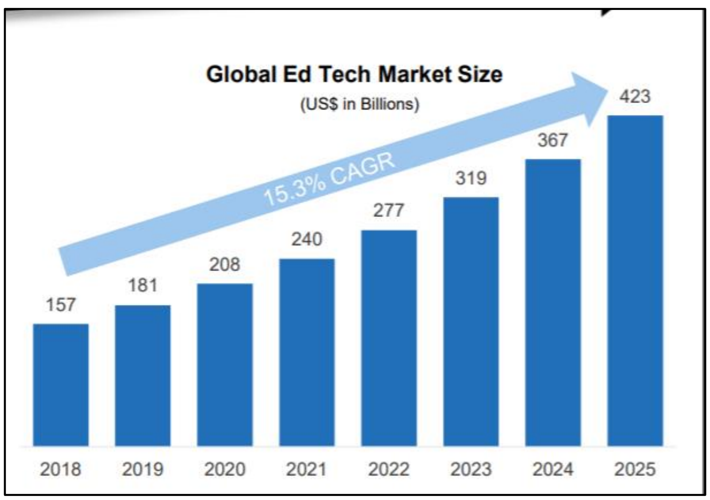
Date	Target	Acquirer	Sector	Target Business Description	Deal Rationale	EV ($M)
Aug-15	ellucian.	TPG	Academic Mgt. Systems	Provides enterprise information management software, SaaS and services	Ellucian's industry leadership, global reach, management depth, and deep vertical focus position the company well for continued success and growth	3,500
Sep-18	COGNITA	JACOBS HOLDING AG	Academic Distribution	Provides excellent teaching and support to every student to achieve his or her full potential	Cognita presents a very interesting opportunity to create value not only for Jacobs Holding but also for society	2,500
Apr-17	ascend LEARNING	Blackstone	Corporate Mgt. Systems	Provides technology-based educational, curriculum, and assessment solutions	Blackstone's unique strategy to hold private equity investments in exceptionally high-quality companies for longer periods of time than traditional private equity funds	2,000
Jun-15	PowerSchool	ONEX	Academic Content	Offers student information systems and performance solutions for K-12 schools and districts	PowerSchool has an impressive track record of delivering innovative, mission-critical products that serve the diverse needs of educators, parents and students around the globe	1,744
Aug-17	EAB	VISTA PRIVATE EQUITY	Academic Mgt. Systems	Provides research, consulting, and systems integration services for the education sector	Working with management, Vista seeks to scale EAB's best-in-class thought leadership to its loyal and expanding educational member base.	1,550
Apr-15	lynda.com	LinkedIn	Corporate Distribution	Provides online, video-based educational courses	lynda.com can change the way in which people connect to opportunity	1,500
Feb-17	APOLLO EDUCATION GROUP	APOLLO	Academic Distribution	Provides private education services in the United States	This transaction will allow us to accelerate our efforts to improve outcomes for all of our students	1,212
Jan-18	WELD NORTH	SILVERLAKE	Academic Content	Develops a digital curriculum and tools for preK-12th grade	Believe in Weld North's vision to become the market leader in preK-12 digital education. This is the first deal of its size in the crriculm space.	950
Dec-16	SUNGARD PUBLIC SECTOR	VISTA PRIVATE EQUITY	Academic Mgt. Sytems	Comprises enterprise software developing business for public administration, public safety, and education officials	The education unit provides numerous synergies with Vista-owned Powerschool	850
Jul-17	CAPELLA EDUCATION COMPANY	STRAYER EDUCATION INC.	Corporate Distribution	Provides online college education services for students in the U.S.	Combination will accelerate investment in the educational experience students receive	800

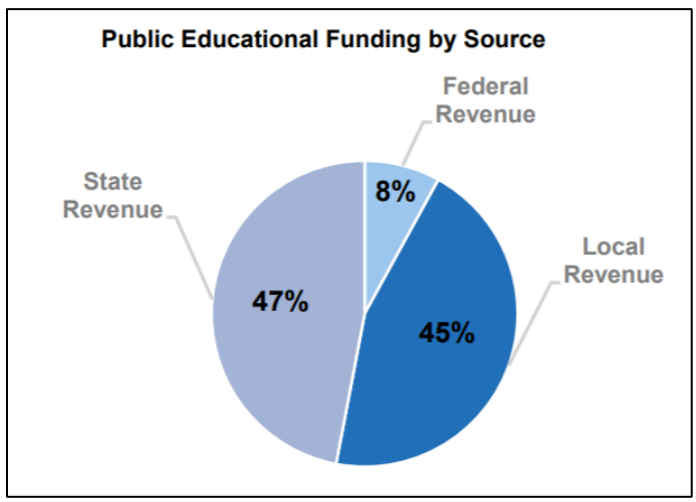
Trading comps from the AGC presentation:

($ in millions)		Market Data				Operating Data[c]								
	Enterprise	EV / Revenue		EV / EBITDA		Revenue		EBITDA		Revenue Growth			LQ Gross	EBITDA
Company	Value[a] [b]	2018E	2019E	2018E	2019E	2018E	2019E	2018E	2019E	17A/'16A	18E/'17A	19E/18E	Margin	Margin
Pearson	$10,255	1.9x	1.9x	11.6x	10.5x	$5,362	$5,473	$881	$974	9%	(12%)	2%	51%	16%
Tyler Technologies	6,914	7.4x	6.7x	24.6x	21.6x	938	1,039	$281	320	11%	12%	11%	47%	30%
Blackbaud	3,624	4.3x	4.1x	19.4x	20.5x	850	892	$187	177	8%	8%	5%	55%	22%
Chegg	3,612	11.4x	9.3x	44.0x	32.1x	317	388	$82	113	0%	24%	22%	73%	26%
Cornerstone OnDemand	3,029	5.7x	5.3x	33.2x	23.4x	529	567	$91	129	14%	10%	7%	73%	17%
2U	2,761	6.7x	5.0x	NM	NM	412	547	$18	12	39%	44%	33%	79%	4%
Pluralsight	1,672	7.3x	5.5x	NM	NM	231	307	($43)	(28)	27%	38%	33%	75%	(19%)
Instructure	1,167	5.6x	4.5x	NM	NM	209	259	($16)	(11)	43%	32%	24%	71%	(8%)
Beijing Lanxum	1,116	3.4x	3.2x	ND	ND	328	353	37	ND	22%	(1%)	8%	48%	11%
Learning Technologies	756	6.0x	4.5x	21.9x	16.1x	126	170	$34	47	102%	79%	35%	25%	27%
Kahoot!	339	ND	ND	ND	ND	ND	ND	ND	ND	NM	NM	NM	NM	NM
Rosetta Stone	336	1.9x	1.8x	NM	82.4x	173	191	($2)	4	(5%)	(6%)	11%	79%	(1%)
Sylogist	191	6.7x	6.1x	14.1x	12.3x	28	31	$14	16	3%	5%	10%	70%	48%
MEDIAN	$1,672	5.9x	4.8x	21.9x	21.1x	$323	$371	$36	$47	13%	11%	11%	71%	17%

Notes:
(a) Based on closing stock prices on January 17, 2019
(b) Calculated as Equity Value plus total debt, minority interest (at book value unless otherwise noted) and preferred stock, less cash & equivalents
(c) Projections represent Wall Street consensus mean estimates

Other interesting charts on the EdTech industry:



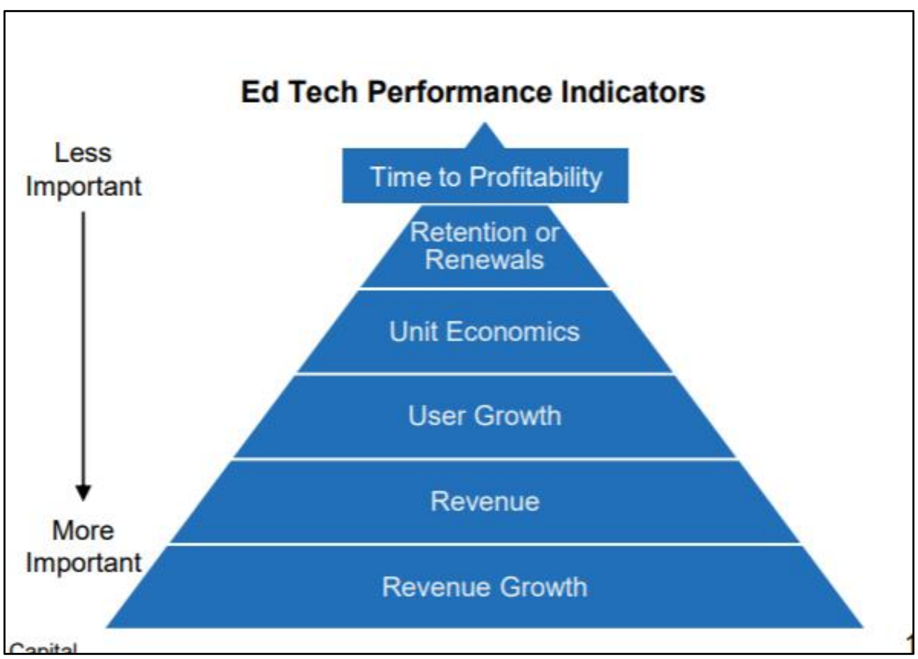


More from AGC on some of the metrics that go into determining a software company's revenue multiple:

AGC's SaaS Performance Exam

AGC is the most active SaaS focused investment bank and has unmatched experience working with the most relevant SaaS metrics

	Not Strong	Solid	Great
ARR Scale	<$8M	$8-20M	$20M+
ARR 3-Year CAGR	5-20%	20-50%	50%+
Customer Retention	90%	90-95%	95%+
% Subscription	<70%	70-90%	90%+
Gross Margin	<60%	60-75%	75%+
Rule of 40%	<20%	20-40%	40%+
LTV / CAC	<3x	3-5x	5x+
ASP/Customer/Year	<$25k	$25k-250k	$250k+
Avg. Contract Length	<1 year	2 years	2+ years
TAM	$500M	$1-2B	$2B+
Barriers to Entry	Low	Medium	High
Representative Multiple	**2-4x**	**4-6x**	**7-10x+**



Source for the above graphics: http://www.abscapital.com/assets/2019/03/14-agc-edtech-jan-2019.pdf

Babbel vs. Rosetta Stone:

"Rosetta Stone Language Software has a higher overall rating than Babbel Language Software. Rosetta Stone scores better than Babbel across: Cost, and Customer Experience. Both companies score similarly on Educational Model, Additional Features, and Languages."

https://www.consumersadvocate.org/language-software/compare/babbel-vs-rosetta-stone

	Languages Offered	Rosetta Stone	Babbel	Duolingo
1	Arabic			
2	Chinese (mandarin)			
3	English (American)			
4	English (British)			
5	Dutch			
6	Filipino (Tagalog)			
7	French			
8	German			
9	Hebrew			
10	Hindi			
11	Irish			
12	Italian			
13	Japanese			
14	Korean			
15	Persian (Farsi)			
16	Polish			
17	Portuguese (Brazil)			
18	Russian			
19	Spanish (Latin America)			
20	Spanish (Spain)			
21	Swedish			
22	Turkish			
23	Vietnamese			
24	Czech			
25	Indonesian			
26	Welsh			
27	Romanian			
28	Hawaiian			
29	Norwegian			
30	Danish	Level 1 only		
31	Ukranian			
32	Navajo			beta
33	Latin			beta
34	Swahili			beta
35	Hungarian			beta
36	Esperanto			
37	Greek			

Major Corporate Event & Product Release Timeline

1984:

- Lexia founded in Concord, Massachusetts by Bob Lemire with grants from the National Institute of Child Health and Human Development

2013:

- July: acquires Lexia Learning Systems, Inc. for $22.5 million
- Core5 flagship product release

2014:

- January: acquires Vivity Labs for $12 million (CAD)
- June 13-D filing from D3, David Nierenberg
- August: 13-D from Osmium Capital, John Lewis

2015:

- Begin to pivot consumer language business to pure SaaS, reduce investment in kids reading line, cut retail locations and partners by 50%, shift Lexia to direct sales force, sold Korean subsidiary
- Launched Core5 version 2
- June 2015: 13-D filing from Roumell Asset Management

2016:

- John Hass becomes CEO
- Initiate E&E restructuring, closing offices in France, China, Brazil (came with acquisitions) and downsized all other offices
- Cut SG&A run-rate by $120M from 2014 to end of 2017, but did not cut R&D
- Launched RAPID Assessment

2017:

- Divest Rosetta Stone Japan Inc.
- Enhanced Lexia reporting/data dashboard

2018:

- Launched PowerUP

2020:

- Release of ELL product, merging of ELL+Lexia to My Lexia platform

Disclosures and Notices: