

McGraw-Hill Education

Q3-2018 Investor Update

November 14, 2018



6 SiiA CODiE Awards for our products since 2014



5 PROSE Awards for our products since 2014



2018 The Journal Readers' Choice Awards

Forbes America's Best Midsize Employers 2018 #2 in Media & Advertising



Universum Top-100 Employers for College Graduates (2018)

ALEKS: BrightBytes Most Effective App for Math Learning (2018)

Important Notice

Forward-Looking Statements

This presentation includes statements that are, or may be deemed to be, “forward-looking statements.” These forward-looking statements can be identified by the use of forward-looking terminology, including the terms “believes,” “estimates,” “anticipates,” “expects,” “intends,” “plans,” “may,” “will” or “should” or, in each case, their negative or other variations or comparable terminology. These forward-looking statements include all matters that are not historical facts. They appear in a number of places throughout this presentation and include statements regarding our intentions, beliefs or current expectations concerning, among other things, our results of operations, financial condition, liquidity, prospects, growth, strategies and the industry in which we operate.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. We caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate, may differ materially from those made in or suggested by the forward-looking statements contained in this presentation. In addition, even if our results of operations, financial condition and liquidity, and the development of the industry in which we operate are consistent with the forward-looking statements contained in this presentation, those results of operations, financial condition and liquidity or developments may not be indicative of results or developments in subsequent periods.

Any forward-looking statements we make in this presentation speak only as of the date of such statement, and we undertake no obligation to update such statements. Comparisons of results for current and any prior periods are not intended to express any future trends or indications of future performance, unless expressed as such, and should only be viewed as historical data.

Non-GAAP Financial Measures

Certain financial information included herein, including Billings, EBITDA and Adjusted EBITDA, are not presentations made in accordance with U.S. GAAP, and use of such terms varies from others in our industry. Billings, EBITDA and Adjusted EBITDA should not be considered as alternatives to revenue, net income from continuing operations, operating cash flows or any other performance measures derived in accordance with U.S. GAAP as measures of operating performance, debt covenant compliance or cash flows as measures of liquidity. Billings, EBITDA and Adjusted EBITDA have important limitations as analytical tools, and you should not consider them in isolation or as substitutes for analysis of our results as reported under U.S. GAAP. This presentation includes a reconciliation of certain non-GAAP financial measures to the most directly comparable financial measures calculated in accordance with U.S. GAAP.

Adjusted EBITDA, which is defined in accordance with our debt agreements, is provided herein on a segment basis and on a consolidated basis. Adjusted EBITDA by segment, as determined in accordance with Accounting Standards Codification Topic 280, Segment Reporting, is a measure used by Management to assess the performance of our segments. Adjusted EBITDA on a consolidated basis is presented as a debt covenant compliance measure. Management believes that the presentation of Adjusted EBITDA is appropriate to provide additional information to investors about certain material non-cash items and about unusual items that we do not expect to continue at the same level in the future as well as other items to assess our debt covenant compliance, ability to service our indebtedness and make capital allocation decisions in accordance with our debt agreements.

Business Review

McGraw-Hill Education Q3-2018 Results

Continued strong digital performance in Higher Ed more than offset by implementation of Higher Ed Affordability Initiatives by MHE and broader market, cyclical trough in K-12 and investment in preparation for significantly larger K-12 markets in 2019/2020

- Higher Ed: strong digital growth more than offset by lower print revenues driven by Affordability Initiatives
 - Activations, Inclusive Access (digital affordability solution), and Direct to Student e-commerce all drove growth in digital Billings
 - New rental model launched across all major distributors and backstopped with lower priced loose-leaf; ratio of loose-leaf sales vs. rental higher than expected in first season – “Divot” in line with guidance
 - Product returns down substantially (through early Nov.) as business transitions to digital, rental and loose-leaf
- K-12: CA English Language Arts (ELA) market cyclically declining by ~80% in 2018 as anticipated; also impacted digital Billings
 - Lower Billings led to significant EBITDA flow-through impact; expected to reverse in 2019 as Adoption market grows
 - MHE performed well in the three largest opportunities: CA ELA, CA Social Studies and FL Science
 - K-12 Open Territory weaker than anticipated in Q3 as states deferred core basal purchases in anticipation of new and revised products for 2019/2020 Adoptions
- 2019 and 2020 K-12 new adoption market opportunity expected to be double the size of 2018 driven by TX, CA and FL; Approved for CA; all other States on track for approval
- CFO Pat Milano to retire at end of 2018; search underway

McGraw-Hill Education, Inc.

<u>Total MHE Performance</u>	<u>9/30/18</u>	<u>Y/Y%</u>
MHE Billings – Q3	\$785M	-5%
– YTD	1,359M	-11%
MHE Digital Billings – YTD	\$657M	-2%
% Digital Billings	48%	44% in YTD-17
EBITDA Before Pre-Pub. Invest – Q3	\$393M	-6%
– YTD	357M	-25%
Adjusted EBITDA – Q3	\$368M	-6%
– YTD	286M	-29%
<u>Key Indicators (YTD)</u>		
Inclusive Access Net Sales	\$48M	+169%
Connect/LearnSmart Paid Activations	3.6M	+8%
ALEKS Unique Users	3.9M	+10%
<u>MHE Inc. Liquidity at 9/30/18*</u>		
Cash	\$134M	
Credit Line Capacity	346M	
Total Liquidity	\$480M	

Strong Liquidity

- \$350M bank revolver fully repaid in September
- \$139M of debt repaid from cash flow LTM
- Over \$275M bank cash balance at 10/31**
- No material funded debt maturities until 2022

Higher Education Q3-2018 Results

Digital is now more than 2/3 of total Billings with strong unit and Billings growth more than offset by expected print declines driven by Affordability Initiatives

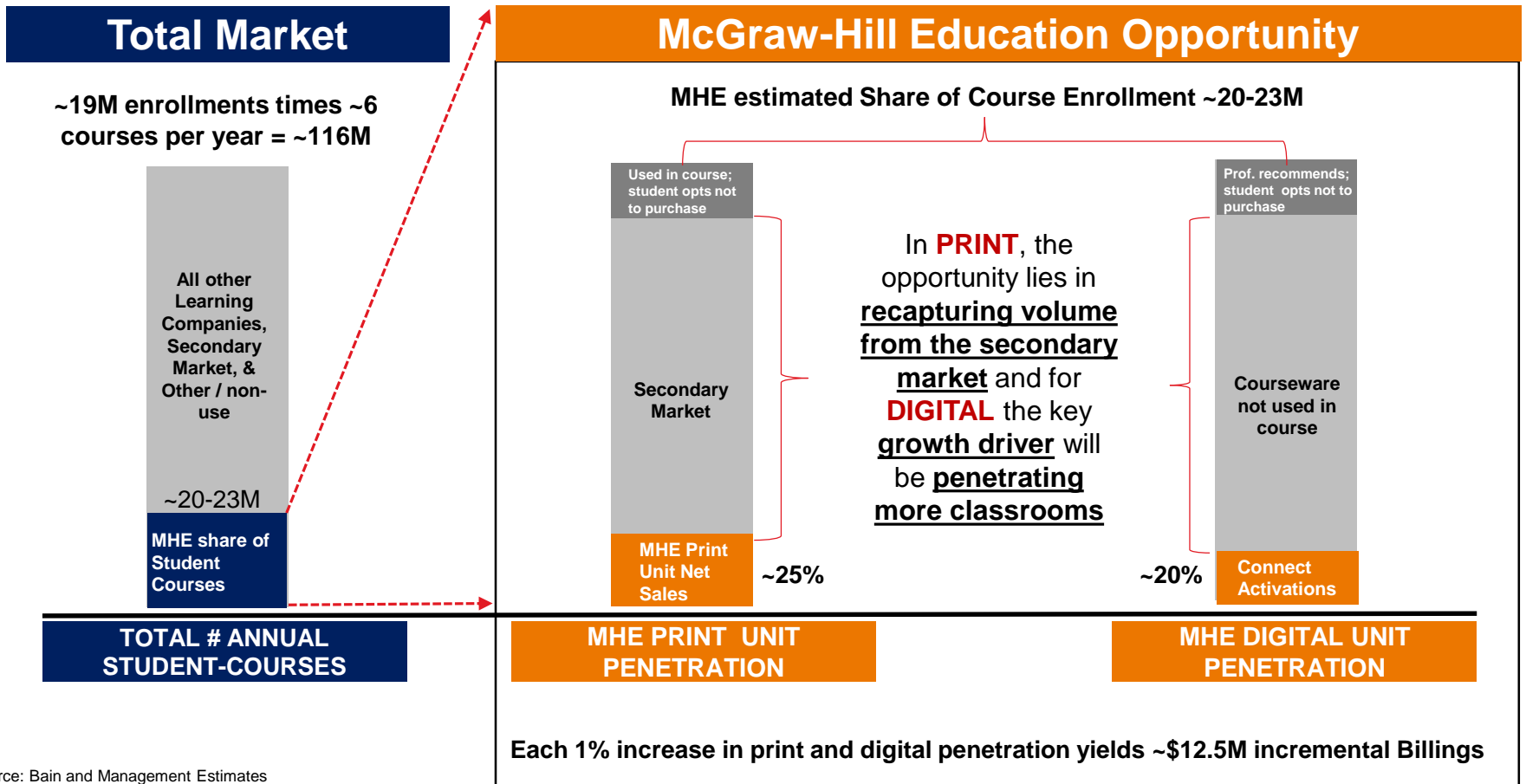
- Print Affordability Initiative: rental program logistics in place for all major distributors
 - Rental was backstopped with lower priced loose-leaf offering to address partners who could not fully implement in the Fall
 - Ratio of loose-leaf to rental units was higher than expected given that distributors, especially independent stores, couldn't fully implement rental for the first semester of launch
 - Divot from rental and lower priced loose-leaf primarily impacted Q3, but won't be fully known until end of Q4
 - Rental Divot should be within, but towards top of, previous guidance (~\$19-37M Billings and ~\$20M EBITDA)
 - Anticipate increased sell-through as broader roll-out continues
- Overall YTD net sales for market down 7% as affordability initiatives are implemented across the industry
 - In addition to the rental Divot, industry-wide pricing compression impacted MHE Billings
 - Billings Divot from rental resulted in minimal (~30 bp) adverse MPI market share impact; no unit impact YTD from competitor affordability programs
 - Product returns continued to decline substantially through early Nov. due to growth in digital/print affordability programs
- Billings related to Inclusive Access and rental mostly reflected in Q3 results (limited Billings to be recorded in Q4)

MHE Higher Education (All figures now INCLUDE impact of new rental program)		
Higher Ed Performance	9/30/18	Y/Y%
Billings (net <u>accrued</u> returns)¹ – Q3	\$320M	-8%
– YTD	542M	-6%
Net Sales (net of <u>actual</u> returns)² – Q3	\$331M	-14%
– YTD	527M	-9%
Digital Billings – YTD	\$372M	+4%
% Digital Billings	69%	63% in YTD-17
Direct-to-Student e-commerce Sales	\$191M	+3%
Inclusive Access Net Sales	48M	+169%
Actual Product Returns Change	-22M	-17%
EBITDA Before Pre-Pub. Invest – Q3	\$182M	-13%
– YTD	199M	-12%
Adjusted EBITDA – Q3	\$173M	-13%
– YTD	173M	-15%
MHE vs. Industry Performance per MPI^{2,3}		
MHE Market Share Change – LTM		~-30 bps
Industry Net Sales (<u>actual</u> returns) – YTD		-7%
Key Indicators (YTD)		
Connect/LearnSmart Paid Activations	3.6M	+8%
ALEKS Unique Users	1.7M	+10%

Monetizing use of MHE IP for both print and digital

Higher Ed Inclusive Access, Print Rental and Lower Cost Loose-leaf

Transitioning the base to lower prices, higher volumes and subscription models (Digital Inclusive Access and Print Rental) is a multi-year effort for MHE and the industry as a whole, but represents a significant opportunity for growth with accretion later than originally anticipated for MHE



Source: Bain and Management Estimates

K-12 Q3-2018 Results

2018 results driven by anticipated cyclically smaller CA ELA adoption market and weaker than expected Open Territory results as districts delay purchasing ahead of large upcoming adoptions

- 2019 and 2020 K-12 new adoption market opportunity expected to be double the size of 2018, driven by TX, CA and FL
 - McGraw-Hill fully approved for California Science
 - TX final State approval expected imminently; FL on track
- Final year of CA ELA adoption market declined 80% (est.), as anticipated, with CA total sales (incl. 9-12) accounting for \$94M of \$125M Y/Y decline in 9 month MHE Billings
 - Adoption Billings decline concentrated in H1
 - H2 and FY 2018 adoption market generally in line with Q2 forecast
 - MHE performed well in final year of CA ELA adoption as well as in CA Social Studies and FL - particularly grades 6-12 in both States
- Open Territory sales (excl. CA 9-12) were weaker than expected in Q3
 - OT (excl. CA) YTD below anticipated -3% to +3% long-range market estimate as districts await new programs to be sold in the larger 2019 and 2020 adoptions
 - AAP market saw higher sales from intervention/supplemental segment where MHE is currently underpenetrated
- Estimating K-12 Billings in FY 2018 to be -17 to -20% Y/Y (vs. prior guidance of -10 to -15% Y/Y) due to continued OT weakness
- EBITDA flow-through rate on marginal K-12 sales in H2 very high (over 75%) as variable costs are minimal; flow-through in 2019 should be significant as large new adoptions drive sales
 - Sampling costs will increase in Q4 ahead of 2019 large adoptions

MHE K-12		
<u>K-12 Performance</u>	<u>9/30/18</u>	<u>Y/Y%</u>
Billings (net of <u>accrued</u> returns) – Q3	\$344M	-5%
–YTD	555M	-18%
Digital Billings	\$204M	-14%
% Digital Billings	37%	35% in YTD-17
EBITDA Before Pre-Pub. Invest – Q3	\$169M	-6%
– YTD	127M	-42%
Adjusted EBITDA – Q3	\$157M	-6%
– YTD	94M	-48%
<u>Key Indicators</u>		
K-12 Digital Unique Users	9.0M	+25%
ALEKS Unique Users	2.2M	+11%

New Adoption Market Should Double in 2019

- New Adoption Market 2017: \$700M
- New Adoption Market 2018: \$420-\$520M
- New Adoption Market 2019: \$900M-\$1.1B

K-12 New Adoption Market Update

Significant opportunity in 2019-2020 after cyclical downturn in 2018

	2017	2018E	2019E	2020E
California K-8 <i>CA 9-12 classified within Open Territory</i>	Reading (yr 2) ~\$400M	Reading (yr 3) ~\$60-80M		
	+30% vs. 2016	- ~80% vs. 2017 for K-8 ELA		
		Social Studies (yr 1) ~\$50-65M	Social Studies (yr 2) ~\$70-100M	Social Studies (yr 3)
	+30% vs. 2016	- ~70% vs. 2017 for Total CA	Science (yr 1) ~\$100-125M	Science (yr 2)
Florida	Social Studies >\$100M	Science ~\$125-150M	Math ~\$150-200M	Reading
Texas			Reading (K-8) \$350M+	Reading (9-12)
Big-3 State New Adoption Estimated Total Market	>\$500M	~\$235-295M	\$700M+	
Total New Adoption Estimate	~\$700M (vs. anticipated range of ~\$600-650M)	~\$420-520M -26 to -40%	~\$900-1,100M ~+100%	~\$900M-\$1,000M

Open Territory (new and residual) total market estimated to fluctuate -3% to +3% per annum over the next several years

- For 2018, we expect the market to be at the low end of the range
- For 2019, we expect the market to be at the high end of the range as large New Adoptions historically stimulate Open Territory growth
- New Adoption/Open Territory mix can be impacted by states that migrate to open territory practices

International and Professional Q3-2018 Results

Repositioning the businesses for growth in 2019 and beyond

International

- New management implemented significant changes to refocus business towards regional decision making closer to customer, increasing front-list publishing to maximize print and digital Billings
- Improved results in several markets in Q3 including Canada and China; stabilization in Latin America
 - \$3M impact YTD from sale of Canadian K-12 in May 2017
 - Large multi-year Middle East contract booked Q3-2018 vs. Q4-2017; benefits Q3 but adversely impacts Q4 Billings and EBITDA
 - Billings adversely impacted by past smaller front-list as well as by stronger controls on sales in distributor markets (vs. direct sales markets) to address issues associated with sales of overseas editions in the U.S. secondary market

Professional

- YTD Billings declined vs. prior year, but subscription renewal rate remained strong
 - Digital Billings adversely impacted by timing of large number of multi-year renewals (paid upfront) in 2017
 - Print Billings impacted by lower ordering by one customer
- Focused on maximizing global sales of new edition of *Harrison's Principles of Internal Medicine*, along with growth in Access platform sales

MHE International

<u>International Performance</u>	<u>9/30/18</u>	<u>Y/Y%</u>
Billings (reported) – Q3/YTD	\$90M/\$184M	+5%/-4%
(constant FX) – Q3/YTD	\$93M/\$184M	+8%/-4%
Digital Billings – YTD	\$40M	+30%
% Digital Billings	22%	16% in YTD-17
EBITDA Before Pre-Pub. – Q3	\$26M	+81%
– YTD	7M	+25%
Adjusted EBITDA – Q3	\$23M	+76%
– YTD	2M	nm

MHE Professional

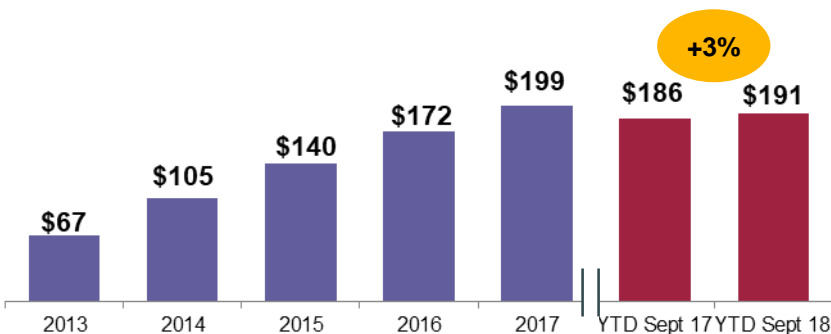
<u>Professional Performance</u>	<u>9/30/18</u>	<u>Y/Y%</u>
Billings – Q3/YTD	\$29M/\$76M	-2%/-5%
Digital Billings – YTD	39M	-4%
% Digital Billings	51%	50% in YTD-17
EBITDA Before Pre-Pub – Q3	\$14M	+10%
– YTD	23M	-8%
Adjusted EBITDA – Q3	\$12M	+14%
– YTD	17M	-11%
<u>Key Indicator</u>		
Access Platform Renewal Rate ¹	93%	

Digital Ed Tech Highlights

Strong digital growth continued across MHE

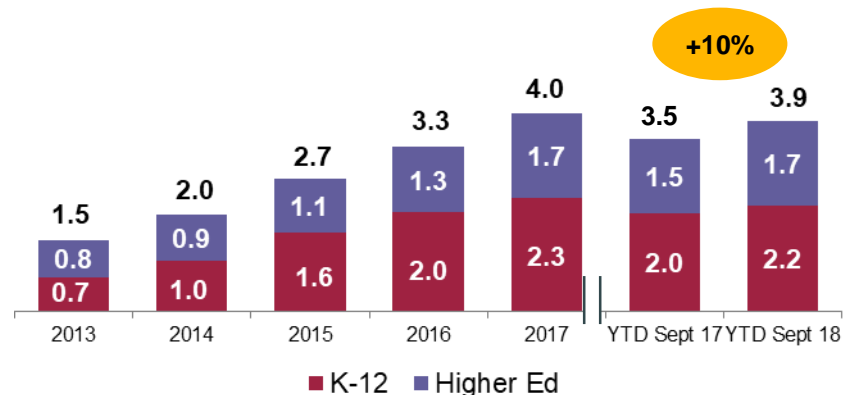
All numbers are in millions

E-COMMERCE NET SALES (U.S. Higher Ed)



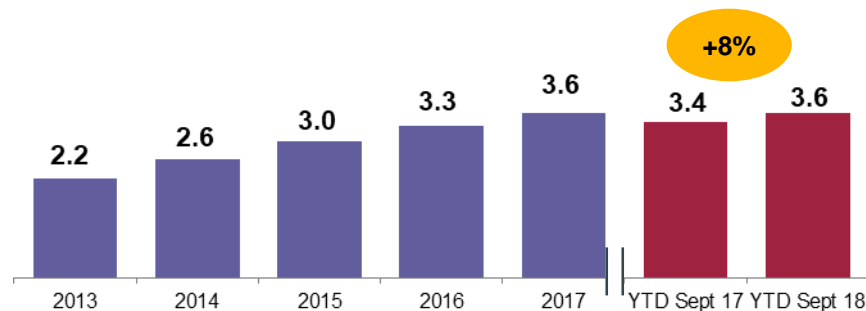
169% growth in Inclusive Access to \$48M complemented e-commerce sales

ALEKS Unique Users² (Global Higher Ed, K-12)



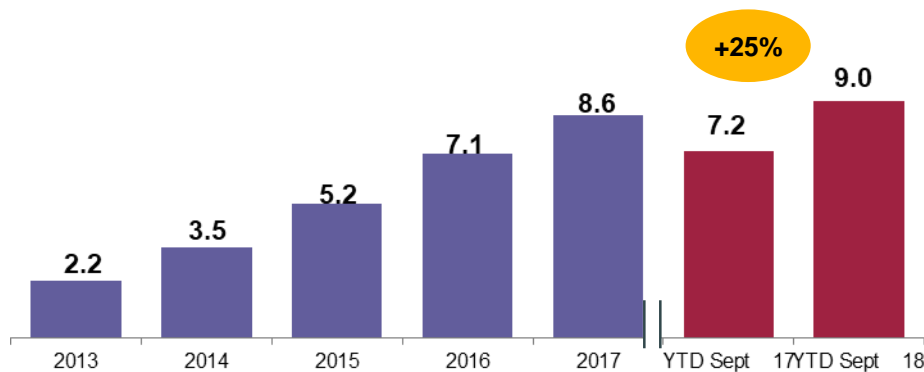
8.0B interactions on ALEKS since 2010

CONNECT/LEARNSMART PAID ACTIVATIONS¹ (US HIGHER ED)



11.1B LearnSmart interactions since 2009

K-12 Digital Access Unique Users (K-12)



ConnectEd and my.mheducation.com are both entry points for K-12 students starting in 2018 (previously ConnectEd)

¹Connect/LearnSmart paid activations exclude ~370K of international paid activations.

²ALEKS Unique Users include ~157K international unique users.

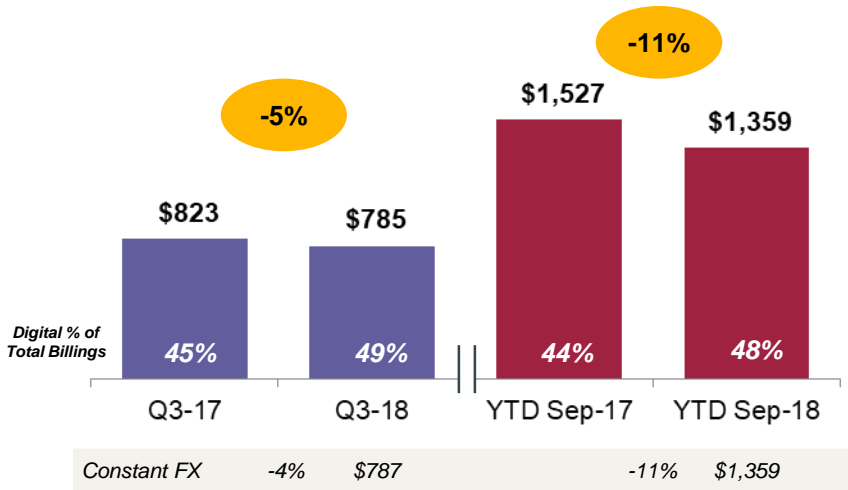
Financial Review

MHE Financial Review

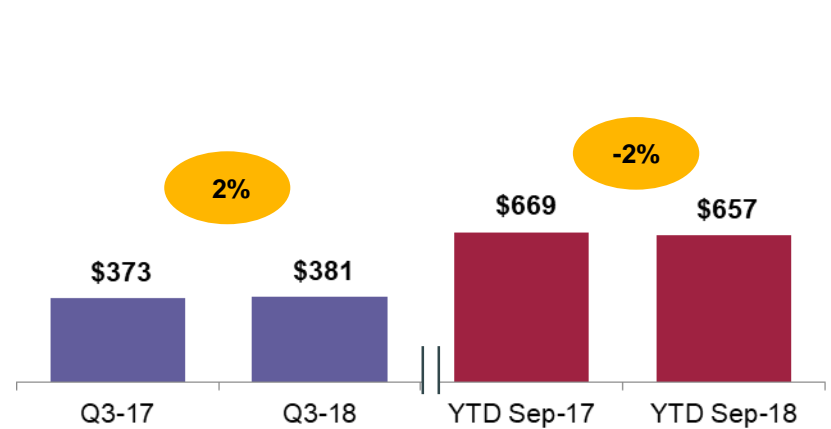
Cyclically smaller K-12 market key driver in print and digital Billings decline

(\$ in Millions)

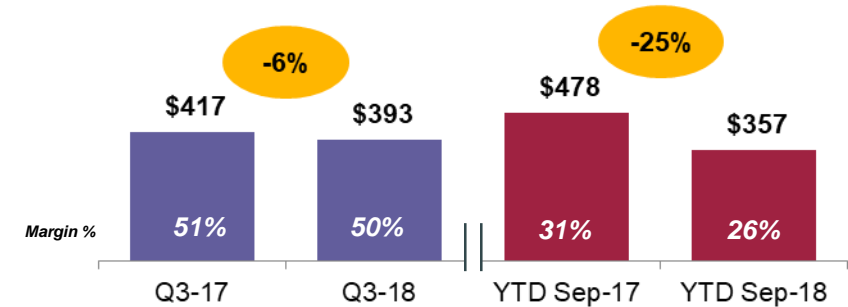
TOTAL BILLINGS



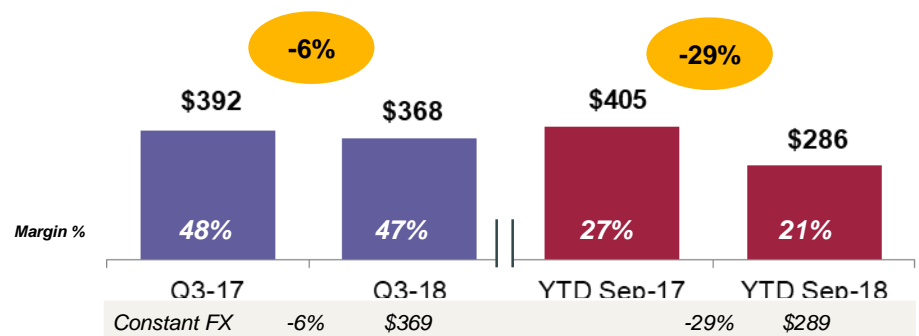
DIGITAL BILLINGS



EBITDA BEFORE PRE-PUBLICATION INVESTMENT



ADJUSTED EBITDA

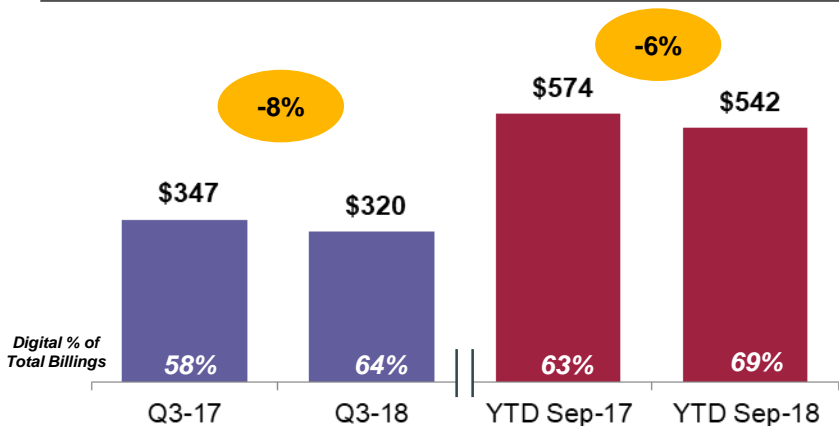


Higher Education Financial Review

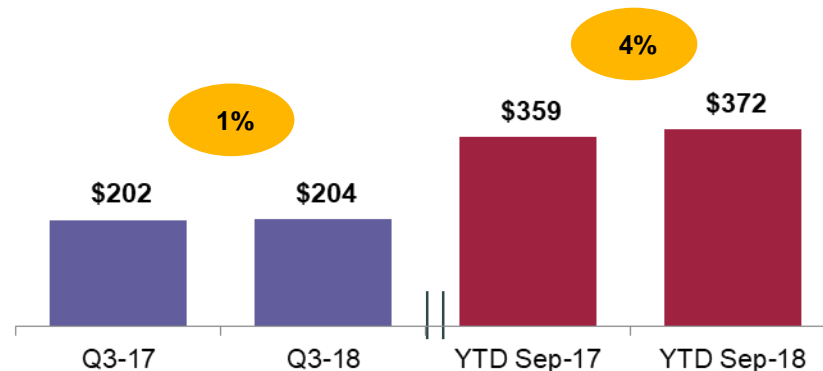
Digital Billings grew in all periods despite rental Divot impact on Billings and EBITDA

(\$ in Millions)

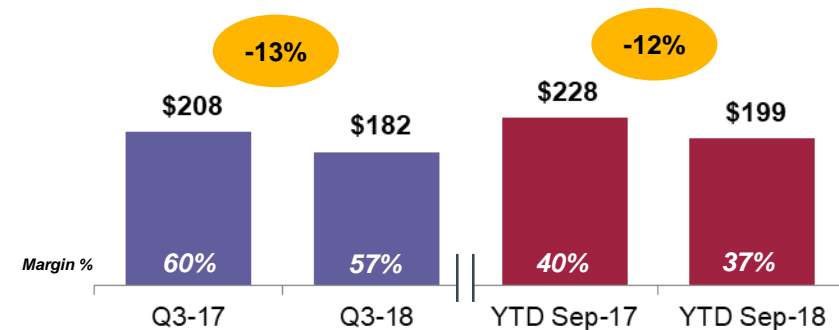
TOTAL BILLINGS



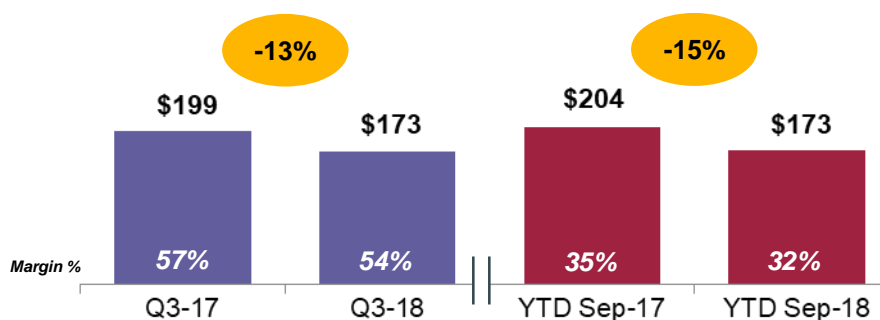
DIGITAL BILLINGS



EBITDA BEFORE PRE-PUBLICATION INVESTMENT



ADJUSTED EBITDA

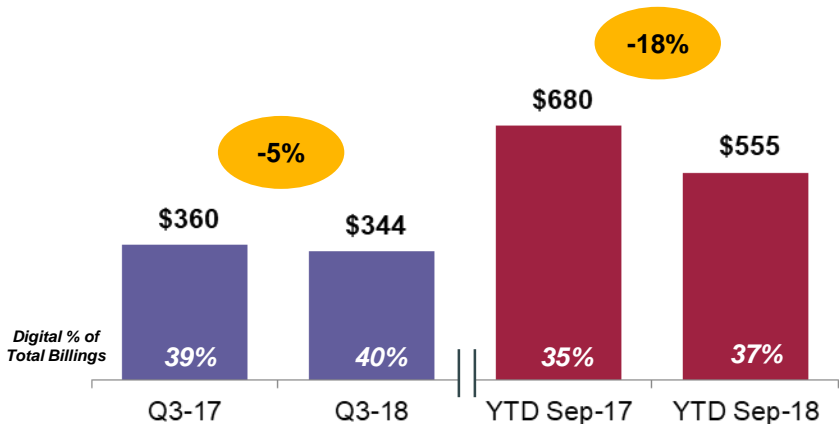


K-12 Financial Review

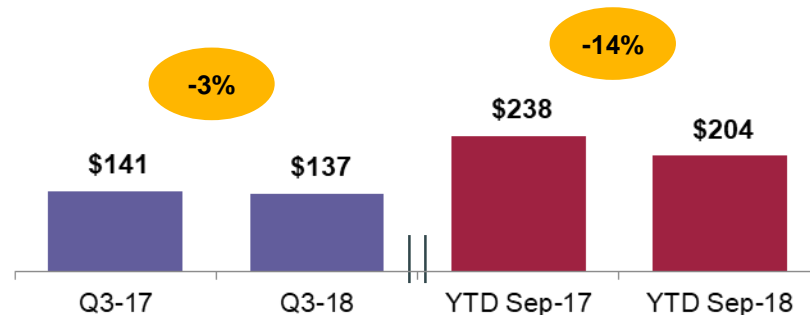
Performance impacted by cyclical market trough in 2018

(\$ in Millions)

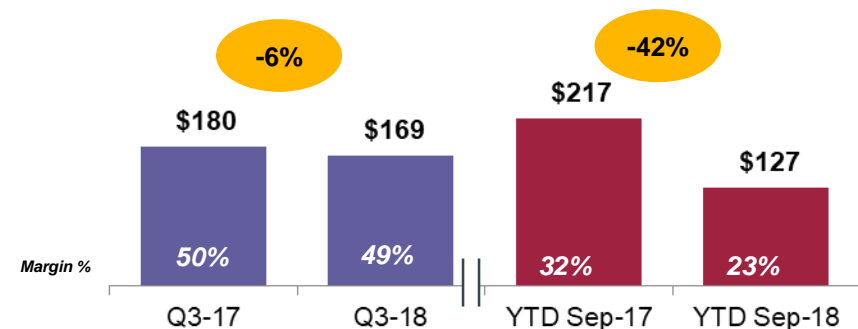
TOTAL BILLINGS



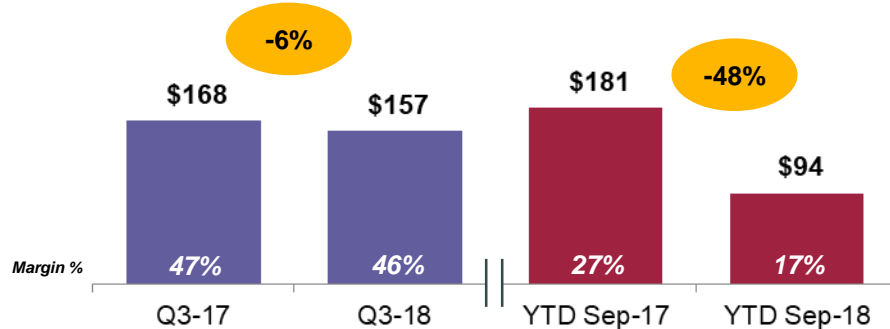
DIGITAL BILLINGS



EBITDA BEFORE PRE-PUBLICATION INVESTMENT



ADJUSTED EBITDA

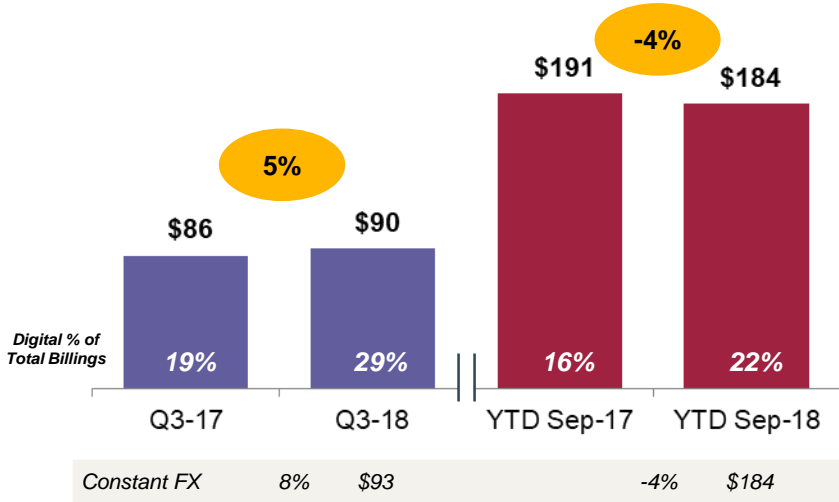


International Financial Review

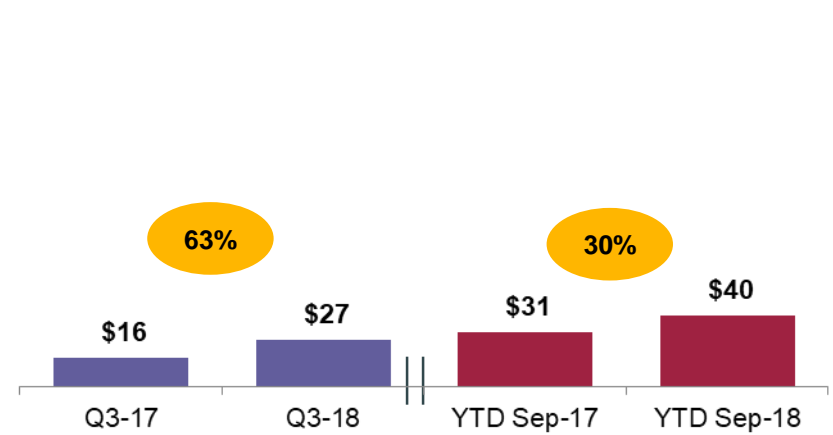
Repositioning the business for growth opportunities; some favorable timing in Q3

(\$ in Millions)

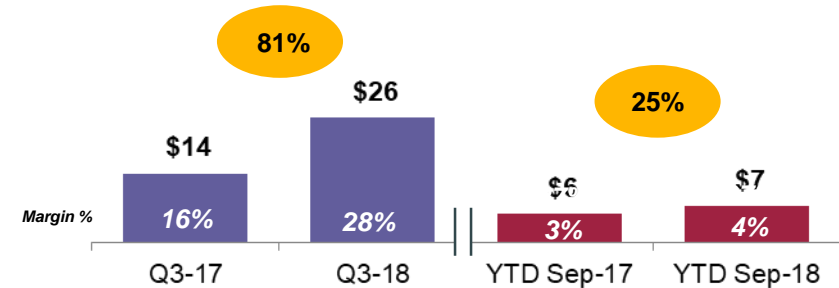
TOTAL BILLINGS



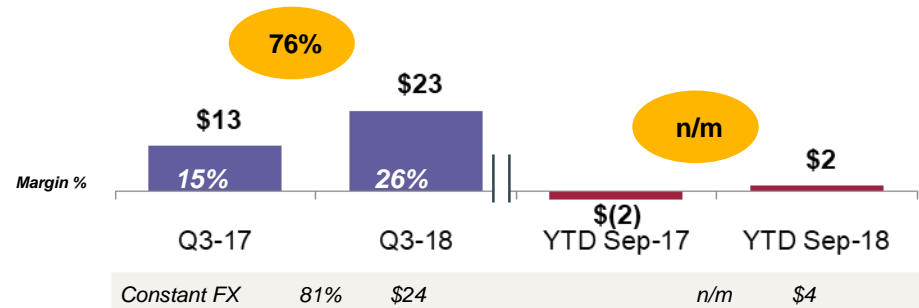
DIGITAL BILLINGS



EBITDA BEFORE PRE-PUBLICATION INVESTMENT



ADJUSTED EBITDA

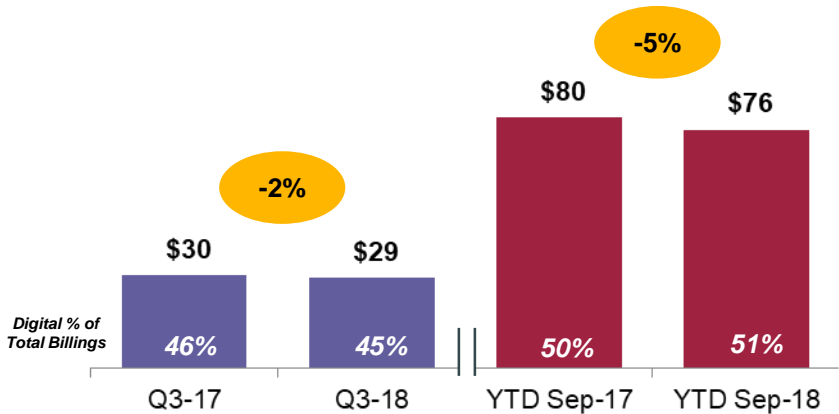


Professional Financial Review

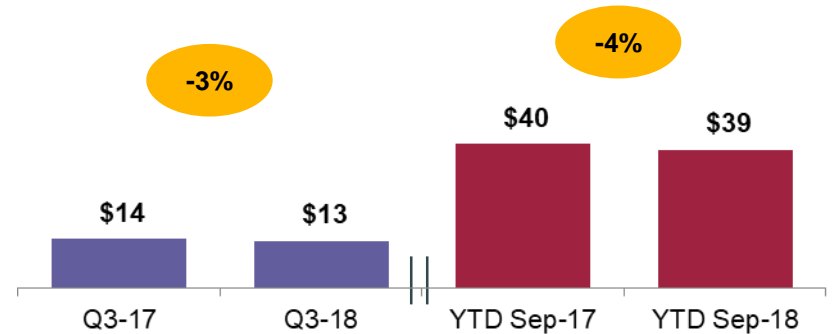
Digital sales impacted by multi-year renewals; print impacted by one large customer in 2018

(\$ in Millions)

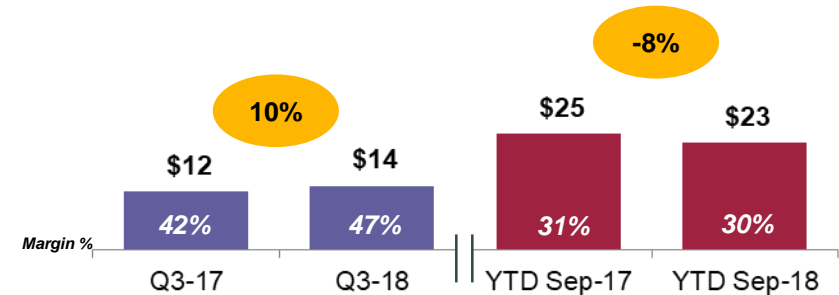
TOTAL BILLINGS



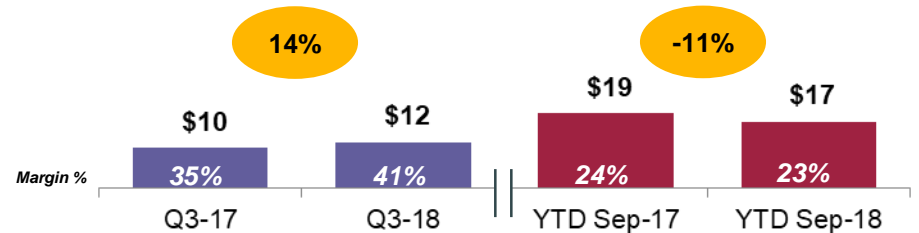
DIGITAL BILLINGS



EBITDA BEFORE PRE-PUBLICATION INVESTMENT



ADJUSTED EBITDA



Capital Structure and Liquidity

Cash building; \$350M Revolver undrawn; No material funded debt due until 2022

- Efficiently managed cash through seasonal trough in H1
 - Fully repaid revolver and accumulating significant bank cash balances (over \$275M) as of Oct. 31*
 - Cash will typically continue to build in Q4
- New receivable securitization program in Oct. that ranges from \$50-\$150M of lower cost, incremental, seasonal liquidity
- Used \$139M of cash in LTM to reduce gross debt
 - No material funded debt maturities until 2022
- EBITDA impacted by K-12 cyclical and Higher Ed rental divot
 - Continued Q3 weakness in K-12 Open Territory and industry pricing impacts in Higher Ed will result in lower FY EBITDA vs. prior expectations (Q4 is typically EBITDA decline)
- Rather than incur costs and distraction for SEC mandated updates to S-1, MHE plans to withdraw its S-1 shortly and refile an updated document when/if plan to move forward with IPO

MCGRAW-HILL EDUCATION LIQUIDITY: 9/30/18

(\$ in Millions)

Cash and Cash Equivalents	
McGraw-Hill Global Education Holdings*	\$134
Available under Credit Facilities at September 30, 2018**	<u>346</u>
Total Liquidity	\$480

MCGRAW-HILL EDUCATION DEBT PROFILE: 9/30/18*

(\$ in Millions)

Senior Secured Term Loan due 2022	\$1,688
Revolving Credit Facility due 2021 (\$350M)**	-
Total First Lien Indebtedness	\$1,688
Less: Cash and Cash Equivalents	<u>(134)</u>
Net First Lien Indebtedness	\$1,554
Last Twelve Months Adjusted EBITDA	\$282
Net First Lien Indebtedness / Adjusted EBITDA¹	5.5x
<i>(covenant not required to be tested)</i>	
Senior Unsecured Notes Due 2024	<u>400</u>
Net Total Indebtedness-MHE Global Education	\$1,954
MHGE Parent Term Loan Due 2022	<u>\$180</u>
Net Total Indebtedness – MHE Inc.	\$2,134

*9/30 cash excludes \$39M held in escrow; 10/31 cash excludes \$29M held in escrow but includes \$50M of securitization proceeds.

**Excludes \$4M of long-term letters of credit issued.

¹Net First Lien Leverage covenant for revolving credit facility is tested if 30% of revolving credit facility was drawn at quarter-end. Usage was less than 30% at September 30, so covenant did not apply. Net First Lien Leverage covenant levels, if required to be tested, would be 5.25x in Q2 and 4.8x in Q1, Q3 and Q4. EBITDA used to calculate Net First Lien Leverage covenant ratio would be Adjusted EBITDA plus pro-forma adjustments that are permitted under Credit Agreement and Indenture.

Summary

- 2018 was a year of substantial anticipated headwinds driven by the cyclical downturn (“trough”) in K-12 and the first year of Higher Ed’s broadened Affordability Initiatives
- MHE remains confident in longer-term impact of Higher Ed Affordability Initiatives to increase both print and digital sell-through; will review rental after 2019 Spring semester to identify opportunities to accelerate the program
- K-12 performing well in the available on-list adoption markets, but a significantly smaller California market in 2018 created a very challenging comparison to PY which was exacerbated by our underestimation of deferred purchasing in advance of new products being introduced for 2019/2020 adoption cycle
 - As a result of the cyclically smaller new adoption market as well as deferred purchasing in Open Territory, we believe K-12 Billings will decline for the year by 17-20%
 - Positioned well to grow Billings in 2019 with strong flow through due to the larger new Adoption Market opportunity as well as a new product driven rebound in Billings for Open Territory
- International is better positioned to capitalize on print and digital sales opportunities beginning in 2019 through a larger front-list and more focused regional decision making and execution under new leadership
- Q4 EBITDA typically a loss and will be impacted by spending in advance of 2019 adoptions and timing of International Middle East Billings
- Strong liquidity with cash building, revolving line of credit fully repaid and new securitization program to provide additional, low cost seasonal liquidity
- Solid capital structure with no material funded debt maturities until 2022



Appendix: Supplemental Disclosure and Financial Tables

Financial Terms and Acronyms

Financial Terms	Description
Adjusted EBITDA	Non-GAAP financial measure that includes adjustments required or permitted in calculating covenant compliance under our debt agreements. Adjusted EBITDA is a non-GAAP financial measure defined as net income from continuing operations plus net interest, income taxes, depreciation and amortization (including amortization of pre-publication investment cash costs) and adjusted to exclude unusual items and other adjustments required or permitted in calculating covenant compliance under our debt agreements less cash spent for pre-publication investment in addition to the change in deferred revenue and deferred royalties.
Billings (formerly referred to as Adjusted Revenue)	Non-GAAP financial measure that we define as U.S. GAAP revenue plus the net change in deferred revenue excluding the impact of purchase accounting. Billings, a measure used by management to assess sales performance, is defined as the total amount of revenue that would have been recognized in a period if all revenue were recognized immediately at the time of sale.
Change in Deferred Revenue	The Company receives cash up-front for most product sales but recognizes revenue (primarily related to digital sales) over time recording a liability for deferred revenue at the time of sale. This adjustment represents the net effect of converting deferred revenues to a cash basis assuming the collection of all receivable balances.
Change in Deferred Royalty	Royalty obligations are generally payable in the period incurred with limited recourse. This represents royalties primarily associated with digital sales which are deferred and amortized over the subscription period. It is the net effect of converting deferred royalties to a cash basis assuming the payment of all amounts owed in the period incurred.
Deferred Commissions	Commissions are generally payable in the period incurred. This represents sales commissions that are incremental direct costs to obtaining a contract which are deferred and amortized over the period of contract performance. It is the net effect of converting deferred commissions to a cash basis assuming the payment of all amounts owed in the period incurred.
Digital Billings (formerly referred to as Digital Adjusted Revenue)	Represents standalone digital sales and, where digital product is sold in a bundled arrangement, only the value attributed to the digital component(s) is included. The attribution of value in bundled arrangement is based on relative selling prices (inclusive of discounts).
EBITDA	Earnings before interest (net), income tax, depreciation and amortization.
Front-list and Back-list	Front-list represents brand new titles and new revisions of existing titles previously published. For example, the 2018 front-list represents 2019 and 2018 copyrights sold in 2018. Back-list represents copyrights from 2017 and prior sold in 2018.
Net Sales	Gross sales less actual returns; net sales are not adjusted for the impact of accruals / net change in deferred revenue.
Pre-publication Investment	Pre-publication costs reflect the costs incurred in the development of instructional solutions, principally design and content creation. These costs are capitalized when the title is expected to generate future economic benefits and are amortized upon publication of the title over its estimated useful life of up to six years.
Sell-through	Represents the percentage of students in a class purchasing MHE materials – new or through the MHE rental program.
KPI Terms	Description
Paid Activation	A user who accesses a purchased digital product for the first time. Access can be through a physical access card purchased from a bookstore or directly over MHE's e-commerce channel.
Unique User on a platform	An individual who authenticates a product at least once during a given period of time.

Billings and Adjusted EBITDA

Billings is a non-GAAP sales performance measure that provides useful information in evaluating our period-to-period performance because it reflects the total amount of revenue that would have been recognized in a period if we recognized all print and digital revenue at the time of sale. We use Billings as a sales performance measure given that we typically collect full payment for our digital and print solutions at the time of sale or shortly thereafter, but recognize revenue from digital solutions and multi-year deliverables ratably over the term of our customer contracts. As sales of our digital learning solutions have increased, so has the amount of revenue that is deferred in accordance with U.S. GAAP. Billings is a key metric we use to manage our business as it reflects the sales activity in a given period, provides comparability from period-to-period during this time of digital transition and is the basis for all sales incentive compensation. In the K-12 market where customers typically pay for five to eight year contracts upfront and the ongoing costs to service any contractual obligation are limited, the impact of the change in deferred revenue is most significant. Billings is U.S. GAAP revenue plus the net change in deferred revenue.

EBITDA, a measure used by management to assess operating performance, is defined as net income from continuing operations plus net interest, income taxes, depreciation and amortization (including amortization of pre-publication investment). Adjusted EBITDA is a non-GAAP debt covenant compliance measure that is defined in accordance with our debt agreements. Adjusted EBITDA is a material term in our debt agreements and provides an understanding of our debt covenant compliance, ability to service our indebtedness and make capital allocation decisions in accordance with our debt agreements.

Each of the above described measures is not a recognized term under U.S. GAAP and does not purport to be an alternative to revenue, income from continuing operations, or any other measure derived in accordance with U.S. GAAP as a measure of operating performance, debt covenant compliance or to cash flows from operations as a measure of liquidity. Additionally, each such measure is not intended to be a measure of free cash flows available for management's discretionary use, as it does not consider certain cash requirements such as interest payments, tax payments and debt service requirements. Such measures have limitations as analytical tools, and you should not consider any of such measures in isolation or as substitutes for our results as reported under U.S. GAAP. Management compensates for the limitations of using non-GAAP financial measures by using them to supplement U.S. GAAP results to provide a more complete understanding of the factors and trends affecting the business than U.S. GAAP results alone. Because not all companies use identical calculations, our measures may not be comparable to other similarly titled measures of other companies.

Management believes Adjusted EBITDA is helpful in highlighting trends because Adjusted EBITDA excludes the results of decisions that are outside the control of operating management and can differ significantly from company to company depending on long-term strategic decisions regarding capital structure, the tax rules in the jurisdictions in which companies operate, and capital investments. In addition, Billings and Adjusted EBITDA provides more comparability between the historical operating results and operating results that reflect purchase accounting and the new capital structure post the Founding Acquisition as well as the digital transformation that we are undertaking which requires different accounting treatment for digital and print solutions in accordance with U.S. GAAP.

Management believes that the presentation of Adjusted EBITDA is appropriate to provide additional information to investors about certain material non-cash items and about unusual items that we do not expect to continue at the same level in the future as well as other items to assess our debt covenant compliance, ability to service our indebtedness and make capital allocation decisions in accordance with our debt agreements.

Note: In compliance with SEC interpretative guidance, we now refer to 'Adjusted Revenue' as 'Billings' throughout the presentation.

Digital vs. Print Billings Detail

(\$ in Millions)

Q3-2018 Billings Detail by Component

	Q3 Digital Billings				%Δ vs 2017	Q3 Print Billings				%Δ vs 2017	Q3 Total Billings				%Δ vs 2017
	2016	2017	2018			2016	2017	2018			2016	2017	2018		
Higher Ed	\$170	\$202	\$204	1.0%	\$156	\$145	\$117	-19.4%	\$326	\$347	\$320	-7.6%			
K-12	130	141	137	-2.9%	253	219	207	-5.7%	383	360	344	-4.6%			
International	16	16	27	62.7%	79	70	64	-8.1%	95	86	90	5.3%			
Professional	13	14	13	-3.2%	15	16	16	-1.3%	28	30	29	-2.2%			
Other	-	0	1	88.2%	0	0	-	n/m	0	0	1	88.0%			
Total MHE	\$329	\$373	\$381	2.2%	\$503	\$450	\$403	-10.3%	\$832	\$823	\$785	-4.7%			
% of Total															
Higher Ed	52%	58%	64%		48%	42%	36%		100%	100%	100%				
K-12	34%	39%	40%		66%	61%	60%		100%	100%	100%				
International	17%	19%	29%		83%	81%	71%		100%	100%	100%				
Professional	46%	46%	45%		54%	54%	55%		100%	100%	100%				
Total MHE	40%	45%	49%		60%	55%	51%		100%	100%	100%				

YTD September 2018 Billings Detail by Component

	September YTD Digital Billings				%Δ vs 2017	September YTD Print Billings				%Δ vs 2017	September YTD Total Billings				%Δ vs 2017
	2016	2017	2018			2016	2017	2018			2016	2017	2018		
Higher Ed	\$320	\$359	\$372	3.8%	\$242	\$215	\$170	-21.1%	\$562	\$574	\$542	-5.6%			
K-12	222	238	204	-14.4%	482	442	351	-20.7%	704	680	555	-18.5%			
International	30	31	40	30.1%	173	160	144	-10.2%	203	191	184	-3.6%			
Professional	39	40	39	-4.1%	42	40	38	-5.9%	81	80	76	-5.0%			
Other	-	1	2	57.5%	1	0	-	n/m	1	1	2	57.2%			
Total MHE	\$612	\$669	\$657	-1.9%	\$939	\$857	\$702	-18.1%	\$1,551	\$1,527	\$1,359	-11.0%			
% of Total															
Higher Ed	57%	63%	69%		43%	37%	31%		100%	100%	100%				
K-12	32%	35%	37%		68%	65%	63%		100%	100%	100%				
International	15%	16%	22%		85%	84%	78%		100%	100%	100%				
Professional	48%	50%	51%		52%	50%	49%		100%	100%	100%				
Total MHE	39%	44%	48%		61%	56%	52%		100%	100%	100%				

K-12 Industry and MHE K-12 Sales Trend

(\$ in Millions)

	Twelve Months Ended December 31						Nine Months Ended	
	2012	2013	2014	2015	2016	2017	Sept. 2017	Sept. 2018
AAP U.S. Net Sales ¹								
Total Adoption	\$1,311	\$1,391	\$1,860	\$1,621	\$1,250	\$1,250	\$1,221	\$1,123
Open Territory	1,423	1,563	1,425	1,431	1,467	1,361	1,335	1,295
Total Net Sales	\$2,734	\$2,954	\$3,285	\$3,052	\$2,717	\$2,611	2,556	2,418
<i>Y/Y %</i>								
Total Adoption	n/a	6%	34%	(13%)	(23%)	0%	(1%)	(8%)
Open Territory	n/a	10%	(9%)	0%	3%	(7%)	(6%)	(3%)
Total Net Sales	n/a	8%	11%	(7%)	(11%)	(4%)	(4%)	(5%)
McGraw-Hill Education K-12								
McGraw-Hill Education Billings ²								
Total Adoption	\$292	\$282	\$348	\$452	\$415	\$405	\$380	\$274
Open Territory / Other	405	396	386	345	343	328	300	281
Total K-12 Billings	\$697	\$677	\$734	\$798	\$759	\$733	\$680	\$555
<i>Y/Y %</i>								
Total Adoption	(11%)	(4%)	23%	30%	(8%)	(3%)	(3%)	(28%)
Open Territory / Other	(15%)	(2%)	(2%)	(11%)	(1%)	(5%)	(4%)	(6%)
Total K-12 Billings	(13%)	(3%)	9%	9%	(5%)	(3%)	(3%)	(18%)

NOTE: This table was updated on 12/14/18 to reflect a correction in the Nine Months Ended September 2018 split between Adoption and Open Territory for McGraw-Hill Education. Total K-12 Billings did not change.

¹AAP annual data reflects unrestated net sales on an actual returns basis submitted by 5 publishers; data reflects U.S. sales & includes AP products, software & platforms, etc. AAP includes front-list and back-list net sales.

²MHE Billings reflect an accrued returns basis and will not reconcile to AAP submission due to classification of revenue; total adoption includes new adoption and residual.

MHE Billings have been restated for the shift of AR and IN in prior periods.

Amounts may not sum due to rounding.

Higher Ed Front-List / Back-List Net Sales¹

(\$ in Millions)

	Twelve Months Ended December 31						Nine Months Ended	
	2012	2013	2014	2015	2016	2017	Sept. 2017	Sept. 2018
Digital Net Sales								
Front-list	\$100	\$126	\$132	\$156	\$149	\$166	\$127	\$128
Back-list	137	153	194	220	263	281	232	245
Total Digital Net Sales	\$237	\$278	\$326	\$376	\$411	\$447	\$359	\$373
<i>Y/Y %</i>								
Front-list	(6.0%)	25.1%	5.2%	18.2%	(4.7%)	11.9%	10.7%	0.3%
Back-list	53.7%	11.8%	27.1%	13.4%	19.2%	7.0%	9.8%	5.9%
Total Digital Net Sales	21.1%	17.4%	17.2%	15.3%	9.3%	8.8%	10.1%	3.9%
Print Net Sales								
Front-list	\$317	\$323	\$291	\$233	\$149	\$145	\$123	\$73
Back-list	205	215	233	178	152	125	100	85
Total Print Net Sales	\$523	\$538	\$524	\$411	\$302	\$270	\$223	\$158
<i>Y/Y %</i>								
Front-list	(23.9%)	1.9%	(9.9%)	(20.0%)	(35.9%)	(2.7%)	2.7%	(40.3%)
Back-list	0.6%	4.7%	8.5%	(23.6%)	(14.6%)	(17.8%)	(14.7%)	(15.0%)
Total Print Net Sales	(15.9%)	3.0%	(2.6%)	(21.6%)	(26.7%)	(10.6%)	(5.9%)	(29.0%)
Total Net Sales								
Front-list	\$418	\$449	\$423	\$389	\$298	\$311	\$250	\$201
Back-list	342	368	427	398	415	406	331	330
Total Net Sales²	\$760	\$817	\$851	\$787	\$713	\$717	\$582	\$531
<i>Y/Y %</i>								
Front-list	(20.3%)	7.5%	(5.7%)	(8.1%)	(23.4%)	4.5%	6.6%	(19.7%)
Back-list	16.7%	7.5%	16.2%	(6.8%)	4.1%	(2.2%)	1.0%	(0.4%)
Total Net Sales	(7.0%)	7.5%	4.2%	(7.4%)	(9.5%)	0.6%	3.4%	(8.7%)
Other (Accounting Accruals/Reversals)	2	(1)	4	5	(2)	1	(5)	(4)
Total Net Sales³	\$762	\$816	\$855	\$793	\$711	\$718	\$576	\$527
Y/Y %	(7.5%)	7.1%	4.8%	(7.3%)	(10.3%)	1.0%	3.6%	(8.6%)

¹2018 front-list represents 2019 and 2018 copyrights sold in 2018; they do not begin to impact current year until very late Q2.

²Gross sales less actual returns; net sales are not adjusted for the impact of accruals / net change in deferred revenue.

³Reflects the impact of accounting related to accruals / deferrals.

Higher Ed Industry and MHE Higher Ed Sales Trend

(\$ in Millions)

	Twelve Months Ended December 31							Nine Months Ended	
	2011	2012	2013	2014	2015	2016	2017	Sept. 2017	Sept. 2018
Higher Ed Industry per Management Practice, Inc.¹									
Higher Ed Market									
Gross Sales	\$5,726	\$5,420	\$5,453	\$5,465	\$5,302	\$4,695	\$4,390	\$3,477	\$3,169
Returns	1,323	1,311	1,262	1,214	1,377	1,250	982	621	506
Net Sales	\$4,403	\$4,110	\$4,191	\$4,251	\$3,925	\$3,446	\$3,408	\$2,856	\$2,663
<i>YY%</i>									
Gross Sales	n/a	(5.3%)	0.6%	0.2%	(3.0%)	(11.4%)	(6.5%)	(4.7%)	(8.9%)
Returns	n/a	(0.9%)	(3.7%)	(3.8%)	13.5%	(9.2%)	(21.4%)	(25.0%)	(18.5%)
Net Sales	n/a	(6.7%)	2.0%	1.4%	(7.7%)	(12.2%)	(1.1%)	1.3%	(6.8%)
McGraw-Hill Education Return Detail									
Actual Returns	\$263	\$276	\$257	\$252	\$277	\$237	\$208	\$134	\$112
Reserve for Returns Adjustment	(3)	(13)	9	16	(31)	(23)	2	3	(21)
Reported Returns	\$260	\$263	\$266	\$268	\$246	\$215	\$210	\$138	\$91
Return Accrual %	24.4%	25.8%	25.1%	24.4%	23.4%	22.7%	22.8%	21.2%	16.3%

¹ MPI data reflects gross and net sales on an actual returns basis and includes other adjustments, eg. Advanced Placement products, which are reported in the K-12 business. Annual MPI data is on an unrevised basis; prior period YTD data has been restated as per the 6/30/18 MPI report. Amounts may not sum due to rounding.

Free Cash Flow

(\$ in Millions)

Cash Flow Comparison	Nine Months Ended Sep 30,		
	2017	2018	Y/Y \$
Adjusted EBITDA	405	286	(118)
Δ in Accounts Receivable, net	(208)	(289)	(82)
Δ in Inventories, net	1	(11)	(12)
Δ in Prepaid & Other Current Assets	(7)	(7)	0
Δ in Accounts Payable and Accrued Expenses	(46)	(49)	(2)
Δ in Other Current Liabilities	(26)	112	138
Δ in Reported Working Capital Accounts	(286)	(244)	43
Adjustments to Derive Operational Working Capital ¹	4	9	5
Δ in Adjusted Working Capital Accounts	(283)	(235)	48
Adjusted EBITDA less Δ in Adjusted Working Capital Accounts	122	52	(71)
Pre-publication Investment	74	71	(3)
Restructuring and Cost Savings Implementation Charges	(9)	(9)	0
Sponsor Fees	(3)	(3)	-
Cash Paid for Interest	(121)	(111)	10
Net (loss) from Discontinued Operations	(0)	-	0
Operational Working Capital Adjustments and Other ²	(7)	(18)	(11)
Cash (used for) provided by operating activities	56	(18)	(74)

Adjusted EBITDA less Δ in Working Capital Accounts per above	122	52	(71)
- Capital Expenditures & Payment of Capital Lease Obligations	(37)	(57)	(20)
Operating Free Cash Flow²	85	(5)	(91)

Δ in NWC including Adjustments to Derive Operational Working Capital			
	2017	2018	Y/Y \$
Δ in Accounts Receivable, net	(219)	(170)	50
Δ in Inventories, net	(2)	(10)	(8)
Δ in Prepaid & Other Current Assets	9	8	(1)
Δ in AP and Accrued Expenses	(46)	(49)	(3)
Δ in Other Current Liabilities	(24)	(15)	9
Total	(283)	(235)	48

	Nine Months Ended Sep 30,		
	2017	2018	Y/Y \$
Cash Balance at Beginning of Period	419	408	(11)
Cash (used for) provided by operating activities	56	(18)	(74)
Dividends	(4)	(3)	1
Net Debt (Payments) / Receipts	(12)	159	171
Repurchase of MHGE PIK Toggle Notes	(48)	(243)	(195)
Pre-publication Investment	(74)	(71)	3
Capital Expenditures	(32)	(49)	(18)
Investments, Acquisitions & Divestitures, net	7	1	(6)
Payment of Capital Lease Obligations	(5)	(8)	(2)
Equity transactions, net	(6)	2	8
Other	4	(4)	(8)
Cash Balance at End of Period	305	174	(131)

Key Variance Drivers

- Accounts Receivable: Reclass of sales return reserve to other current liabilities (~\$119M) and lower sales
- Other Current Liabilities: Reclass of sales return reserve from Accounts Receivable (~\$119M), non income tax related payments in 2018 and a higher interest payable balance at 12/31/16 as compared to 12/31/17

¹ includes the impact of certain non operational, Cash EBITDA or capital structure working capital items (i.e., purchase accounting, accrued interest, deferred royalties, income taxes, available for sale assets, etc.)

² includes adjustment for deferred royalties and sales commissions included in calculation of Adjusted EBITDA

Adjusted EBITDA Reconciliation & Operating Expense Bridge

(\$ in Millions)

Adjusted EBITDA Reconciliation

(\$ in Millions)	Three Months Ended September 30,		Nine Months Ended September 30,		Year Ended Dec 31,	LTM September 30,	
	2017	2018	2017	2018	2017	2018	
Net Income	\$ 125	\$ 56	\$ (35)	\$ (115)	\$ (66)	\$ (146)	
Interest (income) expense, net	46	46	133	136	179	182	
Provision for (benefit from) taxes on income	4	3	10	4	(7)	(13)	
Depreciation, amortization and plate investment amortization	73	67	180	163	232	215	
EBITDA	\$ 248	\$ 172	\$ 288	\$ 187	\$ 338	\$ 238	
Change in deferred revenue (a)	188	232	205	144	147	86	
Change in deferred royalties (b)	(29)	(24)	(35)	(12)	(22)	1	
Change in deferred commissions (c)	-	(0)	-	0	-	0	
Restructuring and cost saving implementation changes (d)	3	1	9	9	14	14	
Sponsor fees (e)	1	1	3	3	4	4	
Other (f)	6	11	8	26	18	36	
Pre-publication investment cash costs (g)	(25)	(25)	(74)	(71)	(99)	(96)	
Adjusted EBITDA	\$ 392	\$ 368	\$ 405	\$ 286	\$ 400	\$ 282	

Adjusted Operating Expense Bridge

	Three Months Ended		Nine Months Ended		Year Ended	LTM
	Sept. 30, 2017	Sept. 30, 2018	Sept. 30, 2017	Sept. 30, 2018	Dec. 31, 2017	Sept. 30, 2018
Operating Expense Bridge						
Total Reported Operating Expenses	\$315	\$307	\$908	\$886	\$1,199	\$1,177
Less: Depreciation & Amortization of intangibles	(33)	(32)	(100)	(97)	(133)	(130)
Less: Amortization of pre-pub. Investment	(40)	(35)	(80)	(66)	(99)	(85)
Less: Restructuring and cost savings implementation charges	(3)	(1)	(9)	(9)	(14)	(14)
Less: Other adjustments	(7)	(12)	(24)	(28)	(35)	(39)
Adjusted Operating Expenses	\$231	\$228	\$695	\$686	\$918	\$909

Adjusted EBITDA Footnotes

- (a) We receive cash up-front for most sales but recognize revenue (primarily related to digital sales) over time recording a liability for deferred revenue at the time of sale. This adjustment represents the net effect of converting deferred revenues to a cash basis assuming the collection of all receivable balances.
- (b) Royalty obligations are generally payable in the period incurred with limited recourse. This adjustment represents the net effect of converting deferred royalties to a cash basis assuming the payment of all amounts owed in the period incurred.
- (c) Commissions are generally payable in the period incurred. This adjustment represents the net effect of converting deferred commissions to a cash basis assuming the payment of all amounts owed in the period incurred.
- (d) Represents severance and other expenses associated with headcount reductions and other cost savings initiated as part of our formal restructuring initiatives to create a flatter and more agile organization.
- (e) Beginning in 2014, \$3.5 million of annual management fees was recorded and payable to Apollo.
- (f) For the three and nine months ended September 30, 2018 the amount represents (i) non-cash incentive compensation expense and (ii) other adjustments required or permitted in calculating covenant compliance under our debt agreements.
For the three and nine months ended September 30, 2017, the amount represents (i) non-cash incentive compensation expense, (ii) elimination of a \$5.8 million gain on disposal of the K-12 Canadian business, (iii) elimination of a \$4.9 million gain related to the sale of an equity method investment and (iv) other adjustments required or permitted in calculating covenant compliance under our debt agreements.
For the year ended December 31, 2017 the amount represents (i) non-cash incentive compensation expense, (ii) elimination of a \$5.8 million gain on disposal of the K-12 Canadian business, (iii) elimination of a \$4.9 million gain related to the sale of an equity method investment and (iv) other adjustments required or permitted in calculating covenant compliance under our debt agreements.
- (g) Represents the cash cost for pre-publication investment during the period.