Implication of evolving Educational Technologies (Ed-Tech) on the Indian market - A PE/VC perspective



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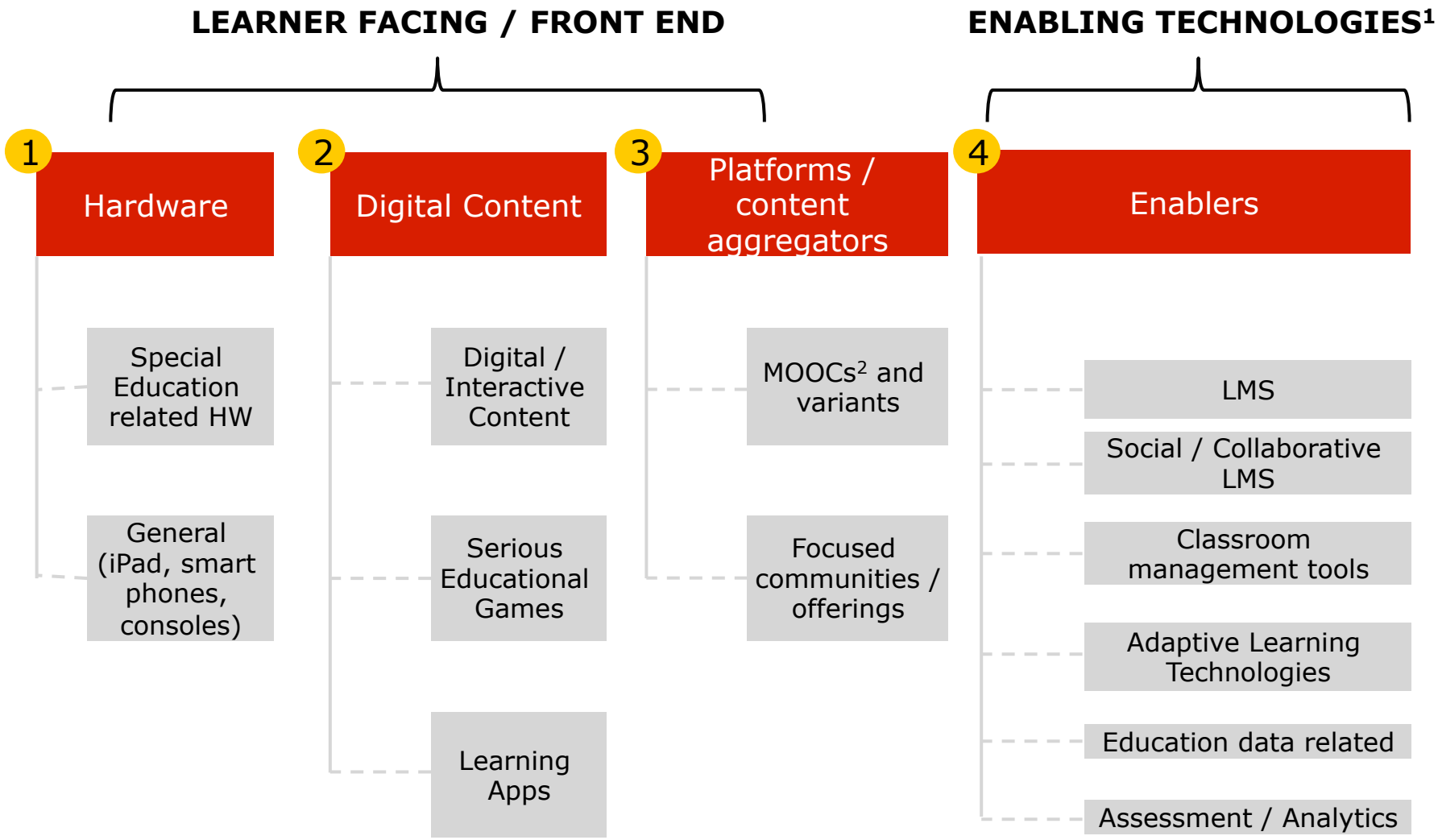
Section 1: Global Ed-Tech Trends and Segments

Global Ed-Tech Overview

DEFINITION / SCOPE	Ed-tech broadly refers to the use of novel technologies in education. Ed-tech could lead to **pedagogical benefits** or a **more efficient** backend Among other areas, we understand Ed-tech[1] to include education related hardware, digital delivery and content, online and mobile platforms and enablers such as Learning Management Systems and assessment tools See detailed classification on slide 3
MARKET SIZE AND GROWTH	23% growth in e-Learning from $91 bn in 2012 to $255 bn in 2017 (Comparable total education CAGR of 7.4% for same period) Source: IBIS Capital - Within e-Learning, K12 with 2012-2017 CAGR of 33%, Higher education CAGR 25%, Corporate training CAGR 8% - Other fast growing markets: Social/Communities (41% CAGR), Serious Gaming (30%), Language learning (20%)
GEOGRAPH-ICAL TRENDS	Wide variances across the globe - Bulk of innovation in Ed-tech and Ed-tech revenues attributable to US companies, driven by pedagogical benefits but also to mitigate effects of rising costs of "regular" education - Emerging APAC market only 16.6% of global education market, ed-tech with potential to address key issues in the emerging world. Low Internet penetration in these markets drive the need for specific solutions
TRANS-ACTIONS	High levels of M&A / investment activity in space - $8.5 bn in M&A transaction value in 2012. Case in point: Since 2007, Pearson has acquired 15 companies, since 2010, 11 of these are digital/tech plays - $1 bn raised through fundraisings in 2012 by start-ups

1. We do not include eBooks and Rentals sites of physical text books such as Chegg in this study. Chegg's pivot from a text book rental platform to becoming a central hub for students with information of courses, reviews etc. could be of interest in the Indian context.

Ed-Tech Classification



1. Can be further sub-divided into administrator focused and educator focused offerings
2. Massive online open course

Global Ed-Tech

1 2

	Hardware	Digital / Interactive Content	Apps[1]	Serious / Education Gaming
Description	• Smartphones, tablets and gaming consoles such as Wii • Smart blackboards	• Digitized textbooks, interactive learning with adaptability / personalization and features such as search and sharing	• Apps for learning and education targeted at audiences of all ages	• Games / simulations with learning objectives • Growth from $2bn in 2012 to $7.4bn in 2015 (McKinsey)
Key Drivers	• Increasing adoption of smart phone and tablets, reducing prices • Pedagogical benefits	• Need for enhanced material including videos and 3D models • Solution to traditional "one-size-fits-all" approach	• Increasing mobile and tablet (iPad) penetration among learners • Intuitive interfaces	• Often to reinforce learning or for supplementary learning
Example Players	iPad, Amplify., nook, Wii, Akash, Ubislate	Kno, inkling, flatworld knowledge	Duck Duck Moose, Tareas Plus, Smartpots, Mindshapes	Caspian Learning, Mind Snacks, Gylo, Fingerprint, Serious Games Interactive
Trends	• Larger players with multi-purpose hardware vendors dominate (e.g. Apple iPad)	• Larger players (Pearson) as well as upstarts such as Kno dominate, digital players often partner with traditional publishers	• Limited # firms with scale much like app developers in general	• Focus on cognitive learning
Implications for India	• Low cost innovation possible but with challenges (Akash fiasco)	• Major opportunity for Indian players	• Major opp but challenging to achieve scale in app development • Development for feature phone market	• Potential for Indian players to emerge, as games are often custom-made (low development cost)

1. mEd market to grow from $3.4bn in 2011 to $37.8bn in 2020

Global Ed-Tech

3

	Massive open online courses (MOOC) + Variants[1]	Focused learning sites and communities
Description	• Online video lectures and related assessment tools to monitor learning, generally with a community angle • Used for stand-alone or classroom blended learning	• Language learning / specific subject
Key Drivers	• Rising Internet penetration • Rising cost of higher education in developed economies • Quality, affordable (often free) education	• Internet penetration • Convenience, personalization, fun
Example Players	UDACITY, edX, 2tor, Udemy, lynda.com, coursera, WizIQ education.online, straighterline, iTunes U, KHAN ACADEMY	noredink, descomplica, GlobalEnglish, Codecademy, OpenEnglish, mYngle
Trends	• Trend towards accreditation • Blended learning / flipped classrooms / lifelong learning • Emerging revenue streams include: courses for credit, verified learning, enabler fee charged to universities.	• Increasing use of social and adaptive learning
Implications on India	• Local plays such as Veduca (Brazil) emerging, India could follow similar course (Language and local curriculum alignment)	• High willingness to pay in India for focused offerings as education is highly valued

1. OCW, online accredited courses, DIY degrees

Global Ed-Tech

4

	LMS	Social / Collaborative LMS	Assessment / Analytics
Description	• Platform used by corporate and academic institutions to manage learning and associated content • Global LMS market of nearly $2bn in 2012	• Allow Facebook like environment for educators and learners to interact	• Testing, both online and offline
Key Drivers	• Need for management of content • Tracking of learning programs	• Superior user experience • Social features	• Online driven by cost savings
Example Players	Blackboard, SumTotal, Desire2Learn Innovative Learning Technology, Open Source moodle, Sakai	LOR E, schoology Learn. Together., edmodo	ETS, The ACT
Trends	• Basic LMS features are commoditized • Noticeable trends of a shift towards OpenSource or homegrown platforms (e.g. Moodle, eFront, Dokeos, etc.), SaaS advanced analytics • New additions include Open source SIS, Assessment and analytics, Campus App store, Student retention CRM, mobile features		• Increased online and adaptive testing
Implications on India	• Fragmented and commoditized market for basic LMS • Low cost open source often find favour in India	• Innovation likely driven by Silicon Valley vendors	• Opportunity due to Indian context and service element

Global Ed-Tech

4

	Curation and Adaptive Learning	Classroom management	Ed-data
Description	• Solutions that tailor content to learner, selection of relevant content	• Various tools for measuring real-time engagement of students, feedback management to parents, teacher effectiveness, etc.	• Solutions relating to management of all learner related data, standardizing metadata to facilitate transparency
Key Drivers	• Solution to traditional "one-size-fits-all" approach • Content overdose – what to serve learner becomes important	• Efficiency in class room • Improved pedagogy	• Improved pedagogy • Need to integrate different applications with SIS (e.g Clever)
Example Players	knowre, KNEWTON, noredink, noodle, eSpark	goknow Mobile Learning Solutions, CLASS DOJO, TOP HAT MONOCLE	MasteryConnect, parchment, inBloom
Trends	• Trend towards advanced recommendation algorithms	• Increased analytics for teachers	• Some standardization work ongoing[1]
Implications on India	• High-tech sector, potential for Indian firms unclear	• Fairly high-tech sector, potential for Indian firms unclear • Currently a nice-to-have in India, not must-have	• Local context may be necessary, opp for Indian firms • Possibly not a high priority problem in India

1. Tin Can Project: "e-learning software specification that allows learning content and learning systems to speak to each other in a manner that records and tracks all types of learning experiences"

Section 2: Indian Education System

Education segment: Core

	1 K-12	2 Higher education
Current size	• $24B (Private schools more relevant for Ed-Tech as of today)	• $13B
Future growth – key drivers	• 14%; largest target population globally	• 13%; Inefficient public system; preference for private except for very reputed schools such as IIT
Key challenges	• Mismanagement and teacher absenteeism, lack of quality of public schools which serve ~60% of student base • Lack of core expertise in areas such as pedagogy, curriculum etc	• Extreme lack of supply; overall Gross Enrolment Ratio (GER) low at 12% when compared to world average of 26%
Potential areas for Ed-Tech	• Transmission based infrastructure (Smartclass, tablets, laptops etc.) to facilitate teaching learning process, particularly for private schools • Adaptive assessments to test understanding and provide learning • Hardware leasing/selling to schools • Digital content	• Educational platforms • MOOCs and Distance Learning Programs (DLPs) through online

Source: Primary interviews; Kaizen Education report

Education segment: Parallel (1/2)

	1 Pre-schools	2 Tutoring	3 Test prep
Current size	• $0.8B	• $9.6B	• $1.2B
Future growth – key drivers	• 30%; higher awareness, hectic working schedules of both parents, high willingness to pay	• 15%; poor teacher salaries in core segment, supplement of school education	• 20%; extremely competitive entrance exams with low success rates
Key challenges	• Relatively small market; concentrated in Metro and Tier 1 cities	• Success tied to a "star" teacher; difficult to scale-up and maintain similar quality	• Difficult to differentiate across competitors
Potential for Ed-Tech	• Limited applicability of Ed-Tech in this segment	• Online delivery platforms for lectures at multiple locations	• Online test simulation assessment packages accessed by users at home (beneficial as entrance exams in India go online)

Source: Primary interviews; Kaizen Education report

Education segment: Parallel (2/2)

	4 Vocational training	5 Corporate training	6 Teacher training
Current size	• $1.1B	• $0.05B	• $0.04B
Future growth – key drivers	• 22%; only ~5% of young labour force trained vocationally	• 10%; increased focus on private teacher training initiatives	• 15%
Key challenges	• Substantial portion of students graduating from rural schools and colleges lack either access or means to go for vocational studies	• Market dominated by captive training; limited scope exists for third-party players	• Limited focus – extremely nascent market (concept of teacher training not very popular in India)
Potential for Ed-Tech	• MOOCs and DLPs to provide better and cheaper access to students • Specialized learning websites / English learning	• Self learning platforms for increasing business knowledge and communication skills	• All major Ed-Tech segments – platforms, MOOCs/DLPs etc. Can be used to provide better training to teachers

Source: Primary interviews; Kaizen Education report

Section 3: Ed-Tech in India

Indian Ed-Tech: Hardware

Description & Drivers

- Smartboards related hardware with high growth, still with high potential for growth
- Huge market potential for cheap, easy to use devices and availability of educational software
  - -Also supported by the govt grants; ~40 M kids targeted to get laptops in next 5 years, increased penetration of tablets as general purpose device

Customer need

- Low-cost hardware important for mass market adoption
- Needs to be supported by a strong ecosystem of easy to understand, child-friendly applications and content (e.g. HCL's offering with 15,000 quizzes)

Sample players in India

Educomp



DATAWIND

1 one laptop per child

magicpencil

MyEdu Tab HCL

PEARSON

iProf

Trends / Opportun-ities

- Lower end of market: Market attractive for any company able to provide low-cost hardware; important to source (part of) hardware locally for winning govt. contracts, players with local consumer electronics design OR reach to government could benefit
- Higher end of market: General purpose tablets likely dominate although firms bundling content with HW (e.g. Pearson) could win, classroom hardware such as smartboards will continue market penetration

Source: Secondary research; Primary interviews

Indian Ed-Tech: Digital Content (Classroom + Digital Content)

Description & Drivers	• Currently focuses on in-class learning platforms for improved transmission of knowledge to students • Demand driven due to: More effective and fun delivery of education using technology/innovation, efficient performance review options and ability to achieve scale
Customer need	• Primarily sold to private educational institutions • Key need is to offer a more effective learning environment; establish competitive advantage over competing institutions, justify higher fees
Sample players in India	Educomp, PEARSON, CompuCom, aurus network, VIENOVA, educate ME360
Trends / Opportun-ities	• Pricing pressures from schools, but considerable headroom for expansion into more schools • Nearly all action in private schools (K12) • Market enthusiasm has tempered off-late with Educomp stock losing over 80% of value in recent times • Some players e.g. Pearson integrating smart content in digital textbooks

Source: Secondary research; Primary interviews

Indian Ed-Tech: Digital Content (Games and Apps)

Description & Drivers

- Games for education and related apps on mobile/tablet platforms
- Fun delivery of education to increase engagement of students

Customer need

- B2B and (more commonly) B2C markets
- Improved and more enjoyable learning experiences

Sample players in India

tiny tapps, MAD RAT GAMES, BrainNook, NAYI DISHA, funtoot Learning Made Fun™

Trends / Opportun-ities

- Middle/upper class parents show high willingness to pay
- Market for educational games is nascent across the world, similar in India
- Potential for freemium model
- Solutions for non-smart phones with very high potential (models for voice/ SMS enabled services such as search are hot)

NEW

Source: Secondary research; Primary interviews

Indian Ed-Tech: MOOCs/DLPs/Focused Learning

Description & Drivers

- Online video lectures/ languages / higher studies etc. Used for stand-alone or classroom blended learning
- Professional courses (e.g. CA) and English speaking sites most demanded focused learning sites

Customer need

- Often customers do not have access to/ time for classroom education
- Flexibility of time and convenience of location (last mile important for DLP)

Sample players in India

NPTEL, LurnQ™, Sunstone Business School, Rainmaker, EnglishHelper™ Learn at your pace, in your context, WizIQ education.online, uts™ Building Skills. Building Careers., Manipal INSPIRED BY LIFE, MANIPAL UNIVERSITY, LANGUAGEREEF Your One Stop Solution for all your Language Needs, MindSpark! www.mindspark.in, excellere

Trends / Opportun-ities

- Growing potential market (Majority of populace < 40 years old), Manipal and others have proven market potential of DLP
- Blended learning / flipped classrooms / lifelong learning
- Emerging revenue streams include: fee for courses, subscription

Source: Secondary research; Primary interviews

Indian Ed-Tech: Enablers (excluding Assessments)

Description & Drivers

- Includes diverse markets such as LMS, classroom management tools, adaptive learning technologies, SIS/school ERP, Ed-data related, etc.
- In India, LMS market is fragmented with a few home grown players
- Other products have not penetrated significantly yet

Customer need

- Improved processes, higher transparency over operations
- Improved pedagogy

Sample players in India

School management	eBooks creator	VLE	LMS
fedena	mangOreader BETA We Bring Books to Life	WizIQ education.online	UPSIDE LEARNING

Trends / Opportun-ities

- Governments with a preference for Open Source Software
- ERP/SIS has been a tough market to crack according to experts
- Players in this segment have already addressed international markets

NEW

Source: Secondary research; Primary interviews

Indian Ed-Tech: Assessments

Description & Drivers

- Conducts assessments for corporates / students / job seekers / preparation for highly competitive exams (JEE,CAT etc.) – as exams are moving online, online prep models are also gaining traction
- Available at an economical price for individual users – students / job seekers / Reliable and consistent results for corporates

Customer need

- Robust testing systems to identify critical development areas
- Economy and instant result

Sample players in India

aspiringminds, meritnation, Assesspeople, oliveboard, Vriti smart.education, mettl, eduquity

Trends / Opportun-ities

- With growing economy and employment opportunities market is growing
- With increasing number of students appearing in competitive exams such as CAT (approx. 200k students in 2012), IIT-JEE (approx. 550k students in 2012)

Source: Secondary research; Primary interviews

Section 4: Implications on PE/VC Investments

Several changes in India's education landscape are promoting the use of Ed-Tech[1]

Rapidly growing student population base	• Major (quality) supply-side constraints: Low enrolment ratios in India, quality a major issue even when access is available • Ed-tech platforms can enable education to the masses by ensuring both **easier** access and **consistent** quality
Rising costs, particularly in higher/ vocational education	• High willingness to pay among Indian consumer offsets this effect somewhat, but ability of MOOCs and DLP to offer cheaper courses could become relevant
Stress on higher quality education / modern pedagogy	• Demand for better in-classroom experience in private schools and colleges • Extra supplementary education outside classes; fun and interactive learning techniques
Increased penetration of e-devices	• Mobile and tablet penetration in India increasing rapidly • Favourable govt policies promoting use of e-devices in schools (K-12)

1. Mostly applicable to middle and upper economic classes

However, Ed-Tech in India also faces multiple barriers which will reduce the pace of adoption

Population's Mind-set / Awareness	• Traditionally Indian education has been teacher/classroom centric often with focus on learning by rote • Low awareness of Ed-tech amongst educators, learners and administrators, seen as a nice to have
Infrastructure Requirements	• Need for significant investment in infrastructure to deliver education via online channels, higher Internet penetration; low smartphone penetration also a limiter • Last mile reach often quoted as a challenge
Content Development	• Digital content needs to be developed and continuously updated (esp. for higher education) for different languages • Content may have to be approved by education agencies (CBSE, ICSE etc.) in core segments
Customization Preference and Budget	• Institutions prefer a customized solution → economies of scale benefits are difficult to achieve • Institutions have budgetary constraints & cannot afford premium products (i.e. customized products)

Quotes from experts about state of Ed-Tech in India and its future

"Ed-tech penetration in India today: 3/10. "
"It will take at least another 3-5 years"

"Low Internet penetration and payment infrastructure a challenge.."

"…Noticeable surge in usage of tablets..."

"…pure play tech innovation less likely to emerge from India, some service component needed..."

"…Language is an issue, need different languages if not targeting English speaking schools..."

"…B2C online offerings: people willing to pay, Personalized learning could be a big deal here..."

"…India DLP/MOOC use case different from US: People wanting replacement of institutions; cannot be physically present!..."

"…Online assessments a massive opportunity..."

Source: Primary interviews

Methodology for assessing potential for all combinations of Education and Ed-Tech segments

4 key criteria

Size of underlying Education sector	Applicability of technology to sector	Openness of sector to technology adoption	Degree of govt regulations

Assign ratings

Size of underlying Education sector	Applicability of technology to sector	Openness of sector to technology adoption	Degree of govt regulations
1 <$1B	1 High	1 Unsupportive	1 Strict regulations
2 $1-$10B	2 Mid	2 Neutral	2 Limited regulations
3 >$10B	3 Low	3 Supportive	3 No regulations

Final average rating

<2	2-2.5	>2.5
Low potential	**Medium potential**	**High potential**

Source: Team analysis

Our research has highlighted several sub-segments within Ed-Tech that show high-medium potential

Education segments

Ed-Tech segments

	K-12	Higher education	Pre-schools	Tutoring	Test prep	Vocational training	Corporate training	Teacher training
Dedicated Hardware	High potential, category unlikely to be open to smaller firms	High potential, category unlikely to be open to smaller firms						
Digital content games and apps	Already successful in certain cats. Needs expansion.	Customized solutions for universities. Need for digital content	Limited potential for tablet content		Could prove to be differen-tiator		Most trainings On-the-Job. Significant customizati on required.	Potentially interesting if more interest in teacher training
MOOCs DLPs And focused learning		Currently Limited penetration (Metros & Tier 1) Huge scope in Tier 2/3				English learning, programmin g, etc.	Employee self-paid courses to upskill	
Enablers + Assess-ments	Focus on pvt schools Assessments, LMS, ERP	Untapped market; few focussed players. Opp in low stake semester exams			Offered for entrance exams; online assessments to become increasingly relevant		Used for internal assessment of employees, and during recruitments	Evaluating/ training teachers still relatively nascent in India

High-potential Mid potential Limited potential Not relevant

Source: Primary interviews, team analysis

Segments attractive for VC Investments (1/2)

PRELIMINARY

	High/Mid growth potential areas	Examples of existing companies operating in India	Comments	Attractive-ness for PE investment
Hardware	K-12 & Higher Education	Datawind, OLPC, magicpencil, Mytab, HCL, Pearson, iProf, Educomp, etc.	• Govt. spending via tendering process – high volume low margin market. Deep pockets needed for waiting out slow government processes • Smaller players at massive disadvantage • Asset heavy	
Digital content, games and apps	K-12	Educomp, Compucom, Aurus Network, Vienova, EducateMe360	• Need capital for development and reaching private schools (B2B) / consumers (B2C) • Still asset light	
	Higher Education		• Need for capital: Reach universities & colleges / technology development / learning centers (last mile), marketing for B2C	
	Corp. training / Test prep		• Need for capital: If needed then to develop customized content • Asset light	-
MOOCs, DLPs & focused sites	Higher education	Universal Training Solutions (UTS), NPTEL, LurnQ, Educateme360, Manipal University, WizIQ	• Need capital for (i) Developing, maintaining and updating database; (ii) Marketing & advertising • Reputation a key success factor	

Source: Primary interviews

Segments attractive for VC/PE Investments (2/2)

PRELIMINARY

	High/Mid growth potential areas	Examples of existing companies operating in India	Comments	Attractive-ness for PE investment
Enablers excluding assessment	K-12, Higher Ed, Tutoring	Fedena, WizIQ, Upside learning	• Need to be assessed on a case by case basis	
Assessment	K-12	Educational Initiatives	• Need for capital limited; required only if need arises in future to scale up through brick-and-mortar, or to provide equipment to schools	
	Higher education	No major players	• Opportunity in low-stake assessment	
	Test prep	Vriti, EntrancePrime, thecatonline, Eduwizards	• Might need capital for establishing testing centres/buying equipment capable of providing real simulation of IIT/CAT entrance examinations	
	Corporate training	Mettl, Aspiring Minds	• Limited need for capital, as market currently is nascent. However, as outsourcing of training and recruitment increases, capital will be required for scale-up	

Highly Attractive	
Moderately Attractive	
Mildly Attractive	
Least Attractive	

Source: Primary interviews

Considerations while investing in Indian Ed-tech firms

Entry valuations	• Potentially attractive entry valuations as education section has taken a hit in India off late, interest in sector lukewarm
Product strategy	• Pure play tech innovation likely to be led by the US, tech plays with blended service components leveraging low cost base could be more promising • Cloud/online/mobile delivery more promising than on-premise
Choice of end markets	• **Segments:** Selling B2B to certain segments that are highly fragmented such as K12 may be a challenge for smaller players, B2C requires high brand value and/or high marketing costs • **Geography:** Start-ups targeting western (US) market have better shot at scale / exit, start-ups targeting India alone can expand in other price-sensitive and emerging markets -**Two India's**: lower-middle to upper class (likely focus) and BOP (volume market)
Exit conside-rations	• Poor environment and track record for exits in India in general at present • Trade sale and secondaries likeliest exit channels • Ed-tech start-ups have better prospects of international exits if they target international (US) market • Potential buyers: Large educational companies (e.g. Pearson), General/ Specialized tech firms (e.g., Blackboard), Telcos, Internet firms, PE firms
Others	• Teams and talent • Ability to differentiate





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