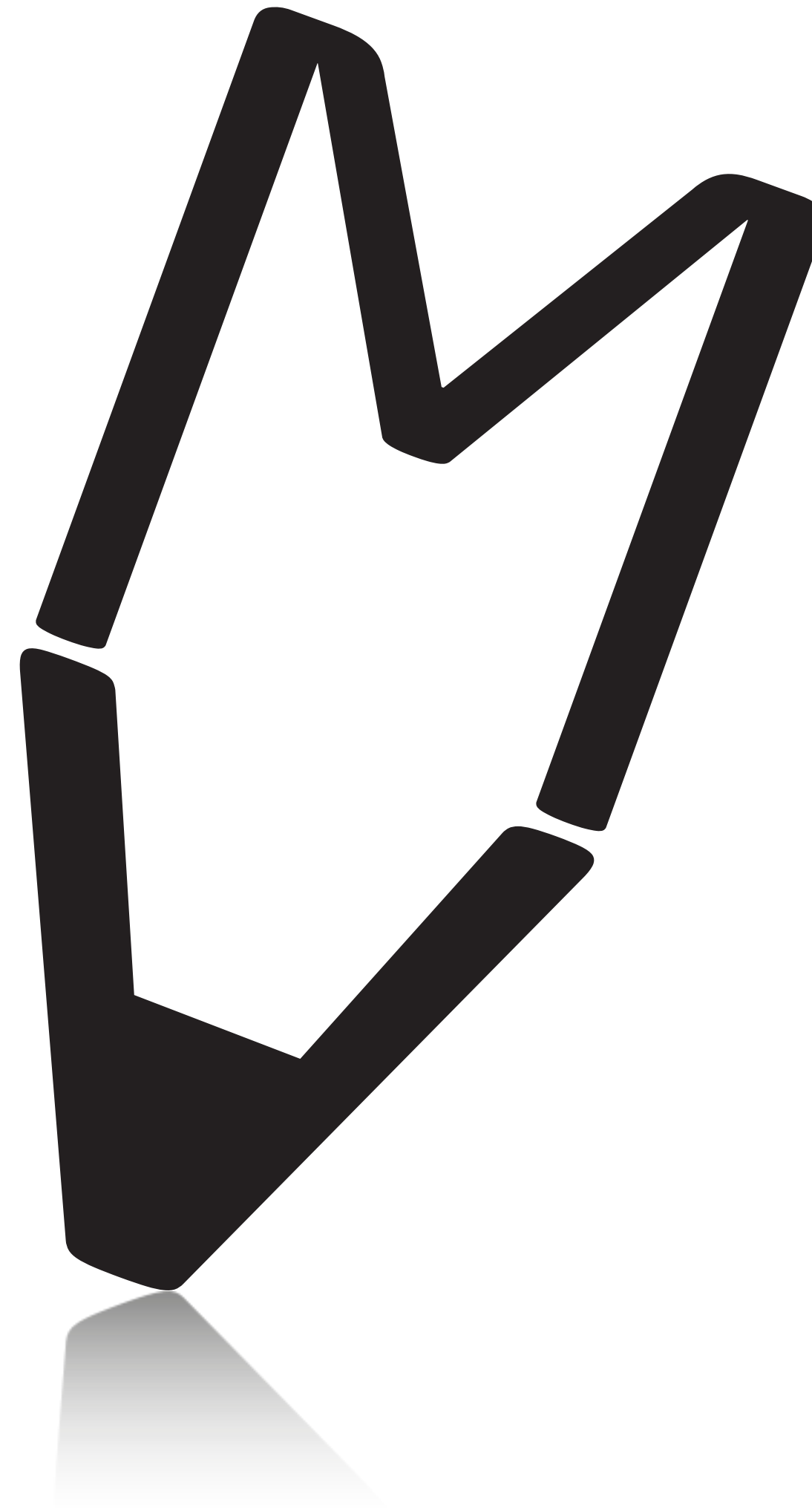# Mechanics Academy

A business proposition

17th April 2012
Harish Narayanan

The university as we know it today has been in existence for over a thousand years.

And the entire time, they have been at the forefront of research and innovation.

Even so, their methods for educating students have **not evolved significantly**.

But then, along comes the internet...

- Inexpensive, high-bandwidth connections

- Ubiquitous wireless access

- Growing comfort with cloud-based software

… and seamlessly connects those with knowledge with those who want to learn.

Of course, I am not the first person to notice that education is having its "internet moment."

Venture-Capital Investment in Education-Technology Companies

Millions of dollars — Sum of equity invested — Number of deals — Number of deals
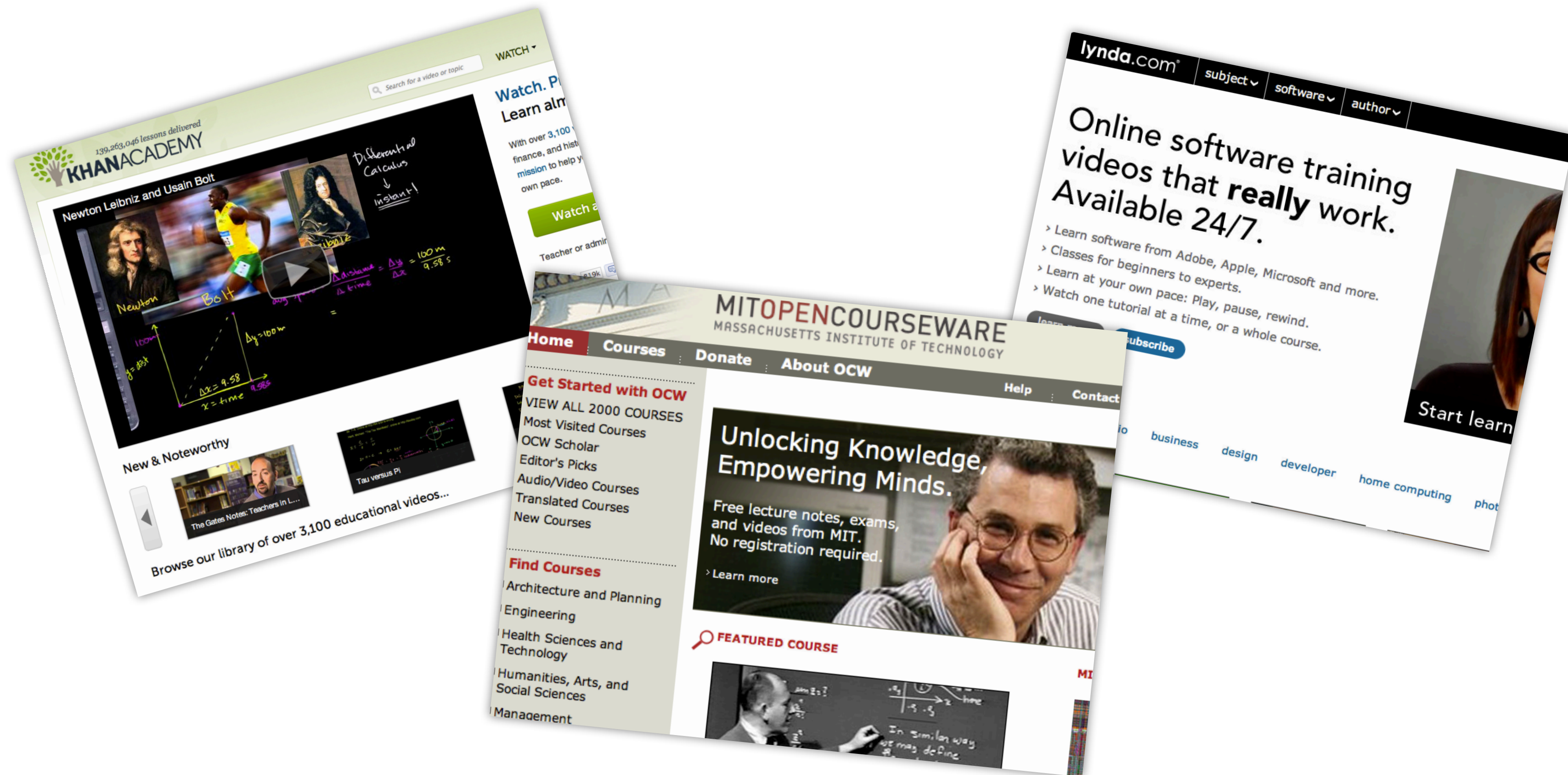
Cumulative: **438**

Cumulative: **$1.97-billion**

Note: Data include educational-technology companies in elementary and secondary education, higher education, lifelong learning, and informal education.

Source: National Venture Capital Association, thomson Reuters

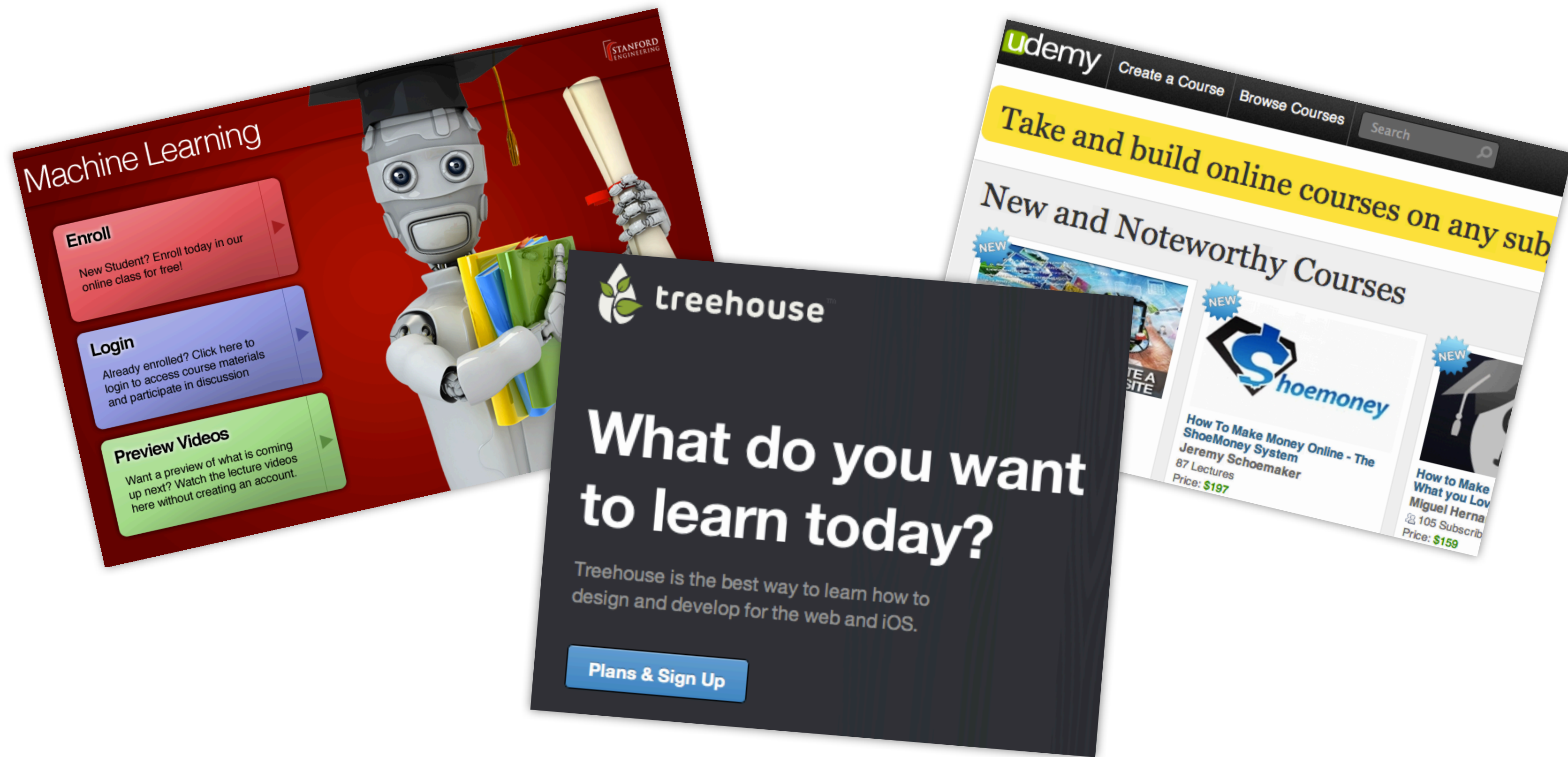| Initiative	Vision/Motto	Market	Topics	Primary Content	Additional Features	Competitive Advantage	Funding/Business Model
Generation 1: These initiatives aim primarily to put up non-interactive content online. They are generally quite broad							
khanacademy.com	A free world-class education for anyone, anywhere	Everyone (with particular focus on school students and school systems)	Math, science, finance and economics, humanities, test preparation, basic programming	Lecture videos	Simple auto-graded exercises tied to gamification	Immensely popular with documented results, huge, varied library, free	Educational grants and community contributions (time, expertise, money)
ocw.mit.edu, itunes.stanford.edu, etc.	To deliver existing university content to a worldwide audience	University students, continuing education	Complete university catalogues (math, science, engineering, architecture etc.)	Lecture videos, notes, exercises		Prestigious, experienced instructors, time-tested content, free	Supported by the university and community donations
lynda.com	Online software training videos that really work—available 24/7	Software, web and digital creative (potential) professionals, businesses, governments	Web technology, development, photography/video, home computing	Lecture videos, supplementary material		Incumbent: Financially successful, huge, varied library of high quality	Tiered monthly membership ($25, $37.5) and discounts for groups
Generation 2 (Academic): Tend to be more specialised, and have content created with online distribution in mind.							
ml-class.org, ai-class.com etc.	Offer advanced training on a specific course	University students, continuing education	Specialised topics, e.g. Machine learning, artificial intelligence, iOS programming	Lecture videos, supplementary material, exercises		Prestigious, experienced instructors, time-tested content	Supported by the university
academicearth.com	Online courses from the world's top scholars	Everyone (with particular focus on university students, continuing education)	Science, Engineering, Mathematics, Literature, Religion etc.	Curated list of courses on other sites		Free press	Angel investment
Generation 2 (Commercial): Tend to be more specialised, have more polished presentation and introduce limited interactivity.							
udemy.com	To disrupt and democratize the world of education	Everyone (with particular success in the web design/development, programming communities)	Technology, business, design, music, languages, etc.	Lecture videos, supplementary material	Crowd-sourced, social, catalogues free courses elsewhere	Crowd-sourced, huge, varied library, serves as a platform for instructors too	Healthy mix of free and paid courses (~ $5–$250 each)
teamtreehouse.com	Help people achieve their dreams and change the world	Web geeks and (potential) professionals, businesses	Web design and development, iOS programming	Lecture videos, supplementary material, auto-graded exercises	Gamification, connects successful students with employers	High-quality content, hot topics	Tiered monthly membership ($25, $49) and 25% discounts for groups
Generation 3 (Academic): The courses provided by these online learning initiatives have an element of feedback, student-to-student and student-to-professor communication and provide structured deadlines like a university course. By engaging students in quizzes and exams, they go above the methodology of the previous generation of online courses.							
udacity.com	Free online university classes for everyone (typically new courses)	University students, continuing education	Computer science, Applications	Lecture videos, supplementary material, auto-graded exercises	Synchronous, Certificate upon completion	Prestigious, experienced instructors, free press	Angel investment. Grow audience now, monetize later.
coursera.org	Offers courses from the top universities for free (typically existing courses)	University students, continuing education	Computer science, Applications	Lecture videos, supplementary material, auto-graded exercises	Synchronous, Certificate upon completion	Prestigious, experienced instructors, time-tested content, free press	Supported by the Stanford university
mitx.mit.edu	Offer a portfolio of MIT courses for free to learners around the world	University students, continuing education	Electrical engineering, Electronics and Computer science	Lecture videos, supplementary material, auto-graded exercises	Synchronous, Certificate upon completion	Prestigious, experienced instructors, free press	Supported by MIT
minervaproject.com	To be the first elite American University to be launched in a century	University-level students admitted using a strict, intellectual standards	[To be seen]	Rigorous, analytical courses that help students thrive	Certificate upon completion	Free press, ambitious goals	$25 million venture capital
class-central.com	Unifies available courses from different platforms in to a single place	University students, continuing education	Electrical engineering, Electronics and Computer science, Applications	Curated list of courses on other sites		Hot topics	
Generation 3 (Commercial): Have a healthy mix of static lecture content and innovative, interactive exercises. Focus entirely on computer science and (web) programming topics.							
codeschool.com	Code School is all about learning by doing	Web geeks and (potential) professionals, businesses	Modern web programming (Ruby, Javascript)	Interactive lessons and exercises, lecture videos	Gamification	Interactivity, high-quality content, hot topics	Charge for individual courses ($55) or monthly membership ($25), including groups
codecademy.com	Easiest way to learn how to code	Web geeks and (potential) professionals	Modern web programming (Javascript, HTML, CSS)	Interactive lessons and exercises	Gamification, social	Crowd-sourced, serves as a platform for instructors too	Angel investment
And many others:							
thecoursebook.com (curator), coursekit.com (tools), courseload.com (tools), unow.com (online university), inigral.com (social learning), oneschool.com (social learning), educause.edu (tools), etc.							

Generation 1:

Generally broad, and aim simply to publish non-interactive content online.
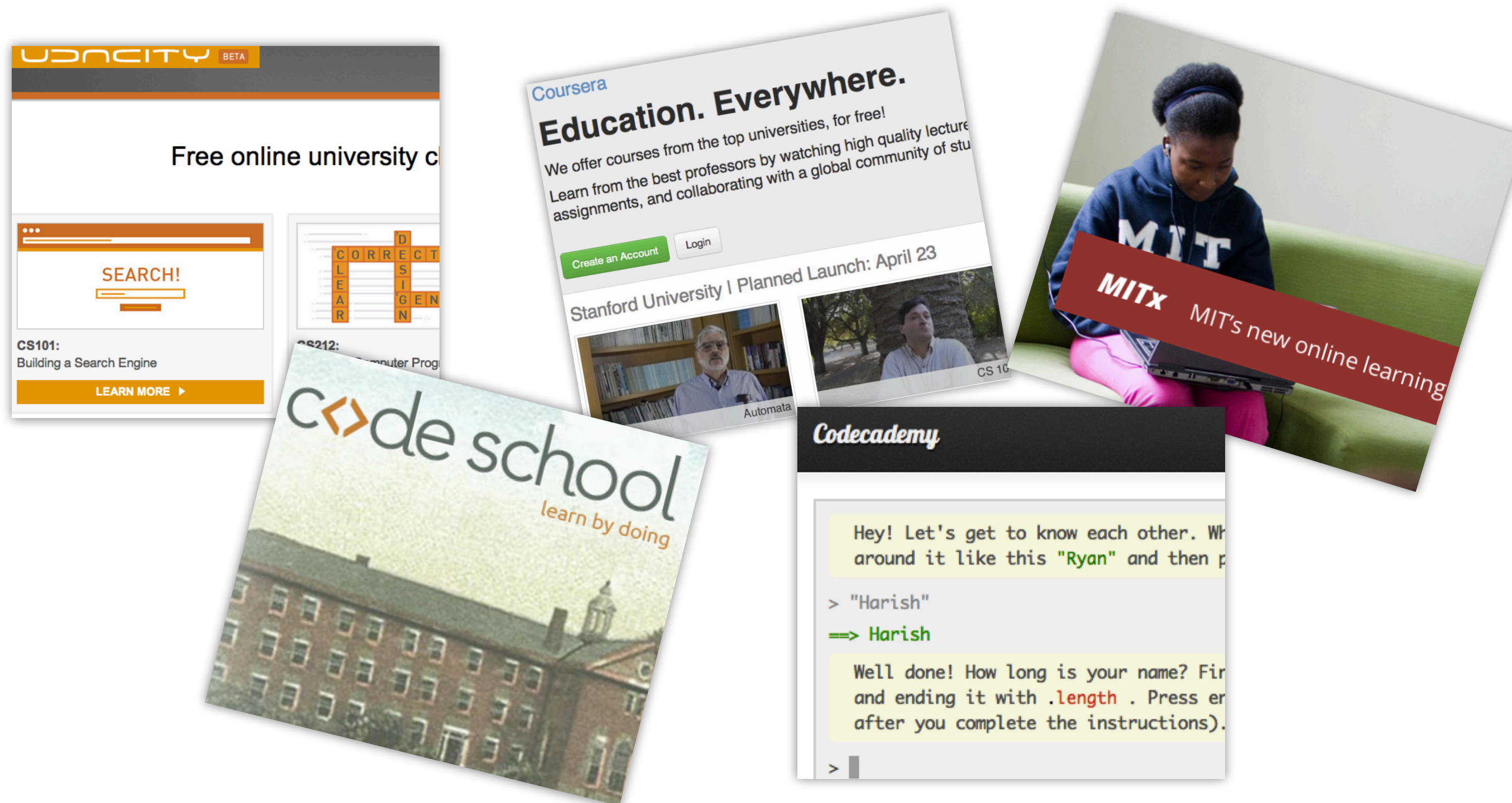
Generation 2:

Tend to be more polished, and have specialized content created with online distribution in mind.

But pedagogical evidence suggests that people learn best when **actively participating.**

Generation 3:

Have a healthy mix of traditional learning material, student-to-student and student-to-professor communication and **interactive exercises.**
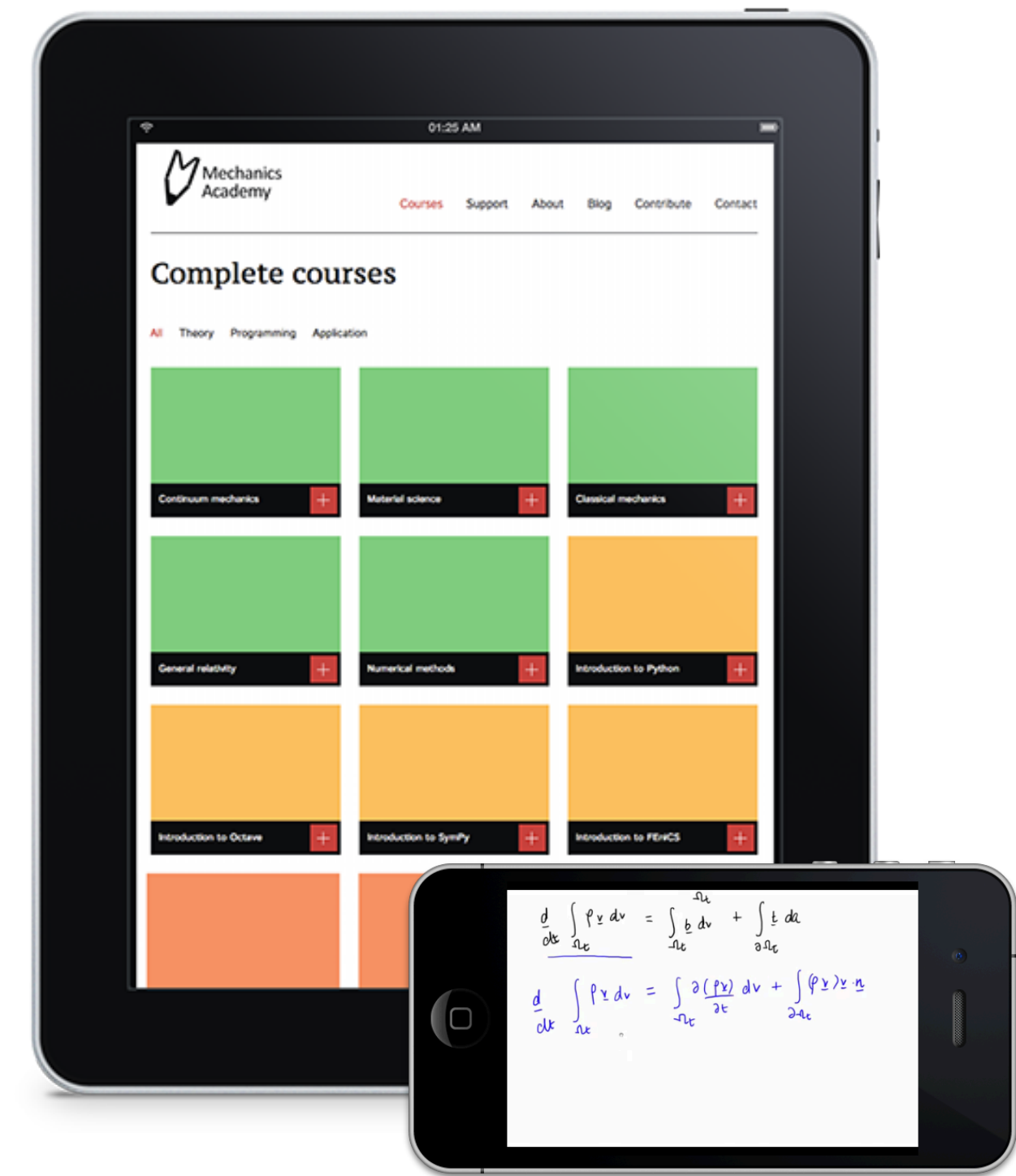
education	programming communities)	music, languages, etc.	supplementary material	elsewhere	platform for instructors too	courses (~ $5–$250 each)
e.	Help people achieve their dreams and change the world	Web geeks and (potential) professionals, businesses	Web design and development, iOS programming	Lecture videos, supplementary material, auto-graded exercises	Gamification, connects successful students with employers	High-quality content, hot topics	Tiered monthly membership ($25, $49) and 25% discounts for groups

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d deadlines like a university course. By engaging students in quizzes and exams, they go above the methodology of the previous generation of online courses.

	Free online university classes for everyone (typically new courses)	University students, continuing education	Computer science, Applications	Lecture videos, supplementary material, auto-graded exercises	Synchronous, Certificate upon completion	Prestigious, experienced instructors, free press	Angel investment. Grow audience now, monetize later.
	Offers courses from the top universities for free (typically existing courses)	University students, continuing education	Computer science, Applications	Lecture videos, supplementary material, auto-graded exercises	Synchronous, Certificate upon completion	Prestigious, experienced instructors, time-tested content, free press	Supported by the Stanford university
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.com	To be the first elite American University to be launched in a century	University-level students admitted using a strict, intellectual standards	[To be seen]	Rigorous, analytical courses that help students thrive	Certificate upon completion	Free press, ambitious goals	$25 million venture capital
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:
om (curator), coursekit.com (tools), courseload.com (tools), unow.com (online university), inigral.com (social learning), oneschool.com (social learning), educause.edu (tools), etc.

But nearly all these efforts focus on applied
computer science and programming!

Mechanics Academy aims to bring such modern, polished, technology-based learning to the more classical field of mechanics.
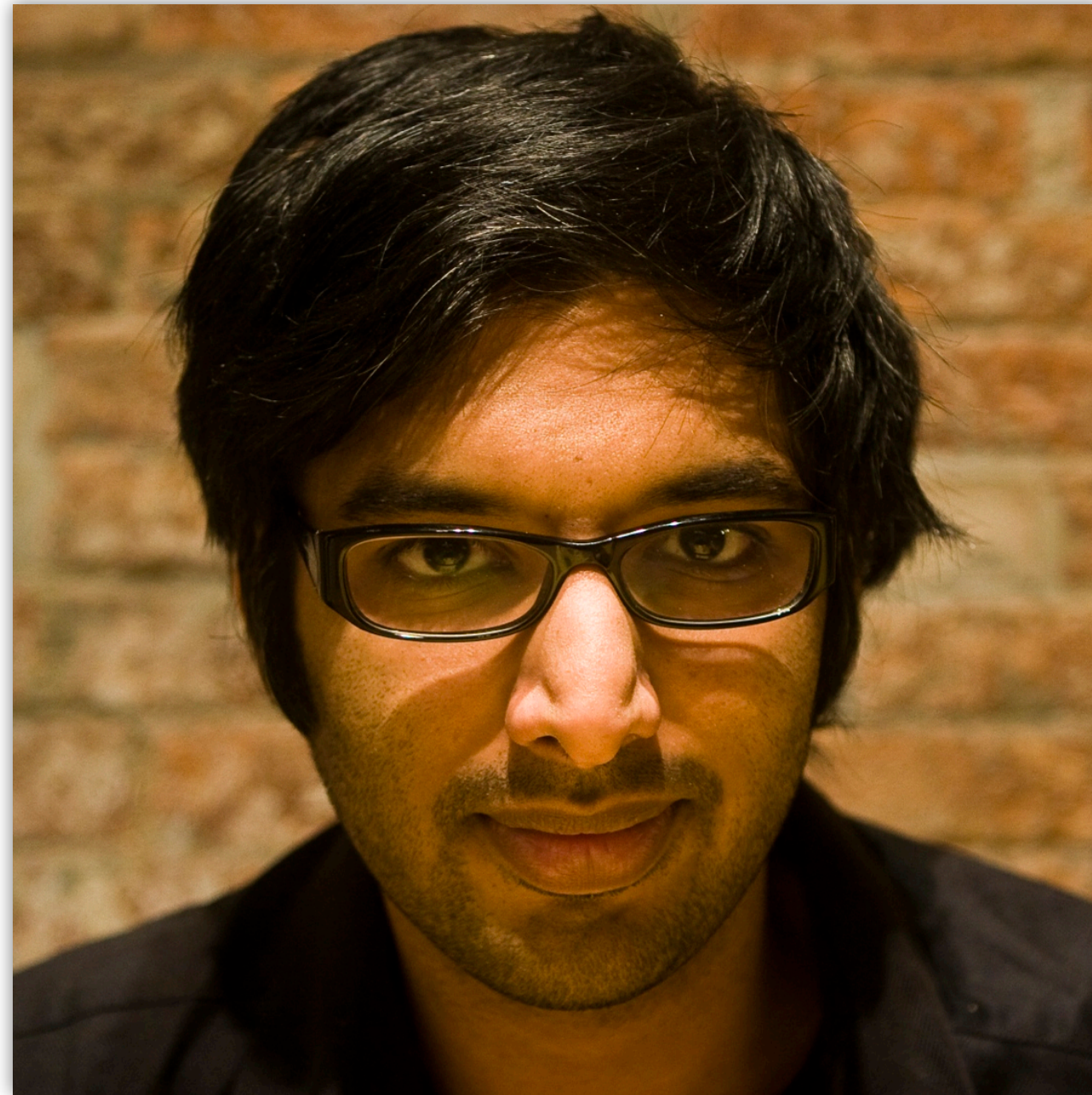
Mechanics Academy will blend the best of previous academic and corporate efforts

- Video lectures and supplementary material

- Interactive exercises (e.g. FEniCS online)

- Student interaction and instructor support

- Gamification

- Available anywhere
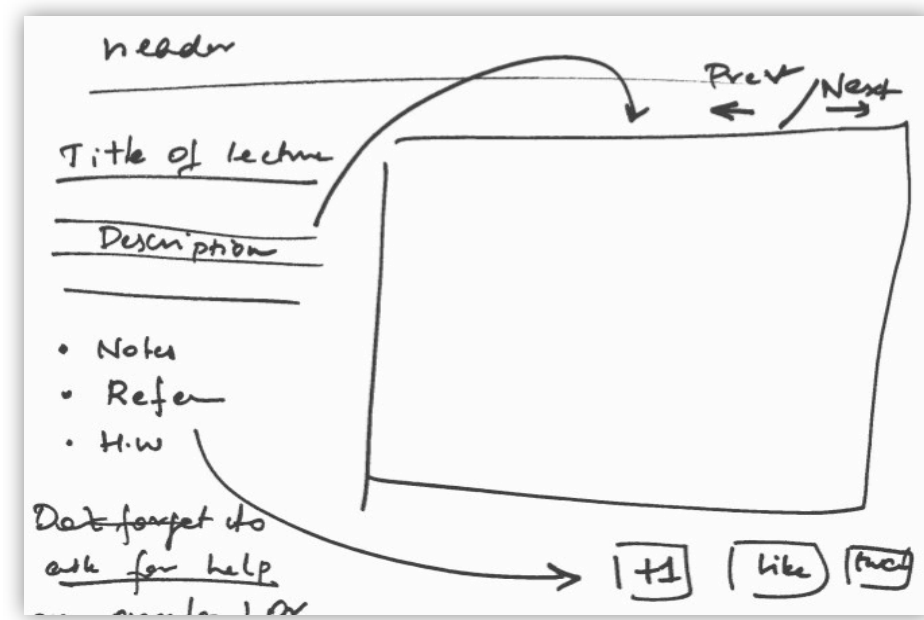
- Connect high achievers to potential recruiters

Mechanics Academy will be directed at university-level students, industry professionals and anyone who wants to learn advanced mechanics but lacks access to local expertise.

Initially, "the team" will just be me.

harishnarayanan.org

I have constructed a basic
back-end

Creating initial lecture videos and
supplementary material

Get help while you learn

If you're looking for help with the lessons or the exercises, you've come to the right place! F
on the support forums below, or if you prefer talking to people about your doubts, join us wh
You need to login before participating in the forum.

Recent discussion topics

Topic	Voices	Posts
What would you like to see in the lectures?	1	1
Started by: Harish in: Ideas for the site		
When will we see the first lecture?	2	2
Started by: Martina in: General discussion		

Will offer limited support

It will soon grow to include...

- Me as a coordinator, evangelist and instructor

- Other instructors

- Front-end web designer (contractor)

- Back-end web programmer (contractor)

- Media guy

- Team of advisors (e.g. FEniCS experts at Simula)

Ideas for generating revenue

- Tiered pricing structure for content, e.g.

  ▸ $25 per month for video lectures

  ▸ $50 per month for video lectures and interactive exercises

  ▸ Discounts for groups

- Tiered pricing structure for support, e.g.

  ▸ Community forums and non time-consuming expert support is free

  ▸ Specialized, one-on-one support charged by the hour

- Lucrative consultancy and creating specialized training material

- Targeted advertising, e.g.

  ▸ Commercial software vendors

  ▸ Consultancies

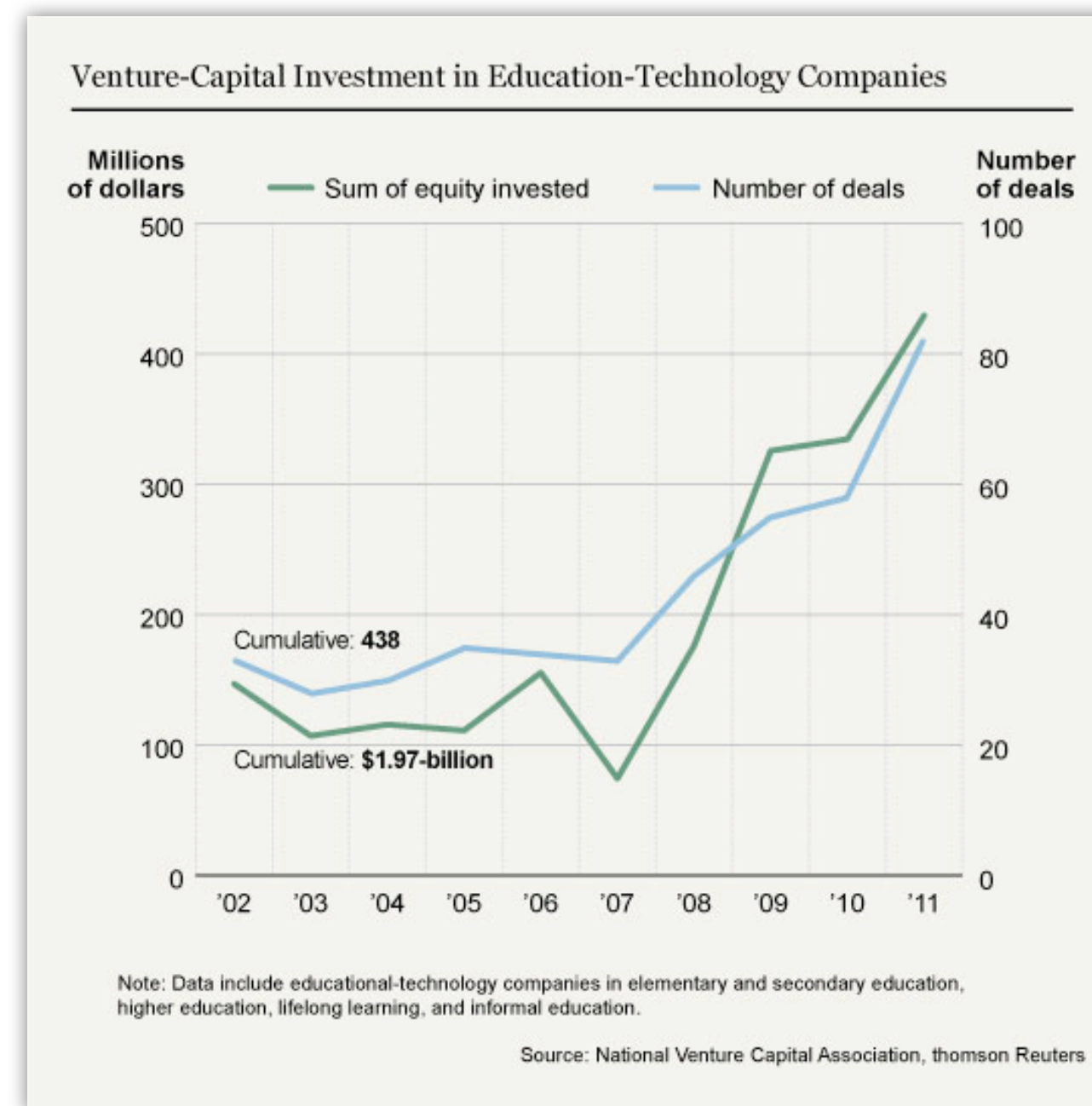 ▸ Charging companies to put job opportunities in front of high achievers

And, the resulting distribution tools and research into tech-based-education are inherently valuable.
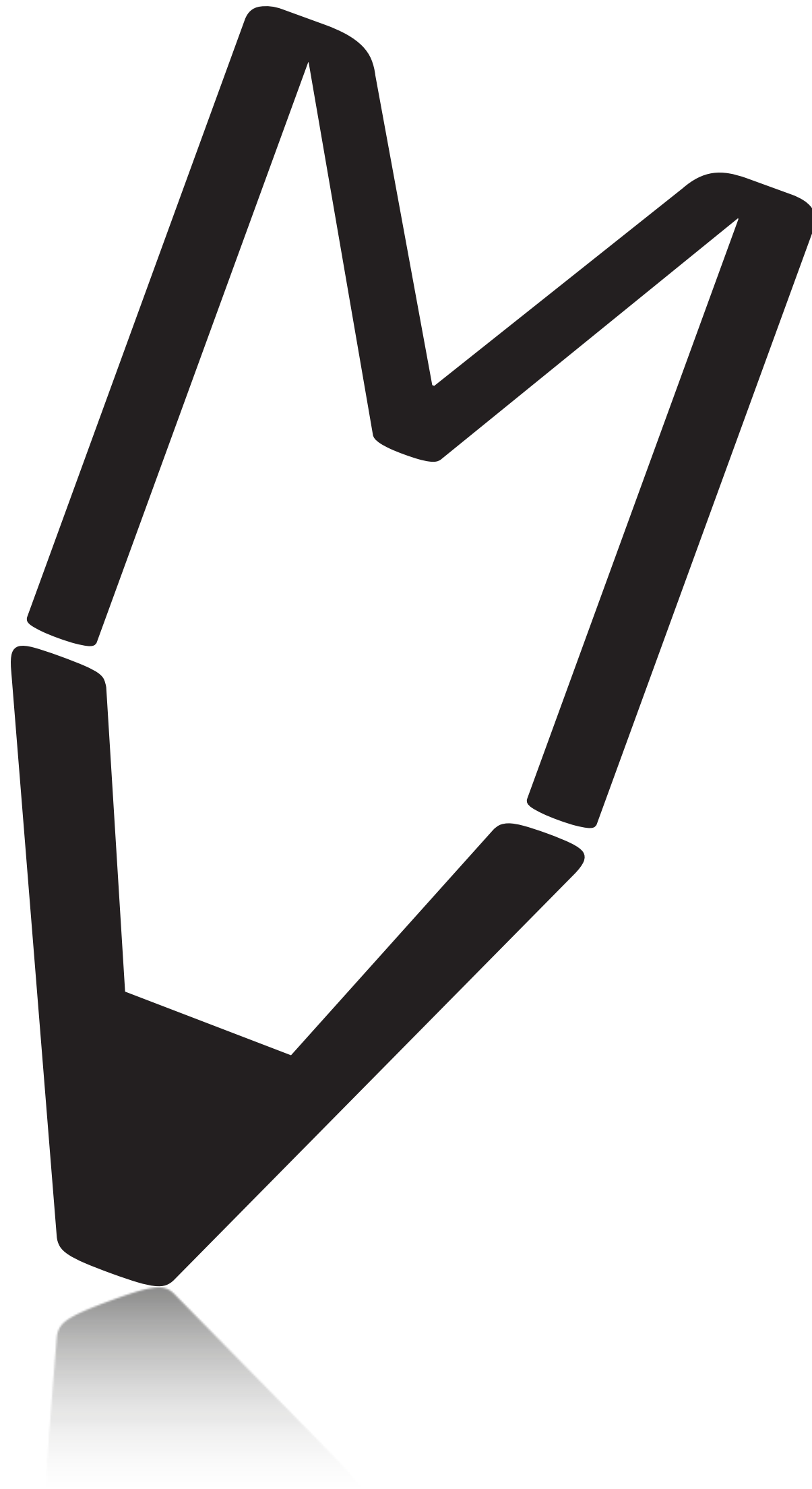
Competitive advantage

- Local domain expertise

- Community contacts

- Blend the best of the academic and corporate worlds

- Everybody else is clamoring for computer science and programming

  ‣ The niche market will allow us to establish a strong position

  ‣ Targeting an advanced field with few comparable learning resources

I am extremely passionate about this idea and intend on working very hard to see it to fruition.

Today, many people are investing significantly in technology-enhanced education.

Venture-Capital Investment in Education-Technology Companies

If we want to make significant impact, it is important that we get in soon and develop a high-quality learning experience.

mechanicsacademy.org/blog
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