

Internet of Education

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Jozef Stefan Institute, Slovenia
&
Knowledge 4 All Foundation, UK

The future of learning is...

open

The future of learning is...

social

open

The future of learning is...

social

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personal

The future of learning is...

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The future of learning is...

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The future of Academia is...

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The future of Academia is...

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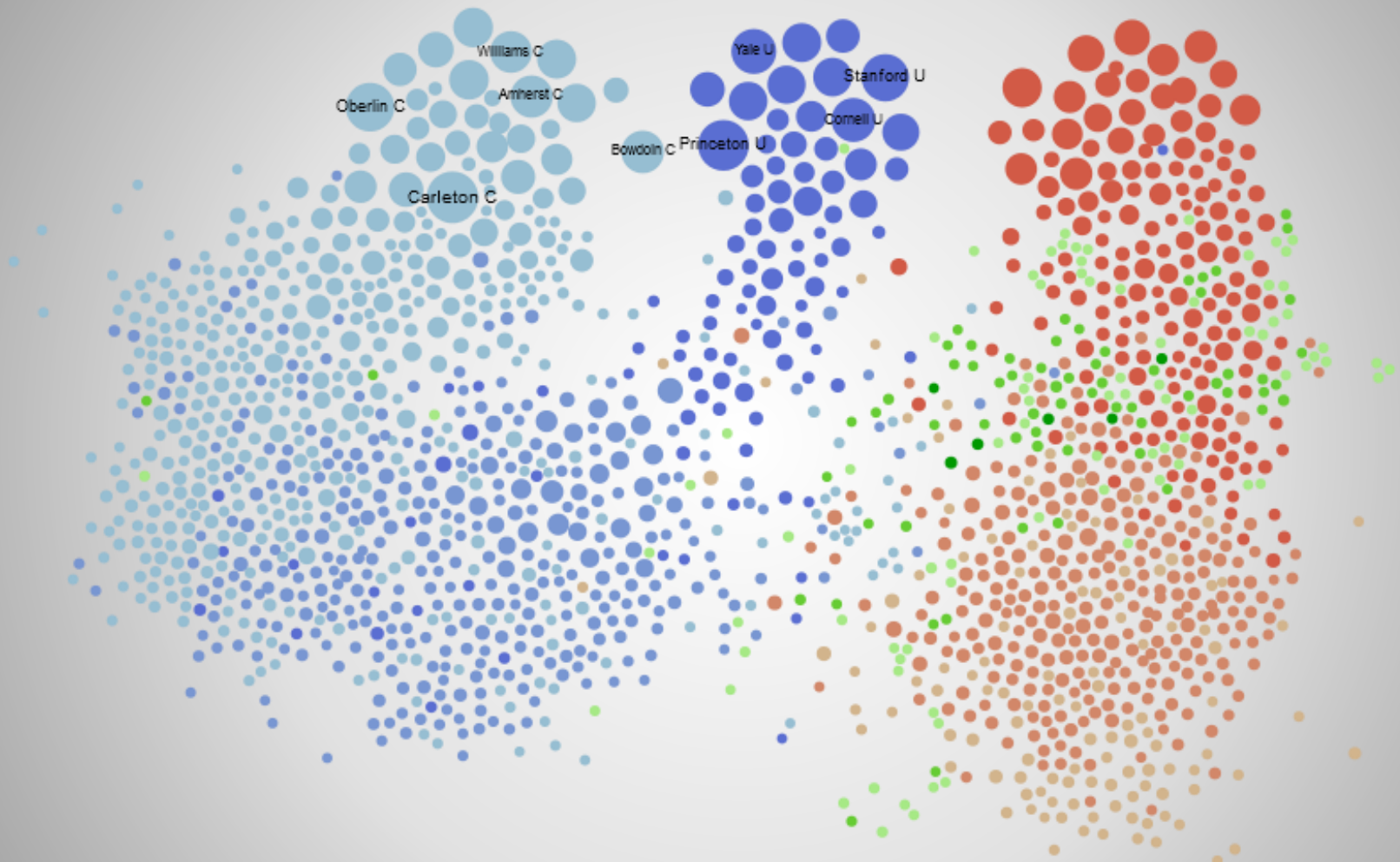
mobile

Digital

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The future of Academia is...



Peers (Chronicle)



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Google and edX Create a MOOC Site for the Rest of Us

September 10, 2013, 3:28 pm

By Steve Kolowich

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Until now, massive open online courses have mostly reinforced existing hierarchies in higher education. MOOC providers have recruited elite institutions and offered them and their professors the opportunity to broadcast their courses to the world.

But now edX, a nonprofit provider founded by Harvard University and the Massachusetts Institute of Technology, is joining forces with Google to create a spinoff Web site where ordinary folks—and professors at colleges that have not been invited to join high-profile MOOC consortiums—can not only sign up for a MOOC but also build one themselves.

The new site, MOOC.org, will provide tools and a platform that “will allow any academic institution, business, and individual to create and host online courses,” says a blog post by Dan Clancy, a research director at Google. In an interview, Anant Agarwal,



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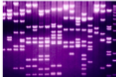


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FutureLearn Launches First Batch Of 20 Free Courses As It Chases Coursera, Et Al.

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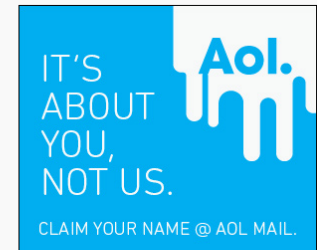
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FutureLearn, a U.K.-led MOOCs alliance, has launched its first set of free courses, nine months after [announcing its intention](#) to jump into the Massively Open Online Courses space.

FutureLearn has grown in size and scope during that pre-launch phase. It now describes itself as “U.K.-led” MOOCs provider — having added a couple of international higher education institutions (namely Trinity College Dublin and Australia’s Monash University) to a list that began as a consortium of U.K.-only institutions.

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October 4, 2013, 4:55 am

By Steve Kolowich

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France is encouraging its universities to build massive open online courses—in French, naturally—with edX’s open-source platform, the nonprofit organization announced on Thursday.

The move is part of a push by France’s Ministry of Higher Education and Research to increase the country’s online offerings. This year the ministry opened a “digital university,” called [France Université Numérique](#), which it hopes will serve as an online clearinghouse for MOOCs offered by various French universities. The first courses will begin early next year.

EdX, which was founded by Harvard University and the Massachusetts Institute of Technology, recently made the source code for its popular MOOC platform available free. Stanford University, for example, [has begun](#) using the OpenEdX platform to power some of its online courses.

France is the first country to adopt OpenEdX at a ministerial level, said Anant Agarwal, president of edX. The French digital university will be independent of edX, but the French government might pay



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The French Ministry of Higher Education has announced the launch of France's new strategy for digital learning in higher education (France Université Numérique) which includes a massive open online course (MOOC) and blended learning portal.

Over 100 higher education institutions have signed on to participate in France's new national portal for massive open online courses (MOOCs) and blended learning. The French Ministry of Higher Education has created the portal as part of the France Université Numérique initiative, which aims to increase access to high quality online learning opportunities in French.

France's MOOC portal will use the open-source edX technology to host its online courses. EdX is a not-for-profit enterprise that brings new methodologies and technologies to online and on-campus learning. The first twenty courses will start in January 2014.

Geneviève Fioraso, French Minister for Higher Education and Research, said in her announcement of the initiative, "First of all, digital technology will be a tool for student success. By 2017, 100% of students should have access to high quality digital courses, at each step of their education, for all types of education."

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University of Melbourne VC pleased as MOOC enrolments reach 300,000

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Melbourne University vice-chancellor Glyn Davis says an experiment in MOOCs was a huge success. Photo: Alex Ellinghausen

TIM DODD

University of Melbourne vice-chancellor Glyn Davis has declared his university's experiment with free online learning a success after enrolling 300,000 students into the seven courses it has offered so far.

"I would use a single word to describe our experience and that's exhilarating," Professor Davis said on Friday.

"We took 160 years to build up a student body of 47,000 on our campus and in 10 months we recruited 300,000 people online. That's the speed of change."

The University of Melbourne is the clear leader among Australian higher education institutions in delivering learning through massive open online courses, or MOOCs, which have grown phenomenally since their

BY TIM DODD



Education editor Sydney

Tim is education editor for the Financial Review working from our Sydney newsroom specialising in higher education, schools, vocational education, online education and MOOCs.

@TimDoddAFR

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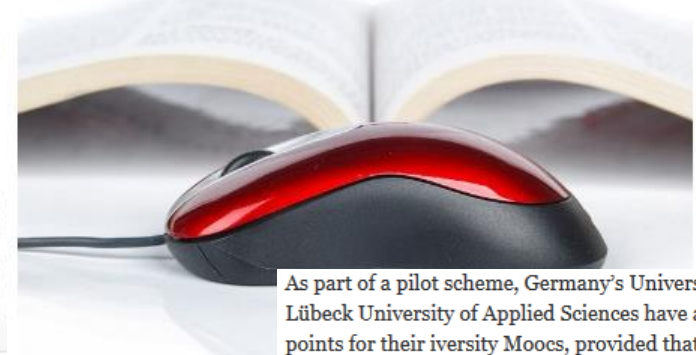
Europe hopes for common Mooc market and single currency

17 OCTOBER 2013 | BY CHRIS PARR

Credit transfer system could give Continent advantage over US

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As part of a pilot scheme, Germany's University of Osnabrück and the Lübeck University of Applied Sciences have already agreed to offer ECTS points for their iversity Moocs, provided that students can pass an "on-campus exam".

The European Credit Transfer System provides a legal basis for the creation of an online marketplace for academic credit that could be exploited by massive open online course providers, a conference has heard

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U.S. Teams Up With Operator of Online Courses to Plan a Global Network

By TAMAR LEWIN

Published: October 31, 2013 | 56 Comments

Coursera, a California-based venture that has enrolled five million students in its free online courses, announced on Thursday a partnership with the United States government to create "learning hubs" around the world where students can go to get Internet access to free courses supplemented by weekly in-person class discussions with local teachers or facilitators.

The learning hubs represent a new stage in the evolution of "massive open online courses," or MOOCs, and address two issues: the lack of reliable Internet access in some countries, and the growing conviction that students do better if they can discuss course materials, and meet at least occasionally with a teacher or facilitator.

Readers' Comments

Readers shared their thoughts on this article.

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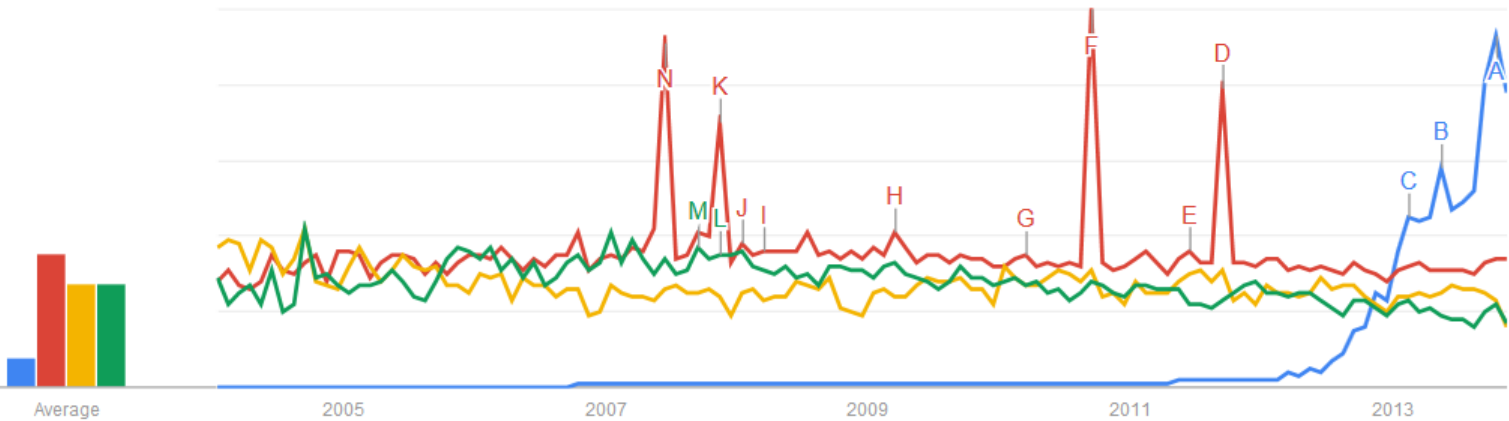
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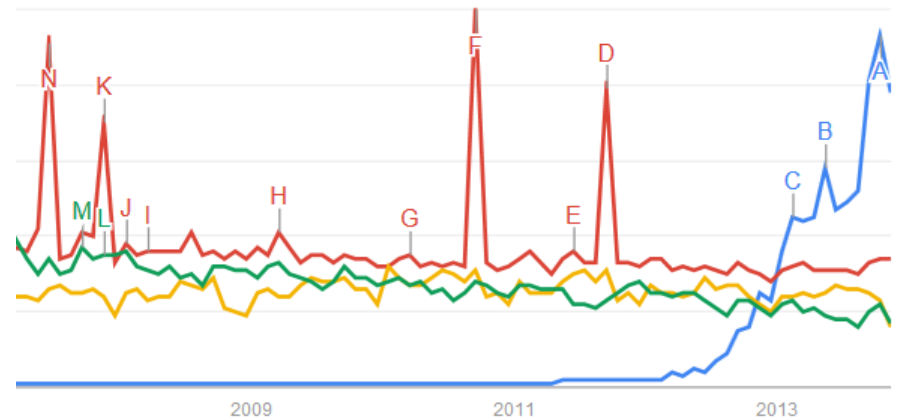
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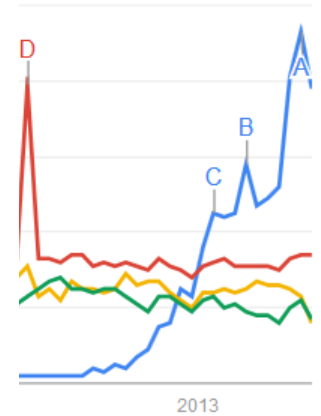
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Just another hype?

Who is Taking Courses Online?

A profile of 1,500 students pursuing fully online programs

The average online student is a **33-year-old white woman** who is earning a salary of **\$65,000** per year.

73%
are pursuing a
DEGREE

8%
are pursuing a
LICENSE

19%
are pursuing a
CERTIFICATE



Enrolled at nonprofit college or university Enrolled at a for-profit

* 17% could not identify their institution as nonprofit or for-profit

70% are women

5% are veterans or active military

STUDENT DISTANCE TO PHYSICAL CAMPUS

80%
live within 100 miles



69%
live within 50 miles

Source: Adelman Market Research and Learning House, Inc.

Designed by Lauren Ruppert

<http://infographicsmania.com/author/stavrosz/>

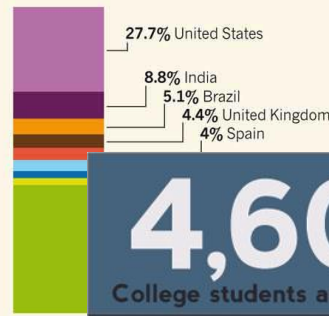
MOOCs rising

Over little more than a year, Coursera in Mountain View, California – the largest of three companies developing and hosting massive open online courses (MOOCs) – has introduced 328 different courses from 62 universities in 17 countries (left). The platform's 2.9 million registered users come from more than 220 countries (centre). And courses span subjects as diverse as pre-calculus, equine nutrition and introductory jazz improvisation (right).

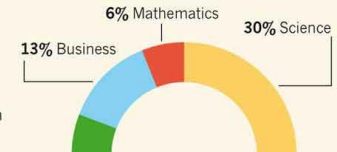
Supply and demand



Student origins



Courses offered



4,600,000
College students are taking at least one class online

that number will increase to
By 2014 18.65 Million

1/2 of the **4500**
brick-and-mortar colleges in the US offer their degree programs online

96% of traditional universities offer at least one class in an online-only format

Open Course Ware offers **4200** complete courses online **FOR FREE**
1689 are classes from **MIT**

Classes And Careers.com

Source: <http://www.classesandcareers.com/yahoo!education/college-learning-on-demand-022110>
<http://www.coursera.org/faq> and <http://www.coursera.com/about>
Image by Nicky N. Khan www.classesandcareers.com

Emerging hubs

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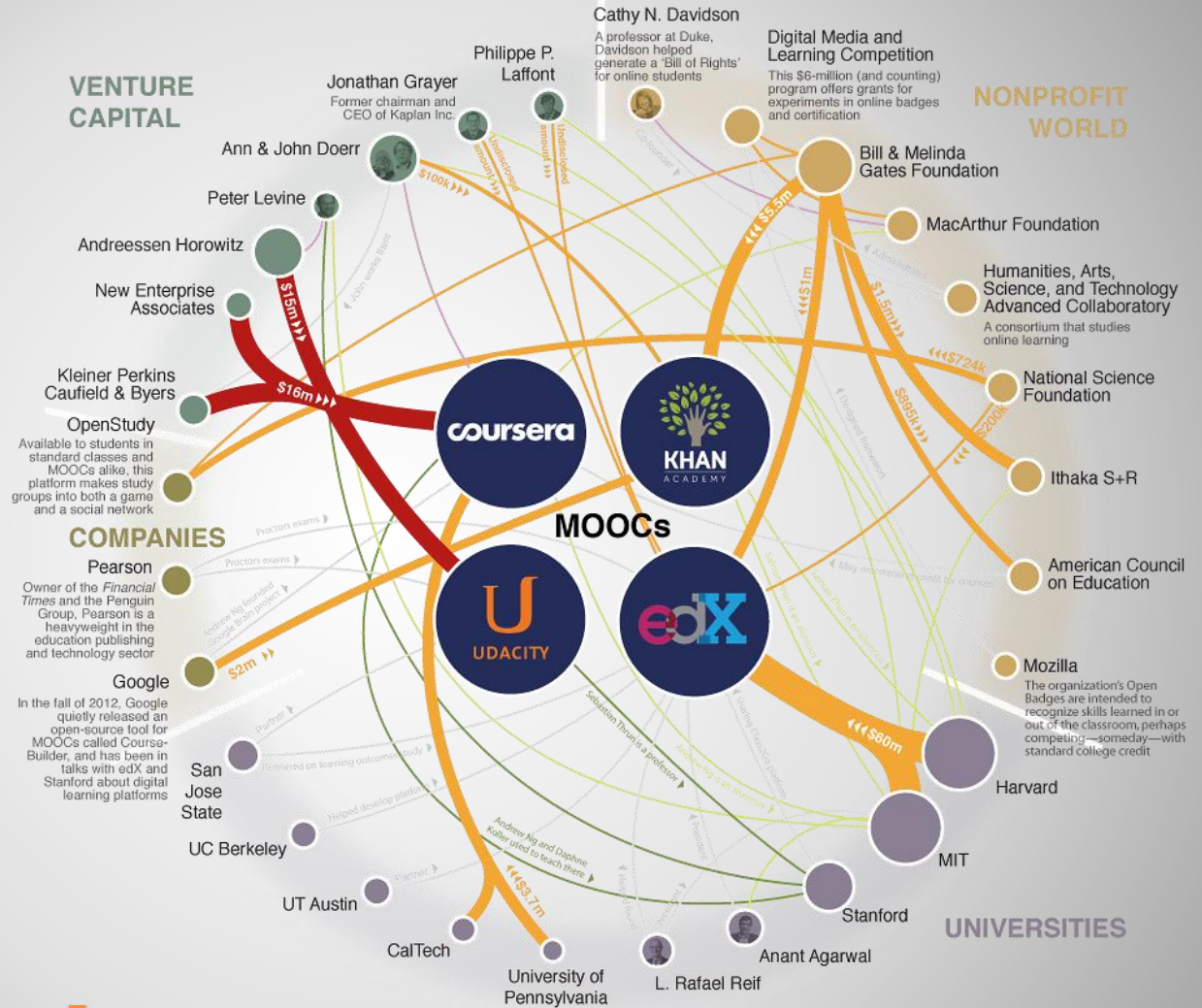
NONPROFIT WORLD

MOOCs

COMPANIES

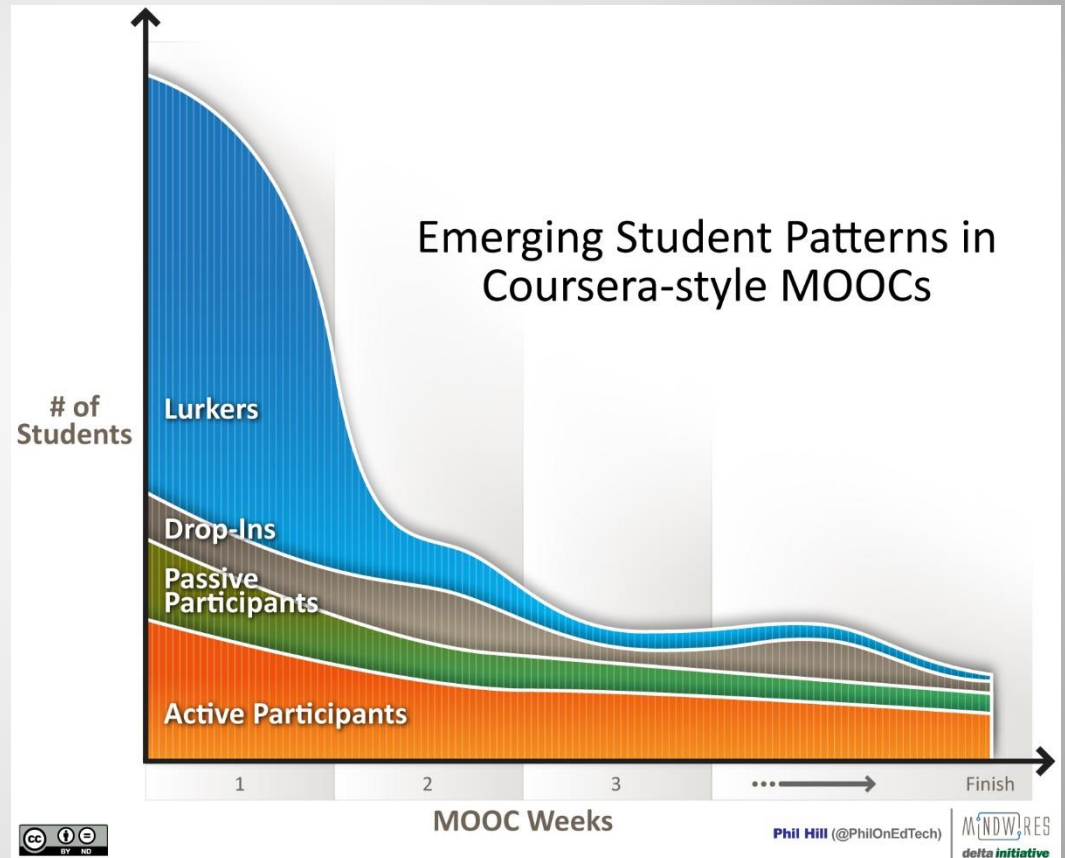
UNIVERSITIES

<http://chronicle.com>



Business interest

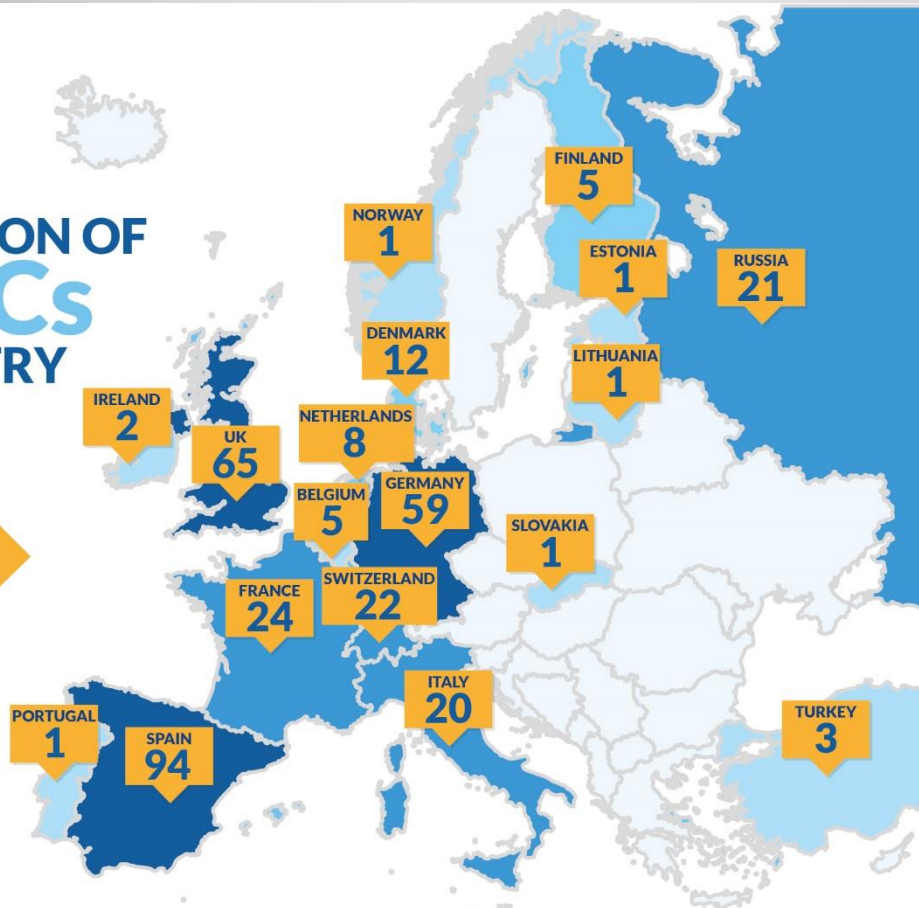
- NYT February 2013: So far, most MOOCs have had dropout rates exceeding 90 percent.



First feedbacks

DISTRIBUTION OF MOOCs PER COUNTRY

345
EUROPEAN MOOCs

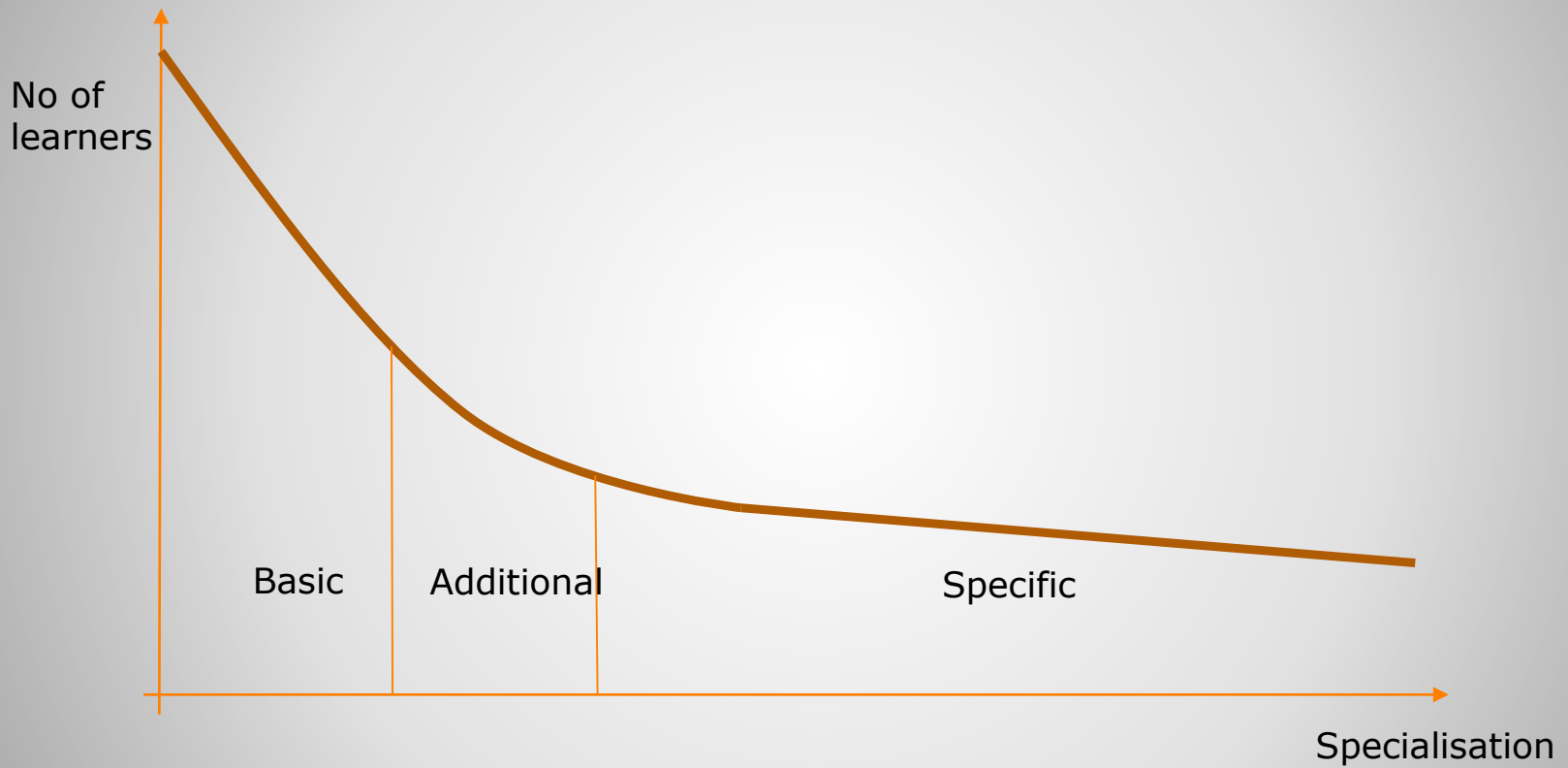


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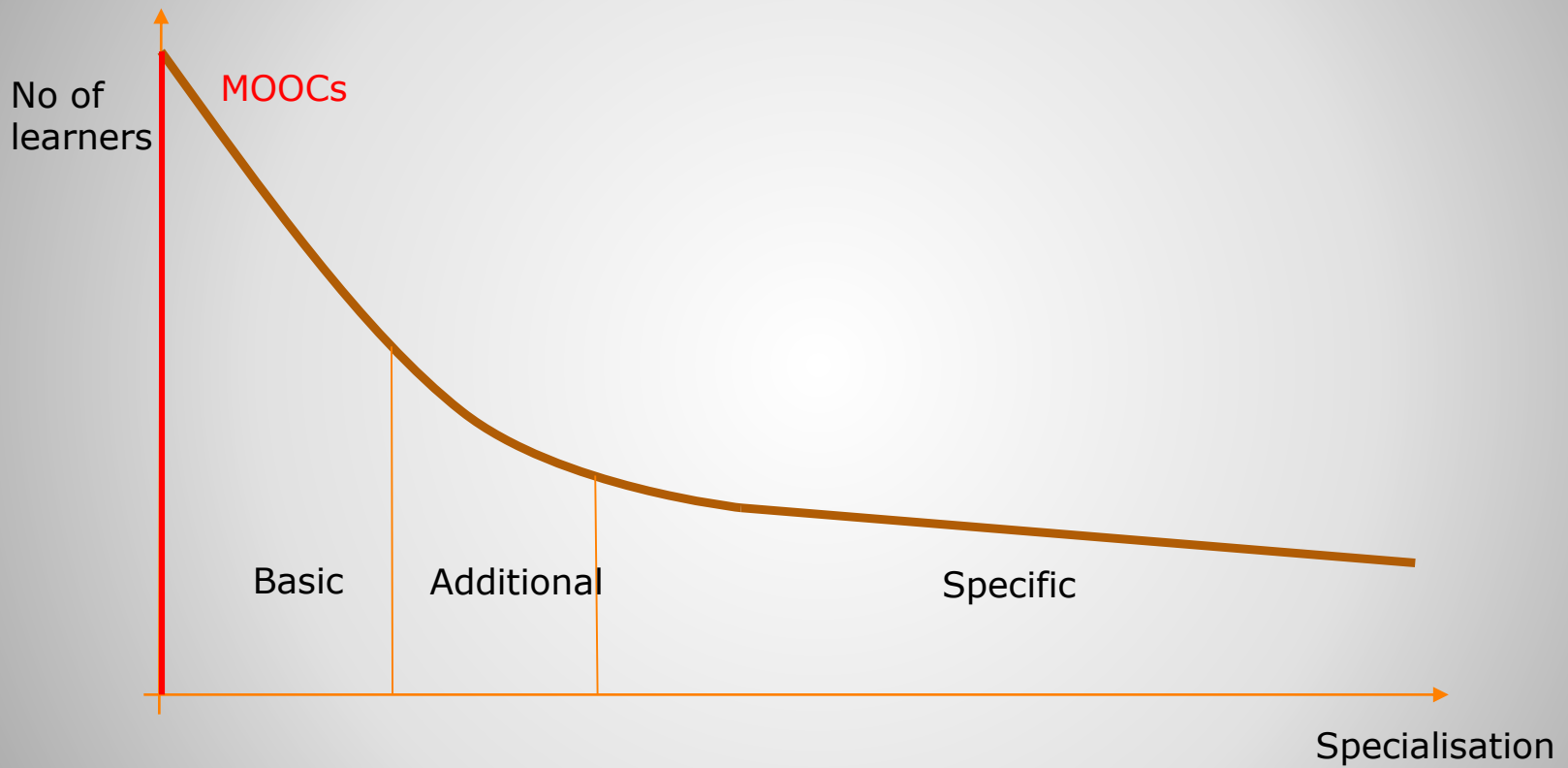
http://openeducationeuropa.eu/en/european_scoreboard_moocs

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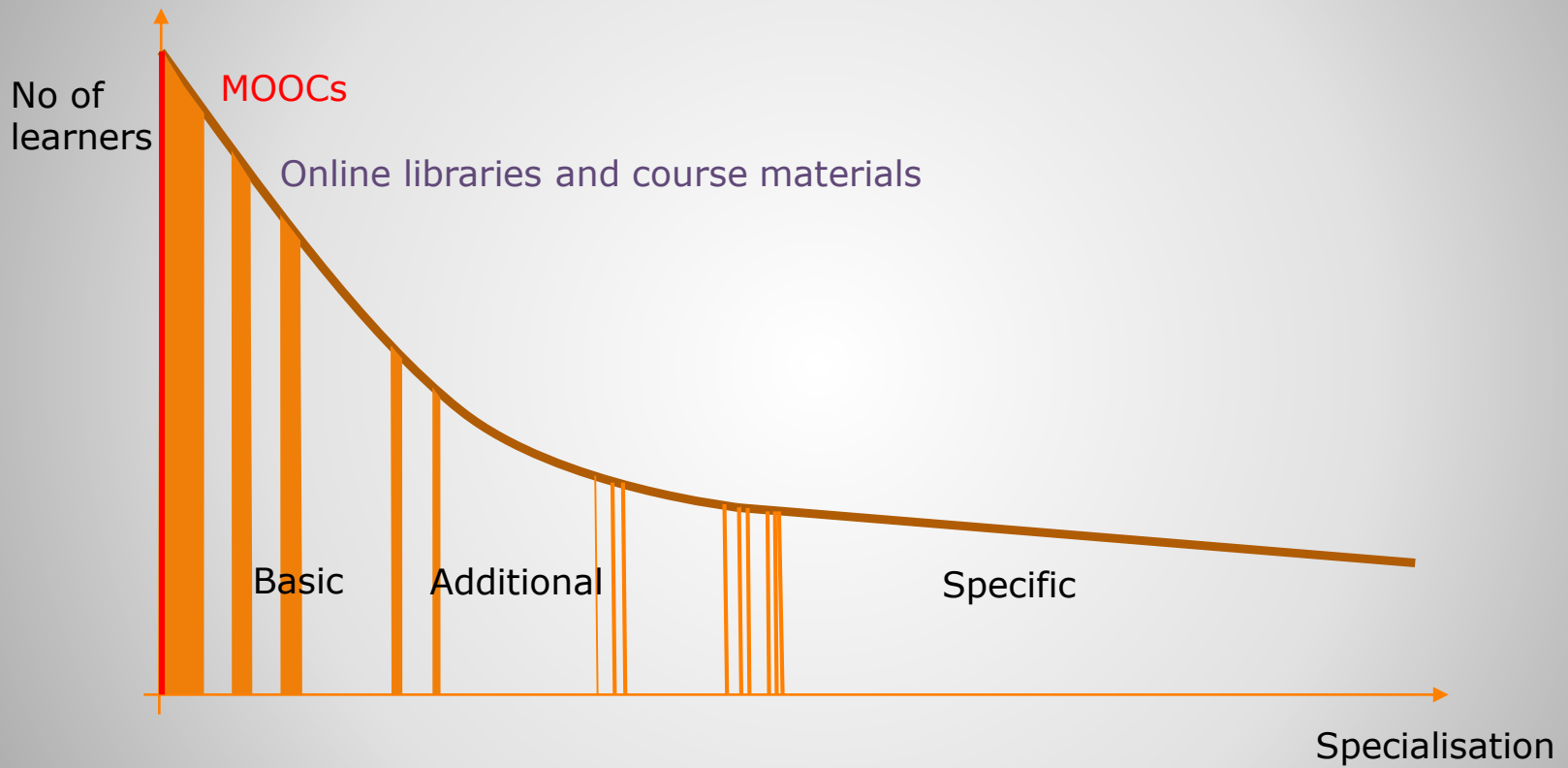
EUROPE's response



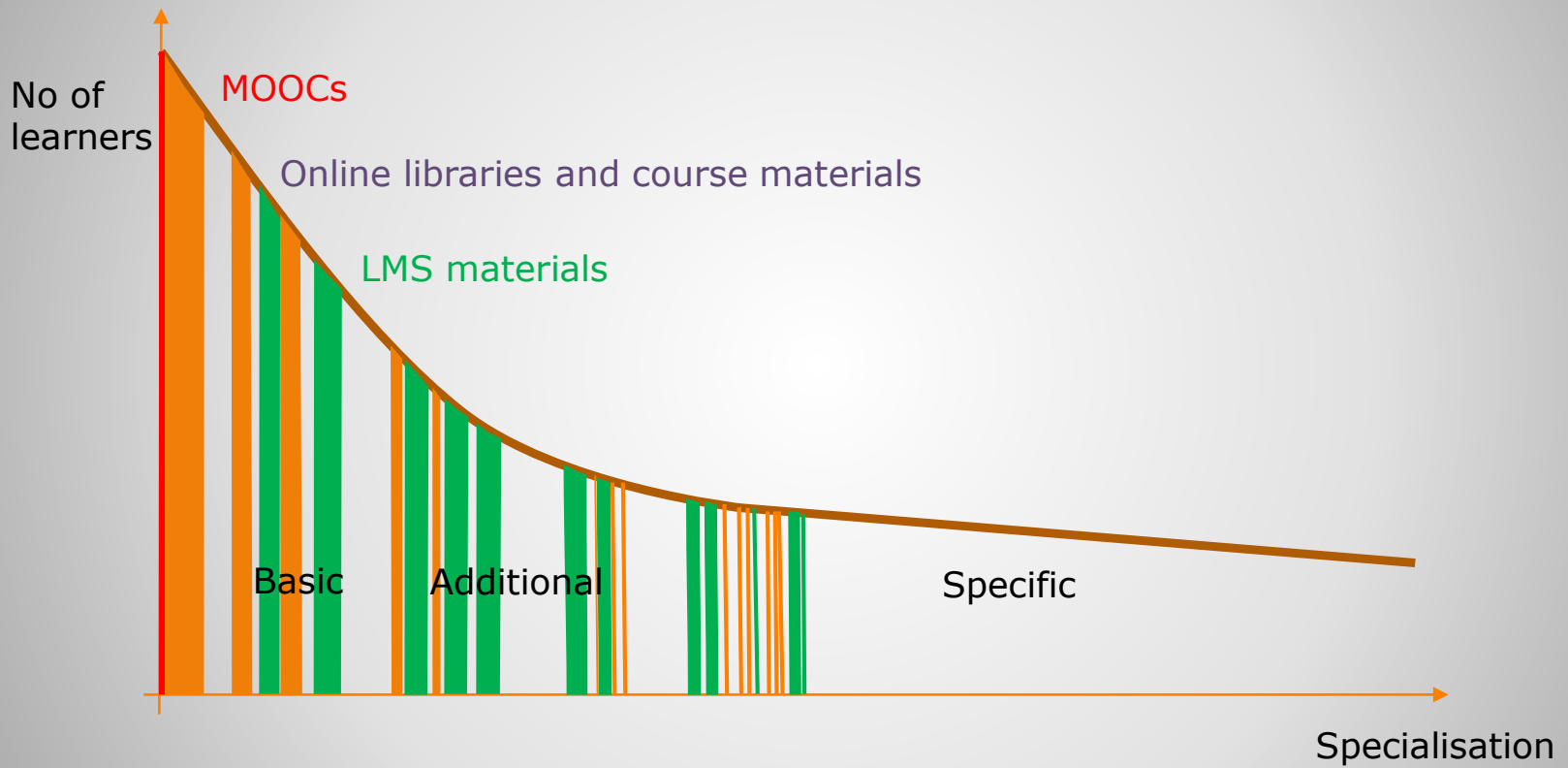
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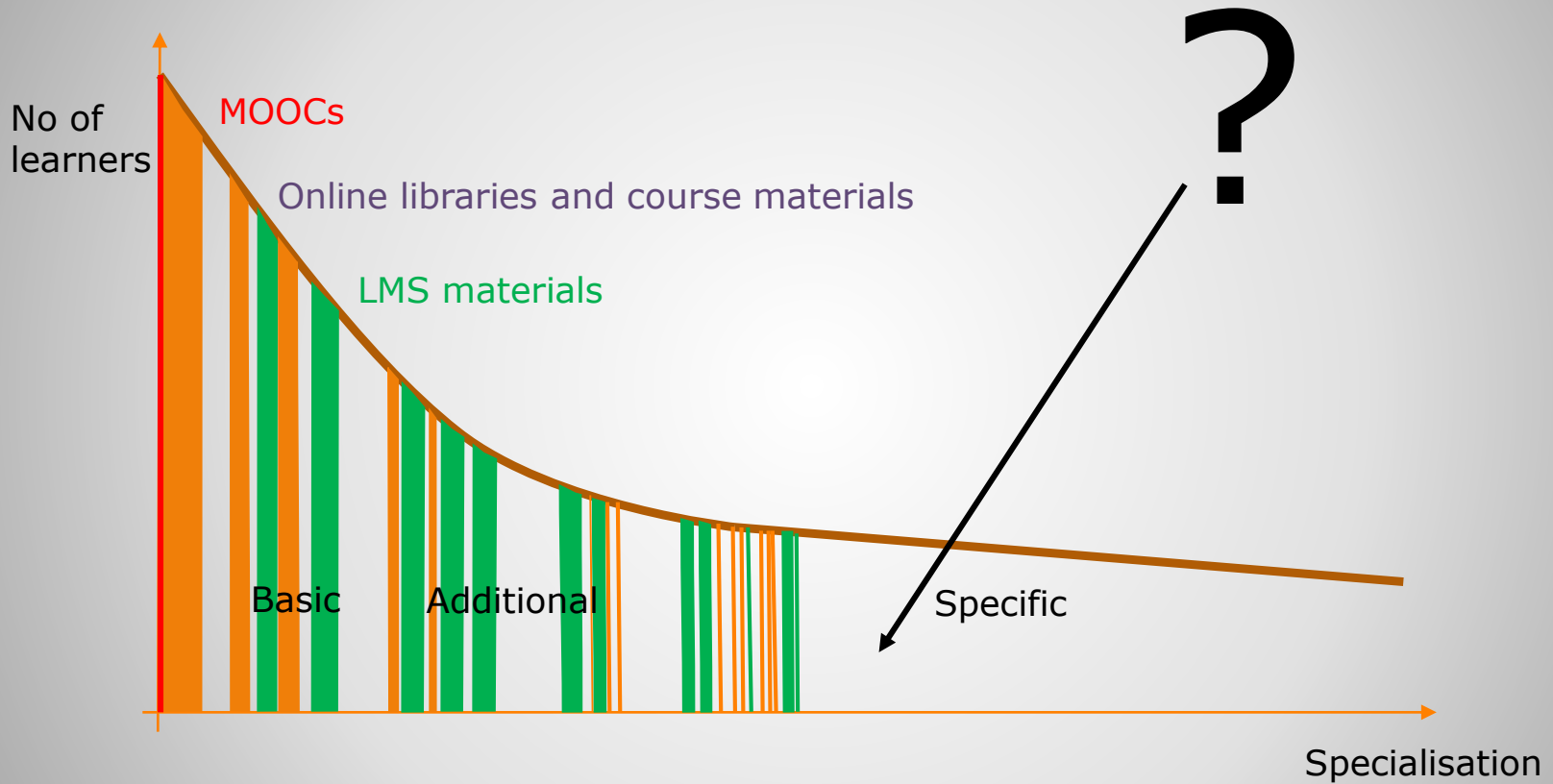
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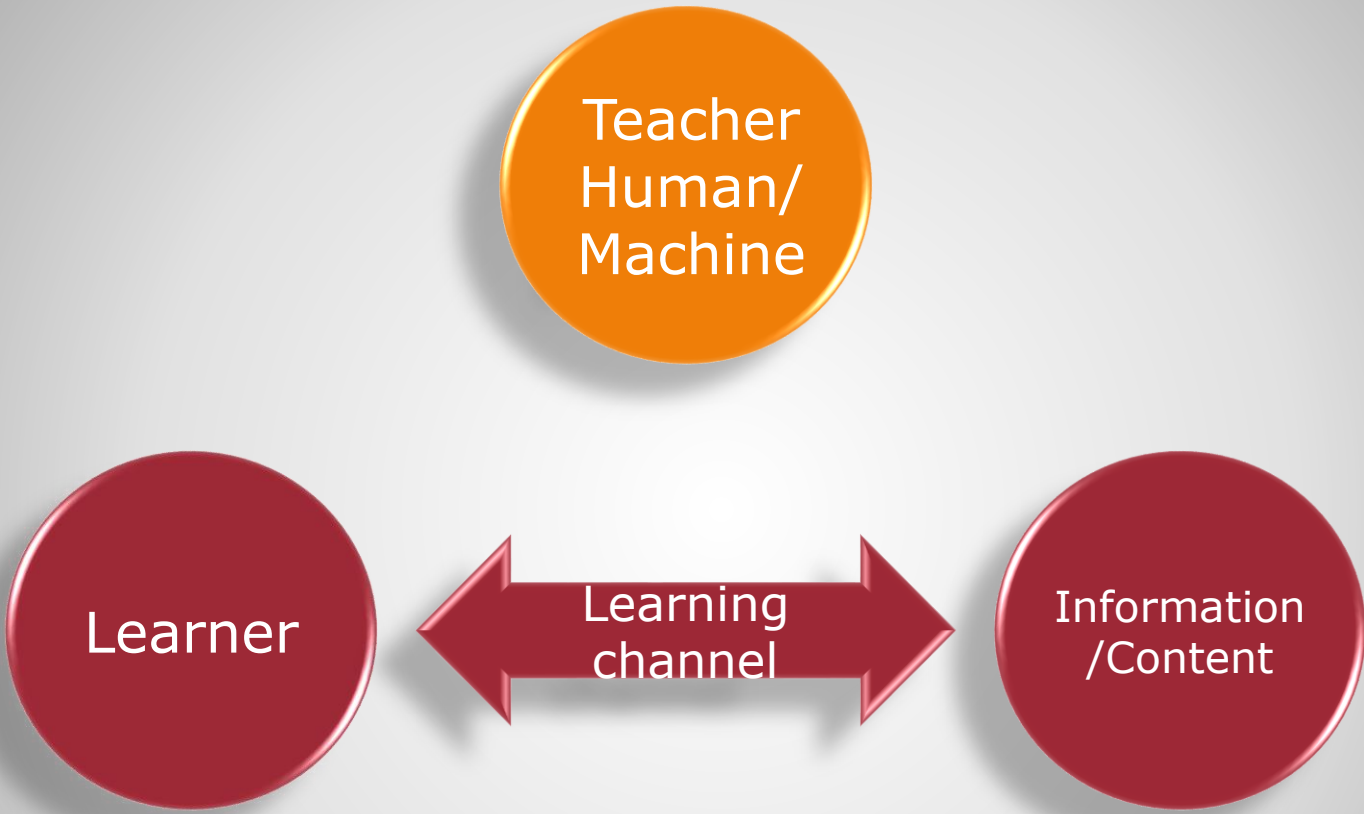
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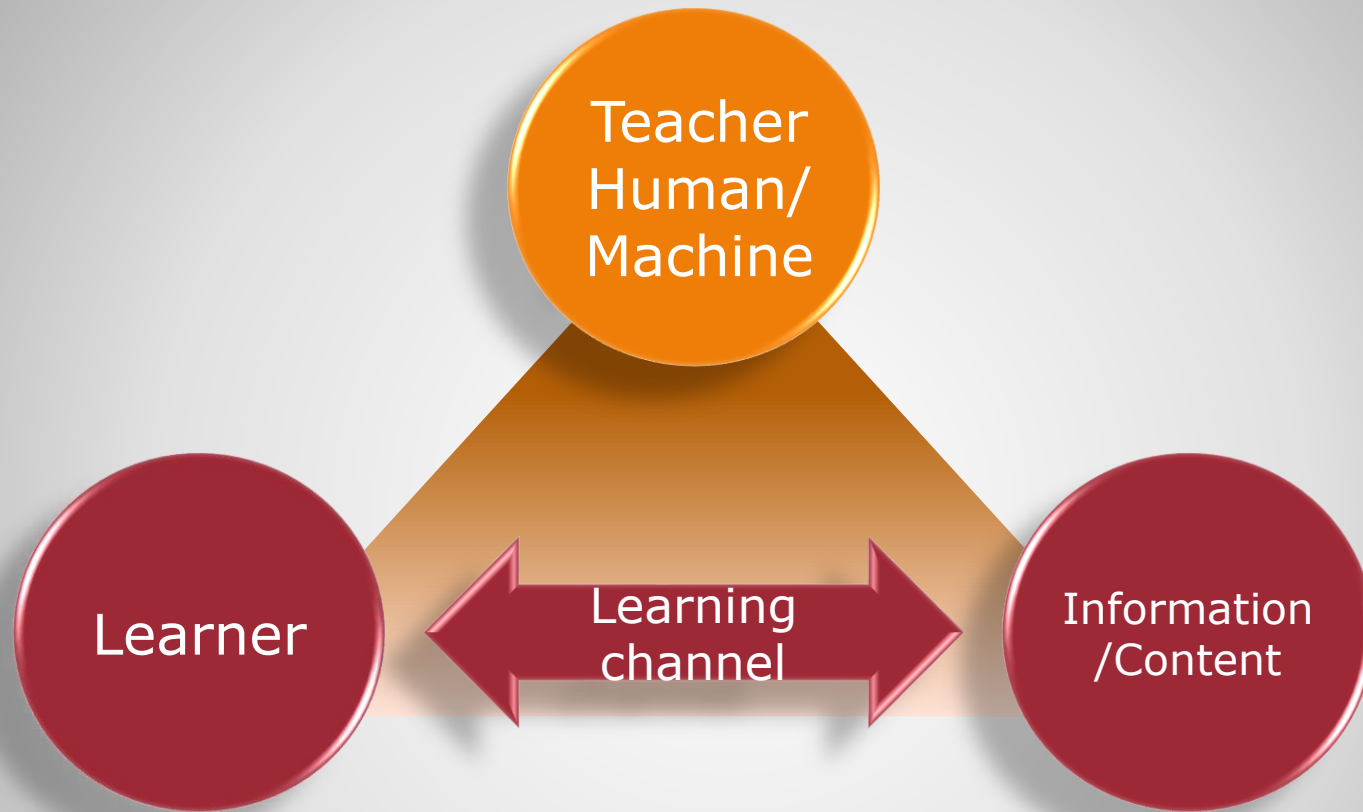
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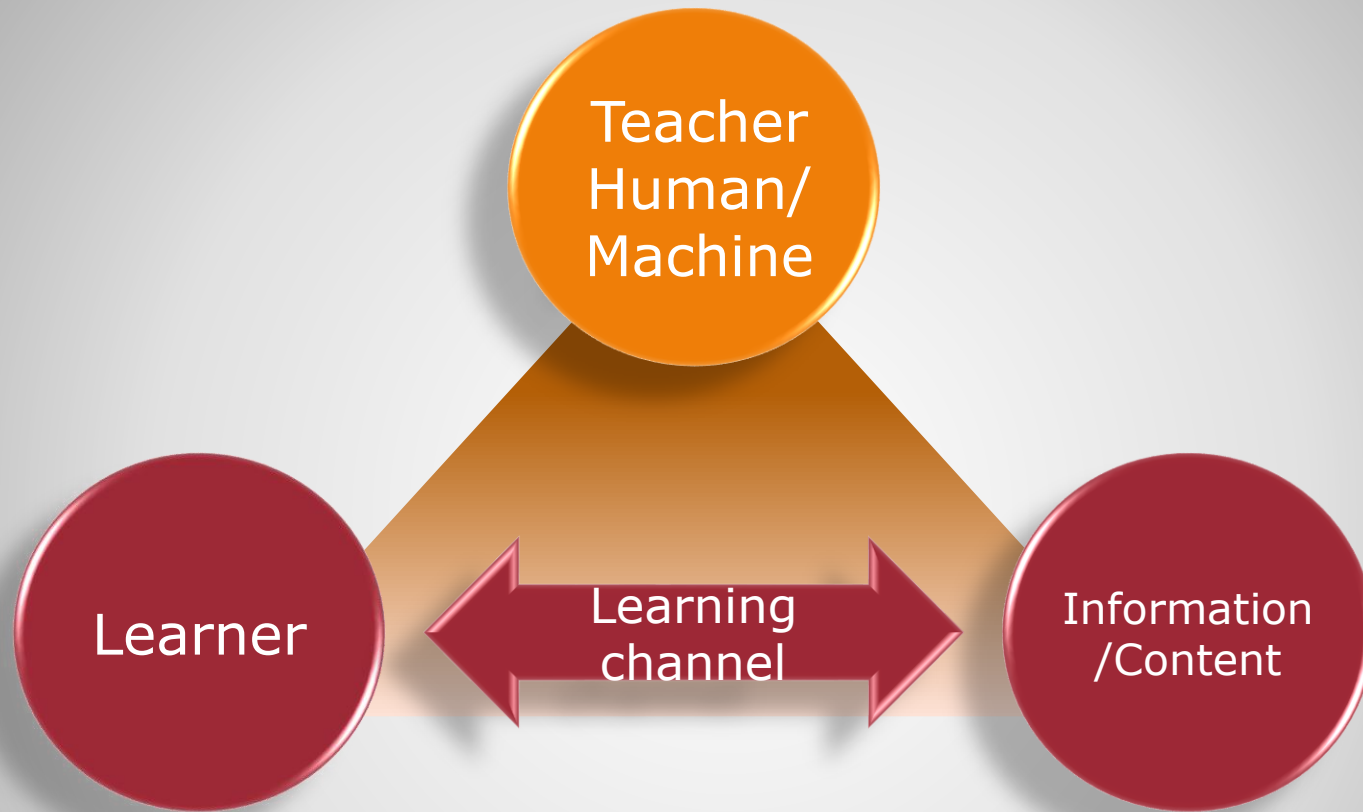
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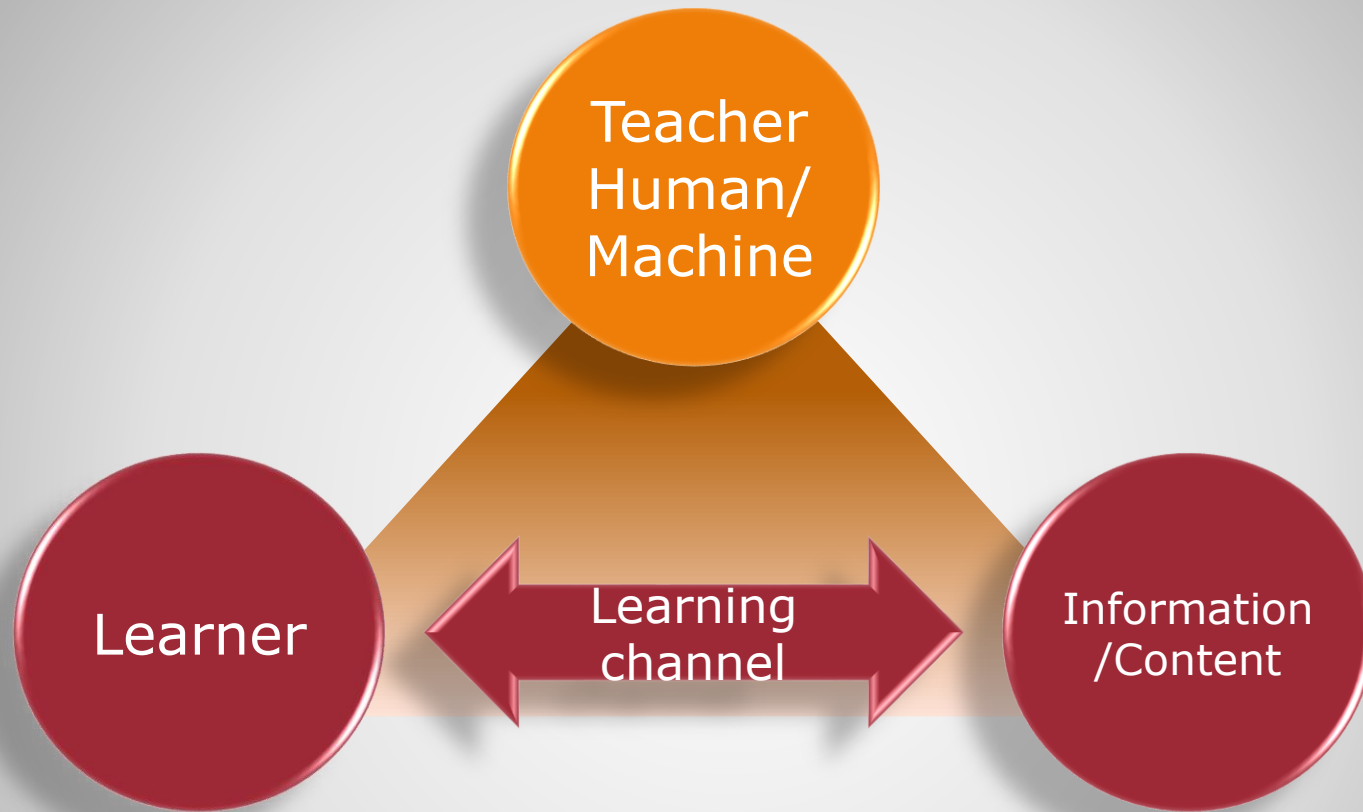
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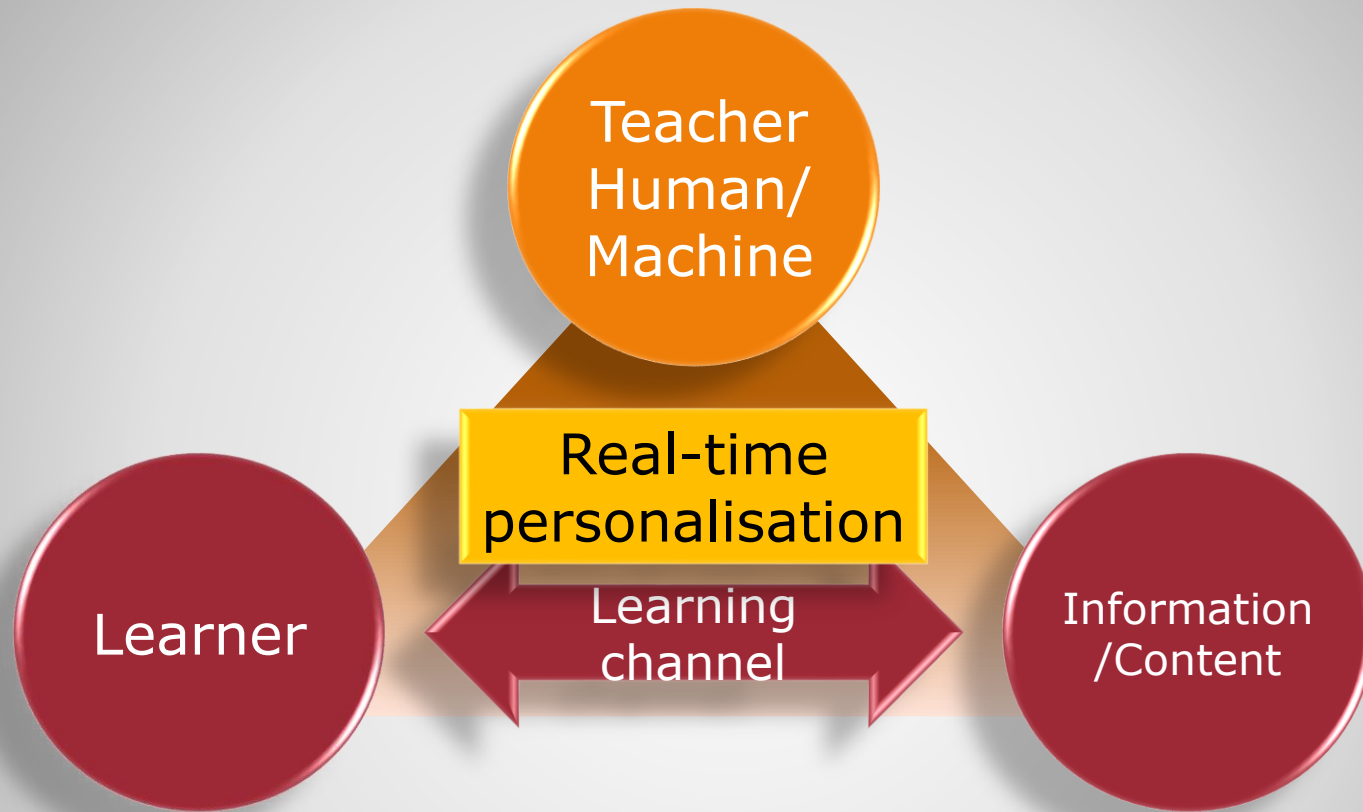
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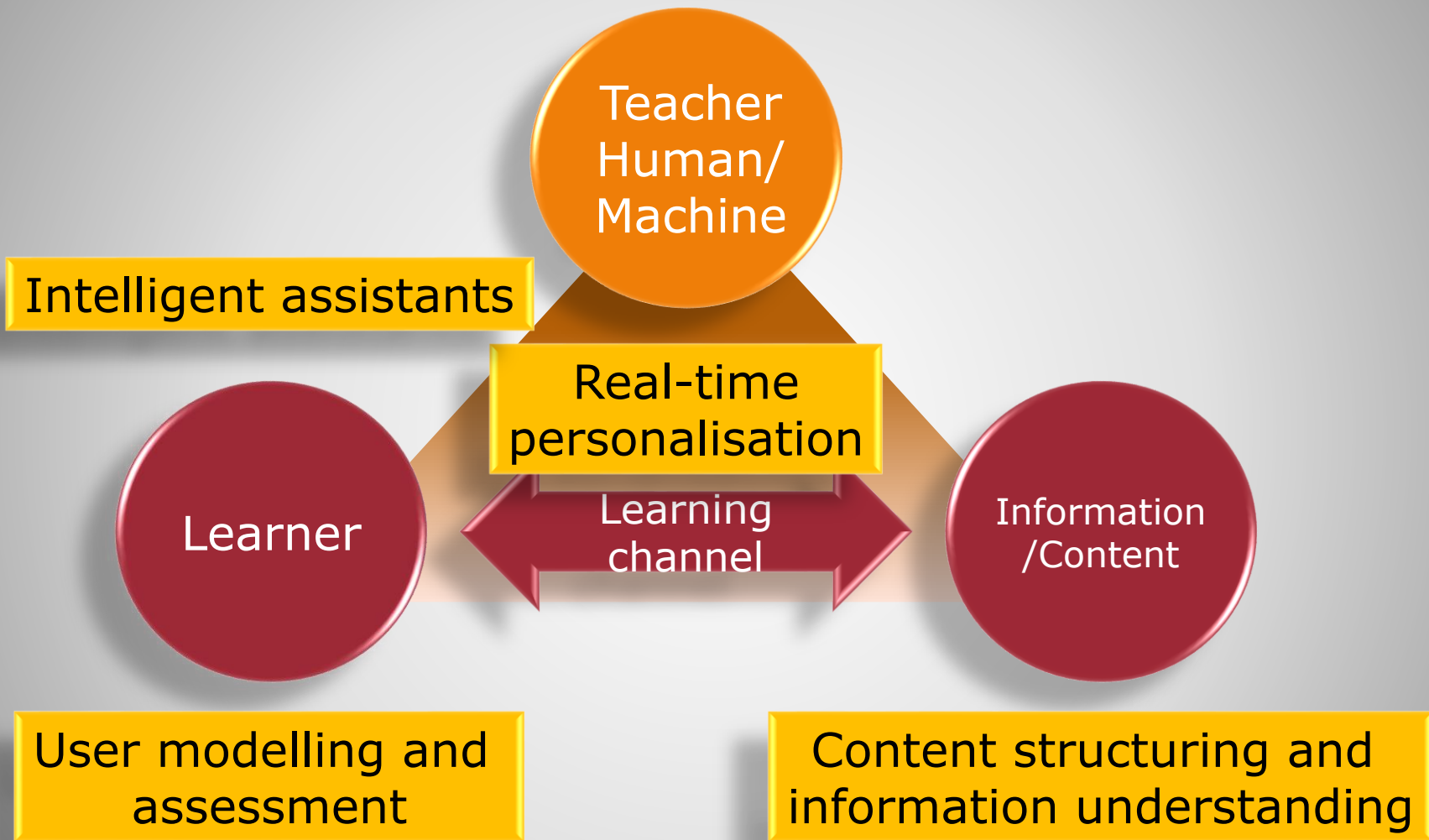
AI methods



User modelling and assessment

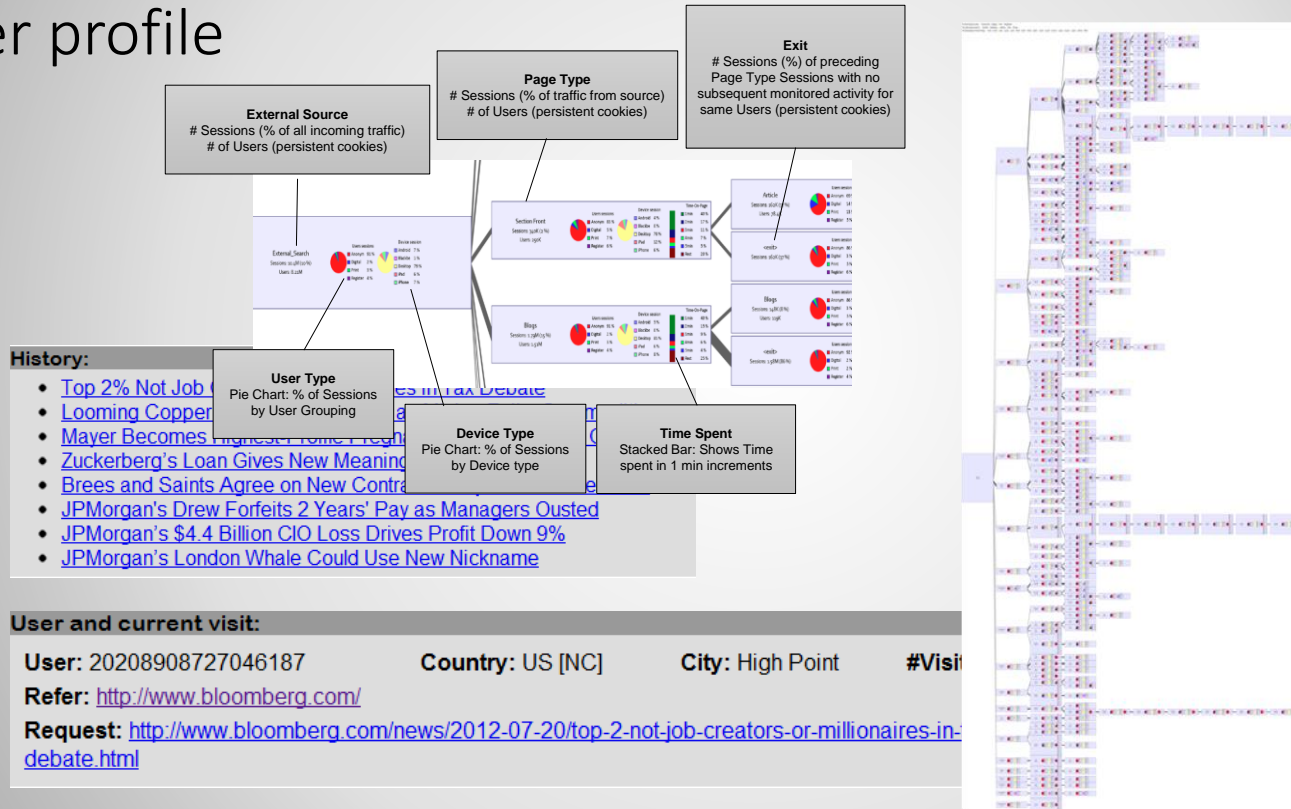
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AI methods



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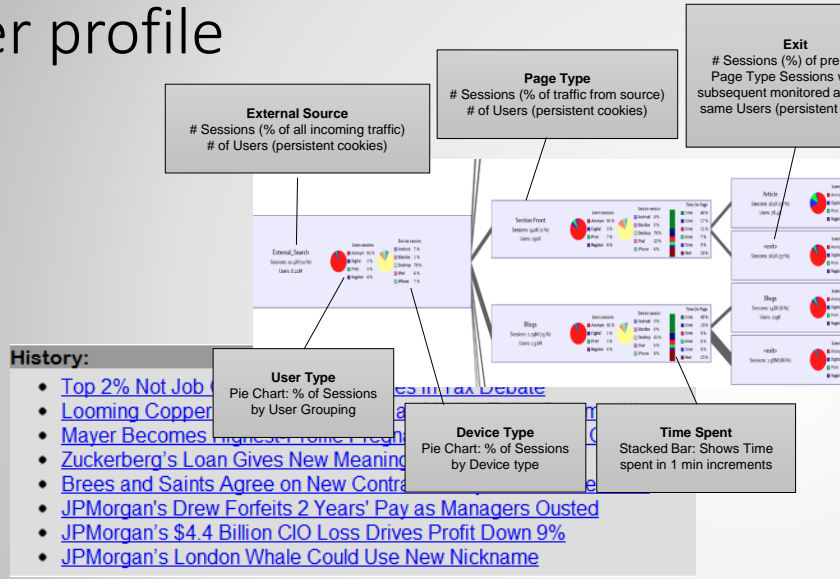
User profile



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User profile



History:

- Top 2% Not Job
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- Zuckerberg's Loan Gives New Meaning
- Brees and Saints Agree on New Contract
- JPMorgan's Drew Forfeits 2 Years' Pay as Managers Ousted
- JPMorgan's \$4.4 Billion CIO Loss Drives Profit Down 9%
- JPMorgan's London Whale Could Use New Nickname

User and current visit:

User: 20208908727046187 **Country:** US [NC] **City:** High Point **#Visits:**

Refer: <http://www.bloomberg.com>

Request: <http://www.bloomberg.com/news/2012-07-20/top-2-not-job-creators-or-millionaires-in-debate.html>

The collage features several key components:

- enrycher:** A dashboard showing a world map with location pins and various data points.
- ARCHIVE EXPLORER:** A search interface with filters for categories like 'Sports', 'Technology', and 'Business'.
- DiversiNews:** A news feed displaying headlines and snippets of articles.
- Event Registry:** A detailed view of an event, including location, dates, and a list of attendees.
- Analytics Charts:** Various small pie charts and bar graphs representing different data sets.

AI technology

Content understanding

User profile

External Source
Sessions (% of all incoming traffic)
of Users (persistent cookies)

Page Type
Sessions (% of traffic from source)
of Users (persistent cookies)

Exit
Sessions (% of previous Page Type Sessions)
of Users (persistent cookies)

External Search
Sessions: 100%
Users: 100%

Search Feed
Sessions: 100%
Users: 100%

Blog
Sessions: 100%
Users: 100%

User Type
Pie Chart: % of Sessions by User Grouping

Device Type
Pie Chart: % of Sessions by Device type

Time Spent
Stacked Bar: Shows Time spent in 1 min increments

History:

- [Top 2% Not Job](#)
- [Looming Copper](#)
- [Mayer Becomes](#)
- [Zuckerberg's Loan Gives New Meaning](#)
- [Brees and Saints Agree on New Contract](#)
- [JPMorgan's Drew Forfeits 2 Years' Pay as Managers Ousted](#)
- [JPMorgan's \\$4.4 Billion CIO Loss Drives Profit Down 9%](#)
- [JPMorgan's London Whale Could Use New Nickname](#)

User and current visit:

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Refer: <http://www.bloomberg.com>

Request: <http://www.bloomberg.com/news/2012-07-20/top-2-not-job-creators-debate.html>

Cyc read: Galileo Galilei was an Italian physicist and astronomer. Galileo was born in Pisa on February 15, 1564. Galileo was sentenced to life imprisonment in 1633. Because of his age and poor health, he was allowed to serve his imprisonment under house arrest. Galileo died on January 8, 1642. Albert Einstein was born in 1879 in Ulm, Germany. Einstein was the first child born to Hermann and Pauline Einstein. Einstein died in April of 1955 in Princeton, New Jersey. Einstein was cremated and his ashes were spread at an undisclosed location.

Fact: Galileo was an Italian, a physicist, and an astronomer.
Learn Logic: (#Sand (#Sisa #GalileoGalilei #ItalianPerson) (#Sisa #GalileoGalilei #Physicist) (#Sisa #GalileoGalilei #Astronomer))
Source: "Galileo Galilei was an Italian physicist and astronomer."

Fact: Galileo was an Italian citizen, he was a physicist, and he was an astronomer.
Learn Logic: (#Sand (#Sisa #GalileoGalilei #CitizenFn #Italy) (#Sisa #GalileoGalilei #Physicist) (#Sisa #GalileoGalilei #Astronomer))
Source: "Galileo Galilei was an Italian physicist and astronomer."

Fact: Galileo was born on February 15, 1564 and he was born in Pisa, Italy.
Learn Logic: (#Sand (#SbirthDate #GalileoGalilei (#DayFn 15 (#MonthFn #February) (#YearFn 1564))) (#SbirthPlace #GalileoGalilei #CityOfPisaItaly))
Source: "Galileo was born in Pisa on February 15, 1564"

AI technology

Text understanding

Content understanding

User profile

Curious Cat

Luka Bradeško had *[item of food or drink]* at its 02:48:32, October 1, 2012 visit to Caffe Famel.

cappuccino

Thanks for teaching me that Luka Bradeško had cappuccino at its 02:48:32, October 1, 2012 visit to Caffe Famel.

Does Luka Bradeško prefer the cappuccino at Caffe Famel over the cappuccino at Egoist Lounge Bar?

Yes No I don't know Enough a

Janez: bread costs 5 euros at Dunajska Pekarna.

City: High P

07897 Caffe Famel

History:

- Top 2% Not Job
- Looming Copper
- Mayer Becomes
- Zuckerberg's Loa
- Brees and Saints
- JPMorgan's Drew
- JPMorgan's \$4.4
- JPMorgan's Lond

User and current v

User: 2020890872

Refer: <http://www.b>

Re: <http://www>

de

Time Spent

acked Bar: Shows Time
ent in 1 min increments

Exit

Sessions (% of prec
Page Type Sessions w
subsequent monitored ac
same Users (persistent c

enrycher

ARCHIVE EXPLORER

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Learn Logic: (**#Sand (#SbirthDate #GalileoGalilei (#SDayFn 15 (#SMonthFn #SFebruary (#SYearFn 1564)))) (#SbirthPlace #GalileoGalilei #SCityOfPisaitaly)**)

Source: "Galileo was born in Pisa on February 15, 1564"

AI personal assistants

Text understanding

AI technology

Content understanding

The screenshot shows the Bloomberg website interface. At the top, there's a 'MARKET SNAPSHOT' with stock indices: DJIA (12,938.10, -158.20, -1.21%), S&P 500 (1,402.43, -15.87, -1.10%), and NASDAQ (2,960.31, -25.59, -0.86%). A green banner promotes the 'WEALTH WATCH NEWSLETTER'. Below the navigation bar, there are news headlines such as 'Taxes to Rise for Workers as Budget Deal Still Elusive' and 'Private talks between Senate Majority Leader Harry Reid and Minority Leader Mitch McConnell that began Dec. 28 stalled yesterday because of disputes over income tax rates, the estate tax and other issues.' A sidebar on the right contains a 'HEADLINES' section with German titles like 'US-Kongress kommt am Silvestertag zu Sitzung über Budget zusammen' and 'US-Haushaltsstreit steuert auf dramatisches Finale zu'.

The screenshot shows the Enrycher website. It features a world map with various location markers and a data visualization area with a green background and text. The site appears to be a tool for exploring data across different geographical locations.

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Source: "Galileo was born in Pisa on February 15, 1564"

Cross-lingual personalisation

The screenshot shows an AI personal assistant interface. It displays user information: 'User: 2020890872', 'Refer: http://www.b...', and 'City: High P...'. A search result is shown: 'Janez: bread costs 5 euros at Dunajska Pekarna.' Below this, there's a search bar with the number '07897' and the text 'Caffe Famel'.

AI personal assistants

Text understanding

AI technology

Technology solutions,
business models
and best practices
solving

cultural richness and
diversity



Language technologies

Media processing, analytics, translation

Technology solutions,
business models
and best practices
solving

cultural richness and
diversity

The screenshot displays the transLectures website interface. The browser address bar shows the URL <http://helium.ijs.si/player/player.php>. The website header includes the transLectures logo, navigation links (MAIN, HELP, LOGOUT), and logos for the European Union and the 7th Framework Programme. The main content area features a video player on the left showing a lecture in progress, and a text box on the right with the following Slovenian text:

lepo pozdravljeni v
preden začnem bi se rad zahvalil organizatorjem ko so mi omogočili tole predavanje
pa jasno vam ki ste se ga udeležili v tako velikem številu
zdi se mi fajn ne vi ste v glavnem mentorji nekih novih generacij ki bojo razvijala
področja računalniškega vida mogoče v prihodnosti

Below the video player, there is a footer with the eurominority.eu logo and a map of Europe. The map is color-coded by language family and includes a legend titled 'States and Stateless Nations' with a list of countries and their corresponding language families. The map also shows the Black Sea and the Mediterranean Sea. At the bottom right of the map, there is a text box with the phrase 'Europed languages / Europar hizhuntzak / leithoedd Ewrop / Lengües d'Europa / Telen yn Jeropa / Teyzhou Europa'.

Language technologies

Media processing, analytics, translation

Technology solutions,
business models
and best practices
solving

cultural richness and
diversity

The screenshot displays a web browser window with the URL <http://helium.ips.si/player/player.php>. The page features a navigation bar with 'MAIN', 'HELP', and 'LOGOUT' links, along with logos for 'transLectures', '7', 'IPS', and the European Union. A video player is embedded on the left, showing a classroom scene. To the right, there is a map of Europe with various regions highlighted in different colors. Below the video player, a 'Cross-lingual similarity computation' tool is shown. The tool has a 'Home' and 'About' tab, and a 'Try out the cross-lingual similarity computation:' section. It includes buttons for 'Compute similarity', 'Reveal key words', and 'Report'. Below these buttons, there are input fields for document names and languages. The tool displays two columns of text: an English document titled 'Dutch Premier Rutte Says He's Against Third Greek Aid Package' and a German document titled 'Mehr als 1000 Besucher kommen zur Landpartie nach Dürren'. The English text discusses the Dutch Premier Rutte's stance on the Greek aid package and the Dutch political situation. The German text reports on a large number of visitors to a local party in Dürren.

lepo pozdravljeni v

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Cross-lingual similarity computation Home About

Try out the cross-lingual similarity computation:

Examples

Compute similarity Reveal key words

Similarity is:

Report

Get Bloomberg doc 100 English

Get Newsfeed doc 100 German

Get i-th GHD 1

Dutch Premier Rutte Says He's Against Third Greek Aid Package

Dutch Premier Rutte Says He's Against Third Greek Aid Package seeking a second election win on Sept. 12, said he would block a third aid package for and defended austerity as the only way out of Europe's debt crisis. We've helped twice and now it's up to the Greeks to show that they want to stay within the euro. Liberal leader Rutte, 45, said in a debate between the four main party leaders in Amsterdam last night broadcast on RTL television. The Netherlands has been severely hit by the debt crisis and the solution is to lower taxes, get government finances in order and make room for investment. The Socialists, led by Emile Roemer, have a three-seat lead over Rutte's party, known in Dutch as the VVD, with enough support for 35 of the 150 seats in parliament, according to a Manance de Hond poll published yesterday. The survey gave both the Freedom Party and the Labor Party 18 seats. In an Ipsos Synovate poll, published Aug. 24, Rutte's party led with 34 seats, four more than Roemer's. It means a third of Dutch voters back the Socialists, who oppose more spending cuts and refuse to hand

Mehr als 1000 Besucher kommen zur Landpartie nach Dürren

Mehr als 1000 Besucher kommen zur Landpartie nach Dürrenhofe 260 Landwirtschaftsbetriebe des ganzen Landes haben am Wochenende der Stadtbevölkerung bei der 18. Brandenburger Landpartie das Leben auf dem Bauernhof gezeigt. Mehr als 1000 Besucher testeten ländliche Kostbarkeiten in Dürrenhofe. Bei so großem Interesse ist man schon ein ganzes Stück weit gerührt, resümierte Geschäftsführer Uwe Schieban das Hoffest. Schieban sieht in der Landpartie vor allem ein Dankeschön an alle Kunden, Angestellten und Verpächter, auf deren Flächen wir arbeiten dürfen. Unter den Betrieben war auch die in Dürrenhofe ansässige Agrargesellschaft Unterepreewald, die zudem Verpächter und Kunden zum Hoffest eingeladen hatte. Moderne Landwirtschaftstechnik in allen Leistungs- und Preisklassen konnte von kleinen und großen Traktoristen bestaunt und bei Interesse gleich erworben werden. So wechselte heute auch mal der begehrte Rasenmähetraktar seinen Besitzer, sagte Uwe Schieban. Hoffaden und

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Language technologies

Media processing, analytics, translation

Technology solutions,
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solving

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diversity

Example of an event

Google wants the YouTube app for Windows Phone 8 taken down by May 22nd

WHEN: May 22, 2013

ARTICLES: 108 (eng: 63, deu: 34, spa: 11, zho: 0, slv: 0)

ENTITIES: Microsoft, Google, YouTube, Larry Page, United States, Facebook, Apple Inc., Federal Trade Commission, Yahoo!, The Wall Street Journal

KEYWORDS: Microsoft Windows, Advertising, Cease and desist, Application programming interface, Uploading and downloading, Terms of service, Application software, Telephone, Disability, Customer

Last week, Microsoft announced the availability of the updated YouTube app for Windows Phone 8, which featured a complete redesign as well as the ability to skip ads and download videos. We all knew it was only a matter of time for Google to catch wind of this. Today, Google issued Microsoft a 'cease and desist' letter, urging Microsoft to remove the YouTube app from the Windows Phone Store. Currently, the app is available for the Windows Phone 8 platform. Google want's Microsoft to ...

Event is about...

ENTITIES

Microsoft	100
Google	60
YouTube	50
Larry Page	21
United States	6
Facebook	5
Apple Inc.	4
Federal Trade Commission	4

KEYWORDS

Microsoft Windows	71
Advertising	42
Cease and desist	36
Application programming interface	32
Uploading and downloading	24
Terms of service	22
Application software	19
Telephone	18

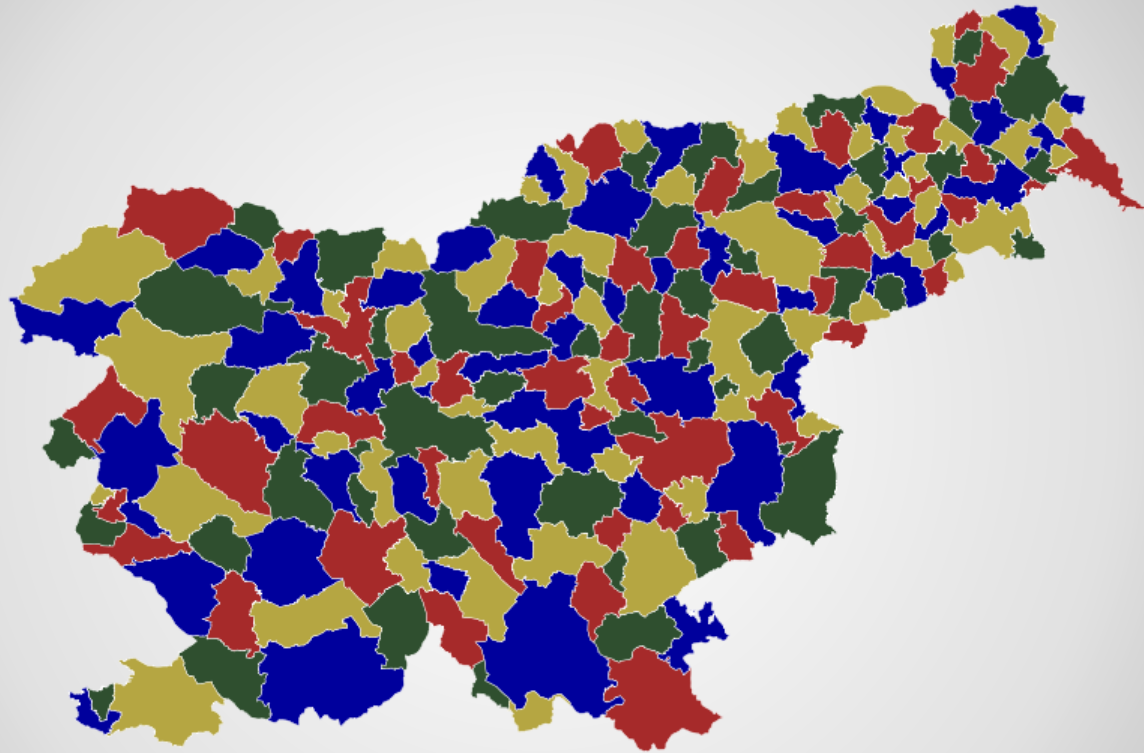
Display similar events

92%	The Verge: Google Asks Microsoft to Remove YouTube Windows Phone App
90%	Google asks Microsoft to take down the YouTube app on Windows Phone
82%	Dudas sobre el futuro de los "tablets" - Finanzas.com - Finanzas.com
77%	Windows Blue kommt kostenlos als Windows 8.1
70%	Windows Phone 8 getting new features in summer update - IntoMobile
70%	There's good news and bad news for Windows Phone business users
64%	Surface: Pro review: A breath of fresh air for a tired Microsoft
62%	Microsoft leist Skype-Chats mit - Spiegel Online

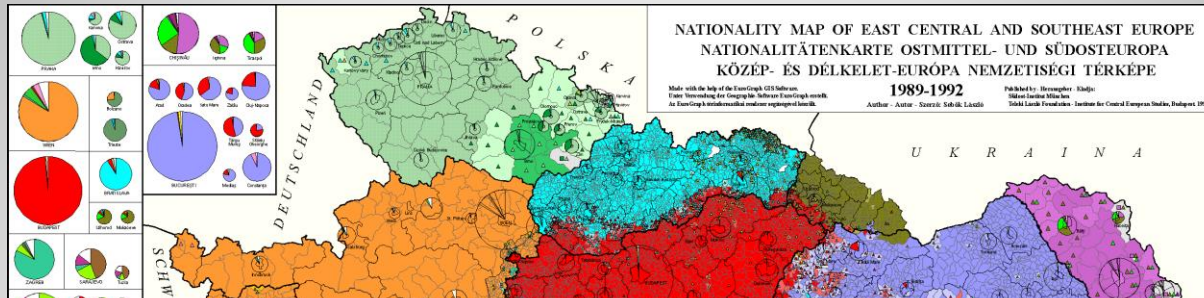
Storyline as an event sequence

Microsoft Goes Back to Start - Mobile Enterprise	The problem with iTunes and Windows 8	Microsoft updates Skype for Windows Phone 8, Windows	Kritische Updates für Flash, Reader und Acrobat	IDC: Android up to 78 percent smartphone share
Windows Phone 8 getting new features in summer update -	Microsoft's ma culpa? Five things that Windows Blue should	Does Nokia's Metal Flagship Do Enough To Change The Game?	Vorsicht beim Skypen - Microsoft liest mit	Microsoft To Get Rid Of Microsoft Points System, Switching To
An Emotional Bill Gates Discusses Relationship With			TouchDevelop v3.0 Beta Coming To Windows Phone 8	Smartphones: Android trumps Apple, Windows edges up

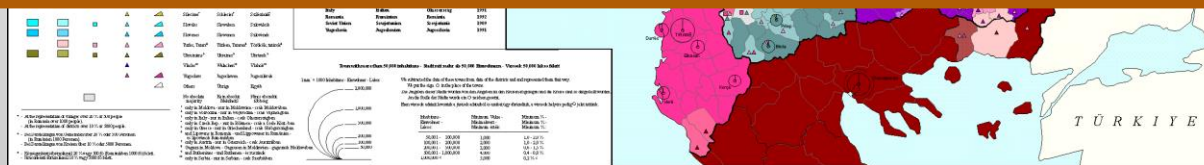
Language technologies



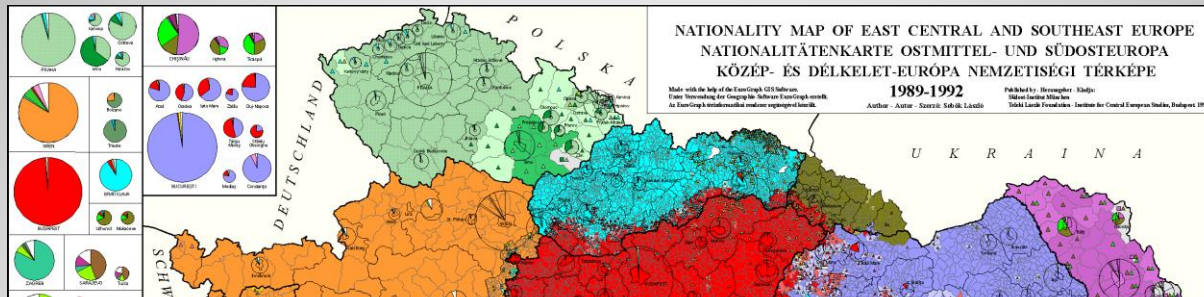
Country/region as a testbed



Opening Up Education – DG Education Culture, Erasmus+
 H2020 – DG Connect: ICT, Marie Curie, Infrastructures
 OER initiative – UNESCO
 Opencast and OCWC OER initiatives
 Business initiatives
 National initiatives



Country/region as a testbed



Opening Up Education – DG Education Culture, Erasmus+
 H2020 – DG Connect: ICT, Marie Curie, Infrastructures
 OER initiative – UNESCO
 Opencast and OCWC OER initiatives
 Business initiatives
 National initiatives



Missing: Testbed and commitment to apply

Country/region as a testbed

Life long learning

Informal

Infrastructure

Content and services

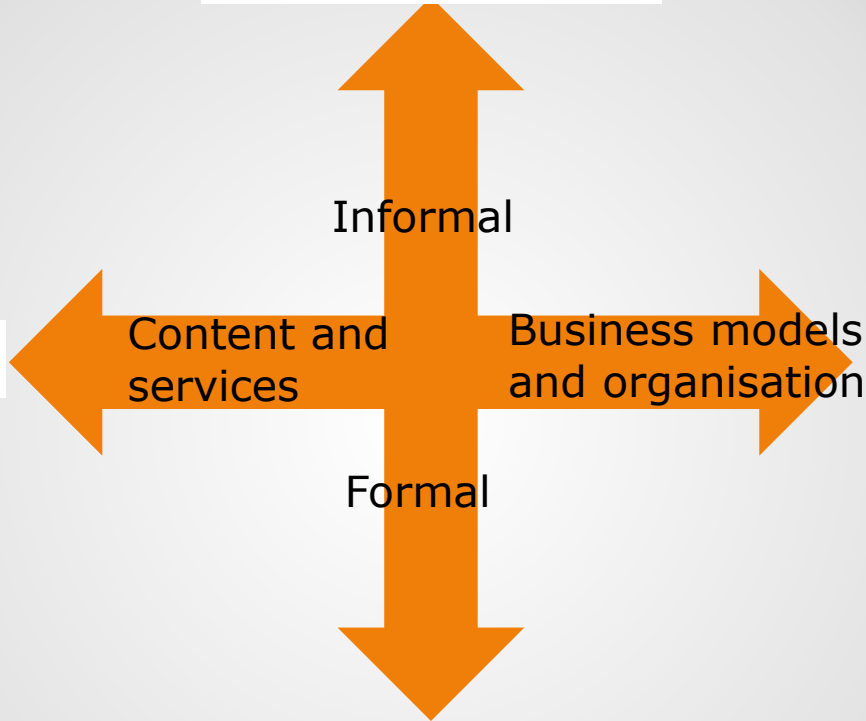
Business models and organisation

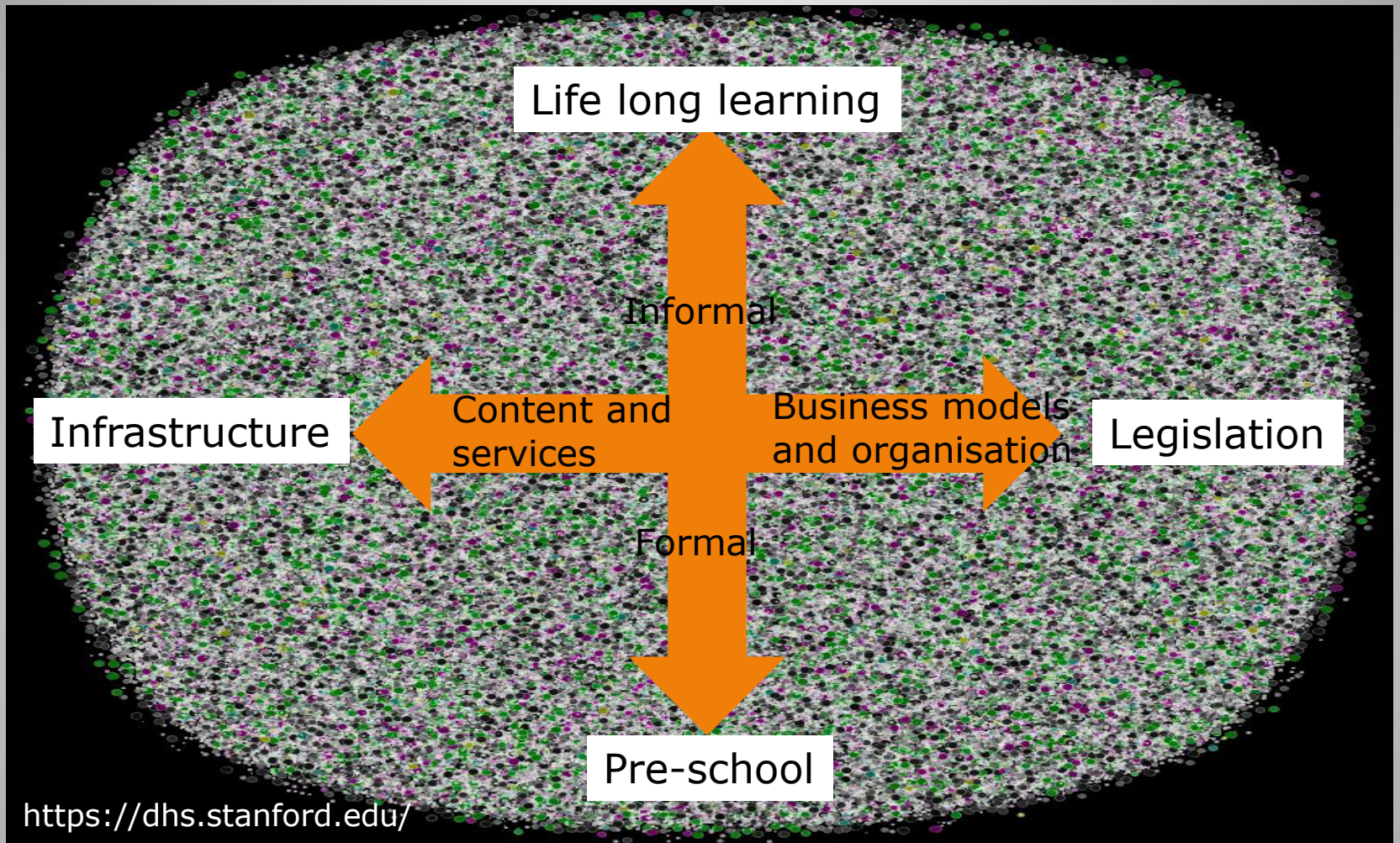
Legislation

Formal

Pre-school

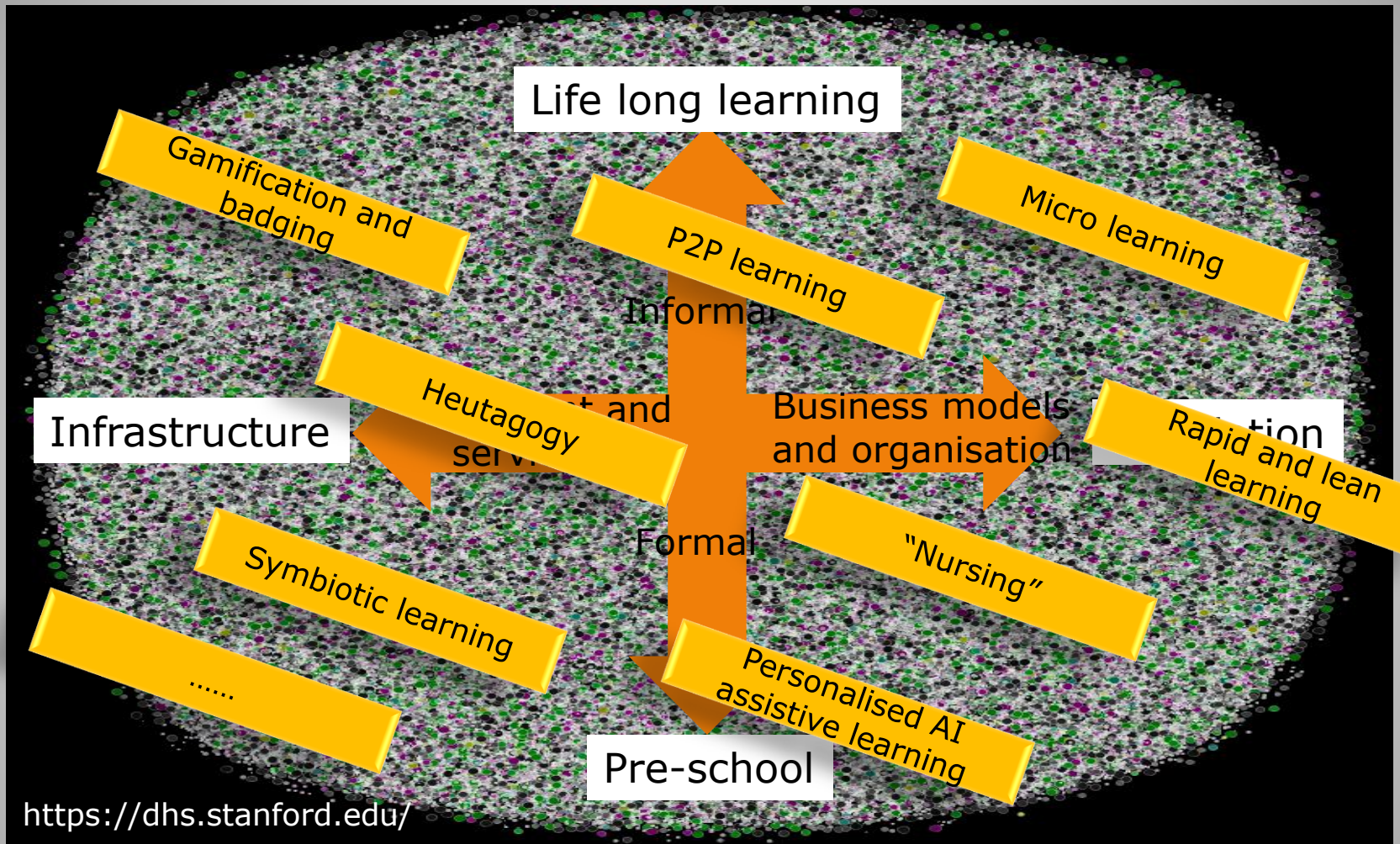
Internet of education





<https://dhs.stanford.edu/>

Internet of education



Internet of education

- Based on:
 - Videolectures.net success
 - Open education projects at Universities
 - E-education program supported at the Ministry
 - Many successful elearning technology developers and providers and
 - Industry lead initiative for Smart Specialisation
- Slovenia is proposing to take a lead in OpeningUpEducation initiative set by EU by:
 - Providing EU state level commitment for the programme by all stakeholders
 - Offering Slovenia as a testbed to develop, test and deploy best practices

OpeningUpEducation Slovenia

- **Higher education** - provide initial steps towards the creation of the "OpeningUpSlovenia University"
- **Compulsory education** – provide initial steps towards the creation of OpeningUpSlovenia Schools
- **Vocational education and training and adult education** – provide initial steps towards the creation of OpeningUpSlovenia Vocation

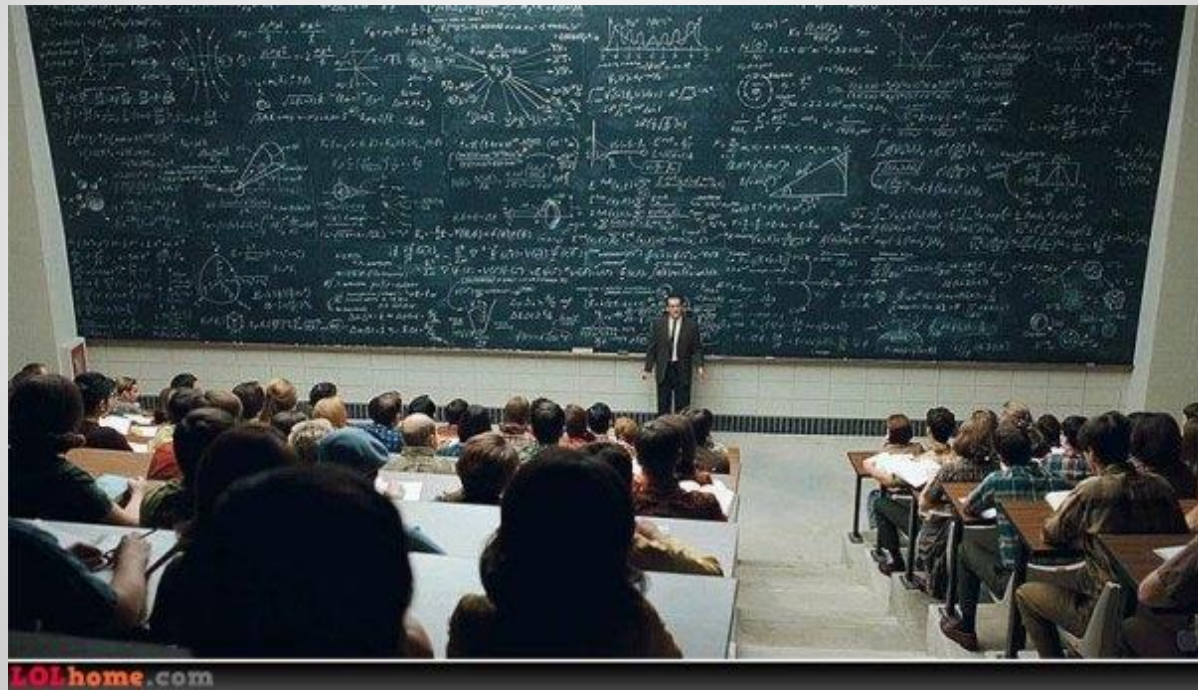
Initial projects

- Knowledge 4 All Foundation Ltd.
- Jožef Stefan Institute
- University of Maribor
- University of Primorska
- University of Ljubljana
- University of Nova Gorica
- Ministry of Education, Science and Sport
- OS Savsko Naselje primary school, representative of the national primary schools cluster
- Vrtec Trnovo kindergarten, representative of the national kindergarten cluster
- Chamber of Commerce and Industry of Slovenia
- The Managers' Association of Slovenia
- Chamber of craft and small business of Slovenia

Initiators

- International Centre for Genetic Engineering and Biotechnology (I)
- Politecnico di Milano (I)
- Karst Research Institute, Postojna, (SI)
- University of Graz, (A)
- University of Vienna, (A)
- Open University, (UK)
- British Telecom (UK)
- University of Nantes (F)
- German Research Center for Artificial Intelligence (DE)
- Karlsruhe Institute of Technology (DE)
- University of Bremen (DE)
- University of Frankfurt (DE)
- Universidad Politécnica de Madrid (ES)
- Universidad Politecnica de Valencia (ES)
- National Technical University of Athens (GR)
- Instituto de Desenvolvimento de Novas Tecnologias (PT)
- SINTEF (NO)
- VTT Technical Research Centre of Finland (FI)
- ...

Expressed interest





- Links:

- Twitter #ioe2013
- <http://www.k4all.org/openingupslovenia/>
- <http://www.k4all.org/>
- <http://conference.ocwconsortium.org/2014/>

- Sponsors:

- <http://www.translectures.eu>
- <http://mediamixer.eu/>
- <http://www.xlike.org/>



Technology trends

- **Mobile technology and devices**
- **LMS, course authoring and management systems**
- **Digital content repositories and services**
- **Social software**
- **Semantic and language technologies**

Technology trends

- **Mobile technology and devices**
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- **Cloud computing**
- **Augmented reality**
- **Artificial Intelligence (from analytics to companions)**
- **Smart environments and sensor networks (IoT, FI)**

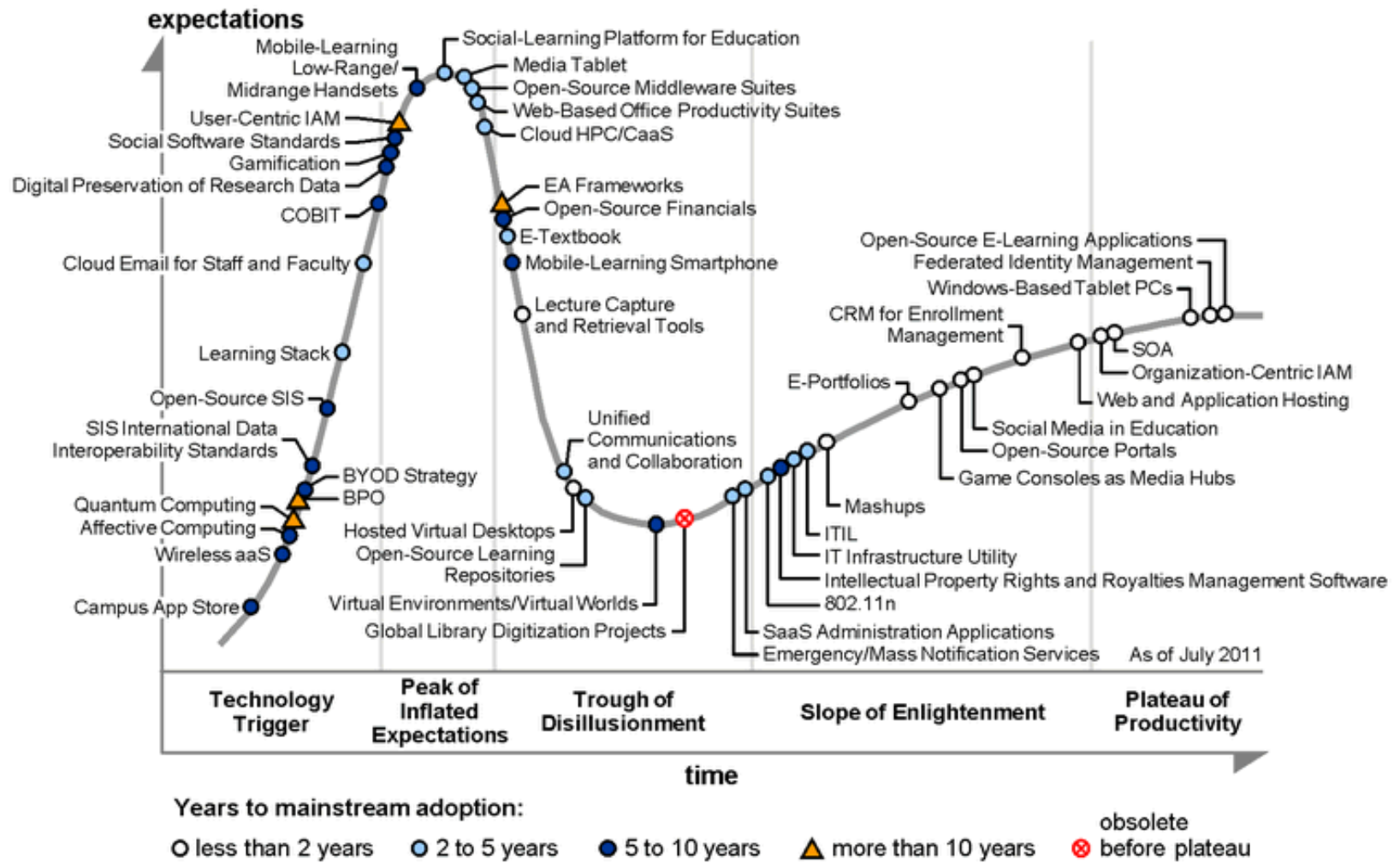
Technology trends

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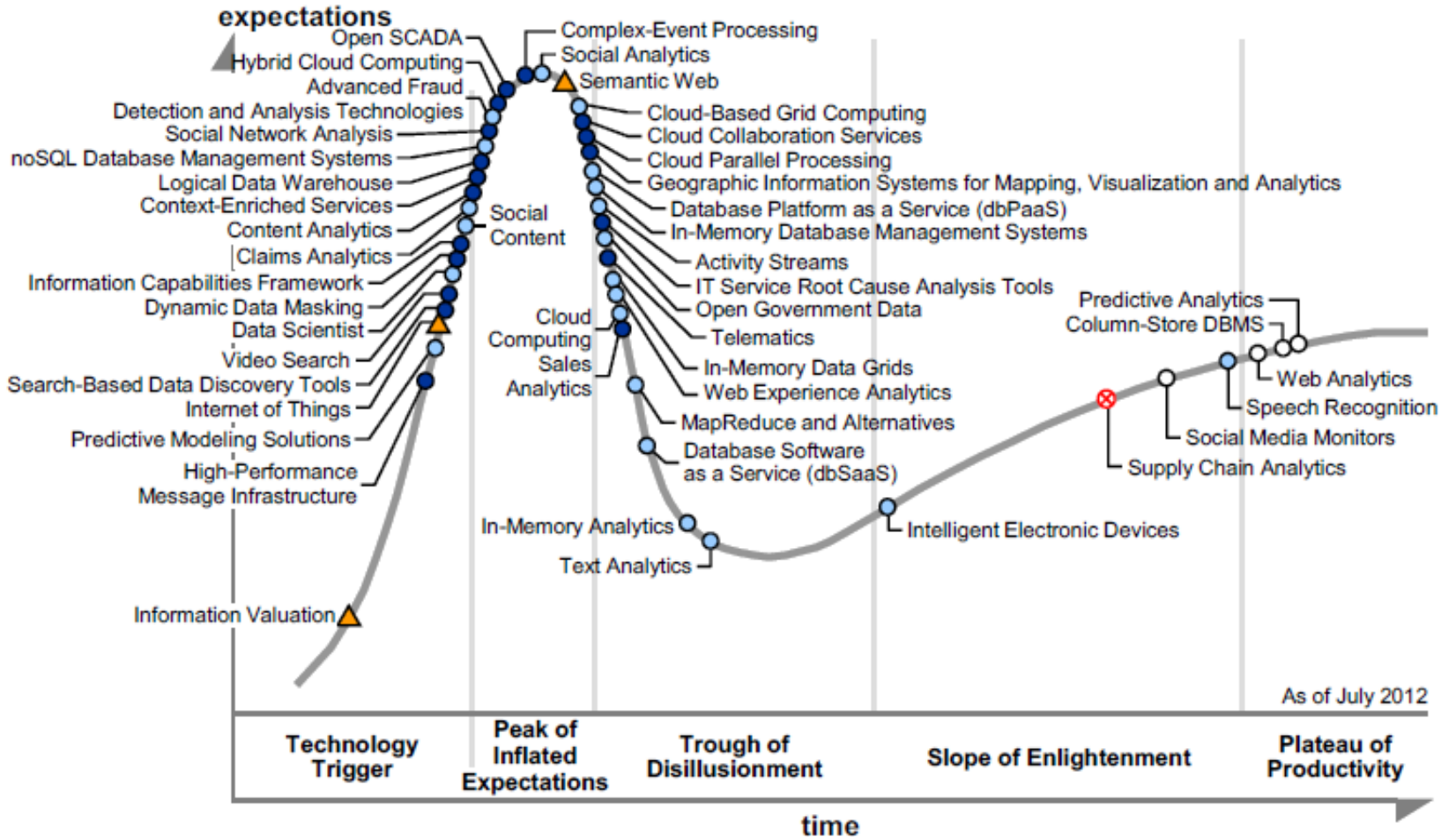
- **Cloud computing**
- **Augmented reality**
- **Artificial Intelligence (from analytics to companions)**
- **Smart environments and sensor networks (IoT, FI)**

- **3D printing**
- **Intelligent/cognitive devices and embedded systems**
- **Nanotechnology**

Technology trends



Technology is there I



Plateau will be reached in:

○ less than 2 years ● 2 to 5 years ● 5 to 10 years ▲ more than 10 years ⊗ obsolete before plateau

Source: Gartner (July 2012)

Technology is there II

-

-

-

Increasing market

- **„691,000 students in the US, with an annual value estimated at around \$20bn“. (BBC News)**

-

-

Increasing market

- **„691,000 students in the US, with an annual value estimated at around \$20bn“. (BBC News)**
- **„340,000 students taking UK university courses in their home countries“. (Irish Times)**
-

Increasing market

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- **„340,000 students taking UK university courses in their home countries“. (Irish Times)**
- **„Indian public opinion was outraged after a series of attacks on Indian students in Australia in 2009. Applications from Indian students slumped by 50% - and threatened an industry which had grown to become Australia's third biggest export“. (Australian Technology Network)**

Increasing market

-

-

-

Increasing market

- **„The number of students around the globe enrolled in higher education is forecast to more than double to 262 million by 2025“. (University World News)**
-
-

Increasing market

- **„The number of students around the globe enrolled in higher education is forecast to more than double to 262 million by 2025“. (University World News)**
- **„The number of students seeking study abroad from China and India alone could rise to 8 million – nearly three times more than today.“ (University World News)**
-

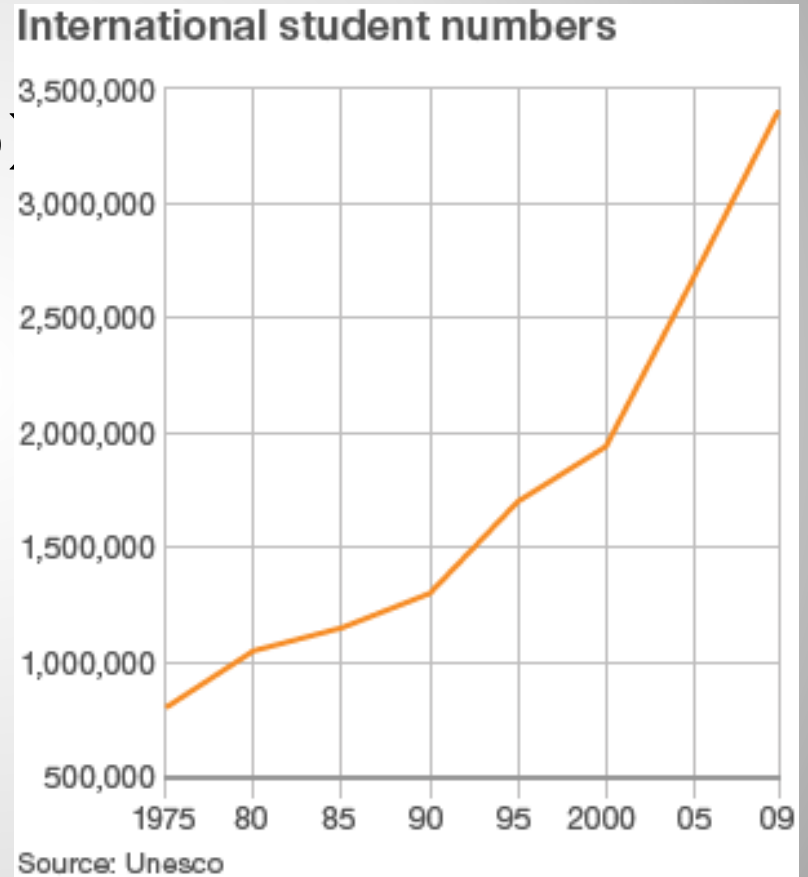
Increasing market

- **„The number of students around the globe enrolled in higher education is forecast to more than double to 262 million by 2025“. (University World News)**
- **„The number of students seeking study abroad from China and India alone could rise to 8 million – nearly three times more than today.“ (University World News)**
- **„The total number of universities in the world are counted to 17036“. (According to International Journal of Scientometrics, infometrics and bibliometrics)**

Increasing market

- **The countries which play host to the most international students in absolute terms are:**

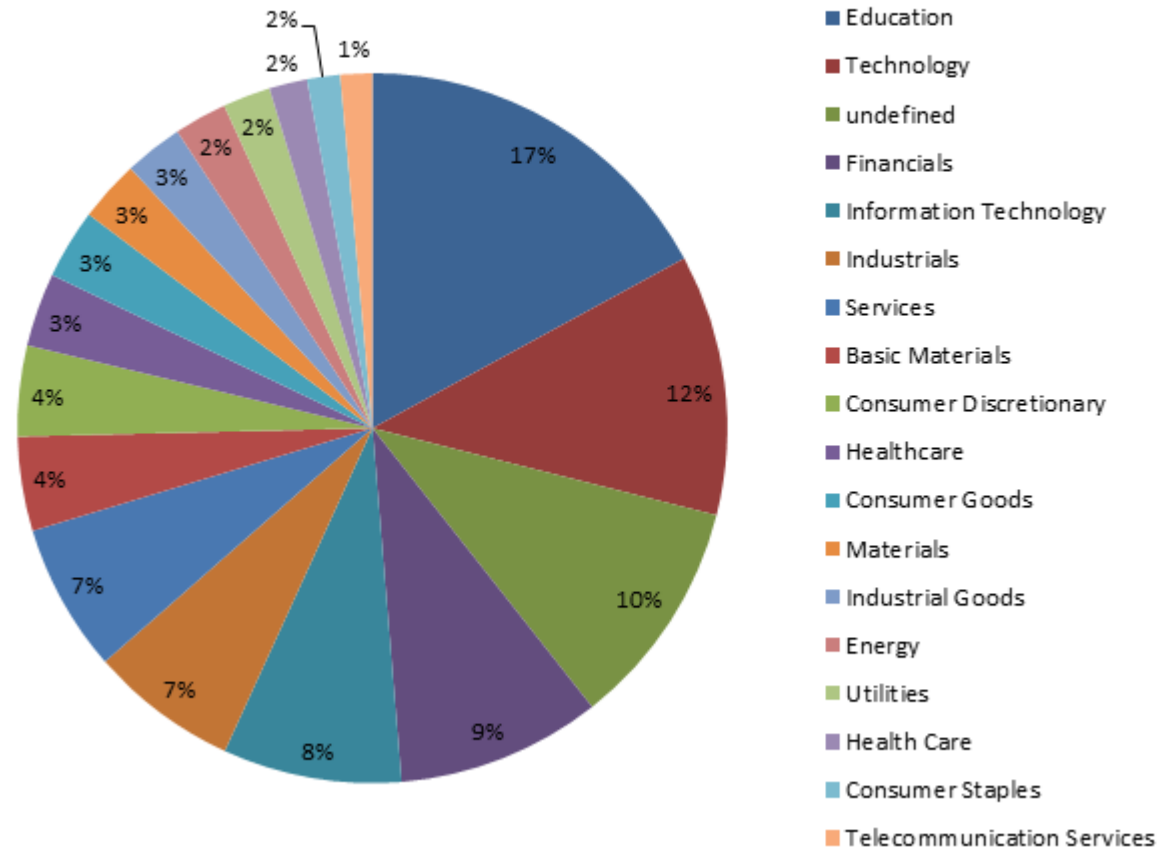
- **United States (18%),**
- **United Kingdom (10%),**
- **Australia (7%),**
- **Germany (7%),**
- **France (7%).**
- **Canada (5%),**
- **Japan (4%),**
- **Russia (4%), and**
- **Spain (2%)**



Increasing market

Big players understand the market potential

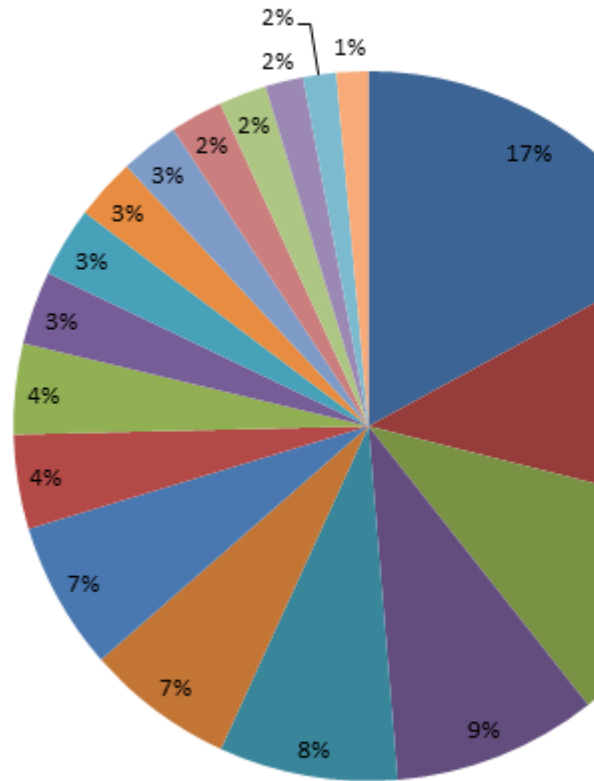
Sector Breakdown - Large Organizations



UCaaS (by Unified Communication Strategies)

Big players understand the market potential

Sector Breakdown - Lat



UCaaS (by Unified Communicatio



4+ Million
students since inception



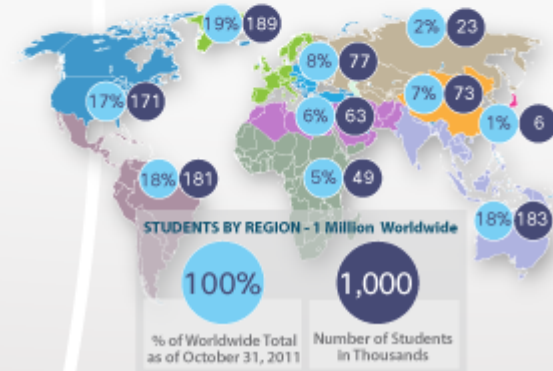
300,000
Facebook fans, growing daily



110 Million
online assessments since inception
with 1 million monthly assessments

Statistics as of January 2012

10,000 Academies
165 Countries



Big players understand the market potential

Figure 3: Which Universities Use Enablers?

Company	# of Partners	Non-Profit
 Embanet-Compass <small>LEARNING TRANSFORMS. MINDS ENGAGE.</small>	35	 BOSTON UNIVERSITY
 Deltak <small>WHERE ACADEMICS AND INNOVATION CONVERGE</small>	26	 PURDUE UNIVERSITY
 ACADEMIC PARTNERSHIPS™	14	 FIU FLORIDA INTERNATIONAL UNIVERSITY
 Bisk <small>bisk education</small>	12	 UNIVERSITY OF NOTRE DAME
 PEARSON	10	 ASU ARIZONA STATE UNIVERSITY
 Educators Serving Educators	7	 AMERICAN INTERNATIONAL COLLEGE
 LEARNINGHOUSE™ <small>Your Online Education Partner</small>	5	 Albany State University <small>POTENTIAL. REALIZED.</small>
 COLLOQUY	4	 GEORGE MASON UNIVERSITY
 2tor	4	 USC University of Southern California
 AltusEd	1	 TIFFIN UNIVERSITY

own - La



amunicatio

 4+ Million students since inception

 300,000 Facebook fans, growing daily

 110 Million online assessments since inception with 1 million monthly assessments

Statistics as of January 2012

10,000 Academies
165 Countries



STUDENTS BY REGION - 1 Million Worldwide

100% % of Worldwide Total as of October 31, 2011

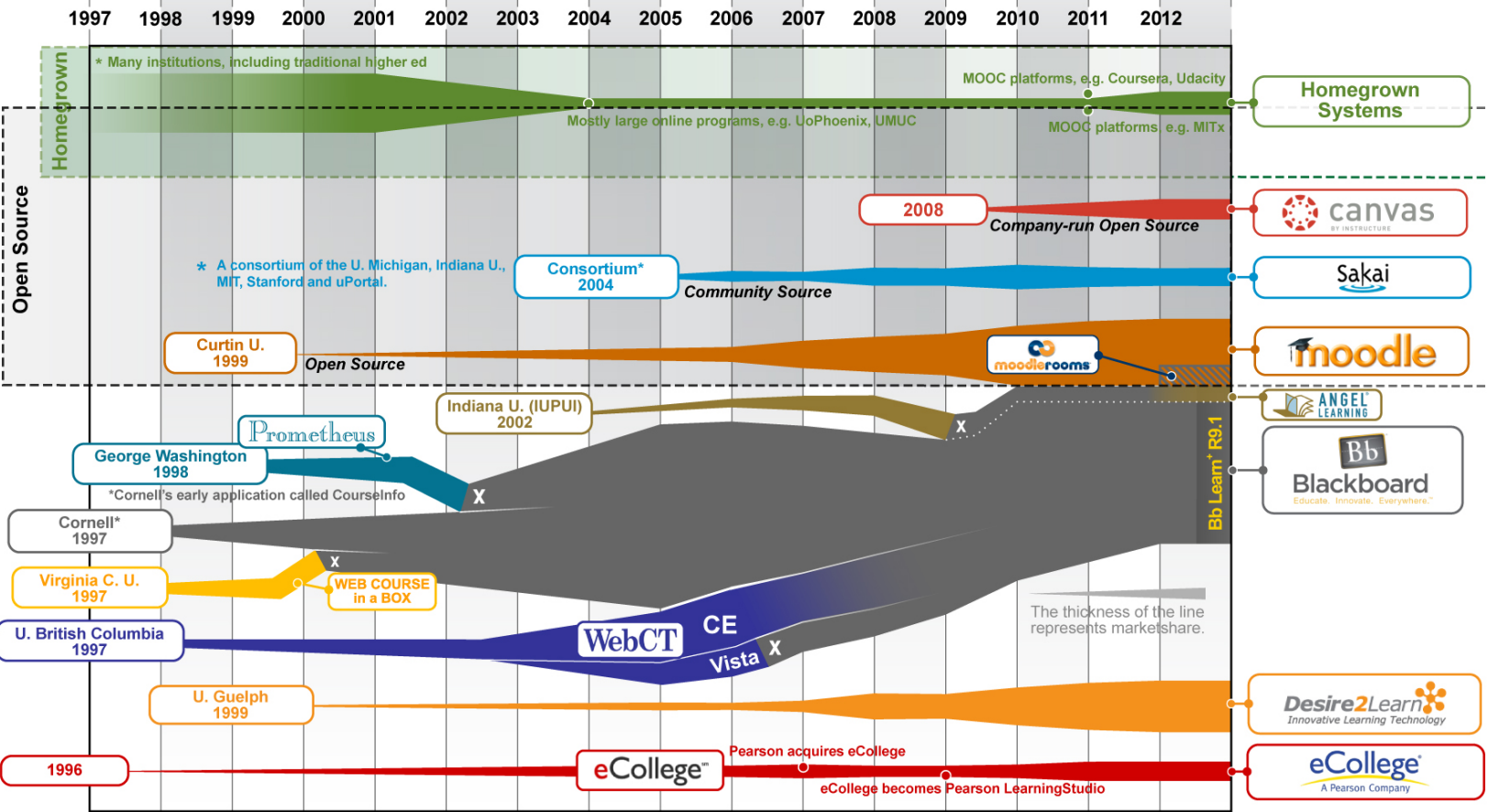
1,000 Number of Students in Thousands

Big players understand the market potential

Figure 3:

LMS Market Share for All Institutions

Apple, Google, Oracle/Peoplesoft, Cisco, Pearson, Cengage, McGraw-Hill, Private Equity, Venture Capital, Institutional Investment



Market share in terms of institutions & online programs selecting LMS
 Key data from 2005 - 2009 from Campus Computing project <http://www.campuscomputing.net>

delta initiative

Big players understand the market potential

Large scale reasoning

Cognitive systems

Interoperability models and solutions

Self-awareness

Language technologies

Semantic and Context
technologies

Machine learning

Information retrieval
Knowledge discovery

Multimodal interfaces

Data collection and storage

Ubiquitous sensing

Internet of things (everything)

What is out there?

Mass data
Multimodal data
Some meta-information

What is out there?

Where to look?

**How do I find the right
information?**

Is it accurate?

Where to look?

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Where to look?

**How to select
and filter?**

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all the news?**

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**What to do with
it?**

**How do I find the right
information?**

Is it accurate?

Where to look?

**How to select
and filter?**

**How to cope with
all the news?**

**What to do with
it?**

**How to file and
categorize it?**

**How do I find the right
information?**

Is it accurate?

Where to look?

How to select

***Never have so many people written
so much to be read by so few..."***

- Katie Hafner

**How to file and
categorize it?**

it?

**How do I find the right
information?**

- **Learning**

- Technology driven
- Self-learning
- Open access

- **Teaching**

- Does not work only with ICT
- instructors engage in dialogue, develop critical thinking skills and spark passion about a discipline.

**Returning back to teaching
- „blended approach“**

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We are ignoring...

- **The generations that are coming are different – ICT, videos, interactive games are embedded in their mental models**

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- **It is not about competition it is about collaboration**

We are ignoring...

Customers	Domestic students		International students		Industry		
Product offerings	Vocational and further education and training		Higher education		Research		
Education disciplines	Arts	Engineering	Science	Business	Medicine/health	Law	
	IT	Design	Other	Other	Other	Other	
Sales	Schools	Open days	Agents	Road-shows	Digital	Other	Other
Delivery	On campus				Digital	Partnerships	
Student services	Student administration		Career centre		Other	Other	Other
Back office	HR	IT	Finance	Legal	Other	Other	Other

Source: Ernst & Young

„Status Quo“

Customers	Domestic students		International students		Industry professionals		Other education providers	
	School leavers	Mature age	High-end	Mass market	B2B	Executive education		
	Parents		Content wholesalers		Content consumers		Service providers	
Product offerings	Vocational and further education and training		Higher education		Research		Mass distribution	
	Content aggregation		Entertainment		Financial services		Other	
Sales	Other	Digital					Other	Other
Delivery	Digital		Partnerships			Other	Other	
Student services	Student administration, career services, other (outsourced)							
	Customer relationship management (cloud)							
Back office	Outsourced							

Source: Ernst & Young

„Transformers“

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„Transformers“

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Implications for Academia

- **The war of titans (network and globalisation)**
 - **What is there for small nations, 3rd world countries?**

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- **Cross-accreditation is still a political incentive**
 - Bologna refform in Europe

Implications for Academia

- **“Other institutions will look at edX certificates – which, after all, are based on courses developed by Harvard, MIT and Berkeley – and say they might accept them as credit towards a course of study.” (Listener)**
- **The ideal behind MOOCs courses is “the promise of scaling a university education to everyone... well everyone with an Internet connection, that is.” (Hack Education)**