Massive open online forces

Feb 8th 2014

UNIVERSITIES have not changed much since students first gathered in Oxford and Bologna in the 11th century. Teaching has been constrained by technology. Until recently a student needed to be in a lecture hall to hear the professor or around a table to debate with fellow students. Innovation is eliminating those constraints, however, and bringing sweeping change to higher education.

Online learning takes many forms. Wikipedia, a user-generated online encyclopedia, contains wonderfully detailed explanations. YouTube offers instruction on how to boil an egg as well as lectures on cosmology. Within many universities the online is displacing the offline. Professors publish course materials and videos of their lectures on the web. Students interact with each other and submit assignments by e-mail. Even those living on university campuses may nonetheless learn largely online, skipping lectures and reporting only for the final exam.

In America, bowing to the inevitable, universities have joined various startups in the rush to provide stand-alone instruction online, through Massive Open Online Courses, or MOOCs. Though much experimentation lies ahead, economics can shed light on how the market for higher education may change.

Two big forces underpin a university's costs. The first is the need for physical proximity. Adding students is expensive—they require more buildings and instructors—and so a university's marginal cost of production is high. That means that even in a competitive market, where price converges towards marginal cost, modern education is dear.

It is also hard to raise productivity. University lecturers can teach at most a few hundred students each semester—the maximum that can be squeezed into lecture halls and exam-marking rosters. Because it is so labour intensive higher education relies on large numbers of instructors paid relatively modest salaries.

MOOCs work completely differently. Alex Tabarrok, an economist at George Mason University and co-founder of an online-education site, Marginal Revolution University, reckons the most salient feature of the online course is its rock-bottom marginal cost: teaching additional students is virtually free. The fixed cost of creating an online course is relatively high, however. Getting started means putting together a curriculum, producing written and recorded material to explain it, and creating an interactive site that facilitates discussion and feedback.

Having invested in the production of a course, a provider's incentive is to sell it to as many students as possible. After the initial cost is covered each additional unit sold is pure profit. A low price maximises registrations and profit. But as prices converge towards marginal cost, there will be little scope for undercutting the competition. Instead MOOCs are likely to compete on quality, Mr Tabarrok reckons. Higher production costs are a small price to pay to attract much greater numbers of students. Such markets often evolve into winner-take-all, "superstar" competitions. The best courses attract the most customers and profit handsomely as a result. In this respect online education may more closely resemble information industries such as film-making than service industries such as hair-cutting.

The market for textbooks already fits this description. New textbooks are costly to write and design but can be reproduced fairly cheaply. Not surprisingly, only four introductory economic texts account for half of the American market, according to Mr Tabarrok. Indeed, says Tyler Cowen, a co-founder of Marginal Revolution University, it is possible that textbook publishers

are better equipped than universities to develop MOOCs profitably.

The market for instructors will also be transformed. The best teachers will be fabulously productive, reaching hundreds of thousands of students. There may therefore be far fewer of them, each compensated like superstars in the entertainment industry.

MOOCs' low marginal cost is responsible for some of the bad press they occasionally receive. Consumers risk little by signing up, so both registrations and drop-out rates are high. Yet that is not necessarily a reflection of poor quality. An analysis of over 1000 studies of online-course results conducted by America's Department of Education found that people who complete such courses do better on average than students in face-to-face instruction.

Ivory glowers

Caroline Hoxby, an economist at Stanford University, argues that MOOCs threaten different universities in different ways. Less selective institutions are close substitutes for MOOCs. Course content is often standardised and interaction with professors is limited in order to keep costs down. Students generally pay the cost of their education themselves and upfront, but drop-out rates are nonetheless high. MOOCs can provide a similar experience with more flexibility and at much less cost. Though some such institutions could prosper as portals for courses developed elsewhere, or by awarding degrees based in part on mastery of MOOCs, most are at serious risk of displacement.

Elite institutions face very different circumstances, Ms Hoxby reckons. They operate like venture-capital firms, offering subsidised, labour-intensive education to highly qualified students. They aim to cultivate a sense of belonging and gratitude in students in order to recoup their investment decades later in the form of donations from successful alumni.

Ironically, these universities may have threatened their own business model by embracing MOOCs. Online courses break the personal link between students and university and, if offered cheaply to outsiders, may make regular graduates feel more like chumps than the chosen few. For top schools, the best bet may simply be to preserve their exclusivity.

Economist.com/blogs/freeexchange

This article appeared in the Finance & economics section of the print edition under the headline "Massive open online forces"