Open, online, flexible and technology-enhanced: understanding the educational business models of tomorrow

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Online, open, flexible and technology enhanced higher education is currently delivered through many different institutions, e.g. virtual universities, open universities, online universities, bi-modal institutions, consortia of universities, conventional universities and more. Different types of collaborative models are used within or between institutions and new models/examples are emerging, such as national consortia, portals, combination of campus/online and even "unbundling" (detachment and separation of elements of the provision of education).

To better understand this complex and rapidly changing educational landscape, the central idea of the OOFAT models project is to produce a number of case studies of institutions and alternative, emergent models around the globe, collecting data on a range of different aspects and attempting to reduce these to a few simple models that are likely to be of interest to policymakers, senior managers, researchers and others involved in higher education: both to indicate possible directions of travel and to identify effective practices.

- Comparison and benchmarking within and between models
- Inspiration and guidance for new players in the OOFAT space
- Guidance for governments and governmental agencies in considering and planning for initiatives in higher education
- Identifying good practice and possible triggers and barriers for good practice

The evolving prototype must capture central processes in the higher education enterprise itself. These are the so-called 'bundles' which make up the higher education provision package. They have been called by Anant Agarwal, CEO of EdX: "clocks, content and credentials". In other words, provision is made up of how higher education is delivered (clocks), what is delivered (content) and how achievement is made recognisable to third parties (credentials) (Agarwal, 2016). In an alternative scheme, Wayne Macintosh from OERu identifies six services which make up the university package. Following content services, he refers to teaching and learning as interaction services after Moore (1993) identifies assessment and support services as additional distinct activities, which lead to credentialing services and are all supported by technology services (Miao, Mishra, & McGreal, 2016). In fact, the first scheme subsumes these six elements but is formulated on a higher aggregate level, since 'clocks' is actually about place, pace and timing, as well as the form of delivery (online versus physical) and, if we follow Moore, 'content' is actually about the interaction between teachers, learners and content, including learning analytics. With a slight reformulation for clarity and conciseness we might call the central processes:

- *Content* consists of subject knowledge, support and guidance and learning analytics, which together make up the entirety of the didactical process;

- *Delivery* captures the qualities of place, pace and timing of delivery of the content, in other words both the extent of physical and online provision and the question of the timing of key events (e.g. start and end points of learning processes);

- *Recognition* comprises both assessment and credentialization, which are formal processes leading to recognition of learning achievements. Assessment is a phase of evaluation at certain times in a learning process, whilst credentials are awarded on completion of formal learning units. In both cases, these evaluative processes lead to recognition of achievement of the learner by third parties.

The following table shows how these elements relate to flexibility, openness and inclusion.

Table 1. Elements of OOFAT Model

Category	Subcategories	Dimensions of Flexibility	Dimensions of Openness/ Inclusion
Delivery of HE/services	*Access to content*	Time; Location; Pace; Organization	Openness of the institution to (all) learners
	Access to guidance, support and services	Cost; Time; Customization	Who can access support? Who can provide support?
Content	*Resources*	Adaptability of content to specific learner	How open is the provision of content?
	Curriculum	Flexible curriculum elements	How much influence over curriculum does the learner have?
Recognition	*Assessment*	Identity and role of assessor	Specifications on who can be assessed / performs assessment
	Process	Combining elements of existing learning; Alternative pathways (e.g. Non-formal)	Which group provides recognition? What alternatives exist?

The idea behind using this rather comprehensive model of delivery of higher education products and services is to be able to capture a broad selection of providers and also to be able to highlight similarities and differences behind them (cf. Garrett, 2016). Cases were selected to represent a variety of institutional types from around the world, including public and private; for-profit and not-for-profit; traditional and non-traditional institutions of a range of sizes. In order to model business approaches, 7 aspects (products and services; target group; communication channels; value chain; competitive advantage; networks; sustainability) were drawn from Taran *et al.* (2015) and respondents invited to categorize their institution.

Table 2. Elements of business innovation

Core aspects	Extending reach	Developing new markets
Products and services	We deliver and/or support core institutional provision	We offer something different, complementary or alternative to the main provision
Target group	We target an existing market	We are targeting a new (or non-traditional) market
Communication channels	We interact with learners through traditional channels	We interact with learners through new or innovative relationship channels (physical or virtual)
Legacy or new value chain	We develop, produce and deliver the provision by making the most of legacy knowledge	We develop, produce and maintain our offering through exploration of new approaches and innovation
Competitive advantage	Our competitive advantage comes from traditional competences (e.g., market knowledge, expertise, improvement of existing technology)	Our competitive advantage comes from new, unfamiliar, competences (e.g., new or emerging technologies, innovation in working practices)
Networks	We operate primarily within traditional institutional or cultural parameters	We operate primarily in non-traditional or (dynamic) networks (e.g., alliance, joint-venture)
Profitability and sustainability	We maintain profitability through incremental cost cutting and efficiencies	We maintain profitability through new processes to generate revenues, or cost-cutting in existing processes

Data was collected in several ways, including desktop research, consultation and interview. 49 complete responses have been received, and a further 65+ have provided partial information. From information provided about institutional enrolment growth over the previous three years (Table 2) we are able to discern some trends. It appears from this data that smaller and very large institutions are experiencing rapid growth while the medium sized institutions are experiencing static or slightly declining numbers. This may be because medium sized organisations may be less able to innovate: very small organisations can adapt practices quickly while very large organisations have more strategic resources.

Table 3. Trends in Learner Enrolment Growth 2014-2016

	Average Enrolment Growth 2015-6	Average Enrolment Growth 2014-5
>1,000 students (n=5)	26.32%	35.71%
1,001-20,000 students (n=20)	-1.05%	-12.69%
20,001-99,999 students (n=12)	1.77%	2.41%
<100,000 students (n=6)	22.74%	-1.07%

When examining the use of technologies at these institutions some general trends emerged. There is a persistence of 'older' technology, for example the VLE/LMS is pervasive, and wikis are still prevalent. Despite much of the media coverage there is very little real application of Artificial Intelligence, and even learning analytics is relatively scarce. We observe a pattern of cautious implementation across the board, with a range of educational technology being deployed but rarely all of them, and with a tendency towards the older ones, and similarly with approaches. The traditional distance education establishments tend to use it to supplement their existing model rather than in pursuit of new audiences.

- Content delivery showed the greatest level of openness, perhaps supported by the delivery of materials online

- Similarly, the flexibility of support delivery was reported to be highly open by most; this could reflect technological approaches to learner support (such as the use of learning analytics) or a more fundamental, philosophical approach to support

- Content production is not typically an open process, although there were some interesting examples which bucked the trend

- Assessment and recognition tend to be the least flexible or open dimensions of the model for most

- Some HEIs are using OOFAT as part of an ambitious organizational change strategy, whilst others are integrating it into existing services

The full report for the International Council for Distance Education could form the basis of an extended piece of work, such as an annual audit of OOFAT dimensions across HEIs worldwide. The proposed typology of business models, OOFAT dimensions, and archetypal cases provided as visual models can be used to describe educational provision in a wide variety of circumstances, and the approach has been validated by the responses already received. Others who wish to make use of the model are advised to contact the authors for a fuller description of the process.

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