
Business Models Associated with Distance Learning in Higher Education

Shouhong Wang

University of Massachusetts Dartmouth
swang@umassd.edu

Hai Wang

Saint Mary's University
hwang@smu.ca

Abstract

Textbook prices are continuously rising in higher education. This paper analyzes a business model which makes commercial textbooks more expensive, and explains why this issue tends to be more severe in the field of distance learning in higher education. It reports a case of adoption of open educational resources (OER) textbook for an online course to tackle the problem of high textbook prices which are associated with the bundled online academic services. Based on an analysis of the business model practiced in this case study, the paper discusses the challenges for implementation of this business model in distance education. It provides suggestions for institutional administrations to engage the distance learning community to reduce the costs of higher education.

Introduction

Textbooks in the higher education sector are shamefully expensive (Goodin-Smith and Rader 2015). To fight against the rising costs of textbooks, open educational resources (OER) have been initiated longer than a decade ago (“MIT OpenCourseWare”, 2017; “The William and Flora Hewlett Foundation”, 2017). OER represent the innovative idea to make educational resources available to all learners and educators for free. However, longer than a decade later, textbook prices are continuing to rise. In fact, the prices of textbooks have increased for about 82% between 2003 and 2013, which is almost three times the rate of inflation (“The Washington Post”, 2016). The challenges of OER textbooks in the higher education sector are more severe than that in the K-12 education sector or community colleges due to many factors. For example, the selections of textbooks in higher education are not centralized by administrations. Typically, individual instructors or small groups of faculty members make the decisions on the textbooks for their courses. Qualified OER textbooks in higher education are not always available, especially in special or new disciplines, because higher education institutions promote research and offer little incentive for professors to write textbooks. Furthermore, there are few consistent codes of ethics related to the issues of textbooks in the higher education sector (Robie, Kidwell, and Kling 2003), and the social and political visions of the educators in higher education are highly diversified.

On the business side, commercial textbook publishers are still occupying their competitive positions in the textbook market especially in the higher education sector (Wang and Wang 2016). There has been no shortage of discussions of barriers to OER adoption (Andrade et al. 2011; Pirkkalainen and Pawlowski 2013). However, the recent dynamics of business competition in the textbook field related to distance learning have not been fully investigated in the literature. This paper analyzes a business model which commercial textbook publishers are practicing recently, and explains why the issue of high textbook prices in higher education is particularly critical in the field of distance learning. It then presents a case of adoption of OER textbook for an online course at one of the authors’ universities. Based on the evidence of the case study and the business model behind the case, the paper offers suggestions for the administrations of distance learning to engage in the battle against the rising textbook prices in higher education.

A Business Model of Commercial Textbooks Bundled with Online Academic Services

Textbooks are unique goods that can be durable or nondurable; that is, a textbook could be re-used or could have a short lifespan. Generally, digital textbooks are not allowed for resale, but textbooks in print are semi-durable goods, and can be re-sold and reused with uncertain duration. This could be one of the main reasons why many students prefer hard-copy of textbooks although the prices of hard-copy textbooks are higher than digital textbooks (Millar and Schrier 2015). As used textbooks do not bring any profit to the publishers, the reuse practice of

textbooks triggers an important practice of commercial publishers: to sustain the profits of a textbook, revisions must be done frequently so that the “durable” product can be transferred into a “nondurable” product. Research has shown that commercial textbook publishers recently accelerate textbooks revisions (Zinser and Brunswick 2010). Commercial publishers have been applying this strategy of fast revisions for two reasons (Wang and Wang 2016): (a) to continuously improve the quality of textbooks and to keep the textbooks updated to meet the instructors and students’ needs; and (b) to block re-selling of used textbooks for profits. However, this strategy might not work well, because many revised textbooks do not add much values to the revisions and instructors might choose to use the old versions.

Recently, many commercial textbook publishers have applied another strategy by bundling a textbook with online academic services for distance learning. When the publisher publishes a textbook, it not only provides a complete set of ancillary materials of the textbook, including test bank, teaching manual, lecture slides, study guide, etc., but could also set an online classroom for students to take online quiz tests, to do online assignments (e.g., technical assignments and games), and to participate in online group projects. Actually, an online classroom bundled with a textbook is a distance learning management system which is hosted and controlled by the publisher. Such online academic services make the textbook more appealing to the potential textbook adopters who are teaching online or blended courses, because the course preparation workloads can be reduced substantially. Because the bundled online services add more value to the textbook, the price of the bundling textbook must be higher than the one without bundling with online academic services. Furthermore, as an access code for the publisher’s online classroom is attached only to a new copy of the textbook, a used copy of the textbook without an access code is hard to substitute a new one. Thus, this bundling strategy makes the textbooks much more expensive than ever. The business model of this strategy of commercial textbook publishers is depicted in Figure 1.

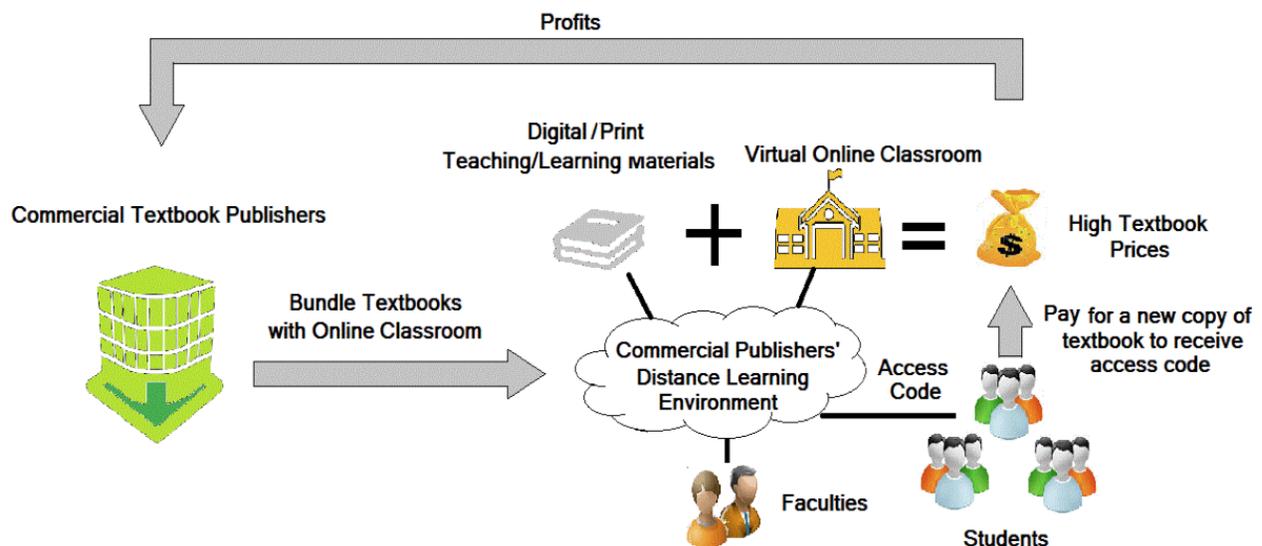


Figure 1. A Business Model of Commercial Textbook Publishers

A Case Study of Adoption of OER for an Online Course

Adoption of OER textbooks for online courses is one of the important practices for faculties to gain more understanding of OER in the distance learning environment. This section briefly describes a case of adoption of OER textbooks for an online course. This case study allowed the authors to obtain first-hand experiences of OER textbook adoption.

The Background of the Course

The introductory Information Systems is a core course for all business majors at almost every business school. The course emphasizes on the role of information technology in business. In addition to non-technical contents, many business programs use this course to enhance students’ computer literacy by including computing lab technical modules (Wang 2007). Likewise, a combination of various assessment instruments, including quiz test, essay, technical assignment, and project, are often used in this course to meet the learning objectives designed by a business program. In the present case, the assessment instruments used in the present online introductory

Information Systems course include quiz tests, database technical assignments, online discussion topics, and course report.

Many commercial textbooks for the introductory Information Systems course are available on the market. The commercial textbook used for the present introductory Information Systems course is one published by Pearson (2017) which is about \$150 for a new copy and is attached with an access code for using the publisher's online Lab. The online Lab has various academic services for this textbook. It not only provides a complete set of ancillary materials of the textbook, including test bank, teaching manual, lecture slides, study guide, etc., but also sets an online Lab for students to practice technical assignments including Microsoft Excel and Access. The online Lab can be sufficient for students to complete all work for the online course. One of the authors adopted this commercial textbook before conducting this case and spent no more than 20 man-hours for preparations.

Adoption of an OER textbook

Because the available OER textbooks for this course were not as many as expected, the review of the candidate OER textbooks was not time consuming. After carefully reviewing four OER textbooks, Bourgeois' textbook (2014) published by Saylor Academy (2017) was chosen for this project. The qualities of this OER textbook and the commercial textbook currently used for the course are considered to be equally good, and the difference between these two textbooks would not be a considerable factor for the teaching and learning effectiveness of the course. This was the first case of adoption of OER textbook at the present college of business.

Similar to the majority of other OER textbook, Bourgeois' textbook does not have its ancillary materials. Fortunately, Guthrie and her colleagues (2017) have developed their lecture slides for this textbook and agreed to make it open-access. Thus, their OER lecture slides for this textbook have been adopted as well for this course. The present introductory Information Systems course involves extensive technical hands-on exercises of Microsoft Access for business, but the OER textbook does not have those resources. The authors had to develop teaching/learning materials for the technical exercises of Microsoft Access and to set up an online learning environment for this part. Furthermore, to maintain the academic integrity, the authors developed proprietary online quiz tests and discussion questions so that students would not be able to find answers simply from the Internet. The entire project of adoption of the OER textbook employed more than 200 man-hours for the preparation of the online course.

Assessment of the adoption of OER textbook

The online course with the OER textbook has been offered three times. Student learning assessment and students' opinions are discussed below.

Student learning assessment

To evaluate the student learning outcomes in the online class with OER textbook, the authors have collected and analyzed two data sets from four comparable classes of this online course: two classes with the commercial textbook and two classes with the OER textbook. The assessment criteria (rubrics) used for evaluating student learning outcomes of discussions and technical assignments in the four classes were the same. The assessment results are summarized below.

(1) Quiz test results: Students of the classes with the OER textbook and students of the classes with the commercial textbook have almost the same performance on quiz tests, as indicated by the t -test result [$t(df=118)=-0.00635, p<0.99$].

(2) Quality of technical assignments (Microsoft Access database): Students of the classes with the OER textbook and students of the classes with the commercial textbook have almost the same performance on technical assignments, as indicated by the t -test result [$t(df=11)=-0.519875, p<0.61$].

(3) Quality of online discussions: Students of the classes with the OER textbook can have better performance on discussions than students of the classes with the commercial textbook, as indicated by the t -test result [$t(df=39)=-4.67583, p<0.001$].

Clearly, the data indicates that the adopted OER textbook can achieve at least the same level of student learning as the commercial textbook does in this online introductory Information Systems course.

Students' opinions on the OER textbook

To understand more about students' subjective opinions on the OER teaching/learning materials, a survey was conducted. The 38 students in the two sections of the online course with the OER textbook participated. The results of the 7-question survey are summarized in Table 1. As presented in Table 1, overall students have very positive opinions towards OER. Based on the evidence of the preliminary investigation, the authors believe that the use of an OER textbook for the online introductory Information Systems course can meet the designed learning objectives and can be beneficial to students.

This section presents a single case study and has its limitations. The objective of the case study was to explain the business models associated with the online course. The sample size was small. The limited opinion-based information collected by the authors may involve biases for any generalization.

Questions	Survey Results	
1. Have you ever used any open access textbook for your business courses offered by this college of business before using this open access textbook?	Yes: 17.6%	No: 82.4%
2. Are you aware of the price of the commercial textbook currently used for other sections of this MIS 315 course which is available at the Campus Bookstore?	Yes: 58.7%	No: 41.2%
3. How important for you to use quality open access textbooks for your business courses?	5 (Extremely important):	70.6%
	4 (Important)	17.6%
	3 (Neutral)	0%
	2 (Not important)	0%
	1 (Not important at all)	11.8%
4. Do you agree that the adopted open access textbook for the course can replace the commercial textbook for the course because the instructor has a good judgement on the quality of the open access textbook?	5 (Strongly agree):	60.3%
	4 (Agree)	33.2%
	3 (Neutral)	0%
	2 (Disagree)	0%
	1 (Strongly disagree)	6.5%
5. In your opinion, how good is the overall quality of this open access textbook you are using now?	5 (Excellent):	51.5%
	4 (Good)	43.2%
	3 (Neither good nor poor)	0%
	2 (Poor)	0%
6. Do you agree that this open access textbook plus all online companion materials posted on this course site of myCourses can help you achieve your expected learning effectiveness?	1 (Extremely poor)	5.3%
	5 (Strongly agree):	53.8%
	4 (Agree)	25.3%
	3 (Neutral)	10.2%
7. Do you have any other comments and suggestions on open access textbooks? (Optional)	2 (Disagree)	7.2%
	1 (Strongly disagree)	3.5%
	(All comments were not negative. They are omitted in this document, and are available upon request.)	

Table 1. Summary of the Results of Student Opinions about OER Textbook

The Business Model of Adoption of OER Textbook for Online Courses

This section discusses the lessons the authors learned from this study. The process of adoption of an OER textbook for online courses demands much more intellectual work on the instructors' side in comparison with that of adoption of a new commercial textbook. This is mostly because of the lack of ancillary materials and online academic resources for OER textbooks. When no or few ancillary materials and online teaching/learning resources are available for the adopted OER textbook, the adopting instructors must develop these materials and set up an online learning environment for students. Although this has been one of the top challenges for faculties

to adopt OER textbooks for a long time (Baker et al. 2009), and the OER community (e.g., MERLOT (2017) and OpenStax (2017)) has made a significant effort to address this issue, the OER community alone seems to be incapable to solve this problem. Furthermore, the OER community has not suggested approaches to making protected free-to-use assessment instruments available in the open access environment. Proprietary assessment instruments should be developed and protected by the adopting instructors themselves to maintain the academic integrity and to set higher professional ethical standards in the open access environment. Thus, the adopting instructors of OER textbooks actually perform self-services for those services provided by the commercial publishers otherwise.

On the other hand, the authors have found that Communities of Practice (CoP) (Lave and Wenger 1991; Wenger 1998; Kimble *et al.* 2008) can ease the problem of high preparation workload in OER textbook adoption. For example, in this case study, the instructors, who work in two different IS programs, share OER with other instructors in the community of the OER textbook. They joined together to develop and share proprietary teaching materials and online ancillary resources for their comparable online Information Systems courses. Subsequently, on average the total preparation workload for each instructor was reduced. If a large number of instructors form a CoP for a common course, the average workload of development of all online ancillary teaching materials for each participant could become marginal. The CoP in this case is discipline-based and can work across organizational boundaries. The discipline-based CoP business model behind this case of OER textbook adoption is depicted in Figure 2. This case study has involved a diminutive community, and has not investigated issues of coordination of discipline-based CoP and positive/negative aspects of the practices.

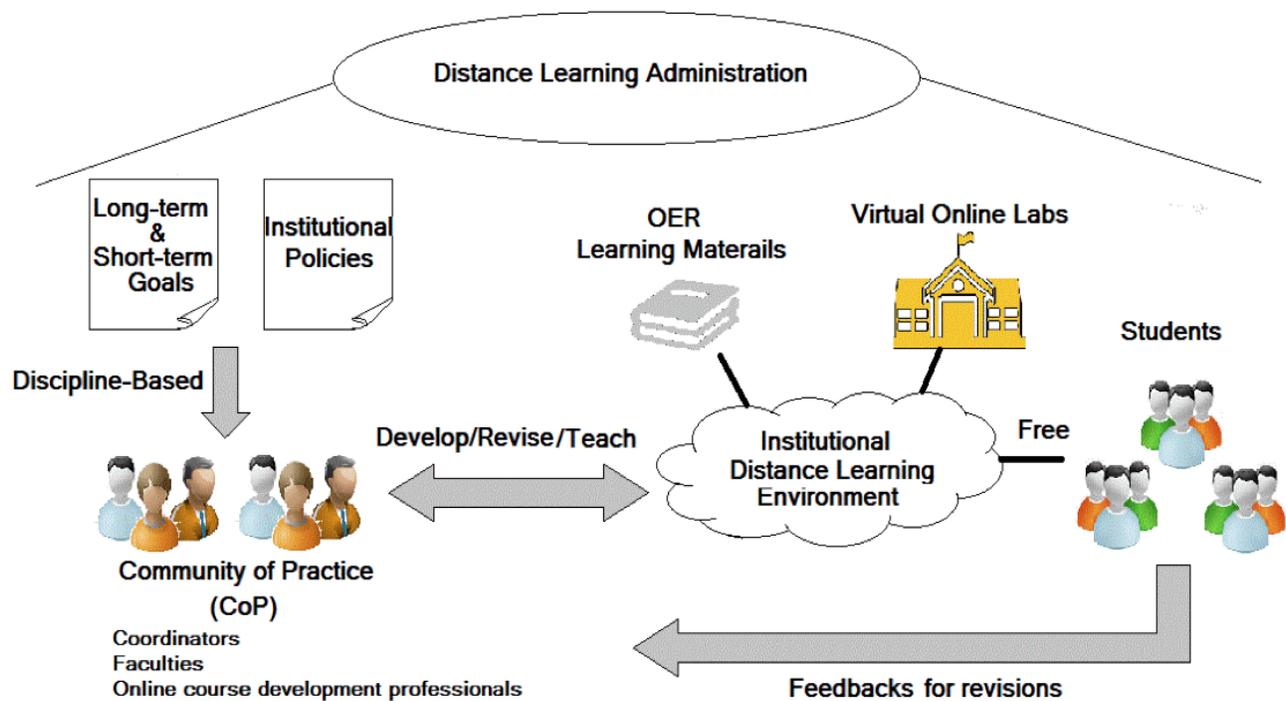


Figure 2. The Business Model Practiced in the Case Study

Suggestions for Distance Learning Administrations

Few educational institutions in higher education would ignore OER adoption completely, given the social and political influences and students' interests. While individual instructors play the key roles in practicing and testing OER, educational administrations develop their strategies and policies on OER for their institutions. There have been many OER research papers published by OER research communities. However, adoption of OER textbooks is still a relatively new subject, and few reports can be found in the literature to explain the roles of institutional administrations in supporting and coordinating the complicated process of adoption of OER textbooks especially in the context of distance learning.

Discipline-based CoP is a knowledge management approach that allows a group of people who are active practitioners to pursue a common interest in OER adoption. The members of the community, who may come from different organizations, are connected as a joint group of entrepreneurs, produce a set of communal resources for OER adoption. Discipline-based CoP for OER adoption is different from OER projects in that an OER project is

driven by OER deliverables and is dissolved once the project is completed, but discipline-based CoP for OER adoption are continuous efforts. Discipline-based CoP is also different from communities of interest in that any member in a discipline-based CoP must contribute resources instead of just moral support or advocate.

The organizational model of discipline-based CoP for OER adoption must possess the following components.

Principle: Social entrepreneurship for adoption of OER textbooks along with distance education materials in the higher education sector.

Founding online courses: A discipline-based CoP must have a specific target online course for adoption of OER along with full online academic services.

Long term goal: Reduce the prices of the textbooks used for the online course to a satisfactory level and maintain the satisfactory level.

Short term goal: Develop and/or adopt OER textbook along with online teaching/learning materials for this online course and revise it continuously.

Composition: A discipline-based CoP is composed of three groups: CoP coordinators, faculty members who teach the target online course and are willing to use OER for the online course, and online materials development professionals.

Policy: All faculty members must participate in the development and revisions of the OER along with all online teaching/learning materials for the online course.

Assessment: Evaluate the overall value of the discipline-based CoP to the decrease of the costs of textbooks of the online courses, the overall value of knowledge sharing to improve teaching and learning, and the overall contributions to improve the enrollments and retention rates of the online programs.

The suggested business model of discipline-based CoP for OER adoption provides a framework of organizational design of OER textbook adoption for online courses to compete with commercial textbook publishers' business model; however, sustainable discipline-based CoP need continuous support from institution administrations. Many specific operational issues must be addressed by institution administrations, such as:

1. Does the higher educational institution have a strategy to initiate and coordinate discipline-based CoP practices for OER adoption?
2. Does the institution allocate financial start-up funds for initiations of discipline-based CoP practices for OER adoption?
3. Does the institution have new policies and procedures to reward and recognize the contributions of OER adoption in online programs?
4. How should the partner institutions share their responsibilities? Etc.

Discipline-based CoP for OER adoption for distance education can be sustainable only when the administrations are full committed to reducing the costs of higher education. In the future, the authors will conduct a CoP project for OER adoption. The future study will have full engagement with the OER research communities and report back on the results of the CoP and how distance learning administrators can learn from the experience.

Conclusion:

This paper analyzes the business model applied by commercial textbook publishers and the business model behind the case of OER textbook adoption for a comparison. It explains why the problem of high textbook prices in higher education can be more severe for online courses, and why adoptions of OER textbooks are facing many challenges in the higher education sector. A successful adoption of an OER textbook to meet the designed learning objectives of the course can demand more intellectual work on the instructors' side in comparison with that of adoption of a new commercial textbook, especially for online courses. The adopting instructors of OER textbooks need to perform certain self-services for those provided by the commercial publishers otherwise. The study demonstrates that discipline-based CoP can ease the adopters' workload problem in the process of adoption of OER textbooks. This paper suggests that distance learning administrations in higher education ought to engage the faculties to fight against rising costs of textbooks by supporting and coordinating discipline-based CoP for effective OER textbook adoption for online programs.

This paper makes contributions to the field of distance learning administration in two aspects. First, the analysis of the business model of commercial textbook publishers has revealed a significant real cause of soaring prices of textbooks in the distance learning field recently. Second, the paper explains how distance education administrations can help the OER community develop CoP for OER adoption to make distance education more affordable across the entire higher education sector. It will be a long-term task for distance education

administrations to develop discipline-based CoP for OER adoption in the endeavor to solve the textbook cost crisis in distance learning programs.

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