The Open School Vision – For More Openness at Universities

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Abstract: This paper introduces the open school concept, which aims to strengthen the openness of the university to its students. In an open school, students do not take a passive role as service consumers; they are active members of their university. Though the open school reflects a new mindset in higher education, it uses available technologies. The web-based platform for Crowd Sourcing, IDEANET, is an adequate system to support universities in launching an open school project. Three case studies conducted at German higher education institutions demonstrate the feasibility of the concept and show that students are willing to make contributions. Grades and promises from the university's side to actually implement students' best ideas can be used as reward mechanisms. In some circumstances, however, the use of grades can raise some conflicts.

1 Introduction

The last years witnessed many initiatives that encourage the diffusion of knowledge in higher education. Open University, open education, and open courseware are all phenomena reflecting the mindset of openness. Universities are increasingly putting their teaching resources and working papers available online for free. Once, these materials were only accessible to the enrolled students and internal staff. The phenomenon of opening up the institution's boundaries to the outside is not new. In his seminal work, Chesbrough demonstrates that open innovation is an imperative in today's business [Ch06]. Companies should not only rely on their internal R&D capacities, but should make their boundaries permissible to innovations from the outside. The open source model of software development constitutes an extreme form of open innovation [Ga06]. Innovations are generated by geographically distributed developers who work collaboratively to jointly develop complex pieces of software, e.g. [RP06].

Open education, open innovation, and open source all have openness in common. But in open education, the extent of openness is still limited; it only focuses on enabling learners worldwide to have access to educational resources [LMH08]. Furthermore, open education is neither concerned with innovation, nor with the application of the open source principles of product development. Open education is also different from open content. The contents that the university publishes on the website represent a closed area; only the university's staff can update the contents.

The next section describes a serious problem at our universities; in spite of their endeavors for more openness to the outside, we notice that universities are still closed vis-à-vis their students. Higher education institutions lose a real opportunity when they do not fully use the intellectual potential of their students. Therefore, section 3 introduces and then defines the open school concept, as a solution to cope with this problem. Section 4 demonstrates the feasibility of the open school in practice, by means of three case studies of German higher education institutions. Section 5 discusses the insights derived from the cases, and section 6 concludes and provides directions for future research.

2 Problem Description

What may be the picture that we have of our classrooms at universities? Students are sitting in a big room, waiting for the professor, who then enters the class, gives the talk; answers questions if any, and leaves. Students hear professor's speech, take notes, and learn the assigned materials. Students are the learners; they are passive consumers of the knowledge that is prepared by the teaching staff.

Students may claim that the materials (e.g. lecture slides) distributed by the professor are difficult to understand. To improve comprehension, students may suggest including more practical examples. The lecturer may seriously consider this feedback information or not. If it happens that this feedback is taken into account, there is a big chance that the students of the current class do not profit from the improvement, since eventual modifications are introduced in the next class.

In addition, many situations at the university, in which things can go wrong, may come from outside the classroom. An example may be long waiting times in the queues of the canteen's food counters, or frequent book stock outs in the library, leading to delays in getting the required titles. Students can be usually confronted with such problems in the university's life. When students see themselves as service consumers, they expect the university's personnel to solve the problem. But students should be, at least, as equally concerned as their administration because these problems affect them directly. Therefore, in their openness endeavors, universities should target their students. Universities should increasingly open up their processes vis-à-vis their students. In so doing, students will not be considered as consumers or passive learners, but as university's staff and even knowledge producers.

3 The Open School Concept

The university should open up its boundaries to enable closer connections to its students. Information technology that supports open source development, online communities, open contents, and idea contest can be used to achieve this goal. The result of this opening process is the so-called open school. The open school is an innovative platform that the university's staff can use to capture ideas and innovative solutions from students. The open school platform involves students in different types of activities. The variety of activities is basically unlimited. It may range from asking students to generate simple ideas, e.g. to improve university's life conditions, to more complex tasks such as developing innovative learning materials and contributing to research projects.

Students can share their ideas, concepts, or drafts to help gradually develop solutions to the problems posted on the platform. In line with the principles of Internet communities and open source innovation, students can work collaboratively, improve the ideas of their peers, and create new ones. In this way, universities have a better access to an intellectual resource, which has been insufficiently exploited so far. Students' participation is a crucial element for the success of these projects. In open source development, for instance, the level of participation depends on internal factors such as intrinsic motivation or altruism, and external rewards such as self-marketing or revenues, e.g. [Hi05] and [HO02]. A plethora of projects failed because they did not attract the critical mass of developers or contributors, e.g. [ABR09].

4 Case Studies

Now, is there any evidence that the open school idea can actually work in practice? In other words, are there any experiments that show the feasibility of such a project? In the following, three case studies, in line with the spirit of the open school will be described.

4.1 University of Erlangen-Nuremberg

In the School of Business and Economics of the prestigious University of Erlangen-Nurnberg in Germany, each winter semester since the academic year 2007/2008, an open innovation contest is used as a teaching tool within the class "Basics of E-Business". To setup this open innovation contest, the teaching staff uses HYVE AG's software, IDEANET, which is an open web-based platform for Crowd Sourcing. Each winter semester more than 1200 first year bachelor students are confronted with a demanding innovation challenge. For instance, in winter semester 2009/2010 the task was to create and submit business concepts for service innovations based on Smartphones. The platform automatically groups the registered students in teams of five students. The groups can enter their own innovation concepts and then refine them. So the concepts develop progressively over time. One incentive for students to make contributions is the final grade. The grade obtained for the participation in this innovation contest accounts for 25% of the overall course grade.

In total, in winter semester 2009/2010, there were 241 submissions in the fields of education, entertainment and healthcare. Each group has to provide a short description of the business idea, to clearly identify the value that the business generates to the customer, and to think seriously about the technical feasibility and implementation. The concept that was best evaluated by the experts (faculty plus decision makers from corporate partners) – thus the winner of the innovation contest – is called "Timeless shopping". The group defines a well thought-out business concept on using a Smartphone for ordering groceries from supermarkets, and analyzes the feasibility of the idea from many perspectives. In particular, the students provide an excellent video, which shows how the business concept actually works in practice. The student teams of the winning concepts also get follow-up support for the implementation of their concept from the corporate partners involved.

4.2 RWTH Aachen

Subsequently, in 2010, the same Internet platform, IDEANET by HYVE AG, has been used to initiate an idea contest at RWTH Aachen, an elite university in Germany. Here, the students are asked to submit ideas that aim to improve the university's life conditions and processes. Almost 60 students participated in this contest. They came up with diverse ideas, ranging from the improvement of signposting inside the campus, over the enhancement of public transport connections to the campus buildings, to more revolutionary concepts, such as RWTH 2.0, the digital university. Unlike the innovation contest at the University of Erlangen-Nuremberg, grades were not an incentive in this competition. The university's staff promised students, however, that the most discussed ideas, which receive many stars, will be actually considered for further evaluation by experts. These ideas have a real chance to be implemented later on at the university.

4.3 HHL - Leipzig Graduate School of Management (Handelshochschule Leipzig)

In 2007, HHL – Leipzig Graduate School of Management, a German elite private university, won a Germany-wide competition by Germany's Donors' Association for the Promotion of Sciences and the Humanities, and the German Federal Ministry of Education and Research (BMBF) with its "Open School Initiative". Compared to the projects described above, HHL's Open School Initiative follows a broader vision of bringing open innovation in the university context. Building on its university tradition of open exchange with partners from industry and trade since 1898 and in line with the principles of open innovation, the HHL Open School Initiative aims to implement additional mechanisms of open innovation in the structure and processes of the educational and research environment. The main idea is that the co-creation of management knowledge should take place in close collaboration between academia and business practice [MM08, p. IX]. To intensify collaboration and exchange between the university and companies, the project makes use of several transfer platforms, like the HHL industry forum, the HHL Student AG, and Innovation Lab Germany.

The openness to industry resulted in many joint projects, and many case studies have been developed in tight collaboration with the corporate partners. Students had a major role in this project. They participated in the activities done with the companies and actively contributed to the case writing seminars. Though the project so far predominantly applies offline mechanisms of openness, it obviously shows the important role of students in developing materials that can be used in research and teaching—the case studies.

5 Discussion

So far, the IDEANET platform has been used within a small context—the single class. In the first case study, students were asked to produce entrepreneurial ideas. In the second, they had to explore areas to improve the university's life conditions. The first insight we can derive from both case studies is that students are willing to use the platform and are capable of generating original ideas.

The cases show that the reward mechanisms that target grades or promise an improvement in real life conditions can motivate students in an open school project. The grade has been used as a reward mechanism in the first experiment. Although grade had a certain weight in this experiment, participation was not obligatory, and students could still choose whether to participate or not. Because the written exam contributed with 75% of the final grade, a student can miss the innovation contest, without losing any chance to pass the course. Nevertheless, the level of student participation was extremely high. Therefore, open school projects focusing on voluntary behavior and competition among students can work effectively in practice.

The use of grades, as a means to push motivation among students, can sometimes lead to conflicts. For instance, a student can come up, by chance, with an idea that is similar to the idea of another participant. Therefore, it is not fair to penalize the student, only because the idea is uploaded a little bit later. Another student may submit a modified version of an idea posted by other students and claim its originality. The ability to resolve such conflicts is necessary to conduct a successful open school project.

Whereas the first two case studies demonstrate that students can generate good entrepreneurial ideas and are willing to improve their universities, the HHL case provides compelling evidence that students can contribute to the creation of high quality research and teaching materials. Since the HHL experience took place in an offline environment (seminars), it is interesting to conduct an online experiment, in which students work collaboratively to create innovative learning resources.

In addition to its main target that is to exploit students' intellectual resources, an open school project that is supported by the IDEANET platform generates big volumes of data. Researchers can analyze this data in order to answer diverse research questions. For instance, the databases can be evaluated to better understand the behavior of online communities and the mechanisms of contributing to open source innovation and open contents.

6 Conclusions

In sum, the open school concept offers two big benefits. First, it advances the creativity, innovation capabilities, and entrepreneurial thinking of students. It considers students as knowledge producers and members of the university's staff; it involves them in various activities with practical or industrial applications. Second, the open school platform represents a laboratory setting to generate scientific insights within the open innovation field. The platform captures data that enables researchers to better understand the behavior of online communities and the mechanisms of creating innovations according to the open source principles. The case studies, which have been conducted in Erlangen-Nuremberg, Aachen and Leipzig, demonstrate the feasibility of the open school concept in practice. However, the open school initiative should go beyond the context of single classes or lectures. The long-term vision is to implement a platform that can be operated campus-wide and independently by lecturers, professors, or even students themselves. In the future, we will expand the implementation scope of the open school platform at two levels: inside the single university, and among universities located in different geographical regions. A comparison across regions provides insights into the differences in the acceptance of the concept. In addition, the experiments generate big data volumes that will be analyzed to deal with current research issues in the field of open innovation and open source mode of product development.

References

[ABR09] Abdelkafi, N.; Blecker, T.; Raasch, C.: From Open Source in the Digital to the Physical World: A Smooth Transfer? Management Decision, Vol. 47, No. 10, 2009; pp. 1610-1632.

[Ch06] Chesbrough, H.: Open Innovation – The New Imperative for Creating and Profiting from technology, Harvard Business School Press, Boston 2006.

[Ga06] Gassmann, O.: Opening up the Innovation Process: Towards and Agenda, R&D Management, Vol. 36, No. 3, 2006; pp. 323-228

[HO02] Hars, A.; Ou, S.: Working for Free? Motivations for Participating in Open-Source Projects, International Journal of Electronic Commerce, Vol. 6, No. 3, 2002; pp. 23-37.

[LMH08] Lerman, S. R.; Miyagawa, S.; Hargulies, A. H.; OpenCourseWare: Building a Culture of Sharing. In (Iiyoshi, T.; Kumar, M.S.V. Eds.): Opening Up Education – The Collective Advancement of Education through Open Technology, Open Content, and Open Knowledge. The MIT Press; Cambridge, London 2008; pp. 213-227.

[MM09] Möslein, K.; Matthaei, E.E.: Strategies for Innovators. Gabler, Wiesbaden, 2009.

[RP06] Reichwald, R.; Piller, F.: Interaktive Wertschöpfung – Open Innovation, Individualisierung und neue Formen der Arbeitsteilung. Gabler, Wiesbaden, 2006.

[Hi05] von Hippel, E.: Democratizing Innovation. The MIT Press, Cambridge, London, 2005.

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