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Visual mapping approaches for considering the strategic rationale for the implementation of OER in higher education institutions

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Visual mapping approaches for considering the strategic rationale for the implementation of OER in higher education institutions

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Abstract

Open educational resources (OER) have become a significant part of the general discourse around higher education and a number of institutions and governments have implemented initiatives to develop and use OER on the basis that they will help transform educational practice within and between higher educational institutions (HEIs). Nevertheless there has also been considerable comment and concern by many involved in higher education that OER are not sustainable financially and unlikely to be truly transformative of policy and practices in higher education. This paper reviews the existing published evidence and argues that all institutions need to properly consider whether and how OER fit in to their strategic plans and that this can usefully be done through the help of visual methods. Visual methods such as paper or computer based mapping techniques enable users to capture as much information as possible through a mediated conversation around the holistic representation of their collective views. This need for undertaking strategic reviews is mainly illustrated through the work of the EADTU led Multilingual Open Resources for Independent Learning (MORIL) project where workshop participants from HEIs used Kurt Lewin's Force Field Framework to examine both intra institutional and inter institutional factors that were driving or restraining them in the implementation of OER. A major outcome of this work is that OER are another valued factor in the evolution of higher education policy and practice and that progress will be evolutionary rather than revolutionary.

Keywords: open educational resources, higher education institutions, strategic rationale, visual mapping, open and distance learning

Introduction

Open educational resources (OER) have become a significant feature in discourses about the future of education, and higher education in particular (Atkins et al, 2007; Geser, 2007; OECD, 2007). Many higher education institutions have actively created and published such resources over the past few years, following the lead of the Massachusetts Institute of Technology with their OpenCourseWare[1] initiative and as evidenced by the growing membership of bodies such of the OpenCourseWare Consortium[2]. Currently the majority of OER are the products of single institutions, such as MIT, but some are more community based such as Connexions[3] and WikiEducator[4], albeit sometimes with the publishing infrastructure supported by particular institutions. And what nearly all these activities have in common is that they have relied in part on the support of charitable organisations, most notably The William and Flora Hewlett Foundation[5], to get started. While charitable organisations are continuing to pump prime a variety of OER initiatives (but may easily change their policies to meet new priorities),

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[1] www.ocw.mit.edu
[2] www.ocwconsortium.org
[3] www.cnx.org
[4] www.wikieducator.org
[5] http://www.hewlett.org/programs/education-program

they also expect such initiatives to become self sustaining as they will not provide recurrent funding. This issue of sustainability has been a significant feature of many discussions and of many reports (e.g. Geser, 2007; Guthrie et al, 2008) and papers (e.g. Wiley, 2006, Lane, 2008a). This means that all higher education institutions adopting OER, whether private or public, have to carefully evaluate why they are doing so and how they fit in to their strategic aims (Lane, 2008a).

To consider adopting OER, individual universities need to carefully consider the changing marketplace for higher education that may be created by the widespread adoption of OER. Most higher education students today have a relationship with just one university in their life. At that university they have any number of individual relationships with individual professors and fairly small groups of fellow learners. Many other potential students are denied access to this because of scarcities in prime resources—lecture rooms and professors (Lane, 2008b). There are now more people than ever wishing to participate in higher education, and increasing numbers of them want that participation to be more flexible to meet their needs. They want to be able to combine modules from different universities. They want to get credit for other types of study and experiences. They want to be full-time at some points in their life and part-time at others. They want to stop and start up again when they can. They may still want to study when they are retired. They may want to be teachers, as well as be taught.

Publicly supported and funded open universities have been in the vanguard of opening up education for more people and giving them more flexibility in their studies. Some private online universities such as the University of Phoenix and corporate universities attached to multinational corporations are extending this social economy into a fully market-based economy. The really significant development for open education is the advent of Internet-based social networking and collaborative technologies. This enables far more people to be producers of resources and providers of particular services—such as tutoring a specific course for anyone, anywhere. The marketplace is global, not just local or even regional. So, in principle, all can become producers and consumers of open education. However, the Internet and OER do not spell the end for traditional universities any more than open universities have done so, or any more than radio has replaced printed texts or television has replaced radio. They both expand the overall market and differentiate it into a greater number of sectors, including the social element of the economy. However, it may be that the Internet and open education, now the smallest sector in the market, will become the largest sector in the education market.

What is the impact of 'free' content on educational business models?

'It's the economy stupid' is a well known dictum and like it or not, it is economics in its broadest sense that is driving the growing phenomenon of apparently free goods and services. This phenomenon is fully covered in the writings of Chris Anderson of Wired magazine (e.g. Anderson, 2008). Goods and services being free at the point of use is not new as it has been a part of many public services e.g. healthcare in the UK and even a few commercial services e.g. free newspapers. Of course, in both cases, there are other sources of funding that support the 'free' service or product – taxes for healthcare and advertising for newspapers. What is different between them is that in the former case nearly everyone 'pays' for the service through their taxes while in the second it is only a proportion of users who may avail themselves of the products and services being advertised. What is happening more and more at the moment is that basic products are being priced much lower or at no cost and revenue generated by other means (taxes, subscriptions, added services, advertising revenue etc). The most high profile example of this is the rock band Radiohead allowing free download of their latest album (which, when in digital form, is very abundant) and inviting people to pay whatever they want but

also realising they will make more money from ancillary services, especially live performances (which are very scarce).

So, will we see an explosion of free resources (or at least free at the point of use)? Yes, in the sense that there will be lots of course materials that are free to access (and more). However this is just part of a much wider movement of opening access to resources online, whereby academic resources have often been in the vanguard (Guthrie et al, 2008). There have been some detailed studies[6] made of the ways in which academic resources can be opened up and adequately funded to do so. Most of these case studies look at individual open projects within institutions rather than whole institutions opening up with their resources but in summary they found:

- That there is no consensus on sustainability and how to achieve it
- There are tensions between sharing and generating funds
- Projects are experimenting across multiple strategies and sources of funding
- Cost control is as important and raising funds
- In kind contributions from host institutions was often significant

As already noted, none of the case studies in these reports are whole higher education institutions dealing with OER, but two factors of five they identified as influencing sustainability are dedicated and entrepreneurial leadership and a clear value proposition, both of which are important for any institution as well.

New educational business models or old models revisited?

Much of the new open education movement embraces OER and open licensing but has not properly considered the practices of the established Open and Distance Learning (ODL) movement. ODL can be operated at scale so that thousands can study the same course at the same time, not just tens as is the case for campus and classroom based teaching (Lane, 2008b). Therefore open education can widen participation in higher education (and other levels of education) greatly. The type of support models used in ODL can also enhance access to groups who would not previously have tried higher education as noted by Gourley and Lane (2008) and Schuwer and Mulder (2008). They also note another significant change which is the greater recognition of non-formal and informal learning achieved through open education that can replace or supplement the formal learning offered by existing HE institutions. This is the lifelong learning agenda where individuals may operate a personalized portfolio approach to their post secondary education, picking up formal bits of education from different providers and mixing it with non-formal learning experiences and expecting recognition of their achievements to come from trustworthy professional organizations e.g. Universities, Professional associations and/or peer review by a trustworthy community of people working/active in the same field as they are. In other words open education opens up not only who produces the 'content', the 'context' in which the 'content' is learned but also who validates that learning so that it has currency in the labour and/or interest markets.

Consider also how universities make educational resources available to learners. In a traditional, campus-based, or 'closed' university, the educational resources are only available to registered students within the perceived walls of the University, and yet most learners are outside these walls, and only a few in their hinterland served by extra mural activities (Lane, 2008b). Universities also limit the number of students they enrol for the

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[6] The series of publications commissioned by the Strategic Content Alliance in the UK cover this very well – see http://sca.jiscinvolve.org/wp/business-modelling-publications/

reasons noted earlier, and determine the students' entry through selection methods such as previous educational achievement. Students are largely registered in whole programs and not individual modules. Further, most universities serve full-time students. Part-time students must structure their time around the institution's schedule, which can be difficult for those who work or have family and other commitments. The students must come to the campus to participate in the educational experience. The methods of teaching used are also very limited (and limiting): Students attend professors' lectures, along with some seminars, workshops, and laboratory, or other practical activities. Educational resources are housed in a physical library or bookstore. Moreover, learning is assessed primarily through examinations and similar means.

This picture is extreme for effect, but the experience of a traditional university is largely an individualised process where individual lecturers and professors devise, specify, and deliver the courses studied by individual students even though present as groups in a classroom. The students are therefore largely guided by the views of a single source even though they may read the views of others in assigned texts. In contrast Open Universities have sought to open up higher education to greater numbers and teach and support students in a greater diversity of ways. What is clear is that learning in classrooms with a teacher at the front is now a small part of the complete picture and that individuals will be undertaking a wider range of learning opportunities, both formal and informal, throughout their lives, by themselves, in groups, at home and at work, to name but a few modes. Although the shape of this market may be decided by the future users of open educational resources, not the current producers of closed educational resources, current producers have the opportunity to influence what happens and decide what role they wish to play. This was the starting point for the MORIL project.

MORIL

The European Association of Distance Teaching Universities (EADTU[7]) began working on OER strategies in lifelong open and flexible learning through an initiative known as Multilingual Open Resources for Independent Learning (MORIL[8]). EADTU is an institutional network and aims to promote the progress of open and distance education and e-learning world, through active support of the institutional development of its members and to the co-operation between them in strategic areas. MORIL was funded by a William and Flora Hewlett Foundation Grant and the aim of the initiative was to gain more experience about the use of educational resources in higher education.

In particular, it was an attempt to learn and share policies and practices from The Open University in the UK (Gourley and Lane, 2008) and the Open Universiteit Nederland (Schuwer and Mulder, 2008), who were early adopters of OER amongst ODL institutions (Van Dorp et al. 2006) with the other members of EADTU and beyond. Some preparatory work and discussions as to what this would imply for universities had begun before a grant application was made to the William and Flora Hewlett Foundation and concurrently universities individually started having consultations with many experts such as those of The Open University. These experiences were fed back into joint network meetings but it was felt that EADTU members needed to collectively obtain insight into the pros and cons of OER, and gain further experience with ways of working, sharing, and partnering around educational resources. Therefore the primary objective of the successful proposal was the organisation of a series of best practice seminars related to OER strategies, dissemination and capacity building. While this began with the involvement of just the members the activity was also expanded to

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[7] www.eadtu.nl
[8] http://moril.eadtu.nl/

other institutions through the organisational and financial support of both the European Commission and UNESCO. Furthermore, these workshops were to be a mix of presentations and focussed discussions and it was decided that an effective way to focus those discussions was through the use of diagrams (Lane, 2002).

The first seminar, on strategy implementation, took place in May 2008 at The Open University in Milton Keynes (UK), and was intended for high-end representatives of the consortium members. They began with the presentation and discussion of existing strategies employed by The Open University (the case of OpenLearn[9]) and the Open Universiteit Nederland (the case of OpenER), dealing with issues like: sustainability, technology, IP, curriculum, academic participation, quality, and organisational structures. They continued by looking at various possible institutional approaches for the member institutions; using paper and computer based visual mapping techniques.

The second strategy development seminar was held in October 2008 in Leuven (Belgium). It aimed to facilitate the knowledge transfer of best policies and practices between regular Universities and ODL Universities, again using visual mapping techniques alongside presentations and panel discussions with representatives of the participating Universities and the European Commission.

The third strategy seminar was held in March 2009 at the UNESCO Headquarters in Paris and explored the potential of OER for improving the provision of education in Africa, Arab States, Asia, the Pacific, and Latin America, incorporating the development of relationships with regional and global networks.

As part of the process of running and building on one seminar to feed into the next, an open workspace[10] was created in the LabSpace of OpenLearn where many of the outputs from each of the seminars were published for members to access and review, and which has been used for the following analysis.

Visual mapping to aid strategic thinking: Seminar 1

The visual mapping workshop undertaken at the first seminar was aimed at getting high end representatives of the participating institutions to explore the key issues related to the development and dissemination of OER at their own institution through the creation and subsequent analysis of 'knowledge maps', both paper and digitally based.

Force Field Framework Maps

The Force Field Framework is a mapping technique devised by Kurt Lewin (1951) used to identify the forces driving and restraining change in a given situation. It allows the magnitude of those forces to be represented as a diagram or map (Figure 1). It is often used by groups who are trying to establish what impact a proposed solution is likely to have during the implementation process of a project. It allows all those involved to contribute and see all the factors that have been identified and rated. In the case of MORIL, Force Field mapping was used to focus on two important aspects of OER development: strategy implementation and strategy development.

Force field mapping on paper

Attempts to implement a solution to any problem are bound to be subject to a myriad of forces - some helpful i.e. 'driving' and some unhelpful i.e. 'restraining'. It is important that all these forces, both supportive and otherwise, are identified and their relative impact evaluated. To achieve this aim the Force Field map must adhere to certain

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[9] www.open.ac.uk/openlearn

[10] http://labspace.open.ac.uk/course/view.php?id=4341

rules: for example, participants are encouraged, using their marker pens on Flip chart paper, to use a rounded box for the "subject, question or issue; to use directional arrows as well as appropriate labels and a key to the diagram or map. It is worth noting that groups may not adhere strictly to these guidelines and interpret them to suit the group consensus (in the workshop discussed here a scale of 1 to 5 was used for strength of force with 5 being the strongest level of force). Examples of the paper-based maps are given in Figures 2, 3 and 4.
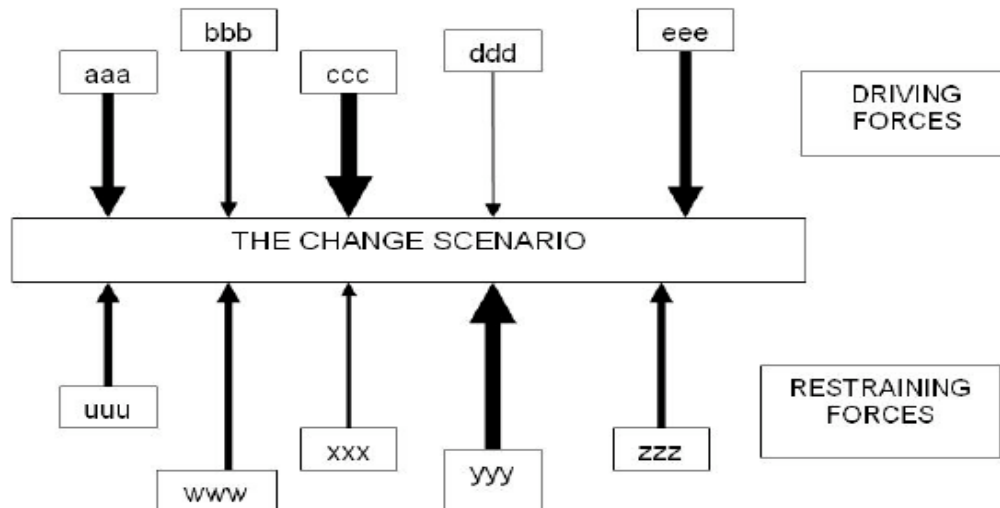

Figure 1: General Format for a Force Field Framework Map[11]

Force Field Mapping in Compendium

Compendium[12] is a software tool that supports real time knowledge construction in meetings, and, equally, can be used for personal information management and reflection. It is a robust hypermedia mapping tool that is freely available, with a growing community of practice. It has also been integrated within the Moodle Virtual Learning Environment as part of the Open University's OpenLearn initiative. For this study, Compendium was used to capture, and later analyse and evaluate, the individual workshop outcomes, namely the paper based Force Field maps and resulting synthesis map. Each paper-based map was re-created in Compendium using the software's visual tools. Thus, icons were used to represent the driving and the restraining forces, for example, as well as the inclusion of the appropriate textual labels that groups had identified. Icon sizes were also adjusted according to the groups' force strength classification. Greater details of the processes involved, such as the use of facilitation and the construction of the Compendium maps, are given in Okada et al (2010).

The Sense Making Process using Force field Maps

During the workshops each group used a different approach to what was, ostensibly, the same task. Some groups started by brainstorming their ideas, bringing in and discussing as many key issues as possible followed by recording both the driving and restraining forces of the change scenario. How these discussions were initially recorded within the groups varied. Some group members made notes or lists whilst

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[11]

http://labspace.open.ac.uk/file.php/4341/kmap/1226932028/Seminar%201%20Knowledge%20map.html

[12] http://compendium.open.ac.uk/

others attempted to draw their diagram straight away, recording the driving and restraining forces directly onto the large piece of paper. The diagram (and resulting knowledge map) produced by the Open University of the Netherlands can be seen in Figure 2, with further examples in Figures 3-4. It is a good example of how such details have been recorded on paper, as a diagram, as well as an illustration of how such information can then be represented as a Compendium knowledge map.
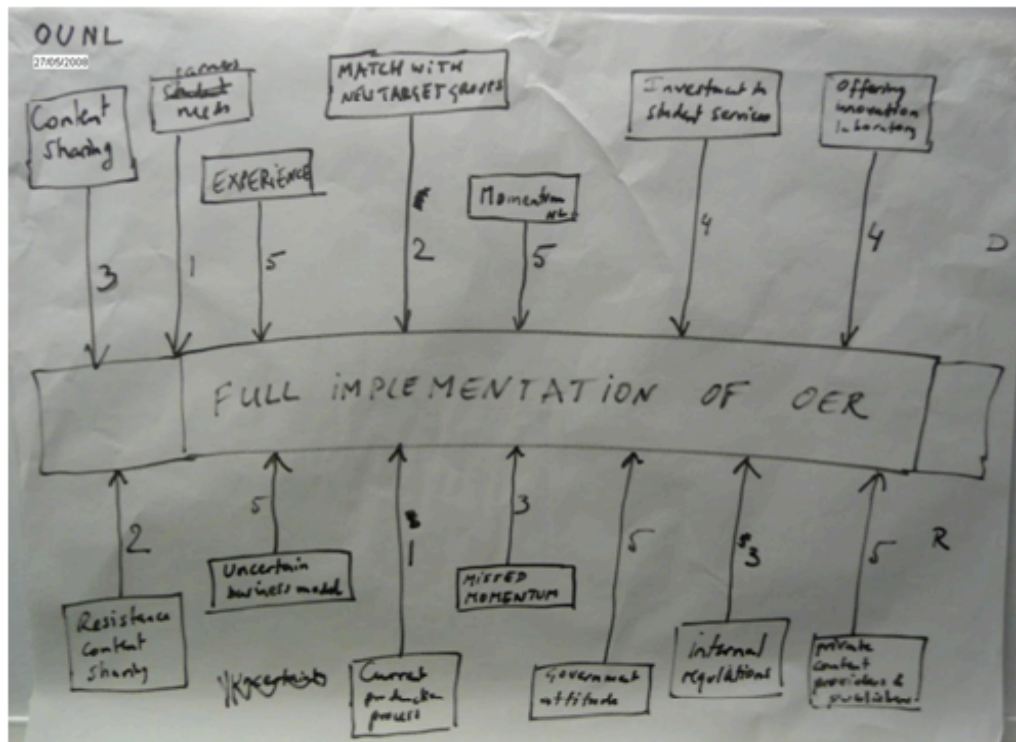

Figure 2: The original Open Universiteit Nederland paper-based map alongside the Compendium Version[13]

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[13]

http://labspace.open.ac.uk/file.php/4341/kmap/1226932028/Seminar%201%20Knowledge%20map.html
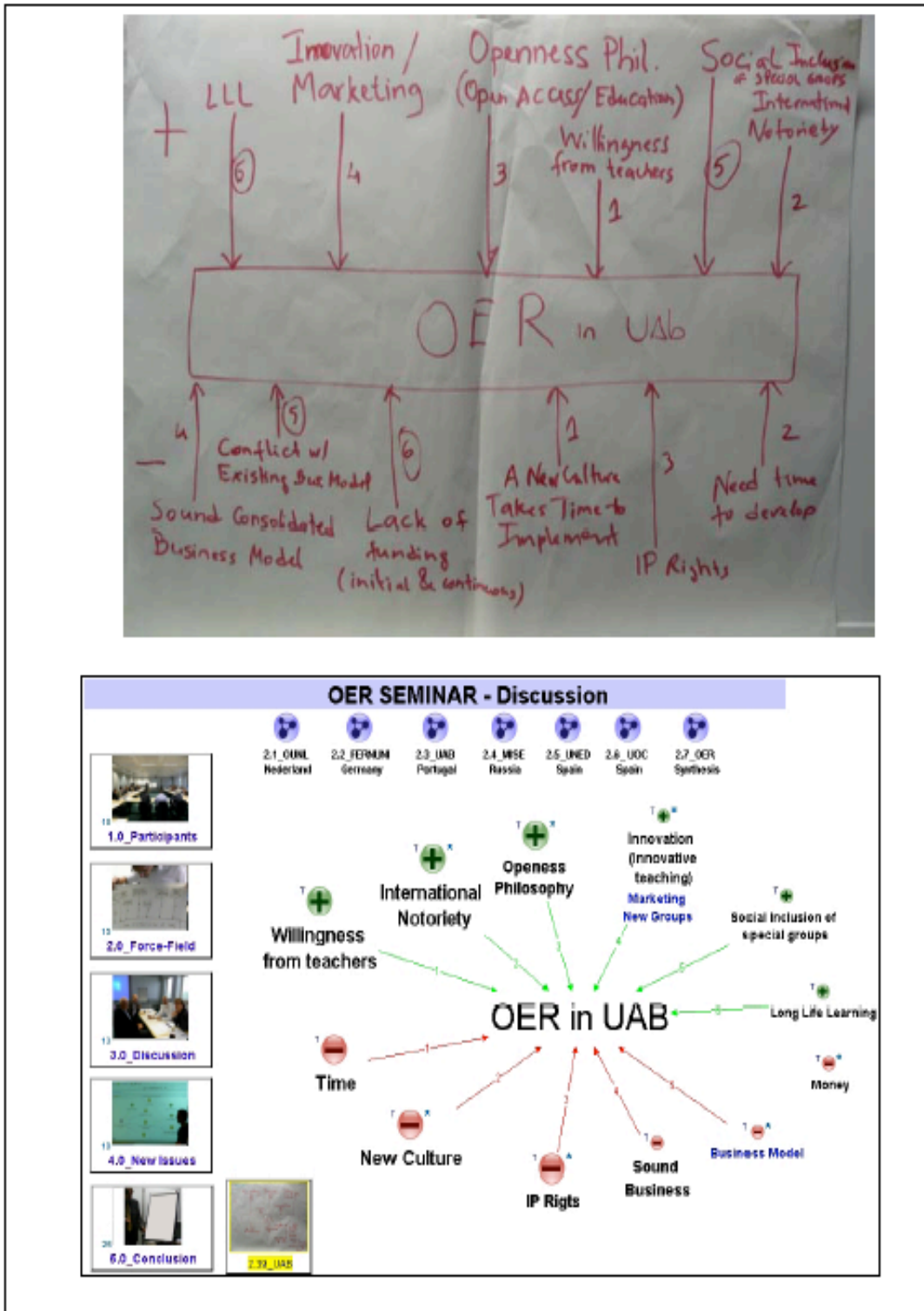
Figure 3: The original Universidade Aberta paper-based map alongside a Compendium version[14]

14

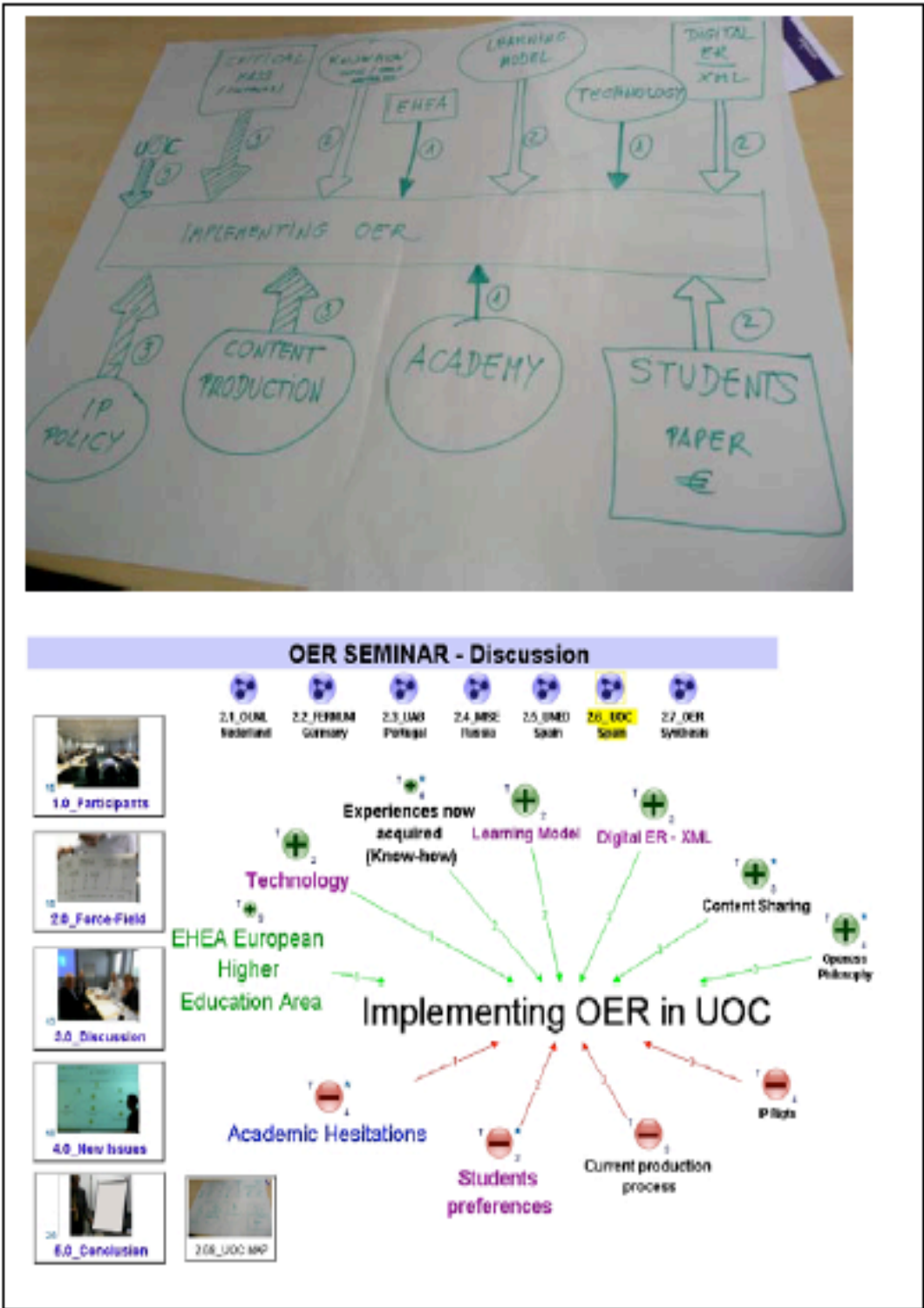http://labspace.open.ac.uk/file.php/4341/kmap/1226932028/Seminar%201%20Knowledge%20map.html

Figure 4: The original Open University of Catalonia paper-based map alongside the Compendium version[15]

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http://labspace.open.ac.uk/file.php/4341/kmap/1226932028/Seminar%201%20Knowledge%20map.html

Creating a collective synthesis and overview

As well as the individual institutional maps a synthesis map to capture the collective sense making between groups was also created. Initially this was drawn by the workshop facilitator on a flip chart in the presence of, and with contributions from, all the participants and both summarized the outcomes of the paper based-maps as well as the resultant discussions. Later, this paper-based map was re-created in Compendium (Figure 5) thus allowing for further enhancements made possible by the software tools. For instance, one of the advantages of using Compendium is that the software tool automatically registers the number of times that an icon appears in other maps and also in what map. This process of combining different group's overviews can be faster and more precise than compiling the information manually.
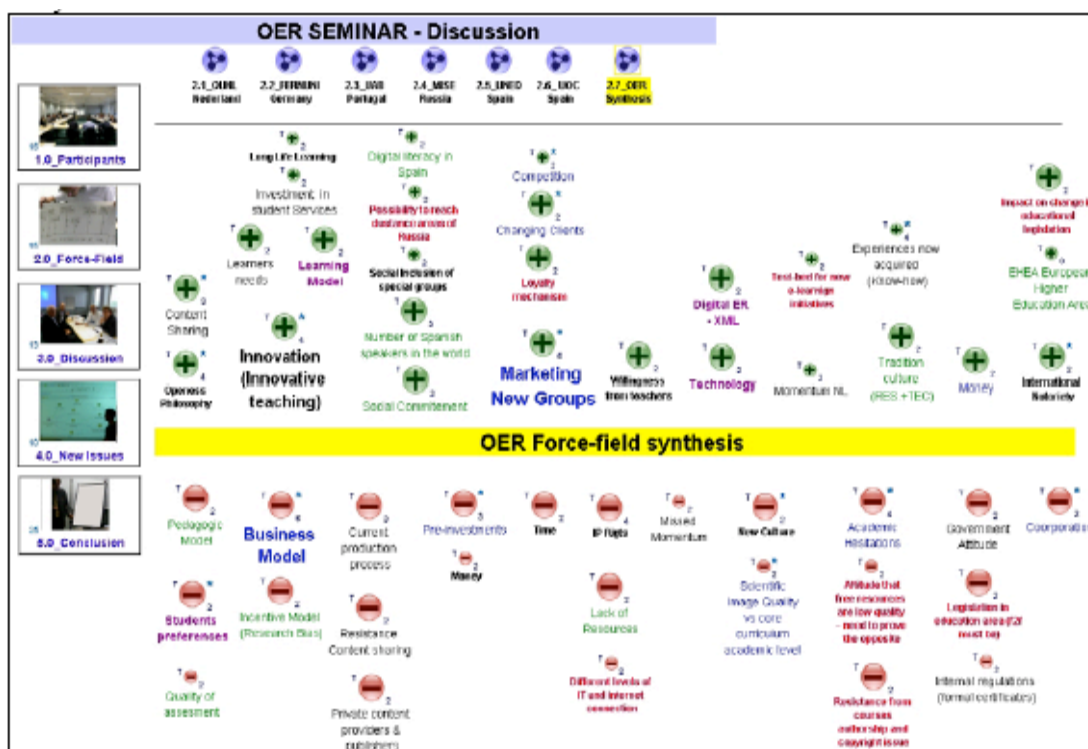

Figure 5: The Compendium based synthesis map of the forces driving and constraining institutions' OER implementation strategies[16]

The Compendium-based synthesis map shown in Figure 5 represents the thoughts of all the separate institutional contributions It indicates that Marketing, Innovation in Teaching and Business Models are the most common forces driving OER implementation, the first two as driving forces, the latter as a constraining force. It is also possible to identify other forces that support these major OER drivers, for example, that competition can often be behind marketing in order to reach new groups. This outcome fits in with other findings from the literature but it is still interesting to note that while there were these similarities between the views of the participants from the different institutions, there were many differences and particularities that related to the specific contexts and activities of the different institutions. While not unexpected, it highlights how important it is for institutions to work through their own strategies against their own priorities and use the structured

[16]

http://labspace.open.ac.uk/file.php/4341/kmap/1226932028/Seminar%201%20Knowledge%20map.html

findings and thoughts of others as guides for that consideration, and that visual mapping provides a useful technique for focussing and capturing this type of analysis.

However, to add to the collective analysis, after a consensus was reached for the most significant forces around OER production and use through the synthesis map, the MORIL participants, in six groups, started to discuss key issues and strategies related to these forces. This furthered the process of sense making in terms of combining and integrating the ideas of each group leading to a general overview of the project's aims: the determination of how OER can be developed and disseminated effectively and efficiently, building upon existing knowledge and experience. This was also manifested in the generation of three keys questions related to these aims:

1. What effects do OER have on our business models?
2. How do OER change our methods and models for teaching (and learning)?
3. What are the new markets and audiences made possible by OER?

And these have continued to be the questions guiding the work of EADTU around OER (Dorp and Lane, 2010).

Conclusions

Open educational resources are here to stay. The impacts they will have on educational systems is still unclear. For higher educational institutions there is growing evidence that publishing OER has promotional benefits in that the institutions gains a new and varied profile that influences students, prospective students and partners. It is also fostering collective and individual considerations about the teaching and learning policies and practices of those institutions. Appropriate and widespread business models for sustaining OER have yet to emerge but national and regional policy makers are beginning to acknowledge and fund the development and use of OER in the expectation that it will increase and improve educational systems they have responsibility for. The experiences of the MORIL project is that visual mapping can provide a valuable way for making sense of the strategic opportunities that OER might provide for an institution alone and collectively (Okada et al, 2010).

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