Sustainability Strategy

DEV 7.1

*Blending Academic and Entrepreneurial Knowledge
in Technology enhanced learning – BAEKTEL*

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**Blending Academic and Entrepreneurial Knowledge
in Technology Enhanced Learning**

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DEV 7.1

Sustainability strategy and Action plan

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Organization name of lead participant for this deliverable:
University of Niš (UNI)

1 Analysis of sustainability for BAEKTEL strategy

The main purpose of this report is to define BAEKTEL sustainability strategy and action plan, where 'strategy' means a long term approach, based on a shared vision, to achieve defined outcomes. This strategy must be followed by a 'policy' that provides guidance, a framework, or set of principles that determine decisions, actions, and other matters. A 'plan' is defined as a detailed document that sets out the intended method of progressing from current situation to achievement of one or more desired outcomes (objectives or goals), with a sequence of measurable steps.

The application for BAEKTEL project included a commitment to prepare a report on the sustainability of the principal goals of the project.

The European Commission (in 2006) defines sustainability thus:

> "*A project is sustainable when it continues to deliver benefits to the project beneficiaries and/or other constituencies for an extended period after the Commission's financial assistance has been terminated.*"

In general, the factors that ensure or hinder the sustainability of TEMPUS projects can be classified in two categories: (i) context-level factors, i.e. elements external to the project itself but that influence its future in some way, and (ii) project-level factors, i.e. elements of the project which can be directly influenced.

At the project level, the factors that can be identified are:

- quality of project's design in meeting academic and professional needs;
- (real) involvement of consortium members: sense of ownership and motivation;
- effective management and leadership, e.g. quality of management structure needed for development and implementation of defined goals and tasks.

There are four main tasks or more precisely four sets of activities, which should be realized within the BAEKTEL project:

- establishing a framework for OER development in WB PC,
- developing of BAEKTEL infrastructure,
- developing of initial domain specific OER content repositories, and
- establishing a broader regional Balkan OER network (BOER) as a formal part of the larger OER community.

BAEKTEL project is focused, first of all, on fostering active learning and better motivation through implementation of OER in the teaching process with the aim of reinforcing the knowledge of university students and providing life-long learning opportunities to employees. At the same time, this project is focused on:

- fostering partnerships between higher education institutions and enterprises by blending academic and entrepreneurial knowledge,
- developing and implementation of an OER network,

- publishing course materials prepared by HE institutions, and
- collecting and publishing best practice examples prepared by enterprise experts, where the materials will be published in different languages, ultimately promoting the concepts of life-long learning and virtual mobility.

The expected outputs of BAEKTEL project are:

- deep and useful analysis of OER principles and practice, as well as policy level documents of OER in EU higher education institutions;
- procedures and guidelines for publishing OER in WB and the conceptual model of the ICT solution;
- individual BAEKTEL nodes in WB PC and a common BAEKTEL portal with multilingual terminological resources & services;
- established and implemented BOER network as a formal part of the larger OER community;
- life-long learning opportunities for employees in enterprises;
- virtual mobility of students within regional universities or through BOER.

It should be emphasized that due to rapid technological development in some areas, academic curricula for students in such areas become rather quickly outdated in some of their features. One possibility to integrate the knowledge generated by technological development into academic programs would be to renew the curricula in ever shortening intervals, which is increasingly harder to achieve due to procedural reasons. Thus often knowledge offered by academic programs lags after expert knowledge available in large enterprises. Current information technologies offer another, alternative approach to solving this problem by blending academic and entrepreneurial knowledge within the open courseware paradigm, and what is more generally known as technology enhanced learning.

Starting from these facts and assumptions, the BAEKTEL platform would make OER materials freely available to anyone, anytime via the internet. BAEKTEL could thus provide educational support at all levels from preparations of university admission exams, additional students education, workplace education and life-long learning, to integration of creative research potential with industry and government institutions for the purpose of achieving better quality and accessibility of education by applying new technologies. OER learners from universities would be able to watch the lectures at their own pace and to better prepare themselves for class. Even more, OER learners from both universities and industry could follow courses to fill in the gaps in their knowledge and become familiar with new knowledge and technologies.

Sustainability by definition is not static in its nature, i.e. sustainability is not an unchanging state. This reflects the need for sustainable project outputs to continue developing and adapting. In that sense, special attention should be paid to the next planned objectives:

1.1 EXP 7.1: Sustainability strategy and committees for BAEKTEL

It was defined that the sustainability strategy for BAEKTEL and employer/student support committees will be created with the main task to help secure continuous OER learner inflow. Although this activity is mainly focused on partner universities, some form of agreement will

also be made with labor market partners, to secure the sustainability of academic-entrepreneurial cooperation and expert consultation.

1.2 EXP 7.2: Capacity for continuous inflow of resources

It was defined that at every institution a committee will be formed whose members will be devoted to provide training, technical and organizational support and to ensure continuous inflow of adequate OER.

1.3 EXP 7.3: Start-up initiative for WB OER network – BOER

It was defined that start-up initiative for a broader regional Balkan OER network – BOER will be a next step in the process of interconnecting and sharing of OER and best practices for its implementation and development with other Balkan countries and their universities, thus promoting virtual mobility of students. It will be presented by all partners through seminars and conferences in a number of most important universities from where this initiative should spread through the entire Balkan academic community.

The BAEKTEL (general) strategy is already defined through planned project goals, activities and expected outcomes. In that sense, the main goal will be to summarize the current state of development of sustainability strategy and create an appropriate action plan, including e.g. the possibility to implement it within the national higher education system. However, sustainability of the BAEKTEL project depends also on successful realization of other work packages, especially the DEV work packages, which are the basic prerequisites for project sustainability.

The activity "*Analysis and review of Open Educational Resources principles and practice* (WP.1)" was very important with the respect to broader insight on OER's as well as already applied methodology for their introduction and implementation within higher education systems. Activities within WP.1 offered a state-of-the-art analysis of relevant OER approaches, as well as of related policies, practices, legal and administrative regulations at regional and EU universities. Even more, since the main premise of this project is to design OER in cooperation with enterprises, special attention was paid to regional labor market needs for OER content with strong involvement of non-academic partners and recently graduated students.

It should be noted that the experience that EU universities already have in offering and running e-learning and distance learning projects are of great importance for development and implementation of OER at the WB partner universities. Therefore EU partners must take active roles in all project work packages.

The activity "*Establishing a framework for OER development in WB PC* (WP.2)" was successfully realized through establishing the framework for OER development in WB PC, but also by defining procedures and guidelines for publishing OER content, producing the conceptual design of the ICT solution and preparing the necessary ICT infrastructure.

The activity "*Development of BAEKTEL infrastructure* (WP.3)" was realized through the necessary capacity building at the partner universities for successful publishing of OER content. The capacity building includes provision of human resource capacities, facilities, and operational capacities alike. The efficient and high quality results realized through previous

mentioned activities were prerequisites for successful implementation of this and the following WP's.

Note that from sustainability point of view project partners from the labor market (NIS and AMP) with their vast professional experience, together with academic partners, should have the crucial role in giving support for development of multilingual resources (in DEV3), as well as in defining the OER content (in the framework of DEV4). In addition to that, the labor market partners will have a significant role in dissemination activities too.

It should be noted that the synchronization of most activities within mentioned WP's is already done, which was a crucial task from the perspective of sustainability of the BAEKTEL project. Some of the results realized up to now are very important: selection of the edX platform, development of the methodology for creating OER's (also in video and audio formats) and a common methodology for generating metadata. All these results (especially the BAEKTEL platform) suggest that most of conditions for BAEKTEL sustainability are already fulfilled.

BAEKTEL platform will enable higher education institutions to publish their course materials. With respect to sustainability this platform must be highly flexible for various forms of course materials (video and audio lectures, course materials, thematic content), without restrictions regarding the domain the content comes from. It is understood that the platform will be initially filled by OER content pertaining to specific areas of expertise of consortium members.

Progress in information and communication technologies has changed the educational context, both in traditional (planning, preparation and realization of education processes), as well as in blended and distance learning. Due to these transformations, in recent years education and training issues have been attracting more and more interest from researchers around the world. Educational resources, such as OER's, have been more and more used in education and training context. Following this trend, OER's have emerged as a tool to assist in the teaching and learning processes in general. Their free and open distribution especially contributes to more applicable dissemination of knowledge and facilitates access to all kinds of information.

Since the main goal of BAEKTEL strategy is the creation of conditions and environment for generating blending academic and entrepreneurial knowledge by applying technology enhanced learning methodology, long-term creating and publishing of OER contents in close cooperation with partners from the entrepreneurial sector must be unconditionally implemented. It can be realized through more active cooperation between academia and industry, from which both sides would benefit. To make this happen one needs to initiate intensive promotion of the importance of OER's as freely accessible licensed documents that can be useful not only for teaching, learning and education in general, but also for research purposes and industrial practice.

It must be noted that a problem of creation of OER materials by partners from industry is present due to their lack of motivation to be engaged more intensively. In order to eliminate the mentioned problem some kind of support to them (from people from higher education institutions) should be organized in developing educational resources by, for example,

development of exemplary courses which could be attractive to industrial partners and show them practically what the content should look like.

Bearing in mind the European program of fostering the quality of education, innovative learning environments and new learning methods based on new technologies and on digital contents, the importance of OER's has to be analyzed in a broader sense, as well as the possibility of introducing OER's in higher education institutions' regulations. The possibilities offered by the BAEKTEL platform whose mission is to establish a new framework for the implementation of technology enhanced learning should also be analyzed. Based on these analyzes, and starting from the existing criteria for promotion of teachers at WB universities, a new model introducing additional conditions for the position of teacher through the obligation of preparation and implementation of a number of OER's (according to position: assistant professor, associate professor, full professor) on BAEKTEL or a similar platform can be proposed.

From the point of sustainability the mobility strategy should be enhanced through initiating the development of a broader regional BOER, in order to connect and share OER content and best practices with WB partner's universities. Therefore, the ultimate goal would be to make the BAEKTEL/BOER network a formal part of the larger OER community, which is expected by the end of BAEKTEL project and after that. Note that the network can be enlarged and may also diversify into other related activities that will be advantageous to partners universities as a whole.

For the sustainability of the BAEKTEL project it is necessary to ensure its financial independence which can provide, but also enhance financial strength and stability after the end of the project. In that sense, important activity should be the development of financial management capacity of organizations (HEI's and/or others, such as governmental or even local) which will/can continue to deliver financial support. Taking into account European funding and that the EU is continuing their support within the Erasmus+ programme (2014-2020), BAEKTEL sustainability can be also provided by funding through this programme. Without that, the project with its results and deliverables will be a short-term supported system only. At the same time, as one of sustainability activities, strategies for reducing dependency on donor funds and project oriented financial management systems should be considered.

2 BAEKTEL Action Plan

Taking above mentioned BAEKTEL goals and tasks (strategy) as well as project sustainability, the following set of activities defined as the Action plan should be realized:

1. ascertain if there are challenges and/or barriers in OER development, and the help that can be provided;
2. promote identified existing good practice with OER's in higher education sector;
3. gather and/or compare examples of similar strategies from the higher education sector;
4. adopt new higher education standards for new educational era based on OER's;

5. reinforce the importance of advanced teaching methodology on sustainable practices, highlighting higher education standards and performance, and their influence on the higher education system;

6. develop and propose new (or modified) criteria for the position of teachers at WB universities, maybe as an extension of the existing conditions with one more (necessary) condition that can be defined according to teaching position, where the new conditions could be as follows:
- for assistant professor at least one OER is required, except in the case of the first appointment to teaching position;
- for associate professor at least two OER's are required in the last five years;
- for full professor at least three OER's are required in the last five years;

7. define priorities for the management within BAEKTEL to be sustainable;

8. initiate or identify growing response of higher education institutions to the labor market partners for long-term cooperation (through signing formal agreements between institutions);

9. offer fully developed courses in any of the aforementioned areas (some existing courses from the partner universities might also be adapted to become part of the OER content);

10. provide training for relevant members of higher education institutions and enterprises responsible for production of OER materials by qualified OER trainers thus enabling them to initially populate BAEKTEL with resources;

11. envisage a high level of involvement of all partners, where academics will be the ones to carry out the development of the majority of OER content to be published, however, in cooperation with experts from enterprises;

12. produce course materials in various languages, both in video (subtitled in several languages) and audio format and in written form as parallel (multilingual, initially mainly in Serbian and partly in English and Russian) corpora of lessons and texts, supported by electronic terminological resources, services, and functionalities for searching and browsing of terminological resources and using them for text annotation;

13. provide different opportunities for companies to present expert knowledge in various forms, such as case studies, expert presentations on specific topics, demonstrations of software implementation in practice (to university students, future employees, to those getting prepared for professional positions they will occupy in the future);

14. initiate activity for establishing employer/student support committees which should be created with the main task to help secure continuous OER learner inflow, where this activity should mainly be focused on partner universities;

15. develop of a broader regional Balkan OER network with the aim of interconnecting and sharing OER content and best practices with WB partner's universities;

16. present the regional network by all BAEKTEL partners through seminars and conferences in a number of most important universities from where this initiative should spread through the entire Balkan academic community;

17. further develop mentioned network through initiating new activities for its expansion (enlargement) and its possible diversification through other related activities that will be advantageous to WB universities.

18. promote the use and development of OER at the faculty level (to institution, teachers and students);

19. provide services to support formal learning description methods;

20. provide necessary conditions for easy integration of learning content from different sources;

21. improve indexing, retrieving and accessing of OER to be easier for teachers and students;

22. improve existing tools, such as supporting systems for the development, use and delivery of learning content;

23. develop and implement the BAEKTEL backend control panel which would offer the possibility for university teachers to track the progress of their students while using the content, and more importantly to study their learning habits in order to further improve the teaching process;

24. provide through BAEKTEL platform cost effective practical experience for the students implementing software based virtual laboratories for technical and natural sciences;

25. promote the application of intellectual property licenses;

26. improve the system for promotion of the publication and dissemination of the BAEKTEL educational content;

27. due to sustainability reason all participating universities from the region should
- be committed to establish stronger relations among themselves and provide opportunities for mobility of their students and teachers,
- initiate activities in direction of developing and strengthening relations with large regional enterprises, which are at the same time potential employers of their students;

28. provide on time the necessary advice, guidance, and external quality assurance in the project (the universities from EU associated with this project);

29. work on the development of sub-action plans (individual university action plans) and methodologies to create and apply OER at individual faculty level.