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Manual for a Collaborative European Virtual University

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Introduction

This manual provides an overview of outcomes of the cEVU project, structured into three parts:

1. Policies, models and joint working practices
2. Requirements, recommendations and guidelines for participating institutions and for the transition from small scale experimentation to full deployment
3. Elements for a business plan.

This manual does not replace the full texts of the Reports of Working Groups on which it is based; links to these Reports are given in the text and should be read by those who are particularly interested in the content of one or more topics of the manual.

The manual focuses on collaborative European Virtual Universities, as one format of transnational virtual higher education. The Reports go often beyond that, paying attention to more general aspects of networking, of e-learning (or ICT in education) and even on the relation between physical and virtual mobility and its implications. Also therefore it may be recommended to have a look into the Reports.

The cEVU project wanted to study why a collaborative European Virtual Education would be beneficial to universities, how it should be structured and operate, and what should be put in place to create it. It used existing information, gathered in former studies, projects and concrete experiences within the participating networks and partner universities. The results provide some answers, but also often it put questions for further research. However, we are confident that sufficient insights have been collected to hopefully start "our" cEVU, with a number of the partners of the project.

I am grateful for the work and the dedication of so many people – teachers, students, administrators and technicians; in universities and in the participating networks – that it is impossible to name them all. We have learned a lot together, got valuable findings and experienced the potential and benefits of collaboration. While sharing this information, we hope that it may also be beneficial to you.

Leuven, 31st January 2004

Jef Van den Branden,
Project-coordinator

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1. Policies, models and joint working practices

The expressed viewpoints are the result of critical consideration by project partners of existing documents that were produced in research, studies and other projects, as well as results of direct investigation of cEVU project partner institutions.

Although it was the ultimate goal of the cEVU project to study the various aspects of "our" collaborative European Virtual University, to investigate its feasibility and conditions, and if possible come with first drafts of a blueprint, doing so implied that many options and their consequences had to be considered. In different settings and combinations, these options may lead to various cEVUs, which are very distinct from each other.

For more detailed information as well as references, the Report of the cEVU Policies Working Group should be consulted.

1. e-Learning and institutional change: evolution or revolution ?

ICT in education has been put forward during the June 2000 Lisbon Summit of the European Union as a key factor of the Union's overall strategy towards digitalisation and global competitiveness, and both Higher Education and the European Commission have identified e-learning as an essential strategic element, especially to further stimulate and enable learning in a lifelong learning context and to support the development of European citizenship.

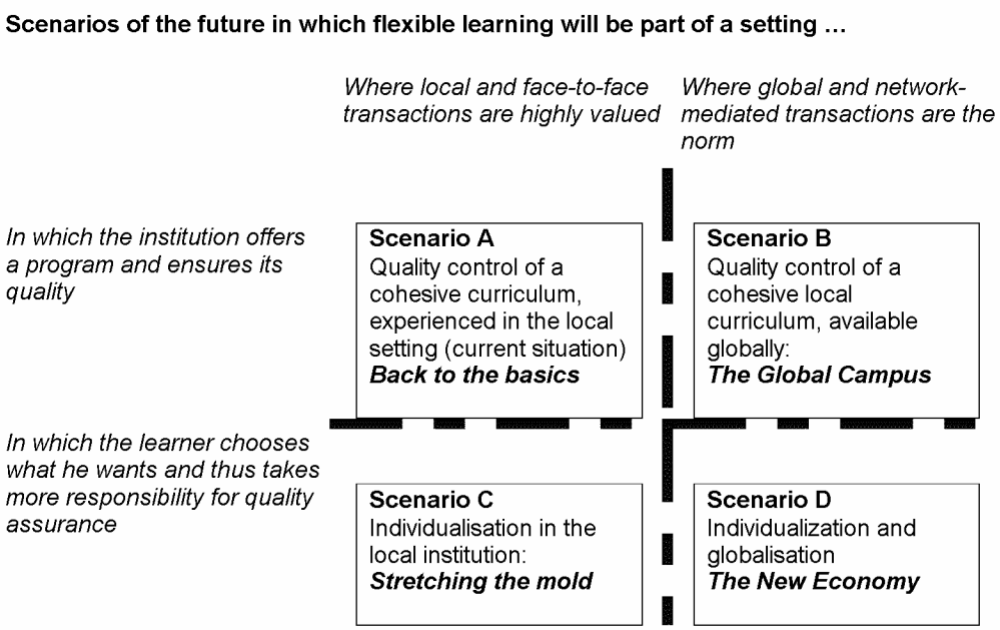
CRE concluded already in a study of 1996 (further elaborated in 1998) that information and communication technologies (ICT) constitute one of the challenges of universities and the use of *ICT in education* has to be considered as a *strategic* element to provide an effective response by universities to the various other challenges they are confronted with.

The HECTIC report identified a great number of these challenges and change requirements which university leaders will have to address.

If ICT use in education is at the same time a major challenge for universities (as part of a broader use of ICT in the institution) as well as a strategic element for coping with the many other challenges with which universities are confronted, it must be asked how such use should be introduced: as an evolution of the existing education or as a revolution that redesigns university education from scratch. In the first approach, ICT does not change the existing setting of education but provides added value by enabling the increase of the quality of education, supporting the shift from teachers to learners as locus of control on learning, favouring communication between the actors in the learning and teaching process, providing easy access to larger learning and teaching resources, extending the educational objectives with new competences, etc. In the second approach, university education itself is questioned in its goals, the pathways to reach these goals, the means that can/should be mobilised, the relations between actors, etc.

1.1. CHEPS

As a result of an international comparative survey carried out by CHEPS, four scenarios were identified that predict the future of flexible learning through ICT use in higher education:



Scenario A: **Back to Basics** is the current dominant situation for many traditional higher education institutions. It is however the case that many universities are starting to experiment with distance participation in their established programmes. This could lead to

Scenario B: The **Global Campus**.

Scenario C: **Stretching the Mould** relates to increased flexibility with or without changing the underlying pedagogical model within the institution. Many traditional universities are now moving toward some format of this scenario, by offering more flexibility for participation within their pre-set programmes.

Scenario D: The **New Economy** is the most radical scenario; examples of this scenario are not available today, although it is increasingly considered as the direction for the future.

As major outcome of this study, it is concluded that the evolutionary approach scenario "Stretching the mould" (opposite to a revolutionary approach of which the New Economy scenario is an example) is the most likely to happen. Characteristics of this Stretching the mould scenario are:

- Change is slow, and not radical. The slogan is "business as usual" (main educational activities on-campus, but – as a process of change from within – institutions are gradually and usually slowly changing their procedures and models.
- ICT in teaching and learning is widespread, but remains part of a blend in which lectures still are dominant.
- Instructors are gradually doing more with flexible learning, but with no reward nor incentives.
- With regard to international comparisons, the countries are more alike than different

1.2. cEVU partners and their institutional viewpoints[1]

The CHEPS main conclusions are largely confirmed in an investigation of institutions that was carried out during the cEVU project:

- e-learning is mainly used as part of a blend for on campus teaching and the impact of e-learning on university teaching is consequently limited
- most universities proclaim to have a policy on e-learning but no strategy to implement it: implementation is left to faculties/departments, with considerable differences within the university as a consequence
- infrastructure is mostly in place

The investigation revealed also that

- networking is part of the e-learning policy of most institutions, but that transnational networking is suffering from the fact that institutions are nationally funded
- virtual student mobility bears the interest of all universities for various activities:
  - it can be used to virtually "attend" preparatory or follow-up courses, connected to the ones that will be taken during physical mobility,
  - it would enable the student to virtually attend courses at the home university that are scheduled during the stay abroad,
  - it could provide access to interesting courses that are not available in the own university as e.g. elective course within the student's curriculum

2. Motivation and aims for a cEVU

2.1. Bologna and cEVU

This institutional interest in networking, and especially in virtual student mobility coincides with the aims of the Bologna process, which is to create a **European Higher Education Area (EHEA)** with the following objectives:

- facilitation of interuniversity mobility,
- promotion of the co-operation between universities,
- increasing employability through scientific and professional competency building in a lifelong learning context,
- enhancing competitiveness and attractiveness of European Higher Education.

It is obvious that objectives of the EHEA can be supported by a cEVU:

- its virtual mobility schemes will extend and complement the physical mobility;
- it will promote interuniversity and cross-border co-operation through joint development of courses and materials, sharing and exchange of courses and learning and teaching materials;
- its distance learning offers will facilitate scientific and professional competency in a lifelong learning context;
- it may enhance sound competition between institutions and thus contribute to the competitiveness and attractiveness of its educational partners.

[1] The expressed viewpoints may not reflect the average situation of European universities, as most of the cEVU partner universities can be considered as forerunners with respect to the use of e-learning in education.

The Bologna process can in other words be a powerful lever to develop cEVU(s). It is however at the same time also a hindering factor for the development of such cEVU (and a EvirtHEA at its background). The necessary reforms that the Bologna implementation requires at especially the institutional level confront staff and teachers with so much extra work that they lack time for the creation and development of new cEVU-like networks.

This might be at the same time one of the explanations why institutions choose for an evolutionary approach instead of a revolutionary one: when the actual Bologna process brings already that much extra work without changing the basics of university education, what to expect from a revolutionary approach?

To avoid overload within the actual Bologna process, but at the same time further develop the named advantages of a cEVU and especially to co-ordinate actions between various instances of cEVUs (plural), a **European virtual Higher Education Area (EvirtHEA)** should be created that deals with the specificity of virtual instruction and learning, making EHEA and EvirtHEA complementary and – as far as possible – transparent for the users (teachers, students, lifelong learners, staff).

Nevertheless, considering the attitude within universities, the expansion of cEVUs and the development of their full potential will probably come after "Bologna" is set on track; a further – rather spontaneous evolution – may take place within institutions and one or some cEVU(s). This might be considered a loss of time, but evolution is often leading to the same results as revolution, be it over a longer period of time.

2.2. Elaboration of these motives and aims for a cEVU

2.2.1. Internationalisation – virtual mobility

cEVUs can become a powerful instrument for the internationalisation of studies at participating (and in general European) universities, and for realising the ambitions of mobility within Europe expressed in the Bologna declaration by European ministers of education.
Although student mobility is increasing, not every student will be able to spend a part of his or her studies at another European university. By distance learning, however, students can take part in courses at all of the other universities in the partnership without leaving their home university. Conversely, exchange students can keep in touch with their home university, and even take courses at home, while studying abroad. As it was already indicated above, this virtual mobility can also prepare and follow-up physical mobility to enrich the latter and make it more effective and fruitful. More over, such virtual campus will also enable flexible combinations of rather traditional distance learning and technology supported presence learning (e.g. through videoconferences).

2.2.2. Transnational knowledge pool for top expertise

A cEVU can facilitate 'virtual mobility' not only for students, but also for teachers. It is slowly becoming excepted that the concept of a university as an academic surrounding in which outstanding experts in all domains of science and technology are collected within a single institution (the ultimate goal of all larger universities), is no longer possible. Providing (direct) access to top expertise for researchers, students and teachers will only possible in the future when top specialists in various disciplines pool and provide expert knowledge as support for academic teachers, researchers and students. Having direct access to such knowledge pool(s), including the access to their

providers, will enrich the working environment of the academic communities of Europe and contribute to Europe's position in a competitive global market.

Where such collaboration is to be found already in research environments, it is not present yet for educational purposes, as it conflicts with the traditional attitude of teachers suffering from the "not invented here" syndrome as a powerful measure for evaluating quality.

2.2.3. Sharing and joint development of educational materials

A typical phenomenon of universities is that each teacher develops the own (lectured) courses. Collaboration between teachers that lecture the same subject (e.g. in different faculties) is still more an exception than the rule. Although this kind of "duplication" can and is defended with pedagogical arguments (the course should be adapted to the curriculum in which it functions and to the characteristics of the learners for whom it is intended), from an economical viewpoint it is a waste of effort and means.

Such collaboration *can* even lead to cost reduction as sharing of resources and joint development has the potential to reduce development, production, maintenance (and eventually also delivery) to one entity instead of having this done in each university of the collaborating partnership. Similarly should the sharing of services (eventually in a distributed setting of services by universities for universities) create economies of scale and avoid the necessity that every partner institution has to cater itself for each service.

2.2.4. The European dimension in global learning

One of the most important arguments for a cEVU initiative, is its capability of strengthening and defending the European academic culture. 'Global content providers' (e.g. some large US universities, as well as commercial providers) tend to flood the market with pre-packed courses. There is a need for counterbalancing forces, building on and defending the European academic culture.

2.2.5. Broadening the supply of ODL courses, thus supporting lifelong learning and the transition from Bachelor to Master degrees

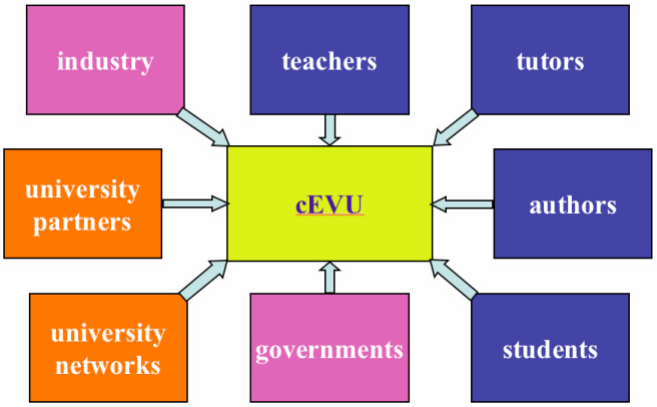
At a growing number of universities there are already a number of (open and) distance learning courses available on the web, and as universities are developing such e-learning courses for their on campus students, they will increasingly become also available for distance learners. But the supply could be considerably enlarged within a given institution if similar courses could be exchanged between partner institutions to make them available to students (e.g. as elective courses) on the same conditions as comparable courses from their home university. It can even be thought of to develop through this collaboration preparatory packs that enables access to e.g. Master degrees for holders of non university Bachelor degrees or for an easier shift to a Master degree that has not been prepared by an appropriate Bachelor's one.

2.2.6. Commercial delivery

The cEVU collaborative environment could also be regarded as a gateway for the commercial marketing and delivery of university courses to paying clients, e.g. employers who need to update the skills and the knowledge of their staff, or even individual students from countries outside the European Union.

3. Target group and stakeholders for a cEVU

In what has been said so far and in what will be said further on, the impression may be given that the main stakeholders of cEVUs are higher education institutions. As in all education-oriented activity, the final target group of a cEVU are students, learners. However, the stakeholders include a wider group, as represented in the following figure (in which governments ultimately represent the society at large):



The importance of these stakeholders will vary according to the various issues that are addressed: on the policy level these will be primarily the universities, university networks, local/national governments and European Union/European Commission; with respect to pedagogy the focus is rather on students and teachers; for technical aspects about all the named stakeholders play a more or less essential role; etc.

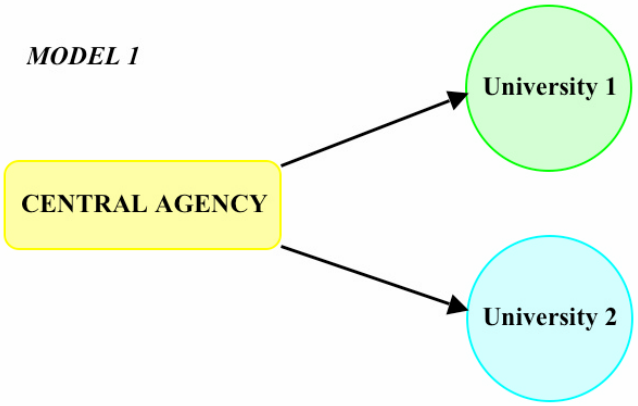
Stakeholders are consequently not only "consumers" of a cEVU, but act often in the double role of provider as well as receiver. Students for instance receive not only instructional materials but create these also in a technological environment (by taking up roles that are conventionally assigned to teachers and tutors, by finding and communicating additional learning resources), and similarly some services can be shared by the collaborating institutions with each other.

4. Models and scenarios for a cEVU

Models and scenarios for a cEVU depend on the willingness of university partners to limit or extend their collaboration, and on the underlying level of autonomy that each partner wants to maintain or wants to hand in to a central agency. Several models can be proposed.

In the following figures the models are simplified for easy understanding: the two depicted universities represent in fact a larger number of institutions that are involved in the collaboration. The cEVU is constituted by the ensemble of a Central Agency and the participating universities.

4.1. Model 1. Collective venture with centralised action: a European University

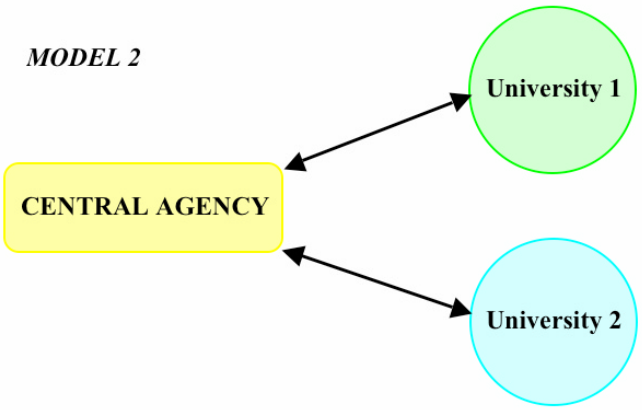


In a first model of collaboration the network should be seen as a collective venture of the participating institutions. The Central Agency plays a dominant role: it takes the initiative for course development, registers (through the participating universities) the students, offers the courses (even full programmes), awards the credits (and eventually certificates) and monitors the activities of student support. Each participating institution retains its own identity and may have its own offer next to the one that is provided through the network collaboration. Students stay in a transparent way at "their" universities, take courses through their university from the Central Agency but have no direct contacts with it. Commercial exploitation through the Central Agency is possible and will be aimed at the outside world by offering courses to external students (especially the corporate world) or selling web based courses to non partner universities and use the "European University" as a brand to appeal to potential students

This model is the most comprehensive and ambitious model, which should offer a range of services and courses, jointly developed and delivered by the participating institutions. It calls for a high commitment on the administrative level as well as on the academic level. Furthermore it needs probably substantial investments in technical facilities as well as in personnel and time. The agency will need a large staff and strong central governance to operate properly.

The model directly takes over a number of functions of the participating universities and implies therefore that these universities hand in (at least part of) their autonomy. While it implies quite some loss of autonomy, it can be doubted that this model has a chance to be accepted on a European level at the moment. It could nevertheless be useful for very specific studies (disciplines) that are jointly created by partner institutions. If created, the organisation of such a European virtual university and its infrastructure will have to evolve gradually.

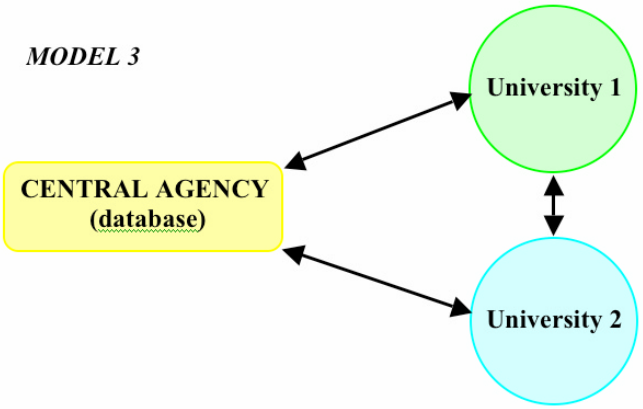
4.2. Model 2. Collective venture with decentralised action: a European partnership



The Central Agency has less influence; it takes less initiative than it does in the former model. The responsibility of courses stays at the universities, the registration and certification also. The universities have more contacts with the Agency than with each other. The relations between the Central Agency and the universities are more bilateral than unilateral like in the first model. Universities offer useful products, which are presented by the Agency to interested partners. To ensure this usability, the products will be more at a modules level than at course or programme level. The Agency takes care of practical issues such as the use of standards (to enable transportability), financial issues, external marketing, maintenance, sustainability of the collaboration. The Agency will consequently need a large central staff to cover all its functions.

The model can be useful in cases were the collective venture is built on a limited number of universities with strong but equal profiles, which want to benefit from synergies and services without engaging in real and intensive networking. Like the former model, it could be useful for the collaboration on specific study programmes based on the input of partners.

4.3. Model 3. Interaction model: a European consortium



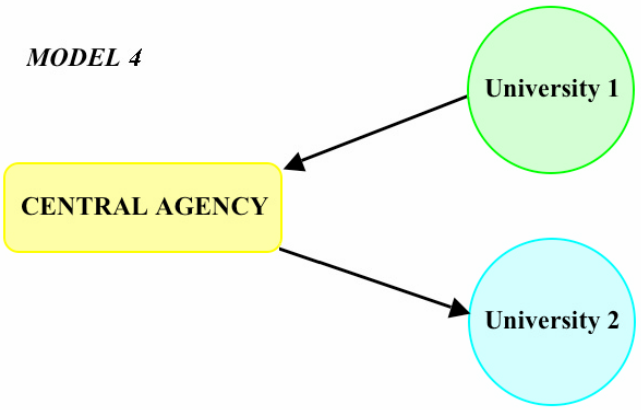
The Central Agency is primarily a repository of materials and know how. It also stimulates the collaboration and supports the exchange between universities. However, the concrete actions are situated at interuniversity level, which means that the

universities keep the initiative and maintain fully their autonomy. The staff of the Central Agency can be limited.

The main objective of this model is to bring academics, policy makers and students together in a virtual environment. The actual outcomes of such model will be highly dependent on the willingness of academics and students to interact (in a social as well as in a scientific/academic way). The focus of the Central Agency should be on streamlining this process, coordinating actions and – as far as demanded – providing services.

This model does not cause any loss of autonomy for the individual institutions, nor does it need excessive investment in the starting phase. However, a real commitment from the central university management of the partners, backed up by a strong commitment from their staff is necessary to give the cEVU credibility and make it operational. Therefore, in this model, the most energy must be spent on accompanying the process of cooperation and the streamlining of interaction.

4.4. Broker Model: a portal site



In this model the cEVU functions mainly as an intermediate Agency between producers and consumers of courses. Collaborating partner universities can be providers and use the agency to market internally their suitable courses to other partners or externally to education institutions and training organisations (including companies). Brokerage of the Central Agency may include delivery services, and even certification services if the providing partner demands so. Although not directly expected, the partners can also be consumers of courses that are externally bought in through actions of the Agency on the partner(s) request.

The model's main advantage is that it can give students (traditional as well as non-traditional) the opportunity to get an easy access to web-based courses of participating universities. It is primarily dependent on the ICT development of the individual institutions, and the synergy created in the network will be less extensive compared to the other models.

In this model the virtual campus should be designed as a portal; it will thus primarily be a technical instrument for access. The model is not directly dependent on institutional commitments for cooperation, it is more reliant on the willingness and ability of the individual teacher to develop web based courses. It will consequently

need limited investments in coordination and process support. The decision about the suitability of courses to fit in the curriculum of the receiving university remains fully with the responsible bodies of that university. In addition, the network can be widened through admittance of universities all across Europe. Access in this model should be open for internal as well as external students.

The four models are not mutually exclusive, and it is quite possible to envisage a successive development from the Broker model to the European University one.

5. Implications of models

The overview of models leads inevitably to the conclusion that Europe will see the establishment of cEVUs of various natures (and even within several of these cEVUs various models may co-exist). The choice for the model(s) will largely depend on the intentions of the collaborating partners, the diversity of cultures and characteristics (size, state of establishment, diversity of education subjects and levels, fame, etc.) of collaborating institutions, previous experiences with collaboration in other contexts, etc.

The choice for one or another model may also be influenced by the implications of some of the models for different aspects connected to the collaboration: technology, pedagogy, governance, IPR, language management, ethical aspects, accreditation, quality, financial issues. An in depth analysis of the impact of models on these aspects (and vice versa) would lead too far, especially while the models themselves are constructs that in reality will not be realised in their pure format. The implications are therefore discussed in general, although their description is influenced by the fact that the working groups of the cEVU project had the creation of an "own" cEVU in mind. This cEVU wants to start with a consortium model (model 3), using for practical reasons a portal as virtual campus (and maybe even some to the brokerage functions of model 4) and maybe even the practical arrangements of the partnership approach of model 2 for specific study programmes.

5.1. Technology[2]

Since the first digital platforms were developed, an important shift has taken place from "technicality" to "functionality", in better agreement with pedagogical insights, and pushing towards openness and flexibility. Whereas till recently an e-learning platform was understood as only an LMS platform, two kinds of platform are needed, an LMS and an LCMS (eventually integrated into one single authoring/learning platform):

- The Learning Management System LMS, which is in charge of managing the education and especially the learners and teachers, the material and digital means they need, the planning and communication tools, and the follow up of the training;
- The Learning Contents Management System LCMS, which is in charge of managing the contents, and especially their specification, production, publication, maintenance and reuse.

Communication protocols need to be standardised to guarantee that LMS and LCMS can communicate.

[2] For a more detailed study of technological aspects, see the Report of the Working Group on digital platforms

Learning materials have to be developed and structured in such a way that regular maintenance is possible and that the reusability of these materials is optimal. In a collaborative virtual university, the various collaborating institutions will use different digital platforms, which enhance the need for contents that are made and even designed in a standardised way. The digital platforms in use at the different universities need, in view of the collaboration between them, to respond to technical standardisation and interoperability.Educational contents are always put in a format; more precisely in a technological format as well as in a pedagogical format. Also these formats will show heterogeneity:

- Heterogeneity of technological format means that some will be made in HTML (some for Internet Explorer, some for Netscape or others), others are in PDF, Macromedia Flash, Microsoft Word or PowerPoint, etc.
- Heterogeneity of pedagogical format means that some are used to provide expositive courses, others are uses to provide more active or constructivist pedagogy, some full distance learning, other mixed distance and on attendance courses, etc.

Forcing to a standardisation at this level is not feasible. From a technical viewpoint, solutions can be found by dissociation of the storage format from the publishing formats, and to set up software tools that automatically transform content from their storage format to one or more publishing formats. A universal storage format such as XML then offers the solution.
The pedagogical format is less classifiable, but also here are candidates that are flexibly enough to describe pedagogical characteristics and thus enable transferability. Examples are SCORM, EML, PS/LU.

5.2. Pedagogy

Current developments of online pedagogy in the field of net-based teaching and learning show a fragmented and heterogeneous picture. This heterogeneity not only exists in technologies and their embedment into different organisational structures. It also applies to implicit respectively explicit educational conceptions that are in use in universities (and even in faculties/departments within universities).

There are no uniform, coherent educational theories, models or concepts. It is nonetheless possible to distinguish some consensus on what could be called "educational beliefs" or even better "educational options": basic pedagogical principles that offer an understanding and solid fundament for intensifying the cooperation. Examples of such educational options are:
1.shift from teaching to learning
2.student - centred approach
3.construction of learning environments and learning advice
4.active learning and learning strategies
5.self-organised and self-directed learning
6.competences
7.interactive and collaborative learning
8.international communication
9.authentic situated learning
10.problem-oriented, case-oriented and guided enquiry-oriented learning

If these educational options are taken as leading principals, it is not useful to construct pedagogical models as prerequisites for the design of learning environments as e.g. learning platforms, learning systems, teaching and learning arrangements. The whole spectrum of media-based options for teaching and learning is still too much in development. A more pragmatic approach describes educational functions that enable to act in an educational setting according these leading principles. These functions are:
Function 1: authoring and representation
Function 2: moderation and facilitation
Function 3: working with tools and cognitive tools
Function 4: supporting learning strategies
Function 5: evaluation, self-steering, control and self-control
These functions require specific settings and environments, which have to be designed, produced and integrated into virtual learning environments. Various variables (and constraints) have to be taken into account to make the virtual learning environments effective. The variables can be clustered into

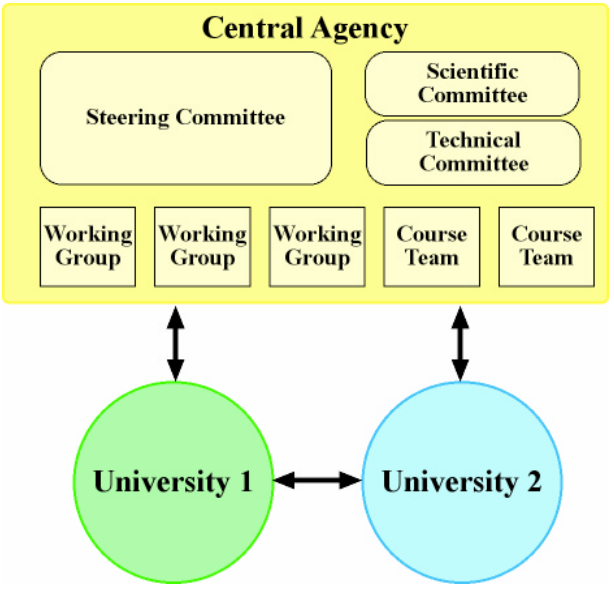
A. technology and digital platforms
B. hypermedia content and presentation
C. media and ICT
D. teachers, learners and ICT

This quite innovative approach to e-learning pedagogy, extensively described in the Background paper of the Working Group, should be worked out. It was not possible to do so within the scope of the project. However, on the basis of existing literature and "working" experiences, a number of recommendations could be provided (see Report of the Working Group Pedagogy and also part 2 of this manual).

5.3. Organisation (governance)

Governance is directly connected to the model that will be chosen for the cEVU; it will consequently be completely different depending on that choice. Rather than giving an abstract overview of possible structures of organisation, a more elaborate example is given in what follows of the governance that would be connected to the preferred organisation as developed in the project ("our" cEVU, with a relatively light central structure that safe-guards a maximum of autonomy at the side of the partner universities). In this preferred structure, the participating institutions are bound by a Memorandum of Understanding (the basic philosophy for collaboration in a cEVU) that supports (a) more formal Consortium Agreement(s) regulating concrete collaboration issues such as IPR and Copyrights or procedures for joint course development and for exchange and sharing of courses. As already said in the introduction to this chapter on implications of models, "our" preferred model of a cEVU is based on a consortium model (model 3) that uses in the start up phase for practical reasons some elements of models 4 and (for specific study programmes maybe also) 2.

Within this organisational structure, the Central Agency of the cEVU is limited to some Committees and Working Groups. A central function is assigned to a Steering Committee, with backup of a Scientific and a Technical Committee, and supported by ad hoc working groups for study and follow up of special issues, or for the development of joint courses.
The organisational structure can be represented as follows:



A more detailed description of the tasks, scope and remit of the various Committees are provided here in a text uses the typical phrasing of a legal agreement, since it has been excerpted from an existing Consortium Agreement[3].

1. Steering Committee (SC)

The *Parties* have established a *SC* composed of one duly authorised representative of each *Party* appointed by the rector of the respective *Party*.
Each *Party* shall have the right to replace its representative and/or to appoint a proxy, after having informed the others in writing. Each *Party* shall use all reasonable endeavours to maintain the continuity of its representation.

The *SC* shall elect a chairman and a secretary from amongst its constituent members.

The *SC* shall meet at least quarterly in principle or at any other time when necessary at the request of the chairman or of one of the *Parties*. Meetings shall be convened by the chairman, through the secretary of the *SC* with at least one month prior notice.

Minutes of the meetings and subsequent agendas shall be transmitted to the representatives of the other *Parties* without delay. The minutes shall be considered as accepted by the *Parties* if, within fifteen (15) calendar days from receipt, no *Party* has objected in a traceable form to the chairman or secretary.
The *SC* shall be in charge of the overall direction and the strategic issues of *cEVU*.
The *SC* shall take responsibility for the successful running of all *cEVU* related activities.

To that end, *SC* shall be responsible for - although not limited to - the areas which are summarised below:

[3] Taken from the proposal made by the IPR (EUNITE/cEVU) Working Group in their Consortium Agreement, Section 3. Permission is granted to use this Consortium Agreement proposal under the condition that acknowledgement is made to EUNITE and the cEVU project.

(a) reviewing and proposing to the *Parties* models for funding, budget transfers and other financial arrangements relevant to *cEVU*. Final decisions on financial and budgetary issues must be voted for on a unanimous basis,

(b) the acceptance of new members to *cEVU*. Final decisions on new members to *cEVU* must be voted for on a unanimous basis,

(c) making final decisions regarding acceptance or withdrawal of *Material*,

(d) making proposals to the *Parties* for the review and/or amendment of the terms of the *Consortium Agreement*. Final decisions on amendments to the *Consortium Agreement* must be voted for on a unanimous basis, and

(e) agreeing on joint press releases by the *Parties* with regard to the *cEVU*.

In voting, each *Party* shall have one vote. A meeting cannot be constituted without a quorum of *Parties* being present. A quorum consists of minimum of 5 representatives of the *Parties*. Unless explicitly provided to the contrary, decisions shall be taken by the majority of the votes of the *Parties* present or represented by proxy at a meeting. Where decisions are to be taken unanimously, all *Parties* must be represented at the meeting.

2. Scientific Committee (ScC)

CEVU shall have a *Scientific Committee* that will consist of representative(s) designated by the *SC* amongst the *Parties* having executed the present *Consortium Agreement*, which will resolve a variety of quality assurance issues as defined and remitted by the *SC*.

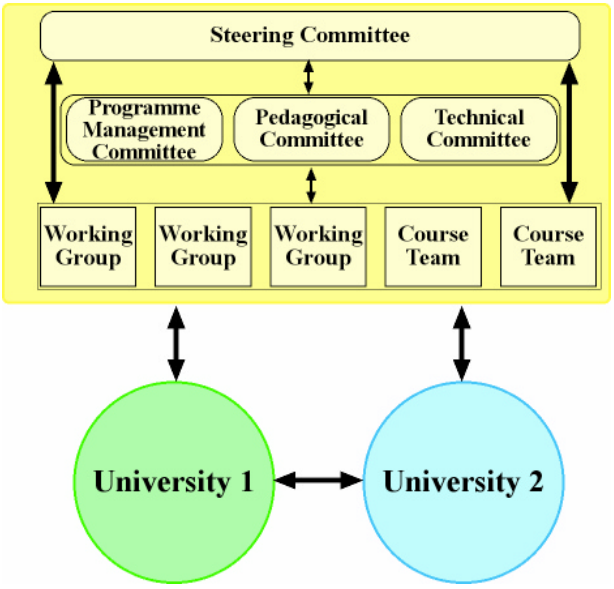
For example the *ScC* may propose guidelines and procedures for the submission, the selection, the (educational) value, the updating and the withdrawal of material which is offered through *CEVU*. The *ScC* may provide guidelines for the *Recipient(s)* on the correct utilisation of *Materials* from the *Provider(s)* including but not limited to acknowledgement of moral rights. Upon approval of these guidelines and procedures by the *SC*, the *ScC* will undertake to implement the above. Subject to the provisions of the License Agreement, the responsibility for authorising changes in relation with material offered to *CEVU* will remain within the remit of the *ScC*.

3. Technical Committee (TC)

cEVU shall have a *Technical Committee* that will consist of representative(s) designated by the *SC* amongst the *Parties* having executed the present *Consortium Agreement*, which will resolve a variety of technical issues as defined and remitted by the *SC*.

For example it will be the task of the *TC* to propose guidelines and procedures regarding support systems, security matters and make and maintain an inventory <template provided as annex to the original document> for all material offered through *cEVU*. Upon approval of these guidelines and procedures by the *SC*, the *TC* will undertake to implement the above.

The structure as given above is a more generic framework. A concrete example of this organisational and governance structure is realised in EUNITE, be it in a somewhat particular way as the Scientific Committee's task is spread over two committees: a Programme Management Committee and a Pedagogical Committee (the last dealing with pedagogical issues connected to the collaboration). The representation of this structure is consequently as follows:



The Consortium Agreement is complemented in EUNITE with a Programme Management Committee document, that is to be annexed to the Consortium Agreement and details more concretely the scope and remit of the Technical and Pedagogical Committees as well as of the IPR/Copyright working group. It provides also a procedure for joint course development (preparation and decision of acceptance of proposals, support and monitoring of the development, evaluation and maintenance of the result) and virtual Erasmus activities within the consortium.

5.4. IPR, copyrights[4]

The approach to IPR and copyrights adopted by each higher education institution leads to the conclusion that currently there is no standard. Often there is no one central person responsible for IPR. Copyright tends to be left in the hands of the individual academics. IPR and copyrights are however sensitive issues in the collaborative environment of a cEVU and practical arrangements should be available.

To provide a solution for the (difficult) issues of jurisdiction and applicable law to be applied to material produced in one country and used in another country, as well as for the legal status of software developed by/for the consortium e.g. freeware, shareware, commercial, three models can be proposed, each connected to a different situation.

Model 1: consortium use of existing web based teaching materials and subsequent updates

[4] See for more details the Report of the Working Group on IPR/Copyrights

In this model, same or broadly similar contracts should be made between the individual member institutions, but there might also be a need for local agreements between the individual members of personnel.

The general principle would be established on recognition of authorship and integrity right (moral rights / acknowledgements). Copyright would be the main type of IPR but depending on the parent institution other models like Database Rights or Software Patents for example might be applied. The terms and conditions of use would be specified on a Consortium Agreement. Special clauses for deviating conditions should be attached to the Consortium Agreement. Description of the courses and the materials should be included as an annex. Also a clause for liabilities and defaulting partners should be made.

IPR of materials would be managed by a non-exclusive copyright license. The staff member or the institution would hold the IPR but the partners would be able to use the materials under a non-exclusive license. If the copyright is held by an individual member of staff, the copyright for use of the material should be transferred or licensed to the parent institution on a perpetual non-exclusive basis with rights to sub-license to other cEVU member institutions. The parent institution, as licensee, should also be able to represent the holder of the IPR.

The applicable law would be the law of originating country of the materials. Tasks of the parent institution would include quality checking of the content (e.g. confidential material should be removed), creating a database of items (inventory of all the assets of the course) and a list of contractual limitations on use (e.g. already existing licenses). It is recommended that the institutions would consult copyright specialists when the model is locally implemented.

It is suggested that the creators of the material should not receive any payment. Nevertheless, if there are commercial implications relating to the transfer of rights, which cause financial payments back to the institution, then the creators should be compensated. The creators, who retain the right to update, customize and modernize their materials, have to guarantee that the updating, customization and modification of the course and the materials are done according to certain rules. They will also give permission for a cEVU backup copy to be made of all web-based materials. Withdrawal of courses would require consultation between the members of cEVU and should not take place during an academic year.

Recommendation is given that materials would be available to members of cEVU free of charge during the pilot phase. For the description of courses the individual universities have created, there should be a standard template according to which the courses could be described in a common way. Quality assurance is the responsibility of the parent institutions, but in the future a Scientific Committee should be formed for peer review.

Model 2 Commissioned course development, paid for by cEVU members

Model 2 is actually a variation of model 1. The model 2 will only be possible when external funding has been assured and it covers materials that are specifically commissioned and paid for by cEVU members for cEVU members. The most

prominent difference between model 1 and 2 is that in model 2 the institution would have the ownership of IPR, while in model 1 also an individual member of staff could be the holder of the IPR.

If there is pre-existing non-web based material, the creator would maintain the copyright for that non-web based material. When the material is put on-line, the parent institution would maintain the copyright. There should be a Scientific Committee reviewing the material. Remuneration scheme should be based on an easily understandable and cost-efficient model.

Model 3 Commercial model

Model 3 is the commercial model, whereas the previous models are non-commercial consortium models. For the time being, this model has been put aside, but in the future a commercial model might be needed.

This model requires that cEVU becomes a legal entity, maybe even a company. Much depends on the legislation of the country where the legal entity is set up. According to the report of the working group, there are two subcategories within the model: commercial utilisation of pre-existing course material and commissioning of material for commercial purposes.

Practical implementation

It was expected that model 1 would be applied in the pilot phase of the cEVU and that model 2 would be applied once the cEVU was on track, whereas model 3 would be used for commercial purposes. The cEVU that was taken in mind is the same as described in 5.4.3 about organisation. Again it should be remarked that another model of cEVU might have created a different approach to IPR and copyright issues.

5.5. Language management

Although language and cultural issues have been a European priority since many years, language management has not been studied as a central topic. More systematic research is urgently needed. Explorative research[5] revealed a large discrepancy between what universities pretend (e.g. multilingual websites, enable foreign student to get help in other than the local language, stimulate contacts and communication between the local and foreign students, etc.) and what is actually realised. Moreover, a coherent policy on language management that provides the necessary resources, implements the policy and monitors the implementation process is about always missing. Only elements of language management can be found in pilot settings (often in the framework of projects) or/and as the result of good will of interested persons.

More work has to be done as a shared and preferably coordinated effort of the European Union, national and regional governments, the universities themselves, and not in the least their staff and students. Nevertheless, there are some good practices to be found, like the one that was established within the Euroliterature project and the pilot courses on Literature and Film and Translation Studies in the cEVU project.

[5] See the report of the Working Group on Language management

ICTs have potential to support socio-linguistic integration of the mobility population (be it in a real or virtual Erasmus setting), and transnational virtual settings like cEVU may put pressure on universities to take up language management as an important issue. For virtual as well as physical mobility it is important to build learning communities in such a way that people do not feel isolated when coming into a course, and for virtual Erasmus it would be wise to demand similar language proficiency as for real Erasmus.

An important consideration is the language of the courses. In Europe we are dealing with different national languages and it must be realised that this will remain so, in particular for bachelor's or equivalent courses. When partners are sharing courses or jointly developing courses, it may be wise to look into possible schemes for multilingual courses and course materials. An example on this level is provided by EUNITE, demanding that joint developments are made in English to be stored in the consortium's common repository of courses but leaving space to partners that want to make local adaptations of the joint course for local implementation.

5.6. Ethical aspects[6]

Ethical issues related to virtual instruction and learning have not been studied extensively so far; yet, it is an important domain which put at least three questions:

- Can and should Virtual Universities have the same role in promoting the public good as conventional universities?
- How are core ideals of higher education, specifically academic freedom and equality, affected in the Virtual University?
- What new moral issues does the Virtual University pose for the behavior of students, faculty and administration and what policy issues does it raise for university policy regarding such behavior?

The *first question* addresses the role of the university in society, and considers whether Virtual Universities can and should fulfill the same role in serving the public good, by fulfilling the wide variety of societal functions that conventional universities have. Apart from the transfer of knowledge and skills, these are: the transition of values, social integration, personal and social change, establishment of social networks and services. Though virtual communities can realize some of these functions, they are poor substitutes for "physical" communities.

It also considers the acquisition by students of academic and social values in the university, and asks whether virtual universities can be as good as conventional universities as places where students acquire and develop these values. As can be expected, there is no unanimity in answers given to this question. Some argue that it is possible others that it is not, but arguments of both parties seem often related to new, respectively conventional education paradigms and to beliefs instead of fact based.

The *second question* addresses fundamental values embodied in the higher education system. In a study of values in higher education, Clark has argued that three values are fundamental in the institution of higher education: competence, social justice and

[6] An in depth discussion is to be found in the Report of the Working Group on Ethical aspects

liberty. Discussions of higher education have been dominated by these three concerns: that universities are to promote scientific and professional competence in its students and faculty ("competence"), to provide equal access to students and equal treatment to students and staff ("social justice") and to provide a climate of academic freedom while retaining institutional autonomy from the state and outside groups ("liberty"). Competence is not a moral value, but liberty and social justice are and must be considered as ethical issues for virtual environments. Whether liberty and academic freedom are as well served in virtual environments as in conventional settings is disputed with arguments such as: academic freedom is controlled in virtual environments by (system) administrators and moderators, instruction styles are more limited, the influence and impact of commercial interests is greater.

Other values focus on equality and diversity, and force to consider possible negative and positive consequences of distance education for equal access to higher education and equal treatment in higher education (e.g. overcoming physical barriers to access higher education and ease of communication versus digital divide and cultural differences as influencing factor).

The *third question* addresses the moral behavior of students, staff and administration in the virtual university. It tackles issues such as digital plagiarism, neglecting of copyrights and software theft, hacking, improper use of computer resources, (anonymous) harassment and hate speech, confidentiality and privacy.

5.7. Accreditation and recognition[7]

The term "accreditation" has been defined by CRE as:*" a formal, published statement regarding the quality of an institution or a programme, following a cyclical evaluation based on agreed standards*…". It is however often misused for an activity of recognition by an institution of credits (and sometimes even awarded grading) that were given in another institution. As accreditation in its original meaning is allocated to national governments in the Bologna declaration, it is unwise to develop and implement specific accreditation schemes for a cEVU. The collaboration needs however systems for recognition of student activities and outcomes in a university by partners in the consortium, as well as recognition by the consortium partners of the professional experience (including non formal learning) of a lifelong learner as validated by one of the partner institutions.

Various systems for this kind of recognition exist or are being developed. Especially the ECTS (European Credit Transfer System) and its extension known as the "Diploma Supplement", based on study load and content; the Tuning system, which takes the competences to which education should lead as references for recognition, and the French approach on validation of professional experience, also based on competences, deserve closer attention.

To support recognition, all offerings of a cEVU should be described in terms of "competences" from the start of their development. The Tuning approach and its examples provide excellent models for the purpose. It needs however further development to complete the reference base of competences. This is also the case with the French system for validation of professional experience. Both systems were

[7] More extensive information is to be found in the Report of the Working Group on accreditation

separately and their promoters need to come to one standardised/harmonised system. The competences approach is not only very helpful for recognition purposes, when courses are described in terms of their contribution to the acquisition of competences, it will also help students and Erasmus coordinators of higher education institutions in finding interesting offerings that fit into the own university programme (be it within or outside virtual mobility schemes).

Acceptance by the "home" university of a "foreign" course and acceptance of the credits (and grades) that a student on mobility obtains are the two essential parts of recognition in virtual as well as physical Erasmus schemes. Good working procedures for physical mobility have been well established and staff in universities has become acquainted with them; it will therefore not only simplify the organisation of virtual Erasmus within universities exchange it it follows as much as possible the same procedures of the physical mobility scheme, but it avoids also that precious time gets lost in developing new procedures and streamline variants of Erasmus mobility.

Recognition is however not only a matter of systems. These are necessary tools for the purpose, but recognition is in a collaborative environment the ultimate formalisation of mutual trust (or in a cEVU of multilateral trust) about scientific and educational level, educational beliefs, criteria for evaluation, quality.

5.8. Quality issues[8]

Following the Bologna declaration implementation, the 2003 Berlin communiqué states that "The primary responsibility for quality assurance in higher education lies with each institution itself and this provides the basis for real accountability of the academic system within the national quality framework." cEVUs should in other words not interfere in the quality assurance systems that universities apply. These quality assurance systems will probably be imposed, if not highly influenced, by the national frameworks to which the universities have to respond, as most universities depend on their national governments for the larger part of their funding. In the collaborative environment of a cEVU, relying on trust between partners, the existence of a quality assurance system in each institution will act as an important element to establish such trust.

The assured quality of each partner institution may be a necessary condition, but it is not sufficient to guarantee the quality of the cEVU. A cEVU has to run its own quality assurance system, which will be different from educational institution systems, as a cEVU is not an educational institution in itself and many components and functions of institutional quality management systems are not or only in a limited way relevant for the cEVU level. The description of the cEVU objectives, organisation and structure defines it as an environment that stimulates cooperation, coordinates the collaboration, supports the users with the provision of effective tools, monitors collaboration processes and helps the partners in finding funding for the collaboration operations. In other words, the cEVU provides services, and quality assurance can be restricted to that aspect (knowing that the partners' institutional quality assurance systems are in place to cover other aspects).

[8] See for more details the Report of the Working Group on Quality

A specific operational cEVU services quality system does not (yet) exist. The typical frameworks and standards like ISO 900X were developed for business use, and existing educational frameworks are designed for (open and distance) educational activities of institutions, not of networks. New generic quality frameworks are under construction on the initiative of the European Commission in the framework of the e-learning action plan, but their development is still in an early stage. The Working Group on Quality Management of the cEVU project designed therefore a framework to define Quality Services Standards that take into account the typical cEVU educational functions. An exhaustive description can be found in its Report.

5.9. Financial aspects

Financial aspects of a cEVU can become easily a breakpoint for creating it. Most universities have limited resources in comparison with their expenses and are neither willing nor able to pay abundant fees for the collaboration. This is the main reason for keeping, especially in the creation stage, the "extra" costs as low as possible, which imply that institutions pay themselves (in kind or cash) for the expenses that are made by their staff in the framework of the cEVU activities (meetings, time for development of materials, studies and reports, cost of equipment and communication), unless decision of the central Steering Committee (after consultation of the university management of the partners) or external funding is available. Only the Central Agency is financed through a contribution of all partners.

Students on virtual Erasmus should follow similar financial rules as the real Erasmus mobility scheme with respect to fees. However, where some extra students in an on campus student group will only marginally affect the costs, virtual students may do so by taking (quite some) extra time for their support from the university staff. Either costs are calculated and paid per university, or the costs are kept sufficiently low to be accepted without refunds. This is possible by restricting the number of courses that can be taken within each university as well as the number of students per course.

At the creation stage, the collaboration of a cEVU is not primarily aimed at commercial benefits. A business-like approach is nevertheless necessary to get concrete information about the "market" (internal as well as external), marketing and branding[9]. Elements of a business plan that serve the creation of a cEVU can be found in Part 3 of this manual.

6. Institutional policies and strategies

The Hectic report describes a number of challenges and change requirements for higher education, some of which affect directly the institutional policies on e-learning and collaboration within networks.

At an overall strategic level, it identifies the need for explicit university strategies for e-learning.

> *"As in other major areas of university activity, explicit strategies enable all staff and students to see the direction which is being taken, and how processes put in place are designed to lead to explicit goals. eLearning support requires involvement of many different units within the university, and so the need for strategies is even more critical."*

[9] For a more extensive discussion, see the Report of the Working Group on Business Plan

Other named challenges were allocated by the Hectic report at specific levels of institutional policies and strategies. Always in relation to e-learning and network collaboration for virtual instruction and learning, the following can be maintained and commented.

6.1. Managerial level

At a managerial level a strategic challenge comes from corporate higher education providers inside EU and/or from higher education providers outside EU seeking students. This challenge affects especially distance courses for continuing education. Conventional universities, which are funded heavily by governments, staff is not really motivated to accept the implications of this challenge, although the universities' strategic management may recognise this challenge as valid and use it as a powerful argument for engaging in collaboration with other European universities.

This observation implies that cEVUs can not exist without firm commitment of the decision makers of the university (Rector, Principal, Academic Boards and Senate), made concrete in a top down approach that engages the full academic community and staff of the university. It includes the establishment of a reward system for academics that recognises their teaching efforts including the development and support for e-learning towards the "own" students as well as to "foreign" ones, instead of putting emphasis on research results and face-to-face activities. Such rewarding system can therefore provide a solution for the problem that the collaboration between institutions may show a balance of efforts and profits at an institutional level (additional efforts due to incoming "virtual" students are compensated by the profits gained through sending students virtually abroad), but the numbers of incoming and outgoing students will be unevenly spread, which implies that some teachers will profit while others will be confronted with additional workload.

A bottom up movement of enthusiast forerunners should of course backup the top down approach, as academics have a tradition of "academic freedom" and autonomy that enables them to focus on their own priorities. Motivating staff and students remains an important element of the implementation process of e-learning as well as networking in a cEVU, and should be approached through awareness raising actions at central and decentralised level, and supported by dissemination of convincing good practices that are obtained by the forerunners.

6.2. Technological level

At a technological implementation level, universities tend to decide on infrastructure – including digital platforms – on arguments that are strictly institutional. For later collaboration such decisions are sometimes disastrous: materials that are developed for such platforms may not be transportable to the platforms of partner universities.

Teachers and students are (sometimes) complaining about lack of (technology) support. A networked environment that uses also digital platforms of partner universities, with which students and staff are not familiar, shall certainly increase the need for such support.

6.3. Educational level

Using courses (e.g. as elective ones) and even programmes of other universities as (part of) the own institution's educational offer can be a strategic, even a policy issue to expand the offer with subjects for which the necessary expertise is missing in the institution. It creates at the same time new issues: who will support the students for these courses, the providing university or staff of the own one? What about differences between the educational concepts of the own education and the "imported" one?

Participation in transnational joint course development can enhance the European profile of an institution, especially if this happens on subjects with a specific European dimension (such as European policies, history, law, culture, etc.). Consecutive joint teaching of the subjects can be an extra stimulus for students and staff, and is in line with an important motive of institutions and students to participate in the Erasmus programme, namely that it offers a European perspective and valuable experience to the student's education. An even more specific position can be taken by collaboration that leads directly to a European degree, or a joint institutional and European degree (e.g. European Ph.D. and Master programmes).

Professional development schemes for academic staff have mostly a profile that focuses on the own educational concepts, the own learning platforms for e-learning, the own support provisions, etc. Collaboration in a cEVU can extend professional development through the confrontation with other development schemes and with the benefits of networking for the purpose.

7. Role of networks and cEVU access policies

Most of the existing networks for higher education are already involved in supporting their members for virtual education activities or are making the transition towards such support. This is as well the case with networks that are disciplinary based (e.g. Thematic Networks) as with more general networks (like Coimbra Group, ECIU, EUA, EuroPACE, and others). Strategic alliances constitute a special category: networks of universities that have committed themselves to achieve a higher level of digitalisation through structured collaboration to meet objectives that would be impossible or only with much more effort to reach without.

Participation of networks in a cEVU may include the following roles:

- Provision of services that separate institutions cannot develop (or only at an exaggerate cost) such as:
  - negotiating about prices for equipment on the basis of common purchase,
  - support for project applications and management,
  - support for virtual Erasmus schemes within the partnership,
  - branding and marketing of products
  - support for mutual recognition of courses, credits and certificates
- Initiation and management of joint development of educational material
- Structuring the consultation between institutions (e.g. with respect to the use of digital platforms, pedagogical models, practical issues such as language management and IPR)
- Training of teachers and staff in networked e-learning
- Dissemination of good practice examples
- Monitoring of the collaboration and quality assurance

The list is not exhaustive and will certainly change in the future.

It may seem attractive to build a cEVU on a relatively large consortium to share the costs of a Central Agency by as many partners as possible. Experience shows however that real collaboration is only possible if institutions have a similar profile and level of commitment. This implies that such consortia inevitably have to start rather small, and only may open themselves once they are more or less established.

8. Role of governments

Governments should in general facilitate and stimulate the evolution towards European virtual universities. On a national level there are two approaches possible: either the government facilitates the creation of regional and/or national virtual universities and allows that these collaborate at a European level, or it invests directly in the participation of the country's institutions in European virtual universities.

Facilitation implies that governance constraints on universities that hinder such participative collaboration are taken away, by e.g. changing legal or administrative rules that hamper universities to engage in the collaboration, provision of sufficient technical bandwidth, creation of incentives for institutions to engage in European collaboration, etc.

The existence of European Virtual Universities can and will have advantages for Europe as well as for individual institutions. The initiative for such cEVUs is unlikely to come from national governments but can be taken by institutions and (European) networks of higher education institutions. It has been and is rightly stimulated by the European Commission, from which the initiative takers expect also support. Especially on the financial side cEVUs are dependent from European funding, as neither institutions nor regional and national governments tend to take risks through financial investments in their start up. At least in a period of creation and initial evolution cEVUs will need dedicated funding that is not project (and maybe even not programme) based. Otherwise it might be experienced again that products remain unfinished, finished products get not implemented and (partly) implementations turn out to be not sustainable.

2. Requirements, recommendations and guidelines for participating institutions and for the transition from small scale experimentation to full deployment

The interests of the various stakeholders of cEVUs are quite different. University management will be probably more interested in the possibilities of attracting new audiences and operate more cost-effectively than do teachers and technical/administrative staff. Students will again have other interests and find collaboration with students from other countries challenging and enriching. Recommendations and guidelines are therefore split along various categories of interested parties.

Apart from the given recommendations, the reports of the Working Groups contain quite some recommendations that address e-learning in general. Since this section deals with specific issues on cEVUs, these are not repeated here, although their application in the setting of a cEVU is obvious.

1. For cEVUs

cEVUs should not be created as dedicated virtual universities, which act in the place of partner institutions, but as collaboration environments that create an added value for partners through support for (their and common) virtual education, while the partners' autonomy remains fully respected.

Therefore the following recommendations can be given:

- cEVUs should take the format of a consortium, bound through a consortium agreement and Memorandum of Understanding;
- The agreement should pay attention to support the transfer of (academic) values in the cEVU (including academic and intellectual freedom as well as personal privacy) and take measures that activities within the cEVU (including the services and tools that enable the activities) respect these values;
- The cEVU can act more flexibly if within the overall consortium (some, temporary) subnetworks of partners are set up for joint development of courses and even for sharing and exchange of courses, to support effectively common interests (e.g. virtual education in common disciplines) of these subsets that are not shared by all partners
- The consortium should collect its partners from higher education institutions (universities) with a similar profile (to have sufficient common interests) and esteem (to provide the basis for mutual trust);
- Acceptance of partner universities should be linked to basic requirements to which a partner has to respond (level of involvement, diversity of involvement, minimal infrastructure and communication capability of the infrastructure, ability and willingness to learn from others);
- The cEVU should focus on the provision of services and not on the development of courses and programmes that are centrally run; this provision does not imply that the cEVU's central level must develop and deliver these services; they can also be provided through a distributed model in which existing services of a partner are extended for use by other partners (with support and coordination for the various services from the central level);
- One of these services must be the development and support for virtual Erasmus, since this is a field that clearly bears the interest of individual universities, national governments and the EU; central support should foresee in procedures for the provision of virtual courses (e.g. limitation of the number of courses that can be

"taken" by an institution and of the number of students per course; eventually financial arrangements between providing and receiving institutions); support for matching offer (by institutions) and demand (from students); provision of a regularly updated joint directory of available virtual courses of partner institutions;

- In a start up phase, the cEVU should focus on the internal needs and capitalise on the internal dynamics of the partnership; activities towards external markets have to come later, after establishment of working collaboration models and procedures. This avoids unnecessary competition between the individual interests of partners and the cEVU interests, and assures that the external market is only addressed with mature products and services;
- Joint development of courses and modules (teaching and learning materials) that can be either used by partners as it is or after local adaptation (and eventual integration in the own courses) required careful preparation. It is recommended that a project approach would be used, with procedures that ensure
    - clear aims and objectives for the materials on the basis of concrete needs of teachers and students of at least the institutions that will participate in the joint development (if subnetworks are used);
    - proof of future utilisation of the materials within the curriculum of at least the proposing institutions;
    - added value of the materials for the proposing institutions and the cEVU;
    - content and pedagogical quality through peer review within and (if possible) outside the development team;
    - reusability and transferability through the use of technical and learning standards;
    - provisions for (central) storage of products, coverage of IPR and copyrights of external materials that get embedded, language management, maintenance of the products;
- Joint development needs additional resources to what partners can bring in themselves (staff commitment and own institutional funding); only then can be assured that each participating staff member get sufficient time and means to do the development work. A clear structure of incentives must be put in place in the cEVU in order to attract staff from partners to do the work;
- Joint development needs also technical, pedagogical and media related support. The cEVU has to provide such support, either on a central level or using services of experts from partner institutions;
- To effectively share materials, a pool of resources from is to be preferred over full modules, since it is easier and quicker to integrate relatively small entities in the own courses than larger ones. Meta-description of these resources should follow standards that are easily to use (e.g. not needing too much time for description);
- To facilitate mutual recognition of credits and awarded grading, all offerings to and of the cEVU should be described in terms of "competences" as well as provide the ECTS information to facilitate integration of virtual Erasmus activities in an overall Erasmus mobility approach;
- The cEVU should support proper use of IPR and copyrights. It is however recommended that specific agreements are made within the consortium to facilitate sharing and (re-)use of materials as well as joint development. Such agreements can e.g. imply that materials are made available to members of cEVU free of charge (eventually during an initial phase);
- The provided services should respond to services quality standards that bear acceptance of all partners in the consortium;

- The cEVU should remain a consortium that is open for new, interested partners. Acceptance should however follow a procedure that avoids uptake of partners that would weaken the consortium and undermine its brand. Openness of the consortium implies as well that the cEVU is designed to dynamically evolve according the partners and stakeholders needs.

2. For universities

- Each institution should include e-learning and transnational cooperation in its strategic plan;
- Top down approaches should be developed that make staff and students aware of the potential of networked e-learning, create incentives for staff and students to engage in this kind of learning, and disseminate good examples of practice;
- Each institution should use a quality assurance system in which language management should be integrated;
- The institution's digital platform (including the Learning Management System and Learning Content Management System) should facilitate flexibility in pedagogy (to enable the support of teaching materials that use various pedagogical concepts) and put emphasis on tools for re-use and tailoring; this include the use of technical and learning standards that enable exchange of materials between institutions; such systems should be as open as possible, to ensure that they are able to follow changing technology and pedagogy;
- The institution's digital platform should also provide the necessary tools to support multilingual activities and collaborative learning and teaching, such as conferencing tools, communication tools, negotiation tools, document and application sharing with annotation tools, even networked gaming;
- Standards should also be used for the meta-data that describe courses, learning and teaching materials in directories;
- Universities should invest more in their websites, as an important information resource for their on campus students as well as virtual students within the cEVU environment. The websites should be truly multilingual (as opposed to their current superficial level)
- Teaching staff should supported for transnational e-learning collaboration, by:
    - Using rewarding systems that take into account the efforts of staff in developing materials and supporting students, including the virtual students from partners;
    - Including training for networked collaboration through e-learning in their professional development;
    - Providing support for the adaptation and integration in the own courses of materials that come from joint developments and/or shared modules;
    - Helping them to make their own materials reusable;
- Permanent self-assessment in language skills for university staff and students should be available somewhere on the website of the university;
- Support to all students (also the virtual ones) should be put in place for using the e-learning infrastructure of the university;
- Barriers should be lifted for virtual students to access the university's digital platform and digital libraries;
- The institution's procedures for Erasmus mobility should include virtual Erasmus schemes;

- Educational offerings (materials, courses, programmes) to the cEVU should be described in terms of "competences", to facilitate their recognition by the consortium partners and evaluate their fitness for uptake by students in partner universities.

3. For teachers

- Teachers should be open to investigate the potential of networked e-learning in a cEVU; to put prejudices aside and experience the benefits through participation in pilots;
- Especially when teaching subjects with a transnational dimension (e.g. European law, European literature, European culture, etc.) it should become a "natural" reaction to look into the possibilities of joint development and even team teaching;
- Once engaged in the collaboration within the cEVU, teachers should commit themselves fully; giving the collaboration a priority that is equal to their other teaching tasks;
- In preparing materials, collaborative learning should be promoted in the cEVU setting, by selecting tasks that need collaboration;
- For course activities within cEVU, content elements should be made as much as possible language independent (e.g. by using animations and simulations, visual information);
- Course materials that force the student to download large files should be avoided, as broadband connections are not always guaranteed throughout Europe;
- Learning communities should be created, if possible even before the start of a course, that allow students of different countries to become familiar with each other;
- Clear agreements with the learning groups should be made about what is allowed and not in communication, to avoid offensive speech and even harassment in a multicultural environment.

4. For Students

- Students welcome the enriching experience of transnational education, even in a virtual setting. However, the benefits are only marginal if they are not really committed by doing their learning tasks timely and well performed. Especially in a collaborative group were work has to be done at a distance, engagement must be taken very seriously.

5. For Governments

- Governments should in general facilitate and stimulate the evolution towards European virtual universities. On a national level there are two approaches possible: either the government facilitates the creation of regional and/or national virtual universities and allows that these collaborate at a European level, or it invests directly in the participation of the country's institutions in European virtual universities;
- Facilitation implies that governance constraints on universities that hinder such participative collaboration are taken away (e.g. by lifting legal or administrative barriers that hamper universities to engage in the collaboration);
- Governments should provide institutions with bandwidth that is sufficiently large. Certainly in the new member state of the Union this remains a problem;

- They can and should be supportive to the establishment of a European IPR and copyright legislation that enable education to function optimally in a digital and global age;
- The shift from a conventional teaching to a (e-)learning centred institution is a costly one. Financial incentives, e.g. through funding for studies, pilots and implementation projects remains necessary to prepare institutions for participation in the creation of virtual universities. Even more important is that financial support is not only project based to launch the initiative and keep the momentum on track;
- In developing national accreditation and quality frameworks for their (higher) education, governments should take care that these frameworks are convergent in a European perspective;
- Governments should take initiatives to disseminate local and international examples of good networked e-learning practices.

6. For the European Union/Commission

The most effective results of European implementations in education (the Erasmus mobility scheme and the Bologna process) have been initiated in a top down approach with mixed efforts from the European Commission and (the) member states, and with sufficient financial support. It is wise to learn from this observation when it comes to stimulation of the creation of (c)EVUs.

Therefore, what counts for national governments is also valid for the European Commission. At least in a period of creation and initial evolution (c)EVUs will need dedicated funding that is not project (and maybe even not programme) based. Otherwise we will experience again what has happened over and over again with projects: products remain unfinished, finished products get not implemented and (partly) implementations turn out to be not sustainable.

But the European Commission can do more for (networked) virtual university actions:

- In many publications, and our cEVU project shares the same finding, it is stated that not the technology but the pedagogy is the problem for e-learning: a coherent e-learning pedagogy is not yet existing. As a priority, research should be stimulated (and financially supported) for the development of such e-learning pedagogy;
- Many existing digital platforms are available as commercial products. As the larger profits for companies are not to be found in education, most of these products do not integrate the full range of technologies that support all necessary pedagogical functions. The European Commission should continue its efforts to support the development of tools that are adequate, by preference through an open source approach that enables their educational orientation and affordability;
- The European Commission should support European IPR and copyrights harmonisation that respond to the needs of education;
- Cultural and linguistic differences and richness within Europe and European education has been for a longer time a priority in many European programmes. However, language management in education has not received the attention that it deserves. Research on the issue, that can develop concrete applicable language management schemes and systems should urgently be promoted;

- From the moment our universities and governments want to get into the post-Bologna process, the integration of ICT in education with regard to the language component, is a "must". It should be part of their structures. The EC could decide that a given percentage of the money available goes to this aspect, planned in such a way that it reaches all layers within a given university.
- It should be possible for the virtual Erasmus environment to work out suggestions or criteria for selection of funding that are similar to the ones in the physical Erasmus scheme, with respect to a minimum of language proficiency level. Another suggestion could be that students follow some virtual courses as a preparatory step to virtual Erasmus.
- The European Commission should support the further development of competences based recognition systems and the uptake of virtual mobility schemes in the Erasmus actions and its recognition instruments;
- The many existing and emerging virtual university initiatives at regional and national level tend to reinvent the wheel over and over again. A similar situation might develop when (c)EVUs are created in the near future. The European Commission should take or at least support initiatives that promote collaboration between emerging and existing virtual universities at local and European level.

3. Elements for a business plan

Higher education is (big) business; and as said in part 1 of this manual, competition with commercial providers or universities from outside Europe is becoming an important challenge for our higher education institutions. Business approaches are nevertheless considered by many academics and scholars of conventional universities as incompatible with the ethos of education. It is consequently not evident to tackle the issue of a business plan in a cEVU environment. Moreover, the development and implementation of a business plan shall be highly dependent on the kind of cEVU that is preferred. Hence, the option to discuss elements of a business plan that could be relevant for a cEVU, with maybe one exception: marketing and branding, which are also familiar to conventional universities under the headings of information provision, student recruitment, university reputation.

A European Commission funded Ten Telecom project produced a Business Plan Support Manual. Its structure is being used to discuss elements for a cEVU Business plan.

1. The Company

Models of a cEVU have been discussed in part 1. Policies. It was advocated to restrict the number of partners, certainly in a first phase and choose for a consortium structure. This consortium will normally be based on individual institutions as partners, but may also include networks that act within this consortium as individual partner. Coming to common decisions, especially on financial issues might be cumbersome with network partners, while they need to find first a decision within their own network.

Including external research networks could be helpful, as research networks within a discipline provide strong working relations and good views on expertise that is available in each partner university. It can be a good basis for the development of courses in that discipline.

There is a possibility of having an asymmetric structure through the setup of sub networks within the consortium to conduct activities. Constructing internal networks makes the idea operational of not forcing every partner to take every option (e.g. for joint course development or sharing and exchange of courses) that is provided within the cEVU. Asymmetric constructions are however only possible if partner universities get similar returns for equal investments at the end of the day.

There need to be anyhow a strong commitment and financial support from the partners. The cEVU should not be based solely on funding from external resources such as the European Union, as this kind of funding is often linked to requirements (and restrictions) that are not always in line with concrete objectives and priorities of the cEVU.

2. The Business Idea

Decisions on the kind of business should be reached at some point. Relevant questions include:

- is the operation going to be purely internal within the consortium or also external towards markets outside the consortium? For which audiences?
- is a stepwise approach applied or are all possible activities of the cEVU to be implemented from the very beginning?
- is an asymmetric model in the consortium structure acceptable?
- is course exchange free of charge for receiving students and/or receiving partner universities (under which conditions)?

- how is joint development financed?
- what kind of governance and Central Agency is going to be installed; which will be the responsibilities of the central level and the partner levels; how are the activities of the central level financed?

3. Production, Procurement, Quality, Administration

Working models and methods have to be developed, taking into account the decisions that must be made with respect to digital platforms, online pedagogy, copyrights and administration, language management, quality assurance (cf. Part 1. Policies).

4. Market Analysis

A thorough market analysis should be carried out by specialists. However, the initiative takers of the cEVU have to specify the borders for the market analysis. In the example given below the levels of studies (which are internal or/and external markets for the cEVU) are combined with possible levels of agreed cooperation.

Levels of cooperation Levels of study	1. Exchange of study material	2. Exchange of courses	3. Offering of complete programmes
A Bachelor's level	A1	A2	A3
B Master's level: 1. Normal 2. Advanced	B1	B2	B3
C. Executive training	C1	C2	C3
D Postgraduate: 1. Long running 2. Short refreshment	D1	D2	D3
E PhD level	E1	E2	E3
F Corporate training: 1. On-site university training 2. In-company training	F1	F2	F3
G Lifelong learning	G1	G2	G3

The relevance of the various cells (from A1 to G3) for market analysis is depending on the chosen kind of collaboration within the cEVU; e.g. offering full programmes might not be feasible at the Bachelor's level, but relevant at a PhD level; similarly it could be decided that in-company training is not a cEVU business to avoid internal competition with partner universities that have already well established offers or external competition with commercial initiatives. Also the nature of the subject domains in the cooperation levels may be a consideration for uptake or rejection in the market analysis. On the other hand, it would be unwise to rule out markets in advance that could be beneficial.

Answers should be provided separately for each relevant cell, since the markets that the cells represent are different in nature. At least the following questions should be answered (in random order):

- Who are the main competitors?
- On what level are the participants willing to pay?
- What are the target segments in different cells?
- What is the present and the future size of the target markets?
- How much market share could the cEVU gain?
- What are the needs of the customers in different cells?
- Is branding equally important in each cell?
-

5. Marketing and Sales

Concrete indications on Marketing and Sales can only be provided after basic decisions have been made concerning issues such as structures and policies. It is nevertheless wise to develop phases for Marketing and Sales in an early stage and in relation to identified phases in the development of a cEVU (e.g. in the first phase, the market is only internal, which enables a decision that no sales are made). A very important issue is also the question of who is taking care of the marketing, the consortium through its Central Agency or all individual partners.

6. Management and Organisation

The decisions under this heading are directly connected to the basic options about the nature of the cEVU that the partners want to establish in relation to the organizational culture and interests of the partners.

7. Financial Plan

There must be a financial plan, at least in the format of a realistic budget. In a development phase this plan will be very general, but it should become more detailed on the basis of concrete experiences (e.g. with pilot activities). It should not only calculate the costs of the central operation, but also the "local" costs at the partners side to enable institutions the uptake of real commitments and longer term planning.

Once a realistic calculation is made, the issue of finding the necessary finances can be addressed. Apart from partner contributions it should consider governmental and European Commission funding, eventually in a private-public venture capital approach.

8. SWOT analysis

An analysis of concrete threats and opportunities has to be made as well as the analysis of strengths and weaknesses. In relation to the market analysis, the questions about the present and the future size of the target markets relate to the threats and opportunities, and the market share that could be taken by the cEVU to the strengths and weaknesses analysis.

Examples of considerations within the opportunities and treat analysis are given hereafter; for the strengths and weaknesses it is more difficult, as this is directly connected to the choice of the cEVU type itself:

8.1. Opportunities

- On a European level, a cEVU can support European citizenship and European identity in reaction of examples of other countries and continents (Australia, the United States of America, which are already active in Eastern Europe, Asia, etc.)
- For universities the joint production and maintenance of material and courses could be cost-efficient.
- For teachers the joint production would mean savings of efforts and time.
- Joint production that include peer review will improve the quality.
- Students would be able to take courses at other universities as part of their own curriculum, which may extend their choice.
- Virtual Erasmus offers will support physical mobility in better preparing it, providing follow-up and enabling students on mobility to take courses in their home university without loss of time.
- Uptake of universities from new member states of the European Union can help the further development in these countries and support the extension of market size from both sides
- In the longer run it can be an effective way for universities to explore new markets inside and outside Europe.

8.2. Threats

- Students taking distance education courses need more support, which will increase the workload of the teachers.
- Partners may not be willing to pay for materials (as in some countries student fees are legally forbidden).
- Important quality differences between the universities may be revealed, leading to problems with recognition and accreditation.
- Differences in pedagogical approaches may hinder the collaboration.
- Technical infrastructure and software or the partners may be incompatible.
- Teachers may not be willing to exchange their own materials (even if they would be paid for it)
- Cultural and linguistic differences can cause problems.
- An asymmetric cEVU structure as an interesting approach to speed up developments may bring the consortium out of balance.

9. BRANDING STRATEGY

A specific issue is the branding strategy, while it is a major concern of each university and will consequently be it for the collaborative environment of a cEVU also.

The brand of cEVU should be strong and stand for high quality in Europe, but it can only be as strong as the brands of the participating universities are. Therefore, it is necessary to select partners from institutions with equal level.

It should be considered if branding is as important for each market (universities that are famous in Europe have not necessarily the same image in other continents, or might even be not known there), or to use different brands for various markets. But exactly the same

counts for the cEVU as such. As the brand should be a mark of quality for outsiders, it can be interesting to award degrees which have the cEVU label as well as the university one.

Developing the cEVU brand will be facilitated if the collaborative activities build on the strengths of the participating universities by using their strongest fields of education.