

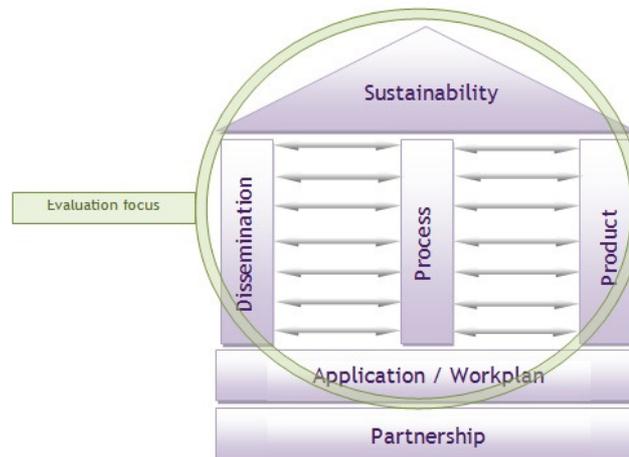


PRODUCT LIVECYCLE MANGEMENT
QUALITY ASSURANCE for vet providers using

AGREEMENT NUMBER 2013-3693 / 001 - 001
PROJECT NUMBER: 538379-LLP-1-2013-1-AT-LEONARDO-LMP

**QUALITY MANAGEMENT
&
EVALUATION**

Handbook by
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1. Introduction and framework

This handbook has been created by *INIT Developments* for the *LEONARDO-LMP - project Q-PLM: QUALITY ASSURANCE FOR VET PROVIDERS USING PRODUCT LIFECYCLE MANAGEMENT* (AGREEMENT NUMBER: 2013-3693 / 001 - 001; PROJECT NUMBER: 538379-LLP-1-2013-1-AT-LEONARDO-LMP) and will assist in managing and bringing this multilateral project to a successful conclusion in a quality assured manner.

In addition to the applicant, *Berufsförderungsinstitut bfi Steiermark (P1/AT)*, the following partners are participating in the project:

P2/DE - *INIT Developments Ltd.*

P3/BE - *Syntra West vzw*

P4/ES - *FFE- Fondo Formacion Euskadi*

P5/FI - *WINNOVA - Länsirannikon Koulutus Oy WinNova*

P6/IE - *City of Cork Vocational Education Committee*

P7/SI - *GZS – Gospodarska zbornica Slovenije*

P8/RO - *USU – Universitatea "Stefan cel Mare" din Suceava*

In accordance with the project application the partnership has come together in order to achieve the following aims:

The main aim of the Q-PLM project is the development of an IT based tool for integrated product lifecycle management for VET providers (IVET and CVET) which is

- a) **Flexible** to be adapted to national, regional and organisational backgrounds and situations (e.g. organisational quality cultures and systems, legal backgrounds etc.)
- b) **Comprehensive and scientifically valid** in the background (taking into account all relevant indicators and variables, analysis of their impact on VET offers together with a profound strategy for actions in product lifecycle phases)
- c) **Easy to use for VET providers** (easy and quick input of quality data, interfaces to existing data resources in the organisation, clear and feasible presentation of results together with clear actions for lifecycle management for the single VET offer / service)
- d) **Indicator based** (the lifecycle of a VET offer is influenced by a number of variables, the tool will reflect the most crucial ones and give room for adaptation to national, regional and additional local and organisational variables)
- e) **Weighted and balanced** (different variables have a different weight in their impact on the lifecycle of a VET offer. The tool developed must allow for a full reflection of these weights)
- f) **IT based** (VET providers do in many cases already have quality information and data in electronic format, are processing data in electronic format. Out of this reason an IT based tool can

create interfaces to existing quality data in the organisation and will allow for a quick and efficient product lifecycle management procedure on VET provider level)

To reach the main objective of the project with all the defined characteristics, the following subaims are set for the Q-PLM project:

- 1) **Analysis of existing PLM (Product Lifecycle Management) Software:** Since PLM is an approach followed for quite some years in other economic sectors, also software and IT based solutions are existing for this from other sectors. In a short investigation phase, existing software should be briefly screened for good practice elements that can be used for the intended PLM tool for VET providers
- 2) **Research about variables influencing the product lifecycle of a VET offer / service:** the most important task in the project is a profound and widely based identification of relevant variables which might have influence on the lifecycle of a VET offer. It is crucially important that this research phase closely involves the members of different target groups and stakeholders of VET providers. At the end of this research activity 10 main variables as basis for the PLM tool shall be identified and agreed within the partnership
- 3) **Identification of indicators for variables identified:** besides the identification of relevant and valid variables influencing the product lifecycle of a VET offer it will be the next task to find reliable indicators for measuring the different variables identified. Again the identification of indicators will be involving on a wide basis stakeholders from the IVET and CVET sector.
- 4) **Development of beta version of the IT based tool and handbook:** On the basis of the research results, the beta version of the PLM software for VET Providers together with a detailed handbook for how to use and operate the software will be developed (this involves the development of functional specifications and requirements collection for the software programming)
- 5) **Pilot phase for beta version and handbook:** The involved VET providers will undergo a comprehensive testing and pilot phase for the developed software and the handbook. Feedback about experiences made will be gathered and channelled into a revision phase of the software and the handbook
- 6) **Revision phase for software and handbook:** On the basis of the feedback received from the pilot phase, the software will be revised to a final version as well as the handbook will be adapted. Translation of software and handbook into all partner languages follows the revision of content.
- 7) **Development of a comprehensive dissemination and exploitation strategy for the project and especially its outputs:** Since the software and the handbook developed for integrated product lifecycle management for VET providers should reach as many as possible members of the direct target group (VET providers from IVET and CVET sector), a powerful valorisation strategy with concrete activities is foreseen as overarching aim for the whole Q-PLM project.

To achieve these aims the project group has 24 working months and has allocated the time resource available into 8 work packages as follows:

Fig. 2: Project Budget

ESTIMATED EXPENDITURES and REVENUE by type of costs for LLP Country Partners												Project Acronym:	Q-PLLM	Number of months:	24					
All figures in Euro (no decimals)												LLP Actor:		Leonardo da Vinci Multilateral Projects for Development of Innovation						
Costs												Financing								
%	Direct costs											Total project expenditures	EU grant requested from LLP	Partner's own funding	Other sources	Total project revenues				
	A. Staff costs				B. Operational costs				Total direct costs (A + B)	Total project indirect costs (up to 7%)	Total						Grant total (up to 75%)	%	Amount	Specification
	1. Travel and subsistence	2. Equipment (up to 10%)	3. Subcontracting (up to 30%)	4. Other	B. Total operational costs	Total project indirect costs (up to 7%)	Total	Indirect costs												
69,03%	48.745	0	63.200	27.650	139.595	450.815	31.557	482.372	7,00%	482.372	361.775	75,00%	120.597	0	482.372	100%				
P1	61.397	3.290	40.700	6.650	50.640	112.037	7.843	119.880	24,85%	119.880	89.907	75,00%	29.973		119.880					
P2	53.380	6.435	0	1.500	7.935	61.315	4.291	65.606	13,60%	65.606	49.204	75,00%	16.402		65.606					
P3	47.030	5.080	4.200	7.300	16.580	63.610	4.453	68.063	14,11%	68.063	51.047	75,00%	17.016		68.063					
P4	28.874	6.010	4.200	1.800	12.010	40.884	2.862	43.746	9,07%	43.746	32.809	75,00%	10.937		43.746					
P5	41.616	7.585	4.200	1.800	13.585	55.201	3.864	59.065	12,24%	59.065	44.299	75,00%	14.766		59.065					
P6	45.574	5.025	2.500	2.300	9.825	55.399	3.878	59.277	12,29%	59.277	44.458	75,00%	14.819		59.277					
P7	24.746	7.585	4.200	6.300	18.085	42.831	2.988	45.829	9,50%	45.829	34.372	75,00%	11.457		45.829					
P8	8.603	7.735	3.200	0	10.935	19.538	1.368	20.906	4,33%	20.906	15.679	75,00%	5.227		20.906					
P9	0	0	0	0	0	0	0	0	0,00%	0	0	0,00%	0		0					

By means of these human, time and financial resources the partnership seeks to develop the following main products in chronological (!) order of the project implementation.

Fig. 3: List of products / deliverables

Product / deliverable:	N° of Deliverable in application	Deadline/ period of implementation	Language versions
Good practice analysis and documentation grid	15	11/13	EN
Quality assurance handbook	3	11/13	EN
Facebook page	10	11/13	EN
Partner reports about software analysis	16	12/13	EN
Dissemination Strategy	6	11/13 / 02/14	EN
Project website	7	12/13	EN, DE, NL, SI, FI, SI, RO
Partner analysis about field analysis PLM	17	12/13	EN
Research and analysis phase report	18	01/14	EN
Exploitation Strategy	11	03/14	EN
Leaflets and posters	8	03/14	EN, DE, NL, SI, FI, SI, RO
Report: Variables and Indicators for product lifecycles in VET	20a	04/14	EN
Stakeholder analysis	12	04/14	EN
Technical and functional specifications document	20b	04/14	EN
National feedback panels	19	04/14	EN, DE, NL, SI, FI, SI, RO
4 Project newsletters	9	03/14;10/14; 02/15; 09/15	EN, DE, NL, SI, FI, SI, RO
Interim quality report	4	09/14	EN
Progress report	1	11/14	EN
Active product lifecycle management for VET providers – software beta version	21	12/14	EN
Active product lifecycle management for VET providers handbook – draft version	22	12/14	EN
Feedback forms for testing phase (software and handbook)	23	01/15	EN
Pilot and testing phase report	24	05/15	
Sustainability strategy	14	08/15	EN
Final conference event	13	09/15	EN
Product Lifecycle Management for VET providers – Software	25	09/15	EN, DE, NL, SI, FI, SI, RO
Handbook for Active Product Lifecycle Management for VET providers	26	09/15	EN, DE, NL, SI, FI, SI, RO
Final quality report	5	09/15	EN
Final report	2	12/15	EN

In addition to these main products there are also a large number of accompanying and secondary products (for a detailed overview of all project activities see the evaluation instrument *snapshot analysis*, created specifically for this project; see also 3.1.1)

The management of the multi-layered and complex working processes and the coordination of the interaction between the different resources place high demands on the entire project group, in particular on the project coordinator (*P1*). In order to be able to implement the project as quality-assured as possible in all of its facets and at all levels, a dedicated *work package (WP 2 - Quality Management)* was defined and entrusted to *P2*. Consequently this Quality Management and Evaluation handbook has been created specifically for the *Q-PLM* project. It describes all fundamental contents, procedures and results of this work package, with relevant quality indicators and standards, and links them with the strategic and operational aims of the project.

In accordance with the methodological focus of the project evaluation specifically created for *Q-PLM* a number of evaluation instruments have been developed and adapted to meet the particular requirements of this project. Following a clear implementation plan various experts can obtain data concerning the different levels and areas of the project by means of the different *methods* and *instruments* at various milestones *during* the project. Also the production, processing, documentation and interpretation of the data records have been clearly planned and are presented in this handbook.

An important component is represented by the quality indicators, identified by *INIT* - in cooperation with *P1* and other partners - which represent the evaluation of the different areas of the project more transparently and in addition allow a modular evaluation approach. It has been attempted to arrange the numerous quality indicators according to priorities and areas of application as well as clustering an overview of indicators series, e.g. lists, charts etc.; if necessary one or more indicators can be exchanged in any set, without the overall character of the evaluation suffering.

Before providing further detailed explanation it is recommended to provide some general information about the principles and standards of this project evaluation.

2. The QM-concept: criteria, experts, objects

2.1 Criteria-based evaluation

An appropriately high quality of the different main products is certainly one of the most important prerequisites which is expected for the successful and sustainable implementation of EU projects. Therefore substantial quality differences between the individual products and areas of the project are to be avoided, and the individual contributions should all aim to be carried out at the same highest quality level possible. This however can only be ensured when the starting points of the project - the *application* as well as the *partnership* - are of an appropriate quality and when this is maintained throughout the entire duration of the project.

The quality management concept should support the partnership with this undertaking, whereby it is generally - not only with transnational cooperation projects - advisable to opt for as transparent, independent and holistic an approach as possible. Within this context the expectation of a high-quality QM-model is to assess and measure the current project *status quo*, its implementation dynamics, its target group relevance as well as the overall orientation in relation to the aims, ensuring the original - e.g. in the project proposal - agreed objectives and plan are adhered to. If these requirements are fulfilled then much will already have been achieved and important prerequisites for the quality-assured implementation of the project will have been dealt with. What even the best QM-model cannot perform however is making concrete deductions and decisions based on the data that has been produced and evaluated. This responsibility remains, as ever, with the persons involved, e.g. the project management, project group, external / internal QM-experts, EACEA etc.

Should any deviations from original plan be identified then it must firstly be clarified whether the deviations can be explained and whether they are meaningful to the project development, or even necessary. Only if they actually prove to be unfavourable to the project should appropriate (counter) control and adjustment actions be discussed and ultimately carried out. If it turns out however that the deviations bring about more benefit than damage to the project, then it is more than reasonable to allow the deviations and to consider them in response to the relevance

and validity of the original project plan. If this no longer stands up to careful examination, the defined "working hypotheses must be rejected" - because on closer inspection they are different to the individual parts of the project proposal - and be formulated again from scratch. How this happens in detail, e.g. by an internal resolution of the partnership, the informal notification of the *project officers* or an official *amendment* to the original *agreement* with the EACEA, depends very strongly upon the framework in relation to individual cases as well as the guidelines of the respective funding (sub)programme.

In order to deal with all of this a successful quality management model should be based on specific *quality criteria*, which not only apply specifically to *Q-PLM* but which possess generally validity for *European development projects* or other transnational cooperative undertakings. EU projects, like other socially organised, dynamic development processes, follow certain basic principles which partly have a character based on the laws of nature. In order to successfully operate in this sphere, QM-models must themselves be measured against various quality features and standards. The most important of these can be characterised as follows:

2.1.1. *Scientific and methodological correctness*

A quality assurance model for an EU project must be *well crafted*. That means in terms of its approach, but also in relation to the selected methods and instruments used it must strictly be able to take into account the requirements of empirical social research, such as *reliability*, *validity* and *objectivity* (see. e.g. Neuman, W. Lawrence: *Social Research Methods* (2006): *Qualitative and Quantitative Approaches*. 6th edition. Allyn & Bacon; Atteslander, Peter (2008): *Methods of Empirical Social Research*. 12th edition Erich Schmidt. Berlin). The results of an evaluation process are only really valid, comparable and meaningful, if *model*, *methods* and *instruments* are orientated towards these criteria.

It must however be taken into consideration that within the context of a European Union project there is hardly any time nor financial resources available for data collection and analysis work at the highest scientific level; besides most of the people involved in the evaluation processes are not familiar with the methods and quality standards of empirical social research, and therefore it is a significant challenge for the evaluator to undertake

evaluation work across several countries at the same time from a significant geographical distance and partly with cooperation partners who lack expertise. Finally it also needs to be clearly considered and decided upon whether and when the subject of the evaluation justifies the cost of comprehensive scientific data collection, e.g. to what extent the partners were content with a seminar room or a hotel room does not necessarily require time-intensive and thus expensive qualitative interviews to be undertaken.

As in other situations with empirical social research, the QM-experts in EU projects also face the dilemma of balancing scientific standards and their quality requirements against the realities of what is possible within the project implementation - defined by the factors *time, money, personnel, access to data* and *information etc.* - and having to align with the objectives of the data gathering. With EU projects very often data gathering and analysis is concluded at a relatively *simple* level, which does not necessarily mean however that it is of *poor quality* - moreover the opposite is true: while the level is generally a simple one and the expectations are limited the evaluation work must be fundamentally correct and of good quality in terms of its methodology.

2.1.2 Transparency

A high degree of transparency concerning any activity within the framework of process, product and dissemination / implementation evaluation (beginning with the concept design, through the data generation and analysis and then with the resulting recommendations for action) is essential and a basic condition for high quality QM-work, which is not open to discussion. The importance of transparency is based upon several factors:

- Evaluation can only be successful if all relevant parties (project group, pilot course participants, external experts etc.) participate cooperatively and with a spirit of mutual confidence in the evaluation process; this can only be ensured - particularly during a longer period - if all those taking part are informed in a transparent manner about the concept, procedure, results and consequences of the evaluation and if they have unrestricted access to the data and the results.

- The basic requirement of QM-work is to lead or guide a pre-defined working and developmental process to an optimal conclusion. "Optimal" is in this regard a semantically very broad concept and its meaning depends very strongly upon the perspective of the respective observer; the same project result can be viewed completely differently by the *project manager*, *project partner*, *promoter*, and *end user*, potentially being assessed (=evaluated) in conflicting ways. A high quality evaluation concept must take account of this, and clearly communicate at the start from which perspective the evaluation is being carried out, which quality standards, indicators and parameters are being used as benchmarks and what ultimately it is intending to achieve. Accordingly the QM-concept must be sufficiently transparent for all parties, so that they and their requirements can be found - only then can it be considered to represent the interests of all involved.
- The most important aim of QM-work is to derive the necessary resolutions for action and then implement them. Said more simply, the essential structure of any scientific work underpins the QM-process, as the product evaluation *of this project*, for example, highlights: a *working hypothesis* (in the case of *Q-PLM* the development of PRODUCT LIVECYCLE MANGAMENT for vet providers) *is formulated* (= project proposal) and is then converted into the individual *postulates* (=working steps / packages), which flows ultimately into the development of the main *pilot products*. During a *test phase* (= pilot) the original working hypothesis is examined for its *validity*, which can lead to three different results: a) it *is confirmed* (= the products were accepted without changes); b) it *is reformulated* (= the products are accepted in an adapted form or is postulated anew) or c) it *is completely rejected* (= the development of products is not continued, meaning it does not enter the education market).

This is the central task of the QM and applies to the main products of the project as well as to other *topics* and *areas* of the evaluation: It applies in terms of triggering concrete actions that benefit the project, whereby it must be taken into consideration that - purely in

sociological terms - the *omission of an action* also represents an *action*, (if, for example, the evaluation shows that the *working hypothesis* is correct and does not require any changes to be made, then the *action* derived is not to undertake any further action). This is naturally more easily said than done, because the crux is in the detail - which actions are actually triggered, such as how its *quantity, quality, direction, intensity, duration* etc. look, which areas relate to it in which form, in which individual steps they are undertaken, who is responsible for it when and how etc. The contents and result of the complex processes as well as scientific analysis must ultimately be implemented by actual participants (usually the project partners). In order that they - given that most are not experts in the field of *quality management* - derive as clear a set of procedural instructions as possible with which they can subsequently orientate themselves, the highest possible degree of transparency is absolutely essential during the data gathering and evaluation.

2.1.3 Holistic approach

As is already evident from the first two points, the QM-work in an EU project is concerned with the complex realities, which occur at different levels, which can be viewed from different perspectives, and their quality changes depending upon the approach and the observer. It is obvious that such complexity cannot be captured exclusively by using *one* method or *one* instrument. As previously mentioned, with regard to the requirements as well as the available resources, the evaluation of EU projects is very limited, nevertheless a good QM-model must be based strictly upon a *holistic* approach. Only an appropriate *method-mix*, the application of different *instruments*, the definition of different *benchmarks* and *periods* as well as the involvement of different *experts* will allow as many levels and perspectives as possible to be taken into consideration and result in as many relevant outcomes as possible.

The model available here takes these requirements into account, as:

- all relevant project levels are subject to the evaluation work (see *section 2.3*)
- different methods, both with more quantitative as well as more qualitative origins, are used (standardised *written and verbal questioning / interviews, non-standardised questioning, peer group analysis, participating observation, non-participating observation, source data analysis, secondary data analysis* etc.)
- different instruments are employed (*questionnaires, interview guidelines, checklists, data gathering and observation sheets, matrices* etc.)
- different experts - depending upon relevance and expertise - are included in the evaluation process (*project lead organisation, project partners, external evaluators, representatives from the different target groups, education / socio-political decision makers and stakeholders, trainers and pilot participants, internal evaluators* and, if necessary, staff from the *EACEA* etc.)

2.1.4 Feasibility

Although the scientific aspects and standard must not be neglected, a QM-model must equally also be implemented - and in several respects:

- first of all it must be aligned with the available financial, personnel and time resources and achieve reliable results and target-orientated (see below) deductions to be actioned.
- secondly it must be relatively simple to use and quick to understand; many people within the context of EU projects entrusted with evaluation tasks, e.g. with the organisation and evaluation of pilot training in individual partner countries, have had no training at all concerning empirical social research and data gathering, and there is neither time nor money to give them any comprehensive training. Therefore the different evaluation procedures need to be easy to grasp

and evaluation instruments must be simple to use. This means that the QM-model and the instruments employed can have a complex and well thought through background, but at the surface they must *appear* clear and simple.

- thirdly, a QM-concept must take into consideration that its strategic planning as well as its operational implementation will occur from a distance; both are the result of transnational cooperation work by participants, who often live and work thousands of kilometres from each other and during the average two year course of a project they only meet each other in person on four or five occasions at two-day project meetings. This *question of distance* places significant demands upon a QM-concept, such as the ability to be implemented without comprehensive personal control by the evaluation expert responsible (usually an internal or external evaluation expert) or the data gathering and data transmission is processed across a large geographical distance, partly by employing ICT based aids.

2.1.5 The European dimension

Naturally a QM-concept for EU projects must exhibit the criterion of having a sufficiently *European dimension*. It must be applicable to different cultural areas with different traditions, experiences, approaches and standards of quality assurance in data gathering, data analysis and data interpretation. It must above all be sufficiently *open* and *flexible* in order to record and reflect Europe's different realities, which are often not known until the data collection commences. Particularly with target group and content based *status quo* analysis and similar exploratory studies at the transnational level then a more fundamental and *qualitative* oriented research approach is unavoidable (see. Nigel Fielding, Margit Schreier: *On the Compatibility between Qualitative and Quantitative Research Methods*. In: *FQS - Forum qualitative social research*. 2nd issue 1, February 2001, 4). Finally one must be prepared with the development of the instruments that they will be translated into different language versions, not always by specialists, so they still need to function sufficiently well in order for essential results to be obtained.

2.1.6 Target orientation

All of the quality criteria previously described should feed into the highest premise of the *target orientation*. Many of the QM-models developed for EU projects run the risk of not progressing beyond an *Art pour l'art-Qualität* - their only purpose seems to be the superficial meeting of the quality requirements which are anchored in the project proposal. They do not seek to quality assure EU projects *in practice*, but rather they want external observers, above all the evaluators from the funding agencies, to believe that this has happened. The fact that this happens more often than is frequently accepted is of little surprise to experts with many years of experience in this area. However this is not the case with the quality requirements for this particular project. Naturally it is important to convince the evaluators from the promoting agencies of the *quality* and *quantity* of a project's evaluation work but it does not mean that time and effort should be invested in constructing *Potemkin evaluation villages*. Primarily the collection, evaluation and analysis of data and information at all levels of the evaluation must serve clearly defined goals for the strategic orientation and operational implementation of the project. As has already been explained above, the data collected must be sufficiently valid and reliable, so that it can be used as a solid basis for deriving *recommendations for action*. Permanent *action*, understood as conscious *implementation* or also the conscious *omission of an activity (action)*, is the central element of the dynamic process of EU project management. There are many consciously observed and innumerable unconsciously experienced moments, in which a project group, within the context of an EU project, must decide one way or the other *what form of action to take* for the *direction, intensity, duration, quality* and *quantity*, in order to more or less achieve a consciously set *target*. Offering the project group at least a basis for decision making in terms of the most important of the *target orientations* should be the primary motive of all evaluation work within the context of an EU project.

2.2 Definition of the evaluation expert

In order to also be able to ensure that all perspectives and opinions of experts for the different levels and areas the projects are included in the quality assurance, the different experts are involved in the evaluation activities.

Basically we assume that the greatest expertise with respect to the project is to be found within the project group; this applies not only to the process-technical areas of the project but also to its content: In the project proposal it was argued in detail, upon which considerations and requirements this particular project group was established, whereby criteria such as *authenticity regarding the project topic, access to the project target groups, educational content and methodological knowledge, international project experience, educational and socio-political networking and European dimension* played an important role; additional indicators such as *integrity, professionalism and work ethic* and the responsibility of being a project organisation were not expressly mentioned, but were assumed as a *conditio sine qua non* for each project participant. From this cumulative collection of experience and expertise it can be derived that the project group will play an important role in nearly all areas of the evaluation.

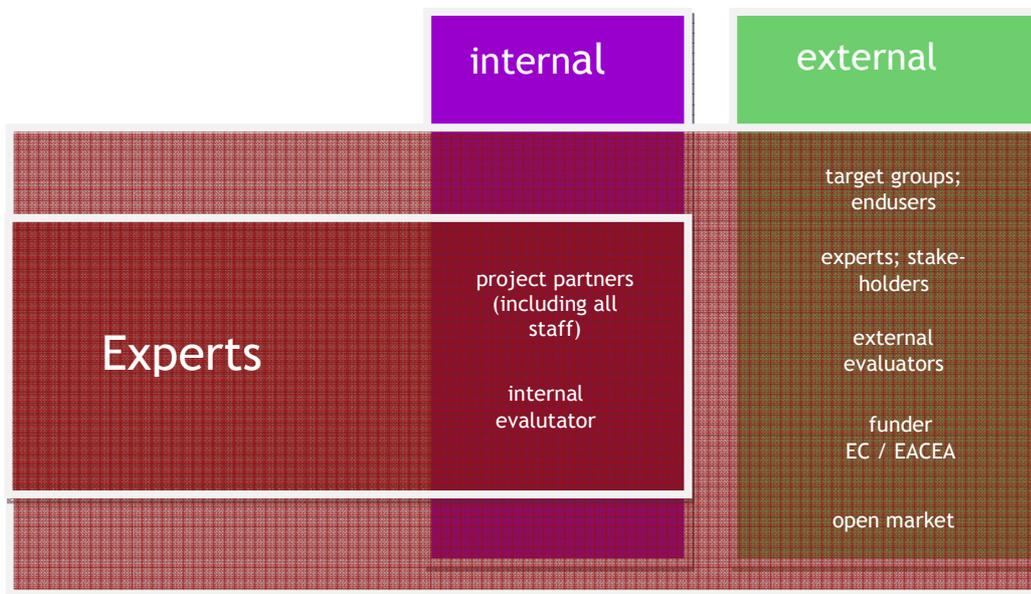
Even when sufficient competence and experience within the project group is a condition for a successful project evaluation, this cannot cover all areas ranges and facets. It is absolutely necessary to bring in a certain external perspective in order to prevent *adopting a blinkered approach*, to increase the target group relevance, to fill gaps in know-how and expertise and for the results of the internal evaluation to be externally examined. Therefore during the course of the project *external experts* are involved again and again in the evaluation activities. Particularly concerning the *target group orientation, market relevance* and the *sustainability potential* of the main products, relevant experts (representatives of *primary and secondary target groups, end users, educational and socio-political stakeholders, academics etc.*) are asked for their assessment and opinions.

With regard also to the technical and organisational quality standards within the area of *project management* it is planned to involve external experts for their advice and evaluation; finally we are also aware that the *EACEA*, with its two evaluation activities, *interim and final report*, is a part of our evaluation concept.

Although the evaluation concept for the Q-PLM project is very comprehensively applied and many internal as well as external experts have been taken into consideration, the most important and, in the long run, only relevant evaluation activity with regard to the product quality will be made by another group of external experts after the duration of the project has ended: On the open market in the individual countries it will be evident whether the *Q-PLM* products will be demanded by or offered to the end users and target groups. Only here will it be shown whether the quality of the content, the target group relevance, the pedagogical-didactical development and the European as well as the national dimensions have been sufficiently achieved so that the project's main products can establish itself on the open market. This evaluation does not follow any standardised procedures or methodological guidelines, but rather it is *more concrete, more relevant and more uncompromising than all other evaluation activities combined*.

The QM-concept for the *Q-PLM project* cannot anticipate or directly influence the results of this *real life evaluation*, but it can help to create the best possible conditions for a positive evaluation by the open market.

Fig. 4: Evaluation experts



The number, profile and selection of different experts as well as the intensity of their involvement varies from project to project and must be clearly specified in each one. In addition in some cases a random sample of the experts involved must be carried out, which in empirical social research and related sciences is an immensely complex, lengthy and thus more costly process, e.g. with election forecasts or product launches; in the *Q-PLM* project this problem with the evaluation of the project products is addressed in section 3.2. (see below for a more precise description).

2.3 Object of the project evaluation

It is extremely difficult to comprehensively, authentically and logically represent all possible objects in a project evaluation. Their numbers are simply too large, their forms are not coherent enough and their interaction is too complex. Within the technical literature there are hardly any reference points to define these objects, according to which criteria they should be selected and considered as well as with which thematic groups they should be combined. It is thus very hard to select from the almost infinite number of possible evaluation topics those which are most relevant and meaningful for a positive project implementation. There is a danger of including the wrong or irrelevant selection of evaluation topics or defining them incorrectly in terms of quality and quantity. The selection of the correct number of evaluation objects represents a significant challenge to the project group: if the number is too small the quality of the evaluation results will suffer as well as the requirement for a *holistic approach*; if it is too large the evaluation concept will become almost uncontrollable and will infringe upon the *criterion of feasibility*. Figure 5 illustrates the first form of guidance for a fundamental schematic representation of the six central data areas, under which, according to our understanding, most evaluation topics can be subsumed:

Fig. 5: Objects of the evaluation

Proposal (already evaluated by EACEA)	Partnership (already evaluated by EACEA)	Process (main focus of Q-PLM evaluation activities)	Products (main focus of Q-PLM evaluation activities)	Dissemination (main focus of Q-PLM evaluation activities)	Sustainability (main focus of Q-PLM evaluation activities)
General project idea	Composition	Technical implementation of work plan	Project idea	Dissemination plan	Quality of project products
Innovation	Number	Contract management	Pedagogic quality	Media used (e.g. project website, flyer, poster, conferences, seminars, print media, TV, Internet etc.)	Adaptability on national/regional level
Market needs	Authenticity	Work atmosphere	Market and target group Orientation	General public reached	commitment of stakeholders and political decision makers
Target group orientation	Competence	Project Meetings	EU orientation	Target groups and stakeholders reached	Intellectual property rights
European value	Size	Cooperation between project meetings	Usage of appropriate media	Involvement of project partners and countries	Marketing strategy
Added value	Area of activities	Information/communication flow	Number of publications	Quality assurance and testing	Efforts and motivation of project partners
Work plan	Geographic dimension	Time management	Language versions existing	Dissemination outside partnership	Etc.
QM plan	Quality of performance and services	Quality Management	Technical quality of products	Etc.	Etc.
Dissemination plan	Reliability	Conflict management	Quality assurance and testing	Etc.	Etc.
Budget	Contact to target groups and stakeholders	Administration, reporting and cash flow	Potential of real usage	Etc.	Etc.
Etc.	Etc.	Etc.	Etc.	Etc.	Etc.

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It becomes evident that two relevant areas of evaluation objects, the *proposal in all its parts as well as the partnership*, have already been evaluated within the context of the application process by the *EACEA*, that this by their own external appraiser.

This is of importance insofar that these areas do not need to be fully addressed again by the QM-concept during the project implementation; this helps save resources and

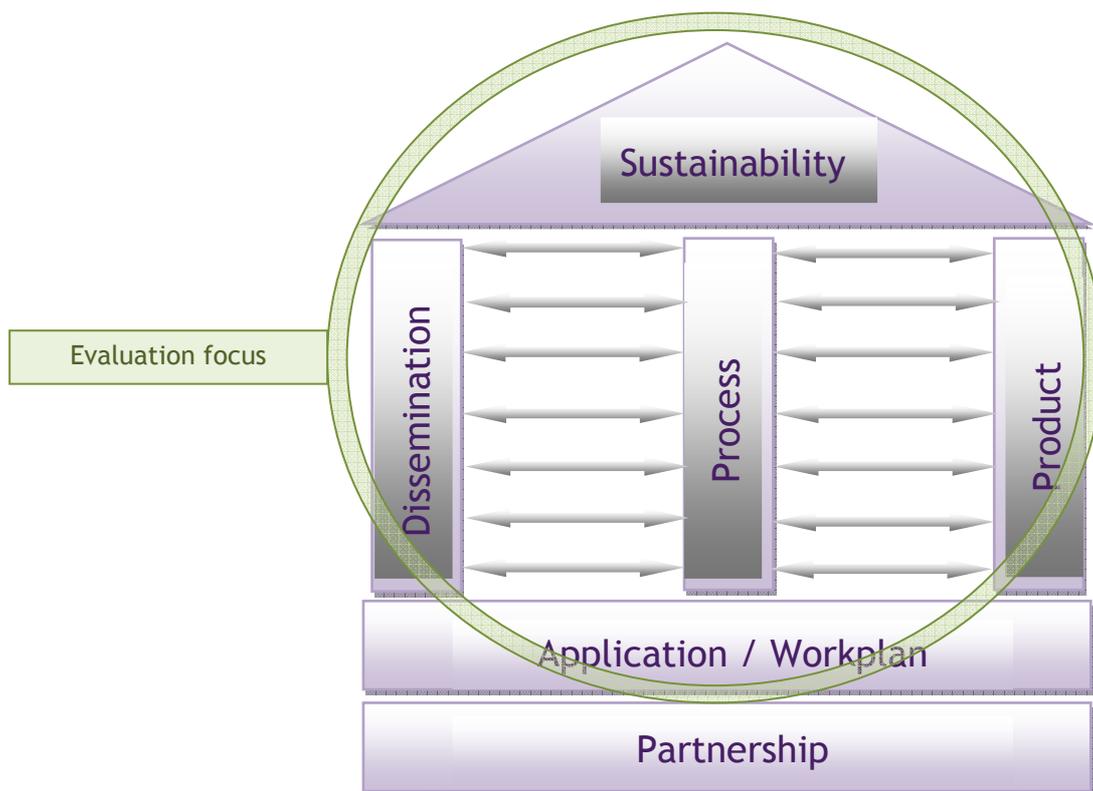
allows efforts to be concentrated more intensively on other areas. This does not mean however that the *project proposal* as well as the *partnership* are not of any further relevance to the positive running of the project; they still represent the foundation of this project and are given further consideration by the ongoing evaluation activities - however not with the same intensity as the areas, which will not yet have been quality assured at all.

This reduction allows us to focus on the following central evaluation topics:

- *process level*
- *product level*
- *dissemination level*
- *sustainability level*

In summary the interaction and dependency of the project's different evaluation levels can be represented as follows:

Fig. 6: Interaction of the evaluation levels and focus of the evaluation



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Following the principles of the *holistic approach* and *scientific correctness*, INIT developed an evaluation model aligned and applicable to these areas, and which is based on the *measurement principle of triangulation* (see Uwe Flick: *Triangulation: An*

introduction. 2nd edition VS Verlag, Wiesbaden 2008; Jennifer Greene, Charles McClintock: *Triangulation in Evaluation*. In: *Evaluation Review*. issue 9 5, 1985, pages 523–545). This procedure, which originally stemmed from geographical location fixing, works on the basic assumption that one's *own point of view* can be determined better if many different perspectives and procedures of an appropriate quality are used. Because this approach does not lack certain logic it has been incorporated into empirical social research, and consequently it has also been applied to our QM-concept. From this several conclusions can be derived for the evaluation of the project:

- a) in order to be able to determine and evaluate the condition of the project in the best possible way all relevant levels are included in the evaluation (*process, product, dissemination and sustainability levels; principle of the holistic approach*)
- b) to determine the condition of the project different procedures and instruments are called upon (see 3.2.1; 3.2.2)
- c) the assessment of the project's condition is carried out at various milestones and times (see Fig. 19)
- d) the necessary data for assessing the condition of the project is generated from different sources (see 3.2.1 - 3.2.4)
- e) the measurement and interpretation of the data as well as the appropriate action derived is performed by different persons (see 2.2; 3.2.3)

The developed *QM-model* works with so-called *relevant quality indicators (RQI)*, which are on the one hand predetermined due to their general validity, and on the other hand are defined by the various experts (evaluator, project partners, target groups etc.) so that they are tailored towards each project. The *RQIs* can be similar or completely different to each other depending upon the project level and the project's specific requirements, however usually they will not be mutually exclusive.

The measurement principle of triangulation implies that all four dimensions are closely interwoven with each other and their combined analysis makes a holistic perspective possible. Furthermore, the method developed by INIT satisfies the previously stated issue of *transparency*, because all project partners have access at any time to the data upon which the evaluation is based.

The main benefit of the quality assurance method is that it helps in assessing the current *status quo* of the project in terms of its different manifestations and to contrast it with the aims set in the project plan or with other quality standards. The method makes it possible to recognise any deviations immediately and allows deductions to be made, which will activate control mechanisms to keep the project on the correct course and to secure high quality standards.

The extremely important questions for the evaluation of the *method-mix* applied, the *instruments* used, and the sequencing of the different evaluation strands, will be addressed in the following section, which is dedicated to the actual work at the individual evaluation levels.

3. Evaluation of the project levels, methods, instruments and measuring points

3.1 Level 1: quality assurance during the project process

We have already stated that the implementation of an EU project is a very complex and multi-layered venture. One of the most important elements, if not the most important, is the *project process* in its narrowest sense, that is the course of the project in all of its technical and administrative, as well as social, communicative, organisational, cooperative and coordinating aspects. They are closely connected with each other and determine each other; however it is difficult to consider each of them in isolation. With some components of a more technical and administrative nature this is achieved more easily, e.g. whether the *partner contracts* are concluded to an appropriate level of quality, whether the partners received their funding tranches on time, or whether the number of project meetings carried out equals what is stated in the proposal. However the scientifically based investigation of other components, e.g. the quality of the communication between the partners, the management quality of the lead organisation or the commitment and motivation during the *project* implementation, would, for one single project, occupy a whole host of sociologists, psychologists and other experts for many years without them being able to reach any significant conclusions. Naturally the demands on the process evaluation of an EU project can and will not meet such requirements. The process evaluation is rather more concerned with defining fundamental key factors at the process level together with the partnership and in obtaining vital information about the different methods and instruments, to establish whether they are regarded positively. If the result of the assessment should prove to be satisfactory then actions can be undertaken in order to maintain this situation, and maybe even to further improve it. If the result should give cause for concern, then essential actions to fundamentally re-orientate one or more factors will need to be undertaken. In a purely academic sense one is acting here very much on thin ice *without sufficient scientifically secure data*; in the somewhat more reality-based and rapid world of project management there are hardly any alternatives to predetermined framework setting and procedures. There remains little else but to work with unreliable data, but nevertheless obtaining a great many formal as well as informal sets of evaluation cycles, the application of acquired specialist competence and knowledge from life and

professional experience as well as a sound measure of intuition for actions in terms of a *positive project implementation* - likewise very much a *comparable* target! - can be achieved.

In this project the *project process* is examined by two large evaluation strands, which both extend throughout the entire course of the project. The first focuses on the technical-administrative areas, whilst the second covers more extensively the management orientated and social components. Both perspectives combined should guarantee a secure project implementation.

3.1.1 *The snapshot analysis (actual - target comparison)*

The so-called *snapshot analysis* helps to draw a comparison between the targets in the *project proposal* and other *quality guidelines* with the actual *progress of the project*. This occurs based on the following considerations:

- the project process set out in the proposal is originally accepted as the optimum way of achieving the aims of the project; the actual course of the project must then be measured against this default process, in order to ascertain the correctness of the approach, or to gain confirmation of the need to modify it (= deriving decisions for action)
- each individual project step should not only have a strategic and operational purpose, as it also involves costs. Project expenditure can only be justified if the individual project steps are kept approximately within their quantitative and qualitative default limits.
- every other evaluator of the project - above all the promoter - will likewise compare the actual results and operational course of the project with the original proposal in order to derive quantitative and qualitative statements regarding the progress of the project. If the project group adopts this approach in its internal evaluation process from the start and achieves positive results, then the probability is quite high that the outcomes of the external evaluators will also be positive.
- the *snapshot analysis* has the additional advantage that its underlying instrument represents clearly and in chronological order all individual *processes, activities, results, deadlines* and *partners' responsibilities*. The

application documents from the funding programmes do not normally ask for such detailed overview plans and all relevant information is "hidden" in different places within the proposal document, e.g. *a general project description, description of work packages, description of the project results, dissemination plan, QM-plan etc.* It is therefore a great help for all involved in the project - primarily for the project lead organisation - if the entire course of the project with its steps is detailed and listed chronologically. Thus a management instrument for project lead organisations and partners is developed alongside the evaluation instrument.

The first step towards the creation of the snapshot analysis is therefore the transfer of the entire project proposal with all its facets and processes into a new document represented in fig. 7.

This document possesses the character of a checklist and is constructed as follows: on the left hand side of the instrument under "nominal results" all project steps, results and products are specified in chronological order and defined by relevant *indicators*; on the right hand side of the instrument there are three *status columns*, in which symbols and coloured shading for each step can be recorded to note whether this step is already underway, () has already been completed () or could not be carried out due to a particular reason; () there is an additional column to note the degree, in percentage terms, to which each individual step has been achieved. Finally there is space available in the last column for *comments* or *notes*.

Fig. 7: Evaluation instrument - snapshot analysis / Q-PLM –page 1



CUBITUS
539005-LLP-1-GS-GRABRUS-GR

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CUBITUS - WORKPLAN							work plan, evaluation, dissemination and valorisation activities		
NOMINAL RESULTS							ACTUAL RESULTS		
Results/Outputs	Quantity/Frequency ¹	Languages ²	Pages/Volume/Duration	Medium	Partners in charge ³	Start - End	Status ⁴	% ⁵	Comments
Work plan and snap shot analysis grid (Del. N° 8)	1	ENG	NA	Work plan quality management tool word/pdf file	P1	10/13	<input checked="" type="checkbox"/>	100	<ul style="list-style-type: none"> Work plan based on chronological listing of all project activities Allows measurement of technical and administrative development of project Allows comparison of projects actual status quo with requirements of the original proposal
Project meeting I (IT) (Del. N° 1)	1	ENG	2-3 days	Meeting	P3, P1, All partners	11/13	<input type="checkbox"/>	50	<ul style="list-style-type: none"> Presentation of all partners Presentation and discussion of projects objectives, aims and results in total Settlement of administrative, financial and contractual issues Presentation/discussion of RDI system Presentation/discussion of senior tourism status quo and expected developments in EU Presentation/discussion of ISO standards relevant for project Settlement of responsibilities and work tasks division in general and for WP1, WP2 and WP3 in total
Partner contracts (Del. N° 17)	7	ENG	Approx. 3- 5 pages	Bilateral contract paper signed in 2 original versions	P1 with each individual partner	11/13	<input type="checkbox"/>	10	<ul style="list-style-type: none"> Contract setting all duties and obligations of promoter and partner organizations (including payments, money flow, deadlines etc.)
Registration at E.N.T.E.R. (Del. N° 21)	1	ENG	NA	Internet platform/network	P1	12/13	<input type="checkbox"/>	10	<ul style="list-style-type: none"> Registration of P1 as E.N.T.E.R. member Registration of CUBITUS as E.N.T.E.R. project Regular dissemination of CUBITUS by using services of the network

Legend:

¹ Indicates in which quantity a results gets produced or in which frequency it takes place

² Indicates in which language versions a results is available or gets performed

³ P1 = Baltic College (DE); P2 = ~~Guarino Guarini~~ (AT); P3 = Florence Planet (IT); P4 = Tartu University (EE); P5 = SPI (PT); P6 = ~~Guarino~~ University (RO); P7 = IODG (TR); P8 = GLUMI (UK)

⁴

= fulfilled = pending / in progress = not fulfilled / cancelled = not yet started

⁵ Indicates the approximate degree of realisation in % at the measuring date

In *fig. 7* the first page of the Q-PLM snapshot analysis is shown, which was developed by *INIT* and its contents were completed together with the project lead organisation. The development of this document is orientated towards the following *Relevant Quality Indicators (RQI)*:

Fig. 8: Relevant quality indicators - series 1

RQI 1: process level 1 – Snapshot analysis				
RQI_1.1	Consideration of all planned and necessary project steps			
RQI_1.2	Adherence to chronological progression (technical planning)			
RQI_1.3	Adherence to content related progression (technical planning)			
RQI_1.4	Adherence to a logical progression (technical planning)			
RQI_1.5	Multiplicity of the project steps			
RQI_1.6	Language requirements are taken into account			
RQI_1.7	Consideration of the quantitative requirements			
RQI_1.8	Selection and use of relevant methods / media			
RQI_1.9	Selection and use of attainable viable methods / media			
RQI_1.10	Clarification of division of responsibilities			
RQI_1.11	Adherence to the timescales			
RQI_1.12	Completion of partner contracts on time			
RQI_1.13	Payment of funding tranches to partner in accordance with the contract			
RQI_1.14	Adherence to chronological progression (operative)			
RQI_1.15	Adherence to content related progression (operative)			
RQI_1.16	Adherence to logical progression (operative)			
RQI_1.17	Timely identification of unintended deviations from the project plan			
RQI_1.18	Timely identification of necessary deviations from the project plan			
RQI_1.19	Appropriate crisis management in case of deviations			
RQI_1.20	Appropriate modification of the project plan in the case of deviations			

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With the help of the instrument illustrated in *fig. 7* P1 and P2 are able to produce an update, approximately every three months, highlighting the progress made -

the so-called *snapshot of the project*! As a result it will be evident at which process-technical level of development the project is at any given time, whether and which problem areas exist in terms of the fulfillment of the individual quality indicators, who is responsible for them and which other project steps and work packages could be affected. Provided that this instrument is used regularly and diligently then serious deficiencies at the project process level can be more or less ruled out, or they will be noticed at an early stage.

During the course of the 24 months of this project eight measurements will be carried out (approx. every 3 months), which in turn leads to 8 updated versions of this evaluation document. With a consistent implementation of the original project plan as well as all other agreements made with the partners the final version of the snapshot analysis should indicate that all the project steps are marked and that the completion level of each individual item - and thus the entire project - is 100%.

As important and robust as this instrument may be, it must not be forgotten that it is more about evaluating the quantity rather than the quality of the project processes. This qualitative area however is covered especially by the quality assurance measures for the product level.

3.1.2. Project meetings and phases

The first evaluation strand is aimed rather at the *hard facts* of the project process, whereas the second is dedicated to a greater extent towards social, communicative and organisational indicators as well as content and operational areas of the project management. This includes organising and undertaking the project meetings, communication processes, problem and conflict resolution strategies, partners learning about the different project activities and their participation in these, the partners' level of knowledge concerning fundamental core data and processes in the project (timescales, budget, dissemination, evaluation etc.), evaluation and control measures etc.

Transnational cooperation initiatives usually organise themselves according to similar patterns, and upon the basis of this fact indicators for the quality assurance can also be standardised across many projects. Since the interaction

between the project participants is at its most intense during the *project meetings*, the organisation and staging of the meetings play an important role; in addition, the *phases* between the project meetings need to be closely monitored, as it is during these times that most of the work takes place, and it is also not optimal that there are large geographical distances between the partners.

Within the framework of the *Q-PLM* project evaluation the following quality indicators are proposed in relation to the evaluation and assessment of project meetings:

Fig. 9: Relevant quality indicators – series 2

RQI 2: process level 2 – Project meetings				
RQI_2.1	Timely agreement of the project meeting (at least 4 months in advance)			
RQI_2.2	Timely planning of the project meeting			
RQI_2.3	Timely distribution of all relevant documents to ensure the successful planning and implementation of the meeting, e.g. registration form, agenda, working instructions etc.			
RQI_2.4	Support concerning the travel and accommodation arrangements provided by the project lead organisation and / or the host organisation			
RQI_2.5	Timely submission of all relevant documents, information, materials by partners			
RQI_2.6	Agenda covers all significant points and issues			
RQI_2.7	Agenda ensures there is sufficient time available			
RQI_2.8	Agenda take into account any organisational hindrances, e.g. transfer times, IT access etc.			
RQI_2.9	Agenda involves all project partners			
RQI_2.10	Underlying the agenda are clear aims			
RQI_2.11	Project partners can help shape the agenda			
RQI_2.12	Agenda contains a relevant mixture of approaches (individual presentations, team / group work, use of different media forms etc.)			
RQI_2.13	Appropriate accommodation (quality, achievability, value for money, distance from meeting location etc.)			
RQI_2.14	Meeting takes place in appropriate surroundings, e.g. room size, facilities			
RQI_2.15	Project management is suitably prepared in terms of content			
RQI_2.16	Project partners are suitably prepared in terms of content			
RQI_2.17	All attendees participate actively in the project meeting			
RQI_2.18	Professional leadership of the project meeting (time, communication and crisis management etc.)			
RQI_2.19	Professional participation by all partners in the project (presentations, communication and discussion etc.)			

RQI_2.20	All participants possess the necessary knowledge and skills to actively take part in the meeting, e.g. language ability			
RQI_2.21	All participants are treated equally and respectfully			
RQI_2.22	Working atmosphere is friendly and relaxed			
RQI_2.23	The project group respects the particular needs of individuals , e.g. dietary requirements, prayer time, disabilities etc.			
RQI_2.24	Balance between working and recreational periods			
RQI_2.25	Agenda includes contact with local target groups, stakeholders, experts, media etc.			
RQI_2.26	Agenda contains a social programme (visits, evening meals together etc.)			
RQI_2.27	Minutes are taken during the meeting			
RQI_2.28	The meeting fulfils the aims and requirements of the agenda			
RQI_2.29	The meeting leads to concrete outcomes and decisions, which are have the agreement (if possible) of all participants			
RQI_2.30	The next project steps are clearly set out and the deadlines are fixed			
RQI_2.31	The minutes include all important outcomes and decisions			
RQI_2.32	The minutes are circulated to all partners as quickly as possible following the meeting (max. 1 week)			

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Closely connected to the quality indicators for the project meetings are those for the *project phases*. Project phases are understood here as "working phases between project meetings" and should not be confused with *the defined content related project phases* such as the *development phase*, *test phase* or *dissemination phase*. The evaluation of the project phases should guarantee that the cooperation and communication between the partners continues to function when the partners do not see each other for many months and are only able to communicate via email, Skype, telephone etc. The indicator series employed here for the evaluation has however been prepared with less detail than the previous one. This is due to the fact that project phases in which the partners do not meet together in person constitute well over 90% of the overall project work time, and furthermore they are constructed in an extremely multilayered and complex manner. The quantity and quality of the project phases, through an intensive evaluation, would go beyond the limits of the scope of the existing possibilities. Therefore it is only possible to concentrate on the most relevant indicators, which were compiled as follows:

Fig. 10: Relevant quality indicators – series 3

RQI 3: process level 3 – Project phases				
RQI_3.1	All partners have received information and documents that clearly detail the project process in the project phases, e.g. a workplan			
RQI_3.2	All partners have received information and documents that clearly set out the financial framework of the project, e.g. budget tables and partner budgets			
RQI_3.3	All partners are sufficiently informed about the status quo of the various project levels			
RQI_3.4	All partners are sufficiently informed about previous steps and procedures in relation to the different project levels			
RQI_3.5	All partners are sufficiently informed about the future project steps and procedures in relation to the different project levels			
RQI_3.6	The partners are aware of their roles and tasks in each of the project phases			
RQI_3.7	The contact person is clearly defined for each partner organisation			
RQI_3.8	All contact persons and partner organisations respond to communications promptly, e.g. within 3 days			
RQI_3.9	The project lead organisation is happy with the communication flow in the respective project phase			
RQI_3.10	The partnership is happy with the communication flow in the respective project phase			
RQI_3.11	The communication runs as required at different levels, e.g. telephone, Skype, platforms, additional bilateral meetings etc.			
RQI_3.12	All partners contribute adequately to the project content and activities within the planned timescales			
RQI_3.13	Timescales and deadlines are adhered to			
RQI_3.14	Those responsible for the work packages make all relevant information available to the partnership, so that the activities can be undertaken in the best possible way			
RQI_3.15	The partners are sufficiently informed about the financial and administrative aspects of the project			
RQI_3.16	The project lead organisation provides adequate instruments for regular content-related reporting			
RQI_3.17	The project lead organisation provides adequate instruments for regular financial reporting			
RQI_3.18	The partners report regularly about their activities			
RQI_3.19	The project finance is regularly accounted for internally (at least every 6 months)			
RQI_3.20	The embedding of the project phases between the partner meetings corresponds to the requirements of the project proposal, the project management, the programme guidelines etc.			

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3.1.3 Evaluation procedure - process level

The quality indicators, which exist in connection with the *project meetings* as well as the *project phases*, can be examined, if required, by one common or by two separate measuring procedures. The final decision is dependent upon the project plan, the budget and also upon other framework factors, e.g. whether other experts are still involved in the project evaluation. Individual indicators can, if necessary, be not taken into account or completely replaced or examined only informally.

First and foremost however, the evaluations are accomplished by means of *written questioning*. The specifically developed questionnaires are sent out - in agreement with the project coordinator - shortly after each project meeting, thus the number of *project meetings* determines the number of evaluations carried out. Either electronic or printed versions of the questionnaire are used. This task works on the one hand with a five-level *Likert Scale*, an established scaling procedure for measuring personal attitudes by assessing relevant items (see Miller, Ferderic P., Vandome, Agnes F., McBrewster J. (2010): *Likert Scale: Psychometrics, Questionnaire, Rating scale, Rensis Likert, Psychologist, Skewness, Kurtosis*. alphascript publishing); in addition to this quantitatively orientated measurement the questionnaire also offers space for qualitative feedback in the form of written comments, suggestions, observations etc.

However, it is not only the results of the written questioning that feed into this evaluation, but the evaluator can also obtain additional relevant data about other methods. This involves personal - *formal* or *informal* - *discussions* with the project participants and - applicable above all if the evaluator is also a project partner, as in the case of *Q-PLM* - intelligence gained from *participants' observations*. The everyday work of the project supplies the evaluator with important information for the evaluation task. Therefore some of the intelligence gained in this way does not need to be collected by using any additional assessment methods.

All of this information and data will be considered by the evaluation of the project meetings and the project phases: INIT collects the results of the written questionnaire, then processes the information and illustrates it using graphic and

statistical representations; in addition the comments made by the partners are analysed and the intelligence gathered from discussions as well as participants' observations are incorporated.

The most important part of this evaluation work is provided by the analysis and interpretation of the data, which in turn lead to a concrete assessment of the project's progress as well as to recommendations for action in relation to further project steps. All data, information, interpretations and deductions are published in an *evaluation report*, which serves the coordinator, all project partners and the external evaluator in their continuing work.

3.2 Level 2: quality assurance at the product level

3.2.1 Problem identification

The quality assurance of products is rightly regarded as being one of the greatest challenges for collaborative development projects at the European level, as *quality* is a hypothetical construct: The definition and interpretation of their developments often depends upon subjective preferences, individual learning experiences or culturally determined learning traditions. Hence it is often difficult for project groups to discuss the *quality of products* with any degree of consensus and to collectively agree reliable indicators.

For this reason the opinion and assessment of a participating project evaluator is also of little benefit. The evaluator's tasks are to evaluate and assess generally significant and highly technical areas of the project (usually at the process level). In terms of product evaluation the evaluator is less of "an evaluator" but is rather more a "moderator of the evaluation." There are sound reasons for this, e.g.:

- as the evaluator does not usually belong to the target group, he or she cannot speak knowledgeably or authoritatively concerning the needs and requirements of the target group, which similarly applies to the *market orientation* of the learning materials

- the evaluator is also only able, to a certain extent, to assess the pedagogical and didactical preferences of project partners as well as the different European learning cultures.
- also questions concerning the design and layout of the learning materials can to a large degree only be assessed subjectively. Therefore an evaluator is only able to perform an advisory function in this area
- the evaluator does not directly carry out the testing of the learning materials, but instead simply reports indirectly about the experiences and knowledge of others
- finally it would also be illogical to bring experts together from across Europe into a partnership and then expect an individual evaluator to determine the product quality.

What does naturally belong to the evaluator's set of tasks is facilitating the best conditions for a comprehensive evaluation of all relevant products, selecting the appropriate methods plus developing the necessary instruments, collecting the raw data and then systematically evaluating and interpreting it.

An evaluator with sufficient experience of transnational project work and / or with comprehensive pedagogical knowledge can naturally intervene in supporting the product development process.

In any case helpful starting points for the product development process are a basic *market analysis* plus an attempt from the beginning to meet the *needs and expectations* of the *direct and indirect target groups* as well as their *stakeholders*. For this reason it makes sense for the evaluator to become familiar, before the actual start of the product development, with the conditions and context of the project topic in the individual partner countries as well as with the needs and expectations of the target groups and stakeholders. Also the requirements and interests of the individual project partners should be examined, because motivated and active project involvement can only be guaranteed if the products correspond to their needs and their perceptions concerning quality.

For these reasons the quality assurance of the project products is to a large extent project-specific, and it is more difficult to define standardised indicators than is the case at the process level. The appropriate indicators can in part only be ascertained and verified during the course of the project.

3.2.2 Product evaluation methods

The methods described here can just as well be used for the identification and verification of evaluation indicators as they can for the evaluation of products. The following methods were envisaged for the Q-PLM project:

- **1 - Research:**
Research or *desk research* involves the gathering of already existing data and information from relevant primary and secondary sources; in addition relevant technical literature, research outcomes, development results from other experts, field reports, media messages etc. are all considered. Naturally it is advisable to undertake this work during the initial phases of a project in order to obtain relevant background information concerning the project topic from already existing specialised knowledge as well as professional and life experience. At best some of this work can be commenced during the project application process in order to transparently present a realistic outline of the issue and to be able to orientate the project from the start.
- **2 - Questioning:**
Questioning represents an important element. This is mainly achieved when the project groups needs feedback and expertise from outside the partnership (e.g. when data are collected about the circumstances in the individual partner countries, about attitudes and opinions of stakeholders and experts, their expectations of the project, their experience during testing the project products, their estimations concerning the marketability of the project's outcomes etc.). Different instruments are used for these questioning tasks, which can be verbal or written or a combination of both.

- **3 - *Observation*:**
Particularly within the context of the *test phase* the observations of participating, e.g. trainers and tutors, trainees, testing persons in general etc. and *non-participating*, e.g. uninvolved experts, persons are used to investigate the product quality as well as the effect of the products on the main target group. *Observation* represents an important evaluation element, as it allows the inclusion of non-verbal or sub-conscious processes in the evaluation; e.g. *can a general mood* within a group of learners provide conclusions about the attractiveness of a training course and their interest in the learning materials; criticism is often expressed through body language, gestures etc.
- **4 - *consultation / technical discussion*:**
A particular form of questioning is represented by *consultation*, usually in form of a *technical discussion*. This means integrating relevant technical experts (scientists, stakeholder, pedagogues, political decision makers, labour market experts etc.) with their expertise into the product development process. Their input will produce visible indicators, which are more connected with the project at an academic and / or political meta level, and therefore help to consider the products in terms of their integration into larger developmental processes as well as into social, educational and labour market policy contexts.
- **5 - *peer group review*:**
The method of *peer group review* used is less formalised and standardised in this project, and has enormous potential for the product evaluation. It assumes that within the partnership - not only through the people specifically taking part, but also through the organisations and networks standing behind it - enormous specialised knowledge is available, and that this expertise should be used to develop the individual quality-assured project products. Thus all project products are sent at the end of each developmental step to all partner organisations for their evaluation and comment; the results of the feedback is then integrated into the further development of the products. Through these continuous evaluation cycles the optimum quality standards should be attainable.

These methods presented are not the only ones used during the product evaluation of this project, but they are the most important upon which the formally driven evaluation processes is based. In addition there are many more methods and their hybrids that can be applied; these play a large role above all in the *informal* and *non-steered* processes, and often those involved are not conscious of it, e.g. through internal consultation discussions within organisations, the alignment of product contents with national legal regulations, the unconscious consideration of national educational standards and learning traditions etc. These evaluation forms are very difficult to examine and represent formally. They will be taken into account by the individual evaluation report as far as it seems possible and meaningful.

3.2.3 Evaluation instruments

Assuming the *objects* and *indicators* of the evaluation are clear, then the appropriate evaluation instruments must be developed in the next step. The *instruments* used in Q-PLM are based on generally valid quality standards in empirical social research as well as on the experience of their application during the course of previous European collaborative projects. For the *Q-PLM* products the following instruments will be used:

1. *documentation forms*, e.g. to be able to gain comparable data from desk research and observations by non-participants and then represent it in a standardised form.
2. *questionnaires*, e.g. by written *questioning*
3. *interview guidelines*, e.g. in the *test phase* or with *the consultation by external experts*
4. *checklists*, e.g. with the *examination of the quantitative requirements for the products*
5. *minutes and experience reports*, e.g. during the *test phase* with tutors / trainers and participants
6. attendance registers (during the test phase)

The specific framework of EU projects (limited time, money and human resources, the large geographical distances between the partners, limited

knowledge of empirical social research within the partnership etc.) appears to justify the increased use of standardised procedures and instruments. Nevertheless the instruments should also offer space for *qualitative data collection*, because this can be extremely helpful for the evaluation of products as well as for obtaining concrete operational instructions.

3.2.4 Samples

As has been previously mentioned, different representatives of the target groups, stakeholders and experts are involved with the product evaluation. In the case of the Q-PLM project these include:

- Management level of VET providers
- Management level adult education providers
- Teaching staff on adult education and/or VET level
- VET policy makers and labor market experts
- General education experts
- Experts in QM with a special focus on product life circle management
- *Q-PLM* partnership

Regarding the internal layering and weighting during the compilation of the individual samples for the product evaluation there is little to say at present, and likewise about how many experts will actually provide input. It is obvious that more VET providers (managers/trainers) and general education experts will be included in the evaluation processes more frequently than politicians with expertise in VET and labor market development. In any case as far as possible all experts should take part in one of the samples.

3.2.5 Product: Research and analysis phase report

The project starts with an explorative research work which serves two main purposes: a) it gives a basic overview of the state of the art with regards to the project's topic in all partner countries; b) it allows clear deductions and recommendations for the main project outcomes, the active product lifecycle-management handbook and software. All data, findings and recommendations will be

summarised in the research and analysis phase report for which the following indicators were established:

Fig. 11: Relevant quality indicators – series 4

RQI 4: product level 1 – Research and analysis phase report (Del. 18)				
RQI_4.1	Good practice analysis and documentation grid was used for data collection by all partners (Del. 15)			
RQI_4.2	Grid underwent at least one evaluation cycle within partnership before getting into usage			
RQI_4.3	All partners (not P2) contribute to data collection with a national/international report (approx. 5-10 pages each)			
RQI_4.4	Report is based on all partner reports on national/international software analysis (Del. 16)			
RQI_4.5	Report is based on all partner reports on national/international fields analysis in PLM (Del. 17)			
RQI_4.6	Report gives good overview of project-relevant situation and demands in partner countries/Europe			
RQI_4.7	Report proceeds findings and feedback of partners reports in own analysis activity and words			
RQI_4.8	Report give clear deductions and recommendations (including a matrix of elements) for further product development work			
RQI_4.9	Specialist terminology used within the partnership is known, consistent and commonly recognised			
RQI_4.10	General research work corresponds to the fundamental standards of empirical social research			
RQI_4.11	Final version of report is presented according to timescale in EN			
RQI_4.12	Final version of report contains approx. 30 pages			
RQI_4.13	Final version of report is downloadable from project website			

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Compliance with these indicators is ensured by P1 and P2 together with the project partnership, particularly with the partner main responsible for the research work before and during the creation of the report. Checklists, guidelines, questionnaires, and verification instruments are used during the development phase.

3.2.6 Product: Active product lifecycle management for VET providers (software)

With the help of the research and analysis phase report (Del. 18) as well as some further deliverables of the project (Del. 19 and Del. 20) the beta version of the product lifecycle management for VET providers can be developed (Del. 21). It will be tested in the pilot phase (Del. 23) and according these results and outcomes revised and published in its final version. At the moment, the following were set as quality indicators for this *product*:

Fig. 12: Relevant quality indicators – series 5

RQI 5: product level 2 – Product lifecycle management for VET providers (software) (Del. 21/25)				
RQI_5.1	Based on findings, outcomes and recommendation of research and analysis phase report			
RQI_5.2	Based on discussion and agreements of 2 nd transnational project meeting			
RQI_5.3	Based on recommendations and suggestions of national feedback panels (Del. 19)			
RQI_5.4	Contains main findings, outcomes and recommendations of report on indicators for product lifecycles in VET (Del. 20)			
RQI_5.5	Respects recommendations and quality standards of the technical and functional specifications document (Del. 21)			
RQI_5.6	Will be developed by an external expert in close cooperation with P1			
RQI_5.7	Undergoes at least three feedback rounds and evaluation checks by the national feedback panel before published in beta version			
RQI_5.8	Published in decent correct EN			
RQI_5.9	Using consequently same professional terminology			
RQI_5.10	Accessible via the project website			
RQI_5.11	Easy to be operate by those with basic IT skills			
RQI_5.12	Corresponds with basic quality standards of e-tools (readability, usability, design, navigation)			
RQI_5.13	Gives good overview of project topic			
RQI_5.14	Instructions are clear and self-explaining (as far as possible)			
RQI_5.15	Measuring activities correspond with fundamental quality standards of empiric social research work			
RQI_5.16	Measuring outcomes lead to clear results			
RQI_5.17	Instructions are provided how results can lead to deductions and			

	decisions			
RQI_5.18	Intellectual rights and copy rights are respected on all levels			
RQI_5.19	Contains relevant disclaimer and imprint			
RQI_5.20	Will be revised according to outcomes of pilot activities			
RQI_5.21	Final version will be translated and published in all partner languages			
RQI_5.22	National language versions respect same quality indicators as EN masters version			

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3.2.7 Product: Active product lifecycle management for VET providers handbook

The software will be supported by a handbook which contains partly similar, partly complementary and partly totally new information compared to the software version. The quality indicators for the handbook are as follows:

Fig. 13: Relevant quality indicators – series 6

RQI 6: product level 3 – Product lifecycle management for VET providers handbook (Del. 22/26)				
RQI_6.1	Based on findings, outcomes and recommendation of research and analysis phase report			
RQI_6.2	Based on discussion and agreements of 2 nd transnational project meeting			
RQI_6.3	Contains main findings, outcomes and recommendations of report on indicators for product lifecycles in VET (Del. 20)			
RQI_6.4	Contains supporting information how to properly use the software developed			
RQI_6.5	Contains additional information on the overall project's philosophy and objectives			
RQI_6.6	Contains additional information about the quality and quantity of the identified indicators			
RQI_6.7	Published in decent correct EN			
RQI_6.8	Using consequently same professional terminology			
RQI_6.9	Language used in clear and understandable			
RQI_6.10	Downloadable form project website			
RQI_6.11	Contains relevant disclaimer and imprint			
RQI_6.12	Will be revised according to outcomes of pilot activities			

RQI_6.13	Final version will be translated and published in all partner languages			
RQI_6.14	National language versions respect same quality indicators as EN masters version			
RQI_6.15	Hard copies will be published in at least 100 copies/languages			

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3.2.8 Product: Pilot and testing phase report

After the draft versions of the main products were developed, they will get tested and evaluated in the pilot phase. During this phase, each partner (not P2) will cooperate with external experts who will apply the software and the handbook in real life and business situations. Their experiences, feedbacks and recommendations for modification and improvements will be collected, analysed and reported by P5. Of course, P5 together with the partnership will define own indicators later in the project, however for the moment following indicators were compiled:

Fig. 14: Relevant quality indicators - series 7

RQI 7: product level 4 – Pilot and testing phase report (Del. 24)				
RQI_7.1	Pilot test implemented by at least 5 VET providers representatives in each partner country (not DE)			
RQI_7.2	Pilot test implemented by at least one labour market authority representative in each partner country (not DE)			
RQI_7.3	Pilot test implemented by at least one social partner representative in each partner country (not DE)			
RQI_7.4	Special feedback form developed for software evaluation			
RQI_7.5	Special feedback form developed for handbook evaluation			
RQI_7.6	Overall evaluation approach corresponds with fundamental quality standards of empiric social research work			
RQI_7.7	Instruments used correspond with fundamental quality standards of empiric social research work			
RQI_7.8	All instruments are accessible via internet			
RQI_7.9	Report contains data and feedback concerning general market relevance of products			
RQI_7.10	Report contains data and feedback concerning usability of products			

RQI_7.11	Report contains data and feedback concerning design and layout of products			
RQI_7.12	Report contains data and feedback concerning reliability, validity and objectivity level of products			
RQI_7.13	Report contains data and feedback concerning methodological approach of products (especially software)			
RQI_7.14	Report contains data and feedback concerning instruments used (especially software)			
RQI_7.15	Report contains data and feedback concerning general marketability of products			
RQI_7.16	Report contains data and feedback concerning language quality of products			
RQI_7.17	Report provides graphs, figures, templates concerning main outcomes			
RQI_7.18	Report comments, analyses and explains all main outcomes			
RQI_7.19	Report give clear recommendations and instructions concerning any revision work needed for software and/or handbook			

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The results of this quality assurance activity feed directly into the further working process and help the project group to finalise the main products in marketable quality in there EN master version. This is then ready for translation into all partner languages as well as for production, duplication, dissemination and, last but not least, actual use.

3.3 Level 3: quality assurance of the dissemination level

3.3.1 Introduction

Within the context of the holistic approach to quality management the dissemination naturally plays *a central role* in a project. Only if as many relevant people, organisations, facilities and public authorities as possible are informed about the project, its contents, its aims and above all its results, can a sustainable and widespread impact of the project be ensured. Furthermore it must be in the interest of every project group that as many European citizens as possible know about the different projects and can benefit from them, as ultimately their development will have been funded from tax payers money.

Having said that the project evaluation should not only be seen purely as a *public relations exercise*, but it must also be assessed in terms of *work ethic*.

In the Q-PLM project P1 is responsible for the dissemination work. This task includes the production of a dissemination strategy, the definition of quality standards and criteria, as well as (in part) the specification and control of the dissemination activities. In order to avoid overlaps in the project work and overlapping competencies, P1 is primarily responsible for the quality assurance of the dissemination activities. In support of P1, P2 will define a number of fundamental quality indicators and will monitor their fulfillment over the course of the project in order to generally improve the quality assurance at this level.

3.3.2 Dissemination strategy

The first evaluation item at the dissemination level is the dissemination strategy. It is of particular significance as it forms the basis for all further dissemination activities; it serves the entire partnership and also the internal and external evaluators as a guide. The relevant quality indicators for the *dissemination strategy* are:

Fig. 15: Relevant quality indicators – series 8

RQI 8: dissemination level 1 – Dissemination strategy (Del. 7)				
RQI_8.1	Present in the first project quarter			
RQI_8.2	Uses clear and correct terminology (dissemination, exploitation, valorisation etc.)			
RQI_8.3	Takes into account all relevant target groups			
RQI_8.4	Takes into account all relevant stakeholders			
RQI_8.5	Takes into account different dissemination levels (local, regional, national, EU, outside the EU)			
RQI_8.6	Takes into account different dissemination forms (horizontal, vertical etc.)			
RQI_8.7	Takes into account different relevant dissemination methods			
RQI_8.8	Takes into account different relevant dissemination media forms / instruments			
RQI_8.9	Takes into account dissemination work carried out by all partners / in all partner countries			

RQI_8.10	Takes into account dissemination work outside of the partner countries			
RQI_8.11	Defines clear and comprehensible quantitative criteria for the dissemination work			
RQI_8.12	Defines clear and comprehensible qualitative criteria for the dissemination work			
RQI_8.13	Defines clear and comprehensible quantitative criteria for the assessment of the dissemination work			
RQI_8.14	Defines clear and comprehensible qualitative criteria for the assessment of the dissemination work			
RQI_8.15	Includes regular summaries, documents and publications (at least within the project group) concerning the dissemination activities			
RQI_8.16	Provides a clear dissemination plan			

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Due to the importance of this document, an external expert was consulted during its creation, the *European Network for Transfer and Exploitation of EU Project Results - E.N.T.E.R.* During the production of the dissemination strategy the experts needed to ensure that they take into account these quality indicators. This is why the dissemination concept was evaluated at the conception stage by the ex-ante survey, and during its creation numerous evaluation cycles were undertaken. Finally the concept was passed on to all partners for their evaluation and approval.

3.3.3 The project website

One of the most important standard products of an EU project is the project website. It serves not only the *dissemination and public relations work*, but it also plays an important role in the *project management* (means of communication and archiving) and the *evaluation* (means of documentation). The construction of a website is to a certain extent a creative act and in aesthetic-artistic terms there is limited scope to apply quality criteria. Nevertheless it must also be possible to measure a project website using certain technical-formal and craftsmanship based indicators, which include the following:

Fig. 16: Relevant quality indicators – series 9

RQI 9: dissemination level 2 – Website (Del. 7)				
RQI_9.1	Registered with a .eu domain			
RQI_9.2	all features and texts are fully developed in EN			
RQI_9.3	Basic information is developed in all partner languages			
RQI_9.4	Download forum is available with all relevant project documents in all partner languages			
RQI_9.5	Linked to all project partners			
RQI_9.6	Offers access to product lifecycle management software for VET			
RQI_9.7	Event forum for planned activities			
RQI_9.8	Link section is available with at least 5 national (per land) and 5 European links to relevant authorities, stakeholders, target group representatives etc. (including their possible presentation by logos, materials, descriptions etc.)			
RQI_9.9	Offers documents sharing (e.g. by googls docs)			
RQI_9.10	Is user friendly to use (above all in view of the project's target groups and stakeholders)			
RQI_9.11	Is authentic with regard to the project aims, contents and target groups (optional indicators – to be discussed by the project group)			
RQI_9.12	Includes information legally relevant (imprint, references of sources used etc.) as well as EC disclaimer, project logo, title and number			
RQI_9.13	Remains online for at least 3 years after the end of the project			

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The project website is developed P1 and evaluated by all partners; this product will be constantly developed further and improved, aided by P2's evaluation activities as well as by feedback from the other partners. An initial intensive evaluation on the part of the partnership (particularly by P2) takes place approximately at the end of the first project quarter, assuming that the basic structure and the different language versions in their raw state can be viewed.

3.3.4 Dissemination materials

In addition to the *project website* further dissemination forms are indicated in the proposal, which are summarised under the generic term "*dissemination*"

materials". These include project *flyers, posters, newsletters* and a facebook page. According to the nature of these products, only very few *quantitative* and *qualitative* orientation points can be deduced for the implementation, but together with general quality standards as well as experience gained from other projects the following indicators can be set:

Fig. 16: Relevant quality indicators – series 10

RQI 10: dissemination level 3 – dissemination materials (flyer, poster, newsletter, facebook (Del. 8-10))				
RQI_10.1	Flyers, posters and newsletters produced in all project languages			
RQI_10.2	Contain basic information about the project, such as its contents, aims, target groups and results (flyer/newsletters/facebook)			
RQI_10.3	They are authentic with regard to project aims, contents and target groups (optional indicators to be discussed by the project group)			
RQI_10.4	Contains contact information for all partner organisations (flyer/newsletters)			
RQI_10.5	Contains legal information (all)			
RQI_10.6	Contains EC disclaimer (all)			
RQI_10.7	Contains project logo (all)			
RQI_10.8	Contains project title and number (optional)			
RQI_10.9	Can be downloaded/accessed from the website (all)			
RQI_10.10	Professionally designed (flyer/poster)			
RQI_10.11	Professionally printed, e.g. logos, pictures in high resolution etc. (flyer/poster)			
RQI_10.12	At least 500 copies of the flyer are printed in each partner language			
RQI_10.13	At least 25 copies of the flyer are printed in each partner language			
RQI_10.14	At least 4 editions of project newsletters are produced in each partner language			
RQI_10.15	Newsletter is approx. 2 pages in length			
RQI_10.16	Facebook site regularly updated and maintained by P1 (and other partners if appropriate)			
RQI_10.17	Distributed and promoted within the partner organisations as well as to relevant target groups, stakeholders and the general public inside and outside the partner countries			

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The convergence of these indicators is monitored by P1, P2 as well as by the whole partnership. Regarding the indicators for the other materials no specific indicators have been determined at present, as decisions about their selection, appearance, scope etc. have not yet been made. This will be discussed by the project group when an occasion arises.

3.4 Level 4: exploitation and sustainability

3.4.1 Introduction

The original motivation and aim of every transnational development project in the *Lifelong Learning Programme* should be to bring about positive change in the spheres of European life, learning and work. For primarily product-orientated projects this means the development of innovative, marketable products, which are successfully used on a long-term basis - all other activities and results of a development project should first and foremost be aligned to this objective. Unfortunately however, only a small percentage of EU projects can fulfil this requirement. Sufficient quality, market relevance and customer orientation of the products are absent from most projects. The causes of this are multilayered just as they are complex and cannot always be influenced by the project group. Also the project evaluator cannot bring about any miracles in this regard. He / she can only try - in cooperation with the entire partnership - to create as optimal a framework as possible for the implementation of a successful project as well as for the development and establishment of high quality products. The prerequisite for successful product implementation onto the real market is an awareness of the associated difficulties. The project group should get to grips with this problem at a very early stage. Naturally in the first place the quality, market relevance and customer orientation of the project products for their successful use need to be decided upon, but also some strategic, technical and operational aspects must be considered, which importantly likewise must be planned and implemented in a quality assured manner.

3.4.2 Exploitation strategy and sustainability strategy

As soon as the beta versions of the most important project products are developed and hence fundamental forms and contents are known, the concrete planning for the sustainable implementation and use of the project results can be tackled. For this purpose P1 prepared a *Exploitation Strategy* in the first half of the project and a *Sustainability Strategy* in the second half; both give a fundamental outline of the issues, present strategies and opportunities for action to be discussed, identify tasks for the partners and set benchmarks. Both products have fairly the main purpose differing mainly on their time perspective: the *Exploitation Strategy* is more focusing on activities during the project's lifetime and gives only an outlook to the time after the project has ended, whereas the *Sustainability Strategy's* focus clearly lies on the time beyond the project's lifetime. However, the relevant quality indicators are for both products pretty much the same:

Fig. 16: Relevant quality indicators – series 11

RQI 11: exploitation level 1 – Exploitation and sustainability strategy (Del. 11; Del. 14)				
RQI_11.1	Takes into account the basic market conditions in the partner countries			
RQI_11.2	Takes into account the basic market conditions at the EU level			
RQI_11.3	Takes into account generally applicable problems related to the launch of products in the educational / vocational sectors			
RQI_11.4	Derives general strategies and actions for the sustainable use of the project results at the EU level			
RQI_11.5	Derives specific strategies and actions for the sustainable use of the project results in each project country			
RQI_11.6	Identifies at least one organisation, facility, public authority etc. outside the partnership, which is willing to participate in the sustainable use of the Q-PLM materials			
RQI_11.7	Assigns specific responsibilities to each partner			
RQI_11.8	Defines quantitative benchmarks for further exploitation activities			
RQI_11.9	Defines qualitative benchmarks for further exploitation activities			
RQI_11.10	Defines the framework for intellectual property rights, regulating the material and non-material rights of the Q-PLM products			

RQI_11.11	Determines the precise timescale for the remainder of the project			
RQI_11.12	Includes <u>draft</u> planning for the period following the end of the project (Exploitation Strategy)			
RQI_11.13	Includes <u>detailed</u> planning for the period following the end of the project (Sustainability Strategy)			
RQI_11.14	Available as a rough draft by 03/2014 at the latest (Exploitation Strategy)			
RQI_11.15	Available as a rough draft by 07/2015 at the latest (Sustainability Strategy)			
RQI_11.16	Contains suggestions and recommendations for IPR (Sustainability Strategy)			
RQI_11.17	Is produced in EN			

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3.4.3 Stakeholder analysis

P1 also develops the stakeholder analysis. By means of this analysis it should be ensured at the start that the project group has identified all relevant target groups and stakeholders and that they are informed about the project through proactive communication. Target groups as well as stakeholders are to receive regularly updated project data and results during its entire course and they should be involved in the project work as much and as meaningfully as possible. This also applies to the period after the funding has expired. The *stakeholder analysis* appears to be sensible when the following indicators are applied:

Fig. 17: Relevant quality indicators – series 12

RQI 12: dissemination level 2 – Stakeholder analysis (Del. 12)				
RQI_12.1	All target groups stated in the proposal are taken into account			
RQI_12.2	All stakeholders stated in the proposal are taken into account			
RQI_12.3	Additional target groups are considered (if required)			
RQI_12.4	Additional stakeholders are considered (if required)			
RQI_12.5	At least 20 contacts per partner are available			
RQI_12.6	Partner countries are represented fairly equally			

RQI_12.7	Local, regional, national und European levels are represented			
RQI_12.8	Different sectors are represented			
RQI_12.9	Different types of organisations are represented			
RQI_12.10	Different fields of activity are represented			
RQI_12.11	Potential cooperation opportunities within the project group arise			
RQI_12.12	Forms basis for long-term cooperation within the project group			
RQI_12.13	Ensures clear deductions for further dissemination and sustainability activities			
RQI_12.14	Data is treated confidentially			

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3.4.4 Final conference event

At the end of the project a *public conference* takes place, representing a central dissemination and sustainability activity. Its staging is linked to the final partner meeting in AT. Since the proposal offers only few reference points for the quantitative and qualitative framework of this event most of the quality indicators for this conference are derived from general empirical values and subsequently further aligned with the partnership. Provisionally the following indicators are under discussion:

Fig. 18: Relevant quality indicators – series 13

RQI 13: exploitation level 3 – Final conference event (Del. 13)				
RQI_13.1	Takes place during the final 3 months of the project			
RQI_13.2	Is held in AT			
RQI_13.3	Lasts at least 4 hours			
RQI_13.4	Conference language is EN (interpreting into DE or other languages is possible)			
RQI_13.5	Visited by at least 40 (international) participants			
RQI_13.6	Participants represent all of the project's target groups and stakeholders			
RQI_13.7	Open to the wider public too			

RQI_13.8	The final versions of all products developed and outcomes are presented			
RQI_13.9	Provides a wide multi-perspective insight into the work and the outcomes of the project group			
RQI_13.10	Actively organised by many of the project partners (through contributions)			
RQI_13.11	Includes contributions from external experts, stakeholders and representatives from the target groups			
RQI_13.12	Also offers space to discuss links between project and general EU policies			
RQI_13.13	Professionally presented, e.g. lively and entertaining quality, use of different presentation techniques etc.			
RQI_13.14	Documented by attendance lists			
RQI_13.15	Documented by photographs			
RQI_13.16	Generate media coverage (if possible during the preparation and post-conference)			

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The relevance of the final conference in relation to the sustainability of the products and the long-term establishment of Q-PLM on the education market must however not be overestimated. A conference is ultimately a classic means of dissemination, which can initiate and promote sustainability. Also linked to this conference are the possibilities for awareness raising amongst the audience of industry professionals (particularly political stakeholders) as well as amongst more generic networks, which must be actively utilised.

Ultimately there will probably be few generally valid solutions at the European level. On the contrary it will be more a matter of Q-PLM seeking individual implementation and utilisation opportunities that are in tune with regional and national contexts, and in doing so will achieve lasting successes. Certainly the most important task in relation to the sustainability work is the *Sustainability Strategy*, which must call for individually tailored education and labour market sustainability strategies.

3.5 External evaluation activities

3.5.1 External evaluator at the process level

The *Q-PLM* project proposal provides also for external evaluation in relation to the quality management. This evaluator will cooperate very closely with P1 and P2 and the whole partnership will assure that he/she has access to all persons, documents, products and information relevant for the external evaluation work. Thus, the external evaluator will be integrated into the entire project development process, and his/her expertise and feedback will assist with the active and quality-secured shaping of this area of the project. In any case the external expert will support the monitoring of the decent implementation of the project meetings and project phases. He/she will distribute a questionnaire shortly after each transnational project meeting and from the feedback and answers an evaluation report will be produced. The external expert also will contribute to the developed of the interim and final evaluation report; in this context he/she will have a look at the overall project developments and will comment them by summarising findings, deductions and recommendations.

3.5.2 Evaluation by the EACEA

According to the contract with the *European Commission*, represented by the *EACEA*, the project will undergo two evaluations by the funding body, respectively its external experts: the *progress report evaluation* at the project's half time, and the final report evaluation after the project's completion. Their evaluation will also consider the *quality* and the *actual* success of the project, e.g. the market suitability of the products, the feedback from stakeholders and target groups, the dissemination measures and the sustainability potential. Primarily however it will focus on the fulfilment of technical and quantitative indicators. Above all the *implementation* of the project in accordance with the contract, the intended use of the funding and the adherence to all legal and administrative regulations of the funding programme will be subject to close examination. This is naturally of fundamental importance, because the full payment of the funding depends upon a positive inspection.

It is important however for project groups to understand from the beginning that a *successful project implementation* in terms of the *development of successful and marketable products* does not (!) necessarily lead to a positive evaluation on the part of the *EACEA*. The opposite can also be true, as it is possible to fail with an EU project in the *real world* but still receive a first class assessment from the *EACEA*'s interim and final evaluations. The cause for such a situation lies in the fact that the two-year funding period of an EU project represents a quasi artificial time period, in which it should produce outcomes for the real world, but in many of the areas however it follows its own set of rules. Often both worlds seem identical and have many overlapping and connecting factors, but from a measurement point of view they are *however de facto parallel worlds*, each with their own rules, standards and consequences.

The planned processes, methods, instruments and indicators for this are standardised by the *EACEA* and cannot be influenced by the project group. It is important however for the *QM-model* of a project that all project partners are aware of it and that through evaluation activities the standards and requirements must correspond to several *worlds*. These do not always need to be logically comprehensible, but under no circumstances can they be contradictory. A central task of the evaluation expert is to define appropriate indicators.

Ultimately consensus must also prevail within the entire project group, so that the *EACEA*'s evaluation activities are supported in the best possible way with all relevant materials, documents, information and other measures.

4. Overview and summary

It has been described above what complex structures EU projects possess and how important it is that the *QM-models* also take due account of this fact. Therefore the following levels, items and numbers of indicators were specified for the Q-PLM project and foreseen with a clear schedule:

Fig. 19: Overview of the evaluation structure, responsibilities and time frame

Level	No.	Series	Item / area	Number of indicators	Partner in charge	frequency	Time frame
Process	1	RQI_1	Snapshot analysis	20	P2, P1	8x	Every 3 months after each project meeting
	2	RQI_2	Project meetings	32	External evaluator/all partners	4x	
	3	RQI_3	Project phases	20			
Total	3	-	-	72	-	-	-
Product	1	RQI_4	Research and analysis phase report	13	P3 All partners	formative	12/13 - 04/14
	2	RQI_5	Product lifecycle management for VET providers - software	22	P6, P1 all partners, external experts	formative	02/14 - 09/15
	3	RQI_6	Product lifecycle management for VET providers – handbook	15	P6, P1 All partners External experts	formative	04/14 - 09/15
	4	RQI_7	Pilot and testing phase report	19	P5, all partners, external experts	1x	12/14 - 04/15
Total	4	-	-	79	-	-	-
Dissemination	1	RQI_8	Dissemination strategy	15	External expert all partners	1x	12/13 - 02/14
	2	RQI_9	Website	13	P1 all partners external experts	formative	Beyond project's lifetime
	3	RQI_10	Dissemination materials	17	P1 all partners external experts	formative	03/13 - 09/15
Total	3	-	-	45	-	-	-
Exploitation	1	RQI_11	Exploitation and sustainability strategy	16	P1 All partners	2x	03/14 07/15
	2	RQI_12	Stakeholder analysis	14	P1 all partners	1x	04/14
	3	RQI_13	Final conference event	17	P1 all partners external experts	1x	06/15 - 09/15
Total	3	-	-	47	-	-	-
Total	13	-	-	243	-	-	-

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According to the requirements set out in the proposal as well as the expertise of P2, 4 different evaluation levels were identified, which are closely related and strongly determine each other. Nevertheless it is attempted to localise the evaluation areas and to establish indicators for this, which make a selective examination and assessment possible. Ultimately 13 such evaluation areas and items were found, which are in turn defined by a total of 243 quality indicators. Most of the areas and indicators were fixed at the *product level* (4 areas / 79 indicators), followed by the *process level* (3 / 72), the *exploitation level* (3 / 47) and the *dissemination level* (3 / 45).

Following on from this the convergence of the project towards these quality indicators is examined by means of various measuring procedures with the help of different instruments. Thereby the results can be determined, evaluated and also reported in different ways. They can be communicated in written reports, in checklists, in tables or through verbal feedback, and their character can be official or unofficial. Fig. 19 also provides an overview of the chronological order of the evaluation activities, the participation of the partners and different experts as well as the outcome reports which can be expected.

Last but not least, we wish to underline that this quality management concept can only support the project group and all other partners involved in the Q-PLM undertaking in developing innovative products of an appropriate quality and in their sustainable usage for the benefit of the various target groups in Europe. At the same time one must not overestimate the power and effectiveness of this concept. Its main aims are to ensure that the interests of all parties involved are considered, that the project follows the proposal that variances and other problem areas can be made visible and that basic quality standards at all 4 levels described above are respected. However, all parties involved must understand that it is not the evaluator who is doing the management, development, dissemination or sustainability work but (mostly) the promoter and the other partners. So it is also mainly their obligation to make sure that the project is implemented properly at all relevant levels. Evaluation does not always give answers, very often it just raises questions. The appropriate answers need to be found by others who are experts in their respective fields – but of course, the evaluator will give as much support as possible.