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# Idea Management by Role Based Networked Learning

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**Abstract:** In our effort to introduce an idea management system to our university, we did a lot of research into what would be the most effective way for accompanying people through the whole process from having an idea to entering it into a computer-supported system and following it up. We are convinced that many ideas are like raw diamonds or small seeds: therefore, instead of evaluating them directly after registration (like in conventional systems), in our solution they get some special attention and nurturing so that they can shine and grow according to their true potential. Beyond the mere entering of ideas, we differentiate several further aspects that contribute to the growing of an idea seed. These are primarily launching and introducing the idea management system as well as learning how to participate in the process and how to use the platform for exploring the potential of ideas in collaboration with others. For this purpose we developed: 1) a method for idea cultivation that we called “Seven Phases Tendril” which enables people to participate in the growing of ideas; 2) a community platform (a dedicated on-line space) supporting this process, and 3) a learning method, which supports people in their effort of becoming a facilitator of the cultivation process. Everybody at our university who is interested in the cultivation and development of ideas is invited to participate. Entering an idea is easy, and the process of cultivation of the idea is guided by a facilitator. If a participant is interested in becoming a facilitator, she is offered to take part in a learning phase. This learning process starts after defining the learner’s roles according to her wishes, knowledge and previous experience (there are six roles available: novice, observer, operator, examiner, creator and evaluator). After having completed this step, participants (users) are learning together with experienced facilitators how to go through the different stages of the idea management process which we call “idea cultivation”. The whole project is still work in progress, and a first validation of the system has started with a pilot project in Spring 2010. By September 2010 we expect to have more outcomes. In this paper, we want to concentrate on the networked learning aspect, and would like to introduce the concept of role based networked learning as a ‘situated learning’ method (Lave & Wenger 1991) designed for accompanying learners through the process of idea management. We will begin with briefly describing the concept and its different components. We then explain the role based networked learning approach and its power to promote learning in a networked way on the basis of your own interest and settings. Finally we will conclude with an outlook on the general potential of this approach.

**Keywords:** role based, networked learning, e-collaboration, idea management, idea cultivation, situated learning

## 1. Introduction

The Swiss Distance University of Applied Sciences (FFHS), considers itself as an innovation driven institution with its management perceiving change as a stimulating factor for prospering in challenging situations. Successfully implemented idea management is known for leading to innovations, and is therefore one of the key success factors for every organization. At the same time, it is helpful for improving the reputation of the institution and the overall satisfaction of its collaborators. Since people usually have inspirations about improvements and positive changes, it is important to give them space for communicating their ideas, or at best initiating new projects. In order to institutionalize a participative approach, the management of the FFHS decided to implement an idea management system which made it possible for FFHS staff to have their ideas integrated in a participative approach.

The Research Management Unit (RMU) of FFHS got the responsibility for the design and implementation of this new initiative since one of RMU's main tasks is the management of research services at the FFHS. Based on a human centred approach, we, the four members of the RMU and authors of this paper, do also research on knowledge management and E-Collaboration. And the planning and implementing of national and international communities of practice constitutes a very important aspect of our work.

One of our first activities was to investigate the state of the art in other universities. Many organizations are striving to foster the process of internal idea management, and in essence solutions are very identical. Collaborators are asked to enter their ideas either into some suggestion boxes or into a specific system by filling out an on-line form (see the example of TU Berlin:

<http://ideenmanagement.f4.htw-berlin.de/en>). After this first initial step, they are informed by an evaluation committee whether their idea was worth being followed up or not. A short path leading from registration to decision making may be efficient and in some cases appropriate, but if in these conventional systems the decision is negative, the idea will be discarded once and forever. And some important ideas might remain undiscovered with this top-down approach, or get lost through a fast decision making process.

Further collaborators might feel that their idea gets immediately disclaimed through an excluding top-down act which probably leads to a deterioration of their sense of community (McMillan & Chavis 1986) and of their identity of participation (Wenger 1998). Accordingly, we chose a participative or bottom-up approach in order to foster new ideas from our collaborators.

We decided that for such a new approach in the idea management field, a new model had to be developed: a phased-process of idea management and according supporting tools. The vision behind this approach was that all ideas get cultivated in a facilitated and participative way. All participants act in an on-line space which is supervised by facilitators. The facilitators have a leading role in the system. Everyone can choose to become a facilitator by learning the related tasks and activities in a networked learning process. Accordingly every participant has the choice to select various roles.

In order to get an overview about this new method of idea management, the first two chapters of this paper are dedicated to the description of what we call the “Seven Phases Tendril” process, its different components and tools. Since in this model the integration of the collaborators is regarded as a key factor for the success of the idea management, chapter three and four will describe the role based networked learning - a kind of “situated learning” (Lave & Wenger 1991). These two chapters show how every idea is getting developed by a team of participants - including the idea giver, facilitator and other interested people. All of this is based on a clearly defined process, supported by a community platform, and various tools and instruments. We will conclude with a short overview and outlook on the general potential of this approach.

## **2. The “Seven Phases Tendril” idea management method**

In this chapter we will describe the seven phases tendril idea management concept with the first part focusing on the concept itself and the second one on the e-collaboration tools.

### **2.1 Concept of the “Seven Phases Tendril” idea management**

Based on our background in cultivating communities of practice as a tool for fostering learning and research activities (Bettoni et al. 2009; Bettoni, Bernhard, Schiller, (in Bergamin, Mural Müller, Filk 2008: 130) „Community-orientierte Strategien zur Integration von Lehre und Forschung“; Bergamin 2006), our goal was to find an organic and collaborative way for gaining the best out of the proposed ideas. Having gathered experience with several internal and external communities of practice we are convinced that members of a group can develop their true potential best while interacting with each others, and that this process takes time. All ideas are therefore followed up and cultivated, also those that might be conceived as unrealistic at a first glance. We believe that ideas need as much time and nurturing to grow and mature, as a plant seed needs care to mature. The “Seven Phases Tendril Method” which we developed based on the work of Blumenschein and Ehlers (Blumenschein, A. & Ehlers I. 2002), therefore gives space to any kind of input: be it a question on “how it would be if we would be made in such and such way” or be it a specific idea which is not yet perfectly developed. Our system also pursues a second goal, namely the promotion of the sense of community. This is a different approach to the traditional system, where an idea giver will get feedback normally by one person and only some months later. Idea management on the basis of the “seven phases tendril method” integrates the idea giver in all the processes on a voluntary basis. This demands having trained facilitators who must be able to grow the delicate seed. Therefore, the role based networked learning method has been exclusively designed for this situation and its adaptation to the people involved. The authentic learning space makes it a special and efficient method.

Up to seven phases are needed to test an idea for its feasibility. Each phase has its own set of questions, tasks and tools. The detailed structure of every phase is indicated in the table “Details of seven phases” (table 1). The collaborators find the key information to the questions: What (content), How (content wise), What for (objective), With what (tools), How (activities), Who (involved actors),

Where (platform), Where from (information source). With this overview even collaborators without any experience can join the process as we will explain further on.

**Table 1:** Details of the seven phases

Questions	Phase I	Phase II	Phase III	Phase IV	Phase V	Phase VI	Phase VII
	<b>Creative Frustration</b>	<b>Problem Analysis and Task Definition</b>	<b>Idea Finding</b>	<b>Idea Structuring Evaluation Selection</b>	<b>Idea Realization</b>	<b>Idea Check</b>	<b>Creative Frustration</b>
What?	Constructive questioning of the familiar	Get to the point, common understanding of the problem	Everything is possible, being crazy in a controlled way	Select, decide	Adjust developed ideas to reality	Asses the target performance comparison Deviation to the initial situation	Constructive questioning on a higher level
How? (content wise)	What if...?	Which aspect do we want to work on?	How can we achieve that...?	How can we structure and evaluate the ideas?	What can be improved?	What did we want to achieve and what can we achieve?	What if...?
What for?	Find problem	Define problem	Develop ideas	Find ideas to realize	Reality check of possibilities	Evaluation of the situation	Use ideas or start all over again
With what?	Notes, discussions	Mind map	Mind map	SFM Method	Mind map	SFM Method & discussion	Notes, discussions
How?(administrative)	Enter idea	Moderate process, collaboration in Wiki	Enter idea moderate process, collaboration in Wiki	Moderate process, collaboration	Moderate process, collaboration	Decision is taken about realization	Enter idea
Who?	Idea giver, Interested persons, facilitator	Idea giver, Interested persons, facilitator	Idea giver, Interested persons, facilitator	Idea giver, Interested persons, facilitator	Idea giver, Interested persons, facilitator	Idea giver, or facilitator, management	Idea giver
Where?	Idea management forum, or Wiki, Mail to facilitator	Idea management Wiki	Idea management forum, or Wiki, Mail to facilitator	Idea management Wiki	Idea management Wiki	Idea management forum or Wiki, management meeting	Idea management forum, or Wiki
Where from / where to?	Possible starting point, input from idea giver, output to II	Input from I, output to II	Possible starting point, input from idea giver or from II, output to IV	Input from III, output to V	Possible starting point, input from IV, output to VI	Input from V, possible end point (if success in VI) or output to VII	Input from VI, possible new start, further development or waiting position in idea pool

These seven phases are based on the alternation between divergent and convergent phases, which means that the participants are challenged to illuminate the ideas as well in divergent as in convergent thinking styles (see Table 2). By divergent or also called lateral thinking, we understand a very associative, creative and open way of thinking which activates the right brain hemisphere. Therefore these divergent phases can open up an idea which would be discarded in a phase of

convergent and critical thinking. Convergent thinking phases on the other side, lead to a rational thinking with a focus on practical realisation. At the end of these phases one correct solution emerges.

Considering it as fact, upcoming ideas can easily be discarded by critical thinking, which is what we are trained for in our rational society. At school, we learnt to focus on one solution, to think rational and straight solution oriented (convergent thinking method). But almost all problems have much more than just one solution. History proves that obviously crazy and impossible ideas can be successfully realized. Godfrey Hounsfield asked: is it possible to look inside a body without opening it? He was told that this was impossible. But Hounsfield invented the Computer tomography which turned his idea into reality. This little example shows the importance of divergent thinking, which always should be included in creative developments.

This and more characteristics of the two thinking methods, you will find in table 2.

**Table 2:** Divergent and convergent thinking styles

<b>Divergent, lateral thinking for idea finding</b>	<b>Convergent, vertical thinking for problem analysis</b>
Playful, associative	Logical, rational
In many directions	In one direction
Deviating from the topic	Consistent with the topic
Accepts inconsistency, Without criticism	Without inconsistency, Critical
Invents new ways	Standard ways
Many original solutions	One correct solution

The alternation between the different thinking methods is a very important characteristic of our idea management concept. Its importance is due to the fact that scientists are used to focus on convergent thinking which limits the field of ideas too narrowly. Adversely, the linkage between both methods allows a creative process which is fundamental for an idea management.

The following description explains every phase in detail and shows which thinking method is appropriate in which phase.

- Phase I is the first divergent phase, where an idea can be entered. It might be an idea, a question like “how would it be” or “what would happen if”. Because it is a divergent thinking process, instead of criticism, it is the search for new or other possibilities which can grow the idea. This phase also needs the identification and allocation of people, who like to join this idea. Tools are on-line discussions which are organised in forums.
- Phase II is a convergent thinking phase which should further the idea or question to a point, which defines which aspect should be considered for further development. This phase includes a mind-mapping for structuring the different aspects. This then results in an understanding of the problem to be solved, and the task which might result.
- Phase III for following up problems to be solved that come from phase II. But it can also be the starting point for new ideas. This phase consists of the divergent thinking style and a mind map for the creation and composition of new possibilities. Because of the “no critics allowed” factor, everything is allowed and all ideas are welcome.
- Phase IV is the filtering process, where ideas from phase III get structured and evaluated. The convergent thinking style allows criticism and leads to results ready for phase V. For the evaluation, our “Solution Finder Model” is used here (see next section “Tools and Models”).
- Phase V is a divergent thinking phase, where ideas from phase IV are getting selected for improvements in order to get realised. Mind maps help to foster improvements. This is the last step which allows inserting new possibilities and it is the phase which offers a new solution, possibility or even an innovation.
- Phase VI is the last convergent thinking phase. Here the decision has to be made about the nomination of the suggested idea and its further realisation. This phase involves the head office or top management. A positive decision will launch a project, whereas a negative decision will send the idea further to phase VII.

- Phase VII allows an idea to have a new start or to wait in a pool for later development. As a result from phase VI, all the reasons, why the idea caused a negative decision are known. Based on this background, the idea will get a new chance, if the idea giver wants to improve it.

The next figure illustrates the linkage between the phases (table 1) and the thinking methods (table 2). The approach of looking at an idea as a plant and taking measures for cultivating it accordingly (“organic” way as opposed to a “mechanical way”), is implemented in this method as shown in the image.

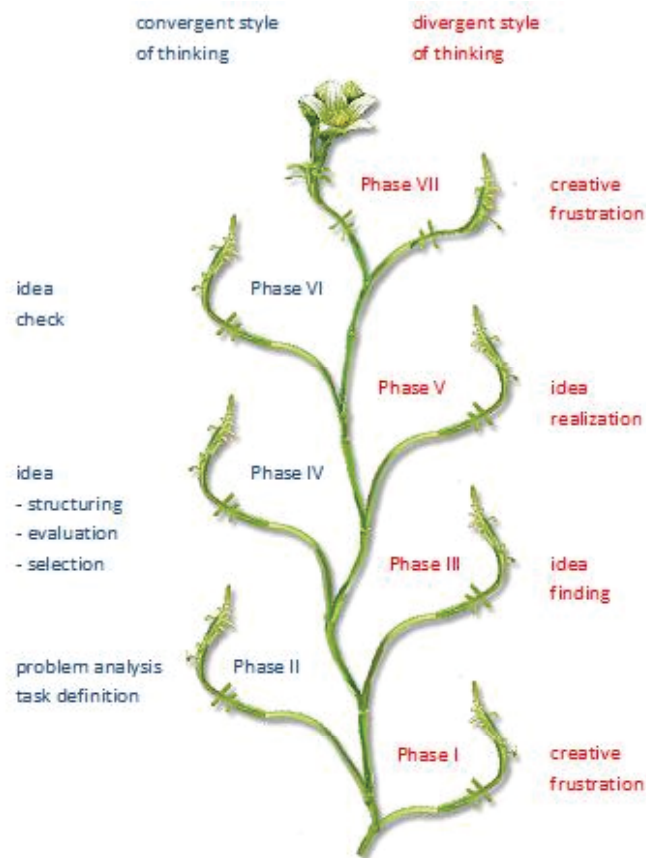


Figure 1: Seven Phases Tendril method

## 2.2 Tools

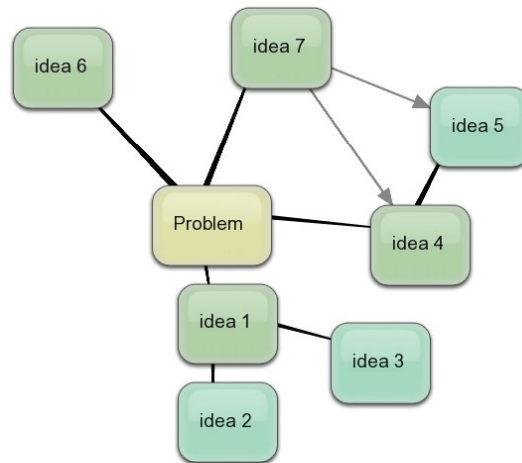
This learning method builds an alternative to the conventional system of a learning course or workshop, which is typically accomplished in a secure learning space. Today's reality shows an other image: In a world of e-collaboration people work together despite the fact that they live in remote areas. As members of a distance university we foster e-collaboration. We possess the know-how and the tools to implement such an idea management.

In order to promote e-collaboration, we chose three main instruments enabling learning and working with our idea management system: a community platform, a mind mapping tool and the Solution Finder Model.

The community platform (a dedicated on-line space) for supporting the idea management process has been implemented as a collaborative space by using standard components provided by the Open Source learning management system MOODLE. It consists of one forum for entering all the ideas and for each idea we dedicate a discussion forum. Results of the discussions and work done in developing an idea are stored by the means of an “idea cultivation wiki”. Support to users is provided through an FAQ forum and related FAQ wiki.

The mind mapping tool offers the possibility to make a sketch of different possibilities. We use <http://bubbl.us> because it enables the collaborative creation of mind maps through the internet. It is

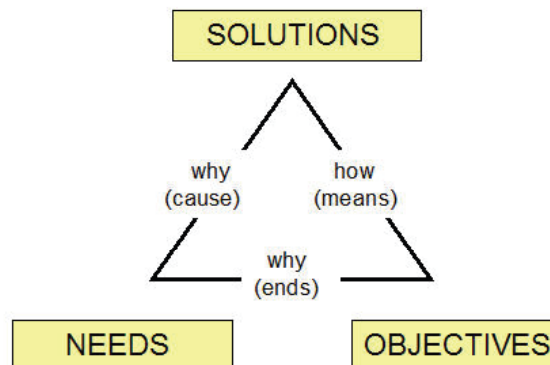
easy to use, and it is freeware. In our method, this tool supports particularly the process phases II, III and V.



**Figure 2:** Collaborative on-line mind map tool <http://bubbl.us>

The Solution Finder Model (SFM) is a system-oriented problem solving instrument with a theoretical foundation in cybernetics, system engineering and radical constructivism. Particularly it supports phases IV and VI of our method. The SFM is based on the idea of the unity of 3 elements: needs, objectives and solutions. The term “unity” refers here to the guiding principle of SFM: in order to find a good solution, the 3 elements should always be explicitly connected to build a triangle (the unity). This is accomplished through 3 relations: need-objective, objective-solution and solution-need.

- The first SFM-element, a **need**, can be any kind of need: defects to be corrected, new wishes to be supported, etc. For example, when dealing with knowledge and learning the focus could be on knowledge needs; for identifying a knowledge need, the question to ask is: what should be known? (know what?). When we identify needs we are on a functional level.
- The second SFM-element, the **objective**, comes in because a need is usually not an end in itself: the goal it aims at, can be used for achieving some effect (goal, objective). When the need is given, in order to identify a related objective the question to ask is: which effect should be achieved in order to satisfy the need? Then, when the objective is found, the question: “why this objective?” is answered by the needs connected to it. In this step we move from the specific functional level of the needs to the general, explanatory level of the objectives (rationale).
- Finally, the third SFM-element, the **solution**, is the instrument, tool or method that enables you to reach the objective and satisfy the related need. A solution should be an answer to the question: by which measures (means) can the objective (end) be attained? In this step we move from the explanatory level to an instrumental level. Vice versa the question: “why this solution?” is answered by the objectives and the needs connected to it.



**Figure 3:** Solution finder model

After having briefly explained the background, we will now have a look at the role based networked learning aspect.

### **3. The concept of role based networked learning in idea management**

So far we focused on conceptual and technical aspects of our system of idea management. This is the basis of the system. But as we mentioned in the introduction, the participatory approach is one of the main innovations of our concept. Therefore, we will dedicate the next chapter to the human aspect which is the participants and their role in the learning process.

According to the networked learning experts at Lancaster University the concept of networked learning is defined as:

*Learning in which C&IT is used to promote connections: between one learner and other learners, between learners and tutors; between a learning community and its learning resources.*

*Some of the richest examples of networked learning involve interaction with on-line materials and with other people. But use of on-line materials is not a sufficient characteristic to define networked learning.*

*The interactions between people in networked learning environments can be synchronous, asynchronous or both. The interactions can be through text, voice, graphics, video, shared workspaces or combinations of these forms. Consequently the space of possibilities for networked learning, and the space of potential student experiences, is vast. (<http://csalt.lancs.ac.uk/jisc/definition.htm>)*

As the definitions states, there is a wide range of possibilities for networked learning, and this was exactly why we adapted the concept for our idea management approach.

In order to accompany people through this new process of idea management, we tested the tool on its learner friendliness. We found out that the two processes of learning how to use this system (method and tool) and learning how to develop the ideas in a community are correlated. This is where and how the idea of role based networked learning first came up. We understand our role based learning style as a specific style of networked learning, i.e. by fostering interaction and relationships between facilitators, idea givers and interested or otherwise involved people. Based on the following definition, on which the original idea of networked learning was built, we therefore define it as “role based networked learning”:

*Situated learning in which information and communications technology (ICT) is used to promote connectedness with rotating roles: connection between one learner and other learners, between learners and tutors; between a learning community and its learning resources. (Adapted from Goodyear & NLinHE Team, 2001 p.9)*

We developed our concept of a role based “knowledge ladder” based on the well known Blooms Taxonomy (Bloom 1956) which - just to recall the main points - consists of the following six steps of how the learning process unfolds:

- 1 Knowledge: Exhibit memory of previously-learned materials.
- 2 Comprehension: Demonstrative understanding of facts and ideas.
- 3 Application: Using new knowledge. Solve problems to new situations.
- 4 Analysis: Examine and break information into parts.
- 5 Synthesis: Compile information together in a different way.
- 6 Evaluation: Present and defend opinions.

In analogy to Bloom’s Taxonomy we therefore consistently distinguish six levels of participation:

- 1 At level one “Knowledge”: The learner gets introduced to the system (role as a novice)
- 2 At level two “Comprehension”: The learner observes the processing of an idea (role as an observer)
- 3 At level three “Application”: The learner enters her own idea and applies the observations made with another process on her own idea (role as a user)

- 4 At level four “Analyses”: The learner analyses ideas in the phases of convergent thinking style and relates them to the corresponding phase from I to VII (role as an examiner)
- 5 At level five “Synthesis”: The learner participates in the cultivation of ideas by participating in the divergent thinking phases for other ideas (role as a creator)
- 6 At level six “Evaluation”: The learner participates in the evaluation phases and acts like a facilitator (role as an evaluator)

Bloom's Taxonomy refers to a classification of the different objectives that educators set for students (learning objectives). As each class has its own objective, it can be conveniently used for a role based learning style. In our view learning can be done best in a networked learning way, where learners are supported in a role based environment:

- The learner starts at the first level of knowledge, where she is a novice of our idea management method. In this role, she checks how an idea is developing from phase to phase and she experiences the different situations of all phases.
- If she wants to know more, she can accompany a new idea on the level of comprehension in the role of an observer. In this role, she has already more influence because she also can ask questions on a better understanding.
- In the next phase, she acts as a user on the level of application, where she is part of the idea team which promotes an idea from phase to phase. Here, she is able to explain the processes for learners, who are in the role of observers.
- The next role is the examiner; the learner of this role is still member of the idea team and can actively try to support the convergent thinking phases in association with a facilitator.
- A further role is the creator, where the learner of this role can actively try to support the divergent thinking phases too.
- The last role is the final role of the evaluator, where the learner of this role will actively support the facilitator in all aspects of the idea management through all the phases needed. She now becomes a facilitator and is able to accompany new ideas through all phases of the idea management.

These different levels are corresponding to the different roles of novice, observer, user, examiner, creator and evaluator. Every role can be chosen by several persons according to the number of interested people. Once the participants have registered, they are invited to a welcome forum where depending on their own evaluation, they can choose between these six roles. The participant communicates her decision by posting it in the forum. A tutor responds and declares her readiness and commitment to assist the participant throughout the process. An overview in a corresponding wiki lists who registered for which role and who is the committed tutor. There are six different areas each for one level where you can find the names and other details of persons on this level. Located on the MOODLE community platform, the learning process takes place between tutor (facilitator) and participant (also referred to as learner), between learners and between tutors in a networked way.

The idea management processes are strongly supported by the facilitators which is the most important role. A facilitator has to learn all the skills related to these tasks and our role based networking. She should know the process of idea management, the tools, and she is able to apply the convergent or divergent thinking style. Like this the facilitator manages to further the idea from phase to phase.

Once collaborators have understood the pillars of the idea management concept, they begin with propositions of ideas. They start with the concrete realization of the networked learning in idea management. A new idea enters into the idea management system via a forum posting or even an e-mail to the facilitator. Everybody who is a member of the institution can do that and there is no special knowledge necessary for that. As soon as a new idea arrives, a facilitator picks it up, forms a group of interested people and sends the idea to an appropriate entry phase which is either phase I, phase III or phase V.

#### **4. The future of role based networked learning in idea management**

On the example of this academic use, we have presented the concept of role based networked learning in the context of a specific type of idea management, a phased-process of idea cultivation that we called “Seven Phases Tendril Method”. By using this method an idea gets cultivated in a

participatory process that includes the idea giver herself, a facilitator and interested colleagues. Like in a kind of incubator, ideas can grow from a seed to their true potential. Following our “Seven Phases Tendril Method” facilitators who are supporting the processes are learning in a networked way how to use the system, before actually working on ideas. Assuming a role and rotating among different roles is what makes our “role based” vibrant and vital; and what is most interesting about it, is the fact that the process remains the same: I observe, support, contribute to and facilitate always the same idea cultivation process, with the only difference of the change in perspective that happens each time I am changing my role.

The essence of this concept is to allow different roles and rotation among these: accordingly, participating parties can choose their individual level of learner’s role and can change to other roles when they feel motivated for a different type of engagement. An idea team can consist of learners with different roles. In this context we understand idea management as an instrument of knowledge management. Knowledge is made of ideas that are “generated, tested and regenerated” (Schaverin, L., Alexander, 2008, p.446) in individuals and communities. Idea management therefore is also very important for the knowledge management process of every organization.

Evident advantages for this type of combination between networked learning and idea management are:

- Learning in a networked way enables ideas to develop in a more organic, participative way.
- The learner learns on the real system “on the job”, and not on the basis of exercises.
- The learner can choose his role based on his interest, repetition of a role is also possible.
- The learner can enter into the learning process at any time, that means that there are no timetables and no course management necessary.
- No special learning material has to be prepared (textbooks, exercises etc are not necessary).
- Roles allow people to bring their different perspectives more effectively into the cultivation process.
- A multiplicity of perspectives creates a greater variety of solution possibilities.
- People get connected in a participative collaboration process, which creates a basis for other projects.
- Participating in a collaboration process promotes a better sharing of knowledge.
- The process enhances the identity feeling with the process and the institution as a whole.
- The process can be considered as a team-building process
- Participants get to know E-Collaboration and some tools

For all these reasons role based networked learning can be considered as a useful strategy for implementing an innovative idea management system like the one we have presented here.

In order to prove that the core ideas and expected benefits are realistic, in Spring 2010 we have launched a pilot project in which we are rolling out our system to a limited amount of users (core staff in administration, teaching and research). Through the evaluation of this experience, we will be able to identify some lessons learned for the improvement of the system, and then to start extending its use also to all the other types of users (part-time lecturers, students, alumni). These findings will help to address some of the potential problems of our system such as the high learning curve as well as a potential low participation:

- **Technical knowledge:** It is important for users to know how to use all the tools. For that reason the RMU offers an E-Collaboration course which will teach the technical knowledge for using the tools and the corresponding MOODLE platform.
- **Complexity:** The phases model with its tools is not easy to understand without any prior introduction. Therefore an f2f- kick-off-event will explain the system and answer immediate questions, and in addition instruction papers or videos will be available on-line.
- **Time frame:** For every phase a time frame will be given by the moderator. This will help the involved users to better coordinate their activities in innovation management with their daily work.

- Incentives: In order to promote and motivate participation, the best idea of the year will be awarded.

If this proves to be successful, we will examine opportunities for expanding role based networked learning also for other environments where there is a need to foster participation, collaboration and knowledge sharing.

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