New innovations and more practical learning by integrating teaching and business co-operations

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Abstract

HAMK University of Applied Sciences has been progressively preceded from traditional teaching in class towards learning-by-doing model. The easiest way to get involved in this is through real business cases. This will decidedly change the role of a teacher. Instead of the traditional lecturer, the teacher becomes a group supervisor and coach that actively helps the students to solve the challenges by themselves. From the teacher this requires even more flexibility and quick ability to react. The whole teaching staff is not supposed to get involve for the actual business interface. For this task, there are separately appointed persons that are called activators. When operating like this, teachers can concentrate to the coaching and business contacts are easier to control. Activator's job is to find systematically different kinds of development needs from the businesses. Some of the development needs are guided to be a part of a teaching cases and rest is solved in separate R&D projects. These development needs can vary a lot depending on the businesses age, field of business and the stage of development. The seven different education areas of HAMK give the possibility to take diverse projects. Just like in the real business life, teaching cases consist of students from different areas of study, to solve these problems. According to the students, diversity has given to the learning more depth and understanding. Students have learned relevant matters through the real business cases instead of learning the matters to be stored for later use.

This development has been partially made possible by INTO-project with its own input. INTO-project is partially funded by European Regional Development Fund where the objectives are above-mentioned and also development of small and medium sized companies' innovative operations by adding co-operation between educational institutes.

Introduction

One mutual goal in Universities of Applied Sciences is to enhance educations work life's correlation. For graduates it is easier to move to work life and the needed knowhow is increased in labor markets when education meets the needs of working life. It is essential to react the development needs between working life and Universities of Applied Sciences. This means development of approaches and continuous interaction between these two.

In HAMK University of Applied Sciences these challenges have been answered by active interaction with companies. European Regional Development Fund co-financed INTO-project has contributed the systematical work.

INTO -project

In a complex society innovations are usually born when different knowhow is combined over the borders of different organizations and research centers together with companies. The participants in Valkeakoski Campus (HAMK University of Applied Sciences, Valkeakoski high school, Valkeakoski vocational school, Tampere University, Tampere University of Technology and Development Agency of Valkeakoski Region) and also their branch offices and networks enable innovation development in SME companies at Pirkanmaa region.

Beginning of the semester 2009 – 2010 all Degree Programmes at HAMK Valkeakoski unit are conducted in English. DP in International Business has been operating in English more than 10 years. DP in Automation Engineering

has been conducted in English for one year and DP in Industrial Management will be next semester. At this moment HAMKs Valkeakoski unit has students from more than 30 countries. Because students are international they have had positive affect for the regions SME's internalization possibilities.

The development of innovation precondition in SME's in Pirkanmaa region has been the essential objective of the project. About 60 companies are selected each year to participate for the project. The project itself is three years lasting process. The current situation, future and development needs are the topics during personal visits for the companies. The key idea for these personal meetings is to find potential new innovations for the company. Innovation as itself is a wider concept, this means the overlapping processes. The process is divided into two different aspects: having new ideas and implementing it (Adair, 2007). These ideas are processed in innovation meetings.

Figure 1: Process model for innovation meeting.

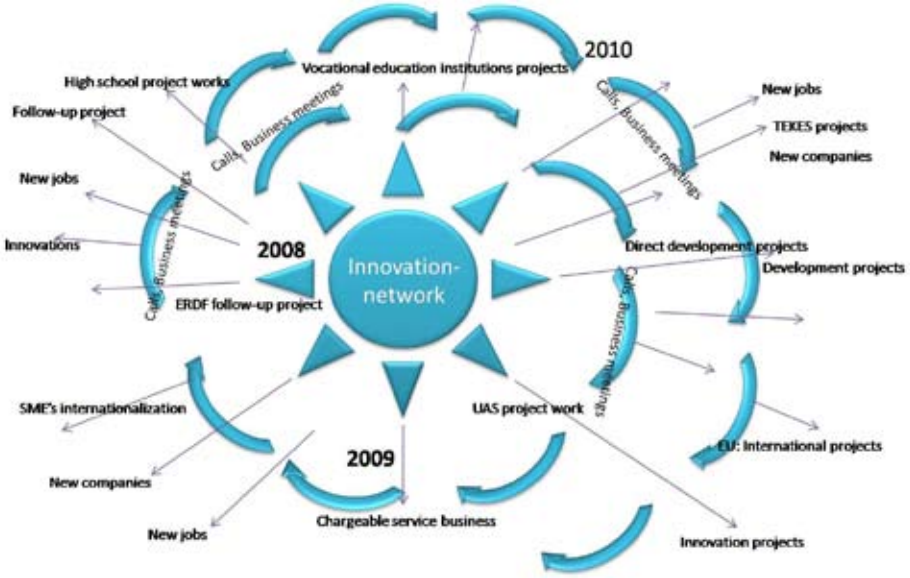
Innovations are usually born quite randomly. Getting the innovation can be helped with systematic activity such as innovation meetings. Different and in some what crazy ideas are gathered before innovation meeting. The matter to be developed is selected using different methods. The actual innovation meeting itself lasts for a day. The matter is developed further during the innovation meeting and at the end of the day there should be a decision of further actions (Lockett, 2008) .

HAMK has taken the process model "doing using interacting" (DUI) from innovation scientists to its operations. Traditionally the matter has been handled with "science technology innovations" (STI) model. In DUI model the innovation projects born in different innovation environments between users and producers interaction. It is not random how innovation projects are found but it is tried be systematically activated (Jensen, 2007).

The development ideas received from companies are made into projects for further development. The cases concerning integrating technologies or needing business and internationalization knowhow are also made into follow-up projects. The objective is to have at least 25 development projects. The innovations born in INTO-project can also be social, diverse or interdisciplinary innovations. The benefit for a strong network between HAMK and other parties is obvious especially in cases like these.

In the region of Pirkanmaa a strong base for innovation development is created by INTO-project. New jobs and possibly even companies are born from the projects consequence. SME's knowhow structure is strengthened by the developed service concept and with this the product development and applied research is promoted.

Figure 2: Innovation networks activities.



The ideas raised from the activities are developed through three different routes;

- Paid services when company is paying reasonable price for the guaranteed outcome.
- Partially government-funded when there are always some uncertainties that are not foreseeable in the R&D project.
- Student projects as a part of their studies. In this case the deadlines are more flexible and outcome has more uncertainties than the previous two.

In Figure 2 there have been presented innovation networks activities. As a result there are born;

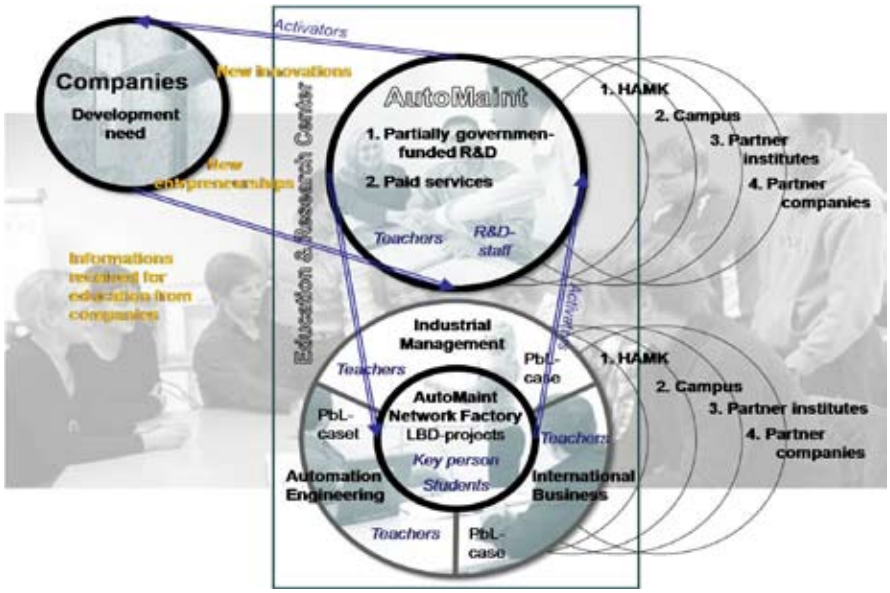
- chargeable service business
- new development and research projects
- student projects between different educational institutes
- SME's internationalization
- indirectly and directly new jobs and business activities

Integrating R&D –activities and education

AutoMaint research and development centre has done more than 10 years R&D projects at HAMK's Valkeakoski unit. The activities in AutoMaint is based hiring mostly own students to work alongside their studies. Currently there are approximately 30 members of staff from which 10 are regular workers.

The objective for AutoMaint is to develop the region by offering research and educational services for the companies in the region of Pirkanmaa. One objective is also to develop own activities more work life related so that students occupational knowhow would be respond for working life's requirements. Through national and international cooperation AutoMaint is trying to developed availability of knowhow.

Figure 3: Integrating R&D –activities and education.



The possibility to participate in projects that support occupational growth among students has been the key issue why AutoMaint Network Factory (AMNF) has been created. From the students point of view AMNF is an environment where to learn by project based learning in projects that are tied for technical or business studies. Extensive and flexible service package for companies are possible to create because there is a solid connection between R&D –activities and education. At the same time the occupational growth can be connected to companies needs.

Development of teacher's role

In the new learning environment teacher role will change significantly. The traditional teacher becomes more of a trainer and advisor. The new working life related projects set up new challenges for a teacher but give a student the possibility to apply theory to practice. The teacher knows the answer for the research problem or questions and is always right. This has been the traditional way of teaching. In the new learning situations students and teachers have to face questions without readymade answers at all (Ylitalo, 2009). This new situation might burden the teacher more for some time but promotes the teacher occupational development. The change should be taken as a possibility to create development.

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