

“Leonardo Quality Charter”

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Abstract - Summary

After having an overview of Leonardo charter, we started to gather as much information as possible about university-industry cooperation. We got some feedback on this from the participants of this IBS+. We discussed the ten criteria and we found out that some university meet them well and some not. Participants discussed topics very actively and concluded with some main points, e.g. different parts of the educational system (university, students and government) should be active to achieve a successful Leonardo project.

We left a lot of questions to be answered, like the ones related to the exact procedure and the method of making the sufficient evaluation of the Quality Charter's label system.

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Introduction

The European Quality Charter of Co-operation between Higher Education and Industry

The Leonardo project is a project of the European Union that aims to develop a Quality Charter for universities or higher engineering education institutions concerning the cooperation with industries. The initiative for the project is taken by the French Ministry, on the occasion of the French Presidency of EU (July-December 2000).

One of the biggest achievements of the partners gathered in the Leonardo project is the compilation of the European Quality Charter of Co-operation between Higher Education and Industry. Each stakeholder contributed to this Charter document, which should form the basis of future co-operation between engineering institutions and the world of industry. The document contains ten objectives the institutions should achieve in order to have a good co-operation with industry.

There seems to be a demand from Industry for such a label. The Quality Charter is based on values and not on accreditation. It just means that institution X has a close collaboration with industry (internships, lecture programmes, etc.). So companies will know when recruiting that people from institution X had an education that involved some co-operation with industry.

The first phase of the project consisted of some benchmarking. People looked for the needs of such quality charter. Sub-topics are entrepreneurial spirit, life-long learning, etc. The first Leonardo Conference was held in Paris to summarize achievements of the first phase. In the second phase of the project (where BEST will be also involved and which will start after the summer of 2001), pilot projects will be run and evaluated. BEST students will be part of the evaluation committees.

The project is actually now in its second phase where the charter is trying to be applied. Two universities will try to follow these 10 guidelines during a pilot project that will soon be started. They will be evaluated by a multinational evaluating network that consists of members of the partners in the project. Of course BEST will have some students involved.

By the end of the Spanish EU Presidency, another Leonardo Conference will be organised. Topic of this conference will be good practises of co-operation between universities and industry. There will be many places for BEST people and someone from the Educational Committee will give a speech, giving the students' point of view on this issue. There is supposed to be a student speech at the second Leonardo Conference in Barcelona. In this session we tried to collect some ideas or guidelines on what should be in the speech.

Discussion group in Lisbon IBS+ was called as Industry-University cooperation: "Leonardo Quality Charter". During the presentation session Leonardo project and the Quality Charter was presented and two experts attended this session: Mr. René-François Bernard, Secrétariat de l'Etat à l'Industrie, Paris, France and Pim Bonne, former VP of BEST.

The Discussion

What do you want to tell the stakeholders in engineering education about co-operation with industry? Perhaps you have some good examples to share?

Approach between universities and companies

Approaches between universities and companies were stated as very essential. Sometimes the universities are so old-fashioned, that they have been grown away from the normal working life. Technology is advancing too fast: universities cannot keep up. Practical work is needed, but you have to remember, that not only cooperation with industry is practical work.

The practical experience you get from working in companies is necessary. Companies collaborate preferably with the last year university students, but being only few weeks or months in touch with companies is not enough. That process should last during whole studies, not only starting at the last years. Practical role of the company in one's education should start since the beginning of one's studies - not only at the end.

Cooperation and communication is really needed.

In some countries university don't help students at all to find some practical works. And in many cases students don't get paid at all. The solution for that could be that those projects could be more implemented to courses, or like a part time job during the whole year.

What are to ways to motivate this cooperation?

- If the university wants to be considered as a good one, it must have a kind of cooperation with industry.
- University should put emphasis on its own "Recruitment Services"
- Some teachers are not interested in this kind of cooperation, at least the theoretical part. A good method to approach the industry could be trying to some research together.
- Teachers could go to industry from some time and see what kind of things are going on.
- Students should get credits for their work.
- Students should get economic motivation to do that too.
- Students have to learn how things work in the real world, so they need some practical experience. Time you spend doing practical things pays off after you're working in real life.
- Companies are selling themselves, and so students can get an idea of what they can expect. Companies could get more benefit from their future workers, if they participated in students' education.
- It can be hard to involve industry, because they don't want to share their knowledge. Should industry be rewarded for its involvement?
- More presence of the government to the make the approach happen is demanded.

Should there be a limit or regulations in the cooperation? How much teachers and university should be involved?

- The university should have the last word on how the programme should look like. Maybe we could have a group of people discussing on it. Is there a danger of university becoming too commercial?
- It's good to make a final thesis in a company, rather than something more theoretical at the university. Is there a danger of brain drain to companies?
- A good idea is when a company goes to the university and gives case studies, but could this give too much work for students?
- At university teachers tend to stay in the same position about a specific topic; bringing industry could give some new ideas. => Conflicts of prestige?
- Is there a threat that universities would start preparing people for what industry wants => maybe too specific and company-oriented education?
- Some universities are willing to cooperate, not all. In any case you should make a long term plan, not a short term one, because the needs of industry change every year.
- Entrepreneurship is also important - students should have the possibility to make their own company. In this case maybe the government is who should help, because it's not sure that a big company wants to teach about how to establish a new succeeding company.
- Companies should really have confidence in students and give them real work. Sometimes student-workers only make coffee and photocopies. Maybe companies don't want students to 'grow' and take more salary? Do companies want students to keep on studying, so students will get paid less?

Ideas about important skills for companies and influence of companies in training

Core curriculum is very important. Students need - though - to get training also from industry people, because most of the students are not going to work as scientists in the university but as developers or researchers in the engineering world.

In order to have proper education what kind of training you should have from industry?

- More practical experience exercises and instant trainings
- Job shops (fair) & company presentations
- Lectures from company people
- Practical case studies
- Exchange between teachers and professionals
- Final project & masters thesis done in companies
- Influence of companies in educational programs should be allowed
- Evaluation...
 - ... of the education system
 - ... of the influence of students
 - ... of the relationship between universities & companies
- Generally speaking examples from real world
- Importance of student associations?

What kind of skills industry demands from students? Should industry have something to say about university education?

Besides trainings from companies, students should have trainings like ‘how to make a CV, an interview’...Those skills that are needed or missing in engineering education: Teamwork abilities, working in virtual teams, languages, leadership and task management, rhetoric and communication skills (like how to make a presentation or how to write a report), cultural skills (how to deal with people from other countries & some general culture), time management (how to schedule your time) and computer & ICT skills should be valued.

Going abroad is also a good way to prove you’re open minded and that you have a multicultural background. And it’s something else for ones CV too. Involvement in associations should be well appreciated, because it shows that you are more flexible. Besides that, initiative and creativity skills lack from present education. But of course, all the required skills depend on the role you are going to play in the company.

Short-term influence from industry on education is not possible, because the universities are not modern enough. To have the right approach of universities and industry, universities should plan long term and create a committee with teachers, representatives of the companies and students. Industry wants to satisfy its needs at any cost, but universities should still maintain teaching in their own hands.

Generally speaking cooperation should not only be about practical things, but also about soft skills & management... Influence of companies in educational programs is also needed but should execute carefully.

What is the role of students and student unions in evaluation?

Most of the universities have representative student unions. Could they give any input or represent students in these matters? How could you evaluate these things as a student? In discussion group was gathered some information about the roles of various student unions and about their links to industry:

- In Italy and Greece they have political parties.
- In Finland and Poland each faculty have their own laws, students participate in them.
- In Romania the student union doesn’t really represent the students.
- In Germany you have the student union from each faculty, and then the general student union.
- In Madrid they have a lot of power but maybe students don’t see it. It is not political at all.
- In France they have a kind of association that cooperates with industry.
- Normally people don’t know how much they are represented, or how much power they have.

There are many non-representative unions, which are doing university-industry cooperation: e.g. bonding in Germany and IAESTE, which has especially industry-related cooperation attitude.

As the conclusion it was stated that student unions have so different backgrounds in every country and in every city that it is almost impossible to have the common procedure in using the student unions in evaluating.

Is there any system for students for evaluating the quality of the university?

In many places at the end of the semester students can fulfil a questionnaire about the teachers, but in the end you don't see the results. There should be developed totally new quality evaluation procedure to evaluate everything that affects to students' education.

There could be developed an internet-based evaluation system, so the university could check what the students are doing. The evaluation could be done in the middle and at the end of the year.

This project could start with a pilot faculty taking the results of the questionnaires really into account. Every stakeholder should take care of the results of the questionnaires.

Conclusions & Future Work

Conclusions

The goal of this discussion group was to explore the Leonardo Charter and have a discussion about the points it included. After that discussion continued on ranging widely from the skills you need in your professional life to evaluation and assessment systems.

We started thinking from the basic points of university-industry cooperation, continued with thinking the obstacles and motivation of stakeholders to achieve the goal, and finally we noticed that there is quite much work to do in the Europe to get the universities to that condition as it is stated in the Quality Charter.

We found Quality Charter as a very useful and practical solution for this university-industry dilemma and we wanted to go more into the details. We compiled a list of skills an average student would like to learn for his/her working life and we analysed if student unions could take a more important role as evaluators. But the main thing we did is that we tried to define the common guidelines for industry to take part in the university basic education. It includes so many aspects that it should maybe be handled as separate topics in the future. First, it should be clarified that "What are the exact motivations of universities, companies and students to work together" and then try to make a nice compromise of each other needs. The main conclusion of this discussion group is that there is no quick and easy answer for this equation.

We also reviewed some of the main aspects, which make industry cooperation difficult to introduce in the current educational system, such as the old mentality and the lack of motivation. We were talking about other aspects to get to know if Quality Charter is becoming more common way to measure the quality of the universities. At the end despite some obstacles we saw the aim of the Leonardo project very positive. If prepared well, it could be useful tool to integrate and assess the European education by the industry retrospective.

Future Work

- **Companies** are the key actors of making this project to work. It's not always so sure that they are willing to cooperate. Do they want to start to make education instead of making profit?
- **Universities** are developing quite fast because of the large-scale political change in Europe. But do they have enough flexibility to do that effectively? Do teachers and professors understand the importance of cooperation? Should university funding be dependable on industry cooperation?
- **Students** are always willing to make radical improvements, but do students really have the ability to work, to study and to have their own life at the same time?

- **Leonardo partners**, what is there really to tell to the stakeholders in engineering education about cooperation with industry? Can industry cooperation be labelled and chartered as such? Does this project need more recognition from politics to get more institutions more committed?