

[DOI: 10.20472/IAC.2018.043.024](https://doi.org/10.20472/IAC.2018.043.024)

VERA KRISTÍN KRISTJÁNSDÓTTIR

University of Akureyri, Iceland

HAFDÍS BJÖRG HJÁLMARSDÓTTIR

Akureyri University, Iceland

THE NOBANET E-BUSINESS COURSE, THE IDEA AND DEVELOPMENT

Abstract:

The authors of this presentation are members of a network called Nordic-Baltic Network for Internationalization of SME's or Nobanet. As part of the Nobanet network Akureyri University Iceland developed an e-business course together with the partner institutions from the Nobanet. The goal is to provide students with necessary knowledge about basic principles of e-business and to improve practical skills to use online tools and applications. During the development of the course, so-called MOOCs were used as an example.

The course contains 10 module, each 1 ECTS. It is possible to take one module, a few or the entire course. The E-learning course materials will be integrated in other courses at Akureyri University and will be available on the Eliademy platform. Eliademy was chosen to host the course, as it is a free platform for instructors to create, share and teach online courses.

The course can also be completed as a self-learning course with support and guidelines provided by the instructors. In addition, e-learning materials can be used for other projects and relevant thesis topics.

In this presentation, the authors will explain how this course was developed and designed, so that it can be used in various ways in many countries at flexible times.

Keywords:

e-business, online course, Eliademy, flexible studies, self-learning

1 Introduction

Small and medium-sized enterprises (SMEs) account for more than 99% of all companies in Iceland, totalling around 4,000 companies (Davíðsson, Oddsson, Ólafsson and Birgisson, 2009). These companies operate in many areas, such as tourism, fisheries and agriculture. There are also a large number of start-up companies. It is clear that these companies are the centre of domestic employment and value creation, and the country's administration has been expanding in recent years in an effort to support them, for example by facilitating their entry into new foreign markets.

The situation is similar in other European countries, where SMEs are the basis of economic development, and the EU has given special attention to promoting them (European Commission, 2008b).

For the past three years, the authors of this paper have been part of a network called the Nordic–Baltic Network for the Internationalisation of SMEs, or Nobanet, which aims to bring together three groups: university teachers, students and SMEs. The objective of the partnership is to create and share knowledge about the successful internationalisation of SMEs. With regard to the role of universities, as defined by the Icelandic Higher Education Act no. 63/2006, emphasis is placed on relations with the local community and especially the business sector.

With this in mind, the following research questions are posed:

- What benefits can be derived from cooperation between university teachers, students and companies?
- What is the best way for groups to undertake assignments across borders?
- What do these three groups think about working together?

The study involved three different groups, namely students who worked on cross-border assignments, the university teachers who supervised and instructed students and finally the SMEs that provided the assignments that students worked on. The assignments were often related to marketing, specifically how the companies could market themselves and their products or services in a foreign market and how they could enter new foreign markets. It was clear that the students found the assignment work rewarding and that their project work gained more significance for them. It inspired them to know that they were working for real companies and that their results could benefit the companies. The authors believe these findings indicate that real-life projects bring more substance and relevance to the students' course and have a positive impact on students' interest.

This paper first describes the role of universities as defined in the Higher Education Act and in the declaration of Magna Charta Universitatum, followed by an analysis of the policies and functions of universities that teach business in Iceland. Next, the importance

of the internationalisation of SMEs is outlined, along with possible ways of collaboration between universities and companies, highlighting the driving forces and barriers in this collaboration. Current research on the cooperation between these two types of organisation is reviewed and the benefits and disadvantages of cooperation discussed. The authors explain the purpose and operation of the Nobanet network, in particular its projects across borders. Finally, the study's findings are presented, including an account of the workflow process designed by the authors and the Nobanet team to ensure the success of this three-way collaboration.

2 Universities and communities, the role of universities and their relationships with the local community

Universities play a social role and are considered by some to be the most important educational institutions in the community they serve. They are independent units, which are engaged in, among other things, teaching and research. The education provided takes into account the needs of society at any given time. The Icelandic Higher Education Act no. 63/2006 states, "The role of universities is to promote the creation and dissemination of knowledge and skills to students and society at large. The university's mission is to strengthen Icelandic society's infrastructure and its position in international terms."

In 1988, a statement was issued regarding the ethical responsibilities of European universities, the so-called Magna Charta Universitatum. This was on the occasion of the 900th anniversary of the University of Bologna, which is considered to be the oldest university in Europe. The Magna Charta confirms that universities combine the functions of teaching and research, in order to serve the changing needs of citizens, society's demands and advances in scientific knowledge. The Magna Charta states that the role of universities is to serve all humanity, whose future depends on the development of all. It also states that the role of universities is to communicate knowledge to the local community and to ensure that the knowledge gained is in line with certain basic values, such as nature, sustainability and life itself (Observatory Magna Charta Universitatum, n.d.).

The authors of this paper examined how the Magna Charta statement is reflected in the policies of universities in Iceland that teach business subjects. The University of Iceland's plan for 2016–2020 clearly specifies this role, which can be performed by undertaking practical tasks in cooperation with the business community and supporting international cooperation and the exploitation of research. The aspiration is expressed for increased collaboration between students and researchers and organisations and industry, with an emphasis on greater participation of students in community projects of various kinds related to their interests (University of Iceland, 2016).

The University of Reykjavik's strategy states that its role is to "create and disseminate knowledge to enhance competitiveness and quality of life for individuals and society, with ethics, sustainability and responsibility as a guiding principle" (Reykjavík University n.d.). One of the core activities of the university is conducting research in close collaboration with industry and society, and especially training students in international relations (Reykjavík University n.d.).

Bifröst University defines itself as a school that educates socially responsible leaders. The University's research policy states that it is committed to building research collaboration with organisations and companies. The school also emphasises good relations with the business community, and seeks to connect teaching at school and student studies to industry (Bifröst University, 2013).

The University of Akureyri's plan for 2012–2017 defines its role as providing students with opportunities for education in an ambitious and international study and research environment. The university also aims to create facilities for research and innovation that contribute to the growth and development of Icelandic society. The university emphasises an interactive relationship with society, which involves increased cooperation with other universities and enhanced relationships and cooperation with companies. The university wishes to be visible and in good relations with both its near and remote communities (University of Akureyri, 2012). The University of Akureyri's plan for 2018–2023 is currently being finalised.

Clearly, universities emphasise strong relationships with the local community, as well as international relations and connecting students to the business community. These principles have in common the will to influence the development of Icelandic society for the better.

3 SMEs and the importance of internationalisation

According to the European Commission definition, SMEs have fewer than 250 employees and have an annual turnover of less than 50 million euros (European Commission, 2015). Therefore, only exceptionally do Icelandic companies fall outside this definition. SMEs are overall Iceland's largest employers and form the backbone of the Icelandic economy. They represent many areas, such as tourism, fisheries and agriculture and all kinds of start-up activities.

In Europe too the SMEs are the basis of economic reconstruction, and special attention has been given to promoting such companies within the EU and creating a favourable environment for them to prosper. For example, "Think small first: A small business act for Europe", otherwise known as the Small Business Act (SBA) has just such an objective. Among other measures, the 2008 SBA programme attempted to stimulate entrepreneurial innovation to help SMEs grow and flourish (European Commission, 2008b).

Many SMEs want or need to internationalise for various reasons. There are drivers that push companies into internationalisation and impulses that pull them. The drivers are external factors such as unfavorable circumstances and limitations in the company's home market, which might include saturation of the market, increased competition and difficulties linked to the distinction between goods or services in the domestic market. On the other hand, enterprise-induced catalysts are factors within the company itself, such as self-assessment of the ability to enter the international market and willingness to become international in terms of the company's own incentives and goals (Kraus, Mitter, Eggers and Stieg, 2016).

While global markets provide growth and opportunity for companies, various barriers are often found along the way. It may be difficult to identify foreign markets, to find a target sector or to team up with the right parties to build a strong business relationship. Furthermore, foreign law may present problems. Contract law and other laws and regulations relating to business, such as specialist licensing, can prove incomprehensible or difficult. SMEs usually do not have the human resources, time and skills needed for analysing foreign markets – almost invariably fewer than larger companies (European Commission, 2014).

Internationalisation of SMEs has long been a priority within the European Union. International markets often offer more opportunities for SMEs and therefore potential growth. Furthermore, internationalisation can lead to development and new opportunities for the companies involved, as well as increased economic growth for the company's home country (Sursock, 2015; European Commission, 2008a). EU research from 2014 shows strong positive links between internationalisation and innovation. About 26% of internationalised SMEs launched new products or services in that year, as compared with only 8% of non-internationalised companies (European Commission, 2014).

In 2007, the Organization for Economic Co-operation and Development conducted a study of the main barriers to companies for internationalisation (OECD, 2009). Many managers of SMEs responded by mentioning a lack of investment in exports, followed by difficulties in analysing opportunities in foreign markets and lack of information. The ten barriers mentioned by managers are listed, in order of importance, in Table 1.

Table 1 – Barriers to internationalisation mentioned by SMEs	
1	Shortage of working capital to finance exports
2	Identifying foreign business opportunities
3	Limited information with which to locate/analyse foreign markets
4	Inability to contact potential foreign customers
5	Obtaining reliable foreign representation
6	Lack of managerial time to deal with internationalisation
7	Untrained personnel for internationalisation
8	Difficulty in matching competitors' pricing
9	Lack of home government incentives
10	Excessive transport costs

Source: OECD, 2009.

Some of these barriers could make suitable topics for assignments for university students. For example, students could have the task of analysing the market and acquiring information for companies. The main task of the Nobanet network is to prepare an assignment in one country to be conducted by students in another country. This will be discussed in more detail in the section on projects across borders.

4 University and business cooperation

University institutions have used a variety of ways of collaborating and sharing knowledge and increasing their competitiveness and the numbers of their partners. When it comes to internationalisation, many universities have increased their cooperation in terms of teaching, for example in the form of the Erasmus exchange programme and collaborative research.

Within the EU, there are many examples of collaboration between universities and companies, which in many cases have lasted for a long time. There are eight different ways in which organisational bodies and universities can work together (Healy, Perkmann, Goddard and Kempton, 2014). They are as follows.

- Research and development collaboration between companies and universities is a relatively common means of cooperation and simple to implement. For example, under the supervision of teachers, students can undertake a variety of research projects for companies.

- Mobility of university teachers and students. In both permanent and temporary collaboration initiatives, students and/or teachers work with companies. This is one of the simplest means of cooperation. Teachers and students can seek grants from the EU (e.g. Erasmus grants) or from student organisations such as AIESEC (an international not-for-profit NGO that provides young people with leadership development, cross-cultural global internships and volunteer exchange experiences around the world).
- International dissemination of research and development results is very important, including, among other things, innovations and patenting.
- Companies and universities can work together to develop curricula, a particularly important initiative where part of a student's education is internship.
- Lifelong learning refers to the education that individuals acquire through university life, by direct or indirect means.
- Entrepreneurship, for example the creation of new companies.
- Finally, cooperation through management, where university teachers play an advisory role in decision-making for companies or sit on their boards.

The study by Healy, Perkmann, Goddard and Kempton (2014) shows a strong positive relationship between all eight ways of cooperation.

Not only does cooperation with universities encourage internationalisation and thereby help companies gain ground outside the domestic market, but it can also improve the quality of teaching and create a good relationship between students and companies, whereby the students may go on to work at the company or find it easier to get work in the future (Ptak, 2014).

5 Drivers and barriers to business and university cooperation

A study conducted by Davey, Baaken, Muros and Merman (2011) revealed that the managers of some companies were not willing to cooperate with universities and their students. Among the factors that hindered such collaboration was the fear on the part of managers that others might acquire their expertise and rob them of their uniqueness, for example the knowledge they had gained through their own research and product development. Other hindrances included different time zones between the companies and the universities, making communication harder. Moreover, finding relevant partners was a problem. When managers of SMEs and university teachers were asked about barriers to their foreign activities, most pointed to financial barriers, as well as bureaucracy within the universities. Financial barriers were, in most people's eyes, the biggest obstacles. Indeed, most university teachers believed that it could be difficult or even impossible to establish partnerships with companies.

It should be noted that cooperation with universities can pose a risk to companies. Clearly, if university students deliver good assignments to the business, the company will want to use the results. At that point, questions have to be raised regarding the copyright of the solutions and the ownership of ideas used in conducting the assignment. Some universities also enter into a binding commitment with the companies, and such partnerships can be accompanied by a lot of bureaucracy (Dan, 2013).

However, cooperation between companies and universities can be particularly cost-effective for SMEs, especially in relation to certain academic research and development work. Academic research in collaboration with universities can be a more efficient solution for companies than investing in their own research (Godin and Gingras, 2000), yielding good information about the market and various relevant analyses of data. A study showed that 10% of new products in the market would not have been created were it not for the research collaboration with universities (Bekkers and Freitas, 2008).

Trust, commitment and common goals are key issues when it comes to collaboration between universities and companies (Davey, Baaken, Muros and Meerman, 2011).

6 Research on current cooperation between universities and business

Collaboration between universities and companies and the benefits thereof have been little investigated. Some of the published studies are discussed below, but it must be mentioned that the authors of this paper found no Icelandic research on cooperation of this type.

The theory of the triple helix model was developed around 1990. In the present context, the theory underlines the importance of companies, universities and government strengthening their cooperation and forming a network. Collaboration is deemed to be fundamental to everything, i.e. the country in question could be doing better, the country's economic growth could increase and at the same time its competitiveness and business success could flourish (Smith and Leydesdorff, 2012). The role of the government is to encourage cooperation through management and support, whereas the universities undertake teaching and conduct research that can benefit the companies (Seppo, Roigas and Varblane, 2014).

Another version of this theory is called the "laissez-fair triple-helix", according to which the three parties are independent of one another. The role of the university is, as before, to carry out research and educate individuals to equip them for the labour market. Knowledge passes from universities to the labour market via published research and graduate students. The role of the administration in this theory is therefore very limited, as there is little communication between the three parties (Etzkowitz, 2003).

Other theorists have proposed the knowledge triangle (Figure 1), which stresses the advantages that can be gained by collaboration between the three parties. The knowledge triangle schema has led to even greater emphasis on support for innovation in the EU. The knowledge triangle also appears in the 2020 Strategic Plan (Horizon 2020) as an element of European policy (Allinson, Izsak and Grinieca, 2012).

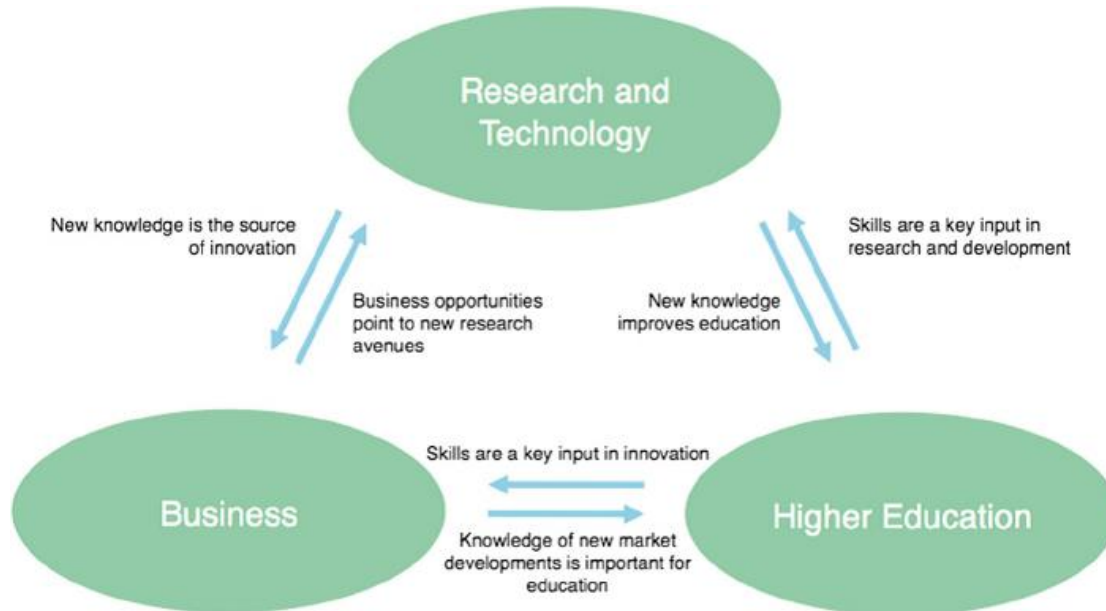


Figure 1. The knowledge triangle.

Within the knowledge triangle, qualified and well-educated university staff conduct better research and development, which can lead to new products and services coming onto the market. Conversely, knowledge and innovation in the market should lead to the furthering of students' education.

The next section details the benefits that may arise from cooperation between universities and companies.

7 Benefits of cooperation between universities and business

The participation of the authors in the Nobanet network is part of the University of Akureyri's policy of strengthening relations with the business community and society at large. The authors have worked with companies in their own community, as well as elsewhere in the country. This collaboration has attracted attention both inside and outside the university. Students have been grateful for opportunities to work in conjunction with the business community. The experience has enthused them and given them a deeper understanding of their academic studies by linking them to actual

situations. Similarly, the authors have gained knowledge and conducted research collaboratively.

Table 2 shows the benefits of cooperation between higher education institutions (HEIs) and businesses.

Table 2 – Benefits of HEI and SME cooperation		
Benefits for students	for	Increased motivation Improving the learning experience Increasing skills Improving employability
Benefits for business	for	Improving performance
Benefits for society	for	Increasing local employment Benefitting the local community Benefitting local industry Increasing local GDP and disposable income Creating a range of social and recreational benefits Improving regional productivity
Benefits for the HEI	for the HEI	Achieving the mission of the HEI
Benefits for the academics	for the academics	Increasing the academics' reputation in their field Supporting personal research Increasing chances of promotion and employability Improving their standing within the HEI

Thus, cooperation between universities and companies can lead to high-quality research, student and teacher training and counselling (Davey, Baaken, Muros and Meerman, 2011).

The European Commission (2005) attaches great importance to the strong link in universities between teaching and research, as well as between teaching and innovation. The Commission's report expresses its eagerness for Europe to strengthen all aspects of the knowledge triangle, believing that investment in innovation and higher standards in universities is a direct investment in the future of Europe and the lives of all Europeans. The University of Akureyri, with the participation of the authors, is equally enthusiastic about making this happen.

8 The Nobanet network

The Nobanet network of the Nordic and Baltic countries is unique. It is financed by Nordplus (Nobanet n.d.). The network was created in 2013, with the main goal of supporting the internationalisation of SMEs and creating and sharing knowledge about their successful internationalisation. Educational and teaching materials are prepared collaboratively and connecting businesses and HEIs is prioritised. As previously mentioned, foreign markets can offer SMEs various opportunities for growth. However, there are various obstacles to entering international markets: companies may lack information about these markets, the analysis may prove to be too time-consuming or the company may lack the human resources and skills needed to identify appropriate foreign markets. Shortage of capital can also present a barrier.

One of the primary goals of Nobanet is to seek ways to assist companies in overcoming these challenges. The methods developed by the network are: cross-border assignments, case studies, development of material, e-learning and internship, with a view to successful internationalisation.

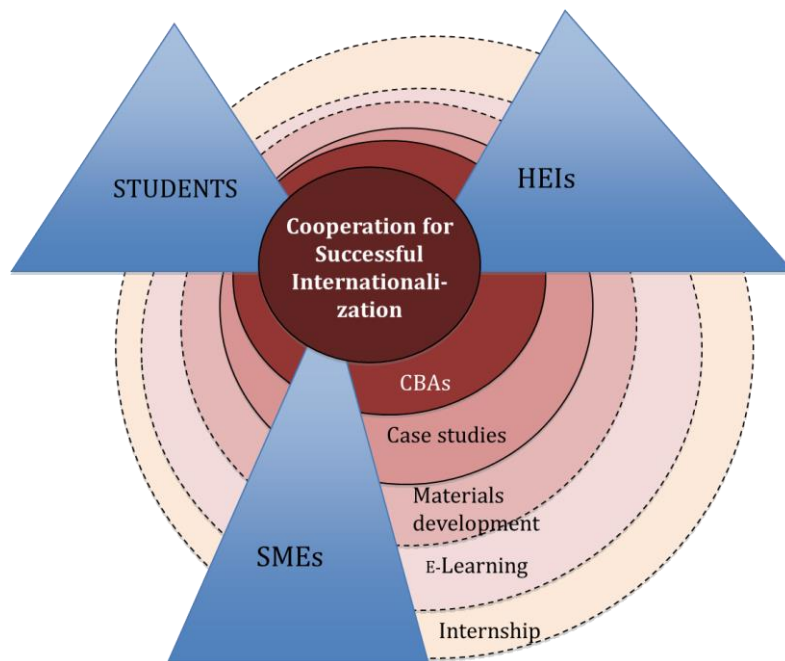


Figure 2. Nobanet connects students, academics and SMEs.

Cross-border assignments (CBAs) are the most important method of cooperation between the three groups, and simultaneously the most effective way to support the internationalisation of companies. Case studies are projects in which students study companies in their home country in order to explore barriers to and driving forces of internationalisation, thus determining what is effective and what can hinder performance. Students in all countries of the network have conducted case studies. Educational and teaching materials have been developed. In October 2016, a handbook was published on

the status of all countries with regard to various characteristics, including the jobs market, gender equality, markets and culture, which might prove interesting for students and businesspeople to review and analyse. Students in Finland, among others, have worked on the handbook, and all national partners have added in information relating to their own country. The handbook is electronic and is therefore easy to update, so it always contains the latest information. The novelty of Nobanet is the work it carries out preparing e-learning materials in the form of lectures and assignments. These are so-called 'massive open online courses' (MOOCs), which can be used by almost anyone in the network. Distance learning and flexible studies are offered at the University of Akureyri, and this work will undoubtedly provide inspiration and be used there.

It can be extremely valuable for university students to live in another country for a while and take a temporary internship in a company. To promote this idea, the Nobanet network is in partnership with the student organization AIESEC (AIESEC, n.d.).

9 Cross-border assignments

The core element of the Nobanet network is the assignments in which students work across borders. The assignments are effected in such a way that teachers and companies in one country, for example Iceland, prepare assignments that meet the requirements of the relevant course and pose questions that the company needs answered. A student group in another country, for example Estonia, then attempts to answer the questions. Thus, the Icelandic company gets market analysis and marketing proposals for their products from students in Estonia. The cross-border assignments are real, and students interact and cooperate with a real company. The company receives solutions from students who are in the country it is interested in entering. Teachers tend to find these assignments and partnerships inspiring, enabling them to connect textbook theory to reality (Nobanet, n.d.).

10 Methodology

This study collected mostly quantitative data, but also made use of existing data, which included official EU publications and reports whose objective was to measure the impact of collaboration between universities and companies. The use of existing data allowed valuable information to be collected quite quickly and cheaply (McDaniel and Gates, 2013).

The study involved three different groups: students working on cross-border assignments; university teachers who supervised the assignments, advised the students and were involved in interpreting the results; and the managers of the companies that provided the assignments as project work for that students. The topic of most of the assignments was

how the companies could market themselves and their goods or services in foreign markets.

A survey was conducted and submitted to all the parties concerned. The questionnaire was tested with a group of Icelandic students working for a small hotel in Denmark. It was adjusted in the light of this pilot, making some of the questions better focused and reducing the number of questions.

There were three questionnaires, one for each group. Each questionnaire had 14 questions in English, which related to the participants' experience of the collaboration. The questions either expected answers on a Likert scale or were open-ended. The ones that were on a Likert scale had five possible responses ranging from strongly agree to strongly disagree. Among the open-ended questions, participants were asked to indicate the main advantages and disadvantages of the collaboration, how the collaboration had taken place, for example in terms of communication, whether participants wanted to participate in a similar partnership again and whether they would recommend collaboration of this sort to others.

Six universities in six different countries (Iceland, Denmark, Finland, Estonia, Lithuania and Latvia) proposed the assignments. In total, assignments for eight SMEs were carried out in these countries. Overall, six teachers, or all the teachers who had given the assignments to their students, answered the questionnaire. The managers of two out of eight SMEs responded to the survey. Seventy-six students answered the questionnaire, an approximately 50% response rate. The questionnaire was electronic and a reminder was sent once to participants who had not initially responded.

11 Sample selection

The study was a census study. All students who worked on cross-border assignments were participants in the study, as well as all the teachers and all the companies involved. Census studies can be unsatisfactory, especially if the population is very large, and in many cases the size of the population can easily change, for example with migration from one area to another (DeVeaux, Velleman and Bock, 2016). In this case, the population was stable and not too large, and it was thus easy for the researchers to approach everyone in the population, that is everyone that had participated in the cross-border assignments.

Teachers in the Nobanet network chose the companies to participate in the work. These were small companies selling goods or services, for which it would be appropriate to sell and market in the other Nordic countries or in the Baltic States. The companies were relatively new and with interesting and even innovative products that were likely to appeal to the students. The Icelandic companies that participated in the partnership included

Junglebar, a producer of protein bars made from crickets, Ankra, which produces fish collagen, and Inspired by Iceland, which offers comprehensive tourism solutions.

12 Results

In previous studies, students declared themselves pleased with this collaboration between universities and businesses. Indeed, students often feel pride that their work could yield a benefit to the business (Cano, Lidon, Rebollar, Roman and Saenz, 2006; Gonzales, Fagerstrom and Fagernes, 2017). Students also reported that tasks that are carried out for real-world companies are important to them, because their work could affect society beyond the individual business (Jóelsson and Árnadóttir, 2017).

In the present research, many students found it rewarding to be working for a real company that they could be in touch with during the project. The majority of students further believed that they had learned more from this task than from a "traditional" project. In most cases, contact with the companies was easy, and the students generally received useful information that helped them in their work. In particular, 92% of student participants considered it important to work across borders (Table 3) and 76% of teachers shared this opinion.

Table 3 – Answers to the statement “Working on assignments across borders is important to my studies”

	Teachers	Students
Strongly agree	63%	42%
Agree	13%	50%
Disagree	0%	6%
Strongly disagree	25%	2%

Asked about their experience of working with companies, many students mentioned that it had been fun and rewarding. The challenges of the assignments were different, but most of them were concerned with marketing abroad, which meant that students had to analyse market conditions and prepare a marketing plan for their company. A very high percentage of students, 94%, said they had learned a lot about the subject of the assignment (Table 4).

Table 4 – Students’ responses to the statement “I learned a lot about the subject of the assignment“

Strongly agree	39%
Agree	55%
Disagree	3%
Strongly disagree	3%

Some students said that assignments of this kind were crucial to their studies, because they required hard work to gather the information and analyse market conditions, just as they would have to do in the future once they themselves were employed.

Students were asked which three aspects of the assignments were the most important. For most students, working with companies in other countries was the top option. Moreover, 40% of students rated the subject matter of the assignment as important (Table 5), although obviously this needed to be relevant to the course they were studying with regard to its learning criteria and outcomes.

Table 5 – Students’ answers to the question “Which aspects of the assignment were the most valuable to you?”

Working with companies in other countries	75%
The subject of the assignment	40%
Improving my intercultural communication skills	35%
Improving my cultural understanding	30%

Furthermore, a few students mentioned that the project work had been good practice in English, as they all had to do the assignment work in English, which was not their native language. Some students pointed out that the collaboration would enhance their job prospects and could improve their CV and that they might even be able to get jobs in the companies with which they were working. A number of students felt that it would be useful to receive some kind of certificate for their cooperation, and it was agreed that this should be done.

Students were also asked, in an open-ended question, about the main disadvantages of the project work and what might have been done better. Cooperation among the students

was most frequently mentioned; in most cases, three to six students worked together on a group project. Some students said that they struggled to get answers from the companies and that they were missing information. Some noted that the assignment was difficult to do in English, and finding a meeting time that suited all parties posed a problem because people were busy and operating in different time zones.

Asked how many times they had contacted the company, 85% of students said that they were in contact (either via email or by Skype) twice or more during the time of the work. However, 15% of students said they had never contacted the company. Those who did contact the company said the information they received had been of great benefit for the project.

At the end of the questionnaire, there was an opportunity for students to express whatever was on their mind. One student said: "I felt that the project was important because it was connected with and even had consequences in the real world. Using what we learned in textbooks in real circumstances was more rewarding than if it had remained purely theoretical." Another student wrote: "Working in partnership with a real company gives me as a student an opportunity to feel that what I do is a big deal. It was also fun to interact with people from different countries."

As regards the teachers, they indicated that they were all pleased to receive new, real assignments that they could present to their students. However, the teachers had made sure that the assignments were relevant to the courses they were teaching. The teachers felt that the projects were inspiring and that they had encouraged the students, who had learned a lot in terms of communication with their colleagues and with the companies.

Five out of six teachers who answered the questionnaire said they had to deal with problems in relation to the project work, notably communication with and support and information from the companies, including a lack of interest in answering students' questions. Most confirmed that the main advantage of the assignment was being involved with a real situation. Four teachers admitted that they had never contacted the company, whereas the other teachers got in touch once or twice during the project and felt there was value in doing so at least once. One teacher stated that he had contacted the Nobanet link person, not the company itself, and had received the information that he requested in this way. When the teachers were asked if they would like to have received further support from the company, only one said that he was very pleased with the support, whereas the others would have liked more.

In response to the open-ended question requesting their views overall, the teachers stated that communication with the companies was poor. One teacher noted that his students had received little information from the company and that the information was slow in coming. Some teachers said that next time they would choose to have fewer students in a group; some groups had as many as eight students, which proved to be too many. Other teachers said they would like to do this again and would do it the same way.

They also stated that they would have wanted the assignment description to be more accurate, but in most cases, it was the Nobanet team in collaboration with the company that wrote the description.

The questionnaire to company managers asked about their experience of working with students and teachers across borders. Unfortunately, only two of eight managers took the time to answer the questionnaire. However, all companies had a contact, a teacher in their home country, to whom they could talk. Most of the companies stated that they were pleased with the cooperation and that the information they received from the students was highly useful.

Company managers identified that the main advantage of the cooperation was that they had valuable market information derived directly from the students' own home market for a foreign company. The disadvantages mentioned were that it took up a lot of time to answer all the queries from students, and that there was a large difference in the quality of different student reports. In this regard, the authors suggest that companies be given only the best two or three reports. Nevertheless, the managers were grateful for the information and analysis that the students did for them, free of charge, in return only for providing information.

Given the opportunity to add what they wanted, the managers expressed their thanks for the chance to participate in this collaboration, and one manager would recommend cooperation of this sort to other companies. Managers mentioned that it was very time-consuming answering all the e-mails from students. More often than not, students who worked together in groups were sending the same or similar questions to the same company, which meant that the managers were answering the same questions many times. This hitch in the arrangements needs to be controlled, to make sure that all the students get the same information without duplication of effort.

The results correlate well with the projected benefits described in Table 2, which is a pleasing outcome. However, they also reveal difficulty in communication between students, company managers and teachers, which suggests that a clear workflow must be present in a collaboration of this kind. Therefore, it was decided to develop a work process to be followed when cross-border assignments are undertaken, setting out how the three groups can work best together across borders. The process was developed by the authors and the Nobanet team and is presented in the next section.

13 Discussion and conclusions

The results show that in some ways the cooperation between the three groups went smoothly, but some things could be improved. As far as the questionnaire is concerned, one question should have been better formulated. The question was, "How often did you get in touch with the company during the time of the assignment?" As reported above,

15% of students said they had never contacted the company, although they had been asked to do so. However, the students may have been responding for themselves, so that although they personally did not contact the company, other members of their group could have done so. It is suggested that this question be reworded to ask whether the student or others in his or her group were in contact with the company.

It was decided to develop a work process for collaboration on cross-border assignments.

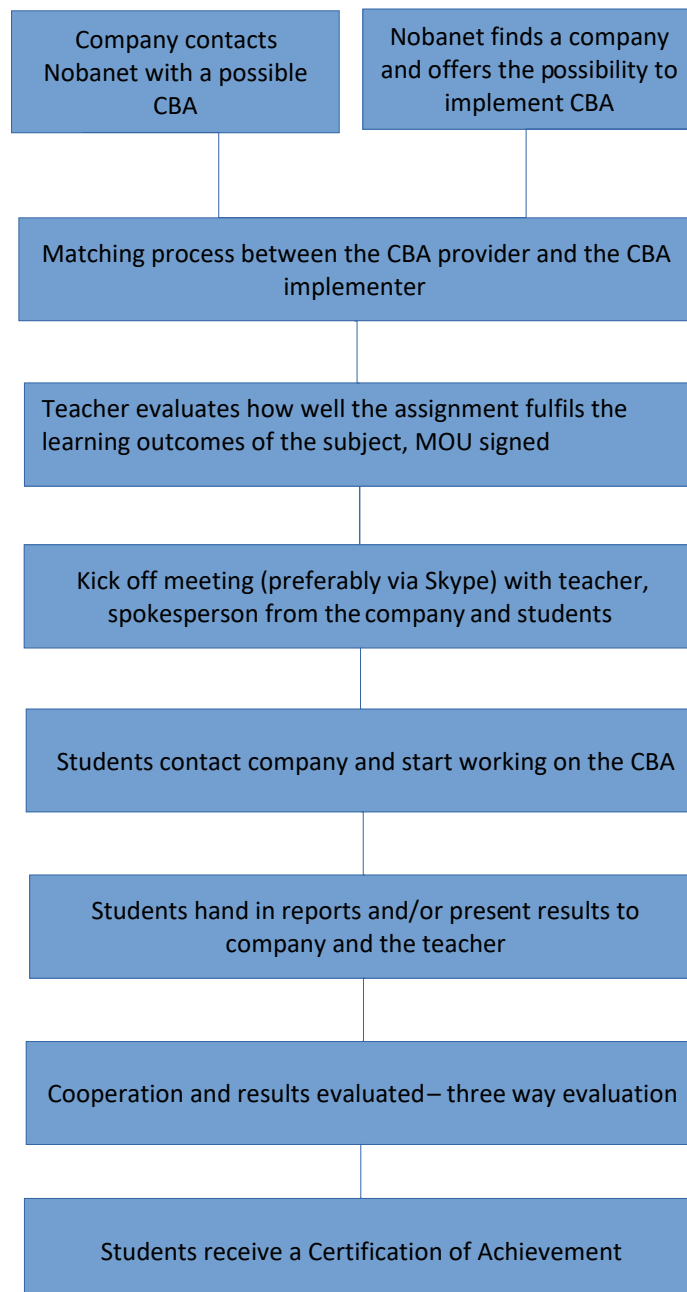


Figure 3. Work process for cross-border assignments.

The first step in the process can be done in two different ways, and consequently is divided into two steps. A company may contact a member of the Nobanet team stating their wish to participate in a cross-border assignment. Alternatively, Nobanet may identify a company and invite them to participate, as happened in the present study. The assignment is then introduced to other members of the network and a connection is made with teachers in other countries, where the assignment becomes part of a course and matches the learning outcomes of that course. It is important to have an initial meeting, for example via Skype, with students, teachers and the company's managers, which allows the latter to express their wishes and to provide students with the information they need to get started and also gives students the opportunity to ask questions and get to know the company and its contact person. This meeting will ensure that all students receive the same information at the beginning. It is also suggested that when students contact the company, the questions they send will be shared on the student's learning platform so that other students will see their questions and answers. This will prevent the duplication of effort described above. At the end of the project, students present a written report, but it is desirable that they give an oral presentation of their findings to the company, giving the company the opportunity to comment and offer feedback. The final step of the workflow process is that students receive recognition for their participation.

As noted above, the managers of some companies are reluctant to cooperate with universities. One of the reasons is doubts about copyright, that is, whether the company is free to use the students' ideas without breaching their copyright. In order to prevent this, the authors and the Nobanet wrote a memorandum of understanding, which is a contract explaining how the company can use results. This agreement provides for confidentiality and needs to be signed by the company and students.

References

- AIESEC (n.d.) *AIESEC student organization*. <https://aiesec.org/> accessed 2 March 2017.
- ALLINSON, R., IZSAK, K. and GRINIECE, E. (2012). Catalysing innovation in the knowledge triangle: Practices from the EIT knowledge and innovation communities. https://eit.europa.eu/sites/default/files/EIT_publication_Final.pdf, accessed 5 September 2016.
- BEKKERS, R. and FREITAS, M.A. (2008). Analysing knowledge transfer channels between universities and industry: To what degree do sectors also matter? *Research Policy*, 37, 1837–1853.
- BIFRÖST UNIVERSITY (2013). *Rannsóknastefna*. <http://www.bifrost.is/um-haskolann/stefna-og-hlutverk/rannsoknastefna/>, accessed 1 March 2017.
- CANO, J. L, LIDON, I., REBOLLAR, R., ROMAN, P. and SAENZ, M.J. (2006). Student groups solving real-life projects: A case study of experiential learning. *International Journal of Engineering Education*, 22, 1252–1260.
- DAN, M.-C. (2013). Why should university and business cooperate? A discussion of advantages and disadvantages. *International Journal of Economic Practices and Theories*, 3, 67–74.

- DAVEY, T., BAAKEN, T., MUROS, V. G. and MEERMAN, A. (2011). *The state of European university–business cooperation*. Munster: Science-to-Business Marketing Research Centre.
- DAVÍÐSSON D.S., ODDSSON, F., ÓLAFSSON, F. and BIRGISSON, H. I. (2009). *Hugsum smátt, lítil og meðalstór fyrirtæki*. http://vi.is/files/SMEweb_1749858511.pdf, accessed 3 March 2016.
- DEVEAUX, R. D., VELLEMAN, P. F. and BOCK, D. E. (2016) *Stats: Data and Models*, 4th edition. Malaysia: Pearson.
- ETZKOWITZ, H. (2003). Innovation in innovation: The triple helix of university–industry–government relations. *Social Science Information*, 42(3), 293–337.
- EUROPEAN COMMISSION (2005). *Mobilising the brainpower of Europe: Enabling universities to make their full contribution to the Lisbon Strategy*. <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52005DC0152&from=EN>, accessed 15 September 2016.
- EUROPEAN COMMISSION. 2008a. *Supporting the Internationalisation of SMEs. Good practice selection*. <http://bookshop.europa.eu/en/supporting-the-internationalisation-of-smes-pbNB7606343/?CatalogCategoryID=C5gKABstvcoAAAEjJJEY4e5L>, accessed 1 September 2016.
- EUROPEAN COMMISSION (2008b). *Think small first: A small business act for Europe*. <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52008DC0394> accessed 1 September 2016.
- EUROPEAN COMMISSION (2014). *Supporting the internationalisation of SMEs*. <http://bookshop.europa.eu/en/supporting-the-internationalisation-of-smes-pbNBBN14001/>, accessed 2 September 2016.
- EUROPEAN COMMISSION (2015). *User guide to the SME definition*. <http://webcache.googleusercontent.com/search?q=cache:27ZXdsWxJxwJ:ec.europa.eu/DocsRoom/documents/15582/attachments/1/translations/en/renditions/pdf+&cd=4&hl=en&ct=clnk&gl=is>, accessed 2 March 2017.
- GODIN, B. and GINGRAS, Y. (2000). The place of universities in the system of knowledge production. *Research Policy*, 29, 273–278.
- GONZALEZ, R. A. R., FAGERSTROM, A. and FAGERNES, S. (2017). Enhancing learning through a real-life assignment. *Advances in Social Science, Education and Humanities Research*, 68, 38-41.
- HEALY, A., PERKMANN, M., GODDARD, J. and KEMPTON, L. (2014). *Measuring the impact of university business cooperation*. <http://www.dges.mctes.pt/NR/rdonlyres/658FB04A-909D-4D52-A83D-21A2AC4F2D38/8090/UniversityBusiness.pdf>, accessed 9 October 2015.
- HIGHER EDUCATION ACT NO. 63/2006, Iceland.
- JÓELSSON, K. S. and ÁRNADÓTTIR, S. M. (2017). Hvað er góð háskólakennsla? Student dissertations. A lecture at conference at the Centre of Teaching and Learning at Akureyri University.
- KRAUS, S., MITTER, C., EGGERS, F. and STIEG, P. (2016). *Drivers of internationalisation success: A conjoint choice experiment on German SME managers*. http://download.springer.com/static/pdf/475/art%253A10.1007%252Fs11846-016-0201-4.pdf?originUrl=http%3A%2F%2Flink.springer.com%2Farticle%2F10.1007%2Fs11846-016-0201-4&token2=exp=1490797283~acl=%2Fstatic%2Fpdf%2F475%2Fart%25253A10.1007%25252Fs11846-016-0201-4.pdf%3ForiginUrl%3Dhttp%253A%252F%252Flink.springer.com%252Farticle%252F10.1007%252Fs11846-016-0201-4*~hmac=273a201cde5390674acbf82d22eaddfeb8e3f38e04854bca5e0441c75c85dba0, accessed 9 March 2017.

- MCDANIEL, C. JR. and GATES, R. (2013). *Marketing research*, 9th ed. Hoboken: John Wiley & Sons, Inc.
- NOBANET (n.d.) *Nordic–Baltic Network for Internationalization of SMEs*. <http://www.nordicbalticnet.info/>, accessed 1 September 2016.
- OBSERVATORY MAGNA CHARTA UNIVERSITATUM (n.d.) *The Magna Charta Universitatum*. <http://www.magna-charta.org/magna-charta-universitatum>, accessed 15 March 2017.
- OECD (2009). *Top barriers and drivers to SME internationalisation*. <https://www.oecd.org/cfe/smes/43357832.pdf>, accessed 1 September 2016.
- PTAK, A. (2014). Business–university cooperation in Europe. *Polish Journal of Management Studies*, 10, 113–119.
- REYKJAVÍK UNIVERSITY (n.d.). *Stefna Háskólans í Reykjavík*. <https://www.ru.is/skipulag/stefnur/hr/>, accessed 1 March 2017.
- SEPPO, M., ROIGAS, K. and VARBLANE, U. (2014). Governmental support measures for university–industry cooperation: Comparative view in Europe. *Journal of the Knowledge Economy*, 5, 388–408
- SMITH, H.L. and LEYDESDORFF, L. (2012). *The triple helix in the context of global change: Dynamics and challenges*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2177331, accessed 1 March 2017.
- SURSOCK, A. (2015). *Trends 2015: Learning and teaching in European universities*. Brussels: European University Association.
- UNIVERSITY OF ICELAND (2016). *Stefna Háskóla Íslands 2016-2021*. http://www.hi.is/adalvefur/stefna_haskola_islands_2016_2021, accessed 1 March 2017.
- UNIVERSITY OF AKUREYRI (2012). *Stefna Háskólans á Akureyri 2012-2017*. http://www.unak.is/static/files/Stjornsysla_stefnumal/HA_Stefna2012-2017_www.pdf, accessed 1 September 2016.