

**RESEARCH, DEVELOPMENT  
AND INNOVATION:  
COOPERATION OPPORTUNITIES  
WITH EDUCATIONAL INSTITUTIONS  
IN CENTRAL OSTROBOTHNIA**



KESKI-POHJANMAAN LIITTO  
KELLERSTA ÖSTERBOTTENS FÖRBUND



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CIIVONIKES

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**Centria University of Applied Sciences  
Kokkola University Consortium Chydenius  
The Federation of Education in Central Ostrobothnia  
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**THIS GUIDE ADDRESSES** research and development activities conducted by educational institutions in Central Ostrobothnia. It is designed to assist companies and organisations in enhancing their research, development, and innovation (RDI) capabilities while gaining insight into the diverse collaboration opportunities available with educational institutions in the region. Additionally, the guide highlights the benefits the cooperation can offer companies and organisations.

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# WHAT IS RDI?

The educational organisations in Central Ostrobothnia offer organisations and companies in the region opportunities for cooperation in research, development, and innovation (RDI) activities in several fields. The aim of RDI activities is to create new knowledge, develop new products or services, and promote technological development and innovations that can improve the well-being and competitiveness of society.

RDI activities may include:

**Basic research** that has its focus on the extension and understanding of knowledge, without immediate practical application or exploitation.

**Applied research** focuses on creating new knowledge and applying existing knowledge in practice. Applied research involves experimentation, observation, data analysis, and testing theories.

**Development activities** use existing knowledge to create and improve new products, processes, or services. It includes designing, prototyping, and testing and development of production processes. Additionally, development activities also involve both competence development of the staff as well as introducing new skills into the workplace.

**Innovation activities** refer to the creation of new ideas, products, and services or processes that respond to changing market needs and adds competitive advantage and value to an organisation.

**Cooperation and networking** RDI activities often involve cooperation between different actors, such as businesses, research institutes, universities, and public sector organisations. Cooperation and networking can help to harness different expertise and resources and promote innovation.

**Sharing knowledge and results** The knowledge, results, and innovations generated by RDI activities are often shared openly so that they can be utilised as widely as possible. Depending on factors such as organisational strategies, funding, legislation and other aspects, information sharing may also be restricted or confidential.



RDI activities play an important role in enhancing the competitiveness and growth of companies and organisations. Cooperation between companies and educational institutions provides significant added value to companies by leveraging knowledge and expertise, innovation, and research results. Educational institutions in the region, Centria University of Applied Sciences, Kokkola University Consortium Chydenius, and the Federation of Education in Central Ostrobothnia (Kpedu) actively engage in different research and development activities.

Businesses have many opportunities to collaborate with educational organisations in the region, depending on their needs and objectives. For instance, companies can participate in joint projects with the educational institutions, leveraging their skills, knowledge, and expertise, or utilise their laboratories and other development environments. Additionally, companies benefit from different types of student collaborations, such as projects or internships. By utilizing the services offered by educational institutions and by fostering cooperation, businesses can create synergies that drive innovation and growth.

# RESEARCH AND DEVELOPMENT ACTIVITIES

Research and development activities enhance the competitiveness of businesses and organisations by strengthening their capacity to adapt to evolving workplace demands and technological development. Furthermore, it enables organisations to identify new business opportunities, create innovative products and services, and improve their quality. Research activities are aimed at increasing knowledge and deepening the scientific understanding of concepts. Development activities on the other hand, focus on practical solutions to different needs and challenges. These development activities may include expertise, product innovation and development, process development, and testing services, among others.

**Has your organisation already utilised the expertise, testing facilities, or specialised equipment available through educational institutions in the region?**

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## FOCUS AREAS FOR EDUCATIONAL INSTITUTIONS

**Centria University of Applied Sciences** focuses its research and development efforts on six key areas of expertise: digitalization, business and entrepreneurship, production technology, chemistry and bioeconomy, and health and wellbeing. Its development activities include specialised expertise, product development services and support, and services for production and process development.

**Kokkola University Consortium Chydenius** organises its research and development activities into five functional units: information technology, education, business, social sciences, and applied chemistry. The research conducted contributes to enhancing the competitiveness of industries and businesses, while also promoting the wellbeing, inclusion, and learning opportunities of citizens.

**The Federation of Education in Central Ostrobothnia (Kpedu)** focuses its development and project activities on advancing business and regional growth, improving teaching and learning environments, preventing social exclusion, and fostering internationalization of both students and staff. Its business and regional development efforts aim to address labour shortages, promote employment, support continuous learning in companies, and encourage the adoption of new technologies and work methods (digitalization, robotics, agriculture and forestry). Kpedu also offers its diverse learning environments to companies as product development and testing environments.



## PROJECT COOPERATION DELIVERS INNOVATIVE SOLUTIONS

The long-term cooperation between the Information Technology Department of Kokkola University Consortium Chydenius and the Kokkola Industrial Park (KIP) on environmental projects has yielded significant benefits for all parties involved. The projects have not only improved the environment and industrial performance but have also fostered trust and a shared commitment to sustainable development among regional stakeholders. The cooperation also enables effective dissemination of environmental information to local residents and stakeholders, promoting greater community engagement and understanding of local environmental issues. As a demonstration of the success of this collaboration, the Information Technology Environment projects were awarded the KIP Environment Prize at the 20th KIP Environment Day on 14 June 2024.

*"It is nice to see that the long-term development work on the digitalisation of environmental monitoring is recognised as essential. Dialogue played a key role in receiving this award. Effective development work requires us, as researchers, to be able to clearly communicate the added value we can bring, while also understanding the needs of industrial stakeholders."*

*Mikko Myllymäki, research coordinator,  
Kokkola University Centre Chydenius*

The ongoing environmental projects within **the Information Technology Unit** are focused on developing a range of monitoring solutions and data analysis tools for business needs, as well as focusing on the challenges of industrial dust and the development of proactive solutions. In addition to the TAKOMO and DustSense projects, the Industrial Big Data project is also underway, exploring the development of industrial processes by analysing process data using artificial intelligence.

# PROJECT ACTIVITIES

Educational institutions often seek external funding for their research and development projects from public or private sources. By participating in these projects, companies and other organisations can use the funding to support their own research and development activities.

**A project is a piece of planned work or activity that has:**

1. limited duration
2. clear objectives and outcomes
3. a plan and a budget

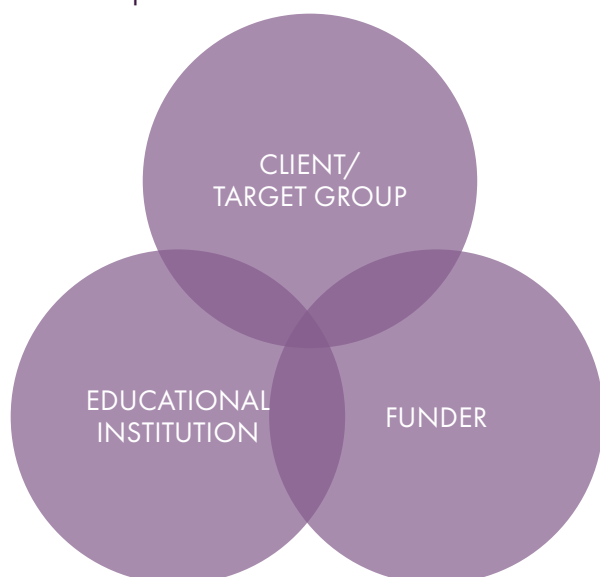
Educational institutions are constantly running a variety of projects in which companies can participate in different ways. These projects often offer companies valuable opportunities to enhance their skills and develop their business. In addition, projects can be designed and implemented collaboratively with companies or organisations from the start.

Three main parties are typically involved in project activities: the educational institution, the client or target group, and the funder. The educational institutions apply for external funding to support the implementation of the planned projects. The duration of the project and the nature of the cooperation depends on the specific type of project and the form of cooperation.

However, if no suitable project is currently available in the region to address a company's challenges, it is important to allow time for the application process to initiate a new project. If a company requires a quick solution and no suitable project is available, it may be beneficial to explore alternative options, such as addressing the issue through service activities or a thesis project.

**Think about project cooperation from your company's perspective:**

- Do we cooperate with educational institutions in the region?
- Regarding which topic would there be a need for project cooperation?
- What is the timeframe for the project?
- Are there any existing projects in the region that would be suitable for us?
- Do we want to plan a new project in cooperation with educational institutions?



## Project Preparation and Project Plan

Educational institutions are interested in partnering with businesses in project implementation and project ideas can be developed together. Experts from the educational institutions offer advice and support regarding the different stages of project preparation and on the development needs of companies.

When designing a project, it is necessary to clearly describe the key skills needed, as identified by companies and partners, to ensure effective adaption and renewal during the implementation phase. The project description must also explain how the results will be used and how they will enhance the skills of companies and partners. Additionally, the post-project period should be considered, with measures in place to ensure continuity.

## Funding and Different Funding Programs

Educational institutions apply for funding from different funding programs, the criteria of which need to be carefully examined before applying for funding. Many RDI projects are carried out as a consortium, that include various stakeholders, such as research institutions, companies, and organisations. Businesses and organisations are encouraged to contact their preferred educational institution to explore different opportunities for collaboration and funding applications. A well-designed and clear project plan, along with defined objectives, are key factors in securing funding for a project. Important funding sources include Erasmus +, the European Social Fund (ESF), the European Regional Development Fund (ERDF), Interreg Europe programs, ministerial programs, and Business Finland.

## Application Process

The application process may vary depending on the funder, but in general the process includes the steps listed below:

### 1. Project Plan

A clear project plan, describing the objectives, measures, timetable, and budget of the project.

### 2. Application

The application form required by the funder must be completed and submitted before the deadline. Please make sure that the instructions have been followed and that the necessary appendices are included.

### 3. Assessment

Project applications are assessed on a number of criteria, such as feasibility, effectiveness, innovativeness, and budget.

### 4. Funding Decision

The funder either accepts or rejects the application. If the application is approved, the project will receive a funding decision.

**Find out more about ongoing projects and new project ideas from experts in the educational institutions.**

# STUDENT COOPERATION

**Internships and student projects** provide companies with a valuable opportunity to receive practical support, leveraging the skills and creativity of students. The projects students do for companies typically involve small-scale, clearly defined assignments, which are often carried out as part of a course.

## Consider the following:

- What topics could we offer student projects on?
- What level of skills are required to carry out the project?
- Who will be the contact person in the organisation and provide the induction?

**Thesis projects** offer an opportunity for more in-depth research and analysis, helping companies address specific challenges. Students bring fresh perspectives and innovative solutions to the topic, in addition to the latest research. Additionally, thesis projects are also an excellent way to identify and attract talent for your company.

## Consider the following:

- What type of thesis topics and projects could we offer students in the region?
- What is the scope of the thesis project and what skills are required to carry out the project?
- Will the thesis contain confidential information?
- Will the student be remunerated for their work?
- Who in the organisation will be responsible for overseeing the project?

**The topic and scope of the final thesis project will determine the level:**

- **Theses** that are final projects for lower (bachelor's) or higher (master's) degrees at University of Applied Sciences. The duration of the work in these types of theses projects correspond to approximately 2-4 months of work.
- **Bachelor's theses** are final theses for a lower university degree. They are equivalent to approximately 2-4 months of work.
- **Master's theses** are the final projects of students graduating from a university with a master's degree. These types of thesis projects correspond to approximately 6-8 months of work.
- **PhD projects** are theses of university doctoral students. A doctoral thesis is a research-based work in a specific field of research that contains new scientific knowledge. The scope and duration of a doctoral thesis is approximately four years for full-time students, who then have completed their doctoral degree.

## INTERNSHIPS TO SUPPORT INTERNATIONALISATION

Centria UAS collaborates closely with various stakeholders in the region on a range of different projects. Project cooperation focuses, among other things, on the availability of skilled labour, recruitment of international talent, and promoting student employment within the region. These challenges have also been addressed by the Export Expert project.

The aim of the project is to connect talented individuals with companies and to support companies in recruiting international talent. The project has developed a model that enables international students to integrate into Finnish working life. The developed tandem internship model pairs an international student with a Finnish student at the same work placement, allowing the international student to receive support from the Finnish student throughout the internship.

The provided tandem internship concept reduces the barriers to recruiting international trainees by pairing them with a Finnish-speaking student who is familiar with Finnish work culture and its unique characteristics.

Hosting tandem trainees not only supports the company's ability to navigate multicultural environments but also enhances its capacity to engage in international recruitment. In addition, this internship model helps companies build the necessary skills to recruit international talent more effectively in the future.

The tandem internship model developed in the Export Expert project has received positive feedback from both students and companies.

Learn more about tandem internships and the experiences of both students and companies involved through the links below:

[Export Expert \(Centria's project page\)](#)

[International recruitment using the tandem model case Boliden \(YouTube\)](#)

# COMPETENCE DEVELOPMENT

Developing the skills of employees can be crucial to the development of a company or organisation. Continuous training and competence development ensure that a company can effectively leverage the latest technologies and best practices. As employees acquire new skills and knowledge they contribute to improving the company's processes and procedures. More efficient processes can lead to faster product development and innovation.

The educational institutions in the region offer a wide range of opportunities for staff competence development:

- Degree programs (vocational education, UAS bachelor's and master's degrees, University master's degrees)
- Specialist vocational qualifications
- Various continuing education and training
- Open UAS and university studies
- Training and courses tailored specifically for companies' needs
- Licensing training

## **What are the needs of our business? Make a plan.**

- How are we developing the competence of our staff?
- What type of skills and knowledge do we need in our company in the future?
- Could we provide apprenticeships in our company?
- Do we have partners for training and development?
- Do our staff have the opportunity to participate in courses or degree programmes alongside their work?

## **COMPETENCE DEVELOPMENT AS PART OF PROJECT COOPERATION**

Seimec Service Oy participated as pilot company in the Kpedu's 3K project to assess and develop its competence management.

Through various forms of cooperation, including mapping of skills, joint workshops and trainings, Seimec was able to evaluate its current situation and define its future goals and objectives. The company also gained new tools for strategic and proactive skills development within their operations.

As a result of this cooperation, Seimec now has established structures and guidelines for competence management, as well as a handbook titled "Seimec Competence Map 2023-2025" to support and further develop practical competence management strategies.

# INTERNATIONAL CONNECTIONS

## Networks

Educational institutions collaborate with various international networks and educational organisations, offering valuable contacts and partnership opportunities for companies and organisations in the region. These international networks provide companies with opportunities to train and develop their workforce and enhance their business activities. Educational institutions can also support companies and organisations in the region in sourcing international talent to meet their staffing needs.

## International projects and cooperation

Companies and organisations can benefit from international research and innovation through participation in different international projects. Open calls offer companies the opportunity to apply for external EU funding for their research and development initiatives. The funding can cover part or all of the project costs, reducing the financial risk for the company. International projects are often aimed at developing new technologies and innovations, allowing companies to access the latest knowledge and advancements in their field. These projects also offer the chance to form new partnerships, as they often involve educational institutions and companies from around the world.

## Trade Fairs

Educational institutions in the region also offer exhibition and trade fair packages for companies and organisations. They facilitate the booking of venues for trade fairs both in Finland and abroad, providing a comprehensive service that simplifies the participation in trade fairs for companies. If desired, companies can participate in international trade fairs, which may open new doors and opportunities for cooperation. Trade expertise of Trade Fair Services also include the coordination of virtual events. Additionally, experts from the educational institutions can offer ideas and assistance for successful trade fair participation.

# BENEFITS OF RDI COOPERATION FOR COMPANIES AND ORGANISATIONS

Cooperation with educational institutions in research, development, and innovation offers significant added value to businesses and organisations. Some of the key benefits include:

**1. Making the most of the latest knowledge and expertise**

Experts in the educational institutions often specialise in different fields and seek to assimilate the latest knowledge and skills in their respective areas. Companies and organisations can benefit from their expertise and enhance their own operations and development.

**2. Cost-effective research and development**

Cooperation with educational institutions provide cost-effective solutions for various research and development projects, as a part of the project costs can be covered by public funding.

**3. The use of laboratories and testing environments**

The laboratories and testing environments of educational institutions offer companies the opportunity to develop and test their products and services.

**4. Utilising student resources**

Companies can also benefit from students' thesis projects. If a company has a specific challenge that needs a solution, the thesis project can help solve it. Students often bring fresh insight and enthusiasm to solving problems.

**5. Staff development and training**

Companies can benefit from the training opportunities offered by the educational institutions, for example by participating in customer-specific training.

**6. Regional networking**

Cooperation with educational institutions can help companies and organisations to strengthen their networks in the region.



# **CONTACT THE EDUCATIONAL INSTITUTIONS IN THE REGION**

**Centria University of Applied Sciences**  
[www.centria.fi/en](http://www.centria.fi/en)

**Kokkola University Consortium Chydenius**  
[www.chydenius.fi/en](http://www.chydenius.fi/en)

**The Federation of Education in Central Ostrobothnia, Kpedu**  
[www.kpedu.fi](http://www.kpedu.fi)

