



Internationalisation of innovation in SMEs

Case Studies, Exemplary Support Practices and Policy Implications

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Case Study No. 1:

Acreeo, Sweden:

Collaborating with numerous partners around the world in R&D projects and selling to international customers

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About the InterSME Study

The study on "internationalisation of innovation in SMEs" was based on a contract between the European Commission, Directorate General Research and Innovation, and empirica Gesellschaft für Kommunikations- und Technologieforschung mbH (coordinator, Bonn, Germany) as well as Dialogic (Utrecht, the Netherlands).

The study focuses on two subjects – innovation and internationalisation – which are deemed to be crucial for the European economy. It has two main parts: (1) Twelve case studies of small and medium-sized enterprises (SMEs) with insightful international innovation practice and (2) an analysis of strengths, weaknesses, opportunities and threats (SWOT) of European policy measures seeking to enhance such internationalisation. This publication presents one of the twelve cases selected.



Acreo is a non-profit research institute in hardware-oriented ICT. The institute collaborates with a wide network of international R&D partners, sells its services to international clients, and employs researchers from more than 25 countries. Participating in trade fairs helped widen contacts with industry.

Abstract



Acreo Swedish ICT is a non-profit research institute in micro and nano electronics as well as photonics. The Swedish government is the majority owner but industry associations also have a share. Acreo is based near Stockholm and has 135 employees. Acreo's main competitors are other large research institutes and universities. In order to remain at the top end of technological advance, Acreo in each project needs to find the best universities and companies to co-operate with. Hence the institute collaborates with a wide network of international partners for research, development and innovation purposes, and it provides its services to international clients. Acreo also has a strong international staff base: The institute's employees come from more than 25 different countries. While one may expect that a top research institute like Acreo may find it easy to establish links with foreign countries, common difficulties of distance and foreign culture also apply. For example, it took Acreo three years to conclude a contract with a Japanese enterprise. Acreo uses a governmental agency, Business Sweden, for developing some of its international contacts. This relationship is mutual because Acreo also helps Business Sweden develop its network and competencies in issues related to Acreo's specific expertise.

Case study fact sheet

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| Full name of company, headquarters location, country, and URL: | Acreo Swedish ICT AB, Kista, Sweden (http://www.acreo.se) |
| Departments: | Gothenburg, Hudiksvall, Norrköping |
| Year of foundation: | 1999 (merger of institutes founded in 1950s and 60s) |
| Number of employees (year): | 135 (2015) |
| Budget in most recent financial year: | 189 million Swedish Crowns (SEK) (20.4 million Euro) turnover in 2014 (2013: 179 million SEK / 19.4 million Euro) |
| Sector: | Research and development |
| Business activity: | R&D as well as small-scale production and prototyping in micro and nano electronics as well as photonics |
| Activities focused in this case study: | Collaboration with R&D partners outside Europe |
| Case gatekeeper: | Leif Ljungqvist, CEO, Acreo |

Background

Business activity and competitive situation

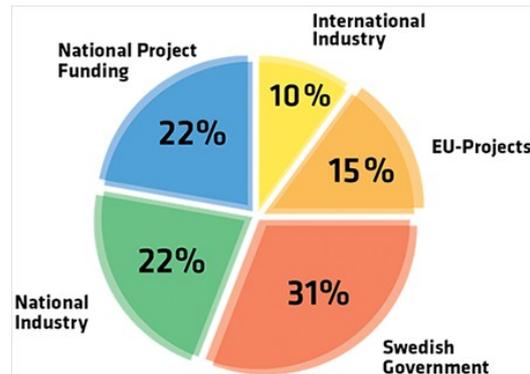
Profile: Acreo Swedish ICT is an independent non-profit research institute in hardware-oriented information and communication technology (ICT). The majority owner is the Swedish government; two industry associations are minority owners.¹ The institute's headquarters are based in the town

¹ Acreo Swedish ICT AB is owned by Swedish ICT Research AB. Majority owner of Swedish ICT Research AB is RISE AB (60%), a company owned by the Swedish Ministry for Industry. The other 40% are owned by two industry associations: FMOF (Föreningen för Mikroelektronisk och Optisk Forskning, "Association for New Microelectronic and Optical Research"), with 22 members particularly from large and international players,

of Kista near the Swedish capital Stockholm and a further three departments are located in the Swedish cities of Gothenburg, Hudiksvall, and Norrköping. Acreo has 135 employees and considers itself to be one of Europe's top research institutes within some of its technology platforms in the areas of micro and nano electronics as well as photonics. The institute has facilities and resources for advanced research and development (R&D) as well as small-scale production and prototyping. Its mission is "to find new ICT-solutions for existing and future demands, creating sustainable growth in industry and society".²

In 1999, Acreo was formed through the merger of two research institutes founded in the 1950s and 60s. The initial business **objectives** are still valid today: Developing and refining R&D results and transferring them to industry, thereby co-operating with enterprises and universities. While Acreo does not target growth of the whole institute, it needs to consider continuously which new research areas should grow. In order to fulfil its objectives and remain at the top end of technological advance, Acreo in each project needs to find the best universities and companies to co-operate with.

Exhibit 1-**Fehler! Kein Text mit angegebener Formatvorlage im Dokument.**-1: Acreo's funding in 2014



Source: <https://www.acreo.se/about-us/finance>

The relatively largest share of Acreo's **budget**, 31% in 2014, comes from the Swedish Government. Further 22% each come from national industry and national projects. A quarter comes from international sources: 10% from international industry and 15% from European research projects. See Exhibit 1-1.

The institute's **clients** are from the public sector in Sweden and from private business nationally and internationally. Hence, while Acreo is not privately owned, due to its strong orientation towards industry, it has some sense of commercial pressure. Beyond R&D projects, Acreo offers its clients expertise in ICT and innovation, pre-studies, advanced test and demonstration milieus, small scale production, a comprehensive network, and seminars and workshops. Acreo's **competitors** are other large research institutes, universities and to some extent consultancies with similar expertise, nationally and internationally. However, they may also be co-operation partners, depending on the constellation of challenges and business opportunities.

The business model is built around permanent top-end **innovation**. Acreo's four key areas of expertise are sensors and actuators, power electronics, digital communication, and life science.³ Exemplary projects include development of fabric-based sensors that can measure respiration, heart rate and movements in smart clothes; developing a "true" smart home where everything works together seamlessly and cost efficiently; and a solution based on fibre optics to measure temperature and atomic composition in real time in different stages of manufacturing and recycling processes for the steel industry.⁴

How and why Acreo internationalised its business activities

Acreo has internationalised its activities in several ways. Most notably over the years the institute collaborated with thousands of partners from all over the world in several hundred R&D projects. Acreo also provides services to many international enterprises. Furthermore, Acreo's employees

and FAV. See <https://www.acreo.se/about-us/owners>. Acreo Swedish ICT is part of the Swedish ICT Group which also includes Interactive Institute Swedish ICT, SICS Swedish ICT, and Viktoria Swedish ICT.

² Quote from <https://www.acreo.se/about-us>.

³ See <https://www.acreo.se/key-areas>.

⁴ For descriptions see sub-sites on <https://www.acreo.se/about-us-0/customer-stories>.

stem from between 25 and 30 countries. For an institute with Acreo's profile and objectives, such internationalisation is a natural part of the business model, as Acreo's CEO Leif Ljungqvist says.

Internationalisation of innovation in Acreo

Practice

Acreo collaborates with **partners from numerous countries** all over the world – the institute has not counted them. The main countries to co-operate with depend on the technology concerned. Inside Europe, Acreo has co-operated with partners from almost all countries. Outside Europe, Japan, Brazil and the US are particularly prominent collaboration countries. Collaboration takes place on a project-by-project basis – beyond research projects there are no long-term agreements. However, there is an established co-operation with Brazilian universities and institutes also due to a number of employees coming from that country.

Acreo does not have dedicated agents for marketing its services in other countries, as a commercial enterprise of the same size may have. However, Acreo is planning to professionalise its marketing and sales activities with new functions. The institute also does not customise its services in a way a commercial enterprise would do. Acreo develops prototypes and "the real customisation takes place after the work we are doing", says Leif Ljungqvist. Furthermore, Acreo has not yet licensed technology from other countries but licensing agreements have taken place the other way round.

Drivers and barriers

Acreo's international activities developed naturally and as Leif Ljungqvist says, "by chance", without a certain strategy or plan. It was just a necessary thing to do in order to stay at the top end of technological developments. There were no specific milestones in internationalisation. Historically, Acreo attended and presented at many international conferences, as it is common for research institutes, and developed its network through contacts gained there. It also participated in international trade shows in order to present applied research, which resulted in a considerably increasing number of contacts to enterprises. Acreo began attending such shows some ten to 15 years ago. In 2015, Acreo went to approximately five trade shows in Europe and the US.

The two major challenges Acreo encounters in its international activities are **distance and culture**. "Distance is always a problem", says Leif Ljungqvist, because one needs to meet people personally and understand their thinking, approaches and behaviour. Cultural differences may lead to much longer communication processes than in Europe. For example, it took Acreo three years to conclude a contract with a Japanese enterprise, based on the way business is done in Japan. It may have taken only three months to conclude the contract with an enterprise from Europe, says Acreo's CEO. Initially there may have been a lack of understanding on the part of Acreo about how to approach this enterprise in the best manner.

Support to internationalisation

Acreo is occasionally working with an agency named **Business Sweden** that supports internationalisation of Swedish enterprises.⁵ Business Sweden has offices around the world. In the case of the abovementioned Japanese enterprise, it was important that Business Sweden supported the liaison. In Japan, Business Sweden is located at the Swedish embassy in Tokyo that endows the agency with the necessary credibility. Leif Ljungqvist states that Acreo and Business Sweden have a mutual relationship. Business Sweden also learns and benefits from Acreo. Business Sweden has a more or less general knowledge about how business is contracted in a certain country, and the agency has a network of experts in the country. However, when it comes to specific inquiries from local businesses, Business Sweden may need specific contacts and knowledge that it does not have. Acreo may then help if its specific network is concerned.

⁵ See <http://www.business-sweden.se/en>.

Impact and lessons learned of internationalising innovation on Acreo

Impact

Internationalising innovation activities in terms of developing a global network of R&D partners and clients as well as hiring employees from many different countries was a necessity for Acreo. Such activities are required to remain at the top end of technological developments and to push forward into emerging fields.

There is however also a downside of such international engagements from the perspective of Swedish business: It might strengthen competitive advantage of enterprises outside Sweden. One could consider this as the other side of the coin of internationalisation – benefiting from expertise from other countries vice versa also increases expertise in the foreign countries.

As regards failures in internationalisation, CEO Leif Ljungqvist says that anyway only approximately 10% of contacts lead to assignments. In the vast amount of attempts, other organisations may be cheaper, better or better suited.

Lessons learned

- **Developing an international network and international staff**

Acreo does not only develop a broad and deep international network of R&D partners but also a strong international staff base: the institute's staff comes from more than 25 different countries.

- **Distance and foreign culture are difficult also for a top research institute**

While one may expect that a top research institute like Acreo may find it easy to establish links with foreign countries, common difficulties of distance and foreign culture also apply.

- **Using governmental agencies for dealing with difficulties of foreign cultures**

Acreo uses a governmental agency, Business Sweden, for developing some of its international contacts. This relationship is mutual because Acreo also helps Business Sweden develop its network and competencies in issues related to Acreo's specific expertise.

References

Research for this case study was conducted by Stefan Lilischkis, Senior Consultant at empirica GmbH, Bonn, on behalf of the study about internationalisation of innovation in SMEs. Sources and references used include desk research plus the following:

Interviews

- Leif Ljungqvist, CEO, Acreo Swedish ICT, 10 December 2015, via voice over internet.

Websites

Acreo: <https://www.acreo.se> and sub-sites, last accessed 10/12/2015.

Business Sweden: <http://www.business-sweden.se/en>, last accessed 11/12/2015.