Internationalisation of innovation in SMEs

Case Studies, Exemplary Support Practices and Policy Implications

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Case Study No. 2:

Aisense, Slovenia:

Developing and marketing a radiation detection device with partners in the US and Japan

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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 (co-ordinator, 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.

IN A NUT SHELL	**Aisense is a start-up from Slovenia that develops and markets an innovative radiation detection device. Partners in the US and Japan were found through personal relations and an international trade fair. The company found it easier to establish trustful and promising contacts abroad rather than within Europe.**

Abstract

Aisense was founded in Slovenia in 2014 and has currently three employees. The company markets an innovative device that is able, in contrast to other products, to detect the direction of incoming gamma radiation in real time. Since there are only a few potential customers in Slovenia, Aisense is aiming at growth through developing and marketing the device internationally. In fact, the company's managers gained much more concrete interest in the device outside Europe. The company found partners in the US for developing the device further as well as for marketing, and prospective marketing partners in Japan. Many of them are extraordinarily agile and supportive. So far Aisense's managers encountered no cultural differences when co-operating with the US, while special tact is generally welcome with partners in Japan. Aisense did not yet use public support measures, not even funding from public research projects or base funding. While both founders are currently linked with the Jožef Stefan Institute in Ljubljana, the current model of the device was developed independently by one of the partners before his first employment at the JSI. The only indirect support was from the institute's technology transfer office on intellectual property matters.

Case study fact sheet

Full name of company:	*Aisense d.o.o., Slovenia (http://www.aisense.si)*
Year of foundation:	*2014*
Number of employees (year):	*3 (2015)*
Budget in most recent financial year:	*n.a.*
Industry sector:	*Measuring technology*
Business activity:	*Developing and selling a handheld gamma radiation hotspot locator*
Activities focused in this case study:	*Collaboration with partners in the US and Japan in commercial and pre-commercial product development*
Case gatekeeper:	*Matjaz Vencelj, Co-founder and Director, Aisense*

Background

Business activity and competitive situation

Profile: Aisense is a very young enterprise founded in 2014 and based in Eastern Slovenia. It develops and sells a handheld device for detecting radiation. The company's main product is called "aisense gamma" which Aisense claims to be "the world's first handheld gamma radiation hotspot locator with angular sensitivity".[1] The device's purpose is observing the dose rate and, most importantly, the direction of incoming gamma rays in real time. According to Aisense, other devices in contrast either only detect dose rates without the direction, or, in the case of true imaging cameras, they require exposition times rarely below a minute. The device can be used, for example, to localise hotspots and contaminated surfaces on nuclear installations and to search fissionable nuclear material as well as in nuclear medicine environments, in dirty bomb threats, and in orphaned radiation sources.

Aisense markets the product with the advantage of localising contaminated sources and other sources of gamma radiation much quicker than established methods, thereby saving costs and protecting employees. Another specific characteristic is a "clean, minimal and intuitive user interface" that is intended to eliminate the need for personnel training or even a manual. Aisense is also affiliated with a dose rate mapping application called "Route Monitoring for Android™"[2] that can also be used for competitors' devices. An interactive map shows the measured points in real time.

Exhibit 2-Fehler! Kein Text mit angegebener Formatvorlage im Dokument.**-1: The "aisense gamma" device**

Source: http://www.aisense.si/

Aisense's business **objective** is "maximum market penetration", as co-founder Matjaz Vencelj says. As soon as more orders come in, the company would need to hire assembly workers and establish full-time management. The company does not intend to attract growth investment. "We are happy having no reporting duties", says Matjaz Vencelj.

The two founders of Aisense are currently employed at the **Jožef Stefan Institute** (JSI) in Slovenia's capital Ljubljana. Aisense already co-operates closely with JSI by purchasing the calibrations at the JSI's Dosimetry Standards Laboratory and by planning to start activities on collaborative development for a new product. The technology of the current product, however, was developed by one of the founders in his spare time before his employment and without using JSI facilities. Hence Aisense is not a typical spin-off in a narrow sense because the technology was not developed in the framework of a research project or on baseline funding. The company also employs a market strategist.

Among Aisense's **clients** are JSI's Radiation Protection Unit (RPU), the Mobile Radiological Laboratory (MRL) of Slovenia, the Institute of Occupational Safety (IOS) in Slovenia, the Krsko Nuclear Power Plant in Slovenia, the US Y-12 National Security Complex, and the Federal Office for Civil Protection of Switzerland. In general, the company targets clients in the fields of first responders, civil defence, power installations, military, police, fire brigade, customs and border

[1] See http://www.aisense.si.
[2] See http://www.aisense.si/dose-rate-mapping.

control, nuclear and environmental services, and nuclear medicine. Aisense's main **competitors** are enterprises marketing established methods to detect gamma radiation. There may be five to ten such suppliers. However, according to Aisense there are no competitors yet for a device with the same properties.

Innovation is crucially important for Aisense. A patent is pending for the configuration of several detectors, combined with a proprietary framework for adaptive signal analysis. Aisense is closely collaborating with the nuclear industry, first responders and researchers "to continuously evolve the specifications and keep improving the user experience".[3] For 2016, a vastly updated version of the device is planned that also allows neutron detection. Aisense plans to collaborate with detection device manufacturers in order to have close contact to their R&D cycle.

How and why Aisense internationalised its business activities

Since North America is one of Aisense's largest markets, the company is drafting a formal co-operation with a small US enterprise operating in the homeland security market, to potentially cover the markets of US and Canada. "Customers will feel safer when served by a company based in the US", says co-founder Matjaz Vencelj. Furthermore, Aisense is in contact with a large Japanese company that has experience in marketing that type of technology. Japan is a large market for the device as well. Aisense is also targeting Western Europe but without a co-operation partner at the moment. Finally, Aisense collaborates with several international governmental research institutes.

Internationalisation of innovation in Aisense

Practice

Aisense used a major international conference to present its device, the IEEE Nuclear Science Symposium & Medical Imaging Conference[4] in San Diego, US, in early November 2015. This conference was also important for the company's founders in terms of research. This is where the contacts to Japan were established – representatives from two Japanese companies came to Aisense's booth and suggested co-operation. Aisense welcomed this offer because experience by other European enterprises teaches that in order to be able to sell in Japan they inevitably need to have a Japanese representative. The contacts to the small US partner were established through a friend of a friend of one of the founders.

Drivers and barriers

Aisense found that collaboration with companies from the US and Japan is more effective than with Europeans – the US and Japanese contacts act faster, appear to be more interested, and it is easier to reach the decision makers. Furthermore, in Aisense's experience "one contact in the US brings many more ensuing contacts", as Matjaz Vencelj says. "I enjoy working in the US environment", says Matjaz Vencelj. "They start interaction by trusting that you are going the right way, while Europeans start with doubts."

Aisense finds that the US company is an "almost perfect partner". In Matjaz Vencelj's experience, the culture is "nearly identical", communication is "just as with someone you studied with". It is somewhat different with Japan; particular tact is required. Oftentimes, interlocutors from Japan do not tend to show it directly when they have not understood something completely. One has to find out later and then be careful not to insult the interlocutor.

In its co-operation with Japan, Aisense also encountered language problems. In an anecdotal example, based on the English version, the Japanese partner produced a brochure about the device in Japanese. For a micro company it would be resource-consuming to have the Japanese version proof-read in-depth. Aisense needed to find a friend who speaks Japanese to verify the translation. A difficulty with both partners is time difference, requiring to work at unusual times when direct communication is necessary.

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[3] See http://www.aisense.si.
[4] See http://www.nss-mic.org/2015.

Support to internationalisation

Aisense has so far not received any public support, and the company is reserved against it. As regards national programmes, "often public support is designed in a rigid way", says Matjaz Vencelj. "They force you to use the funds and grow the company in a specific way." While he understands this kind of strictness in public programmes, this would not be appropriate for the market in which Aisense operates. As regards European programmes, Aisense found that they are overly bureaucratic.

Impact and lessons learned of internationalising innovation on Aisense

Impact

So far, co-operation with international partners was very helpful for Aisense to prospectively gain access to large markets. The company until now did not experience any failures.

Lessons learned

- **Business development outside Europe may be easier than inside**

Aisense found it easy and pleasant to establish promising and trustful contacts to the US and Japan. In fact it was far more difficult to engage with partners in Europe.

- **Try to finance international business development yourself**

In Aisense's opinion, one should develop business oneself to the largest possible extent, without third-party funding, also insofar international activities are concerned. This will allow focusing on developing the business, not having to engage in time-consuming reporting duties.

- **The right idea and some luck will help finding international partners**

For Aisense it was no big deal to find the international partners – it was a matter of accidentally meeting the right people at the right time. Maybe it was also fortune favouring the brave.

The latter two lessons may reflect the situation of a very young company with a rather specific target market and founders who are still employed at a public research institute.

References

Research for this case study was conducted by Stefan Lilischkis, Senior Consultant at empirica Gesellschaft für Kommunikations- und Technologieforschung mbH for the study about internationalisation of innovation in SMEs. Sources and references used include desk research plus:

Interviews

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