

ANONYMOUS

United Kingdom

The European Space Agency provided funding and good advice on writing up requirements to an SME which partnered with the National Space Centre in Ireland, the University of Strathclyde and an SME specializing in mapping to deliver the project outcomes

Executive Summary

This case is about a space services company that provides environmental monitoring and assessment services to a wide variety of customers. The company identified an opportunity to perform thermal efficiency measurements of buildings for local authorities and power generation firms. The company spoke to these potential customers and undertook a feasibility study in partnership with two PSR's and an SME. A successful outcome has allowed the company to go on and partner with a large power generation company to create a demonstrator system which is expected to lead to the creation of a new service offering.



CASE N°: UKI08

SECTOR: SERVICES

TECH INTENSITY: HIGH-TECH

LIFE CYCLE STAGE: EARLY STAGE

INNOVATION VECTORS: SERVICES

OI PARTNERS: PSR, OTHER SME

KEYWORDS: Earth observation, satellite data, data analysis, mapping, thermal efficiency and carbon footprint, feasibility study

- BACKGROUND FRAMEWORK
- INNOVATION CHALLENGE & MARKET OPPORTUNITIES
- OI TRAJECTORY
- BUSINESS IMPACT
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BACKGROUND

This space services company was founded in 2005 by the current CEO. It develops tailored solutions for customers using data obtained from satellites combined with other third-party data sets. The services are diverse in purpose but generally focus on monitoring and assessing aspects of the environment, both natural and built. Examples of the services include identifying sites for tidal and wave-based renewable power generation, coastal erosion and flooding assessment and assessing thermal efficiency in buildings.

Georgia Deacon has an astrophysics degree and went into project management after her degree. Later she became a physics teacher for approximately four years before completing a master's degree in space technology. She has worked for the company for two years and is currently Head of Projects.

The company has started to pull together its different services under one umbrella service called RAPID, Recovering And Protection In Disaster. This is expected to assist the company in branding the service. Following a successful application for funding from the UK Space Agency, the company is working with the Vietnamese government to assess their disaster response process focusing on floods and typhoons and their effect on critical infrastructure.

INNOVATION CHALLENGE & MARKET OPPORTUNITIES

The company expects to need to collaborate further with organizations to gain access to third-party data sets. This is driven by the fact the company does not own its own network of satellites and, as a result, bases its services on the availability of open data, as well as commercially licensable data.

The company identified the need for an energy auditing tool which could measure the thermal efficiency of buildings. At the outset, it was unclear who would be the end customers for a service of this type. Potential end customers were approached and included individuals, local authorities and energy companies. This helped

pinpoint three distinct applications:

1. Individuals looking to compare their house's energy efficiency to neighbours' homes;
2. Local authorities/municipalities looking to compare their towns and cities to neighbouring town and cities with regard to energy efficiency;
3. EU-based energy companies who are required to ensure that their customers are not wasting energy, e.g. through poor insulation.

During the marketing phase, the company found it would not be an affordable solution for individuals and that local authorities showed little interest in the service. Energy companies, on the other hand, were interested and could afford such a service.

OPEN INNOVATION TRAJECTORY

Concept development

The SME spoke to energy companies to understand their needs and create requirements for a project. The original concept involved a feasibility study to use thermal satellite imaging data to assess buildings for heat being lost in winter. This was expected to provide the benefit of identifying buildings that required further roof insulation.

During technical discussions, it was found that the resolution of thermal data available from third-party organizations was insufficient for the project's needs. At a resolution of 30 metres, it would not be possible to assess smaller buildings, such as houses.

The project was therefore changed to focus on industrial sites and to combine other datasets to create other useful outputs, such as building volume data.

The development process, IPR and competition strategy

As part of the project, a prototype suite of tools was developed which was used to encourage energy companies to become involved in the project. This created a challenge as the company found it difficult, as an SME, to encourage other companies to be willing to talk about and be involved in the project. The company found

challenges in collecting user requirements as often the information provided to them was not detailed enough.

The European Space Agency provided funding for the project, as well as supervision and support during the execution of the project. The company found this to be of great help. The SME partnered with the National Space Centre in Ireland, the University of Strathclyde and an SME specializing in mapping to deliver the project outcomes.

Third-party thermal satellite imaging data sets were required for the project.

The company strategy in dealing with potential competition was to target one large energy company as an end user and initially partner with them to further develop a tool. It is expected that this will lead to an exclusive contract with the company for several years.

Commercialization and follow-up

The company is currently going through a process of restructuring which is not solely a consequence of the project outcome but due to a growth in business overall.

To support the specific project outcome and develop a tool and service for the energy company partner, the company expects the need to hire more staff, including a project support officer, a developer and a data scientist. A business analyst has recently been recruited to provide support for this project.

The company has partnered with the Copernicus Master programme to raise its profile and seek solutions to some of its technical challenges through a funded competition. The project is also being used as an exemplar of the benefits of working with the company.

BUSINESS IMPACT

The outcomes for the company have been two-fold, notably the development and demonstration of ThermCert, a new suite of tools for targeting, measuring, reporting on, verifying, communicating and promoting the thermal efficiency of buildings. Another outcome for the company has been the development of new and improved processes and structures for the communication and management of collaborative projects.

The company has learned to better adapt initial concepts using input from potential end-users.

Support from ESA has helped them to improve the gathering of requirements by using a very structured framework. The project has been a steep learning curve for the company but has helped them to better understand how to work with new business clients in addition to its traditional governmental clients.

The outcomes for the project are expected to develop into the company's first business to business technology service with long-term subscriptions.

LESSONS LEARNED

Georgia's advice to companies undertaking an OI project is to acquire a good project management software package for the lead project manager and partners early on in the project. The partners should also agree on a communication plan with provision for an updated meeting schedule. To assist the company to collaborate on future projects, guidance on suitable software tools for SMEs for project management and customer/partner relationship management would be helpful.

This case demonstrates how an SME can communicate effectively and benefit from discussions with potential end-users at the concept stage of a project to help identify suitable partners for future follow-on new product or service developments. It also shows how working closely with a project funding organization - ESA in this case - can help improve a company's processes, such as structured requirements gathering.

Main lessons learned:

1. Working closely and seeking advice from funders can help develop better processes for use in OI projects.
2. Discussions at a conceptual stage can help identify potential partners for future OI projects.
3. OI projects may be based solely on third-party data and the innovation outcome may be in the form in which the data is processed and visualized.