Stairway to Excellence
Cohesion Policy and the Synergies with the Research and Innovation Funds

Example of Synergies

Combining video images

Malta
Brian Warrington
Executive Summary
The case study considers the case of synergies achieved by a local SME, Ateknea Solutions Malta Ltd, through participation in two projects, one funded through a local ERDF R&D Grant scheme and the other funded through the Framework Programme 7 (FP7) Programme. The level of synergy is not very high, and did not come about as a result of policy actions designed to promote synergy.

Type of synergies: Parallel Funding

S&T field targeted by the synergies
ICT

The views expressed are purely those of the author and may not in any circumstances be regarded as stating an official position of the European Commission.
1. Introduction

The case presented in the following sections is one of the examples of synergies provided by the ‘Stairway to Excellence’ project in which different sources of funding have been combined to amplify the R&I investments and their impact on the economy and wider society.

As described in the guide ‘Enabling synergies between European Structural and Investment Funds, Horizon 2020 and other research, innovation and competitiveness-related Union programmes’1, synergies can be achieved through:

- **Sequential (or successive) funding** that use funds in separate projects built on each other;
- **Parallel funding** that use funds in separate projects complementing each other;
- **Simultaneous/cumulative funding** that brings together Horizon2020 and ESIF funds in the same project aimed at achieving greater impact;
- **Alternative funding** that reorients FP7/Horizon 2020 projects that were positively evaluated, shortlisted, but not funded given the limited budget, towards Structural Funds impact.

The combination of sources of funding is used to address two types of activities:

- **Upstream activities** build the appropriate capacities to perform research. They can be capacity building in physical capital (construction or improvement of research infrastructures, purchasing equipment, (including IT equipment and connections, data storage capacities), innovation infrastructures (LivingLabs, FabLabs, Design factories, etc.) and social capital (assistance for building networks, clusters and consortia).
- **Downstream activities** are focussed towards the market and the creation of economic value. They can be applied to research, development and demonstration activities, technology transfer and adoption; technology and innovation audits to identify potential demand for RDI results; proof-of-concept funding; pilot lines for first production; and pre-commercial procurement projects. There can also be activities to support the improvement of the innovation eco-system in a territory.

2. National R&I Context

R&D expenditure in Malta has seen a strong positive trend in recent years, but in spite of this stood at just 0.85% of GDP compared to an EU average of 2.01% in 2013.

Recent years have seen a number of positive developments in the R&D landscape, with expenditure increasing from 0.53% of GDP in 2008 to 0.85% in 2013. In spite of this Malta still ranked twenty-first in the EU in terms of R&D intensity in 2013, and is still far from reaching its target of 2% of GDP by 2020. The business enterprise sector is the largest R&D performer, accounting for 54% of GERD in 2013, followed by the higher education sector at 36% of GERD. Malta has only one public university, the University of Malta, which is the main research performer in the higher education sector and a key organisation in Malta in terms of research capacity. R&D expenditure by government and public research organisations is 9% of GERD and is one of the lowest in the EU. (S2E Country Reports Malta)

Malta enjoys a simple and stable R&I governance structure centred around three public bodies having well-defined responsibilities and operating at a national level. R&I policy is guided by a multi-annual R&I strategy incorporating the national smart specialisation strategy developed on the basis of widespread consultation with stakeholders. A detailed R&I action plan which will

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3. IMPLEMENTATION

Figure 1 maps the project chronologically, the research activities of the organisation and the type of funding. It aims to give a picture of relations between projects revealing planned or unplanned dependencies (synergies) between projects and their source of funding.

Figure 1: Diagram of chronology of the main projects involved in synergies

Ateknea successfully submitted a proposal under the R&D Grant Scheme managed by Malta Enterprise and funded through the ERDF structural funds (SF). The R&D Grant Scheme was not designed with the objective of promoting synergies with FP7, and did not include any evaluation criteria or other considerations facilitating such synergies. Ateknea was the sole beneficiary in this project, which aimed to develop an augmented reality framework that will enable agencies (such as Heritage Malta) to create augmented reality applications for deployment on mobile phones.

Ateknea also participated in an international consortium in a project funded through FP7 under the ‘Research for SME’ funding instrument. The objective of the project was to develop a cost-effective, fast-to-deploy, low-power and flexible video surveillance system that automatically combines images from multiple cameras with overlapping regions to create a natural seamless panoramic view of the monitored area. The combined images can be viewed on portable devices such as tablets and smartphones.

The synergy lies in the similar technical concepts and techniques used in both projects, namely the development of efficient algorithms for video processing and wireless transmission for display on mobile devices. Nevertheless, the techniques were applied in different manners, in one case for combining video with still images and in the other for combining multiple video sources into a single stream. Furthermore, the projects involved other components such as development of hardware components, which were different for the two projects.

Added value / complementarities created by the synergies

This case study deals with two R&D projects in the field of video processing undertaken by an SME. The two projects complement each other and leverage the work done in each project. Although the two projects are not totally aligned with each other they both depend heavily on similar concepts and techniques such as:

SF Project 1: Time Traveller (development of augmented reality platform), 2011-2013 (0.175 mil Euro)

FP7 Project 1: Chameleon (combining images from multiple cameras), 2012-2011 (1.199 mil Euro)
- Development of efficient video-processing algorithms
- Combining video images from multiple sources
- Possibility of viewing the output on smartphones

**Mechanisms facilitating the synergies**
There were no mechanisms facilitating the development of synergies, and such synergy came about as a result of the initiative of the beneficiary.

**Main problems encountered in implementing the synergies**
The main issues experienced by the beneficiary were the high administrative workload associated with the implementation of the SF project and the delays in reimbursement of expenses incurred in the project. This caused some degree of financial hardship for the beneficiary which is a small organisation with limited financial resources. The negative impact of these issues is so significant that the beneficiary declared that he will not be interested in applying for European Structural and Investment Funds (ESIF) 2014-2020 funding in the future.

**Suggestions to improve the synergies**
Streamlining of administrative procedures for ESIF and reduction of delays in repayments.

**Main motivations in implementing the synergies**
To leverage existing knowledge and R&D work to develop commercial applications.

**Facilitating mechanisms for the take up of the scientific results**
The FUSION Programme funded through national funds provides funding for applied research and commercialisation of research results, whether these arise from SF, FP7 or other funding sources.

**Impact on the regional / national economy**
This has not been quantified, however, it is expected that Ateknea will benefit and grow from its increased knowledge of the video processing area gained through these two projects. The augmented reality framework developed through the SF project could provide a useful tool for improving the tourist experience in historical and cultural settings.
Figure 2 aims to position projects according to the activities they cover; from upstream (infrastructures, equipment, research activities) to downstream related activities (innovation, knowledge transfer, access to market).

**Figure 2: Diagram of the complementarities of the funds in the knowledge triangle / flow**

- **Research** (Research Infrastructures, facilities, Research activity etc)
- **Innovation** Knowledge dissemination, knowledge transfer events, funding of the KTOs etc.
- **Training** (Continuous professional training, PhD fellowships)

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**FP7 Project 1: Research for SMEs, Chameleon**

**SF PROJECT 1: R&D activity, Time Traveller**
4. RELATED PROJECTS

Name of the SF PROJECT Time Traveller R&D
- SF funding scheme: Grant Scheme operated by Malta Enterprise as Intermediate Body, funded through ERDF.
- Budget: €175k
- Time frame: April 11 – April 13
- Main objectives: To develop a system which will allow the development of augmented reality applications, targeted primarily at tourist attractions.
- Type of costs covered: personnel, equipment

Name of the FP PROJECT: Chameleon
- FP funding scheme: Research for SMEs
- Budget: €1.199m
- Time frame: Jan 2012 – Dec 2013
- Main objectives: To develop a video surveillance system that automatically combines images from multiple cameras with overlapping regions to create a seamless panoramic view of the monitored area. The project covers personnel, equipment cost personnel and international mobility.

5. APPENDIX: ADDITIONAL INFORMATION

SF funded project: Time Traveller
Weblink: n/a
Beneficiary: Ateknea Malta Ltd
Type of institution: SME
Budget:
- Total Investment: €175k
- EU contribution: €67.2k
- Other contributors: €11.8k (Malta government)
SF/ESIF funding instrument: R&D Grant Scheme operated by Malta Enterprise as Intermediate Body, funded through ERDF.

Time frame of the project: April 11 – April 13

Main project objectives:
To develop a system incorporating both software and hardware components which will allow third parties to develop augmented reality applications with relative ease. The system is intended primarily for use in tourist attractions and would enable the development of applications whereby a user could point his mobile phone camera at a historical building or artefact and see both the image as well as superimposed information or images.

Specific goals (expected output)
To develop the technology, to study the implementation issues, and to develop a business plan for exploitation of the project results.

Collaborative work within the project
Ateknea was the only beneficiary and there was no collaboration with other entities.
Type of costs covered:
- personnel
- equipment

Main Results
An augmented reality framework which will enable public agencies (such as Heritage Malta) to create augmented reality applications which could be deployed either on mobile phones or on special devices.

Difficulties encountered at the stage of drafting the proposal
The beneficiary reported that although the drafting the SF proposal did involve some effort, this was significantly less than that involved in developing an FP7 proposal. The scheme guidelines were clear and included eligibility and selection criteria. No other difficulties were reported.

Concerns regarding the evaluation
The beneficiary did not express any concerns relating to the evaluation criteria or transparency of the evaluation procedure. Neither was there any concern regarding the integrity of the evaluators or the use of political influence in the selection of the successful proposals.

Difficulties during the implementation of the project
Yes, very onerous administrative reporting requirements which were not specified at the beginning of the project e.g. cheque images, employment contracts, signatures by individuals who were no longer with the company (in one case the individual was deceased). In fact it appears that Malta Enterprise, who managed the R&D Grant Scheme, were not themselves aware of the reporting requirements when the scheme was originally launched. It was only following an audit by the managing authority that the requirement for detailed backing documents for financial claims came to light. At this point, the financial claim had already been submitted by Ateknea and a number of months had elapsed. It was necessary to revisit the claim and compile supporting documents which was not an easy task since years had passed since the event. Obtaining cheque images from the bank was laborious and involved additional expense. This problem led to significant delays in processing of claims and reimbursement of expenses which proved to be an issue for the beneficiary which is an SME with very limited financial resources.

Regulations regarding employees also caused problems. The proposal was accepted on the basis of certain employees who left the company during the project lifetime and were replaced. However it was necessary to make a detailed justification that the new employees were of the same calibre and competence as those who had left.

Finally the beneficiary highlighted the very rigid and inflexible nature of the grant scheme, and the requirement to adhere strictly to the original project proposal during the implementation stage. This is not always practical given the duration of the submission / implementation process, the rapid pace of technological change, and the uncertainties of R&D work.

Facilitating mechanisms during the draft proposal/ implementation
There are no facilitating mechanisms for either the proposal or implementation stage of the project. However, this was not an issue for the beneficiary which is experienced in undertaking such projects. It is believed that the practical nature of the project with its potential positive impact in the area of tourism which is so important to the local economy contributed to its positive evaluation.

Cashflow was a big issue since the funding scheme did not involve any advance grant (such as in the case of FP7 projects) and the beneficiary had to fund all expenses using internal funds until the final reimbursement.
Reducing bureaucracy, allowing more flexibility during implementation, and focusing on achievement of results rather than on the process of getting there would greatly facilitate future participation in similar projects.

**Contact:** David Micallef  
**Position:** Managing Director  
**Tel.:** +356 2148 2144  
**E-mail:** david.micallef@ateknea.com.mt
FP7 FUNDING: Chameleon

Project reference: 286519
Beneficiary: Ateknea Solutions Malta Ltd
Type of institution: SME

Budget
- **Project cost:** €1.199m
- **Total EU contribution:** €0.786m
- **Partner EU contribution:** €0.036m

FP funding instrument
- Funding scheme: BSG-SME Research for SMEs
- Subprogram: SME-2011-1 - Research for SMEs
- Call for proposal: FP7-SME-2011

Time frame of the project: Jan 2012 – Dec 2013

Main project objectives
To develop a cost-effective, fast-to-deploy, low-power and flexible video surveillance system that automatically combines images from multiple cameras with overlapping regions to create a natural seamless panoramic view of the monitored area.

Specific goals (expected output)
- Development of a low-power video stitching unit, located at the camera site, which combines video streams from three CCTV cameras. This allows portable devices, such as tablets and smart phones, to configure the system and to view the video stream in real-time.
- A high performance and yet low-power and cost-effective panoramic CCTV system that can run on an off-grid power supply and a wireless link.

Collaborative work within the project
The project was coordinated by Ateknea Malta Ltd and the consortium consisted of a total of 10 partners.

Type of costs covered:
- salaries
- equipment
- travel
- dissemination activities

Main Results
The main result achieved was the development of the multi-camera video surveillance system including the processing unit for combining the multiple video inputs into a single video stream. The project involved collaboration and exchange of knowhow from partners in 7 European countries, including the organisation of workshops and conferences. The project work resulted in the development of knowledge which could lead to publications or patents.

Difficulties encountered at the stage of proposal drafting
The application process is highly complex but over the past few years Ateknea has prepared numerous proposals and gained experience in dealing with it. The length of time required to draft the proposal can be an issue but is accepted as an unavoidable task.
Concerns regarding the evaluation
- The beneficiary advised that the evaluation procedure is clear and transparent, but that they do not always agree with the evaluation results and the comments of the evaluators. In particular, they expressed concerns regarding the ability of evaluators to properly understand the commercial side of the project.
- Malta is at a disadvantage compared to the larger and technically advanced countries in the EU15.

Difficulties during the implementation of the work:
The beneficiary did not report any difficulties related to implementation of the project. The allocation of funding at the start of the project is especially welcome for an SME with limited internal funding.

Facilitating mechanisms during the draft proposal/ project implementation
There are no grant schemes or other mechanisms for providing assistance during the project proposal stage. However, this is not an issue for Ateknea which is experienced in proposal drafting.

Other push – pull factors that may affect the R&I performers in applying/ being successful in FP calls
Local funding for R&D is in very short supply and FP7 represents an important source of funding for local organisations. However, the limited number of research-performing SMEs together with a low level of awareness of FP7 among the SME community limits the level of participation in this programme. Isolation from the international research community and lack of funding for participation in international conferences also contribute. Other factors include the difficulty of finding research project managers with the required experience, although such employees can be trained on the job.

The beneficiary believes that the quality of NCP support is very good.

Which were the strengths of the proposal to become successful
Innovative solution with a practical application.

Suggestions to policy makers to facilitate the participation of national R&I performers in H2020
The proposal evaluators should have more industry experience rather than academic background. From ESR it is sometimes clear that evaluators have a very academic background and cannot appreciate the industrial or commercial perspective.

Advise to R&I performers willing to apply
Learn the rules, generate the required experience.

Contact: David Micallef
Position: Managing Director
Tel.: +356 2148 2144
E-mail: david.micallef@ateknea.com.mt