

# SPRING TECHNO

Germany, [www.springtechno.eu](http://www.springtechno.eu)

An SME collaborates in multiple joint R&D projects and incorporates the key outcomes into new products to be commercialized in other industries. In this sense, QI becomes an R&D enabler

## Executive Summary

Based in Bremen, Germany, SME Spring Techno was founded in 2003 to develop solutions and applications for stock market analysis. Although this remains the SME's core business, they have become increasingly involved in collaborative R&D projects which have allowed them to use their know-how, advance the learning of the company and innovate in different domains. A key example of this successful development has been the application of algorithms used for the stock market to the healthcare sector via a proprietary software for monitoring the gait of elderly or infirm people at risk of falling. As this project progresses slowly towards the commercialization phase, it has been extended to R&D in other medical applications for use in hospitals. It is therefore a company with multiple experience of using QI as their R&D enabler and source of differentiation.



CASE N° : FG44

SECTOR: SERVICES

TECH INTENSITY: HIGH-TECH

LIFE CYCLE STAGE: ESTABLISHED

INNOVATION VECTORS: PRODUCT

01 PARTNERS: PSR, LARGE CORPORATION, OTHERSME

KEYWORDS: Algorithms, gait analysis, stock market, R&D projects

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The logo for Spring Techno, featuring the word 'spring' in a lowercase sans-serif font, followed by a stylized blue and white graphic element resembling a spring or a signal, and then the word 'techno' in a lowercase sans-serif font.

## BACKGROUND

Spring Techno was founded by Helger Arndt and Stefan Burkard in 2003. It started out as a company producing stock-market applications and analysis. From reasonably early on, they became involved as a partner in various projects funded by the EU, which allowed them to diversify into other fields such as healthcare and geolocation. Participation in collaborative projects is their main source of innovation.

## INNOVATION CHALLENGE & MARKET OPPORTUNITIES

Their participation in collaborative projects was motivated by their research interests to advance innovation for the sake of greater business opportunities. The direct output of the project is not necessarily increased turnover for the SME, but the know-how that can be re-utilized elsewhere. Spring Techno have been able to expand their area of business into other fields, where they can re-apply or customize the algorithms they know for different uses.

## OPEN INNOVATION TRAJECTORY

### Concept development

The SME focuses on algorithms and systems architecture for R&D projects which can be later built-on or re-used in other projects or for the company's core business of software and services.

One such example project which the company has been involved in concerns the application of their algorithms in a proprietary software to collect and analyze gait data from real users and correlate the parameters related with the risk of falls among the elderly population. The partners in the WIISEL project (standing for Wireless Insole for Independent and Safe Elderly Living) were principally universities and research centres.

### The development process, IPR and competition strategy

For the WIISEL project, Spring Techno adapted the algorithms which they had developed for the stock market and applied them to gait analysis, for the purpose of helping to detect the risk of falling among the elderly or infirm. The partners developed a shoe insole which detects the gait of the wearer. Spring Techno took care of the data communication and analysis in a proprietary software which was developed during the project.

Managing Director, Helger Arndt, explains that he is usually guided by the consortium agreement that is signed by all the partners at the start of the EU-funded projects. Normally each partner has ownership of the part they develop, and when they wish to use or sell the whole system then they enter into single agreements with the partners involved, and outside the scope of the project.

Typically companies, including Spring Techno, continue to develop what they have done in the project and make parallel developments of the other parts as required.

According to the European Union, by 2050 the number of people in the EU aged 65 and above is expected to grow by 70%, and the number of people aged over 80 by 170%. It is a well-known fact that the ageing of Europe's population is a challenge for the continent's social and healthcare systems. Age is a major risk factor in the case of injury through falling. 30% of people over 65 and 50% of those over 80 years fall each year, and older adults who fall once are two to three times as likely to fall again within a year.

A system like WIISEL that makes it possible in an unobtrusive way to analyze the movement, posture and activity of the elderly population by extracting direct and continuous information from gait is without doubt very useful. By assessing the risk of falling, such a device provides crucial information to prepare the way for implementing early and adapted interventions to lower such risks.

### Commercialization and follow-up

The WIISEL consortium finalized the trials in three clinical sites (Ireland, Israel and Italy) and presented the project results to the research and clinician communities in late 2015. Since then some of the consortium partners have been looking for and working with other collaborators to release a more advanced prototype, scale up the technology and prepare for market launch.

The move from prototype to market is difficult, according to Spring Techno. When they talk to potential clients they always need to do some iterations and customization. It is never the case that the innovation project ends with a completely finished product. The SME has learnt of one possible alternative for developing the technology further, i.e. developing the whole system or just parts of it through other projects. For example, Spring Techno is involved in a new project application which aims to combine gait analysis with other medical applications to implement in large infrastructures such as hospitals.

## BUSINESS IMPACT

Spring Techno specializes in custom-tailored software solutions and innovative user interface technologies. Their core business is the development of financial trading software for which they have developed and commercialized different solutions for analyzing, charting, and predicting financial markets. Through different R&D collaborations they have been able to accrue vast expertise in data mining, pattern recognition, search algorithms, databases and user interfaces which has allowed Spring Techno to extend its products and services to various fields of application. One example of a solution which they have recently co-developed with two other SME companies (UK and Austria) is a 3D search engine.

This project aims to provide new ways of searching, summarizing and visualizing large multimedia archives. The objective of the project is to create work environments that support creativity and flexibility beyond the classic procedural work approaches by providing automatic and semi-automatic methods and tools for semantic annotation. Spring Techno contributes to this project with the development of a 3D search engine (back-end software and 3D visualization).

The value for the SME in collaborating openly in EU projects has been that they can innovate and develop parts of what they do in the projects and then take it on themselves to develop them further as part of their own products. For example, in the QUALIMASTER project they developed sophisticated software and algorithms for systemic risk analysis and have implemented them into their existing software and developed their own product.

In more general terms, what Spring Techno has found critical during the development phase in EU projects is that partners deliver their parts on time.

A strong coordination is required to deal with this, as continual meetings are not possible. Another challenge experienced is to determine a fixed definition of the concept and requirements involved. Very often, PSR partners want to stay open to new ideas during the development process and they do not realize that this is a problem for the SME; they only see the advantage of the new idea. This means that they have had to change or abandon work already done and this is costly in terms of resources and unrealistic in terms of the project deadlines.

There is still a need for greater support for SMEs to progress beyond the prototype stage of development. Arndt believes that the SME Instrument programme goes some way to respond to this need, but it is limited in terms of competition for funds and accessibility for small companies (only partial funding).

## LESSONS LEARNED

There was some difficulty getting a single strong story from any one of the projects. The QI experience is better seen as a whole – i.e. how the SME uses these projects for advancing their own interests beyond the aim of the individual project. This might offer an entry point to new industries, or advancing know-how and technologies for incorporation into their own products.

### Main lessons learned:

1. Problems of shared vision between PSR and SME when fixing the development concept.
2. In joint collaborative R&D projects, SMEs require a strong coordinator who is capable of driving forward the work of partners and ensuring delivery to the SMEs in time and in the right order. Projects which are not run to a strict time-frame and remit are potentially damaging to the SME.
3. Completing a project with a prototype does not mean a simple transition to its commercialization.
4. The SME can take key learnings of early-stage innovations in projects they work on and incorporate them into their own products or re-use them in other industries in a cross-disciplinary way. In this way, QI becomes an R&D enabler.