

Swiss High Tech Companies on the Way to Success

In this section ten Swiss High Tech companies on the way to success will be presented.

The criteria for selection were:

- closing of one or several financial rounds > CHF 1 Mio. and/or
- having paying customers or a product ready for the market entry (except in Biotech).

Of course there are many more Swiss High Tech companies that would qualify for this section.

One other interesting aspect of these companies is, that they took advantage of most Swiss support organizations and got involved with investors related to CTI Invest.

Remember

Presented in 2009

AXSionics	axsionics.com
BeamExpress	beamexpress.com
Concretum	concretum.com
Doodle	doodle.com
Glycovaxyn	glycovaxyn.com
HeiQ Materials	heiq.com
Med Discovery	med-discovery.com
NEXThink	nexthink.com
Primequal	primequal.com
Sensimed	senismed.ch

Presented in 2010

Arktis Radiation	arktis-detectors.com
Atizo	atizo.com
Basisnote	basisnote.ch
Covagen	covagen.com
Diagnoplex	diagnoplex.com
Insphero	insphero.com
Optotune	optotune.com
Sonic Emotion	sonicemotion.com
Virtamed	virtamed.com
Zurich Instruments	zhinst.com

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Aimago

Subcutaneous Vision

Visualizing microcirculation in real-time: the innovation of Aimago, based in Lausanne, has a market potential of two to three billion Swiss Francs.

The capillary blood flow is a medical key factor, as human tissue is only viable if there is circulation and is therefore provided with nutrients. In case of burns or reconstructive surgery of the female breast, regular assessment of the microcirculation can be decisive for successful therapeutic treatment.

So far there exists no clinical method for assessing circulation. Optical scanners, however, have been used for approximately 10 years. The skin is screened by laser and the light which is reflected in this process infers the movement of the red blood cells.

“The medical potential of these scanners is hardly being exploited in clinics”, states the CEO of Aimago, Michael Friedrich. The reason being that these devices need approximately five minutes to provide a correct image of the cutaneous circulation.

Aimago’s EasyLDI has no such disadvantages. Thanks to a patented technology, developed by the Laboratoire d’Optique Bio-

medicale of the ETH Lausanne, it manages to visualize the functional dynamics of the capillary blood flow in real-time. So, for example, a deep burn can not only be routinely supervised during diagnosis, but also during surgery and the ensuing after-care.

“Our technology can be widely applied from diabetes to brain-tumour, in fact, there is hardly an indication where it can not be put to use”, says Friedrich. He estimates the market potential at around 2 billion Swiss Francs. Currently, it is implemented mainly in plastic and reconstructive surgery, which has a market volume of approximately 250 million Swiss Francs.

Hospitals and specialised clinics in Switzerland and its surrounding countries are supplied by Aimago directly and the rest of the world is served by means of intermediary trade. EasyLDI actually arouses great interest. Since the market launch last August, contracts with well-known medtech distributors have been signed and initial sales have been carried out.

In order to expand the marketing organization, Michael Friedrich would like to have completed the second financing round by the end of April. It should provide 2 million Swiss Francs. According to Friedrich, initial backers are still interested but he also welcomes further investors. “We are especially interested in Smart money”, explains the 30 year old.

In the coming year, Aimago anticipates a turnover of 4 million Swiss Francs. An expansion towards the USA, the holy land of medical technique, is planned for 2013. No earlier though, insists Friedrich: “There is no point in going to the United States before we have done our homework”.



MICHAEL FRIEDRICH
CEO of Aimago

Aimago AG
Lausanne



Line of business	medical technology
Foundation	2008
Employees	12
Financing	Industrial investor, bank and Business Angel
Generated capital	3.3 million Swiss Francs
Web address	www.aimago.com
CTI Projects	Yes
CTI Start-up Coaching / Label	Yes
CTI Invest Appearance	Yes
Venture Leader	Yes
Venture (ETH, McKinsey, CTI)	Yes (2006)
De Vigier Prize	Yes (2010)
Additional Awards	Innigrant of the ETH Lausanne

Attolight

The Nano World Film Camera

More efficient solar cells and cheaper LEDs – Attolight's new electronic microscope makes it possible. No wonder great interest is shown in the product of this young enterprise.

Today, examining objects which are only a few nanometres small is part of everyday life in physics laboratories. Electronic microscopes are the crux of the matter but up to now, the devices only supplied snapshots. Now, however, scientists can supervise processes at nano level thanks to the newly developed microscope of the young enterprise Attolight, based in Lausanne. "To put it in a nutshell, we have developed the nano world film camera," states CEO Samuel Sonderegger.


The initial camera was developed in a laboratory at the EPF Lausanne. It served Sonderegger's own purpose as he examined semiconductors with it for his doctorate. But one day he was visited by an Indian physics professor. "He asked me why we didn't sell this device," the company founder points out. "Why ever not," Sonderegger said to himself and began to follow up on the idea of a spin-off. The first time he attended a course initiated by Venturelab, he immediately knew: "Entrepreneurship is exactly the right thing for me."

Today, he has already overcome the first typical challenges. Attolight is on the last lap of its product development, has an important intellectual property at its disposal and has generated 800 000 Swiss Francs venture capital. "We definitely want to put our film camera on the market before the summer," says the 32 year old.

In a first step, Attolight is planning to focus on research laboratories. "Due to our camera, physicists can, for example, improve their understanding of the processes in solar cells, LEDs or laser diodes," explains Sonderegger. As a result, their respective efficiencies can therefore be improved. Similar research is continuously being carried out worldwide so it is understandable that interest in the Attolight product is accordingly great.

As is usual for developers of new measuring instruments, the second step will then be to gain control of the production testing market. Here again the new camera offers substantial advantages. With this product, for example, LEDs can be tested earlier on in the production process which will clearly decrease reject costs.

"We still have a long way to go," explains Sonderegger frankly. First of all, the young enterprise wants to demonstrate that it can be successful on the research market in the coming year. Once attained, further development steps will be tackled which will also require additional investors. In 2012 Attolight would like to approach the next financing round.

Attolight SA	
Lausanne	
	
Line of business	Measuring instruments
Foundation	2008
Employees	3
Financing	Business Angel from the StartAngels Network and through investiere.ch
Generated capital	800 000 Swiss Francs
Web address	www.attolight.com
CTI Projects	Yes
CTI Start-up Coaching / Label	Yes
CTI Invest Appearance	Yes
Venture Leader	Yes



SAMUEL SONDEREGGER
CEO of Attolight

GetYourGuide

On the Way to becoming the Global Number 1



JOHANNES RECK
CEO of GetYourGuide

On GetYourGuide.com travellers can book city-tours, museum visits or even outdoor adventures. The portal is growing by the minute, thanks to the trend towards individual tourism.

Booking accommodation and flights online has, over the past few years, almost become an everyday routine. Hotel and flight portals have conquered an ever increasing part of the travel market. However, local tours and excursions have been left out by this rapid development. Those of us who wanted to book guided museum tours, city sightseeing or a river rafting trips online, were generally badly disappointed.

In 2008, four students of the ETH Zürich decided to change this. "We studied during the day and programmed at night," remembers Johannes Reck. Today, the biochemist is CEO of GetYourGuide. None of his colleagues started working for large companies, instead, they chose entrepreneurship.

Over the past three years, the four founders have managed to set up a solid young enterprise. The business model, for example, was fundamentally restructured. Inspired by facebook's success, the founders had initially planned a social community where, for example, students could offer tours. But today, GetYourGuide's

business model is similar to a hotel portal. The enterprise does not receive advertising revenues but instead gets a share of every booking – somewhere between 20 and 30 percent of the overall booking price.

Organizers of guided tours, round trips and local tours are happy to pay this contribution. The fast growth of GetYourGuide reflects this fact. Since the definite version of the website was launched in January 2010, 700 local operators have registered over 3500 tours. These range from New York sightseeing tours based on Sex and the City, guided tours through world famous museums such as the Louvre and the Prado, excursions to the Japanese Mount Fuji or the rainforest of Rio de Janeiro, or even a wellness day at the Dead Sea.

The growth will continue. GetYourGuide is profiting from the fundamental change in the travel branch. "A few years ago, travel agents offering package deals contributed largely to the income of museums, citytour guides or excursion organizers. But this income is sinking, as package deals are losing their importance due to the internet," explains Reck.

A financing round with international investors is to allow further growth. The team is in the middle of specific negotiations. Simultaneously, international partners are being sought who are willing to integrate GetYourGuide in their websites and therefore make it, internationally, even more well-known among travelers. "We will make headlines within the next few months," reveals Reck.

GetYourGuide AG

Zürich



Line of business	Travel
Foundation	2009
Employees	15
Financing	Business Angel, Zürcher Kantonalbank
Web address	www.getyourguide.com

CTI Start-up Coaching / Label	Yes
CTI Invest Appearance	Yes
Venture Leader	Yes
Additional Awards	Red Herring Global 100, Beste Swiss Web-Shops 2010

greenTEG

Four Energized Founders



WULF GLATZ
CEO of greenTEG

"Thanks to the new and automatable manufacturing process, we can now produce generators differing fundamentally from the previous models," explains CEO Wulf Glatz. Firstly, the greenTEG products are by far cheaper. Secondly, they are made of thin, pliable foil allowing for many customer specific requests to be carried out, which were previously not possible. The basic principle, developed by Glatz during his PhD at the ETH Zürich, is constantly being optimized.

Parallel to the technical development, the team is promoting the business sector. The young enterprise is carrying out feasibility studies with potential customers. Based thereon, development projects are planned to follow this year. An initial product sales' turnover is scheduled for 2012.

"It was surprisingly easy for us to reach potential customers," states Peter Stein, responsible for the enterprise's finances. Various professional articles as well as the winning of numerous young enterprise prizes, have helped greenTEG to become well known and trustworthy. This will also be of use to the company's planned financing round. In 2012 the objective is to develop the customer specific manufacture and to intensify sales activities. In order to meet this objective, further venture capital is to be invested. "This summer we will start contacting specific investors," explains Stein.

Waste heat is produced practically everywhere. By machines and motors of course, but also by turbines and solar cells. GreenTEG generators make the conversion of heat to electricity economically interesting.

The generation of electricity and its use as well as the operation of combustion engines have one common denominator – energy conversion produces waste heat. Often, it is actually the real main product, as only a third of the initial energy can, on average, be used for its desired purpose. The rest, however, heats the environment.

The greenTEG team wants to raise energy conversion efficiency by obtaining electricity from waste heat. They have developed thermo-electric generators which convert heat directly into electricity. The converters are not only suitable for improving the efficiency of machines or vehicles, but they can also provide small gadgets, which are not connected to the mains supply, with electricity. In some cases, even the body heat of human beings is sufficient for this.

The principle, which the generators are based on, is well known. But up to now, the production involved a lot of manual labour as well as material wastage which inevitably led to a corresponding high production cost. As these elements were relatively big and rigid they were predestined to be used in niche applications only.

greenTEG GmbH Zurich		
Line of business	Cleantech	
Foundation	2009	
Employees	7	
Financing	Zürich Kantonalbank, Aargauische Kantonalbank, Berner Partners, Gebert Rüf Stiftung, Volkswirtschaft-Stiftung, AXPO, swisselectric research, Elektrizitätswerke des Kantons Zürich (EKZ)	
Generated capital	more than 1,4 million Swiss Francs	
Web address	www.greenTEG.com	
CTI Projects	Yes	
CTI Start-up Coaching / Label	Yes	
CTI Invest Appearance	Yes	
Venture Kick	Yes	
De Vigier Prize	Yes (2010)	
Additional Awards	IMD Startup Competition, STEP Award, swisselectric research	

Kooaba

A New Kick for Print Products


HERBERT BAY UND TILL QUACK

Co-Founders of Kooaba

Kooaba Paperboy trims newspapers for the web. In Switzerland, all well-known publishing houses support this tool – and that seems to be just the beginning.

Because the Kooaba founders Herbert Bay and Till Quack took on several marketing and sales specialists, the old office became so cramped that the team decided to move in January. Their job is to work on the German market. The expansion was made possible by a second financing round over three million Swiss Francs.

Last year, Bay and Quack worked hard to win their investors' trust. Their product Paperboy was launched as recently as April 2010 and has already become a success. Today, as many as 40 publishing houses use it for publications such as 20 minutes, Blick am Abend or the Coop magazine.

Paperboy links newspapers and magazines to the online world. A smartphone photo can be taken of an article or an advertisement by the software user. It is then, automatically passed on to the Kooaba server and compared to the stored data therein. The software recognizes the page and offers the reader appropriate options. Articles and advertisements can be downloaded and saved, they can be sent to friends as PDF versions or further information can be retrieved.

"20 minutes' readers tend to share their articles or watch corresponding videos whereas readers of the Betty Bossi magazine like downloading and saving recipes"; comments CEO Bay the users' behaviour. Advertisements can also be photographed with Paperboy. "A successful advertising campaign can inspire several thousand potential customers to use our service"; explains Bay. Skoda is currently a perfect example. For this car manufacturer, the Kooaba team came up with a specific formula – not only is additional information about the advertised cars accessible, but test drives can also be booked directly via the mobile phone.

At all events, Paperboy supplies advertisers with important information. Significant, statistical data concerning advertising in the print media is thus collected. So far, this was only possible with online advertising. No wonder, advertisers are willing to cover the costs. Neither users nor publishing houses are charged, however.

The crux of Paperboy is the automatic picture identification. "To put it in a nutshell, we have actually developed a picture search machine"; states CTO Till Quack. The technology which is causing a worldwide sensation, is to be applied to other formulas. An offer called Shooting Star is already in the beta phase. It is capable of identifying sights on holiday snapshots, supplying their GPS coordinates as well as suggesting corresponding websites.

Kooaba AG

Zurich

Line of business	Digital Imaging
Foundation	2006
Employees	15
Financing	Zürcher Kantonalbank, Hasler Stiftung, Chemolio Management, Corisol Holding
Generated capital	4,9 million Swiss Francs
Web address	www.kooaba.com

CTI Projects	No
CTI Start-up Coaching / Label	Yes
CTI Invest Appearance	Yes
Venture Leader	Yes
Venture (ETH, McKinsey, CTI)	Yes (2008)
Additional Awards	IMD Startup Challenge, Winner of Red Herring Global 100

Lemoptix

The Miniaturized Beamer

Market researchers are predicting a golden future for microprojectors. Lemoptix, based in Lausanne, is one of the leading companies in this new market.

Nowadays, every child knows what a beamer is: a bulky device which projects images, usually suspended from the ceiling. The announcement of Marco Boella, CEO of Lemoptix, therefore sounds like science fiction. "We will put a projector on the market which will be roughly the size of a sugar cube". Materialization for this ultra-miniature microprojector is intended for 2012. Until then, the company will be commercializing and selling its current microprojector which is roughly the size of a credit card.

A completely new approach makes miniaturization possible. Up to now an image, made up of hundreds of thousands of pixels, was first produced in the beamer before it was projected. In the Lemoptix-system, however, one single small micromirror reflects a lightbeam generated by three laser diodes, red, green and blue. The mirror oscillates at neckbreaking speed and line by line, draws an image onto the projection surface. Our slow-moving human eye cannot fathom this projection process, it only takes in the final image.

Not only is the Lemoptix-system smaller and more energy-efficient than today's projection technologies, but it is also cheaper. This means that the microprojection display becomes a viable and essential component in many devices and systems where no display could until now be embedded. Market researchers have predicted a rapid growth for microprojectors in the coming years. According to the Display Search institute the shipment forecast for microprojectors is USD 7 billion by 2014. Lemoptix is determined to play an important part in this. "Currently there is no other European player developing similar technology and only 2 or 3 more serious competitors worldwide," explains Marco Boella.

The Lemoptix founders are by no means inexperienced; Marco Boella is 49 years old and has spent the past 24 years working not only in leading positions for companies such as Hewlett Packard and Nokia but also in several start-up companies. Two other founders also have industrial experience.

Production is to start this year. Lemoptix is already working on significant and immediately addressable market opportunities, for example in the area of Head Up Displays for the automotive industry. For 2013 Boella has set his sights on the consumer markets which include microprojectors in mobile devices such as laptops, digital cameras and phones.

However, before this step can be taken this young company needs further capital to finance the industrialization of its flagship ultra-miniature microprojector. A third financing round is planned in 2011.



MARCO BOELLA
CEO of Lemoptix

Lemoptix SA

Lausanne



Line of business	Optical Microsystems
Foundation	2008
Employees	10
Financing	Private investors & Go-Beyond business angel group, Eidgenössische Stiftung zur Förderung schweizerischer Volkswirtschaft durch wissenschaftliche Forschung, Gebert Rüt Stiftung
Generated capital	2,1 million Swiss Francs
Web address	www.lemoptix.com

CTI Projects	Yes
CTI Start-up Coaching / Label	Yes
CTI Invest Appearance	Yes
Venture Leader	Yes
Venture Kick	Yes
Additional Awards	IMD Startup Competition, Prix Entreprene Region Lausanne (PERL)

Malcisbo

A Young Enterprise with a Bulging Pipeline

When an experienced team such as Malcisbo decides to set up a company, there has to be something behind it. The technology of the young enterprise holds the solution to several urgent medical problems.

It was an exclusive circle that met at the beginning of 2009 to discuss the company foundation. Amongst them was; Lino Camponovo, a vet with many years of management experience with the worldwide biggest veterinarian vaccine producer; Bruno Oesch, co-founder of Prionics and serial entrepreneur; Irene Schiller, scientist at the federal veterinary office; and of course Markus Aebi, an internationally renowned microbiologist at the ETH Zürich.

The four have known each other since their schooldays and had often thought about setting up a company based on Aebi's research results. A promising technology developed in Aebi's laboratory then lead to the foundation of Malcisbo. "We have the technology to develop a wide variety of vaccines against parasites and bacteria which infest both humans and animals," explains the current Malcisbo CEO Lino Camponovo.

The mode of action is always the same. The agents of Malcisbo's vaccines correspond to the carbohydrates identified in parasites

and bacteria. The vaccine stimulates the production of antibodies in both humans and animals. These, in turn, access the pathogens, dock onto their carbohydrates, the so-called target, and thus manage to kill off the bacteria or parasites. Malcisbo has developed one technology platform to discover targets and one to produce agents.

The first product is to be used against the poultry bacteria *Campylobacter*. The tiniest amount of these bacteria in the human food chain causes diarrhoea. In case of additional complications, *Campylobacter* can even cause death. "In the USA alone, human *Campylobacter* infections are the source of massive annual expenses, of more than 18 billion US Dollars," explains Camponovo. Malcisbo has developed an affordable remedy which can be easily administrated to poultry via their drinking water.

Experiments with the vaccine on live poultry are in process. The second medication which is shortly going to be tested on animals is a vaccine against blood-sucking parasites in ruminant stomachs. Others, for example against the hookworm which infects dogs, cats and humans, are in the pipeline. With these prospects, it is not surprising that Malcisbo is of great interest to investors. Presently, a financing round is in process which will cover the current cash requirements. However, Camponovo is still interested in contacting further investors.



**BRUNO OESCH, IRENE SCHILLER,
LINO CAMPANOVO, PROF. MARKUS AEBI**
Co-Founders

Malcisbo AG

Zurich



Line of business	Pharma
Foundation	2009
Employees	5
Financing	Private Investors, Zürcher Kantonalbank
Generated capital	more than 1,5 million Swiss Francs
Web address	www.malcisbo.com

CTI Projects	Yes
CTI Start-up Coaching / Label	Yes
CTI Invest Appearance	Yes
Venture-Kick	Yes
Venture (ETH, McKinsey, CTI)	Yes (2010)
Additional Awards	Swiss Technology Award

Memonic (Nektoon)

Intelligent Data Management



DORIAN SELZ
CEO of Nektoon / Memonic

The young enterprise Nektoon, from Zürich, offers personal data archives on the internet. Memonic has already convinced more than 20 000 people.

The International Data Corporation (IDC) has worked out that the amount of data which is freely accessible on the World Wide Web has increased tenfold since 2006, to the almost unfathomable amount of 1.8 trillion gigabytes.

This development is similar to a hyperinflation. In the data world, however, there is no central banking system to oppose the data flood. Everyone who researches or uses online data professionally knows the consequences. Surveys show that people working for universities or the media, or those who specialise in marketing spend up to two thirds of their worktime searching for or organizing digital data.

“Tools such as Memonic are called for here”, explains Nektoon-CEO Dorian Selz confidently. Memonic is a small scale software which is docked onto the internet browser and allows the user to compile password-secure online archives. Users can copy parts of texts and pictures on the internet, transfer them to their Memonic archives, reuse them there or offer them to third parties.

Together with his four founding partners, Selz has big plans – Nektoon is to win over the world market. Not as a free of charge “nice-to-have” but as a premium-rate service based on subscription. Selz realises, however, that a strong, competitive market already exists, especially in the USA, partly pushed by affluent venture capitalists.

“We have to outwit the others”, explains the man who was awarded a doctorate in economic computing science at the HSG. For example, with a software architecture, based on so-called web services, catering for memory space rental and its growth without much hardware investment.

Web services can, at the same time, easily be multiplied and this is the prerequisite for Nektoon’s OEM-business. Selz cooperates with publishing houses which offer digital archives to their online customers. This feature has been available on www.nzz.ch since the beginning of December 2010. “The feedback is gratifying”, says Dorian Selz.

Currently, 20 000 users are registered directly at memonic.com, most of whom are still using the free basis version. Guiding these people towards the premium offer at cost, is going to be the main task at hand in the coming months.

Further technical and sales investments are necessary to tackle this task. Selz intends to go into a second financing round in late summer. Early-Stage-Investors and Business Angel are the focus of his attention as, together, they would be able to invest between one and two million Swiss Francs.

Nektoon AG / Memonic

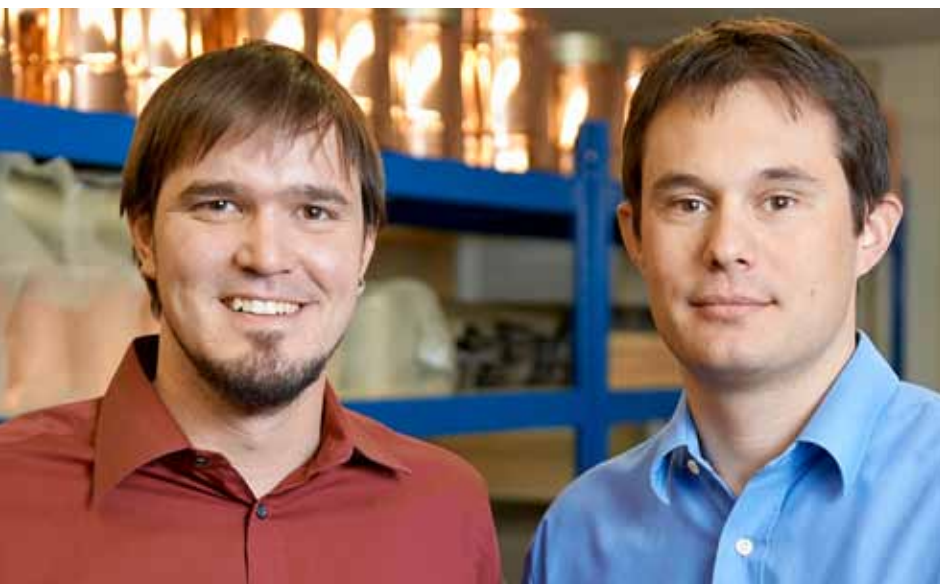
Zürich



Line of business	Internet
Foundation	2009
Employees	9
Financing	Trusts, Zürcher Kantonalbank (ZKB) and Business Angel
Generated capital	1,2 million Swiss Francs
Web address	www.memonic.ch
CTI Projects	Yes
CTI Start-up Coaching / Label	Yes
CTI Invest Appearance	Yes
De Vigier Prize	Yes (2010)
Additional Awards	Red Herring Top 100 Europe Best, Business Award 2010 of Internet World Business

OekoSolve

A Catalyzer for Timber Chimneys



DANIEL JUD UND BEAT MÜLLER

Co-Founders of OekoSolve

Daniel Jud's and Beat Müller's extra fine particle filter astonishes Europe. It is cheap, efficient, easily installed and low in maintenance, in short, it has a lot of potential.

August de Coulomb lay the foundation for electrostatics in 1785. In the field of electrostatic microparticle separation, revolutionary patents were submitted in the 1930's. Since then, the industry has concentrated on increasing the efficiency of industrial particle filters as, for example, those of waste incinerators. Respirable dust produced by small furnaces was considered irrelevant.

The climate debate, however, changed this course of events distinctively. Timber was recognised as a climate neutral fuel, timber furnaces had a revival and consequently respirable dust, produced by household furnaces, made the headlines in winter 2005 / 2006.

"At that time there was no elegant solution to the problem of private timber furnaces", remembers OekoSolve founder Beat Müller. The electro engineer subsequently concentrated on developing an extra fine particle filter for timber furnaces with a heating capacity of 70 kilowatt.

Five years have passed since then and OekoSolve is now the leader, europewide, when it comes to the fine particle separation of small timber furnaces. "We realised that there was considerable scope for improvement", says Daniel Jud who joined the business at the end of 2008 as a partner and has, since, been managing director.

Oeko Tube 2 is the latest, numerous patent-approved filter model, developed by OekoSolve. Unlike conventional filters, it can be installed on every chimney and can easily be cleaned by the chimney sweeper. Additionally, it has an extremely high separation rate of up to 95 percent and is, nevertheless, purchase competitive despite its low installation and maintenance cost. A well-thought out product design makes this possible. Moreover, the high-voltage power unit along with the system control was radically overhauled.

So far, the school friends Jud and Müller have sold 500 of these appliances and that seems to be just the start. In January 2010 the German Bundestag passed a waste-emission safety regulation resulting in the technical up-dating of millions of German household furnaces over the next few years.

The situation in Eschen has since been hectic. The OEM-contract with one of the largest German furnace manufacturers has been signed and further inquiries are at hand.

"Sometimes you have to be lucky" says a contented Daniel Jud. By the year 2013, OekoSolve is to be in the black. In order to reach this aim, Jud and Müller require approximately one million Swiss Francs additional capital which they mainly intend to invest in further production optimization as well as the international market.

OekoSolve AG

Eschen (LI)

OekoSolve

Line of business	Cleantech
Foundation	2007
Employees	6
Financing	KMU and regional Business Angel
Generated capital	1,8 million Swiss Francs
Web address	www.oekosolve.ch

CTI Projects	Yes
CTI Start-up Coaching / Label	Yes
CTI Invest Appearance	Yes
Additional Awards	Winner businessplan competition Liechtenstein 2007

ViSSee

A Speed Sensor in Microformat



VALERIA MOZZETTI UND NICOLA ROHRSEITZ
Co-Founders of ViSSee

Valeria Mozetti and Nicola Rohrseitz have developed a revolutionary speed sensor. The automobile industry shows great interest.

“The motion computation of a fruit fly’s visual system.” Such was the title of Nicola Rohrseitz’s PHD theses at the Institute of Neuroinformatics at the ETH Zürich. The young scientist wanted to prove that the *Drosophila melanogaster*, the common fruit fly, was capable of reacting to moving objects in a wind channel. Once the evidence had been provided, the next question arose: How can a fly which only has 100’000 nerve cells measure speed?

Thousands of experiments later Rohrseitz believed to have found an explanation. Based on these initial ideas a passive, visual speed sensor was developed which had no need for external reference systems and only cost a fraction of the existing camera-based speed sensors.

“The spatial and temporal changes in the field of vision of a convex lens are analysed by our software,” explains Rohrseitz. The two variables are then used to calculate the speed by means of the formula “space over time”. The crux of the matter is that the distorted geometry of the fish-eye-lens does not interfere with, but actually simplifies the computation. The patented filtering method only selects incoming data which is relevant to the speed measurement.


Together with Valeria Mozetti, who has a PHD in biotechnology, Rohrseitz founded the firm ViSSee, domiciled in the center of Lugano. Within a year a prototype of the “Third Eye”, as it is called, was developed in collaboration with the Italian Swiss college (SUPSI) and the university (USI) also from the Canton Ticino.

The founders firstly focused on manufacturers of portable electronic devices as well as medical training equipment. The chance for a further application arose in August 2010; due to an article in the American engineering journal IEEE Spectrum, General Motors took notice of the Italian Swiss start-up.

Behind the scenes the automobile industry has long been looking for a speed sensor which can identify speed independently from axis rotation and also support the ABS system during skidding manoeuvres. “We have visited the United States twice since then,” says Rohrseitz.

The next step now, is the miniaturization of the “Third Eye” from the size of a child’s fist to fingernail format. As a microsystem, the new sensor should only cost a few francs.

So far Rohrseitz and Mozetti have financed the project out of their own pocket. But they have now reached their limits. An investment round which ought to generate one million Euro is currently under way. Nevertheless, the overall capital investment required is 4 or 5 times larger. The potential is, at the same time, considerable; a turnover of 80 million Swiss Francs has been estimated for the next five years.

ViSSee GmbH	
Lugano	
	
Line of business	microtechnology
Foundation	2009
Employees	2
Financing	Founders and prizes
Web address	www.vissee.ch
CTI Projects	Yes
CTI Start-up Coaching / Label	Yes
CTI Invest Appearance	Yes
Venture-Kick	Yes
Venture (ETH, McKinsey, CTI)	Yes (2010)
Additional Awards	Best Entrepreneurial Idea of the year of the Canton Ticino; IMD Start-up competition of IMD, Lausanne; CTI US Camp@Swissnex San Francisco of Swissnex, San Francisco