

eit awards

ACES  
ACADEMIC ENTERPRISE AWARDS

START UP! YEARBOOK

# DRIVING INNOVATION AND GROWTH

2012 Yearbook of the EIT Awards and  
Science|Business Innovation Board  
Academic Enterprise Awards



All about the **winning** EIT and ACES innovators  
Tips on how to get **funding** for your start-up  
Make industry-university **partnerships** work  
How to turn your researchers into **entrepreneurs**

## European Institute of Innovation & Technology

The European Institute of Innovation and Technology (EIT) is an independent body of the European Union, headquartered in Budapest and set up in 2008. It aims to overcome the innovation gap as a severe threat to the economy of Europe and, more importantly, to the future of the next generation. Its mission is to unlock Europe's innovation potential by integrating higher education, knowledge/research and business across the European Union, putting the entrepreneur in the driver's seat of this "knowledge triangle".

Far from being a mere grant-giving institution, the EIT is already acting as, and will further develop to become an Impact Investment Institute focusing on seeding and on fostering promising innovation eco-systems, the "Knowledge and Innovation Communities (KICs)." The KICs enable top-class European education, research and business hotspots to form entrepreneurial and excellence-driven innovation factories. They address focused innovation topics and integrate public and private research organisations, innovative industries, higher education institutions, investors, start-ups and spin-offs.

## Science|Business Innovation Board

To encourage public dialogue about innovation policy in Europe, the Science|Business media group, along with INSEAD and ESADE business schools, have established The Science|Business Innovation Board AISBL, an independent, blueribbon panel of leaders in industry, academia and policy making that meets twice a year to review and make recommendations on important aspects of European innovation policy, and to formulate recommendations for policy action.

The aim: to use the collective experience of the board members to improve the climate for innovation in Europe. The Innovation Board also names the winners to the annual ACES awards. Organisation and reporting of the Science|Business Innovation Board's work is managed by Science|Business.

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## THE 2012 START UP! CONFERENCE IS A JOINT INITIATIVE OF



# Change the mind-set around innovation in Europe

Europe needs a fresh cycle of innovation to create a more “reactive economy” that can absorb shocks and bounce back, says European Education Commissioner Androulla Vassiliou

*Nuala Moran*

**The role of entrepreneurs in promoting growth and job creation “cannot be overstated,” Androulla Vassiliou, European Commissioner for Education, Culture, Multilingualism, Sport, Media and Youth told the Start Up! European Entrepreneurship Summit in Brussels.**

Congratulating the winners of the Science|Business ACES awards and the European Institute of Innovation and Technology (EIT) awards, Vassiliou said, “We need more entrepreneurs like the ones we are celebrating today.”

The credit crunch and underlying structural problems are making it difficult for would-be entrepreneurs to get financial backing and the other support they need. The EIT was created in 2008 to redress these deficits and at the same time address huge social problems such as climate change and energy supply and security. “Three years ago [the EIT] was just on paper”, now the EIT awards are, “proof of the fact that the EIT is working,” Vassiliou said.

The key change brought about by the EIT has been in persuading education to play a bigger role in fostering entrepreneurship, by interacting more with industry and training students in business skills alongside their scientific studies. At the current time many member states have a high number of unemployed graduates. “We badly need cooperation between business and educational institutes” to address this, Vassiliou said. There needs to be structured, two-way collaboration, with university professors advising business and business people teaching students.

**EU Commissioner Androulla Vassiliou presents one of the EIT Awards**



Most enterprises in the next decade will depend on people with a deep knowledge of science and technology, but also skills in innovation. This calls for a change in mind-set. “We need to develop a spirit of initiative,” Vassiliou said. At the same time there should be support for people if they start a business and it fails.

“Ultimately people are at the heart of innovation”, said Vassiliou. After only three years the EIT has created its first innovations and first entrepreneurs. “It’s satisfying to see a dream is coming true. Young people with excellent ideas are not scared of trying,” Vassiliou concluded.



# Europe's innovation factories to support entrepreneurship

By *Alexander von Gabain, Chairman of the EIT Governing Board*



**Europe needs a stronger focus on entrepreneurship. Despite its great assets, excellent universities, research organisations and strong industries, many creative ideas for novel products and services do not make it to the customer and perhaps most worryingly, are often not encouraged to become reality. The EIT is devoted to addressing the innovation gap in Europe, by creating more favourable environments and frameworks for entrepreneurship-driven innovation to flourish, and by growing and rewarding entrepreneurial talent.**

We do so by joining the three sides of the knowledge triangle of research, higher education and business, configuring new ways to work together and at the same time supporting entrepreneurs or intrapreneurs within existing corporations, as the central actors within the innovation ecosystem.

Creating or enabling these ecosystems to flourish is at the heart of the mission of the EIT and our innovation factories, the so-called Knowledge and Innovation Communities (KICs). Each KIC works within five or six co-location centres spread across Europe which enable people from universities, research centres, large and small businesses and other relevant partners to work together face-to-face in integrated teams. This ensures that the innovation factories are not simply loose networks but real focal points of integration where innovation is facilitated.



**Alexander von Gabain, Chairman of the EIT Governing Board**

This is crucial for European growth, as the current European innovation landscape remains fragmented. Indeed, many excellent higher education institutions, research centres and businesses can be found in Europe, but what is often missing is geographical and cross-sector collaboration. Working in such "silos" leads to dispersed innovation efforts, and it is therefore crucial that we build a "critical mass" of human and physical resources, attracting and retaining private sector investment in innovation, education and R&D. In order to make the most of its innovation potential, Europe must overcome this fragmentation and this is exactly why the EIT was set up.

Investing in and building innovative ecosystems in Europe is tremendously important, not only to bring the actors of the so-called knowledge triangle together, but also for investors, in particular venture capitalists, to be able to work with young ventures and entrepreneurs that are exposed to the realities of working in such ecosystems. If you have a great idea, you need to know whom to address to get it off the ground, and whilst capital is extremely important for growth, many other aspects also need to be considered. Investors need to be certain that all these elements have been and are being considered, and this is why we at the EIT believe that our co-location centres can have a very significant impact and will attract intelligent capital which prefers holistic ecosystems in innovation with entrepreneurial mind-sets.

The EIT Entrepreneurship Awards 2012 have highlighted the extent to which the activities of the EIT's "innovation factories" (KICs) integrate all elements of innovation, from initial discovery to invention and translation to the market. Promoting innovation fostered by entrepreneurship is the key ambition of the EIT, and it has been a moving moment to see this turn into reality and to have the opportunity to meet the first wave of entrepreneurs of the KICs that we have catalysed.

As an immediate benefit, the EIT ventures participating in the Entrepreneurship Awards competition take advantage of extended communication support, allowing for increased visibility and recognition of their innovative business ideas. They are given the opportunity to meet with leading entrepreneurs who can provide them with guidance on how to prepare for the scaling up of their businesses. Moreover, it is a major concern



**The EIT headquarters in Budapest, Hungary**

of ours to help them identify, choose and access the most adequate support services Europe-wide from across the KICs' business support portfolios, and last but not least, to open access to financing through relations with the venture capital community.

Due to the economic crisis that we are facing and underlying structural problems in Europe, it is more and more difficult for promising entrepreneurs to get access to finance. Improving the conditions for access to finance in strategic sectors and addressing societal challenges, such as energy, telecommunications and fostering innovative industries, is vital to boost growth, creativity, knowledge and innovation in Europe. And this is something the EIT and our KICs are devoted to achieving!

The Belgian Royal  
Academy of Sciences,  
Brussels, setting for the  
2012 Start Up! Awards



## FOREWORD

# Europe reaches a milestone seeding start-ups



At a handful of Europe's top research universities a remarkable change is underway. Entrepreneurship is finally taking root as a true career path. Statistics compiled by individual universities and technology transfer organisations such as the University of Cambridge, ETH Zurich and the Technical University of Berlin are starting to show a steady rise in the number of students and researchers opting to launch their own companies. ETH Zurich produced a record 110 spin-outs over the past five years.

It's been a long time coming and the trend is not yet widespread, but it marks a milestone in efforts by governments and institutions to nurture entrepreneurship. Supporting that shift is vital to Europe's future and economic growth. Entrepreneurship is key to developing new industries, technologies and wealth. To create a large and vibrant population of innovators, these campus hotspots must expand and multiply. Europe's would-be entrepreneurs need better financing, markets and recognition.

Two awards programmes for start-up innovators came together on 21 February 2012 in Brussels to provide that recognition: The first entrepreneurship awards offered by the European Institute of Innovation and Technology (EIT) and the fourth annual Academic Enterprise Awards (ACES) offered by the Science|Business Innovation Board. Together, the two programmes brought 21 young entrepreneurs from across Europe to compete for seven awards, bolstering best practice in seeding campus start-ups and building a pan-European network of young entrepreneurs. This yearbook celebrates the winners and the intrepid spirit of Europe's new generation of innovators.

**Gail Edmondson**, Editorial Director, Science|Business

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The historic hallways  
of the Royal Academy  
were bustling with  
technology

# 1 Seven entrepreneurial start-ups from across Europe recognised in double awards ceremony

**The EIT launches its first awards – ACES enters its fourth year. Start-ups from the UK and Germany led the list of winners, which also included Spanish and Hungarian companies.**

*Gail Edmondson*

Seven start-up companies from across Europe were recognised at an awards ceremony in Brussels on 21 February 2012 as two programmes came together to hand out prizes to entrepreneurs. Start-ups from the UK and Germany led the list of winners, which also included Spanish and Hungarian companies.

Together, the cluster of awards made a powerful statement about the promise and importance of entrepreneurship in reviving the European economy. The European Institute of Innovation and Technology (EIT), an EU institution, launched its first entrepreneurship awards there, for three start-ups. At the same time, the Science|Business Innovation Board, a not-for-profit association, awarded four prizes in its fourth annual Academic Enterprise Awards (ACES) competition.

The winning companies developed breakthrough technologies and innovations across many fields, including a network system to detect cyber threats; sustainable

pre-fabricated housing; hybrid photovoltaic and solar thermal devices; an advanced magnetic sensor device for breast cancer diagnosis; a cloud-based research management and collaboration platform; advanced electric motors, generators and drive systems for electric cars; and an innovative hand hygiene system to help control hospital-associated infections.

## The awards programmes

The two programmes – the ACES and the EIT Awards – cooperated on a joint conference: Start Up! The European Entrepreneurship Summit, in Brussels on 21 February. Both awards competitions drew nominations from across Europe. The 21 finalists that emerged were given communications training, and presented themselves to the conference audience and jury in three-minute “elevator pitches.” The winners were announced in an awards ceremony the same day.

The EIT Awards competition was created by the institute as part of its mandate to promote

entrepreneurship within the “knowledge triangle” of research, education and industry. Each of the EIT’s three KICs – the Knowledge and Innovation Communities that group project partners in developing innovations for sustainable energy, information and communications technologies, and climate change technologies – selected three start-up companies in the projects to compete for an award.

ACES is a pan-European competition among companies spun out from universities – to recognise the best academic entrepreneurs from across all technology disciplines. The competition is open to founders of university or research institute spin-outs up to five years old. The competition, which since inception has honoured 57 start-ups from Norway to Israel, is organised by the Science|Business Innovation Board AISBL, a Belgian not-for-profit scientific association formed to improve the climate for innovation in Europe. Members of the Board include ESADE Business School, INSEAD, Imperial College London,







Microsoft, BP, SKF Group and law firm Foley & Lardner. This year's ACES programme was sponsored by the Board, Microsoft, the Janssen Pharmaceutica unit of Johnson & Johnson, and the Capital Region of Brussels.

### The EIT Winners

Climate-KIC Award winner Christophe Williams founded Naked Energy, which develops combined photovoltaic and solar thermal technologies in a new system with a vacuum configuration that generates electricity and hot water more efficiently and is easier to mount and install.

EIT ICT Lab Award winners Patrick Duessel, Christian Gehl and René Gerstenberger launched Trifense, an intelligent network security company that taps self-learning technology to develop a system that automatically detects potential cyber attacks.

KIC InnoEnergy Award winners Pol Guiu and Rosa Vilarasau founded Think CO2 to build and market energy-efficient "no-emissions" pre-fabricated homes.

### The ACES winners

The Microsoft Award went to Victor Henning, founder of Mendeley. Henning devised a desktop tool to extract information from research papers automatically and transform it into a structured database. The database syncs to a web account, creating the first global research collaboration platform and database.

Highlighting the potential of cloud computing to drive new business models, Mendeley's database contains 50 million unique documents, created through crowd sourcing by a global user base of 1.3 million researchers.

The Life Sciences Award went to Quentin Pankhurst, founder of Endomagnetics Ltd. Pankhurst created an ultrasensitive hand-held probe for identifying the "sentinel" lymph node biopsies in breast cancer patients using advanced magnetic sensing technology and nanotechnology. The probe was developed as a cost-efficient solution to the existing use of radioisotopes, a more expensive diagnostic approach not available to all patients.

The New Materials and Engineering Award was won by Michael Lampérth, who launched EVO Electric around breakthroughs in electric car technologies. Lampérth designed and integrated high-torque electric motors and generators based on axial flux technology, providing benefits in cost, efficiency, torque and power density. EVO Electric's technologies are aimed at hybrid and electric vehicle drive systems, wind power generators and mobile power systems. EVO Electric is an associate member of the EIT's Climate-KIC.

The Young Entrepreneurs award was granted to Tamas Haidegger of Clariton. Haidegger developed a hand hygiene system called "Hand-in-Scan" to help fight against healthcare associated infections - which kill 37,000 in Europe annually. The scan system uses ultraviolet light and digital imaging to highlight disinfected versus unclean areas after a regular hand washing and provides an overall quality score. The system provides real-time objective feedback to the user and aims to teach medical personnel how to wash their hands more effectively to reduce hospital-linked infections.



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# Help Wanted

## ENGINEER

### Product Support

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# 2 Can entrepreneurship and innovation drive growth?

Policy makers have put innovation and the promotion of entrepreneurship at the heart of economic rejuvenation plans. But can start-ups seriously be expected to end unemployment overnight? Nuala Moran reports.

**There's a long lead time from forming a spin-out to developing products, building markets, creating jobs and generating growth, raising the question of whether politicians should be hanging hopes of recovery on entrepreneurship and innovation.**

The biotech and pharmaceutical industry is a notable example of long lead times, with novel drugs taking ten or more years to get from bench to bedside. But, said Alexander von Gabain, Chairman of the Governing Board of the European Institute of Innovation and Technology (EIT), approval of a new drug is not the point at which impact begins. "It's not the product, it's the growth stage of companies that creates jobs and is changing the landscape of the continent," he told the Science|Business European Entrepreneurship Summit in Brussels on 21 February.

Von Gabain observed this at close quarters as the founder of Austrian vaccines specialist Intercell. At the

point he set up the company as a spin-out from the University of Vienna in 1998, the Campus Vienna Biocentre did not have a single biotech. Since then, the campus has seen investment of €100 million in infrastructure and the building of new research institutes, and the ten biotech now based there employ 300 staff.

## Fertile soil

The current emphasis on innovation and entrepreneurship is appropriate because it takes "more than universities and well-educated people to spur growth," von Gabain said. What is needed is "fertile soil" and a network of individuals who are "willing to take ideas and drive them forward."

A biotech start-up may take a while to create jobs, but other flavours of innovation can have immediate impact, believes Anne Glover, the European Commission's recently appointed Chief Scientific Adviser in the Cabinet of President Barroso. She cited the way in which mobile

phone networks are supporting serial innovation, such as the introduction of mobile online banking. "Science underpins this," Glover said. "Knowledge is transferred through the innovation process into the economy."

## Viral infection

The boom years up to 2008 made Europe complacent. "It seemed okay just to do things the same, but now we have the opportunity to do things differently," Glover believes. This will stir the economy. "It's a bit like a viral infection – one person does [something] and then another follows," said Glover.

Maria da Graça Carvalho, a Member of the European Parliament (MEP) and former science minister of Portugal, noted that while knowledge transfer can take time to have a social and economic impact, the pipeline requires sustained support. Projects financed by the European Union some years ago, in areas including aeronautics, car manufacturing and air quality, now underlie marketed products in sectors where Europe is globally competitive. "We have to keep feeding the pipeline and to continuously sponsor research in general," said Carvalho.

This is why it is important to tie the Horizon 2020 research programme so closely to the agenda for jobs and growth, and why MEPs have voted to increase the budget for the 2014 – 2020 programme from the €80 billion proposed by the Commission, to €100 billion, Carvalho noted.



Member of the European Parliament Maria da Graça Carvalho (EPP-PT); Alfons Saquet, Dean of ESADE Business School; Anne Glover, EU Chief Scientific Adviser and Alexander von Gabain, Chairman of the EIT Governing Board, debate Europe's innovation future



Alexander von Gabain



Robert Sorrell



Maria da Graça Carvalho

### Think differently

From his perspective as Dean of ESADE, one of Europe’s leading business schools, Alfons Sauquet said one of the key ways to spur innovation is to provide young people with the opportunity to think differently. “If you want to create entrepreneurs you have got to change the way students are addressed, and give students control. However, academics don’t feel comfortable about this,” Sauquet said.

At the same time as developing the entrepreneurial mind-set it is important to get small and large companies interacting through open innovation. Small companies “can’t build value” without large companies, while large companies “don’t become innovative” without prompting from their smaller counterparts, Sauquet observed.

Robert Sorrell, Vice President of Private Partnerships at BP Research and Technology, described his direct

experience of this phenomenon, saying it is easier for BP to assess a new technology through a relationship with a fast-moving SME, than to explore it in house. “We learn very quickly about the market,” Sorrell said. At the same time SMEs get the benefits of having an experienced corporate partner. “There is potential for SMEs to grow and develop further,” said Sorrell.

### Bureaucratic hurdles

SMEs are a fount of new ideas, but often the amount of paper work involved deters them from taking part in collaborative projects, noted Ludo Lauwers, Senior Vice President of Research at Janssen Pharmaceutica. While there are some good efforts to work together to increase the productivity of pharma and biotech – most notably the €2 billion Innovative Medicines Initiative – this bureaucracy creates a hurdle for small companies. “We need to beef up efforts to involve SMEs,” Lauwers said.

But there is a barrier do doing this because innovation does not sit well with the traditional system of applying for and awarding research grants, noted Anders Flodström, Vice Chairman of the EIT’s Governing Board. “Since there is no KPI [key performance indicator] for innovation it is difficult to have an EU instrument that is both satisfactory in terms of accountability and in terms of how innovation works,” he said.

# 3 EU seeks to bolster 'Innovation Factories'

As the European Parliament prepares to debate the future of the EIT, entrepreneurs are urging MEPs to cut bureaucracy and back market-focused research. Gary Finnegan reports.

Europe needs to bridge the gap between university researchers and innovative industries if high-end technologies are to help solve major societal challenges. That was the message entrepreneurs had for the European Parliament as MEPs prepared to work on a series of major reports designed to reshape the EU's research funding landscape.

Winners from the first annual European Institute for Innovation & Technology (EIT) Entrepreneurship Awards were in the Parliament on 22 February 2012 to offer insights regarding their experience with the EU's funding programmes and the support they received from the EIT in particular.

MEPs were gearing up for a crucial period in preparation for the seven-year funding period for EU research which begins in 2014, according to Marisa Matias, responsible for drafting the Parliament's report on the Strategic Innovation Agenda (SIA).

Matias' work will help determine

the future direction of the EIT, and is one of six reports the Parliament is developing in response to the European Commission's €80 billion Horizon 2020 R&D programme.

## KIC-starting innovation

Matias, who has first-hand experience of applying for EU funds during her time as a young PhD researcher, said linking education and industry should be a priority.

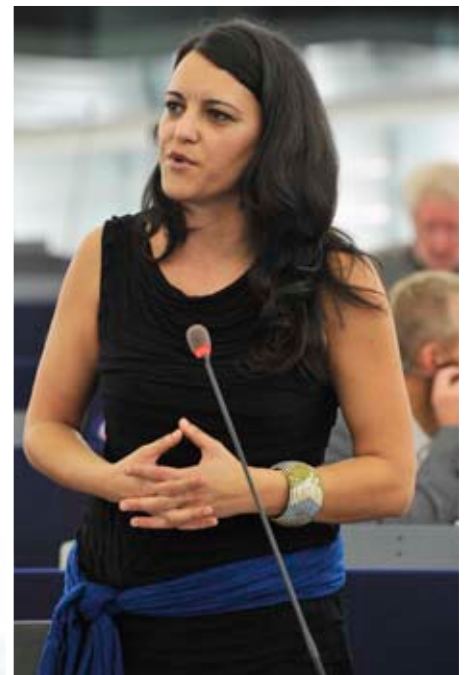
"We must try to develop existing KICs further and to disseminate the results of their work. There is a lot of work to do in order to make the EIT an established part of Europe's research and innovation system," she said.

She said that applying for funding from FP7 – the predecessor to Horizon 2020 – was hindered by many bureaucratic obstacles. "As a researcher, it felt like I was a lab mouse participating in an experiment. The system was bureaucratic regardless of how much money you were asking for."

## Dutch lessons

Portuguese MEP Maria da Graça Carvalho, who wrote the Parliament's report on simplifying the EU research funding system and is now a rapporteur for Horizon 2020, said it was significant that the EIT has been included in the Horizon 2020 programme.

"One of the big differences between Horizon 2020 and FP7 is the strong focus on promoting entrepreneurship and innovation. We must now work



**Marisa Matias,**  
Member of the  
European Parliament





Patrick Duessel,  
Trifense



Maria Lijding,  
Smart Signs

together to advance programmes which can improve the quality of life of Europeans," she said.

Among her suggestions for improving the Horizon 2020 proposal is to borrow the concept of the Dutch Small Business Innovation Research (SBIR) programme, which sees entrepreneurs pitch their ideas in a 15-minute presentation. The decision on whether to fund the proposal is then made quickly without the need for undue bureaucracy.

This was music to the ears of entrepreneurs who need to deal with considerable amounts of paperwork when applying for EU funds and accounting for how they are used.

Alexander von Gabain, Chair of the EIT Governing Board, said the EIT could help research-oriented start-ups to bring scientific breakthroughs to the market. He said the KICs are run with a commercial mind-set and are expected to regularly review their business plans in order to ensure they are developing products

consumers want.

Von Gabain referred to the KICs as "innovation factories" which support young innovators in developing their ideas. The key to their success is bringing together industry and academia in one location to share ideas and turn them into products and services.

"We meet KIC CEOs regularly to talk about road ahead. That's the difference between being a business and professors writing a grant for long-term funding," he said.

### Winning ideas

The gulf between entrepreneurs and academic researchers was a common theme when the EIT Entrepreneurs spoke of their experiences working with KICs.

Rosa Vilarasau of Think CO2, which has developed energy-efficient prefabricated homes, said the practical benefits of KIC membership

include help with fine-tuning business plans and identifying market niches.

Think CO2 was nominated by KIC InnoEnergy and hopes to start selling later this year. In the meantime, with the help of partners in the KIC, the company is working on ways to streamline its production processes to make it more efficient. Think CO2 won the EIT Entrepreneurship Award for sustainable energy.

Also aiming to make buildings greener is Christophe Williams. The founder of Naked Energy – a green energy start-up – and winner of the EIT Climate Change Award, said getting products to market requires the support of experienced partners.

"When you're a small business it can be a lonely experience. We joined the Climate KIC in 2011, which helped



Christophe Williams,  
Naked Energy



Rosa Vilarasau,  
ThinkC02

us to work with Imperial College London and allowed us to tap into an enormous network," he said.

"When we first worked with universities we were quite concerned. Engineers worry that universities work at a slower pace, and for SMEs time-to-market is so important. The EIT gave a fuel injection to make sure progress happens at the right pace."

Naked Energy has developed a solar hybrid module which they believe can radically reduce energy consumption and waste. They plan to market their product to hospitals, schools and hotels before targeting the domestic building sector.

Williams added that the academics he worked with were particularly dynamic and business-minded, but other entrepreneurs suggest industry and academia have distinct cultures.

### Wanted: cultural exchange

Maria Lijding of Smart Signs has made the switch from university researcher to entrepreneur and believes a "mind-set shift" is required. Lijding, whose firm has developed technology that allows people to find their way around a building they are not familiar with, said businesses must answer to the market whereas academics often follow their own interests.

"In business, you have to shelve many of the ideas you have because, while your ideas may seem interesting to you, it won't make it on the market if it doesn't help anyone," she said.

For Trifense Managing Director and co-founder Patrick Duessel, access to academic expertise was crucial to the development of his company's highly sophisticated product. Trifense is a spin-out firm from the Technical University of Berlin and began as an innovative research project.

By claiming the EIT ICT award, Trifense hopes its self-learning network security products will be able to win a slice of the fast-growing cyber-security market. The company can help large organisations in the public and private sector to defend against cyber attacks coming from unknown sources.

Duessel acknowledges that the transition from the lab to the boardroom can be challenging. "On the one hand you have universities and on the other hand you have businesses. In between you have a gap – not just a funding gap but attitude gap."

He said the EIT and EIT ICT Labs could help to fill that gap by facilitating the transfer of research from the lab to the market.

# 4 Making industry-university partnerships work



**Long-term strategic partnerships between universities and industry that run for 5 to 10 years are the most productive at driving innovation. Universities and industry have been collaborating for over a century, but the rise of a global knowledge economy has intensified the need for strategic partnerships that go beyond the traditional funding of discrete research projects.**

**World-class research universities are at the forefront of pioneering such partnerships. They are designed to run longer, invest more, look farther ahead and hone the competitiveness of companies, universities and regions.**

In short, they transform the role of the research university for the 21st century, anchoring it as a vital centre of competence to help tackle social challenges and drive economic growth.

Science|Business Innovation Board AISBL, a not-for-profit scientific association created to improve the climate for innovation in Europe, commissioned a report in January 2012 aimed at addressing the challenge of bridging the industry-university divide. It highlights what makes universities attractive as industry partners, what structures make for excellent partnerships and what approach produces seamless interactions.

## Key lessons on making industry-university partnerships work:

1. University leadership is vital
2. Long-term strategic partnerships with built-in flexibility work best
3. Start with a shared vision and develop a strategy
4. Put the right people in charge – those who cross boundaries
5. Kick-start the dialogue – encourage cross-fertilisation of ideas
6. Don't get hung up on intellectual property (IP)
7. Promote a multidisciplinary approach to research and learning
8. Don't get hung up on measuring the results of a strategic alliance
9. Redefine the role of the research university as a source of competence and problem-solving for society

## The empirical lessons in this research lead to some clear policy conclusions. They include:

1. Keep the ship steady. Policy makers need to ensure a predictable, stable environment of funding and regulation for long-term strategic partnerships to thrive.
2. Give universities the autonomy to operate effectively, and form partnerships. The best people to decide a university's strategy are its own board and faculty heads, not government ministries. Without freedom to operate – with appropriate checks and balances – they cannot form effective partnerships.
3. Reward activist, collaborative universities – and encourage more to be that way. Funding incentives work: government policy should reward, or at least not discourage, universities and companies that form strong partnerships. New government programmes, such as proposed by the EU and some national governments, should entice others to take the same step.
4. Help universities strive for excellence. Companies want to work with the best – and so Europe must take care always to feed and promote its best universities, in order that more job-creating partnerships can be formed.





Download the *Making Industry  
University Partnerships Work*  
research report for free at  
[sciencebusiness.net/innovationboard](http://sciencebusiness.net/innovationboard)





ACES Young  
Entrepreneur Award  
winner Tamas  
Haidegger took tip  
number 3 to heart



Abionic's CEO Nicolas  
Durand shows off  
his product to the  
judging panel

# 5 So you want to be an entrepreneur?

**Start-up entrepreneurs learnt how to pitch their companies at a joint EIT and Science|Business master class. Peter Koekoek reports.**

**One of the first things company founders with a great idea or product must do is raise growth capital. The so-called “elevator pitch” is a 3-minute summary aimed at convincing potential investors to open their wallets.**

It's all about delivering the right information with panache. Science|Business organised a master class for the finalists of its annual Academic Enterprise Awards (ACES) and European Institute of Innovation and Technology (EIT) Awards to help new entrepreneurs learn what to do, and maybe more importantly, what not to do.

A group of twenty-one company founders from across Europe joined the master class in elevator pitching, to prepare for the joint Academic Enterprise Awards (ACES) and EIT Awards which took place in Brussels.

The entrepreneurs received advice from Antti Aarnio, business development manager at Aalto University; Bill Magill, associate director of science entrepreneurship at INSEAD; and Duane Schulthess, commercial director at Science|Business.

All finalists pitched their companies to a panel made up of the Science|Business Innovation Board and the European Institute of Innovation & Technology (EIT) Governing Board at the Science|Business Entrepreneurship Summit in Brussels.



**Pitches were strictly limited to three minutes, which was announced by a gong**

## Ten tips for convincing the world that your company deserves funding:

1. Open your pitch with a clear hook: what is your promise?
2. Your pitch should be an easy-to-repeat story: tell a great tale and leverage the power of word-of-mouth
3. Use props. They are powerful tools to communicate quickly
4. Keep PowerPoint presentations short and snappy. Slides should aid your story, not duplicate it
5. Have one lively individual make the pitch. Don't use a team of presenters
6. Be credible. Unrealistic claims such as "There's no chance this can fail," will hurt your credibility.
7. Focus on the product and the market. Don't dwell on your team bios.
8. Demonstrate that you know your customer and the market
9. Never pitch without a strong closing
10. Film yourself: watch the video and learn from your mistakes

# 6 Seeds of entrepreneurship - Nothing ventured

**The decline in venture capital funding means that seed funds are even more important to technology start-ups. Michael Kenward reports.**

Seed funding for tech start-ups is under pressure as venture capital struggles to survive the recession. In a session on financing entrepreneurship, Axel Polack, general partner at TVM Capital, warned the European Entrepreneurship Summit in Brussels that in Europe "we are losing investors into venture capital left and right. There is a dramatically shrinking VC industry."

In Germany, Polack warned, without super angels "it would be really really grim". Super angels come in at a later stage in the development of a business and back more mature companies with larger amounts, he explained.

While angels and VC funds are the traditional sources of backing for new businesses, Edward Astle, Pro Rector Enterprise at Imperial College London, described a growing new source of early stage funding for university spin-outs. "One opportunity for filling the pre-seed – the very early stage – gap is a small number of organisations focused purely on this."

Astle explained that organisations like IP Group, Imperial Innovations and, more recently, MTI raise money to fill this gap. In all, these three funds have raised well over £300 million to focus purely on this early stage gap. "It shows that the market place can actually deliver part of the solution," said Astle.

Early stage investment was a recurrent theme of the session. However, for most of the spin-outs in the audience, the challenge is to find angel investors who will not only finance their ideas but who can also act as mentors. The people behind the ventures are often young researchers with little business experience. They need "intelligent money" from people who can guide them through the creation and growth of a business.

Bill Magill, associate director of Science Entrepreneurship at INSEAD, suggested that budding entrepreneurs should seek out local



**Bill Magill, Associate Director of Science Entrepreneurship at INSEAD (left) with Edward Astle, Pro Rector Enterprise at Imperial College London**





**Axel Polack, General Partner, TVM Capital GmbH**

angels. He pointed out that angels are often people who have made money out of starting their own tech businesses. This puts them in a good position to back businesses in other ways than by providing purely financial backing.

The theme of helping young companies to develop also ran through the event. Speakers described new ways in which universities support business development. For example, Magill described how INSEAD brings researchers together with students on its MBA courses. Together they can develop a business idea to the stage where it might appeal to angel investors.

Johan Bruneel, assistant professor in the Imperial College Business School in London, described an initiative at Imperial College on Innovation, Entrepreneurship and Design. This brings together engineers, academics, MBA students and designers from

the Royal College of Art. They work together for six months to come up with a fully elaborated business plan. Here, too, there are opportunities to present to angel investors.

Such initiatives work only if researchers are interested in developing their ideas commercially. With experience in Silicon Valley, Magill brought different cultural insights to the session. In Europe, he said, "there is a lack of Silicon Valley type ambition in the research laboratories that I visit."

In the USA, he explained, go to a university and "if an investor is in the hallway, you are absolutely swamped" by people wanting to talk to you. By contrast, he continued, in Europe the technology is absolutely incredible - "as good as anything I see in the States but they have no interest really in carrying it forward."

# 7 How to turn your researchers into entrepreneurs

To create spin-offs and boost tech transfer, universities must actively help young researchers to become entrepreneurs. Michael Kenward reports.



**Researchers turned entrepreneurs are providing an increasingly significant channel for spin-off formation and technology transfer, making it ever more crucial that universities create a supportive environment for young researchers with entrepreneurial aspirations.**

There are several ways in which institutions can go about engendering such an environment, according to contributors to the session, Spinning out – Tech Transfer Strategies, at the Science|Business European Entrepreneurship Summit.

For Karen Maex, vice-rector science, engineering and technology at KU Leuven, one way to encourage and help young researchers to transfer their technology - and to promote entrepreneurial thinking - is for them to mix with the right people. At KU Leuven, she explained, "We pay a lot of attention to making sure that our students at masters' level and at PhD level come into contact with entrepreneurship and everything that is related to that."

## Ingredients for technology transfer

Support for aspiring entrepreneurs can come through training, access to facilities such as incubators, and – perhaps most important – introductions to networks of entrepreneurs and people who can guide, and possibly even fund, their business development.

These are all ingredients of the portfolio of support for technology transfer that the three Knowledge and Innovation Communities (KICs) in ICT, Climate and Energy are developing on behalf of the European Institute of Innovation and Technology (EIT).

## Sharing entrepreneurial knowledge

Young entrepreneurs also benefit from the ability to share knowledge with people in the same position, as Gandert Van Raemdonck, chief technical officer of Ephicas, described. Ephicas, winner of a Science|Business Academic Enterprise (ACES) award in 2008, started life in an incubator at TU Delft. Not only

did the company pay a low rent, the founders worked alongside other start-ups. "We were all together. That is a really important part as an entrepreneur. You share your knowledge," Van Raemdonck said.

Companies can, for example, compare notes with other business in the incubator who have similar problems, such as dealing with IP rights and fund raising.

The Climate-KIC also recognises the importance of incubators. "We have incubators in many partner [institutions]," said Mary Ritter, CEO of the Climate-KIC, which is creating a network of incubators in its co-location centres in France, Germany, Switzerland, the Netherlands and the UK.

## Welcome to the Hotel Incubator

As well as comparing best practice, the network will also look at how the incubators vary in the types of assistance they provide. In this way,

entrepreneurs will be better informed as to which incubator provides the support they need. Think of it like hotels, Ritter suggested. "It is not necessarily the quality, it is the facilities that are offered."

Marco Waas, knowledge valorisation portfolio holder at TU Delft, who is managing this activity on behalf of the Climate-KIC, said it is also intended that the network of incubators will facilitate connections with venture capital. The network will do this by becoming what is effectively a "virtual cluster" with the stature to attract investors who might otherwise not be interested in smaller groups.

As CEO of the Climate-KIC, Ritter is on the front line of some new initiatives that are trying to engender a more entrepreneurial environment in Europe and inject more entrepreneurial thinking into European research. For Ritter it takes three things to be an entrepreneur. First, it must "be in your DNA." Second it is crucial to have knowledge of the relevant sector. The third component is experience.

### The Journey

The Climate-KIC is aiming to help young researchers accrue that experience through one of its programmes, called "The Journey," in

which MSc and PhD students spend five weeks travelling around the KIC's co-location centres, visiting companies, universities, local government and other organisations. This shows students "what is happening on the ground, what the problems are," Ritter said. One of the most eye-opening visits was to Utrecht, where student gathered real insights into local problems. For example, Utrecht has carbon targets that it does not know how to address.

Following the five-week tour, students have business coaching and can pitch ideas for businesses they would like to set up. Successful students can apply for money and time in an incubator to develop their ideas. Ritter said this scheme is delivering results already, with four ideas attracting external funding.

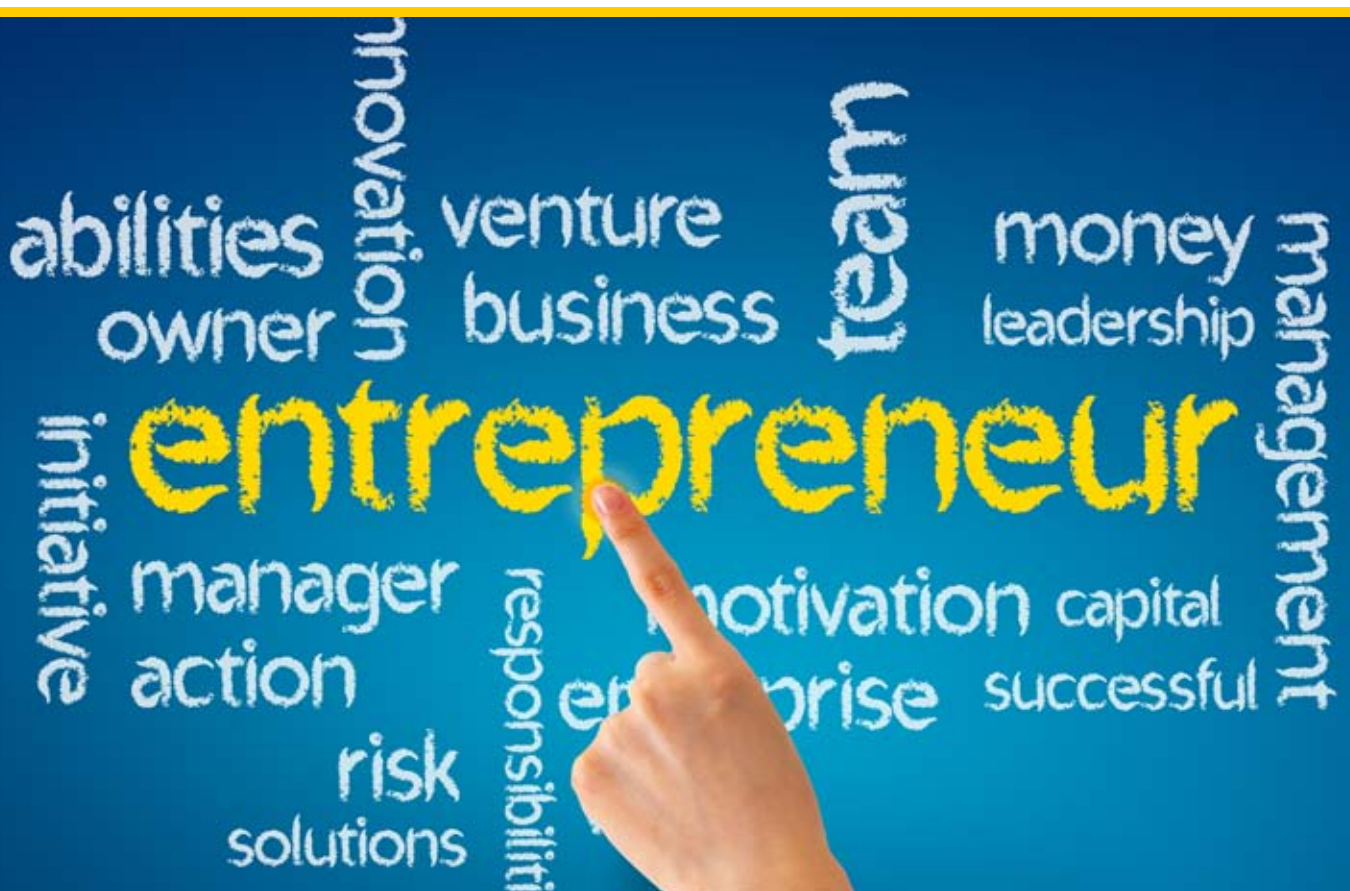
### Alternative avenues

But in all of the talk of creating the right environment for young entrepreneurs, speakers stressed it is important to recognise the other routes for technology transfer, "There are many different ways to do technology transfer and knowledge exchange. We should just be aware of them and use them all," said Ritter.

It is also important to recognise that the flow of knowledge is not a

one-way process. Maex warned that talk of technology transfer itself can be misleading. In her view, it is important to think of the two-way flow of knowledge between universities and businesses.

Maex also emphasised the importance of looking beyond the spin-offs and transfer of patents, which grab most of the attention when talking of technology transfer. "This is important, but there is also a lot of collaborative research that is also extremely important and beneficial for the growth of technology and the collaborative partnerships between universities and industry at large."



# 8 TU Berlin finds the right formula for nurturing entrepreneurs

Start-ups are multiplying despite tough economic climate. Gail Edmondson reports.

**The Technical University of Berlin excels at churning out top engineering and science graduates, but lately it has started minting something new – technology entrepreneurs. Over the past four years, TU Berlin students and researchers have created an average of 33 start-up companies a year, more than double the rate of the previous four years.**

That's a company-creation pipeline that ranks among the best at European universities, including those where entrepreneurship has a longer and deeper tradition, such as the University of Cambridge or ETH Zurich. The relatively rapid creation of a hotspot for entrepreneurship at TU Berlin, despite a tough economic environment, holds valuable lessons for other universities keen to support the same dynamic.

Most important is getting the ecosystem right, says Agnes von Matuschka, co-director of the TU Berlin Center for Entrepreneurship. In addition to courses and incubator space, company founders need regular contact with business angels,

venture capitalists, entrepreneurs, service providers, role models, developers, analysts, headhunters, alumni and corporations – a networking community to help guide their idea to market.

The three-year-old Centre for Entrepreneurship is a one-stop shop for students and researchers and a key catalyst. The number of start-ups at TU Berlin rose sharply after the first supporting activities were launched in 2007. At one-day business modelling workshops, for example, five external experts evaluate students' business plans and tackle their problems.

Before designing the TU Berlin Centre for Entrepreneurship programme, its staff benchmarked successful counterparts at Stanford, MIT and ETH Zurich. Sixty per cent of TU Berlin's start-ups are IT companies. "It's not a miracle what we do. The US tested the approach 20 years ago, and we took it over," says Jan Kratzer, chair for entrepreneurship and innovation at TU Berlin and co-director of the Centre for Entrepreneurship.

The TU Berlin centre now employs a staff of 25 professionals who coach TU students, researchers and professors on how to set up a company, obtain venture capital and win government grants to commercialise their technology. Kratzer and von Matuschka also personally contact 50 professors a year for new ideas and help mentor students keen to create a company. "The strategic cooperation between my chair and the start-up service was a milestone," says Kratzer. "It linked the faculty to the administration. Entrepreneurship became more popular and more professors became aware of the centre's programme."

Equally important, the centre connects entrepreneurs with the community of investors and external players interested in backing new technologies and innovation, including international contacts. "A community has formed with events and places where entrepreneurs can meet," says von Matuschka, noting that a small core of promising companies have received international financing.



Bringing alumni closer to the university and its start-ups is another key to TU Berlin's success growing start-ups. The centre's staff compiled a book profiling TU Berlin's start-up successful entrepreneurs and they are regularly invited to participate in lectures and workshops. "We've succeeded in opening doors and winning them over as mentors, teachers and angels," says von Matuschka.

In 2011 TU Berlin garnered an accolade as one of Germany's top three entrepreneurial universities. Each received a €3.2 million grant from the German Ministry for Economy and Technology to improve the culture for start-ups at the university. "It's an excellence programme in entrepreneurial climate and support," says Kratzer.

In fact, German government programmes are now better designed and more effective at supporting the efforts of universities such as TU Berlin. They include monthly stipends of up to €2,500 for researchers interested in commercialising their technology, an accelerator programme to help German start-ups establish US subsidiaries and apply for US patents, and a matching-funds programme for business angels. Students who win the so-called EXIST start-up awards receive up to €17,000 for creating a prototype and €5,000 for coaching.

Since 2010, TU Berlin also has benefited from European Commission efforts to promote entrepreneurship on campus through the European Institute for Innovation and Technology (EIT). In 2010, the EIT launched three pan-European Knowledge and Innovation Communities (KICs) that link universities and industry and promote innovation and start-ups. TU Berlin participates in two of those communities – EIT ICT Labs and Climate-KIC. "Through the KICs, we have close partnerships with industry – it's a door opener," says Kratzer.

Each KIC runs a summer coaching and pitching competition for student entrepreneurs, including sessions on partner university campuses to build international ties. "The KICs have provided an opportunity to enlarge the scope of our world," adds Kratzer.

Despite TU Berlin's achievements, Kratzer and von Matuschka say there is more work to do. Fifty per cent of the centre's work still focuses on inspiring students and researchers to consider an entrepreneurial path whereas at universities in the US or Israel, the interest is already there. "Germany started developing an entrepreneurial culture on campus quite late," explains Kratzer, noting that the country's first professor for entrepreneurship was created in 1999. His own chair for entrepreneurship at TU Berlin was created in 2009. "For 10 years [of effort], we have a fine result. Ten years from now, I think we will be able to overcome the negative image of entrepreneurship in Germany," he says.

Of course, the real test is making sure university start-ups survive and grow. TU Berlin recently linked up with the University of Karlsruhe and the Technical University of Munich to study the survival rate of their combined pool of start-ups. The first assessment is due in November. If the survival rate for the first five years is high, this new crop of German start-ups will mark not only a breakthrough in teaching entrepreneurship, but also a critical shift towards building a more innovation-driven European economy.



# 9 It's a small world – Making EU initiatives SME-friendly

It can be difficult for technology start-ups to locate the support and finance needed to grow. Nuala Moran reports.

**Small is beautiful in the world of innovation. But while technology start-ups may be fleet of foot, it can be difficult for them to find time to look up from the task in hand and go prospecting for the support and finance needed to grow.**

Yet Europe's legions of SMEs now find themselves at the nodes of open innovation networks, responsible for teasing new research and technologies out of universities and developing them to the point where they are of interest to large corporations.

This is very much the case in the pharmaceutical industry. "Business models are changing and new forms of collaboration increasingly rely on spin-offs," Richard Bergström, director general of the European Federation of Pharmaceutical Industry Associations told the Science|Business European Entrepreneurship Summit on 21 February 2012. "My members are putting a lot of effort into trying to work out how to help small companies to grow so they can buy them," Bergström said.

In recognition of the role start-ups play in the engine room of innovation, the

European Commission is working to deliver policies that are SME-friendly. For example, helping SMEs make connections is a key activity of the European Institute of Innovation and Technology (EIT), noted Willem Jonker, CEO of ICT Labs, which is one of three Knowledge and Innovation Communities (KICs) set up by the EIT to underpin its work in promoting innovation across Europe. "We are focussing on SMEs that want to grow, assisting them with growth strategies and connecting them to markets they can't easily access," Jonker said.

The three KICs are co-located in different centres across Europe, making it simple for SMEs to engage. "Rather than them coming to us, we come to them," said Jonker.

The European Investment Fund (EIF) is another initiative tailored for SMEs, aiming to simplify access to capital. "Over the past ten years we have developed into the backbone of European venture capital, investing €6 billion in 350 funds, and also providing loan guarantees," said Jacques Darcy, head of division, Technology Transfer at the EIF.

Similarly, the European Enterprise

Network, funded by the European Commission, offers a range of services across Europe for SMEs, through chambers of commerce, business incubators and banks, noted Georgios Lemonidis, deputy head of the unit of financing, innovation and SMEs at the Directorate General for Enterprise and Industry at the European Commission.

While chambers of commerce can provide local knowledge about legal requirements to SMEs based anywhere in the EU, incubators are able to handle technical questions. "A typical query comes from SMEs with new products, looking for advice on commercialisation – how to get a CE marking for example. The network handles thousands of questions of this kind every week," Lemonidis said.

There are plans in hand to expand the type of information available through the European Enterprise Network, to include for example, mentoring and help with business plans. Other schemes are in development to assist SMEs and to back up Horizon 2020, the European Commission's €80 billion R&D programme, which will run from 2014 to 2020.

Rouget Henschel, partner at the law firm Foley and Lardner LLP, suggested the EU could learn from some of the US government schemes for supporting SMEs. "For example, the government in the US has taken a more intensive approach in terms of customer service. Agencies are told to treat people as customers and there is a visible effort to simplify communications," he said.

Meanwhile in Europe, "It's really difficult to piece together how things work, from the Commission to national and onto local bodies," said Henschel.



**Rouget Henschel,  
Foley and Lardner  
LLP**



# EIT ICT Lab Award winner Trifense fights the unknown cyber-threats

**A Berlin spin-out, named as the EIT ICT Lab Award winner, takes a new approach to providing cyber security – and starts to gain traction in the market.**

Anna Jenkinson

**Protecting a company or organisation against known cyber-security threats is one thing; protecting them against unknown cyber-threats is quite another. But that is exactly the goal of Trifense, a Technical University of Berlin spin-out named as an EIT ICT Labs finalist for the EIT Awards.**

"It is crucial for governments, operators of critical infrastructures such as utilities, and companies in all sorts of sectors from financial services to healthcare to be able to detect such risks and protect themselves against them," said Trifense Managing Director and co-founder Patrick Duessel. "A modern society can be vulnerable to pretty huge threats. Our technology can address this appropriately."

Trifense's self-learning technology allows models of "normality" to be learnt through incoming data known as network packet payloads. In this way, any deviation from the models can be detected and unknown cyber-threats entangled with the payloads can be recognised. The main difference between this and more traditional technology is that Trifense does not rely on any kind of pre-written description of the attack to spot the trouble coming. "This is a significant advantage over traditional

network security solutions such as firewalls or signature-based systems," Duessel said.

The company was founded in 2010, and in May 2011 Trifense secured its first customer, Astaro, an international network-security supplier, which is integrating Trifense's technology into its own products.

When Duessel and his co-founders Christian Gehl and René Gerstenberger drew up their original business plan, integrating their technology into others' products was not part of their thinking. The three computer scientists, who studied together at the University of Potsdam and later at the Fraunhofer Institute before the move to TU Berlin, had hoped to build their own hardware and sell directly to end-users. Talks with investors, however, highlighted the difficulty in raising enough money for such a plan and so they switched strategy to target companies like Astaro. "This cooperation is a big opportunity for us right now. It gives us hope that we'll make it," Duessel says.

Duessel is also encouraged by the interest from the German government. "IT security has a very high priority right now, and German politicians believe in the idea of Trifense. They take it seriously," Duessel said.

Proof is in the awards that Trifense has picked up. For example, in 2010, it won a competition funded by the Federal Ministry for Economy and Technology for founders of innovative ICT companies, known as the "Gruenderwettbewerb IKT Innovativ." In November 2011, the company was chosen for another ministry-supported initiative, the

German Silicon Valley Accelerator programme. As a result of that selection, Duessel gets to spend a few months in early 2012 in California's Silicon Valley and seek out business opportunities there.

All this means that Duessel's efforts are very much concentrated on developing and marketing the business, while the ongoing technology research is left to his colleagues. "I'd love to spend more time on the technical side. After all, I'm a computer scientist," says Duessel. "But it's really interesting to get a company up and running. I wouldn't want to miss out on this experience."



**Commissioner Vassiliou presents the EIT ICT Lab Award**





**The elevator pitch:** A premium supplier of innovative, high-quality network security technology to protect corporate networks against tomorrow's cyber-attacks.



# Climate-KIC Award winner: One man's journey from art to ads to solar panels produced Naked Energy

Artist-turned-entrepreneur Christophe Williams catalysed a London start-up and won the Climate-KIC Award

Anna Jenkinson

**For a career path, Christophe Williams has not made the obvious choices. He started at St. Martin's art college in London, and went on to be a creative executive in the ad world. But then he went solar, founding Naked Energy, a renewable energy company. And now his company has been nominated as a finalist in the European Institute of Innovation and Technology's (EIT) entrepreneurship awards.**

Williams is the first to say he has an artistic, not technological, background. Nonetheless, engineering isn't entirely foreign to him: his grandfather designed a renewable energy system in the 1960s and his father was a mechanical and aeronautical engineer. "It must have rubbed off on me," said Williams, whose own past projects have included working with the government on its global climate-change advertising campaign, "Act on CO2".

Soon after setting up Naked Energy in September 2009, Williams was joined by Richard Boyle and Norman Cottington, co-inventors and in Williams' words "virtually co-founders". Boyle and Cottington have been building and designing renewable energy devices for the

last 30 years and together came up with a new type of hybrid product that combines photovoltaic and solar thermal technologies to generate both hot water and electricity. These technologies are normally separate – one converting sunlight directly to energy, the other using it to heat water. But "with our system, end-users can have the best of both worlds," said Williams.

What differentiates Naked Energy from its hybrid competitors is that its product, which is being developed with Imperial College London and has already been patented, is a vacuum tube rather than the more familiar flat panel mounted on an A-frame rack. "No-one else is doing it in a vacuum configuration," notes Williams. A tube means more versatility in installation, he says, because it can be directed towards the sun if the roof is not directly south-facing, or it can be mounted on a flat roof. The vacuum improves insulation and energy efficiency. "You get a lot more useable energy per square metre than standard technology," he said.

The combination of photovoltaic and solar thermal technologies also means that in the UK end-users are eligible for two government subsidies: feed-in tariffs, for producing their own electricity from PV panels, and renewable heat incentives, for generating heat from solar thermal panels. While acknowledging that government subsidies provide a "massive" boost to the business, Williams is keen to point out that the company does not want to depend on such incentives. "We want to make a system that is so efficient that even if you strip away the subsidies completely, it will still give a good return on investment," he said.

Naked Energy's initial target market is the UK, mainly because that is where it is based, that's where its investors are from and that's the market it knows best. "But we're looking far beyond the UK," Williams said. "We've already had significant interest from around the world," he noted. For now the company's focus is on securing a second round of investment and optimising its demonstrable prototypes, with the aim of the technology being on the commercial market in the third quarter of 2012.

And does Williams ever miss his previous creative life? "Not at all. I love this adventure. The career change was a big risk, but now I get to work with professors and engineers, which is very stimulating. And it may sound a bit of cliché but we're also doing something for the betterment of society."

Naked Energy, nominated for an EIT Award by Climate-KIC, is one of nine finalists competing 21 February for recognition at Start-Up! The European Entrepreneurship Summit.



**Naked Energy's  
Christophe Williams**





naked energy™

**The elevator pitch:** Naked Energy has developed a hybrid product that combines photovoltaic and solar thermal technologies, generating both hot water and electricity and allowing the customer to get more useable energy per square metre than standard technology.

View the Naked Energy video profile  
[www.eitawards.eu](http://www.eitawards.eu)



# KIC InnoEnergy: Think C02 wants to build your ideal 21st-century home

Mobile, pre-fab and sustainable – that's what the modern dwelling needs to be, says a Spanish start-up named as KIC InnoEnergy winner

Anna Jenkinson

**Rosa Vilarasau was approaching her 40th birthday when she decided she had had enough of working for a Spanish confectionary company. "If I'm going to do something on my own, it has to be now," she recalls thinking to herself.**

So she contacted a university friend, Pol Guiu, and they started throwing venture ideas around. They finally hit on one that chimed with them both: designing the perfect 21st-century house. What's that? In their view, it's a sustainable, mobile home.

"You evolve as a person, but your home doesn't evolve with you," Vilarasau said, explaining how they wanted to free the home from the land and allow it to adapt to its owners' new job in a new city or a new addition to the family. "Technology allows this solution to be possible," said Vilarasau, who with Guiu founded the company Think C02 in December 2009.

The company's basic concept is an energy-efficient, pre-fabricated, modular house. Being a passive house, it uses minimal energy for heating or cooling the space: "This is the magic of it. You can run the house with almost nothing," said Vilarasau. Being pre-fabricated, it can be put up in four or five days and taken down in a couple of

days if it needs to be moved to a new plot. Being modular, it can be expanded if a bigger space is needed. In general, a "noem" (no emissions) home can be between 30 and 90 square metres; it can stand alone or be an annexe for a growing family or grandparents. The price range per square metre is €1,600 to €2,000.

The main structural material is solid pinewood from the nearby Pyrenees. In order to keep Think C02's carbon footprint to a minimum, the target market is Spain, Portugal, Andorra and France. In the future, Vilarasau would like to take the concept to the Alps, using local wood from the Alpine region. As well as residential buildings, other possible uses are ski resort accommodation and eco-luxury hotels, she noted.

A milestone for the company was presenting its prototype, which is now used as Think C02's office, at Solar Decathlon 2010 in Madrid. The years of development started to become reality, Vilarasau said.

Since then, the company has secured its first customer: a 74-square metre project for a family near Valencia. The customer approached Think C02 in spring 2011, explaining how their second residence was no longer big enough with the arrival of a grandchild; they wanted a green solution and one that could be built



Think C02's Rosa Vilarasau

by the summer. Think C02's team designed the house to the customer's specifications within 10 weeks and built it in five days. "It was fantastic," Vilarasau enthused. "The truck arrived on the Friday at 4pm and by the end of the day the first module was in place." Over the next few days, the different components were slotted into place and the dream became reality.

"We have proved that once you put know-how and passion together, you can make it happen," said Vilarasau.







**The elevator pitch:** A Spanish venture to build the ideal 21st-century home: mobile, flexible, and sustainable.



# Young Entrepreneur Award winner Clariton's hand scanner tackles hospital-induced infections

The winner of the Science|Business Academic Enterprise (ACES) award for entrepreneurs under age 30 – presented at the Royal Academy of Science in Brussels in February – deploys ultraviolet reflective powder and a scanner to determine just how clean are a pair of washed hands.

*Nuala Moran*

In 1847 the Hungarian Ignaz Semmelweis was the first clinician to demonstrate that hand washing reduces the incidence of hospital-acquired infections. Now 165 years later, his fellow countryman and Science|Business ACES Young Entrepreneur 2012 Tamas Haidegger is poised to deliver an automated test for verifying that healthcare workers have disinfected their hands.

"Alcohol-based hand rubs now used in hospitals are effective in killing 99.99 per cent of bacteria. The problem is, if you don't wash your hands properly, for the correct amount of time, the rub can't do its job," says Clariton founder and CEO Haidegger.

Rather than the laborious process of testing for bacterial contamination, the Hand-in-Scan device developed by Haidegger and his team at Clariton detects unclean areas of the hand instantly after users wash their hands with a rub or soap containing ultraviolet (UV) reflective powder.

Haidegger developed the system as device to teach the proper cleansing of hands, especially in medical centres. After washing, staff insert their hands into a reader with captures a UV picture. This is then transmitted to a laptop computer for analysis with image processing software written by Clariton. The software maps any variations in UV distribution, giving an objective assessment of how well the hands have been washed, and then provides an overall quality score.

As Haidegger notes, it is not just a case of getting this right once a day. The World Health Organization (WHO) has established five rules to guide medical staff on when hands must be washed, such as before touching a patient and after touching any body fluids. "We can do what no one else can do, which is to automatically monitor compliance of staff at all times," says Haidegger, who is also Clariton's chief technology officer.

The identity of the member of staff using the Hand-in-Scan system can be checked via the contactless RFID (radio frequency identification) badges now worn by most healthcare workers, and the read-out from each test reported back to the hospital's IT system.

Haidegger says Hand-in-Scan has the potential to significantly reduce the incidence of hospital-acquired infections, since an estimated 30 per cent of such infections could be prevented with proper hand hygiene and practice. Despite this promise, Haidegger was initially uncertain about becoming an entrepreneur. As a student at the Budapest University of Technology and Economics he took a number of courses on technology commercialisation and innovation. "All I heard was frightening stories about going bankrupt," he said.

The idea for Hand-in-Scan was initially suggested by a fellow PhD student. Haidegger found himself supervising the project and working with other students to develop a prototype. "It was at this point



Tamas Haidegger received his ACES award from BP's Robert Sorrell

A graphic featuring the Clariton logo (a green plus sign inside a circle followed by the word 'Clariton' in a blue box) on a light blue grid background. Below the logo is the text 'Visit Clariton online' and the website address 'www.handinscan.com'. At the bottom of the graphic is a large QR code.

# ACES

ACADEMIC ENTERPRISE AWARDS



that the Technology and Knowledge Transfer Office at the university told me 'this cries out for a business case'," Haidegger said. In September 2010 the university filed the patent, "Method and apparatus for hand disinfection quality control."

Crucially for the team of PhD students behind Hand-in-Scan, the filing of the patent freed the group to publish. "That was important for us in terms of our academic careers," Haidegger noted.

The patent filing also left Haidegger – as founder and CEO of Clariton – "desperate for funding" to test the technology in a live setting. Relief came in the form of an email from the government agency Contact Singapore offering grants for innovative ideas involving

clinical trials in Singapore. "We got the grant, and through that introductions to people who were prepared to incorporate our technology into a large-scale trial," said Haidegger.

The offer to take part in the clinical trial came through in March 2011, six weeks before the study was due to start, and left Haidegger struggling to raise the €6,000 he and his team needed to fly to Singapore with the Hand-in-Scan prototype and supervise its use in the trial. "I was finishing my PhD in April and at the same time trying to find the money," Haidegger said. "In Hungary raising €6,000 from nothing in six weeks is not easy; there was not enough time to apply for grants."

In the event, Haidegger succeeded. "This gave us the chance of lifetime to go to Singapore and apply our technology as part of a hand hygiene training programme involving 4,762 people."

Armed with clinical proof, Haidegger is now moving on to raise more money and commercialise Hand-in-Scan. "We are still in seed phase and negotiating with a lot of people," he said. "We can do the engineering: now it's about business development and creating trust with the customers."

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# The Microsoft Award winner Mendeley changes the face of science

ACES winner Mendeley is revolutionising the way research is done – using cloud computing to create the largest crowd-sourced library in the world. Its software lets academics organise and annotate journal articles, and share and discuss their work with researchers around the globe

Michael Kenward

The CEO of Mendeley, Victor Henning, and his two co-founders started down the path to entrepreneurship by solving a problem they had as PhD students – organising mountains of research. “Every academic has hundreds of PDF files that they need to manage for their research,” says Henning. Mendeley’s goal is to make that task “really easy.”

The five-year-old company provides intelligent database and collaboration tools for academics. Its desktop software allows researchers to drag and drop papers into cloud-based folders, and automatically extracts information from those PDFs to help researchers organise their work. Proprietary algorithms analyse the text to determine who wrote the paper, and when and where it appeared, the lifeblood of academic research. “Mendeley takes those PDFs and turns them into a structured database that is easy to search and sort and filter,” Henning says.

Since its launch in 2007, more than 1.6 million people have signed up for Mendeley’s free cloud- and crowd-based service, with 150,000 new users joining each month. Academics make more than 5 million visits a month to the Mendeley website, cataloguing, maintaining and sharing their research papers.

## Focus on quality

While the numbers may look modest alongside the billions of friends on Facebook and other social networks, Mendeley claims it is the world’s largest research collaboration platform and research database. Besides, the start-up’s focus is quality, not quantity. When Henning pitched Mendeley at the European Entrepreneurship Summit in Brussels in February, he listed MIT and

the universities of Cambridge and Stanford as its top users.

At the start, the founders of Mendeley viewed the project as a way of earning money to supplement their academic salaries. While Henning was working on a doctorate in psychology at Bauhaus University of Weimar, Jan Reichelt, now president of Mendeley, was researching information management at the University of Cologne, and Paul Föckler, the chief technical officer, was doing a PhD in computer science and media system science, also at Bauhaus University.

Although Henning and Föckler were both studying in Weimar, they were in different departments and had not met formally. The two, who knew each other by sight, formally met in Las Vegas where they were attending academic conferences and it was here they struck up a friendship, three years before Mendeley was formed.

## An incredible database

“When we came up with the idea, we planned to do it as a side project,” Henning says. The trio would write software and then license it out. They soon realised the huge, “potential in the idea of crowd sourcing”, says Henning. If they got millions of scientists to use Mendeley, he explains, “It would be an incredible database of research that would not have been available before.”

The Science|Business Innovation Board awarded Mendeley the Microsoft prize for the best company with a business model based on cloud computing, one of four Academic Enterprise Awards (ACES), presented at Start-Up – The European Entrepreneurship



Microsoft’s John Vassallo presented the ACES Award to Victor Henning



Summit held in Brussels on 21 February 2012. On the day before the ACES presentation, researchers had uploaded 800,000 papers to Mendeley’s database.

Using the Mendeley software, researchers can annotate their libraries of paper, as well as creating

# ACES

ACADEMIC ENTERPRISE AWARDS



## MENDELEY

collaborative groups to share and discuss their work. "Each document comes with unique user-generated social information," says Henning. Mendeley knows who people are, what they are reading, and what keywords they use. But, Henning insists, the company is more than just a social network. "Scientists are not known for being sociable," he jokes. "I have always seen social networks as being a subset of our functionality."

### Platform for scientific apps

Mendeley – which combines the names of two scientists, Gregor Mendel, the father of genetics, and Dmitri Mendeleev, who developed the periodic table of elements – is turning its database into a platform for developing scientific applications. More than 1,000 people have already signed up to create apps for such programs as "The visualisation of research, impact analysis and collaboration."

Though the founders started Mendeley with their own funds, the company quickly attracted venture capital. In a handshake deal, Stefan Glaenger, a serial entrepreneur and dot.com millionaire, invested €250,000 and became an adviser to the company as well as its executive chairman. Since then, Mendeley has attracted angel funding – now "in the high seven figures", says Henning – and has received research grants in excess of €3 million.

While Mendeley was founded in Germany, the founders moved the business to London's Tech City in 2008, both to be nearer Europe's largest venture capital market, including their own backers, and to be in the centre of one of the world's most active scientific research and publishing communities in the so-called "Golden Triangle" of Oxford, London and Cambridge.

### Revenue growth

Henning sees multiple sources of revenue growth for Mendeley. The company has started to collect a share of the income generated by applications writers. Companies and universities have also taken out licences, allowing them to use the software to manage research portfolios across their organisations and to improve collaboration among researchers. By providing such connections, Henning believes that Mendeley could become a portal for Open Access journal publication.

In presentations, Henning proudly quotes Werner Vogels, the chief technology officer of Amazon.com who commented, "I strongly believe that Mendeley can change the face of science." Given how it has tapped cloud computing to transform the ability of academics to organise their research, Mendeley already has.

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# ACES winner Endomagnetics shows how magnetic particles can fight cancer

In one of the first clinical applications of magnetic nanoparticles to reach the market, Endomagnetics has developed a technology that offers a safer, cheaper way to detect whether breast tumours have spread

Nuala Moran

**A childhood fascination with magnetism is about to translate into a significant advance in the treatment of breast cancer, which will at the same time improve safety and reduce costs.**

"As a child, playing with iron filings, I was enthralled to be able move them around with a magnet without touching them," Quentin Pankhurst, professor of physics at University College London, recalls. Many years and a few detours later, he has turned his fascination with magnetism into a technology that is poised to improve the treatment of breast cancer. The company he founded, Endomagnetics, is the winner in the Life Sciences category of the Science|Business ACES Awards 2012.

The aim of Endomagnetics' technology is to replace the unstable radioactive isotopes that are now used to assess if a breast cancer has spread beyond the primary tumour, with a safer, cheaper and easier to use magnetic tracer.

Such assessment is important, because if a tumour has not spread, its surgical removal and a short course of radiation is sufficient to

bring about a cure. But if cancer cells have broken off from the primary tumour and moved into the surrounding lymph nodes, a patient will need more drastic radiotherapy and/or chemotherapy.

The current test involves injecting a radioisotope into the site of the primary tumour and tracing this to find the closest lymph node. This node, called the sentinel node, can then be removed at the same time as the tumour. If the subsequent analysis indicates the node is cancerous, radio- and chemotherapy can be administered. If not, the patient is spared debilitating, unnecessary and expensive treatment.

## Hard-to-handle isotopes

Although radioactive tracing has been shown to improve survival outcomes, only one in six of women diagnosed with breast cancer each year are assessed in this way, according to Pankhurst. "The reason is that it relies on hard-to-handle radioisotopes," Pankhurst told Science|Business. In the absence of sentinel node analysis the tendency is play safe and administer radio- and chemotherapy "just in case".



Quentin Pankhurst received his ACES Award from Janssen Pharmaceutica's Ludo Lauwers

A graphic element featuring the Endomagnetics logo at the top, which consists of the word "ENDOMAGNETICS" with a blue plus sign inside the letter 'O'. Below the logo, the text "Visit Endomagnetics online" and the website address "www.endomagnetics.com" are displayed. At the bottom of the graphic is a large QR code. The entire graphic is set against a light blue grid background and has a yellow envelope-like top edge.

# ACES

ACADEMIC ENTERPRISE AWARDS

In 1986 – before the science of the very small was officially labelled nanotechnology – Pankhurst developed magnetic nanoparticles during his PhD research at Liverpool University. An academic career followed and it was not until 2004 that he applied to the UK Department of Trade and Industry (now the Department for Business, Innovation and Skills) for a grant to help commercialise the technology.

“We got £150,000 to work on applying magnetic particles to trace cancer in the body. But there was a caveat: we received £10,000 upfront over three months to find out if we had freedom to operate, and to come back with a specific proposal,” Pankhurst said.

## Strong intellectual property

This led to endless discussions with clinicians to nail down the first application around which to commercialise the technology, finally leading to the selection of sentinel node detection in breast cancer. Endomagetics was also able to establish there were no blocking patents and establish a strong intellectual property position.

A subsequent 60-patient trial found that Endomagetics’ system, which uses a hand-held probe for tracking the whereabouts of magnetic nanoparticles injected at the site of the primary tumour after its removal, is as efficient as radioisotope tracing in pinpointing the sentinel node. Endomagetics has received CE

marking for its test and has raised £2.55 million to launch the product this year. The technology is also applicable to evaluating whether other types of solid tumour have spread.

“We are also in discussions with the FDA [the US regulator]. We are financed for launch and looking for partners,” said Pankhurst, who is Endomagetics’ chief technology officer. “Our aim is to globalise and democratise access to the best standard of care for breast cancer and other cancers.”

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# ACES winner EVO Electric powers long-range electric cars to market

**EVO Electric has applied novel technology to develop motors that combine high power with low weight, promising to increase the efficiency and appeal of electric cars and reduce CO2 emissions from hybrid petrol/electric cars**

Michael Kenward

**Technology developed by ACES award winner EVO Electric is poised to overcome two of the main barriers that stand in the way of the large-scale adoption of electric cars, by boosting their performance at the same time as increasing their range. The technology will also make hybrid electric/petrol cars cheaper to manufacture and reduce the amount of CO2 they produce.**

The significance of this breakthrough was highlighted earlier in 2012 when the luxury car makers Lotus and Infiniti both exhibited hybrid vehicles incorporating EVO Electric's electric drives at the Geneva Motor Show.

The innovation rests on the research into axial flux motors carried out at Imperial College London by Michael Lampérth, who received the ACES award in the materials and engineering category at the awards ceremony in Brussels last month.

## Commercialisation strategy

Lampérth had an idea of the extent to which his research could change the shape of electric-drive motors, but as a researcher his first thought was not to set up a business. However, when his industrial partners suggested he should patent his axial flux technology, Lampérth started to think about the best strategy for commercialisation.

While he was looking into the options, Lampérth realised that there was more to the technology than patents, important as they are. "Patents are one thing," he explains, "Know-how and manufacturing skills are also important." With support and backing from Imperial

Innovations, the technology transfer and commercialisation arm of Imperial College, Lampérth co-founded EVO Electric and now acts as the company's Chief Technology Officer.

The attraction of axial flux technology is that it allows the design of electric motors that are much smaller and lighter than conventional motors, while at the same time delivering higher torque and power densities. This makes it possible to pack more power into the weight, reducing a vehicle's energy consumption. It also lowers the cost of materials.

Although the potential advantages of axial flux were generally acknowledged and understood by engineers, complex design and manufacturing problems held back the technology until Lampérth and his group at Imperial College tackled the challenge.

## Back to business

Lampérth had worked in industry before coming to London from Switzerland to work on a Master's degree, and then a PhD, funded by the Swiss National Science Foundation, at Imperial College. A trip that was supposed to keep him in the UK for a year ended up as a 16-year stay.

Lampérth wasn't reluctant to return to business, saying, "I thought it would be interesting to be back in industry again" But after years as an academic and researcher, he needed help in developing the commercial side of the business, and this is where the expertise at Imperial College proved invaluable.



SKF Group's Alan Begg handed Michael Lampérth his ACES Award







## Assessing the options

Imperial Innovations offered advice and space in its business incubator, as well finding a CEO, while the university's business school put an MBA student on the case, to look at the new company's options. "That was really helpful," says Lampérth.

The business input showed that rather than outlicensing the patents at an early stage, the best option was to develop the axial flux technology and add more value, says Lampérth. EVO Electric started up in 2006, but it wasn't until a year later, when a group of business angels expressed an interest in investing, that the company could start to motor. "That really accelerated the beginning," Lampérth says.

One early move was out of the

Imperial incubator, which is mostly home to biotech businesses "We were too noisy," Lampérth observes. He spotted a vacant building in Woking, Surrey, on his train commute into London. This is a standard industrial unit where a team of around 20 people is now working on the next generation of axial flux machines.

## The road ahead

Lampérth takes a realistic view about the business model for EVO Electric, acknowledging that it is hard for a small business to break into the automotive market. "We needed to form a partnership," he says. It achieved this in 2011, setting up a joint venture with the leading automotive components supplier GKN plc. The joint venture, GKN EVO eDrive Systems will develop, manufacture and sell axial flux

electric motors and drive systems for use in hybrid and electric vehicles. "We have a route to production with GKN," says Lampérth.

As part of the agreement, GKN acquired a 25.1 per cent stake in EVO Electric and is providing financing in a combination of debt and equity, together with engineering and commercial resources, to support the development of the joint venture. The total value of GKN's investment is £5 million.

EVO Electric hopes to sign similar deals with other companies for non-automotive applications and is already producing bespoke designs for other customers. The company is also working on machines for use in wind power systems and other industrial applications.

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# 11

## The growing pool of Science Business ACES winners are bringing breakthroughs to market

Past winners of Academic Enterprise Awards are making progress in the commercialisation of their research



### Science|Business Reports

Winning an Academic Enterprise Award (ACES) is not only a moment of recognition for the risk-taking academics in Europe who launch promising spin-outs based on their research. It is often a milestone on the way to market, as progress by a growing pool of alumni highlights.

After winning the ACES award in the materials and chemistry category in 2011, the Cambridge University spin-out Enval Ltd went on to build a demonstrator plant to prove its technology for recycling plastic and

aluminium laminate packaging. Currently, this laminated material, which is widely used to package milk, fruit juices and a range of other foodstuffs, cannot be recycled. Enval's process makes it possible to reclaim the aluminium, leaving a hydrocarbon residue that can be used as a feedstock for biofuels.

Following this, Enval struck up partnerships with Kraft Foods and Nestlé, two large-scale users of laminate packaging. More recently, in January 2012, it announced

it had secured funding to build a commercial-scale reprocessing plant, expected to come into service by mid-2012.

Another of the class of 2011, Psynova Neurotech, reached the milestone of launching its first product – the first blood test for diagnosing schizophrenia – on the US market. The company also was acquired by its US partner Rules-Based Medicine, which in April 2011 itself was acquired by the leading

gene-testing company Myriad Genetics in an \$80 million cash deal.

Robotics specialist Gostai, ACES winner in the ICT category a year earlier in 2009, hit the big time in March 2012, when it made it onto the pages of the leading technology magazine, Wired. As Wired put it, Gostai's Jazz Connect is "the office robot that lets you be in two places at once."

Jazz Connect may look more like a vacuum cleaner than a friendly humanoid, but the metre-high robot, equipped with video camera, speakers, microphone and Wi-Fi can be controlled remotely via an internet browser by anyone who cannot make that all-important meeting. With the user's image streamed live to a screen fitted on the top of the Jazz Connect unit, video conferencing will never be the same again.

Novacem, which is working to commercialise carbon-neutral cement, is another ACES winner that has made impressive progress. Since taking the Science|Business award in December 2009, the Imperial College

London spin-out has gone onto win eight other awards

Most recently, in November 2011, the company was listed in the Global Cleantech 100 for the second time.

Novacem's cement, based on magnesium silicate, uses a relatively low-temperature production process that absorbs more CO<sub>2</sub> than it emits. The company says that for every tonne of standard Portland cement replaced by its product, CO<sub>2</sub> emissions will be reduced by up to 900 kilogrammes.

### In other highlights from the ACES alumni:

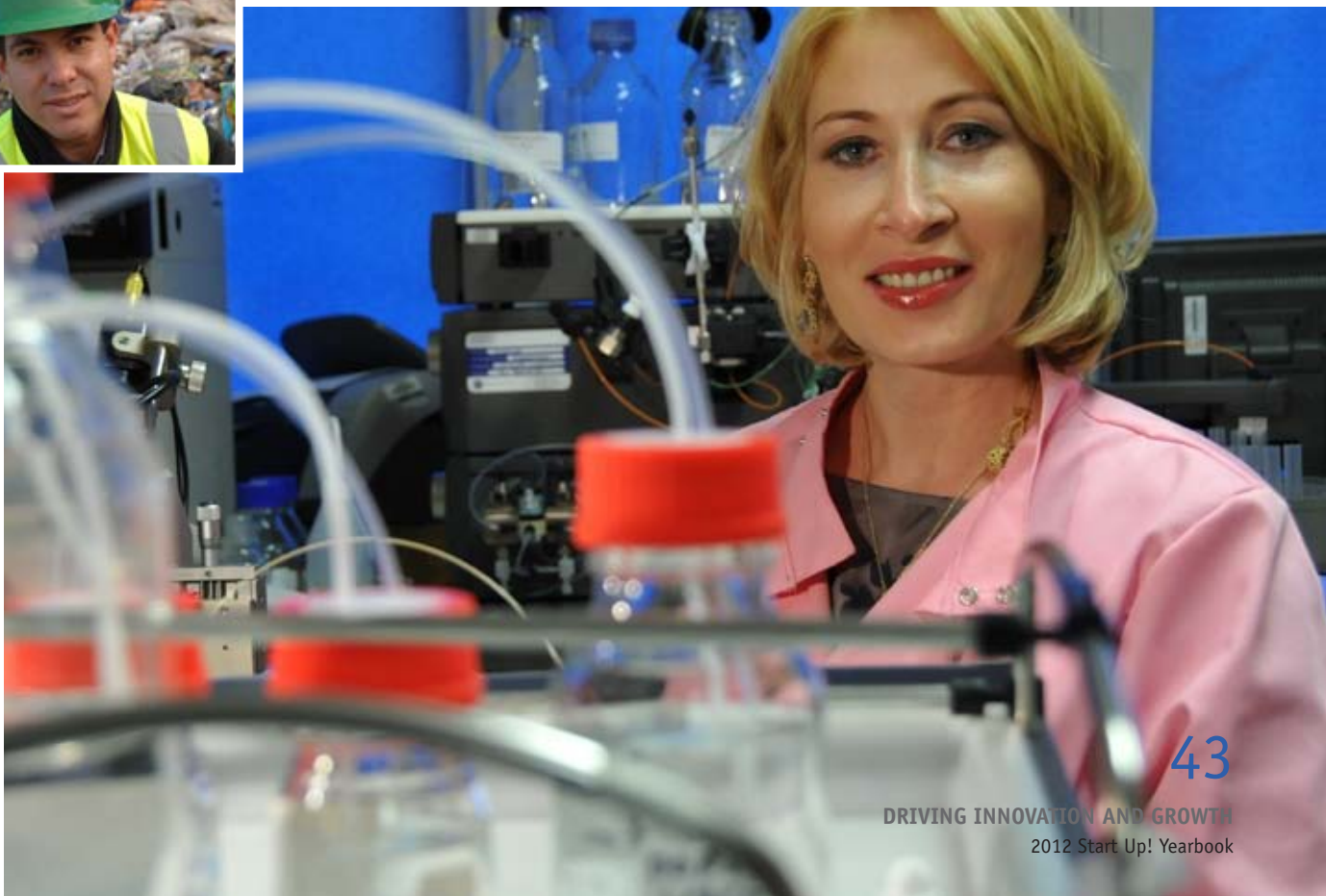
- Dybuster, an ICT category winner in 2011, received the Dyslexia Quality Award for its training software. The company launched a demo version of its software for the Apple iPad in 2011.
- GridON, another 2011 winner, was selected in July 2011 to be part of a £4 million UK project that is aiming to reduce the impact of fault currents on the electricity network. The project is using GridON's Fault

Current Limiter to manage fault levels, which is a key enabler for linking multiple renewable electricity sources to the grid. The project is the first commercial deployment of the technology and GridON is currently engaged in discussions for deployment with large utility companies around the world.

- Ephicas, a KU Leuven spin-out which was an ACES winner in 2008, announced in January 2012 that the haulier TNT Express had successfully tested Ephicas' "Ecotail" on one of its juggernauts. Trucks guzzle fuel because of their non-efficient aerodynamics; the Ephicas Ecotail was shown to reduce fuel consumption by 6 per cent, simply by making the body of the truck more streamlined.



Enval's Carlos Ludlow-Palafox



Psynova Neurotech's Sabine Bahn

# 12 The theory of practice

**Business schools can spur entrepreneurship through curriculum and culture. The key is to create an environment that encourages team learning and student initiative, allowing the entrepreneurial mind-set to blossom, says INSEAD Dean Dipak C. Jain**

*Dipak C. Jain*

**Entrepreneurship is a mind-set. It is a way of engaging the world that joyfully explores the possible rather than surrendering to the inevitable hurdles in the road.**

Entrepreneurs have a passion to turn ideas into action. Their motivations and methods are different from those associated with traditional university scholarship, where theoretical concerns may trump practical ones and consensus views can take years to emerge. Yet, business schools – where entrepreneurship is taught – find themselves within an academic framework whose traditions go back centuries.

But even among their B-school peers, entrepreneurs distinguish themselves as people driven by a sense of practical immediacy. Their initiatives usually focus on solving specific real-world problems. Entrepreneurship seems an intrinsically community-oriented and collaborative activity, since it tries to make day-to-day life better for others. In doing so, its practitioners may engage with many different partners. Certainly this is the case with social entrepreneurs, those who create value that improves conditions for groups of people, perhaps by devising new ways to deliver medicines or other resources.

Business schools can spur entrepreneurial studies through culture, curriculum, and competitions.

## **Reverse mentoring**

If we accept that entrepreneurship involves much collaboration and inventive thinking, then we know why schools must create an environment that encourages team

learning and student initiative. Equally important, schools should genuinely engage students and embrace their ideas. This “reverse mentoring” or two-way learning challenges both faculty and students to be their best, and it respects students as the co-creators of their education. It also provides an arena to develop entrepreneurial instincts. Informal peer-to-peer interaction, as through student interest groups, is a valuable complement to formal learning.

Of course, strong courses in entrepreneurship are essential. These include action-learning opportunities that teach students how to create a business plan and pursue venture funding. Courses in risk management, strategy, and technology innovation, among others, provide would-be entrepreneurs with the tools for success. Exposure to entrepreneurial models that meet the needs of emerging markets offers additional insight for prospective social entrepreneurs. Intensive, multi-day entrepreneurship “boot camps” can provide a wealth of foundational knowledge through lectures and workshops to augment formal learning. Programmes such as entrepreneurs-in-residence can bring successful entrepreneurs to campus to mentor and engage students.

## **Safe-to-fail environments**

Business plan competitions are another way to extend entrepreneurial education. These events provide a forum for students to sharpen and refine their ideas about new venture formulation, and to test the insights they gain in the classroom by bringing a business



plan to life. Competitions, especially those with prestigious judges and the chance to win venture funding, create a real-world simulation whose pressure gives students a taste of what actual entrepreneurship entails – while still remaining a “safe-to-fail” environment that lets students truly pursue their ideas.

These events convey prestige, recognition, and reward to encourage entrepreneurship. They can serve as a way for business schools to partner with other schools, such as design and engineering, medicine, or law to pursue cross-disciplinary opportunities by bringing together students from disparate backgrounds – as might well happen after graduation. Business plan competitions also give schools another way to engage their successful alumni, perhaps as judges or sponsors for the events. These relationships hold promise for bringing the best student business plans to fruition, perhaps as part

of a venture associated with the school’s graduates. The school itself could create a partnership with its students to support early stage ventures with the agreement that a portion of future profits gets channelled back into the school’s entrepreneurship programme, seeding the next generation of scholarship.

As a global market, we are moving toward greater entrepreneurialism, one driven by citizen engagement and innovation sparked by technological advances that permit increased collaboration and idea sharing. Business schools can play a leadership role in this transformation through integrating entrepreneurial thinking into their curriculum and culture.

*Dipak C. Jain is the Dean of INSEAD*



## What we can learn from entrepreneurs

*Daria Tataj, Member of the EIT Governing Board and Executive Committee*

**One of the obstacles that entrepreneurs face in Europe is the lack of a deeply rooted entrepreneurial culture and the limited recognition of entrepreneurial success. With its initiatives in entrepreneurship, such as education, support and promotion, the EIT aims to contribute to a cultural shift in how entrepreneurship is perceived in Europe.**

The EIT 2012 Entrepreneurship Awards are the first pilot initiative in this view, rewarding one venture per Knowledge and Innovation Community (KIC) with the 2012 Award in the respective fields of the KIC's activity: sustainable energy, climate change mitigation and adaptation, and the future information and communication society.

The Awards Ceremony in February 2012 showcased the first entrepreneurial success stories that have emerged from our three KICs. Together with the KICs, we are placing a strong emphasis on the next generation of young entrepreneurs, encouraging, training and supporting them to develop their ideas, take them to the market and grow their businesses successfully.

We have seen on stage a group of highly committed finalists who presented truly impressive

entrepreneurial projects in the fields of energy, climate and ICT – and there are many things we can learn from them. Being an entrepreneur is being passionate about your work, creative, persistent and open-minded. But there is also more to it. The role of entrepreneurs in terms of job creation and economic growth is still largely overlooked but of growing importance in the current era of economic crisis. Enterprises will become more and more dependent in the future on people with specialist knowledge in science and technology but also those with entrepreneurial skills who are able to take their ideas to the market.

Let us support them by celebrating and supporting young ventures like Naked Energy, Trifense, Think CO2 and all the other entrepreneurs whose projects contribute to a more innovative and competitive Europe. Europe needs more of these inspiring role models. I am looking forward to seeing in the coming years more entrepreneurial talent from all over Europe on the EIT Awards stage and being part of this exciting experience.

Congratulations to all finalists for their ideas and creative solutions to today's challenges and best of luck in your drive to become world-class enterprises.



## THE START UP! COMMUNITY

### 2012 Start Up! Jury

The 2012 Start Up! finalists were judged by a jury comprised of members of the EIT Governing Board and members of the Science|Business Innovation Board.

**Edward Astle**, Pro-Rector (Enterprise), Imperial College London  
**Alan Begg**, Senior VP Technology and Development, SKF  
**Pat Cox**, Former President, European Parliament  
**David Eyton**, Group Head, Research and Technology, BP PLC  
**Howard Fogt**, Partner, Foley & Lardner LLP  
**Alexander von Gabain**, Chairman, EIT Governing Board  
**Daria Golebiowska-Tataj**, Member of EIT Governing Board and Executive Committee  
**Bill Magill**, Adjunct Professor of Entrepreneurship and Family Enterprise, INSEAD  
**Alfons Sauquet**, Dean, ESADE Business School  
**Robert Sorrell**, VP Public Partnerships, BP  
**John Vassallo**, Vice President of EU Affairs, Microsoft Europe  
**John Wood**, Secretary General, Association of Commonwealth Universities

### EIT Knowledge and Innovation Communities (KICs)

Climate-KIC (Climate Change) [www.climate-kic.org](http://www.climate-kic.org)  
EIT ICT Labs (Information and Communication Technologies) [www.eitictlabs.eu](http://www.eitictlabs.eu)  
KIC InnoEnergy (Sustainable Energy) [www.kic-innoenergy.com](http://www.kic-innoenergy.com)

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