SPOTLIGHT ON WALLONIA

Marshalling innovation

How a cluster-centric strategy keeps Wallonia competitive.

"The Marshall Plan was an important argument to start a research career here."

Liesbet Geris

IN THE heady days of the industrial revolution, coal-rich Wallonia was the wealthier part of Belgium. Over the last century, though, its fortunes have been in decline. To combat this, the Walloons have staked their future on science. In 2005, with an investment pot of €1.4 billion accumulated from budget savings and the sale of state shares in the Arcelor steel firm, the Marshall Plan – inspired by the investment plan of the same name that rebuilt Europe after World War II – was born.

Winning in health

BioWin is an example of what can happen with the right investment; in this case with approximately €114 million between 2006 and 2015. "Our premier activity is to promote the emergence, selection and follow-up of R&D projects," says Sylvie Ponchaut, BioWin's director. "We help create bridges between academic researchers, industry, university hospitals, and the world outside. The cluster now has 540 members," she says, "130 companies, of which over 90% are small and medium sized enterprises (SMEs), and 400 research units involving 11,000 researchers from four universities and other research institutes."

One of the beneficiaries of BioWin support is Jacques Piette, director of the Interdisciplinary Cluster of Applied Genoproteomics (GIGA), based at the University of Liège. Funding from BioWin has been essential in supporting infrastructure and logistics as well as a series of applied research projects. "We've participated in getting a series of start-ups on their feet," says Piette.

Liesbet Geris, professor of biomechanics and computational tissue engineering at the Department of Aerospace and Mechanical Engineering at the University of Liège, was initially wary about moving to Wallonia, where research funding was historically less generous. "The Marshall Plan was an important argument to come to Wallonia and start a research career here," says Geris, "Being part of GIGA will provide me with access to technological platforms that would be difficult to find elsewhere."

Green is good for you

GreenWin funds green chemistry, construction and environment, chemical engineering and materials science projects, and has nearly 200 members, including companies, research institutes and academic groups. "The cluster's aim is not specifically to create new companies, but to increase the value of existing ones and the sector as a whole," explains Veronique Graff, director of GreenWin.

One of GreenWin's key focuses is on developing activities with zero waste and pollution, known as the circular economy. To do this, the cluster advocates using lifecycle analysis, which considers a product's lifecycle from sourcing of raw materials to disposal or recycling, in an effort to reduce waste. "What we see is that certain projects create new value chains," says Graff. "This could help to create new companies down the line."

One of the projects supported by GreenWin, l'Atelier de l'Avenir – literally "Workshop of the Future" – is a social SME employing deaf and hearing-impaired

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Research at the University of Namur.

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Poppy flowers in Marche-en-Famenne, Wallonia.

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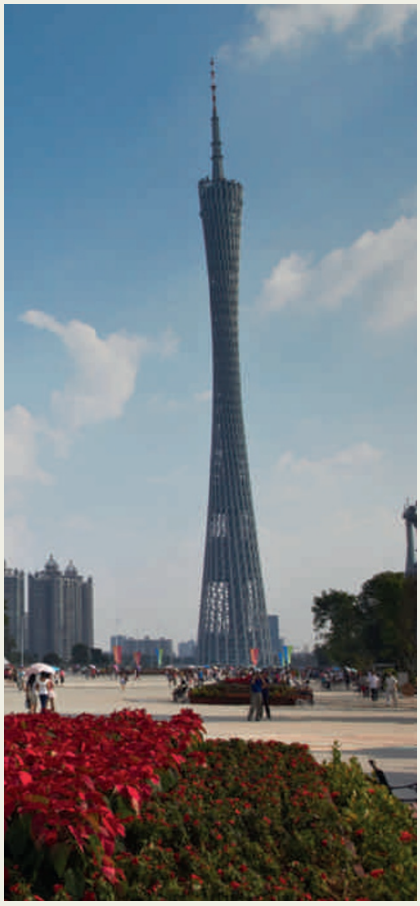
The Chinese-Walloon affair

BioWin is expanding its links with China, with a new collaboration agreed in June 2015 with the Guangzhou Biotechnology Center (GZBIO) in Canton. GZBIO has 400 members including start-ups, research centres and universities, and provides laboratory services, animal testing, and clinical testing services to the biotech and pharma sector.

This is BioWin's third partnership with Chinese groups, following earlier agreements with Juke Biotech Park in Shanghai and the Shanghai BioIndustry Association (SBIA). Such contact paves the way for R&D collaborations between Walloon and Chinese members, who will exchange expertise and resources. The partners will also assist with to-market access in their respective jurisdictions, helping with regulatory issues and participation in trade fairs.

BioWin, together with the Wallonia Foreign Trade & Investment Agency (AWEx) have been courting their Chinese counterparts since BioWin began. "Partnering with clusters, federations and science parks is key to developing links with China," says Michel Kempeneers, overseas chief operating officer at AWEx. This framework ensures reliable, government supported partners. "It's a win-win deal between their aim of looking for expertise and technology and our aim of entering an enormous market," he says.

One company that's already reaping the benefits of collaboration is Coris BioConcept, which makes rapid diagnostic tests for health. The Walloon company sold 400,000 tests in their first year in the Chinese market, compared to 21,000 tests sold in Belgium over the same period. And it's a two-way street. The China-Belgium Technology Centre is due to open its doors in 2017 in Louvain-la-Neuve. This €200 million campus will house five incubators, and is expected to employ 1,500 people, of whom up to 600 will be Chinese.



Canton Tower, Guangzhou.

people to build sustainable and economical timber-frame houses. Membership of GreenWin gives them access to support for their R&D orientation, communications and subsidy applications.

GreenWin also links the team with other partners in their network. "We're happy with our collaboration," says Aurélie Klinkenberg, communications manager at l'Atelier de l'Avenir. "GreenWin are very present and help a lot with the research process."

"It's an excellent initiative that allows university labs to meet small companies, and helps small companies discover expertise in the region."

Stephane Lucas

Cross cluster cooperation

Research rarely falls neatly into one category. According to Graff, a spirit of collaboration holds sway over science in Wallonia. "Innovation often requires a crossover of technology," she says, "the most interesting place is at the intersection between clusters."

Graff cites the company Realco as an example of collaboration between the clusters. The company uses enzymes for a range of applications in cleaning, agrifood and biotech. "We are a member of GreenWin, MecaTech and Wagralim," explains Sebastian Fastrez, head of R&D at Realco. The company started in 1958 and has around 40 employees, some of whom are directly financed by Realco's participation in cluster-led research projects.

For example, the company participates in a MecaTech project called BIOAFP. "We aim to bring anti-fingerprint technology to glass and steel by coating them in enzymes that degrade grease," explains Fastrez. "The project opens new markets for cleaning smartphones, and lets us collaborate with companies we would not normally work with. As an example, when we needed to outsource some infrared spectroscopy, Wagralim put us in touch with a research centre," he says.

The Space Centre of Liège (CSL) at the University of Liège also picks and chooses collaborations with the cluster best suited to a particular project. For example, the Legomedic project, investigating microreactors and microfluid techniques for producing chemicals and biomolecules, is a collaboration with Biowin and Mecatech. Partnerships with Skywin include the Theo project to develop instruments to observe Earth from space, and the HM+ project to develop smart predictive maintenance for airplanes.

An academic viewpoint

Academics also benefit from the cluster ecosystem. Stephane Lucas is a professor in the Department of Physics in the University of Namur, and researches surface coatings for materials and the use of nanotechnology in cancer treatment. Lucas has eight collaborative research projects with MecaTech and BioWin, along with industrial partners. "This has allowed me to hire three people for two years," says Lucas.

One of Lucas' projects is Havcoat, a MecaTech scheme to develop surface coatings that reduce friction and noise, and avoid the use of oil-based lubricants. Lucas' lab has developed the coating and four industrial partners will test it. As the academic partner, Lucas' participation is entirely funded by the Marshall Plan

In all, Lucas' experience with the Marshall Plan and the clusters has been very positive. "It's an excellent initiative that allows university labs to meet small companies, and helps small companies discover expertise in the region," says Lucas.

Future perspectives

In the next phase of the Marshall Plan, the biggest chunk of investment – €1.1 billion – is targeted at boosting energy efficiency, renewables and the circular economy. Another €374 million will improve the infrastructure that underpins economic activity, such as roads or ports. The other big winner in this cycle of the Marshall Plan is digital innovation, which will be funded to the tune of €244.8 million.

This change in research priorities might be why some clusters are starting to prepare for life after the Marshall Plan by helping their members find funding from other sources. "This year in BioWin we opened a new department with the aim of developing European projects," says Ponchaut, "We're helping our members to search for funding from Horizon 2020, Eurostars, Eureka and other sources."

The successive phases of the Marshall Plan have succeeded in fast-tracking Wallonia into the global scientific arena (see **the Chinese-Walloon affair**). The challenge now is to transform these advances into durable, self-sustainable success; a track Wallonia is well and truly on. ■

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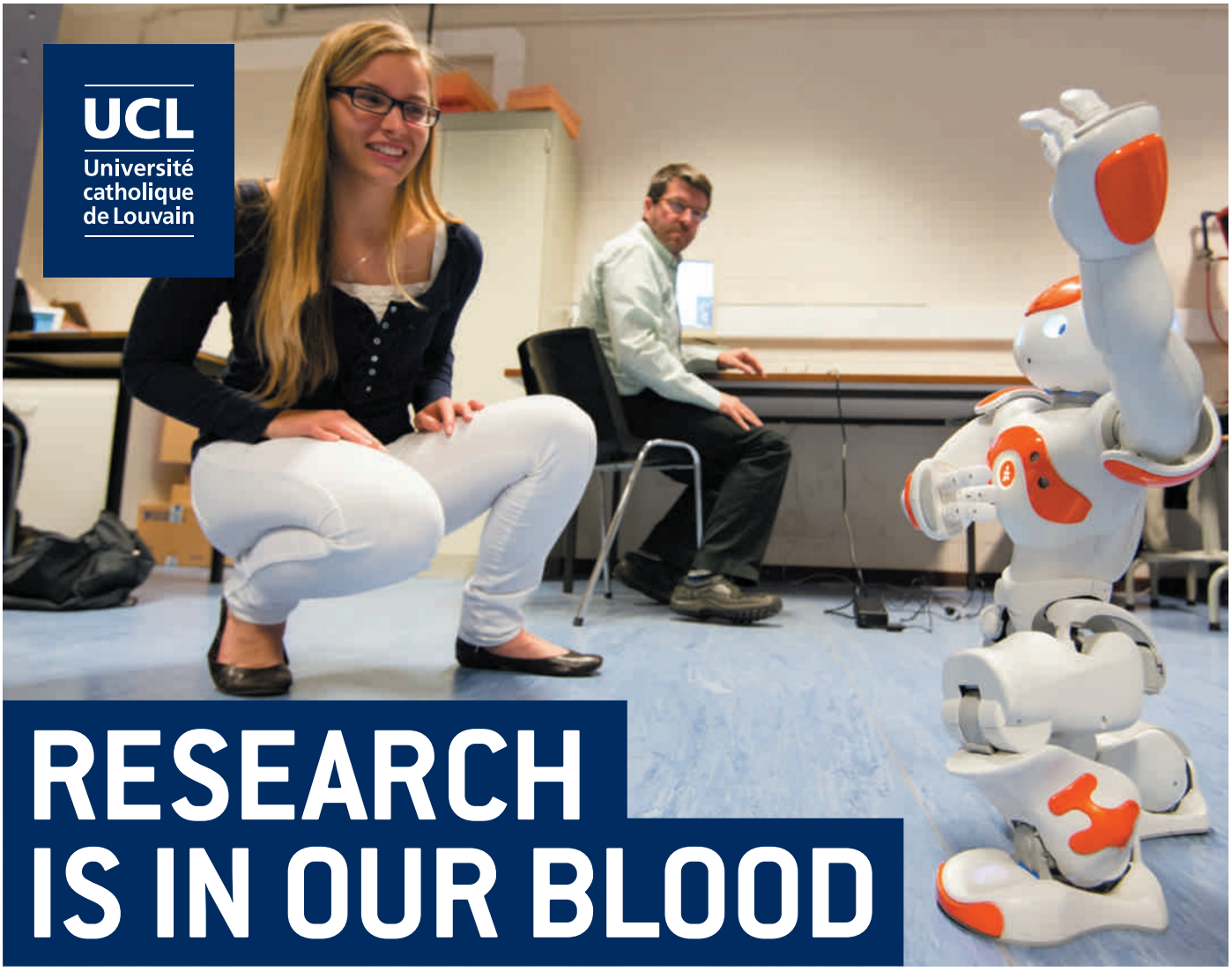

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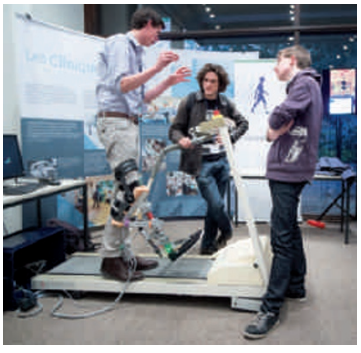

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