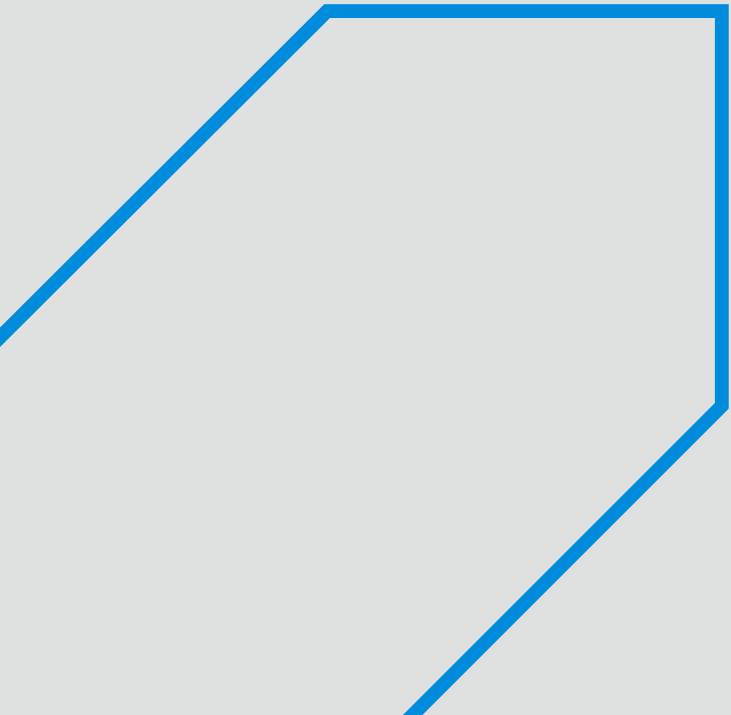




2018

ANNUAL REPORT

 **LUXINNOVATION**
TRUSTED PARTNER FOR BUSINESS



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LUXINNOVATION: A VITAL FORCE

The successful economy of tomorrow will be data-driven, smart and sustainable. The Luxembourg government is determined that our country should be a leader in these fields, and Luxinnovation has a key role to play in making this happen.

”

Luxembourg is currently implementing a number of initiatives aimed at stimulating the data-driven economy. Examples include hosting the European High Performance Computing Joint Undertaking and creating a joint research laboratory for artificial intelligence (AI) in collaboration with global AI leader NVIDIA. Digitalisation is also a central theme in Luxinnovation's service offering. In addition to driving the Fit 4 Digital programme, the agency supports companies with Industry 4.0, automated and connected driving, smart cities and health technologies, to name just a few examples.

Luxinnovation will also host the Luxembourg component of the European Digital Innovation Hub initiative (a platform dedicated to supporting businesses for the digitisation of industry) which is currently under construction.

Digitalisation often goes hand in hand with sustainability as it facilitates the smart use of resources and helps decrease waste and pollution. Luxinnovation works with industry on crucial topics such as the circular economy, plastic recycling and reuse, smart mobility and sustainable construction. The agency is also a key partner in Luxembourg's international prospection and promotion efforts, notably in the fields of clean technologies and the digital economy, as well as the automotive industry.

Luxinnovation is a major player in Luxembourg's R&D and innovation landscape and makes an important contribution to the development of our dynamic start-up community. With her international career, in-depth knowledge of the government's economic policies and experience as chair of the "Inspiring Luxembourg" committee, we saw Sasha Baillie as the perfect fit for the role as the agency's new CEO. The impressive achievements of her team in 2018 outlined in this report clearly show that Luxinnovation is and will continue to be a vital force for innovation and economic success in Luxembourg.

”

Mario Grotz
Board Chair



FOSTERING INNOVATION WITH THE CLIENT AT THE CENTRE

Any company wishing to innovate and grow can find a reliable partner in Luxinnovation. Our wide portfolio of services fosters innovation in all its forms, thereby supporting the government's economic development objectives. We also ensure that Luxembourg continues to attract international investment, companies and skills that are a perfect fit for the country.

”

Luxinnovation has developed tremendously over the past few years with new services, programmes and clusters and has taken on new missions in the field of international prospection and promotion. Since joining the agency as CEO in May 2018, one of my main tasks has been to develop a strategic framework for the agency and ensure that the companies we serve and their needs remain at the very centre of everything we do.

To optimise the services we offer, we have put in place a new organisational structure. From now on, the Company Relations & Support department focuses on existing Luxembourg companies, while the Business Development department supports all the new companies that make Luxembourg their base for European expansion.

These two departments benefit from the remarkable work done by the Market Intelligence team in identifying the sectors and key



companies on which to focus our promotional and prospecting efforts.

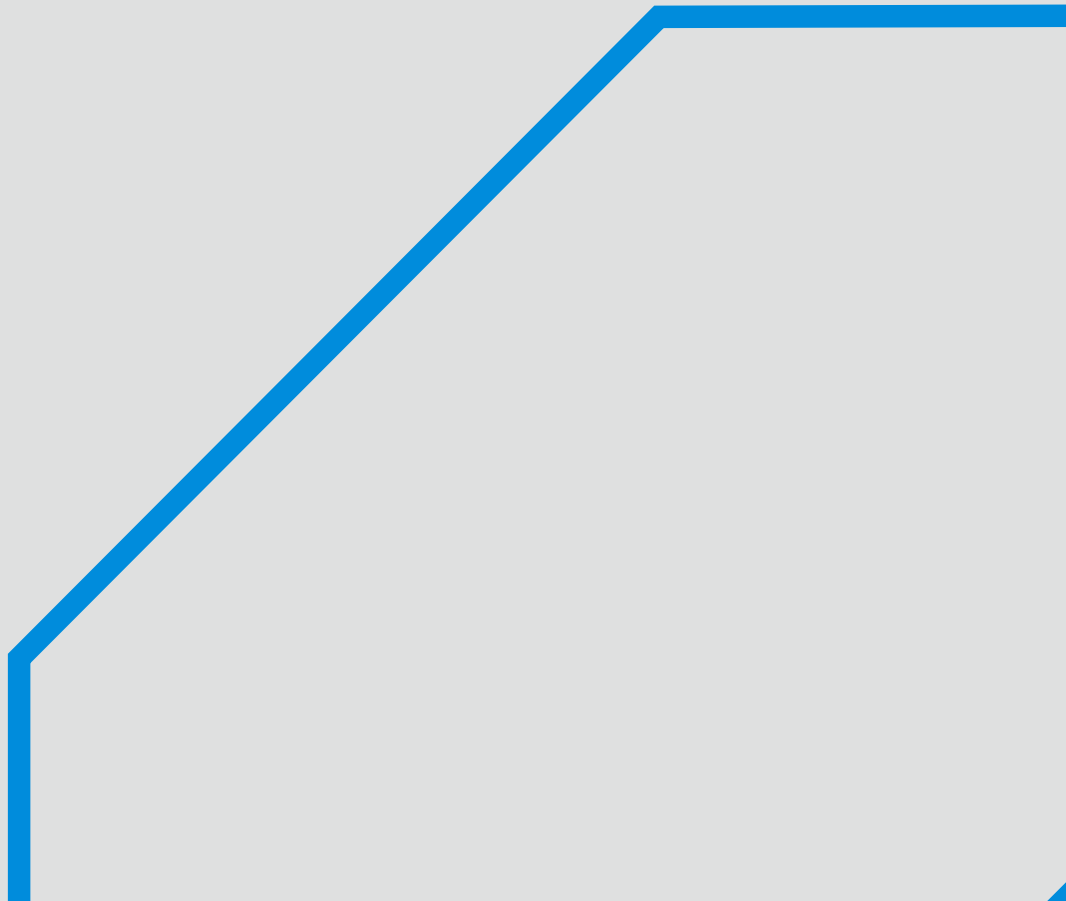
The new name of our funding department, R&D and Innovation Support, highlights that the advice and expertise provided by this team goes well beyond funding support and covers the successful implementation of R&D and innovation projects from A to Z.

Finally, the role of the Marketing & Communication department is to clearly convey the message and promote the benefits of innovation as well as of the advantages of Luxembourg as a business location.

Being part of the dynamic and committed Luxinnovation team - which includes 12 nationalities and an equal number of men and women - is a privilege. The support provided by our internal services, soon to be coordinated by an administrative and finance director, enables our organisation to run smoothly. The complementarity of the skills of our teams puts us in a unique position when it comes to offering holistic innovation support. Together, we will continue to put our best efforts into helping companies innovate and be prepared for the challenges of the future.

”

Sasha Baillie
CEO





2018

COMPANY RELATIONS & SUPPORT

 LUXINNOVATION





CASE STUDY - COMPOSITE INDUSTRY LUXEMBOURG

STRONGER TOGETHER

Born from the desire of Luxembourg's industry to develop skills in the field of composites, Composite Industry Luxembourg (CIL), hosted by Luxinnovation, responds to a need originating from companies in the materials sector.

CIL aims to strengthen the development of new innovative concepts.

CAROLINE
MULLER
Luxinnovation

CIL offers a platform for exchanging information to industrial companies that wish to combine their strengths and work together on projects of great interest. This new entity, which has the status of a non-profit organisation, was created in 2018 and complements the National Composite Center - Luxembourg (NCC-L) by bringing together companies interested in working together on large-scale projects.

Hosted by the Luxembourg Institute of Science and Technology (LIST), the NCC-L is a laboratory dedicated to research on composite materials conducted in partnership with Luxembourg industry. The NCC-L provides companies with access to the equipment needed for developing new materials and innovative technologies that are relevant for major sectors such as the automotive industry, aeronautics or energy.

BUILDING A NETWORK OF EXCELLENCE

Created by the founding members of the NCC-L, the CIL is hosted by Luxinnovation. By pooling their diverse skills and experience, CIL members combine their strengths to meet challenges and develop new innovative solutions. "Companies have identified six areas on which they wish to mainly focus: the surface properties of composite materials, thermoplastic fibers, the recycling of composite materials, bio composites, non-destructive testing methods and finally a sixth axis, which is actually transversal, i.e. that of simulation," says Caroline Muller, Cluster Manager - Materials and Manufacturing at Luxinnovation.

Constantly focusing on innovation and industrial performance, CIL members work on topical issues. One of the main concerns is recycling. While superimposing several materials is a common practice and brings many features, there is also the question of how to separate these multilayers and their recycling. "These are issues that companies in the sector are familiar with," says Ms Muller. "The constraints related to recycling are also increasingly present, since composites users will soon be responsible for the end of life of their products."

SHOWCASING NATIONAL EXPERTISE AND COMPLETING THE VALUE CHAIN

CIL also has the mission to promote all technologies and strengths available in Luxembourg. The Luxembourg composite branch has a number of opportunities to offer. "There is a good complementarity between the members," Ms Muller points out. "We have specialists in simulation, surface treatment by atmospheric plasma, but also fiber specialists or plastic injection. What makes CIL so strong is that these companies can work on topics that are not confidential, they do not compete, they move forward together."

CIL members are also members of the Luxembourg Materials & Manufacturing Cluster, where the original idea of creating a National Composite Center was born. "This grouping is ultimately the concrete realisation of our mission to identify the skills and needs of businesses. When there is an idea or a flagship theme, and there are enough interested industrialists, we can come up with these kind of large-scale projects," says Ms Muller.

The CIL is open to all national players but also more widely to international companies. Although Luxembourg can be proud of its composite industry, the most advanced countries in this area remain the United States, Japan, France and Germany. In order to highlight its potential and attract new businesses to the area, Luxembourg has renewed its participation in the international JEC World fair. "This is the most representative event in terms of new technologies and materials, all European and international composite centres are present. This is an excellent showcase for CIL companies but also for the country," explains Ms Muller. CIL therefore participated in the JEC in 2019 and actively contributed to enhancing the visibility of the composites field, a sector in full expansion.

CLUSTER INITIATIVE / SECTORAL RELATIONSHIP MANAGEMENT

Luxinnovation works extensively with key sectors that are essential for Luxembourg's economy. The agency's sector experts strive to promote the development of these sectors by providing individualised company support, facilitating the establishment of projects and partnerships and implementing cross-sector flagship projects. These efforts are principally channelled through the Luxembourg Cluster Initiative which unites expertise of companies, industries and public research centres.

457



NEW ACTIVE MEMBERS

affiliated to the various clusters

A TOTAL OF

2.200



PARTICIPANTS

at all cluster events, workshops and meetings combined

692



COMPANY-TO-COMPANY INTRODUCTIONS

organised

A major project involving the **AutoMobility Cluster** in 2018 was the Interreg project Pôle Automobile Européen (PAE) that aims to strengthen the links between automotive clusters in the Greater Region. Nearly 220 experts from the Greater Region participated in Automotive Day 2018 which focused on the digitalisation of mobility.

The **BioHealth Cluster** carried out a detailed mapping of Luxembourg's health technologies sector, put together in close collaboration with the Ministry of the Economy and the Observatory for Competitiveness. The cluster also supported the launch of a health tech pilot track in the Fit 4 Start acceleration programme.

Already featuring the profiles of 265 Luxembourg creatives, the online platform of the **Creative Industries Cluster** was launched in May 2018. The cluster also published an award-winning magazine, *DO DO DO*, in collaboration with Maison Moderne recognised at the BtoB Awards in Brussels and facilitated partnerships and projects that created a significant economic value for the country's creative industries.

The **EcoInnovation Cluster** focused its work with regards to the circular economy on the reuse and recycling of plastics and deconstruction waste. In the context of its work on smart cities, the cluster organised a series of workshops to generate sustainable ideas for the reconversion of the Esch-Schiffflange brownfield site into an eco-district.

Strengthening links and facilitating partnerships between companies and other key players was at the centre of the activities of the **ICT Cluster**. The cluster also organised events on topics such as cybersecurity and the implementation of the GDPR EU directive.

The creation of the Composite Industry Luxembourg ASBL was one of the major

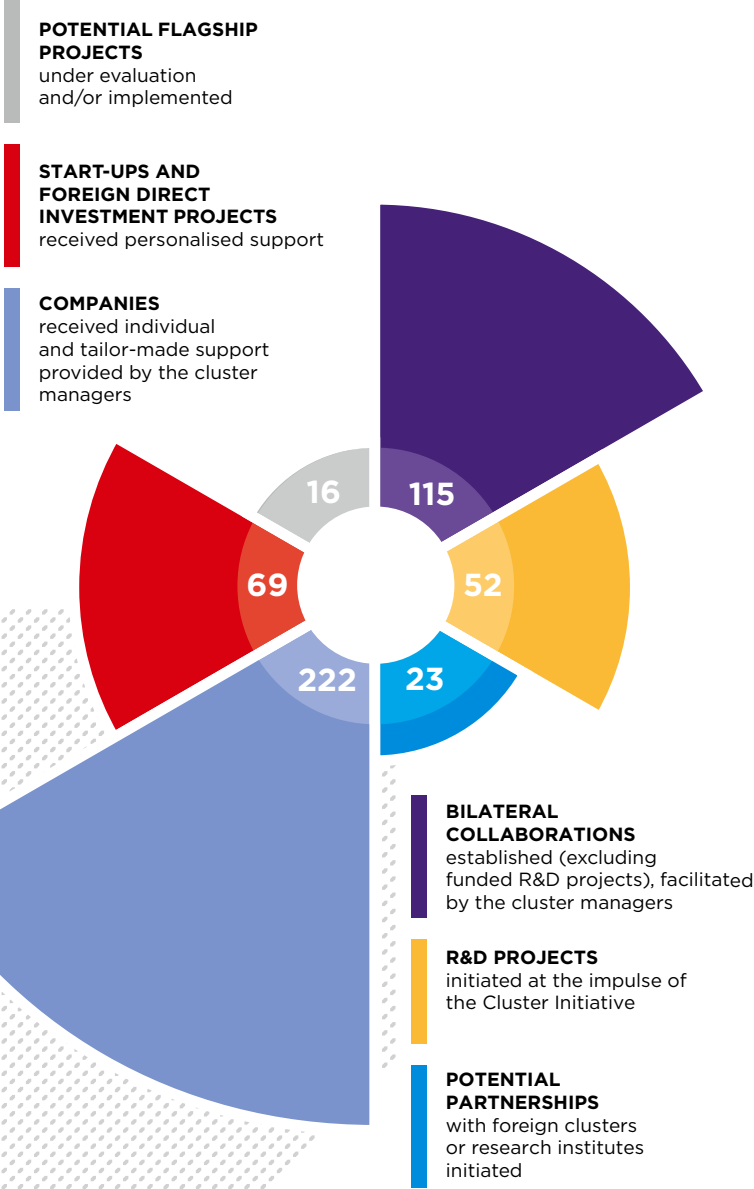
PILOT PROJECTS WITH CROSS-SECTOR PROJECT MANAGEMENT IN PLACE

- Industry 4.0
- Plastics Loop Circular Economy
- Wiltz Circular Economy Hotspot
- National Composite Initiative - Luxembourg
- Digital Cross-Border Testbed
- Pôle Automobile Européen

achievements of the **Materials & Manufacturing Cluster** in 2018. The cluster was also involved in cross-sector activities focusing on the wood industry and the reuse and recycling of plastics, and committed to support several cross-border initiatives on topics such as additive manufacturing and Industry 4.0.

A 2018 highlight for the **Wood Cluster** was the organisation of its first ever forum that attracted 150 participants. The cluster also worked on the implementation of a "Holz vun Hei" label to promote the use of local wood, 'Holz vun Hei', and on "Holzhaff", a regional commercial platform for high quality timber.

Many cross-sectoral initiatives, simultaneously involving two or more clusters, were also conducted in more transversal areas.





On the right:
JEAN SCHILTZ
Ministry of the Economy

AUTONOMOUS AND CONNECTED DRIVING ACROSS BORDERS

The mobility of the future is, in part, taking form at the cross-border digital testbed that connects Luxembourg to Germany and France. The initiative capitalises on the country's strengths in data handling and ICT infrastructure, and is well in line with its ambition to develop and implement smart mobility concepts and solutions.

The cross-border digital testbed connects the south of Luxembourg with Metz in France and Merzig in Germany. It offers developers of technologies for automated and connected driving, as well as of related mobility services, the opportunity to conduct tests in a real-life environment on ordinary roads in three different countries. Challenges include border crossings, tunnels and the use of different traffic signs in a region with high peak-time traffic density due to a very high number of cross-border commuters.

“The testbed was originally a French-German project,” explains Jean Schiltz, Deputy Director Smart Mobility at the Ministry of the Economy. “Luxinnovation was one of the catalysts for Luxembourg to get involved. The agency has extensive contacts with automotive clusters and research organisations in the Greater Region that were already involved in this initiative. Luxembourg officially became part of the testbed in September 2017.”

“Digitisation and automation of transport play an important role in helping the country improve road safety, reduce emissions and reduce congestion,” says Gilles Caspar, director of mobility planning at the Ministry of Transport, Mobility and Public Works. “The promotion and testing of autonomous and connected driving is therefore of great importance for mobility strategies.”

DATA-DRIVEN APPROACH

The testbed focuses on the assessment of the continuity and compatibility of the perception of autonomous systems, the link between automation and connectivity, and the impact and effects of automated and connected driving. Luxembourg highlighted a fourth topic: the access and reuse of data emerging from automated and connected vehicles, as well as from connected infrastructure and other road users. “We are building on Luxembourg’s excellent ICT infrastructure that provides for data communication, storage, analysis and enrichment undertaken with the support of high performance computing,” says Mr Schiltz. “It is also an opportunity to apply our advancing skills in artificial intelligence and machine learning based on big data.”

While the government aims to further enhance its knowledge about how to implement intelligent transport systems to make traffic more fluid, optimise infrastructure use and reduce road accidents, there is also keen interest from various business sectors. “When connected cars and infrastructure interact, it is crucial that messages are delivered with integrity from a trusted source to a trusted recipient,” Mr Schiltz underlines. “This calls for using the renowned expertise of Luxembourg players in the fields of cybersecurity, authentication and trust. There are also companies getting involved in the development of innovative insurance products that cover autonomous vehicles.”

CROSS-BORDER CONNECTIVITY

Crossing borders, or driving closely along a border, is a particular challenge for automated and connected cars that have to switch from the mobile network of one country to that of another. When this happens, connectivity is often momentarily lost. This interruption can strongly impact specific functions of a connected and automated vehicle whose operation is reliant on mobile data. 5GCroCo, one of the first projects using the testbed, will test how this can be improved by using 5G technology. “The testbed is mentioned in the EU’s 5G deployment strategy as one of the sites where 5G will be available in a cross-border environment,” says Mr Schiltz.

Luxinnovation helped the international partnership behind 5GCroCo successfully apply for funding from the European Horizon 2020 programme, and Anthony Auert, the manager of Luxinnovation’s Automotive cluster, sees great promotional potential stemming from the project: “The emergence of these new technologies is helping to consolidate well-established companies, but it also attracts young start-ups.”

ESCH-SCHIFFFLANGE, AN INNOVATIVE LOOK AT URBANISM

As part of the feasibility study for the rehabilitation of more than 60 ha of ArcelorMittal brownfields, the development company Agora mandated Luxinnovation to initiate a process to identify technologies, services and innovative products. This major preparatory work will pave the way for an international urban planning competition scheduled to be launched in spring 2019.

As the birth place of Luxembourg's wealth, the south of the country is home to vast industrial land formerly exploited by Arbed (today ArcelorMittal) and now looking forward to a new life. This has already happened in Esch-Belval, where industrial heritage and modern administrative buildings coexist in perfect harmony. Esch-Schiffflange is the next big project. The possibility of turning 60 hectares of industrial land that has a century and a half of history into a new kind of eco-district is under review.

"The site was in operation from 1871 to 2012 and has been officially shut down since 2016," explains Yves Biwer, administrative director of Agora. "Following this, we signed an agreement with the State and the owner of the field, ArcelorMittal, to carry out a feasibility study for the development of a new urban concept."

The idea is simple: to create a nice neighbourhood where future generations can live. "In this context, it is important to integrate innovative aspects from the very beginning of the planning, so that forward-looking developments and trends are integrated immediately."

AT THE CROSSROADS OF SUPPLY AND DEMAND

To carry out this preparatory phase, Agora called upon Luxinnovation to be able to leverage the agency's extensive network and mobilise companies in the field as well as research centres.

"With Agora, we started from scratch," says Charles-Albert Florentin, Luxembourg EcoInnovation Cluster Manager at Luxinnovation.



**YVES
BIWER**
Agora

“So, to begin, we had to define what could be the vision of this future neighbourhood. We therefore proposed workshops to identify innovative concepts, in collaboration with the Luxembourg Institute of Science and Technology (LIST), the University of Luxembourg and some 80 participating companies.”

Finally, three workshops were organised on the themes of (de-)construction (materials, modelling and circular economy), social integration (mobility, quality of life and urban agriculture) and urban metabolism (water, energy, materials and waste facilities and flows). The aim was clear: to propose guidelines for the future specifications and to collect good ideas for the forthcoming urban planning competition in 2019. The principles of the circular economy figured prominently in the requirements.

As a result, selected architects, planners and landscape gardeners will develop their concepts in connection with local businesses. “The ambition is to bring supply and demand together,” says Mr Florentin. “We have identified several interesting projects in the future for the country and we want to put concepts, products and services in place, regardless of whether they come from Luxembourg companies or from foreign companies wishing to settle here.”

PUTTING PEOPLE AT THE CENTRE

Various innovative approaches were devised during the workshops, both on the construction of buildings as such and on energy or water solutions. “There are some interesting ideas in this area, particularly with regards to the carbon

cycle, which makes it possible to consider wastewater not as waste, but as a carbon resource for plant development,” says Mr Florentin.

The approach was highly appreciated by companies, who clearly expressed their satisfaction at being involved well in advance of such a process and being able to offer their know-how. A dozen players, both public and private, were able to present their innovative technologies and concepts through tangible and documented presentations.

The study of this eco-district involves a concentration of technological innovation designed to serve the well-being of future residents. “The human being is one of the main challenges,” confirms Mr Biwer. “You have to think of the quality of life aspect for everyone who will use the site. It is essential to focus on the user who should be key in our thought process. It is not enough to develop very advanced technologies, it is necessary to constantly ask yourself how the human being will be able to derive the best benefit from it.”

SME PERFORMANCE

Fostering the performance and competitiveness of small and medium-sized enterprises (SMEs) is a central part of Luxinnovation's support to Luxembourg companies. The performance programmes Fit 4 Digital, Fit 4 Innovation and Fit 4 Growth provide individualised support tailored to clients' needs and stages of development. In 2018, the agency also contributed to putting in place a new programme, Fit 4 Service. Luxinnovation provides, in addition, international partnering services via its membership in the Enterprise Europe Network (EEN).

Launched already a few years ago, the performance programmes continue to attract a lot of interest from companies with almost 85 new participants this year. As the interest in Fit 4 Digital is particularly high, Luxinnovation has extended its network of consultants who provide expert advice to participating companies and brought them together to share their experience and best practices. The agency also supported the Ministry of the Economy with designing and launching the new Fit 4 Service programme, which helps companies from the commercial sector develop and implement a strategy aimed at improving the customer experience.

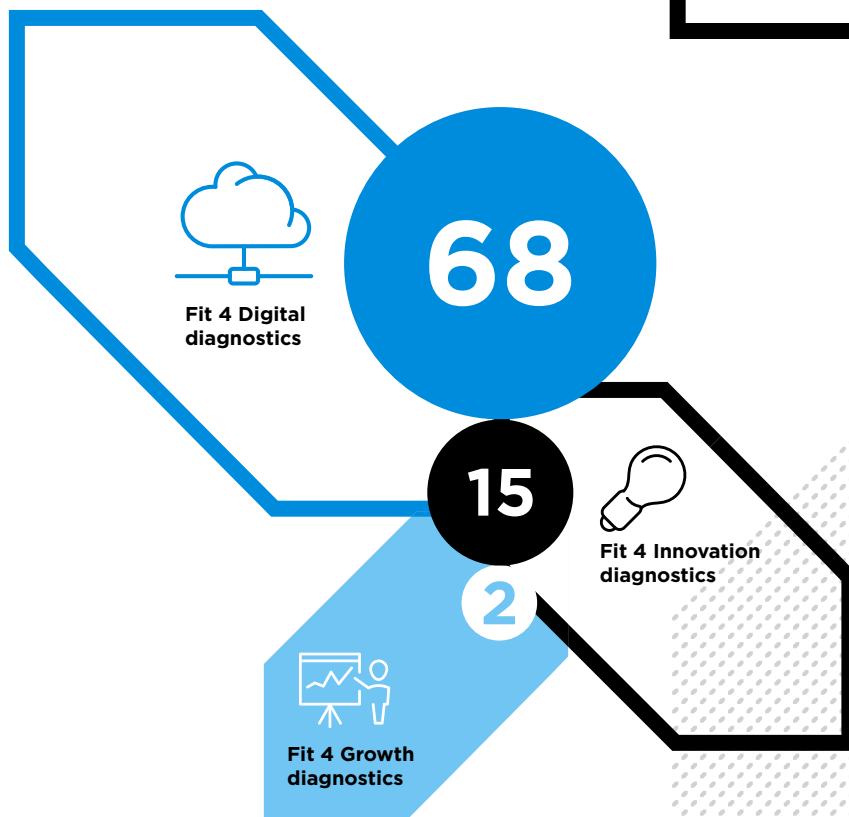
Many partnerships are conducted with the professional chambers. The House of Entrepreneurship of the Chamber of Commerce, for example, has launched and developed the "Go Digital" initiative to raise business awareness of the challenges of digitalisation and to inform, guide and advise businesses in this direction. This is based on Luxinnovation's Fit 4 Digital service offering. The Chamber of Skilled Crafts is also successfully promoting Fit 4 Digital through its "e-Handwierk" initiative that targets skilled craft companies.

The agency also took part in two conferences on digitalisation, organised by the Chamber of Commerce and the Chamber of Skilled Crafts, with whom Luxinnovation was also involved in the implementation of the "Innovation Club". Four events targeting the craft sector were organised, focusing on building information modeling (BIM), collaboration with research institutes, design thinking and risk management. Luxinnovation contributed to two of these events.

Finally, together with the Chamber of Commerce and the Chamber of Skilled Crafts, Luxinnovation functions as the Luxembourg node of the EEN network. In this context, the agency helped several Luxembourg players

publish targeted requests for international partnerships. It organised two matchmaking events in Luxembourg, consisting of face-to-face meetings between potential business and innovation partners, in conjunction with Automotive Day in June and the Innovative Medicines Initiative networking conference in December. Luxinnovation also promoted relevant matchmaking events abroad to selected companies.

PERFORMANCE PROGRAMMES



140



PROACTIVE VISITS TO SMES

to evaluate their potential for innovation

57



COMPANIES

participating in international matchmaking events organised by the Enterprise Europe Network (EEN)

6



EEN INTERNATIONAL PARTNERSHIP PROFILES

written, published and managed

“AN INTERESTING AND ENRICHING EXPERIENCE”

Genista was created in early 2017 as the result of a merger between two family businesses, Sanichauer and Electro Security. In order to reinforce its performance and its capacity for innovation, this new leader in the installation and maintenance of building technologies joined the subsidised Fit 4 Innovation programme, developed in partnership with the Ministry of the Economy and dedicated to SMEs.

Genista is built on a solid foundation of knowledge and experience from its two “parents”. Sanichauer was founded in 1959 and operated in the fields of sanitary facilities, heating, air-conditioning, ventilation, renewable energies and renovation for almost six decades. Electro Auto was created in 1992, following on from Electro Auto set up in 1925, and had vast experience in intrusion and fire detection, access control, time management, video surveillance, parking barrier and systems, centralised alarm management and electrical works. Genista employs some 300 people and generated a turnover of €35 million in 2017.

IDENTIFYING POTENTIAL FOR IMPROVEMENT

Genista’s Fit 4 Innovation participation started with a comprehensive analysis of the company, conducted by the programme’s expert consultants certified by Luxinnovation. The study highlighted a number of potential areas of improvement. Resource allocation could be enhanced, as too much time was being devoted to non-productive tasks. There was a lack of efficiency due to the insufficient preparation and coordination of certain activities, and in some cases, roles and responsibilities needed to be defined more clearly.

“The diagnosis didn’t tell us anything major that we didn’t already know, but it did help confirm our perspective of things, with consistent figures and analyses to back it up,” explains Alain Wildanger, Genista’s managing partner. “There is always room for improvement in any company. It’s a normal process, particularly if you want to stay at the cutting edge of innovation.”

Based on these findings, the management team approved an 18-month action plan that notably aimed to improve operational



On the right:
ALAIN WILDANGER
Genista

efficiency (for building sites, maintenance and repairs) by 15%. It also introduced a series of processes, tools and indicators that would make it possible to monitor the performance of each department and the progress of every on-going project.

QUALITATIVE AND QUANTITATIVE GAINS

“To follow up on our progress, a series of indicators were identified and measured over time. The combination of the improved internal actions and processes meant that the indicators evolved in the right direction,” explains Mr Wildanger. “We weren’t able to implement all of the planned actions, as some changes were made along the way, but it was a productive exercise overall.”

In addition to the quantitative gains observed, various qualitative improvements were also achieved. A number of supervisory tools,

designed to facilitate the operational decision-making process and to make overall and project management more professional, were implemented.

“Our involvement in Fit 4 Innovation was an interesting and enriching experience that helped us to accelerate the introduction of several crucial processes. More than anything else, it enabled us to fully benefit from the skills of our human resources in order to implement a whole host of new initiatives that before were only theoretical visions,” explains Mr Wildanger, who has every intention of keeping this momentum going. “Our company claims to be innovative, and innovation doesn’t start, or indeed end, with such a programme. In fact, we are already working on a large number of other innovative projects.”



2018

BUSINESS DEVELOPMENT

 LUXINNOVATION



INTERNATIONAL BUSINESS DEVELOPMENT

Luxinnovation plays a key role in the economic promotion and prospection of Luxembourg abroad, a task that is carried out in close collaboration with the Ministry of the Economy, the Chamber of Commerce and other partners. Focusing in particular on three sectors – the automotive industry, clean technologies and the digital economy – the agency identifies relevant companies and works with them on a one-to-one basis to support them all the way from discovering the advantages of Luxembourg to incorporation and the launch of activities here.

**LUXINNOVATION PARTICIPATED
IN AND SUPPORTED**

26



**OFFICIAL MISSIONS
AND SECTOR-SPECIFIC
PROSPECTION VISITS**

Prospection efforts are focused on very specific geographical areas based on sector activities: the West Coast of the United States and China for the automotive sector; the Nordic countries for cleantech; Europe, Canada, Korea, the United States and Russia for the digital economy.

The agency participated in several economic missions and attended many international events (congresses, shows, exhibitions, etc.), which allowed it to increase its visibility abroad. In May 2018, it organised an impressive booth at the ICT Spring event in Luxembourg, which attracted significant international and local interest. Luxinnovation also established or maintained close relations with economic players interested in setting up a business in Luxembourg.

All these efforts were also supported by the services of the agency's Market Intelligence team, and its targeted research work that identifies potential partners and better organises prospection assignments.

Luxinnovation benefited as well from the groundwork carried out in the field by the eight Luxembourg Trade & Investment Offices spread around the world (Abu Dhabi, New York, San Francisco, Seoul, Shanghai, Taipei, Tel Aviv and Tokyo), which constitute an important source and relay of information for the organisation and implementation of these prospecting missions.

All these combined and coordinated actions bore fruit, since in 2018, no less than 12 new international companies finally chose to

settle in the Grand Duchy, with the support of Luxinnovation. The agency is also following dozens of other potential companies looking to set up an office in the country.

Upon their arrival in Luxembourg, these companies benefit from support and guidance by means of a soft landing process set up jointly by the House of Entrepreneurship, the Ministry of the Economy and Luxinnovation.

147



**NEW COMPANIES
WITH A POTENTIAL
INTEREST IN ESTABLISHING
ACTIVITIES**

Luxembourg identified

42



**FOREIGN
COMPANIES VISITED
LUXEMBOURG**

12



**FOREIGN
COMPANIES
REGISTERED**

in Luxembourg with support from
Luxinnovation

STIMULATING CLEANTECH BUSINESS FROM SCANDINAVIA

Developing the clean technologies sector is a priority in Luxembourg, and the country is keen to learn from the best. Luxinnovation has set up a partnership with Cleantech Scandinavia in order to attract companies and technologies from the Nordic countries that are among the world leaders in this field.

Luxembourg's central location and multilingual and multicultural environment makes the country an ideal location for accessing the fast-growing European market for clean technologies and solutions. This is why Luxinnovation works closely with the Ministry of the Economy to develop the cleantech sector and attract new ventures that can complement the existing ecosystem.

The Nordic countries are of particular interest. "They were among the first to invest in cleantech," says Georges Schaaf, Head of International Business Development - CleanTech & Manufacturing Industry at Luxinnovation. "As a result, they are home to a high concentration of the best clean technologies, and we believe that Luxembourg would be an excellent host country for many of these companies that want to reach out to the European market."

This strategy is part of Luxembourg's overall ambition to create an eco-system that is conducive to environmental technologies and particularly to the circular economy. "We offer an interesting entry market for Nordic companies that will fill technological gaps by joining forces with local players, while at the same time taking advantage of the country as a platform to develop their activities in central Europe", says Christian Tock, Director Sustainable Technologies at the Ministry of the Economy. "This is a win-win situation based on trust and collaboration."



**GEORGES
SCHAAF**

Luxinnovation

FACILITATING EXPANSION

Luxinnovation targets Nordic firms that want to expand their business beyond their home countries and establish a presence abroad in order to scale up their activities. After identifying the potential for a mutually beneficial collaboration, a relationship was established with Cleantech Scandinavia, a Nordic renowned provider and promoter of clean technologies. “Cleantech Scandinavia federates all the best companies, and the team has inside knowledge about which companies are looking for a new foothold abroad to continue growing,” explains Mr SchAAF.

For Magnus Agerström, Cleantech Scandinavia’s Managing Director, Luxembourg is a strategic location for Nordic companies aiming to grow in Europe due to its proximity to the French, German, Belgian and Dutch markets. “There is potential for industrial and R&D partnerships with the Luxembourg ecosystem and also for attracting funding from this capital-intensive region. Luxembourg companies could also benefit from the work we do to reach the Nordic and Baltic markets,” he points out.

NORDIC HUB

Georges SchAAF hopes to see Luxembourg become a new hub for expanding Nordic cleantech firms. “With the open borders, the immediate home market of a company located in Luxembourg extends to the 11.5 million inhabitants in the Greater Region,” he says. “The start-up ecosystem helps new companies become part of the national network. Being located in a small, very cosmopolitan country that uses English as the common business language also makes it easy for companies to keep their unique ‘Nordic DNA’.”

Magnus Agerström shares his hopes of seeing some Nordic companies expand through Europe from Luxembourg. “We would also like to see Luxembourg becoming an investment hub for cleantech start-ups and are interested in discussing how we can contribute to the efforts to steer capital in this direction,” he says. “In addition, we aim to provide a platform for exchange on smart cities, a field where Luxembourg and the Nordic countries could inspire and learn from each other.”

MARKET INTELLIGENCE

Luxinnovation's market intelligence department was set up in 2017 to provide essential economic information and data to improve the targeting of priority sectors. In addition to supporting the teams involved in international promotion and prospecting within Luxinnovation and the Ministry of the Economy, the unit provides information enabling sectoral mappings that are used to better understand the characteristics of a given market. In addition, Pilot projects are also carried out in collaboration with other institutions to make more effective use of this information.

In order to provide strategic recommendations on how to position Luxembourg in its international sector-related promotion efforts, Luxinnovation produced four market studies on various topics. A regular technology and market watch allowed monitoring of key trends in relevant sectors and better understanding of their development within Luxembourg as well as in relevant markets where prospecting activities are deployed. Priority prospects to be targeted were identified, and company profiles including in-depth due diligence were established.

The agency also conducted several mappings that provide a detailed overview of selected national economic sectors (in particular technologies in the health and wood sectors). Finally, several specific geographic reports were drawn up in order to identify potential business opportunities for national companies in countries where Luxembourg economic missions were conducted in collaboration with the Chamber of Commerce and the Ministry of the Economy.

4



MARKET STUDIES

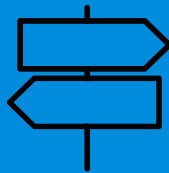
conducted in the fields of clean tech, data marketplaces, cyber insurance and connected cars

27



TARGETED PROSPECTION LISTS
compiled

4



SECTOR MAPPINGS

completely or partly undertaken

9



TECHNOLOGY AND MARKET WATCH THEMATIC ALERTS ISSUED

35



COMPANY PROFILES
established

2



COUNTRY REPORTS
produced

START-UP ACCELERATION

Supporting the creation and growth of innovative start-ups is a central part of Luxinnovation's business development activities.

The scope of the flagship acceleration programme Fit 4 Start considerably increased during the year, and the efforts to identify international start-ups that could benefit from setting up shop in Luxembourg were intensified. The agency also further enhanced its collaboration with the national start-up ecosystem.

Since 2016, each bi-annual edition of Fit 4 Start has offered five ICT start-ups 16 weeks of intensive coaching and a financial grant of up to €150,000. Due to its success, the Ministry of the Economy and Luxinnovation decided to double the number of places in 2018 to 10 in order to increase the impact of the programme. For the 7th edition of Fit 4 Start, in the autumn, the scope of the programme was also widened with an additional five places for start-ups focusing on digital health technologies. This pilot track reflects the dynamism and growth potential of Luxembourg's health technologies sector.

Fit 4 Start was also promoted when Luxinnovation attended the Vivatech fair in Paris to highlight the advantages of Luxembourg as a start-up nation to the international start-up community. 120 contacts were made with entrepreneurs with a potential interest in Luxembourg, several of whom were invited to apply for a place on Fit 4 Start and establish themselves in Luxembourg.

The Luxinnovation team advised almost 300 entrepreneurs over the year on a broad range of topics, notably business ideas, business models, the scaling up of ventures and access to funding. With coaching from the team, two start-ups successfully applied for young innovative enterprise grants and five for process and organisational innovation grants from the Ministry of the Economy. Five more applications for financial support were prepared for submission in 2019. Luxinnovation fosters synergies between mature companies and innovative start-ups that can help them maintain their competitive edge. Such collaborations can be very beneficial for both parties involved and have positive effects on the Luxembourg economy.

Collaborating with the whole start-up ecosystem, and helping start-ups get access to the full range of support available in Luxembourg, is important for Luxinnovation. A number of key players were invited to a “reverse pitch” day, where they had the opportunity to present their offer to the international group of short-listed applicants to Fit 4 Start. During the year, the agency intensified its exchanges with two key organisations specialised in fund raising, the Luxembourg Private Equity and Venture Capital Association (LPEA) and the Luxembourg Business Angels Network (LBAN), and strengthened its relationships with the University of Luxembourg, Nyuko and the Junior Chamber International Luxembourg that awards the Creative Young Entrepreneur Luxembourg. Luxinnovation was also once again a partner of the Mind and Market and Pitch Your Start-up initiatives.

REQUESTS FOR SUPPORT AND INFORMATION FROM OVER

500



ENTREPRENEURS

ACTIVE SUPPORT PROVIDED TO

283



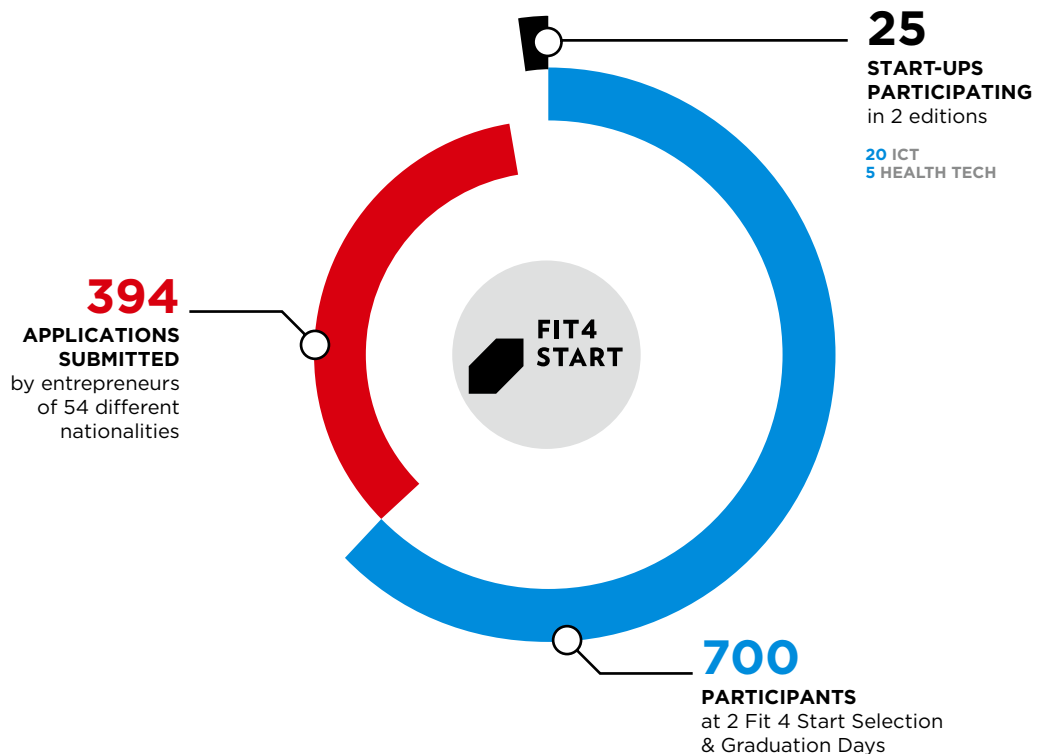
INNOVATORS AND COMPANIES

64



INNOVATIVE START-UPS CREATED

with support from Luxinnovation





On the left: KEVIN MULLER	On the right: CÉDRIC ALFONSI
Passbolt	Passbolt

CASE STUDY - PASSBOLT

FROM FIT 4 START TO DIGITAL TECH FUND: A SAFE MOVE

Luxembourg start-up Passbolt has developed a password management solution for companies. Having come to Luxembourg more or less by coincidence, the growing company has benefited from all the advantages offered by the national ecosystem.

The story about Passbolt started in India, but it is in Luxembourg that the adventure of the start-up really took off. French expatriate entrepreneur Kevin Muller – creator of a web agency that employs about 60 people in Delhi – realised that the password management in his company was a real headache. He therefore created a solution that first became a product in its own right and then evolved into the company Passbolt.

“With my two partners we wanted to return to Europe to create our start-up,” recalls the entrepreneur. “We thought at first more specifically about Switzerland, but stumbling, a bit by chance, on the Fit 4 Start programme, we finally decided to choose Luxembourg.”

The start-up obtained a place in the third edition of Luxinnovation’s start-up programme and Mr Muller was the first one to move to Luxembourg in order to follow the coaching sessions. Meanwhile, the company Passbolt was created and set up its headquarters at Technoport. Cédric Alfonsi, the second co-founder, also came to Luxembourg to get involved full-time in the start-up.



ACCESS TO A NETWORK

“We already had a great entrepreneurial experience behind us and were not necessarily ready to receive lessons on how to manage our company, but we realised that the people who listened to our pitch did not understand what we were doing,” Mr Muller admits. “We had fallen in love with our idea and did not have enough distance to ask the right questions. Fit 4 Start helped us refine our marketing strategy.”

Passbolt has developed a solution for sharing passwords between employees. The aim is not only to fill the security gaps created by these practices, but also to improve competitiveness, especially in the ICT sector. The solution was first offered as open source to a community of several thousand members who provided the young entrepreneurs with very important feedback to improve their product.

While waiting for its first revenues, Passbolt was looking for funds. The €50,000 obtained from Fit 4 Start was a first breath of fresh air. This was quickly followed by a private fundraising round of €110,000, which, together with the successful graduation from Fit 4 Start, made the company eligible for a second subsidiary of €100,000 from the Ministry of the Economy.

“Fit 4 Start not only helped us to define our business model, but also gave us access to a network,” says Mr Muller. “Our first investors came to see us just a few days after the end of the programme. All were business angels and one of them was even part of the Fit 4 Start jury.”

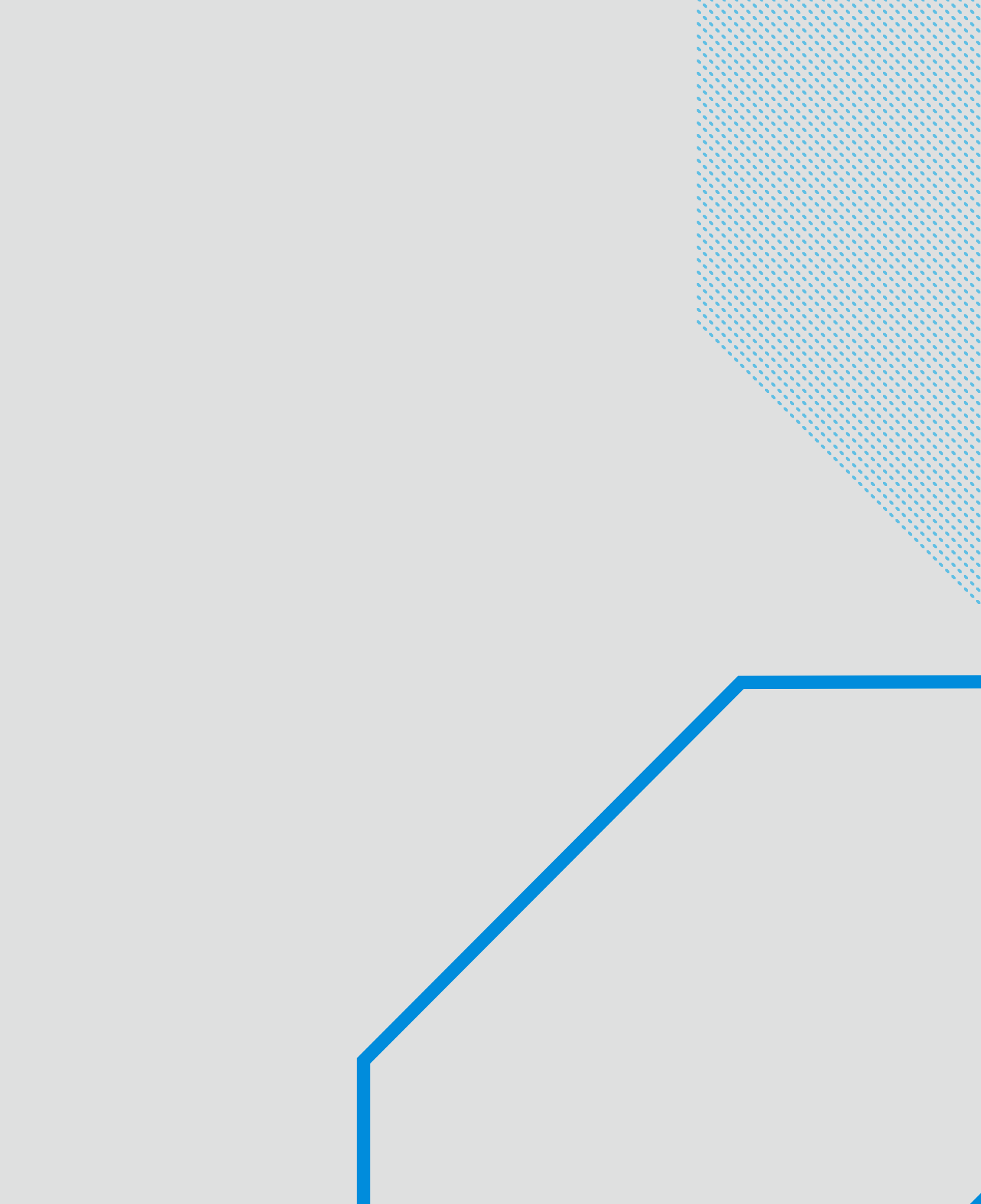
ACCELERATING GROWTH

With €260,000 on the account, Passbolt could focus on the technical development of its solution and on its commercial strategy. In May 2018, the start-up launched its first paying offers. Already during the first few days, the entrepreneurs were surprised to receive much larger orders than expected.

Things accelerated for the start-up which quickly felt the need to start a second round of fundraising. Mr Muller, Mr Alfonsi and Rémi Bertot, the third co-founder who had since arrived in Luxembourg, set to work. They first looked for business angels, before realising that venture capital funds were also interested.

The Digital Tech Fund, a public-private seed fund managed by Expon Capital, joined the Passbolt adventure and made it possible for the start-up to close a round of fundraising at the end of December 2018 for €460,000, twice as much as the target initially set.

As a result, the future is even brighter for the small company that is looking to recruit between three and five people by the end of this year, in particular to strengthen its sales team. The next steps? Mr Muller and his associates are more convinced than ever that they will take place in Luxembourg. In 2019, they hope to obtain a subsidy for process and organisational innovation to support their growth, which promises to be exponential.





2018

R&D AND INNOVATION SUPPORT

 LUXINNOVATION





CASE STUDY - CERATIZIT

ON THE ROAD TO INDUSTRY 4.0

In order to maintain competitiveness and increase their productivity on international markets, it has become essential for companies in the Luxembourg manufacturing sector to make a transition to Industry 4.0. That is why Luxinnovation, together with FEDIL, implemented the Digital4Industry (D4I) initiative in 2016 to work towards digitisation in industry. The “Customer to Customer Digitalisation” project of Ceratizit, manufacturer of hard materials products, designed and co-financed with the support of Luxinnovation, is a life-size example of what can be done.

CLAUDE
DIESCHBOURG

Ceratizit

Industry is moving towards a new era of completely automated manufacturing processes and customer interactions, grouped under the heading of Industry 4.0. "Our D4I initiative aims to raise awareness and inform companies about the areas and technologies related to the digital transformation of industry," explains René Winkin, the director of FEDIL. A message perfectly received by Ceratizit, who embraced this change in order to better meet the needs of its customers.

DIGITALISATION: THE KEY TO SUCCESS

Digitalisation is at the heart of the matter. "Our vision is to have a tool that would allow our customers to input their requirements for products from Ceratizit online and basically click on a button to launch the manufacturing process in our factory," explains Digitalisation & Industry 4.0 Manager Claude Dieschbourg. "The whole engineering process behind - the definition of each stage of the production process, the scheduling, the preparation of a quotation and the calculation of the exact price and delivery date - should become automatic."

For this large-scale project, Ceratizit chose to collaborate with the Luxembourg Institute of Science and Technology (LIST) in order to benefit from its knowledge in data analytics and artificial intelligence. "In order for clients to be able to design their own products via our interface, we need to simulate all the stages the products need to go through until their finalisation," Laurent Federspiel, Executive Assistant at Ceratizit, points out. "LIST supports us with developing a mathematical model - a kind of digital twin - of our factory that will be used to automatically calculate how the various machines will have to be set up to get the desired result. We have around a thousand different machines at the plant, so the challenge is enormous."

DEALING WITH BIG DATA

This digital transformation will include handling and analysing massive amounts of data. "This is a new field of expertise for Ceratizit. LIST helps us kick off the process and set up the right tools and databases. In the future, we will certainly need to hire more data scientists," says Mr Dieschbourg. "We are also scanning our network to identify Luxembourg start-ups that could help us take the process further," Mr Federspiel adds.

Ceratizit is member of the Luxembourg Materials & Manufacturing Cluster and contacted Luxinnovation at an early stage to explore co-funding opportunities for the Industry 4.0 project. The agency supported the company with preparing a well-built request for an R&D subsidy from the Ministry of the Economy and helped in particular with the definition of the project scope, the evaluation of technical risks and the configuration of the budget.

Luxinnovation also helped draft the collaboration agreement with LIST in such a way that Ceratizit could benefit from an additional co-funding of 15%. However, the joint project with LIST is only the beginning. "This is the first piece of the puzzle, but we will have to add many others," says Mr Federspiel. "The implementation of Industry 4.0 is not an evolution but a revolution, and we are determined to stay on top."

In order to enable all companies to carry out this "revolution", Luxinnovation, together with the FEDIL and the Chamber of Commerce, initiated the project "Digital Innovation Hub Luxembourg" (DIH-L). "This project aims to set up such a digital hub in Luxembourg, a kind of one-stop shop that companies can turn to for help in their efforts to digitise," summarises Mr Winkin. "The DIH-L will focus on technologies related to Industry 4.0."

CORPORATE R&D AND INNOVATION SUPPORT

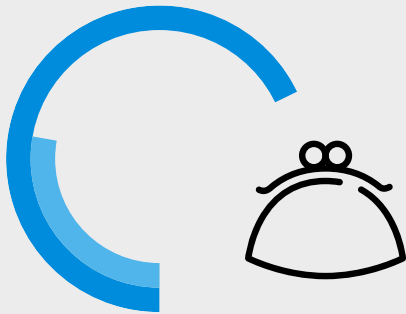
One of Luxinnovation's key missions is to help companies design and launch R&D and innovation projects with high impact. The agency's experts also support companies with preparing successful applications for R&D and innovation subsidies from the Ministry of the Economy. Almost 100 financial subsidies were awarded in 2018.

The R&D and innovation subsidies offered by the Ministry of the Economy are unique in their kind in Europe: the Ministry adopts a bottom-up approach, which means that all projects submitted that meet the selection criteria are likely to receive funding. Luxinnovation's role is to help companies optimise the way their activities and projects are structured so that they can be eligible for funding and provide them with an overview of relevant funding measures.

In addition to making sure that funding applications are well aligned with the European rules for state aid, Luxinnovation supports its clients with defining the scope of their projects, taking into account their strategy and objectives, as well as with establishing a product or service roadmap specifying project results and milestones. The agency also assesses companies' co-financing capacities. The R&D and innovation subsidies are in fact designed to have a leverage effect on mobilising private funding provided either by the companies themselves or by private investors, banks or the Société Nationale de Crédit et d'Investissement (SNCI). Luxinnovation can assist with putting together financial solutions involving several players.

In order to be eligible for funding, the R&D and innovation activities concerned must principally be carried out in Luxembourg. Companies applying must demonstrate the local substance of their projects and justify the possible return on investment that the subsidy could bring. Luxembourg entities belonging to multinational groups can show this via revenues resulting from the exploitation of intangible assets developed in the country. Luxinnovation can help identify suitable R&D partners, for example relevant public research organisations.

97
COMPANIES
FUNDED



28 LARGE
ENTERPRISES

69 SMALL AND MEDIUM-SIZED
ENTERPRISES

- **21** skilled craft companies
- **28** star-up

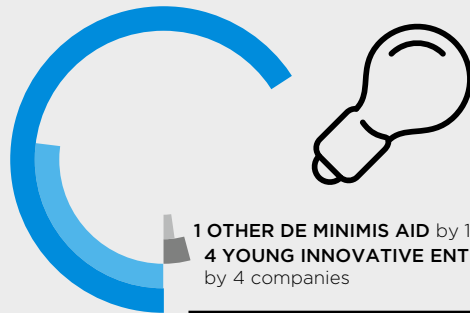
13 

ENVIRONMENTAL
PROTECTION AID
APPLICATIONS APPROVED

13 ENVIRONMENTAL PROTECTION
PROJECTS by 12 companies

98

R&D and innovation
aid applications
approved



1 OTHER DE MINIMIS AID by 1 company
4 YOUNG INNOVATIVE ENTERPRISE PROJECTS
by 4 companies

27 R&D
PROJECTS
by 22 companies,
including 5 collaborative R&D projects

66 INNOVATION
PROJECTS
by 59 companies, including:

- **15** Fit 4 Innovation diagnostics
- **9** Fit 4 Innovation projects
- **1** Fit 4 Circularity project
- **22** Fit 4 Start projects



On the left:
MATTHIAS HETTINGER
Steffen Holzbau

CASE STUDY - STEFFEN HOLZBAU

BUILDING THE FUTURE

General construction company Steffen Holzbau specialises in innovative building materials and energy efficient and sustainable buildings. Within its R&D project “Holz-Beton-Verbundträger”, the company has developed composite beams combining the virtues of wood and concrete.



For a company using “We’re building the future” as its tagline, innovation and performance are central concepts. Consequently, a few years ago, Steffen Holzbau joined Luxinnovation’s Fit 4 Innovation programme in order to analyse how to further improve its organisation and work methods. The input provided by the programme’s expert consultants helped the company increase its margins, boost its financial results and expand its staff by another 20 people. It also launched a continuous innovation process, the latest outcome of which is the “Holz-Beton-Verbundträger” project.

AN INNOVATIVE CONSTRUCTION ELEMENT

The aim of this project is to develop a ceiling construction element that provides a new configuration for the passage of ducts. This innovative concept allows for modification of the ducts at a later stage without this having an impact on the bearing system of the ceiling. By combining the advantages of wood and concrete, the beams can be longer and carry more weight compared to pure wood structures. “Our beams also meet all the criteria for fire protection, acoustic insulation and deflexion without losing any of their flexibility,” adds Managing Director Matthias Hettinger.

Steffen Holzbau developed the beams in close collaboration with engineering bureau PHIP. “We often work together, and the combination of our know-how in wood construction and the engineering idea of PHIP gave birth to the project,” explains Stephan Hostert, who manages the company together with Mr Hettinger. When discussing the project idea with Luxinnovation, the agency brought up the possibility to apply for an R&D subsidy from the Ministry of the Economy. “It is thanks to Luxinnovation that we found out about this co-funding opportunity,” he says. “They advised us on how to design the project, helped us to prepare the subsidy request and supported us in our contacts with the Ministry.” Luxinnovation also provided input on how to establish a solid partnership agreement with PHIP that would be beneficial for both partners.

The wood-concrete beams are used for the first time in Steffen Holzbau’s new administrative building that is currently under construction. “We are still in the test phase,” underlines Mr Hettinger. “We have successfully tested the beams’ ability to carry weight together with RWTH Aachen University. Once all tests have been finalised and we are completely convinced that our requirements are met, we will put the beams on the market.”

WOOD: THE MOST SUSTAINABLE BUILDING MATERIAL

The “Holz-Beton-Verbundträger” project has already been presented to the members of the Luxembourg Wood Cluster, who visited the building site in November 2018 as part of a tour to four innovative Luxembourg projects based on wood. Mr Hettinger is part of the Wood Cluster board and plays an active role in its efforts to promote the use of wood in all possible applications. “The cluster brings together a very interesting group of stakeholders: forest owners, sawmills, construction firms and architects as well as representatives from relevant ministries and administrations”, he says. “We work together to overcome the prejudices that still exist concerning the use of wood as a material and to do away with the obstacles for its more extensive use.”

For Mr Hettinger, it is a pleasure to be part of these efforts: “At Steffen Holzbau, we consider wood as the building material of the future, because it is the most sustainable material. This is of course a long process, but we are on the right track.”

EUROPEAN R&D AND INNOVATION SUPPORT

Luxinnovation provides support to clients from the public and private sectors looking for European funding, in particular in its role as National Contact Point (NCP) for Horizon 2020, the EU's framework programme for research and innovation. These efforts contributed to the very positive results obtained by Luxembourg organisations in 2018, with a considerable increase of both the success rate of project proposals and the amount of Horizon 2020 funding received.

Throughout the year, the NCP team welcomed clients to discuss their project ideas, help them define an optimal funding strategy and guide them until the submission of their project proposals. The team also used its extensive international networks to help identify potential project partners, and advised successful applicants on the management of their projects.

The annual Horizon 2020 Day, which provides information on forthcoming calls for proposals, gathered approximately 80 participants. Luxinnovation also organised an international conference on the Innovative Medicines Initiative (IMI), a European public-private partnership funding applied research on health-related topics. Several Luxembourg organisations are part of international consortia that have recently been successful in obtaining IMI funding. In addition, workshops were organised on specific Horizon 2020 work programmes and policy areas, as well as on topics such as successful proposal writing.

Horizon 2020 spans over the period 2014-2020. Through their participation in the programme committees run by the European Commission, Luxinnovation's experts actively contributed to the process launched to ensure that the topics funded in 2020 allow for a smooth transition to the next framework programme, Horizon Europe. In order to facilitate the application process for Luxembourg stakeholders, the agency reactivated the Fit 4 Horizon 2020 programme that provides grants aimed at reducing the economic risk associated with preparing a Horizon 2020 proposal for private organisations.

2018

73

NEW CONTRACTS SIGNED

for Horizon 2020 projects with Luxembourg participants

€33.03

MILLIONS of Horizon 2020 funding obtained

LUXEMBOURG PARTICIPATION IN HORIZON 2020

Accumulated figures for 2014 - 2018

287

PROJETS involving Luxembourg participants

€105.38

MILLION of Horizon 2020 funding obtained

SUCCESS RATE OF SUBMITTED HORIZON 2020 PROJECT PROPOSALS

	2017	2018
Luxembourg	13,60 %	23,70 %
European Union	14,66 %	17,75 %

TOWARDS A WORLD WITH DRIVERLESS CARS

In the coming years, autonomous, driverless vehicles will take to the roads – a dramatic change, both for passengers of such cars and buses and for other drivers. With support from Luxinnovation, the Luxembourg Institute of Science and Technology (LIST) has set up a Horizon 2020 funded project studying how this mobility of the future will impact individuals, businesses and society.

With cars being a taken for granted daily feature of our lives, it is hard to imagine the courage of the drivers of the first vehicles that were not horse drawn... Today, another mobility revolution is just around the corner: the arrival of connected and autonomous vehicles. "This will be a complete paradigm shift," underlines Francesco Ferrero, Lead Partnership Officer – Mobility, Logistics and Smart Cities at LIST. "Human beings will need to adapt and learn how to use these new technologies and associated services. Otherwise, they will never be adopted."

THE HUMAN FACTOR

Together with his colleagues, Mr Ferrero is the driving force behind PAsCAL ("Enhance driver behaviour and Public Acceptance of Connected and Autonomous vehiCLeS"), a 36-month project funded by Horizon 2020, the EU's framework programme for research and innovation. Its aim is to create a "Guide 2 Autonomy" that will improve the understanding of the implications of connected and automated vehicles on society, educate future drivers and passengers and help decision makers navigate the transition to this new form of personal mobility.

"We want to investigate people's expectations regarding automated vehicles, understand their fears and concerns and help design services that will be used and trusted," says Mr Ferrero. "We will also analyse the behaviour of drivers in semi-autonomous vehicles to see how the human-machine interaction can be as smooth and safe as possible, and study the need for training and certifications." Another aspect

is how to optimise autonomous mobility for people who are not able to drive classical cars, for example the visually impaired.

PAsCAL includes 13 partners from 7 different countries, which will make it possible to conduct studies at the European level. The project will also include practical pilots in different countries. "We will have pilots in Luxembourg and Sweden with high-capacity autonomous buses produced by Volvo, training with driving schools and academies in the UK and Italy, and a pilot with different types of shared connected vehicles in Germany," Mr Ferrero explains. "We will also do a trial with an application helping people with disabilities, or those who travel with heavy luggage or strollers, move around the transport network of Madrid."

RESEARCH THAT MAKES A DIFFERENCE

Putting together such a massive project was a challenge, and LIST called on the expertise of the National Contact Point for Horizon 2020 mobility issues hosted by Luxinnovation. "The call for proposals was complex with a large non-technological component, and Luxinnovation helped us determine what topics were the most interesting to investigate. The agency also helped us to identify other European mobility projects with which we will share experiences, and reviewed the proposal before submission," says Mr Ferrero. "All in all, we received very valuable support."

In addition to coordinating the project, LIST will contribute with psychological survey tools, the development of autonomous driving simulators



**FRANCESCO
FERRERO**

**Luxembourg Institute of
Science and Technology (LIST)**

and the analysis of data collected from the various pilots. Three Luxembourg companies are part of the project consortium: the Volvo e-bus competence centre, specialist consultant LuxMobility and Examotive, an R&D-oriented start-up developing new business models for car sharing. Transport provider Sales-Lentz also plays an active supporting role. "Our aim is to conduct applied research that serves a real need, in particular in Luxembourg," Mr Ferrero points out. "Participating companies are exploring new mobility business opportunities, and PAsCAL can help them get there faster and better."





2018

MARKETING & COMMUNICATION

 LUXINNOVATION



MARKETING & COMMUNICATION

Luxinnovation's marketing and communication activities continue to evolve. In addition to highlighting the benefits of innovation and showcasing the support offered to clients, they also play a central role in the agency's international promotion and prospection efforts. In 2018, the agency intensified in particular its digital communication in terms of online articles, newsletters, videos and social media campaigns.

With an already strong track record in the digital field, Luxinnovation stepped up its digital communications efforts even further in 2018. Original online articles drafted by the agency's editorial team highlighted national innovative ventures and initiatives as well as Luxembourg's advantages as a home for international companies targeting the European and global markets. These articles made up the content of the agency's two newsletters: *Insights* that is disseminated to Luxinnovation's national clients and stakeholders, and the Luxembourg Trade & Invest newsletter *Crossroads* that is aimed at international investors. As of September, a weekly article is also published in the *Trendin'* newsletter by PaperJam under the heading "La minute de Luxinnovation".

Videos produced included "Attracting talent", realised in collaboration with ADEM, and the related "A quick look at Luxembourg" (subtitled in eight languages) that is used for the international promotion of the country. A series of new videos presented the Fit 4 Start acceleration programme. Several international social media campaigns were run, notably featuring the Fit 4 Start calls for applications and international events.

Printed publications published during the year included, among others, the second edition of the international *Happen* magazine and two brochures presenting the Creative Industries and Wood clusters.

Major events organised included the Wood Cluster Forum in March, two Fit 4 Start Graduation and Pitching Days in March and October, a Luxinnovation/Trade & Invest stand at ICT Spring in May, Automotive Day in June and a conference on the Innovative Medicines Initiative in December. Luxinnovation also contributed to the organisation of national

7



**NEW BROCHURES
AND MAGAZINES
PUBLISHED**

20



**NEWSLETTERS
PUBLISHED**

10 editions of *Crossroads* and
10 editions of *Insights*

pavilions at key international trade fairs, including JEC World and Vivatech.

Luxinnovation further strengthened its marketing and communication-related collaboration with the other main stakeholders involved in the Luxembourg Trade & Invest promotion activities, namely the Ministry of the Economy and the Chamber of Commerce. The agency also worked closely with the Luxembourg Trade & Investment Offices to support the promotion activities in their respective target territories.

16



VIDEOS
produced

55



EVENTS
ORGANISED

OVER

200



MENTIONS OF
LUXINNOVATION
in Luxembourg newspapers
and magazines

**FOLLOWERS ON SOCIAL
MEDIA IN 2018:**

Luxembourg Trade & Invest accounts

f 2,623 **+9%**

t 3,674 **+18%**

Luxinnovation accounts

f 2,958 **+81%**

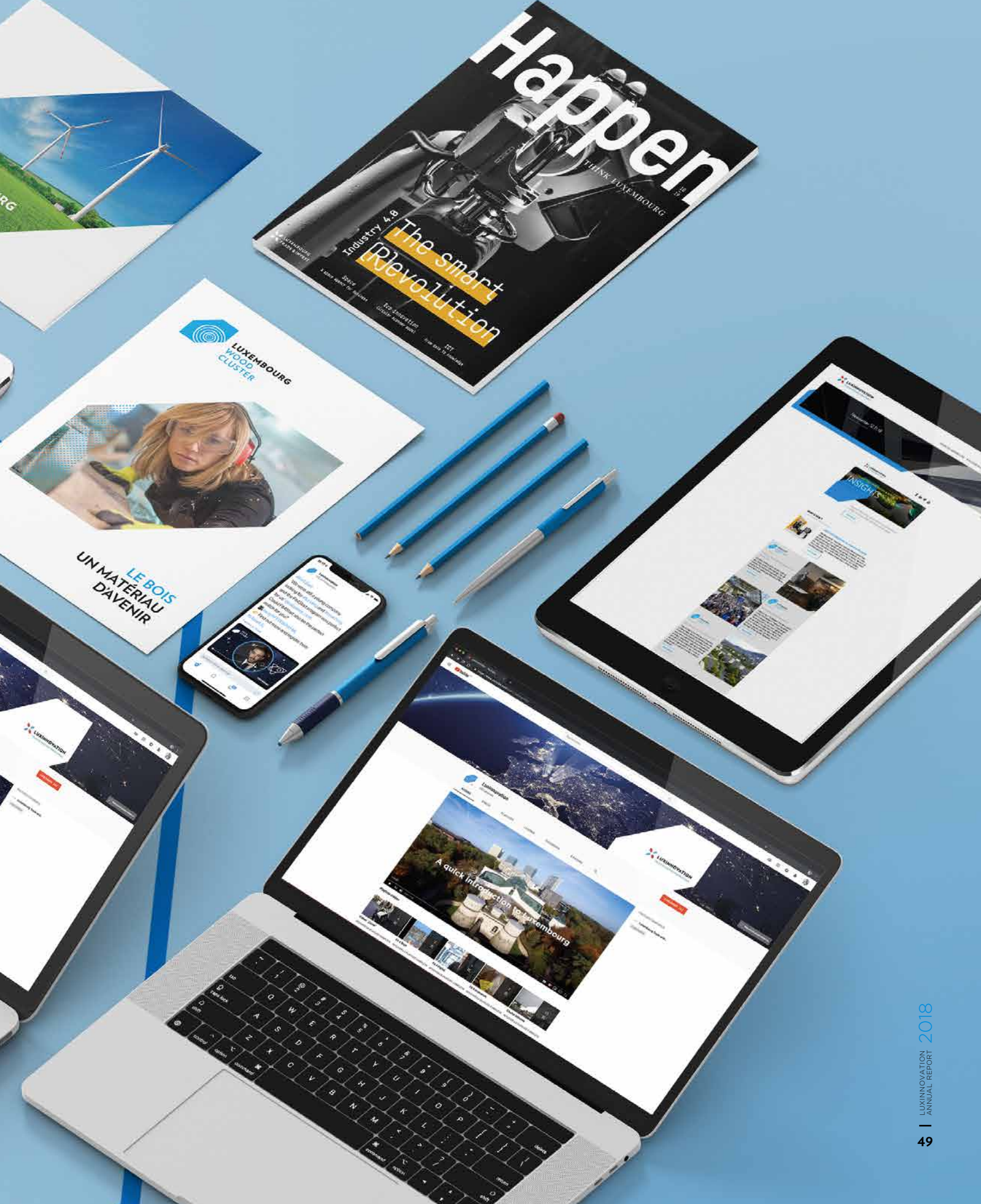
in 4,738 **+51%**

t 5,880 **+26%**

COMMUNICATION COLLATERAL 2018

EXAMPLES










2018

MEET THE LUXINNOVATION TEAM





To leave and return... When Charles Betz, who grew up in Luxembourg City, left the country to continue his studies in molecular biology abroad, his idea was to pursue an international academic career. His first destination was Switzerland. "In general, Luxembourgers who study abroad go where there are other compatriots and stay within this group. I did not want that, and this is why I chose Basel which is very similar to Luxembourg and has a very pleasant quality of life."

At the University of Basel, Charles obtained his Master's degree and then a scholarship for a position as researcher in Boston. "This was a great experience. I could have continued working in the same field in London, but the best experts in the world were in Basel so I went back to finish my PhD."

He then chose to work in one of the university's laboratories where he studied blood system development by working on zebrafish. Meanwhile, after becoming a father he was looking for more stability as research was covered by fixed term contracts. Reconnected with Luxembourg through one of his acquaintances working at the University of Luxembourg, Charles was finally persuaded to try his luck within Luxinnovation's European finance team.

"I hardly knew the agency at the time, but the more I checked it out the more I liked what it was doing. In my daily work, my background in research is very valuable for better defining companies' needs. At the same time, I learnt a lot about project management, and I realise that this would have been very useful in my career as a researcher!"

Having joined the agency in 2017, he also participates in preparatory meetings for Horizon 2020 projects in Brussels where he can influence certain discussions in line with the expectations of the Luxembourg organisations that he represents. "This gives you a 360-degree vision and enables you to pass on information in both directions."

**"MY
BACKGROUND
IN RESEARCH IS
VERY VALUABLE"**

CHARLES BETZ

Advisor - European R&D and Innovation Support



**“THE
INTERNATIONAL
DIVERSITY IS VERY
ENRICHING”**


LENA MÅRTENSSON
Senior Marketing & Communication Officer

Like many other foreigners who discover Luxembourg, Lena Mårtensson thought that she would stay two or three years when she arrived in 2001 from her native Sweden. Almost two decades later, she is still very happy here and does not hide her “love” for the country of which she knew almost nothing when she arrived. “I expected a bigger culture shock, but the great international diversity here helped a lot. Of course you have to be open minded and flexible, but having the opportunity to work with people from so many different nationalities is very enriching.”

Lena had already experienced this cultural mix when, armed with a degree in international business management, she was in charge of a European project aimed at developing a regional innovation strategy. A few months after its end, she was invited to move to Luxembourg to join the secretariat of the Innovation Regions in Europe network, which was looking for someone from Scandinavia.

This experience lasted for seven years. Lena then decided to make a new career move and join Luxinnovation, an organisation which had aroused her interest for some time. In August 2008, she was recruited as a member of the Marketing & Communication team in charge of *FOCUS*, a magazine that was edited and published by the agency in order to promote internationally the country’s innovative companies and outstanding research teams. She also rapidly took over the deployment of the internet portal for innovation.

Now a Senior Marketing & Communication Officer, her tasks have obviously expanded over the past 10 years. “What I’m doing today has not a lot to do with what I did at the beginning. The agency’s missions have diversified and expanded into new areas of activity, notably international economic promotion. With this dynamic evolution things are never monotonous and my work remains exciting every day.”

A black and white portrait of Arnaud Duban, a man with a beard and mustache, wearing a dark blazer over a light-colored shirt. He is smiling and looking towards the camera. The background is a blurred office setting. A large blue geometric shape is overlaid on the right side of the image, containing the quote and name. A white semi-transparent box is overlaid on the bottom half of the image, containing the main text.

“NEW OPPORTUNITIES MAKE THE JOB EXCITING”

ARNAUD DUBAN
Head of SME Performance

During his 13 years at Luxinnovation, Arnaud Duban has had a wide range of responsibilities that have given him an excellent insight into the issues Luxembourg SMEs face and made him able to better understand the challenges they face.

Professionally active in Luxembourg since 1997, ever since obtaining his engineering degree in Nancy, Arnaud was first a quality engineer at Rotarex, then process engineer at Guardian before joining an industrial start-up as business developer. This led to his first contacts with Luxinnovation in the context of the 123 Go business plan competition.

He joined the agency in 2006 as coordinator of the Innovation Relay Centres network, which since then has become the Enterprise Europe Network (EEN). He was also in charge of the SurfMat cluster (now the Materials & Manufacturing Cluster) and of monitoring various Interreg and ERDF projects, before joining the SME department where he worked developing the service offer and strengthening the support for SMEs. He now holds the position of Head of SME Performance.

“I also contributed directly to setting up the ‘Fit 4’ performance programmes,” he adds.

“So I can say that I master quite well all topics related to innovation in SMEs, whether at the national or the European level.”

Over the years, Luxinnovation’s reputation has grown in the SME community as the various programmes have developed and proven their value. “By acting as a point of reference in innovation for companies, we have intensified our relationship with them and strengthened our position as a neutral third party and trusted partner, a role that goes far beyond the specific content of each programme.”

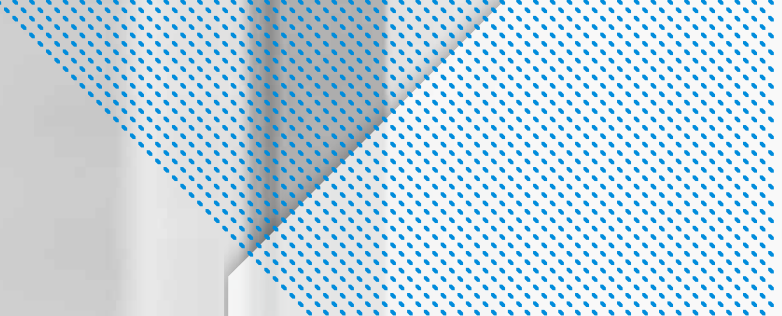
In just over a decade, Arnaud was able to appreciate the diversity and richness of a structure that he has seen quadruple over the same period of time. “Being able to change sectors and roles is one of the reasons why I have stayed here. Today, it is the richness of the content, the development of the activities and the new opportunities that constantly emerge which make the function exciting.”

A black and white portrait of Barbara Grau, a woman with long, wavy hair, smiling slightly. She is wearing a dark dress with a light-colored floral pattern. The background is a blurred indoor setting. A blue geometric shape is overlaid on the bottom left of the image, containing text.

**“WE ARE
INCREDIBLY
LUCKY”**

BARBARA GRAU

Senior Advisor - Corporate R&D and
Innovation Support

A decorative blue dotted pattern in the top right corner of the page, consisting of small white dots arranged in a grid on a blue background.

When joining Luxinnovation in September 2015, Barbara Grau not only brought her skills but also a soft accent from Spain. Born in Valencia and holder of a Master’s degree in financial engineering from Marseille, she started her career with one of the “big four” in Barcelona and specialised in supporting companies applying for state aid and tax incentives for R&D.

In 2009, Barbara followed her partner and left the Iberian Peninsula for Luxembourg. “The first winter was a bit difficult, but I don’t regret my choice at all. Once you live here, you get used to it! Now when I go back to Spain, I almost feel like a tourist.”

For nearly six years, she worked in the financial department of Performance Fibres in Bascharage. However, as the company prepared to cease operations in Luxembourg, Barbara anticipated the closure of the site and left to join Luxinnovation. “I had met representatives of the agency and found that some of its activities corresponded to what I did in Spain, but this time on the public side.”

As member of the Corporate R&D and Innovation Support team, Barbara carries out due diligence, identifies the innovation potential of companies and advises on relevant subsidies. “I have a financial background, but I also understand the technical aspects of a project. My technical engineer colleagues are also able to look into the financial side.”

Barbara and her colleagues work closely and effectively with the clusters and the international business development team. “We also facilitate cooperation between companies to help them get access to expertise that they don’t have internally. In the end, when an application is submitted to the ministry, the preparation is such that the success rate is really very high.”

With a passion for learning languages, Barbara has started the process of becoming a Luxembourgish citizen. She really appreciates the multicultural environment that surrounds her and her family. “My two children already speak four languages. We are incredibly lucky to be able to experience this.”

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Until 27 March 2019

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As of 28 March 2019

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Lynn ZOENEN

Global Affairs Manager
Ispace

ANNUAL ACCOUNTS

BALANCE SHEET 31 DECEMBER 2018 (EUR)

ASSETS	2018	2017
FIXED ASSETS	640.407,76	704.371,43
Intangible assets	237.864,87	301.653,59
Tangible assets	402.542,89	402.717,84
CURRENT ASSETS	3.188.706,61	2.787.712,00
Debtors	729.577,96	2.373.478,71
Cash at bank and in hand	2.459.128,65	414.233,29
PREPAYMENTS	75.976,09	63.941,01
TOTAL	3.905.090,46	3.556.024,44

CAPITAL, RESERVES AND LIABILITIES	2018	2017
CAPITAL AND RESERVES	2.630.059,58	2.614.631,68
Subscribed capital	541.739,24	541.739,24
Reserves	2.030.389,59	1.999.068,64
Profit or loss for the financial year	0,00	0,00
Capital investment subsidies	57.930,75	73.823,80
PROVISIONS	249.370,18	215.024,00
CREDITORS	591.105,13	568.179,59
Amounts owed to credit institutions	2.588,97	2.613,33
Trade creditors	288.343,44	318.971,75
Other creditors	300.172,72	246.594,51
DEFERRED INCOME	434.555,57	158.189,17
TOTAL	3.905.090,46	3.556.024,44

PROFIT AND LOSS ACCOUNT 31 DECEMBER 2018 (EUR)

	2018	2017
Other operating income	9.924.342,11	9.157.388,71
Raw materials and consumables and other external expenses	-2.382.220,16	-2.331.230,62
Staff costs	-6.986.789,66	-6.320.255,51
Value adjustments	-238.920,54	-200.072,47
Other operating expenses	-316.424,14	-306.239,63
Other interest receivable and similar income	12,39	428,97
Interest payable and similar expenses	0,00	-19,45
Profit or loss after taxation	0,00	0,00
PROFIT OR LOSS FOR THE FINANCIAL YEAR	0,00	0,00

OUR TEAM

As of 27 March 2019

Sanna _____ **ALARANTA**
Jean-Philippe _____ **ARIE**
Anthony _____ **AUERT**
Jean-Claude _____ **BACKENDORF**
Sasha _____ **BAILLIE**
Stefan _____ **BEREND**
Charles _____ **BETZ**
Sara _____ **BOUCHON**
Johnny _____ **BREBELS**
Lucie _____ **BRIDARD**
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Virginie _____ **GODAR**
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Isabelle _____ **HENNEQUIN**

Sue _____ **HEWITT**
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Benjamin _____ **QUESTIER**
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Georges _____ **SCHAAF**
Noémie _____ **SCHULER**
Stéphanie _____ **SILVESTRI**
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Sofia _____ **TRIGO**
Laurence _____ **VAN LOOY**
Kathrin _____ **WATTELLIER**



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