

COVERSTORY





The first "Meet Luxembourg", organised with the support of the Ministry of the Economy, by the MICE cluster and Luxembourg for Tourism, took place from 1 to 3 September 2016 at the Kirchberg Conference Centre. The aim of the show was to raise awareness of Luxembourg as a business tourism destination.

Credit: Luxembourg for Tourism

CLUSTERS

FEDERATE TO INNOVATE

Since 2002, Luxembourg's government has promoted the creation of clusters in those sectors judged priorities for the country's economic diversification. It is a question of bringing together actors from industry and from research to build upon and give greater value to the skills and expertise already present in Luxembourg. The challenge is to go further and seize the opportunities to find development pathways, and to implement projects through partnerships.

Text: Marie-Hélène Trouiliez

A "cluster" brings together companies and actors from the same economic sector, and from related sectors, in a given geographic area. It structures and strengthens networking. The idea of "clusters" was popularised by Michael Porter in his 1990 book "The Competitive Advantage of Nations". His idea was to use the model of clusters to group organisations in an area together to build their competitiveness. Proximity and links, whether vertical (e.g. customer-supplier links) or horizontal (complementary products and services, use of resources, similar technologies), imply social relations from which the companies concerned can benefit. So, the cluster can be understood

as "A form of network that occurs in a given location, where the proximity of businesses and institutions ensures certain common elements and improves the frequency and impact of interactions"; in other words, it is a form of networked organisation in the area, emphasising the links in that place. However, even if geographical and organisational proximities are significant assets in helping a cluster work well, there are some pitfalls to be avoided such as the phenomena of spatial lock-in, overly diverse objectives, organisational bottlenecks ... Effective governance and active participation of all stakeholders are key to success for an emerging cluster.

IMPROVING COMPETITIVENESS BY SHARING SKILLS

A good relationship can create great opportunities. Based on this idea Luxembourg has set up eleven clusters in the country's strategic economic sectors. Their mission is to improve their companies' capacity for innovation and, of course, productivity by facilitating interaction and symbiosis between them. Thus, the private sector, ►



Michael Porter's "diamond"

According to Michael Porter, clusters makes it possible to intensify the interaction between four complementary factors that constitute a competitive advantage, synthesised by the "diamond".

- Resources, which include the production factors of cluster companies: the scientific and technical workforce; capital for the stages of corporate financing; infrastructure and natural resources.
- A healthy and stable political, legislative and economic environment that encourages investment, innovation and competition.
- A quality local market with discerning consumers pushing businesses to more innovation and quality.
- A rich local fabric of suppliers and related industries.



01.

researchers and the state authorities are investing in identifying common needs and opportunities with the aim of creating new projects that will benefit them all and the economy in general. They also contribute to the international influence of the country, notably by attracting foreign direct investment and the highly qualified workforce required by the stakeholders' dynamism.

THE CLUSTER INITIATIVE – A KEY ELEMENT IN INNOVATION POLICY

In 2002, the Luxembourg government launched the Luxembourg Cluster Initiative, a key element of the national research and development and innovation policy, which brings together several clusters and innovation networks established throughout the country. The initiative aims to develop state-of-the-art technologies, while supporting Luxembourg's existing technological expertise, as well as promoting the development of centres of excellence. Luxinnovation, the national agency for the promotion of innovation and research, oversees the daily organisational management carried out by a cluster manager. Each cluster is headed by a president representing the private sector and who is assisted by two vice presidents from public research. The Luxembourg Cluster Initiative offers specific services and tools tailored to the needs of its members, in line with its five pillars: business development, product and service innovation, internationalisation, prospecting and branding.

The clusters included in the initiative were not chosen at random. They focus on selected strategically key technologies and aim to strengthen already flourishing economic sectors in Luxembourg, as well as to develop new business sectors with the greatest potential for the sustainable development of the national economy. Between 2002 and 2016, five clusters were created bringing together leading compa-

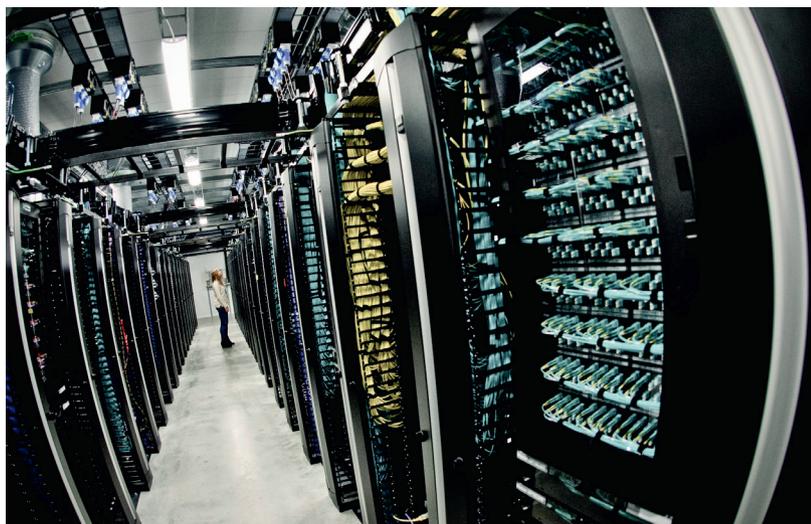
nies in the biomedicine, environmental technology, information and communication technology, material sciences and automotive fields. In 2016, the Luxembourg Cluster Initiative continued its development with new members joining its ranks. To the five existing clusters were added two new clusters active in the timber and the creative industries sectors.

THE LUXEMBOURG ICT CLUSTER

Created in 2002, the Luxembourg ICT Cluster brings together players from the information and communication technology sector in Luxembourg. It aims to optimise the use of ICT as an enabling technology and to enhance the value of the ICT sector, by encouraging networking and collaboration between the private and public sectors.

Among the numerous national and international promotion or networking services, specific to clusters, include the support given by the ICT Cluster to business development in targeted areas, aligned with Luxembourg's priorities: cybersecurity, *fintech*, *big data*, the internet of things, high performance computing, artificial intelligence, *blockchain*, etc. or help for promising ICT start-ups in their international development in collaboration with other players in the Luxembourgish ecosystem.

In 2018, the Luxembourg ICT Cluster and the Luxembourg Materials & Manufacturing Cluster took part in the European High-Performance Computing (HPC) flagship project, in collaboration with the Ministry of the Economy and the Luxembourg Institute for Science and Technology (LIST). Luxembourg is the initiator of this supercomputer and coordinates a group of several countries. The purpose of this project is to complete the European network of supercomputers for the benefit of Industry 4.0. Applications will be developed to improve everyday life, support the "data-driven" economy and serve the "Smart



Credit: Numerama

02.

Nation” concept. The European Commission has backed up its support for this project with significant financial resources.

THE LUXEMBOURG MATERIALS & MANUFACTURING CLUSTER

The members of the Luxembourg Materials & Manufacturing Cluster, created in 2002, range from start-ups to multinational groups. The cluster focuses on composite materials, bio-sourced materials, nano-materials and Industry 4.0, which includes additive manufacturing (3D printing), automation and robotics. If we consider industrial activities related to the manufacture of materials or semi-finished products useful to industry, Luxembourg has several useful assets. Some references, to mention only a few beyond ArcelorMittal, are enough to convince us that there is a skill pool available in the country: Dupont of Nemours, Guardian, Goodyear, Tarkett ... Through the materials cluster, more than 75 active member companies gather together regularly to work on different topics.

Luxembourg has developed real expertise especially in the development of composite materials - alloys of fibres and resins with new properties, from which innovative applications can be derived. Composite materials have been the subject of a working group and an ambitious project involving several Luxembourg companies, the LIST, the University of Luxembourg and the Ministry of the Economy. The Luxembourg Materials & Manufacturing Cluster was thus involved in the creation of the National Composite Centre - Luxembourg (NCC-L), a European-wide skill centre for composite materials created in 2015 and employing around 60 people. With a budget of 100 million euros over five years, the NCC-L is financed by public and private funds. In Luxembourg, the composite materials sector employs ►

01. March 21, 2018: The Luxembourg Wood Cluster organised the first Wood Cluster Forum at the Cultural Centre in Mersch, in the presence of the Secretary of State for Sustainable Development and Infrastructures, Camille Gira.

02. By the end of 2018, Luxembourg will acquire a High-Performance Computer (HPC). With this supercomputer, Luxembourg, as a European leader in the field of digitisation, and the EU intend to ensure their competitiveness on a global scale. The European Commission department assigned to the HPC project will be in Luxembourg and will employ around 200 people.



JOHNNY BREBELS
Head of Cluster Initiative & Flagship
Projects, Luxinnovation

“ 3,000 net new jobs by 2020 ”

How would you describe your role in your organisation?

The first step is to detect, analyse and create synergies between clusters, sectors and actors. For this we have a similar governance for each of our 7 clusters: a president from "the field", a cluster manager who knows the economic landscape perfectly and a steering committee that brings together the main players in each sector. Then, it is a matter of consolidating the strategies of each of the clusters and translating this into an annual action plan, paying attention improving possible coordination between the different clusters. Finally, it is also a matter of detecting and initiating flagship projects, that are large scale and have a great economic impact. Achievements such as the National Composite Centre Luxembourg, the Circular Economy Hotspot Wiltz or the Automobility cross-border test bed are some examples, among others, of what we have been involved in.

By 2020, what are the measurable objectives expected for each entity?

The objectives of the next performance contract (2018-2021) are being finalised. We are aiming for some 200 collaborative projects from cluster activities to be implemented or to be supported by cluster management. 40 of these projects will benefit from

national RDI-type financing, four of which will be the subject of a public-private partnership and two of which are for RDI-type innovation clusters or research infrastructure. As a reminder, in 2017 alone, we were behind 264 connections between companies, we supported 143 companies and no fewer than 38 collaborative projects were initiated by the clusters.

How many jobs should the Cluster Initiative help create?

We estimate that between 2014 and 2020, all our actions will create about 3,000 net new jobs.

**INTERVIEW****CORINNE BREVER**

CEO, Brever Bois, REPRESENTATIVE OF FEDIL (Federation of Luxembourg Industry) WOOD AND MEMBER OF Wood Cluster Board

“
We are seeing a resurgence of interest in wood, a sustainable and ecological resource”
”

In the era of modern technologies, why a cluster dedicated to wood?

The wood cluster helps to promote the timber industry in Luxembourg. Today, we are witnessing a renewed interest in wood, a sustainable and environmentally friendly resource that can be used in a wide variety of areas, including green buildings. The cluster's mission is to promote wood as a local and regional resource, optimise its marketing and give new life to products. Finally, the cluster is working on promoting research and innovation in the timber sector to modernise this rather traditional sector and make it more attractive.

What does the Wood Cluster bring to your company and the timber industry?

Since the timber industry is not very big in Luxembourg, the cluster promotes collaboration between companies. Our members come from different branches and find new opportunities for local or Greater Region collaboration through networking with other members of the Wood Cluster. Indeed, it is not necessary to go very far to find other actors in the timber industry. The cluster also helps to think about finding solutions related to wood supply in the future.

Does the cluster make it easier to identify and address common needs?

The real strength of a cluster lies in its ability to bring together the parties involved and have them collaborate successfully. Our members think collectively, build collaborative projects through synergies, and find ways to address common issues and challenges. Different working groups with specific skills in a given field have been created to facilitate these approaches. These groups oversee proposing solutions and promoting the exchange of ideas and good practices.



03.

around 1,600 people with a turnover of around 400 million euros a year.

THE LUXEMBOURG BIOHEALTH CLUSTER

The Luxembourg BioHealth Cluster was launched in 2008 and aims to strengthen, and capitalise upon, the national strategy developed by the Luxembourg government, so that molecular diagnostic science becomes the cornerstone of personalised medicine. The members of the cluster are R & D companies, public research organisations, laboratories, hospitals and other actors (patient associations, service and capital providers, etc.) whose activities are related to health sciences and technologies.

The Cluster places emphasis on personalised medicine, an area in which Luxembourg has identified different niches of expertise in which the country has a high potential for global competitiveness: digital health, neurodegenerative diseases, molecular diagnostics and immuno-oncology.

THE LUXEMBOURG ECOINNOVATION CLUSTER

Since 2009, the Luxembourg EcoInnovation Cluster has promoted innovation, business development and cross-sectoral cooperation by focusing on one area of potential growth: sustainable living and environmental technologies. The Cluster supports its members in the creation of new processes, products and services, with the aim of making the concept of the circular economy a reality in Luxembourg. The activities of the Luxembourg EcoInnovation Cluster are mainly focused on diversifying the activities of Luxembourg companies, to enable them to acquire and develop new skills in the field of environmental technologies; contributing to the development of new environmental solutions and sustainable construction; and developing public

03. 17 May 2018: "Present Yourself Part III" networking event, organised by the Luxembourg Material & Manufacturing Cluster at the Luxembourg Science Centre, Differdange.

04. May 29, 2018: Launch of creativecluster.lu, the collaborative platform for creative industry players in Luxembourg. Event organised by the Luxembourg Creative Industries Cluster, in the presence of the Secretary of State for the Economy Francine Cloesener, at 1535° in Differdange.



Credit: Luxinnovation

04.

awareness of the adoption of “green technologies”. The strategic study concerning the Third Industrial Revolution in the Grand Duchy, driven by the theory of Jeremy Rifkin, places the circular economy at the heart of ideas, making it a foundation stone supporting all sectors of the economy: energy, food, mobility, construction, industry and finance. Thus, in June 2017, Luxembourg hosted the second Circular Economy Hotspot, an international event organised around conferences and site visits that has allowed Luxembourg to take its place on the international scene. The cluster also participated in the Wiltz Hot Spot project to position Wiltz as a national skill centre for the circular economy as part of the national Climate Pact Plus programme. Finally, as part of the Fit4Circularity programme developed by the Ministry of the Economy in collaboration with Luxinnovation, to help SMEs seize new opportunities for sustainable growth, the EcoInnovation cluster helps to identify the economic added value of such a change of models and to identify interesting measures for businesses.

THE LUXEMBOURG AUTOMOBILITY CLUSTER

Created in 2013 and bringing together some fifty members, the Luxembourg Automobile Cluster encourages innovation, business development and intersectoral cooperation by bringing together suppliers of automotive components based in Luxembourg. One of the Luxembourg Automobile Cluster’s major projects is developing a campus dedicated to innovation for mobility and a business incubator. Luxembourg offers access to the main European development centres of companies specialising in automotive components. Several major trends dominate the automotive sector and form part of the Luxembourg Automobile Cluster’s roadmap for 2025-2030: decarbonisation, of which electric

mobility is but one part; the “safety and connectivity” aspect, of which autonomous driving is an integral part; and manufacturing in the future, with all that implies in terms of digitisation and automation of our companies. The Luxembourg Automobile Cluster is also involved in autonomous vehicle projects, including cross-border test beds with Germany and France announced at the IAA (International Trade Fair for Mobility, Transportation and Logistics) in Frankfurt in autumn 2017.

THE NEWBORN OF THE CLUSTER INITIATIVE: LUXEMBOURG WOOD CLUSTER ...

The Luxembourg Wood Cluster follows the logic of improving the use of this sustainable material at local and regional level. Woods and forests cover more than 90,000 hectares, nearly 35% of the country. There are nearly 1,500 companies in Luxembourg, that are working directly or indirectly with wood. These companies employ 11,000 people, more than half of whom are in the construction sector.

As a model for the circular economy, the “wood” sector is therefore a source of various economic activities in Luxembourg providing enormous potential for development. Through its availability and natural properties, this material also plays a significant role in the context of sustainable development and, as a renewable material, in the objectives set for the fight against climate change in the COP21 Paris Agreement. By bringing together all the players in the forestry and timber sectors, the cluster wants to offer its members a framework conducive to developing projects and boosting the sector through innovation and by new opportunities for the material to create economic and ecological added value and thus participate in Luxembourg’s green growth.

On 21 March 2018 - the “International Day of Forests” - the Luxembourg Wood Cluster organised ▶



Top 8 global World Innovation Clusters

The American magazine MIT Technology Review named the world’s top 8 World Innovation Clusters in 2013:

- Silicon Valley, USA (Google, Apple), 17 stock market launches, 64% foreign workers.
- Boston, USA (Akamai, Genzyme), 85 schools and universities, investments in biomedical.
- Tech City London, United Kingdom (Techstars, Last.fm), 140 technology companies.
- Paris-Saclay, France (EADS, Siemens), 7,700 hectares, 6 engineering schools.
- Silicon Wadi, Israel (Waze, Teva), 230,000 high-tech engineers.
- Skolkovo Innovation Centre, Russia (IBM, Rusnano), 400 hectares, partnership with MIT.
- Bangalore IT cluster, India (Infosys, Wipro), 400 enterprises, 50,000 researchers.
- Beijing, China (Baidu, Lenovo), 70 colleges and universities.



Credit: Luxinnovation

05. June 7, 2018: Automotive Day, in the presence of the Minister of the Economy, Étienne Schneider in Luxembourg, on the theme "Digitisation of Mobility". This is the largest event dedicated to the automotive sector, organised by the Luxembourg AutoMobility Cluster, in partnership with the AutoRegion meta-cluster.

its first Wood Cluster Forum on the theme "Forest and Sustainable Cities". Designed in an interactive way, this event took place in Mersch's wood-built Cultural Centre and allowed stakeholders in the timber industry to share experiences and exchange ideas on topics that make news in the sector.

... AND THE LUXEMBOURG CREATIVE INDUSTRIES CLUSTER

The last member of the Cluster family was created in 2017 to enhance the visibility and innovation capacity of the creative industries sector in Luxembourg. The growing Creative Industries Cluster focuses on two priorities, namely: promoting an online platform launched on May 29, 2018 to connect creative people and their customers; and supporting member companies to export their services beyond Luxembourg's borders. The creative industries employ around 7,000 people in Luxembourg and are divided into 12 sub-sectors: architecture (including engineering and urban planning), crafts and manufacturing, visual arts, film and audio-visual production, design, fashion, gaming, marketing and communication, literature, digital media and publishing, performing arts and music. Creative projects often require the involvement of people from many different disciplines. "The chance of winning a project is higher if you can offer all the necessary skills, but this is a challenge for many freelance creators. Having a good network and receiving

personal recommendations is extremely important," explains Marc Lis, who observed that the different sub-sectors often had little contact with each other. The idea of creating a web platform, highlighting the skills, expertise and work of cluster members and facilitating their connection and collaboration grew out of this observation. The site is a unique entry point for Luxembourg's creative industries where potential customers can find the professionals they are looking for and download projects or tenders. It also provides information on funding opportunities, legal issues, events, etc. In addition to this virtual meeting place, the cluster regularly organises networking events for its members to meet.

THE LUXEMBOURG SPACE CLUSTER

The Luxembourg cluster dedicated to space technologies was created in 2002. Its goal is to guide the development of Luxembourg's space sector and bring together people from the industry from both the private and public sectors.

The Luxembourg Space Cluster has two objectives: to raise the exposure of Luxembourgish space skills internationally and to foster national cooperation between the private and public sectors, as well as international cooperation through research and development projects. Several tools and actions have already been put in place to achieve these objectives. A catalogue of Luxembourgish space skills is updated



Credit: Applan

06. The future Automotive Campus, located in Bissen, covering an area of 14 hectares, will open at the end of 2018. Eventually, some 6,000 people could work on the site. Goodyear and IEE will be the first companies to take up residence in this complex entirely dedicated to automotive research and development.

every year and B2B meetings are organised regularly between Luxembourg and other European countries such as Italy, Germany, Switzerland, France, Belgium, Poland and the Czech Republic. The Luxembourg Space Cluster also ensures the recurring presence of its members at certain shows of importance to the sector, including the Paris Air Show, Toulouse Space Show, Space Tech Expo Europe – and takes part in economic missions targeted at the sector.

Managed by the Ministry of the Economy, the Luxembourg Space Cluster now has about forty member companies, as well as the LIST and three research units from the University of Luxembourg.

Luxembourg's journey into space started in 1985 with the creation of the Société Européenne des Satellites (SES) (European Satellite Society), now the world's leading provider of satellite media and telecommunications services worldwide. This initiative has allowed not only the development of SES, but also the development of an entire industry working in this direction.

The second major step taken in positioning Luxembourg in the space sector was its membership of the European Space Agency (ESA). This membership, which became effective in 2005, led to the consolidation of telecommunications and media services activities, but also to diversification towards activities related to Earth observation, navigation and technological developments. Today, Luxembourg is ESA's ►

**INTERVIEW**

Frédéric Moncary De Saint-Aignan
President of the french maritime cluster (CMF) and vice-president of the european network of maritime clusters (ENMC)



We have to be numerous and united



What are the missions of the French Maritime Cluster?

The French Maritime Cluster (FMC) is the voice of the French maritime economy. Today, it brings together 440 players in the maritime sector in a broader sense and its action plan is structured around several axes. We promote networking, we organise working groups called "synergy groups" that deal with critical issues and problems, we ensure broad institutional communication and finally, we influence political and economic decision-makers so that maritime is one of their priorities.

What are the main achievements of the FMC?

We have united a disparate and fragmented maritime economy in mainland France and overseas and we have supported the creation of seven ultra-marine clusters and several French Maritime Cluster Committees in Singapore, Hong Kong and Shanghai. Another success has been the introduction of the maritime economy into school curricula. The creation of the first investment fund dedicated to the maritime sector was promoted by the FMC. In addition, the France Maritime Committee, a public-private initiative led daily by the Secretary General of the Sea and by the President of the FMC, makes it possible to move towards the objective set by the Government, namely to double French maritime employment by 2030.

Why join the European Network of Maritime Clusters (ENMC)?

Europe is the right scale when it comes to "blue growth". It has all the assets to be the leading continent in the field. No less than 18 national maritime clusters are present in Europe. It is necessary that they coordinate to influence in the strategic and budgetary choices of the European Union. The ENMC, the network that represents these European clusters must be more present and stronger with the Brussels institutions. For that, we must be numerous and united.



INTERVIEW
JAN GLAS

President of the Luxembourg Creative Industries Cluster, Luxinnovation and Design Management Consultant

“
Developing collaboration between creative people and getting them known to potential clients
”

What are the ambitions of the new Creativecluster.lu digital platform?

The digital platform serves to unite creative professionals, to offer them more visibility and to facilitate their accessibility. The tool grew from a request by the creative industries in 2017 and aims to develop collaboration between creative people and make them known to potential customers. The use of the platform is free for creative people and clients. Currently, the Luxembourg Creative Industries Cluster has more than 300 members, two-thirds of whom are already registered on the platform. The reactions are very positive and it's a safe bet that this number will grow rapidly. With more than 2,200 companies and independents in the sector, the potential is real. The sector is mostly made up of small and medium-sized enterprises, 59% of which do not have employees. They, in particular, will benefit from increased visibility. Besides the platform, the cluster will also have its own annual "Do Do Do" magazine, whose first edition will be published in mid-September. It will present the achievements of the actors in the Luxembourg Creative Industries Cluster.

What are the conditions to be referenced?

You must be professionally active in the creative sector and have a business license

in Luxembourg as a company or independent. The platform does not make any selection regarding the offer. It is up to customers to make their choice. We also accept creative federations and support organisations. The goal of the cluster is to create a vibrant community.

Do the Luxembourgish creative industries rely on the international ones?

When we launched the Creative Industries Cluster, we were asked to participate in missions abroad. An economic mission to France and exchanges with Berlin, in Germany have resulted in various international collaborations. We will continue to encourage our members to showcase their know-how around the world.



07.

07. January 17, 2017: The Shipowners New Year conference, in the presence of polar explorer Arved Fuchs, organised in partnership with the Commission for Maritime Affairs.

08. September 19, 2017:

Digitisation in the maritime sector around a conference organised in partnership with FEDIL. (Animation: virtual reality glasses).

largest relative contributor. An investment that has seemed to pay off, is the very recent example of the Galileo programme, an initiative that has allowed SES to position itself successfully as the European Commission's GSOP (Galileo Service Operator) for a volume 20 times higher than the initial investment. A third step is the positioning of Luxembourg as a pioneer in the exploration and use of space resources with the SpaceResources.lu initiative, announced in February 2016.

Now, as a response to significant growth in the sector and the needs this growth engenders, Luxembourg is developing a space agency. This agency aims to develop the sector for commercial purposes, in line with the decision taken in 1985 when SES was created. All the Cluster's present activities will become an integral part of the agency. and so, if the Luxembourg Space Cluster is to continue, its structure and scope will have to evolve.

THE MICE CLUSTER

The MICE Cluster (Meetings, Incentives, Conventions, Exhibitions) is a participatory body integrated into the Economic Interest Grouping (EIG) Luxembourg for Tourism (LFT). The 27 members that have joined since its creation in 2014 represent a fair segmentation of the sector (conference centres, hotels, transport, professional organisers and public institutions).

The Cluster and its members aim to unite and develop their expertise with a view to strengthening, in the medium term, the position of Luxembourg as a destination for business and congress tourism. Luxembourg for Tourism is developing in collaboration with Cluster members an action plan as part of a national strategy to develop a MICE destination. Over the last two years the sector has grown by 4%. In 2016, the cluster had eight technical commis-

Credit: Cluster maritime



Credit: Cluster maritime

08.

sions (TCs) that met around several specific projects, including: the development of a national “bid book” in to tender for large international congresses; the posting of a calendar of MICE events aimed at optimising capacity management; the creation of a quality charter governing the entire sector; the development of a statistical tool to monitor the activity of the sector in the Grand Duchy and to analyse the potential for development.

In 2016, the MICE sector also undertook a major promotional operation organising the “Meet Luxembourg” event, which presented Luxembourg’s strengths as a MICE destination to nearly 120 international conference organisers. Targeted promotional actions were also carried out in Paris, Frankfurt, London and Barcelona.

THE LUXEMBOURG MARITIME CLUSTER ASBL

Created in 2008, the Luxembourg Maritime Cluster has just celebrated its 10th anniversary. Luxembourg, landlocked and without direct access to the sea, is not a traditional maritime power. However, its first steps in the maritime sector in the late 1980s proved to be a remarkable economic success. Thanks to its expertise in the financial sector, combined with an attractive tax environment as well as a favourable legal and regulatory framework, the Grand Duchy offers real opportunities to maritime sector players in view of the globalisation of their activities.

The Luxembourg Maritime Cluster’s work includes a series of actions on behalf of the national maritime sector. The membership structure reflects the reality of the Luxembourg maritime sector: shipowners, banks, advisors, insurers, lawyers and the Luxembourg flag, managed by the Commission for Maritime Affairs. Thanks to its diversified composition, the

Maritime Cluster allows shipowners to benefit from expertise in various other areas, such as investment funds, asset management, securitisation, private equity, insurance, logistics, etc.

Two major dredging companies established in Luxembourg are also promoting the initiative: the *Jan de Nul* group and *Deme*. CFL Cargo and CFL Multimodal, two railway companies are also part of the Maritime Cluster since they contribute to opening up Luxembourg thanks to the daily shuttles that serve the major North Sea ports of Antwerp, Rotterdam and Zeebrugge, all within 300 kilometres. In the Bettembourg platform, Luxembourg and the Greater Region have a large dry port.

Among the major achievements of the Luxembourg Maritime Cluster are numerous awareness raising conferences; the setting up of an effective networking platform; advances in credibility and visibility through the cluster’s European activities; not to mention the strengthening of local expertise, notably thanks to training activities; and steady growth in membership to, currently, a little over sixty.

Today, the Luxembourg Maritime Cluster is rethinking its strategy and is focusing on four complementary pillars of activity: networking, lobbying, knowledge sharing and business development. In addition, the Maritime Cluster has been active for several years in the European Network of Maritime Clusters (ENMC), to strengthen its European alliances and offer an international dimension and visibility to its members.

THE LUXEMBOURG CLUSTER FOR LOGISTICS ASBL

The Luxembourg Cluster for Logistics a.s.b.l. (C4L) unites public organisations, logistics companies, service providers and “shippers”. Founded in 2009 as ►



Cluster Excellence Labels

A standard evaluation system for cluster management, recognised at European level, has been set up within the framework of the European Initiative for Cluster Excellence (ECEI). Thus, 31 quality indicators on internal management, activity, ecosystem animation and results are used to assess the level of performance and governance of European clusters. The label also gives privileged access to certain calls from the COSME program, internationalisation and inter-clustering actions “Cluster go international”. By the end of 2017, this label had been given to 87 European clusters.

More information:
www.cluster-excellence.eu

09. June 4–8, 2018: The Luxembourg Delegation at POSIDONIA 2018 on the Luxembourg stand organised by the Luxembourg Ministry of the Economy, the Chamber of Commerce and the Maritime Cluster

10. February 6, 2018: Kronospan, Luxport and Webtaxi received the Lean & Green Award from Camille Gira, Luxembourg's State Secretary for Sustainable Development and Infrastructure.



09.

an initiative of the Ministry of the Economy and with several founding members, including the Chamber of Commerce, the objective is to strengthen collaboration and synergies between the various actors, to identify and promote initiatives to develop the logistics sector which is one of the key sectors in the government's economic development and diversification policy and to position Luxembourg as an international logistics hub. Since 2018, the cluster has included several start-ups, thanks to an incentivising pricing policy. The cluster now has nearly 90 member companies and will organise an event next year to celebrate its 10th anniversary.

Several key events are organised by the Cluster for Logistics, including conferences in spring and autumn on a logistics theme, or the "Logistics Day", an annual open house event. Besides these conferences, the cluster members take part in company visits within the German Federal Logistics Association (*Bundesvereinigung Logistik e.V. (BVL)*) logistics and supply chain management network and participate in organising state visits and economic missions to key countries for the Luxembourg sector, such as China, Poland and the Benelux.

Launched in 2008, the European Lean & Green voluntary CO₂ reduction program was introduced to Luxembourg in 2014, with the Cluster for Logistics' collaboration. Since then, 11 Luxembourg companies have received the label after committing to reduce their CO₂ emissions by at least 20% (or 10%

in the case of airlines) for a maximum of five years. If the goal is reached by the end of the programme, companies receive the Lean & Green Star. Three companies will receive their first Stars this year.

The C4L has also contributed to a three-year work-study training programme "Logistics Technician" for high school students and regularly participates in the working group dedicated to this training. Since 2017, C4L has been promoting the Luxembourg Centre for Logistics and Supply Chain (LCL) at the University of Luxembourg and the Massachusetts Institute of Technology Center for Transportation & Logistics (MIT CTL). The cluster also plans to offer continuing education.

Since January 2018, the Single Window for Logistics (www.swl.lu) provides logistics stakeholders with information on formalities, customs, VAT and the regulatory procedures of different authorities. As an active promoter of this project, led by the Ministry of the Economy, the C4L also supports pilot projects such as "e-CMR" launched in March 2018. The CMR, i.e. the 'Convention on the Contract for the International Carriage of Goods by Road', is a UN convention. An electronic consignment note (e-CMR) contains information on the nature of the goods transported as well as the parties involved in the exchange.

Finally, the C4L initiated the formation of the "Shippers Council Luxembourg" to call attention to the topics and wishes of shippers, manufacturers and retailers.



10.

THE GREATER REGION AND META-CLUSTERS

Within the cross-border Greater Region, comprising Wallonia, the Grand Duchy, Lorraine and Rhineland-Palatinate, different bodies talk with each other, exchange and support innovation. They do so, notably through the University of the Greater Region, which brings together six universities in the region. The Greater Region presents multiple opportunities for development within and beyond its borders. Thus, sectoral clusters exist in each zone of the Greater Region. Despite certain linguistic, cultural, geographical and identity barriers, clustering approaches and cooperation poles are being set up across borders.

The International Business Development Working Group contributes to networking of the Greater Region's clusters. The aim is to promote mutual knowledge of Greater Region players and their activities, to identify possible synergies and to encourage collaboration within the Greater Region between these sectors and sectoral clusters and to generate cross-border clusters. Since 2009, meetings between clusters in the Greater Region have been organised regularly in several sectors (sustainable development, automotive - including subcontracting, information and communication technologies, new materials, environment and water technologies, etc.). These inter-clustering meetings have stimulated partnership dynamics and identified areas of cooperation and actions and projects which can be implemented

jointly. Thus, the theme of digitalisation was evoked during the Automotive Day of June 7, 2018, an event organised by the Luxembourg Automobility Cluster in collaboration with Goodyear and AutoRegion, the meta-cluster dedicated to the automotive industry in the Greater Region. Several conferences addressed technical topics such as artificial intelligence, connectivity and cybersecurity, as well as vision and detection technologies.

Another cross-border meta-cluster in the materials and processes sector, intermatGR, is now strengthening the transfer of innovation and technologies between companies and research institutions to increase the competitiveness of the Greater Region. Co-financed by the European Union's Interreg Cross-border Cooperation Programme, this project aims to develop commercial opportunities and research projects for actors in the Greater Region and develop a brand image as an international "world-class cluster" (WCC).

In environmental technologies, the International Business Development Working Group has been actively engaged in the creation of the Greater Green meta-cluster. It is the first European cross-border network for environmental technologies and its target groups are other networks in Rhineland-Palatinate, Saarland, Lorraine, Luxembourg and Wallonia. Greater Green connects actors from companies, science and government across borders. With this project, 12 existing clusters in the sector and a ►



Agenda

BioHealth

25-26/09/2018 – Riken

Symposia – RNA Biology

Organising an event with Riken, the largest research institute in Japan, the Luxembourg Institute of Health and the Luxembourg Centre for Biomedicine Systems, aim to strengthen cooperation in biomedical and health research.

11-12/01/2019 – International PD Symposium

Participation in the 4th International Parkinson Disease Symposium at the "House of Knowledge" in Belval.

Creative Industries

05/07/2018 – Creative Thirst Day

On the 1st Thursday of every month, meetings to held to exchange, discuss and discover the thousand and one facets of the creative industries.

12/07/2018 – « Building our cluster together »

Meetings and workshops with the federations from the creative industries sector to create an advisory group bringing together representatives of the federations.

Ecoinnovation

20/09/2018 – Workshop

Eco-quartier Esch-Schiffange

In collaboration with Agora, the first preparatory workshop to set up a project to reclaim the 54-hectare former Arbed steel works.

27/09/2018 – Greater Region

Plastic Workshop

Workshops to consider the management and recycling of plastic waste, in collaboration with the Greater Region's "Greater Green" meta-cluster..

ICT

10/10/2018 – Fintech Conference

Participation in the 4th Fintech conference organised on the premises of the "Banque Internationale à Luxembourg".

13-14/11/2018 – Luxembourg

Internet Days

Participation in the most important meeting of the autumn for professionals in the ICT industry.

Materials & Manufacturing

25/10/2018 – Platinum3D Seminar

Participation in the Platinum3D seminar in Charleville-Mézières, the technological and scientific platform dedicated to additive manufacturing.

Wood

29/06-01/07/2018 – Ettelbruck

Agricultural show

The Wood Cluster has a stand of 70 m² promoting the timber industry and is organising a visit (Saturday) to two exceptional wooden buildings (the new headquarters of the Administration of Nature and Forests in Diekirch and the High School of Care Professions currently being built in Ettelbruck)

18-20/10/2018 – Home & Living

Accompanying the Luxembourg delegation participating in the European Carpenters Championship

Maritime

09/2018 – "Maritime transport and decarbonisation" seminar.

Carbon-free maritime transport by 2050: what innovative strategies are being put in place by the sector?

MICE

12-14/09/2018 – Luxembourg

Meet 2018

International event inviting you to discover the Grand Duchy's assets for hosting conferences, trade fairs and professional events.

13/09/2018 – Salon BtoB

for events professionals

Organised at Luxexpo The Box.

More information:

www.meetluxembourg.lu

total of 18 partners are networked across the borders. 1,500 companies are thus connected and can benefit from knowledge transfer and best practices, as well as accessing nearby markets and opening up to new international markets. Greater Green is funded by Interreg's Greater Region V A programme and this cross-border cooperation in the field of environmental technology is unique in Europe.

EUROPEAN SUPPORT TO INTERNATIONAL CLUSTERS

COSME (programme for the competitiveness of enterprises and SMEs) is a European multi-annual programme with a budget of 2.3 billion euros for 2014-2020. It builds on the success of the previous Competitiveness and Innovation Programme (CIP) and has four main components: access to finance, access to markets, improvement of the framework conditions for SMEs and the promotion of entrepreneurship. Many of the activities financed are intended for any company, but some are dedicated to clusters. They are put in place via calls for tender.

Within COSME, there is a European programme to develop cooperation between clusters "Cluster go international" which promotes cooperation to develop joint international strategies based particularly on smart specialisation and thus promotes the internationalisation of SMEs in emerging sectors. "Cluster go international" finances preparatory work to create new European strategic cluster partnerships (ESCP): development and implementation of a common strategy to internationalise (support in identifying partner clusters, developing legal representation, preparing a joint marketing strategy and a roadmap for cooperation). "Cluster go international +" aims, in turn, to support the international development of previously established cluster partnerships: tailor-made analyses, fact-finding missions, assistance in opening joint overseas representative offices and *matchmaking* missions for SMEs.

Finally, support for European inter-cluster cooperation is provided by the European Cluster Collaboration Platform (ECCP): www.clustercollaboration.eu.

FROM SUCCESS OF CLUSTERS IN THE WORLD TO INTERCLUSTERING RELATIONS

A country's competitiveness in the modern world relies more and more on effective innovation networks. Clusters enable companies to build competitive business and strategic advantages by increasing their links with other companies in the same sector, and on technological, financial, human capital, infrastructure and legal aspects. The success of the concept is huge! Thousands of "clusters" are spread around the world in all fields and support for clusters is now one of the main models of public action in the field of economic development. France



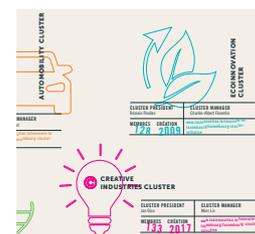
Credit: Ministère de l'Économie

speaks of “pôles de compétitivité” or “competitiveness clusters”, Germany of “Kompetenznetze” or “skill networks”, Italy of “industrial districts”, Canada of “grappes” or “clusters” and “créneaux” or “niches” ... but despite these different names, all these countries are building competitive advantage by stimulating the development of groups of related companies within a given field and region. In some cases, the emergence of these networks was spontaneous, in others it was stimulated externally, often by public authorities. If there is no doubt that clusters impact on economic development, there is still the question of precisely measuring the extent of this impact on business productivity, economic performance, growth, innovation, etc. Many studies have appeared on this subject, but the conclusions are not always the same. In fact, the evaluation criteria, but also the period considered, and the time left for the clusters to obtain results, are all factors that influence the conclusions of these evaluations.

Countries are specialising to capture as much value as possible from a “chain” which is now understood to exist on a global level. “Biotech clusters” or “ICTs” proliferate with the declared aim of positioning themselves in the race for growth and more and more projects concerning ecological transition are emerging. We are witnessing the emergence of a “global market” of clusters representing companies that com-

pete with each other, but which can also benefit from networking and cooperating on a larger scale than on their own immediate geographical area. The concept of “coopetition” – a portmanteau of competition and cooperation – popularised in 1996 by Barry J. Nalebuff and Adam J. Brandenburger, can be applied to clusters on related themes emerging globally. It can be defined as the situation in which an enterprise establishes and strengthens its competitiveness and its competitive advantages by developing strategic alliances, networks, or collective strategies with competitors, in order to access scarce and/or complementary resources. Inter-clustering relations, resulting from the principle of networking between clusters, are developing and are encouraged by public policies and the European Union. The future therefore seems to be using inter-clustering to access complementary resources and skills and avoid lock-in. Like intra-cluster relationships, inter-cluster relationships require long-term trust, consensus on objectives, and cognitive, cultural, and institutional proximity. National governments, local authorities and other stakeholders (universities, research centres, private companies) must therefore continue their efforts to ensure their integration into this network of trust and become real economic partners in cluster projects, both at national and international level. Trust and collaboration are the key words to remember. ●

11. 19–25 June 2017:
The Luxembourg Space Cluster stood beside several of its members and represented those who were not present on the Luxembourg stand organised by the Ministry of Economy at the Paris Air Show, a must for space companies wishing to position themselves internationally.



The landscape of Luxembourg clusters

How many clusters does Luxembourg have? Which sectors are represented by these clusters? Who runs them and how many members they unite? The answers to these questions are in the infographic poster inserted at the end of the magazine.