

Look closer...

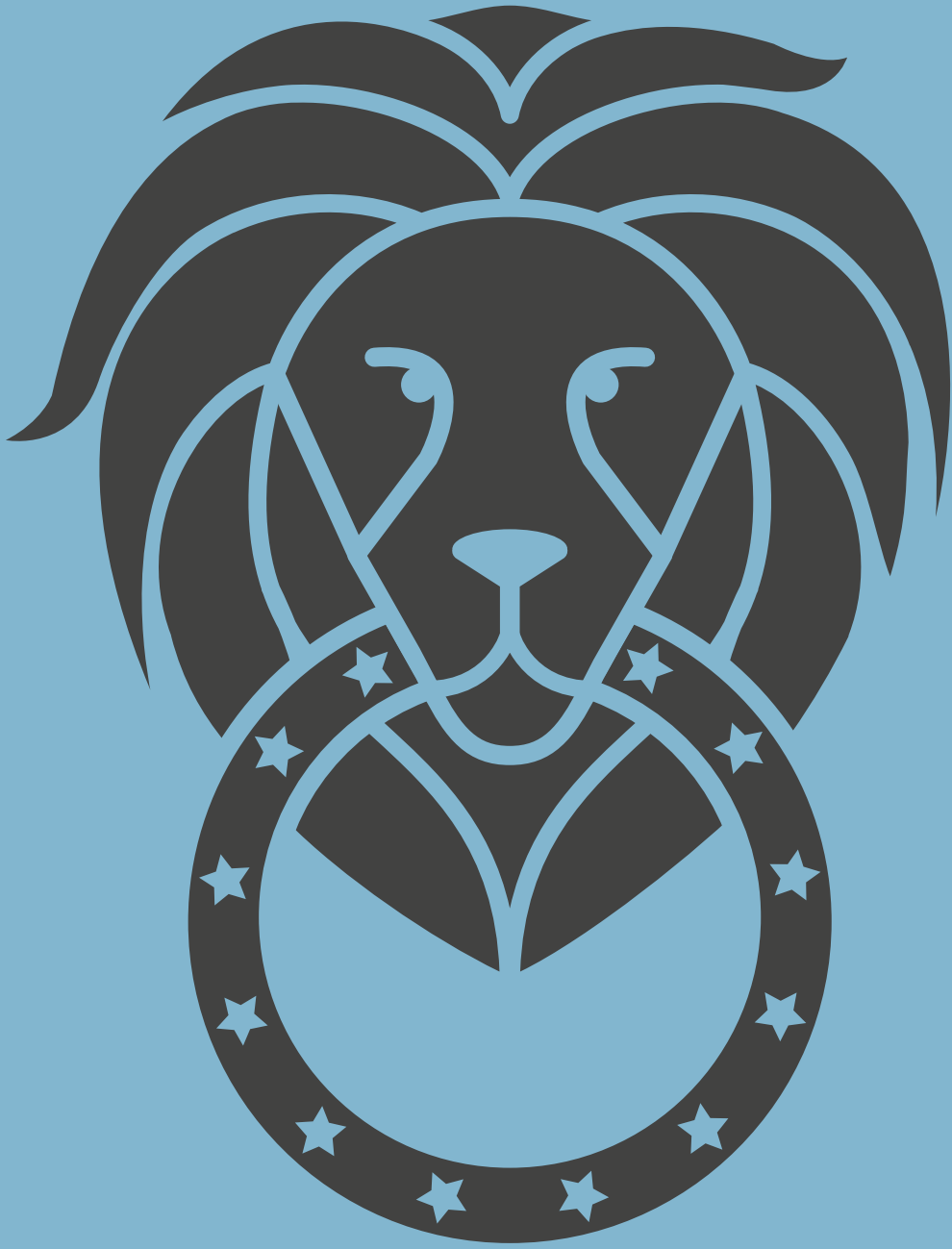
SurprisingLux



SurprisingLux

Luxembourg is more than you think.
We invite you to look closer.

Welcome (to) Europe



Connecting international business with Europe

46%

of the population are foreigners and come from 170 countries.

“Luxembourg is a real melting pot of cultures and truly European at the core. Every day we see how the country embraces diversity to tap into the European market and beyond.”

Carlos Cipollitti
General Director, Goodyear Innovation Center in Luxembourg (GIC*L)

Luxembourg is the **most competitive country in the European Union** and ranks 6th worldwide.

Source: IMD World Competitiveness Yearbook, May 2015.

Luxembourg is both...

European at the core

Nestled in the heart of Europe between Belgium, France and Germany, **the Grand Duchy of Luxembourg has always valued international cooperation** as a means to achieve peace and prosperity. Luxembourg is a founding member of the Benelux, the European Union, the OECD, the United Nations and NATO, reflecting our desire to foster political consensus in favour of economic and political integration.

Today we serve an international client base, which has enabled our country to develop a vibrant, thriving economy. **Our market extends far beyond our own borders.** With the free movement of goods, capital, services and people, we have always been well placed to help international companies gain a foothold in the European Single Market. The economy of the European Union generates a GDP of about €14.3 trillion and counts 500 million consumers.

Luxembourg hosts a significant number of key institutions and agencies including the Court of Justice, the Court of Auditors, the European Investment Bank, the European Stability Mechanism, a number of European Commission services and the secretariat of the European Parliament. Luxembourg was the birthplace of prominent figures including Robert Schuman, one of the founding fathers of European unity.

Luxembourg at a glance

Official name: The Grand Duchy of Luxembourg

Government: Constitutional Monarchy

Capital: Luxembourg City

Surface area: 2,586 km²

Official languages: French, German and Luxembourgish, with English widely spoken

Currency: Euro

Neighbouring countries: Belgium, France and Germany

Total population: 563,000 inhabitants



And connecting international business with Europe

Luxembourg features a diversified economy with businesses coming from all over the world. Today, we are a European home to a large international community with **46% of the total population coming from 170 countries.**

When entrepreneurs and multinationals come to Europe, they often set up businesses in multiple countries. The more activity they have in different countries, the more complex their business planning gets.

Few hubs in Europe offer the necessary cross-border expertise to help investors **manage their activities in several jurisdictions.**

Over the years, Luxembourg has developed an exceptional workforce whose productivity is internationally recognised.

170

Foreigners of more than 170 nationalities live in the Grand Duchy.

71%

of the active population in Luxembourg are foreign nationals.

Stability in motion



Solidly rooted, naturally innovative

23.2%

Our public debt is low at only 23.2% of GDP, far below the EU's 60% threshold.

“The stable, efficient and business oriented government is the key to Luxembourg’s success.”

Wang Hongzhang
Chairman of China Construction Bank

Luxembourg is among **the 3 leading financial centres in the European Union.**

Source: Global Financial Centres Index, September 2015.

Luxembourg is both...

A stable and strong country

Luxembourg's history is grounded in **political stability** and **economic performance**. Growth in Luxembourg is consistently above the EU average. Public debt is low at only 23.2% of GDP, and the government deficit stands at 0.6% of GDP, far below the EU's 3% threshold. Luxembourg is one of only nine countries worldwide – and one of only two in the Eurozone – that is **AAA rated** by all three major credit rating agencies.

Luxembourg draws on its political, economic and regulatory stability to foster a strong culture of investor protection.

We are proud to offer investors a **stable labour environment** that promotes open dialogue with business and union representatives. In Europe, Luxembourg has one of the lowest number of working days lost through industrial action.

Luxembourg is an expert in steel, polymers, composite materials, car-component manufacturing, logistics, digital services, satellite development and media production. Additionally, our financial sector offers a diversified range of activities including banking, investment funds, insurance and securities listings. Investors who set up their business in Luxembourg find a **strong and reliable partner for international growth**.



Since the end of World War II, Luxembourg has had only **eight Prime Ministers and eight Ministers of Finance**.

And a forward-looking and innovative global player

Luxembourg has a modern legal and regulatory framework designed to foster business development. Our **forward-looking approach** and our **can-do-attitude** have allowed us to transform ourselves several times during the last century.

Whilst our history is rooted in agriculture, we established a booming steel industry in the 19th and 20th centuries. When the steel crisis hit in the 1970s, it was time to reinvent ourselves once again – this time creating a **dynamic financial centre** and a highly prosperous **service-based economy**.

By the 1980s, financial services had replaced steel as Luxembourg's number one export. At the same time, Luxembourg also entered the space sector with the creation of SES, followed by strong ICT development in the nineties.

Luxembourg has played a fundamental role in driving innovation and has invested substantial financial and organisational resources to power the transformation of specific sectors. New business is welcomed and looked after. **Innovative start-ups are incubated, hosted and coached** in publicly and privately-owned facilities to ease their early development and to provide access to services and support.

663

During the period of 2009 to 2015, the Ministry of Economy has provided €402.7 million of investment aid for 663 projects.

6th

Luxembourg is **no. 6** out of 28 countries for **innovation performance**.

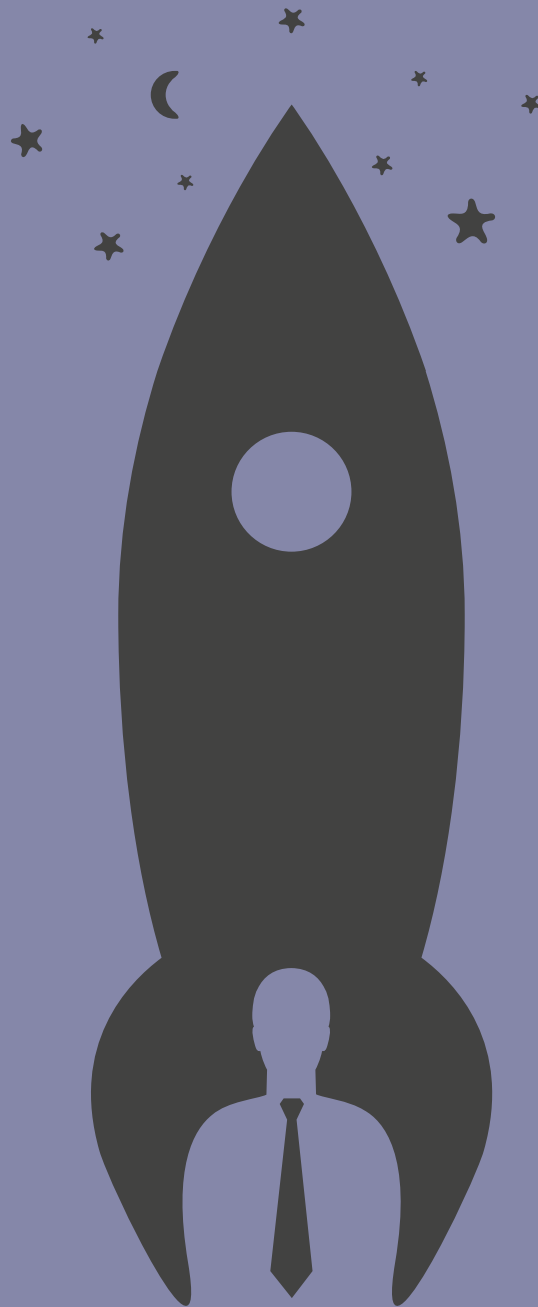
Source: Innovation Union Scoreboard 2015, European Commission.

9/141

Luxembourg ranks **9th** out of 141 countries for **global innovation**.

Source: INSEAD Global Innovation Index 2015.

Human scale, global skills



The shortest route to international talent

3rd

Luxembourg ranks 3rd in the world for talent competitiveness.

Source: INSEAD Global Talent Competitiveness Index 2015.

“We were global from day one from Luxembourg.”

Niklas Zennström
co-founder of Skype

Luxembourg City ranks **No. 1** out of 468 cities and regions for **economic potential**.

Source: European Cities and Regions of the Future 2014/15 – *fDi Magazine*.

Luxembourg is both...

A welcoming country

Luxembourg has always been **outward-looking**. People are friendly and approachable, meaning that Luxembourg is a **welcoming place to settle in and find work**. When you come to Luxembourg, you are a welcome guest. With no home market to protect, we believe in synergy for international growth.

Administrative procedures are facilitated by **responsive, multilingual government officials**. In Luxembourg, the government serves as an **agile partner** and we pride ourselves on offering a supportive, **business-friendly environment** where we can help you get things done. Indeed, all successive governments have emphasised the importance of attracting international entrepreneurs in order to build an efficient business framework, boost economic growth and establish a sustainable and innovative business community.

Luxembourg is a high-level finance and business hub that provides excellent **international career opportunities**.

The Greater Region, which includes the adjacent regions of Belgium, France and Germany brings together **11.5 million people**. This means that Luxembourg is able to tap into an extensive European talent pool as it creates jobs to serve the international community. Cross-border workers play a major role in Luxembourg's economy. They make up almost 45% of the workforce.

1st

Luxembourg ranks **No. 1 in Europe for efficient and helpful administrative services**.

Source: Eurostat, Urban Satisfaction Rate 2013.

And a hub for international talent

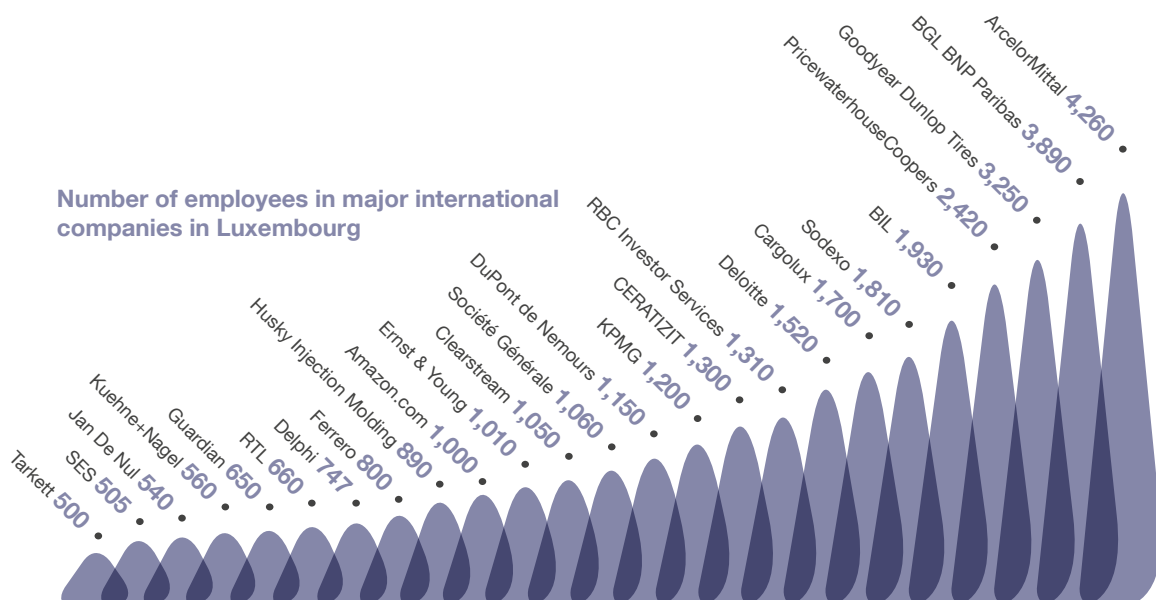
All our workers – from bus drivers to sales assistants, lawyers, accountants, bankers and asset managers – cater to an international clientele. As the world becomes more global and more complex, Luxembourg is attracting a high concentration of **professionals with cross-border expertise**. Luxembourgers grow up between France, Germany and Belgium, and thus speak French, German and English flawlessly. We have a thorough understanding of neighbouring markets and are able to assist entrepreneurs in doing business in Europe.

In addition, Luxembourg offers a very **attractive tax regime on salaries** relative to other EU countries. On a gross salary of €60,000, the cost for the company amounts to approximately €68,000. 63% goes directly to the employee as net salary while about 37% is paid in tax and social contributions.

The University of Luxembourg meets the needs of the employment market.

This multilingual, international and research-oriented institution welcomes some 6,000 students from over 100 countries. The university fosters interaction and collaboration with businesses and institutions in Luxembourg. Many of the Master students and PhD candidates undertake their thesis in close collaboration with an industrial or business partner.

Number of employees in major international companies in Luxembourg



Quality of (business) life



Grow your business, live your life

1st

Luxembourg ranks No. 1 in Europe for personal safety with 10 out of 10 for its low crime rate.

Source: Mercer's Quality of Living Survey 2015.

“Once expatriate families discover what it is like to live in Luxembourg, they’re amazed. Outstanding international schools, a world class arts and entertainment programme, convenient train and plane connections to the rest of Europe, and commuting time to the office of under 15 minutes will make them wonder why they should live anywhere else in Europe.”

Dr. Boris N. Liedtke
Chief Executive Officer
Deutsche Bank Luxembourg

Cost of living in Luxembourg is lower than central London, Paris, Berlin or Brussels.

Source: Eca International, 2015.

Luxembourg is both...

A great environment for business

Luxembourg is a leading economic player that offers quality infrastructure and services to connect your business and the digital world. A wide range of sectors from space and satellites to shipping and logistics rely on **state-of-the-art connectivity** in Luxembourg. Taking advantage of the country's central geographical location, the government has invested strategically in order to create a world-class digital environment. Luxembourg has **one of the most modern data centre parks in Europe** with low-latency connections to all of the major European internet hubs.

Another advantage for companies is our performance in terms of intellectual property rights, transparency, trade freedom, investment freedom and financial freedom. In Luxembourg we put our strengths to work for you and focus on **taking care of your European business**. Whether you are planning to set up a headquarters, an R&D unit or a production facility, you will find the expertise and resources that you need, as well as a government ready and willing to assist you.

A diversified ecosystem provides a **full range of advisory services** covering several jurisdictions. Luxembourg is also there to help you to get your business venture off the ground quickly, and articles of incorporation can be submitted directly in English.

It is easy to get around in Luxembourg. Business people can attend several meetings in a day without worrying about traffic. The Luxembourg Findel airport is 15 minutes away from the city centre and offers **international reach with the convenience of a regional and uncongested airport**. Within an hour you can access major European cities such as London, Berlin, Frankfurt, Paris, Amsterdam or Zurich. Private jet services are also available.

1st

Luxembourg ranks **1st in the world for technological readiness (the agility with which an economy adopts existing technologies to enhance the productivity of its industries)**.

Source: World Economic Forum Global Competitiveness Report 2015.

66

lux-Airport provides **direct flight service to 66 destinations**.

And a great place to live

Luxembourg ranks as the **world's second best city for expats** according to Expat Insider's most recent survey. Luxembourg hosts an ultra-modern and vibrant Rockhal, as well as a philharmonic concert hall with a programme of renowned conductors and performers. If you are looking for excellent food with a fabulous mix of cultures and flavours, you will find your choice in one of Luxembourg's brasseries, trendy eateries or Michelin-starred restaurants.

We offer a **family-friendly environment** with a growing choice of schools. The state system encourages children to learn four languages – English, French, German and Luxembourgish. The private system includes the International School of Luxembourg, the Lycée Vauban, St. George's International School, the European School and the Waldorf School. Luxembourg state schools also offer a free curriculum in English leading to the International Baccalaureate.

Luxembourg is one of the safest countries in the world. Business people know they can come to Luxembourg to achieve a **better work-life balance**. There are plenty of parks and playgrounds when you want to take a stroll, while the forest is never far for avid hikers and cyclists.

Luxembourg has six 18-hole golf courses. Those that prefer shopping will find the world's leading brands in our charming historic city centre.

20

Luxembourgish wine makers, which are famous for their pinot gris and sparkling crémants, won **20 medals** (8 gold and 12 silver) at the **2015 Concours Mondial de Bruxelles**.

1,000

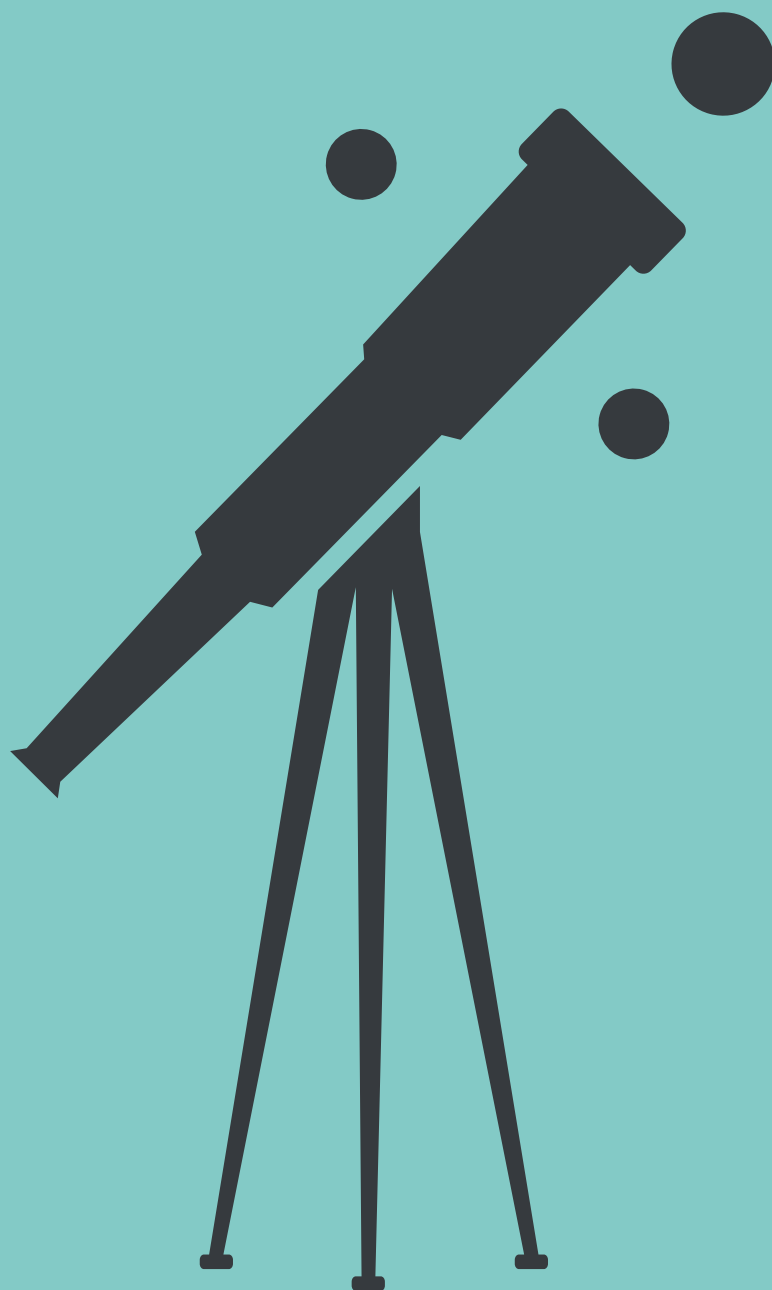
The City of Luxembourg, with its 1,000 years of history, is a **UNESCO World Heritage site**.

10

With 10 Michelin-starred restaurants, Luxembourg City boasts the **most stars per capita of any city in the world**.

...For opportunities beyond borders

SurprisingLux



Now that you've looked closer,
discover Luxembourg's opportunities
beyond borders.

**Did you know...**

Two major companies provided products made in Luxembourg for the 206-storey Burj Khalifa Tower in the United Arab Emirates. The tallest man-made tower includes 600,000 m² of Guardian Luxguard low-emissivity glass and 3,000 tonnes of ArcelorMittal steel beams.

Advanced materials, competitive production technologies

Luxembourg's manufacturing sector was established over a century ago during the heyday of the nation's steel industry. Over subsequent decades, the focus shifted from traditional materials to **high value-added niche products**, many of which have become the market leaders of today.

Advanced materials produced in Luxembourg include **composites, nanomaterials, high performance steel, biodegradable and recyclable materials, glass, concrete, rubber and plastics**. The sector also demonstrates expertise in the functionalisation of surfaces. The main fields of interest and expertise include highly automated production lines, cyber-physical manufacturing systems, robotics, additive manufacturing and the reduction of energy consumption and waste production.

Building a bridge between business and academia

The **Materials Research and Technology Department (MRT)** of the **Luxembourg Institute of Science and Technology (LIST)** translates cutting-edge materials research into applied technologies in the fields of material development and production at laboratory scale as well as the modelling, characterisation and testing of materials.

Nanomaterials and nanotechnologies are a key research field in which the MRT specialises in multifunctional ferroic materials, transparent and optical tuneable electronics, nano-enabled medicine and cosmetics, and new surface treatments, while bio-based and functional composites, adhesion and interface engineering are central to its research on composite materials.

At the **University of Luxembourg**, the Physics and Material Sciences Research Unit is dedicated to R&D and innovation in photovoltaics, energy materials, nanomagnetism, polymer physics, the theory of condensed matter physics, complex systems and statistical mechanics as well as theoretical solid-state physics. The Research Unit in Engineering carries out strategic research projects in the fields of construction and design, energy and environment, automation, mechatronics, and geophysics.

High(-tech) facts

High-tech components supplier Saturne Technology specialises in the design and configuration of high-tech laser applications for cutting, drilling, welding, resurfacing and laser sintering as well as in additive manufacturing of high-performance metals. In 2015, the company configured and commissioned **the world's largest additive manufacturing machine**.

If you write with a **ballpoint pen**, there is a very good chance that the ball at its tip was made in Luxembourg, where hard materials manufacturer CERATIZIT produces **12 billion** such balls every year. This represents 40% to 45% of the global production. CERATIZIT produces unique hard material solutions for cutting tools and wear protection for industrial clients including automotive, energy and stone working. Its technologies can be found in drills, tooth wheels and other abrasion resistant applications.

The new production line of International CAN S.A. has a production capacity of **12,000 cans per hour or 60 million cans a year**. The company is currently expanding its activities in Luxembourg and produces, among other things, aluminium cans for aerosol products.

An innovation made in Luxembourg: Air Cargo Covers

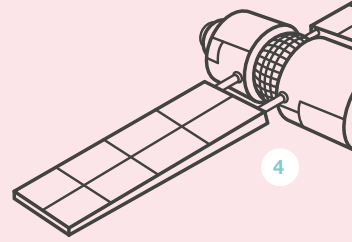
DuPont™ Tyvek® is a unique nonwoven fabric that offers a high level of protection. Tyvek® Air Cargo Covers help reduce loss of perishable items by limiting the exposure to their environment, decreasing the impact of sudden ambient temperature changes and allowing excessive moisture to escape.

With a presence in the Grand Duchy for some five decades, DuPont de Nemours produces polyester films, high-tech construction materials, medical packaging and industrial personal protection equipment. The Luxembourg production plant also serves as a key regional research and development centre.

Luxembourg is home to the headquarters of global steel producer ArcelorMittal. Its high-performance steel produced in the Grand Duchy is used in large construction projects worldwide, including the One World Trade Centre in New York, the Bow in Calgary, the Federation Tower in Moscow and the Shanghai World Financial Centre in China.

By substituting common steel with ArcelorMittal's high-strength Histar®, the weight of steel columns is reduced by 32% and of beams by 19%. The lighter structures enable savings in greenhouse gases, with a 30% reduction in carbon emissions during production.

Trailblazer



4

LUXEMBOURG IS EVERYWHERE YOU TURN



13

17

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21



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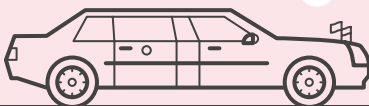
19

1

1



3



7





Did you know...

Almost all cars worldwide rely on at least one key component developed in Luxembourg.

Taking to the road with Luxembourg at your side

Car manufacturers source **components from Luxembourg suppliers** and with more than 50 different nationalities working in the sector, companies have easy access to well-trained engineers to develop multilingual, multicultural customer support teams. This means that international clients are able to receive the service they need conveniently in their own language and with an understanding of their business culture.

Driving innovation


The automotive industry is constantly adapting to new requirements to build safe, clean and connected vehicles. With each and every diversification requiring more R&D, innovation is a key factor for ensuring the competitiveness and success of the automotive components industry. Luxembourg is well positioned in important areas of R&D such as electronics and sensors, Advanced Driver Assistance Systems (ADAS), navigation and on-board diagnostic systems – attracting top-calibre talent seeking a **dynamic community specialised in application development**. Luxembourg supports R&D projects with grants and has put in place a **special programme to promote joint research** that encourages companies to collaborate with each other or with public research organisations. The automotive industry in Luxembourg prides itself on pooling its knowledge and thinking strategically. Competence mapping is carried out on a regular basis to ensure that the country has the players it needs to drive innovation and serve the automotive market of today and tomorrow.

Smart solutions for driving

Cebi Luxembourg is Europe's leading supplier of thermistors, heat-sensing electronic components found in several locations in every car, including the cylinder heads, radiator, coolant hoses, fuel pipes and the engine's air intake. With over **300,000 finished products** leaving its factory in Luxembourg every day, the company supplies 90% of Europe's car makers.

Hidden tread

The Goodyear Innovation Center Luxembourg (GIC*L) is known for its high level of innovation. One innovative example is the new Fuelmax, Goodyear's most fuel-efficient truck tyre range. It includes the IntelliMax Groove Technology, whereby a "hidden" tread pattern is molded in the tyre and a new pattern appears as the initial tread wears. This ensures that **high levels of grip and low rolling resistance** are maintained. When wear progresses to 50%, five new grooves with six ribs appear. At a wear level of about 75%, four contact ribs remain, ensuring good wet grip until the end of the tyre's usable life.



The majority of **Hyundai-Kia vehicles designed for the US market are equipped with an occupant classification system developed in Luxembourg.**

International collaboration in R&D

In 2013, Luxembourg-based sensing specialist IEE was taken over by a consortium of Chinese industrial and strategic investors. The company has strengthened its market share in Europe and the United States, while gaining a foothold in the growing Asian automotive market.

IEE collaborates with the Automation Research Group of the University of Luxembourg's Interdisciplinary Centre for Security, Reliability and Trust (SnT). In 2012, SnT and IEE inaugurated their joint Computer Vision laboratory focused on designing new sensor systems for security technology applications, and the two entities are working together to develop new **advanced driver assistance systems for electric cars**.

For those who prefer to run instead of taking the car, IEE and Kinematix, a leader in measuring human movement, have collaborated on a **new wearable technology to help runners run smarter**. The **shoe sensor** will allow recreational runners at all levels to monitor their movements during a run, obtain an analysis of the evolution of their running technique, and make use of customised exercise plans designed to help them improve.

Luxembourg's strengths in terms of automotive components

- Luxembourg is located in the middle of the world's leading region for vehicle development and automotive innovation
- All European development headquarters can be visited from Luxembourg within one working day
- Luxembourg serves various car manufacturers in Europe including BMW, Fiat-Chrysler, Ford, GME, PSA, Renault, VW Group, Nissan, Suzuki, Toyota, Hyundai-Kia
- No less than 25% of the automotive workforce are employed in R&D

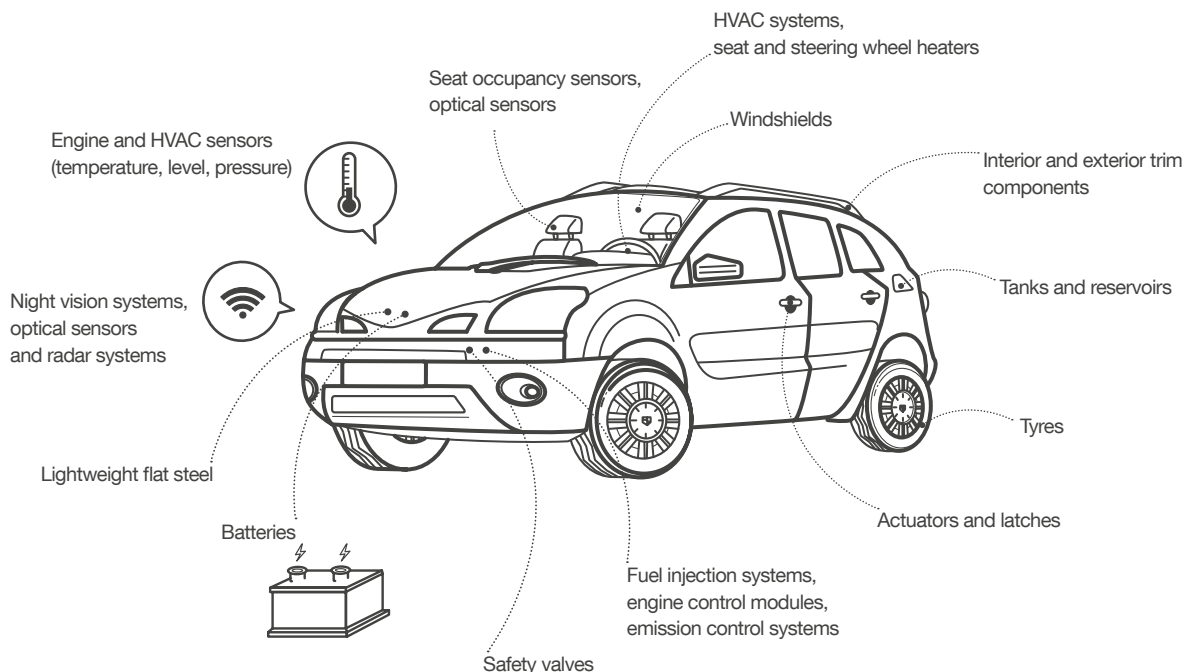
A long-standing presence in Luxembourg

- Goodyear: 58 years
- Delphi: 44 years
- Cebi: 39 years
- Carlex: 34 years
- IEE: 25 years

Game of Roads

The **SnT VehicularLab**, which is part of the Security and Networking Research Group (Secan-Lab), was set up to explore new services that can be developed by making use of **vehicular network technologies**. Scientists from the lab have developed **Game of Roads**, an innovative application that uses sensors to allow mobile phones to create statistical models and that encourages drivers to adopt a safer and more environmentally-friendly driving style. Game of Roads is supported by Baloise Insurance and helps redefine the role of the insurer by offering modern technologies. **Motion-S**, the start-up behind the programme, designs flexible, intuitive and intelligent telematics systems to improve the driving experience. The **Automation Lab** works on the automation of critical technical infrastructures such as energy, water or production systems, **ICT solutions in e-mobility**, mobile robotics (including unmanned aerial vehicles and space robotics), as well as medical devices and applications.

Automotive products and technologies developed by Luxembourg-based companies





BIG DATA – CAR DATA

The connected car industry is expected to be worth €40 billion worldwide by 2018, up from €10 billion in 2012, according to forecasts by the automotive research firm SDB. Connected car technologies cover a wide range of applications, from intelligent infrastructures supporting automated driving, to advanced traffic management and smart routing, aiming at a better utilisation of infrastructures, less congestion, reduced fuel consumption and lower emissions.

DRIVING CONNECTED CAR SERVICES

Luxembourg's innovation friendly environment is fostering the emergence of a budding start-up eco-system, with highlights in this sector such as Motion-S (fleet management, driving efficiency) and Soundytics (adaptive music selection). Moreover, established Luxembourg-based companies, both automotive and non-automotive, have identified this market as being important for their future growth. Here are some examples.

- Post Telecom is extending its machine-to-machine (M2M) communication services for the automotive sector.
- Post Telecom is partnering with major international players to offer complete solutions in automotive telematics. French carmaker PSA and Luxembourg's Post Telecom signed a partnership agreement in 2009 to increase the development of PSA's telematics services in Europe. Post Telecom has already equipped more than 1 million Peugeot and Citroën vehicles with its SIM cards. In addition to this, as of 2018, all new vehicles registered in Europe will be equipped with SIM cards in order to activate eCall, an automatic call service, in case of accidents.
- Hitec Luxembourg provides expertise in satellite communication and traffic management systems.
- IEE has been developing innovative sensors and sensing systems for the automotive industry – leading the way for the safer cars of today. Autonomous driving and connected cars are no longer science fiction, and sensing technologies have an essential role to play in these new functionalities. ●

A NEW GENERATION OF SERVICES

Post Telecom and Hitec Luxembourg are collaborating on the following projects in the domain of vehicular connectivity with an emphasis on emergency services and European safety guidelines.

HeERO 2 The Luxembourg HeERO consortium tests and validates the **common European eCall standards** defined and approved by European Standardisation bodies in real conditions using Post Telecom's networks.

CoMoSeF is designed to provide assistance in the area of cooperative traffic management through connected car networks to help develop and deploy advanced and cost-effective vehicle and roadside data collection solutions in order to **gather valuable traffic information and provide weather and incident data to road users.**

DG-TRAC is underwritten by the European Space Agency and addresses the **tracking and tracing of dangerous goods in the medical sector** integrating and using existing space technologies with GSM/UMTS and the internet. ●

1million

Luxembourg connects 1 million Peugeot and Citroën vehicles with SIM cards.



Did you know... Cargolux handled the transport of the Solar Impulse. The long-range experimental solar-powered aircraft was disassembled and loaded into the nose of a Cargolux Boeing 747 before taking off on its pioneering round-the-world flight from Abu Dhabi in March 2015.

Forging ties for international reach

The logistics industry is undergoing major changes as companies seek global solutions to ship products worldwide. In Luxembourg we are setting the standard among logistics providers with sustainable, high value-added logistics services. Luxembourg offers **world-class distribution facilities** and is an **internationally-recognised logistics hub**.

At the core of major logistics decisions

Luxembourg lies at the heart of Europe's strongest consumer markets and is close to major production centres, right on the main North-South and East-West highway and train corridors. The country focuses on using a multimodal approach to offer logistics solutions that combine all modes of transport via well-developed air, road, rail and waterway infrastructure. Connected via reliable and scheduled rail connections to major ports of the North Sea, Baltic Sea and the Mediterranean Sea, Luxembourg serves as an extended gateway for goods travelling into and out of Europe.

Luxembourg is **Europe's 7th largest cargo** airport and home base of Cargolux, Europe's leading all-cargo carrier. With its annual handling capacity of 1.2 million tons, this well-equipped, modern air-freight facility ensures secure, efficient and **fast ground handling**. Goods can move from jumbo wide-body freighter aircraft on the tarmac all the way through customs at record speed. **Trucks can be quickly on the road and reach neighbouring capitals in less than eight hours.**

Over the last decade, Luxembourg has developed leading expertise in the handling and storing of multiple products such as valuable goods, pharmaceuticals, high-tech products, live animals or perishables.

Leading logistics and supply chain expertise

Major logistics service providers such as Atlas Air, Arthur Welter, Cargolux, CFL Multimodal, China Airlines, CLdN, Dachser, DB Schenker, DHL, Expeditors, Fedex, Hasenkamp, Jost Group, Kuehne+Nagel, Lufthansa Cargo, LuxairCARGO, Luxport, Mars Logistics, Panalpina, Qatar Airways, SL Logistics, SDV, TNT, Transalliance, UPS, Wallenborn, Yangtze River Express and Yusen Logistics, to name but a few, are active in Luxembourg. As a result, a broad range of international companies have European distribution centres in Luxembourg or are managing their supply chain functions out of the Grand Duchy.

Going paperless

The Luxembourg Customs Administration has implemented, in cooperation with the European Commission, a paperless trade and customs environment, enabling effective control while reducing trade transaction costs. Moreover, Luxembourg has been an IATA certified e-freight location since 2008.

Airlinks to all continents

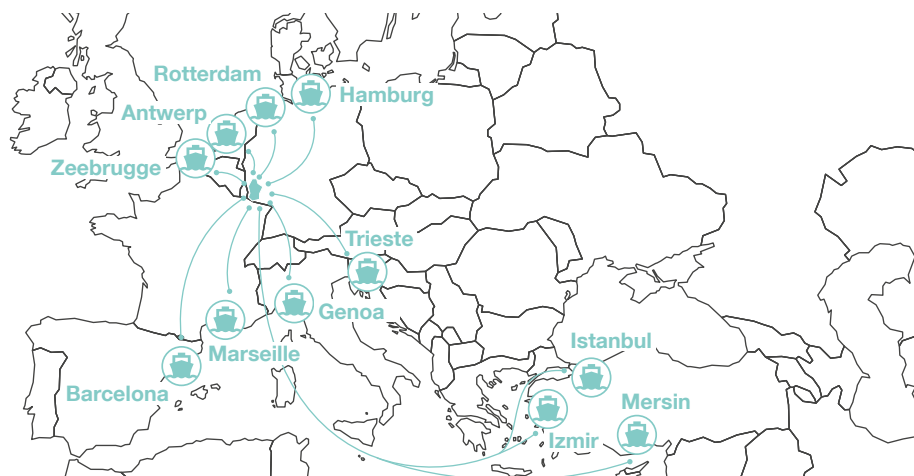
The global network of Cargolux and other freight carriers (e.g. China Airlines, Silk Way West Airlines and Qatar Airways) as well as Panalpina's Controlled Air Freight Network, offer multiple destinations out of Luxembourg on a daily basis.

1st

Luxembourg is ranked 8th globally for logistics performance and is No. 1 for international shipments and timeliness.

Source: 2014 Logistics Performance Index.

With a dedicated team based in Luxembourg, Amazon manages out of the Grand Duchy its European Fulfilment Network, a logistics network composed of 28 centres in Europe.



Connections for multimodal transport

CFL Multimodal, the logistics operator and combined transport operator of the Luxembourgish National Rail group (CFL), simplifies **train-to-truck transport**. Containers, swap bodies and trailers are shifted onto trains for their journey by rail to a wide range of European cities and ports.

Inland navigation provides another competitive and environmentally-friendly mode of transportation. Connected to rail and motorway networks, the **riverport of Mertert** offers tri-modal waterway – oriented transport logistics to other inland and North Sea destinations – a solution used mainly for dispatching and receiving steel and iron, fuels, construction materials, fertilisers and containers.

Sustainable shipping

Luxembourg has become a sought-after location for the maritime sector. In October 2015, out of a total of 227 ships registered in Luxembourg, 218 are flying the Luxembourg flag and 9 a foreign flag.

Ship owners specialise in areas as diverse as the **transportation of bulk liquids, offshore oil and gas marine services, dredging and land reclamation**, and are encouraged to renew their fleets on a regular basis and invest in new vessels. Luxembourg-registered vessels operating all over the world are known for their high quality and an average age of 9.6 years.

Shipping companies choose Luxembourg for many reasons. With access to a single window for maritime affairs, they know where to turn to get things done quickly and efficiently – especially when it comes to registering new ships. While the process is convenient, ship owners understand that owning and operating a fleet requires complex **multidisciplinary expertise in accounting, audit, insurance, finance, law, ICT and satellite services** and they must have the information they need to comply with strict regulations wherever their ships operate. Maritime companies that set up in Luxembourg also appreciate being able to find the highly skilled, multilingual staff they need to manage bookings and work with international clients.

227

ships are registered in Luxembourg.

The Jan De Nul headquarters in Luxembourg host a training centre and simulator for dredging operators. As dredging operations require the use of very sophisticated equipment representing a very high value in capital, it is unthinkable to train the crews directly at sea. That is why they get familiarised using a simulator in Luxembourg.

Trailblazer



ACHIEVING PERFECTION IN NICHE LOGISTICS SERVICES

As an intercontinental hub for logistics value-added services, the Grand Duchy helps to ship special goods and merchandise safely while minimising risk.

Luxembourg is proud to be leading the way in pharmaceutical Good Distribution Practice (GDP) certification. It is the **first airfreight gateway to be fully GDP certified according to WHO and EU GDP guidelines.**

Alongside fully GDP certified logistics providers such as Arthur Welter, DB Schenker, Expeditors, Kuehne+Nagel, Panalpina, SDV and Wallenborn, Cargolux and LuxairCARGO have also decided to go through this certification process, making them,

respectively, the first cargo airline and the first airport handling agent in the world to become fully GDP certified.

ENSURING THAT TEMPERATURES REMAIN CONSTANT

One of the greatest challenges for the safe shipment of these goods is **ensuring that temperatures remain constant.** When goods arrive at the Luxembourg airport, trucks only have to travel a short distance to reach the LuxairCARGO Pharma & Healthcare Centre. Thanks to this sophisticated logistics set-up, time and temperature sensitive products can be shipped from a pharmaceutical plant in Germany to a distribution site in the Midwest of the United States in only 36 hours without any changes in temperature.

Luxembourg is breaking new ground with the **first-ever GDP-certified trade route.** A memorandum of understanding was signed in 2015 between airport operators **Hong Kong Air Cargo Terminals** and Luxembourg airport. The goal is to maintain GDP standards for all healthcare-related shipments that travel between the Hong Kong and Luxembourg airports. ●

350m

At lux-Airport, the maximum distance from the cargo centre to the furthest aircraft parking space is 350 metres.

HORSE-POWER: SPECIAL HANDLING

Every year Cargolux flies up to **3,000 horses** in next-generation horse stalls loaded onto its Boeing freighters. With a single racehorse worth up to \$5 million, horses are precious cargo that require very special attention. Noah's Ark of the skies does not only include live animals, as high-end car manufacturers regularly airfreight **racing cars** boasting 750 horsepower. ●

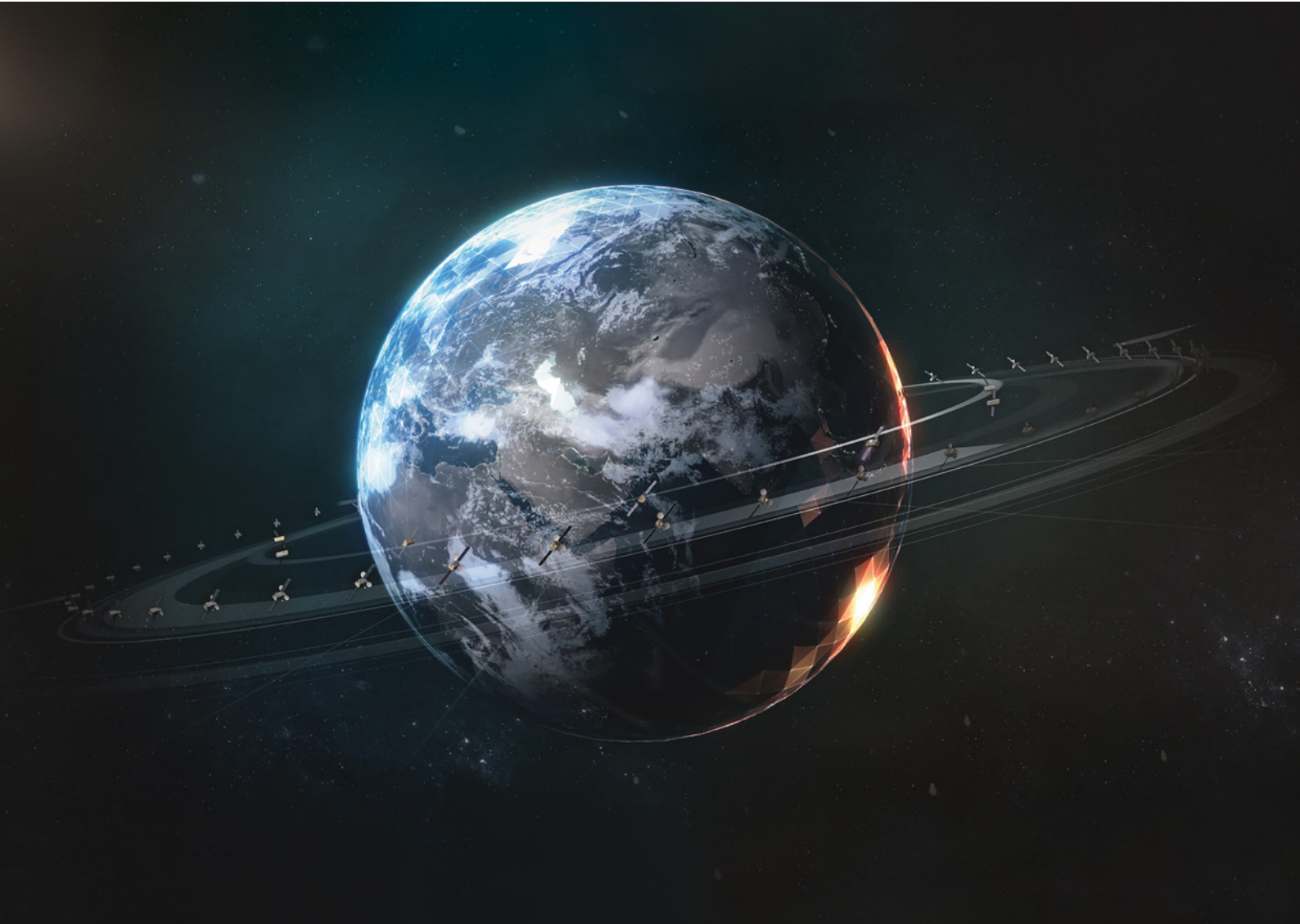
LE FREEPORT

Located adjacent to the Air Cargo Terminal of Luxembourg airport, Le Freeport provides a sophisticated, **highly secured logistics facility for managing and storing art, fine wines, jewels, precious metals, cars and other valuable goods.** With its **state-of-the-art climate-control system**, Le Freeport Luxembourg offers optimal storage conditions. Valuable goods can be

delivered straight from the tarmac to the storage room with no road transport involved, significantly reducing transfer costs and the risk of loss or damage, while offering a high degree of accessibility and security. To ensure **strict control and oversight**, goods can only be introduced into Le Freeport through specialised forwarders who are licensed by the Luxembourg Customs authorities. Goods that arrive through the airport

and are stored at Le Freeport are suspended from VAT and customs duties, while those that exit Le Freeport must be declared to Customs. Officials are physically present at the facility and have the right to inspect goods at anytime. All service providers working within Le Freeport must also comply with stringent regulations on antimoney laundering and combating the financing of terrorism. Le Freeport is well suited

for the **storage of valuable works of art** and is particularly interesting for art collectors and museums of neighbouring countries. While remaining in the VAT suspension regime, works of art stored at Le Freeport can be displayed in museums or art fairs under a temporary admission and importation system. ●



© SES

Did you know...

SES is the only satellite operator in the world offering connectivity from two different orbits, the Geostationary and the Medium Earth Orbit. Thanks to the unique combination of these two fleets, the most remote areas on Earth can be reached.

New frontiers

The creation of SES in 1985 was the starting point of the space sector in Luxembourg. This **audacious move**, both politically and technically, has led to a **tremendous commercial success** and the development of the **entire space industry** in Luxembourg. Our space sector covers a large range of activities: technology development, microsatellite design and integration, ground infrastructure development and support services.

Pioneer in broadcasting and connectivity

Since SES was founded, the company has consistently moved to new horizons. Initially pioneering in TV broadcasting throughout Europe – through ASTRA – the company today is a global leader in connectivity. SES transmits more than 7,000 TV channels, nearly one third of them in high definition (HD), and thus reaches **1.1 billion people** worldwide. The company invests and expands significantly in emerging markets and grows its portfolio and capabilities far beyond video, in the fix and mobile data segments, as well as in defence and security solutions.

Maritime surveillance from space

LuxSpace, a specialist in microsatellite products and niche services, was the first company to demonstrate the commercial potential of utilising ship radio transmissions using low Earth orbit satellites and exploiting the data collected to map the entire route of every large ship in near real-time. In 2011, the European Space Agency commissioned LuxSpace to lead the preliminary design of a fully operational space-based automatic identification system (AIS), which is currently being implemented.

Flying over oceans and deserts

Air traffic controllers cannot maintain contact with airplanes flying over oceans and deserts, seriously impeding rescue attempts in the event of a crash. A new satellite tracking system developed in Luxembourg not only has the potential to eliminate these “black holes” and secure tracking of aircraft in the future but could also cut fuel costs and overcome some of the problems of a growingly overcrowded air space.

This technology is called ADS-B (Automatic Dependent Surveillance – Broadcast). SES began working on the technology in 2009 and quickly joined forces with the German Aerospace Agency (DLR). In 2013, the European Space Agency provided the capability for a trial run in space on-board the Proba-V (LEO) satellite. Between July 2013 and August 2015, the demonstrator captured 193 million pieces of Mode-S traffic data and was able to decode 36 million positions all over the globe. SES confirmed that **the operation has been a success and this proved, for the first time, that the concept of space-based ADS-B was functional and able to process air traffic worldwide.**

Newcomers

LuGovSat – a joint venture between the Luxembourg government and SES – has been created with the objectives of procuring, launching and operating a satellite to support governmental and military innovative communication services.

Telespazio France has chosen Luxembourg for the location of the 2nd EarthLab Centre in Europe. EarthLab Luxembourg is part of the EarthLab Galaxy network monitoring the environment in order to help assess risks for industry, insurance and investment funds.

Deep Space Industries (DSI), a US asteroid mining company, chose Luxembourg for its European subsidiary. DSI aims to change the economics of the space industry by providing technical resources, capabilities and system integration required for prospecting, harvesting, processing, manufacturing and marketing in-space resources.

European Space Agency

Luxembourg has invested strategically in the development of the space sector and became **a member of the European Space Agency in 2005**. Luxembourg is among the top five contributors per capita to ESA.

3 public research organisations are active in the Luxembourg space sector.

30 companies.

700 people employed in the space sector.

99%

With a fleet of more than 50 geostationary satellites, SES has the capacity to reach 99% of the world's population.

7 new satellites under construction and to be launched by 2017.

A digital nation driving growth

Initially developed to support Luxembourg's flourishing financial, broadcasting and space sectors, the rapidly growing information and communication technologies (ICT) industry has also enabled Luxembourg to evolve into a global centre of excellence in cybersecurity and data protection.

Luxembourg has successfully embraced the IT revolution whilst consolidating its position in media. Two Luxembourg giants – RTL Group in media and SES in satellite transmissions – have developed the country's reputation in these sectors. Leading players of the ICT sector – Amazon.com, PayPal, eBay, Rakuten, Skype, Vodafone and many others – have chosen Luxembourg as their base for accessing European and worldwide markets.

23

Luxembourg boasts first-class infrastructures including 23 data centres, 8 of which have Tier-IV certification. Tier-IV data centres provide the highest level of quality and security.

4-8 milliseconds

Luxembourg enjoys a combination of fibre routes, satellite communication, mobile and fixed lines. To date, Luxembourg is connected through 23 different fibre routes to the main internet exchange hubs in Europe: Frankfurt, London, Paris, Brussels, Amsterdam and Strasbourg with particularly low-latency rates of between 4 and 8 milliseconds.

Fibre to the Home

Local internet connectivity is assured via a Fibre to the Home (FTTH) programme which is currently being rolled out and will be fully completed by 2020, ahead of the current EU target.

LU-CIX internet exchange

LU-CIX, the Luxembourg Commercial Internet eXchange, is an industry initiative set up in 2009 to optimise connection speed and efficiency. Internet service providers can exchange internet traffic between their networks and directly connect content providers and international internet operators located in Luxembourg.

Trusted Data Hub

Luxembourg has all the ingredients to create and maintain a Trusted Data Hub:

- ICT architecture – infrastructure;
- Governance;
- ICT skills and security;
- Regulatory environment:
 - E-archiving law (electronic contracts have legal status in Luxembourg) and secure e-archiving procedures,
 - Cloud-friendly legislation.

Luxembourg has multiple computer security incident response teams (e.g. govcert.lu, CIRCL, cert.lu), a national cyber security administration (ANSSI) as well as a cybersecurity portal promoting behavioural, organisational and technical security (e.g. securitymadein.lu, CASES, BEE SECURE).

R&D and ICT working hand-in-hand

The University of Luxembourg works closely together with the ICT sector.

The Interdisciplinary Centre for Security, Reliability and Trust of the University of Luxembourg (SnT) provides high-quality research in secure, reliable and trustworthy ICT systems and services. Other ICT research competencies at the University include digital communications, information processing, systems and robotics as well as algorithmic number theory.

The ICT for Innovative Services (ITIS) department bolsters research through multidiscipline scientific and technological research to develop innovative ICT services.

Digital Lëtzebuerg

With its **Digital Lëtzebuerg** strategy launched in October 2014, the Luxembourg government gave a boost to the development of six key domains in order to make Luxembourg a Digital Nation:

- FinTech;
- Infrastructure;
- Support for innovation and access to financing for start-ups;
- e-Administration;
- e-Skills;
- Promotion.

Did you know...

The Luxembourg financial regulator (CSSF) was the first supervisory authority in Europe to take an official position on virtual currencies, defining them as scriptural money.

FinTech: a breeding ground for innovation

FinTech is a growth sector for Luxembourg. Companies including international FinTech leaders, SMEs and start-ups have set up in the country to develop and market their product range internationally. **Two-thirds of these FinTech companies were started in the last three years.**

FinTech companies in Luxembourg – many of which are established firms of foreign origin – service a range of financial sector industries including private banking and wealth management, investment funds, insurance and electronic payments. An increasing number of family offices and private banks now provide their high-net-worth clients with **investment opportunities** in the FinTech sector either directly or through an intermediary fund managed by a bank or family office. Moreover, new market entrants such as business angel networks and venture capitalists are demonstrating increasing interest in building links with Luxembourg.

With over 140 banks, more than 2,000 ICT firms and Europe's largest hub for investment funds, the Luxembourg financial centre represents a significant local market for FinTech companies. Excellent infrastructure conditions such as low latency connections to the major European consumer markets and a comprehensive financial ecosystem are added advantages for Luxembourg. Meanwhile, start-ups find an **ideal testing ground** for the launch of their products, benefitting from Luxembourg's position as a hub to branch into the European customer base.

Many FinTech companies in Luxembourg benefit from the **EU passport** to distribute services and products through 27 other European countries, as well as the proximity to clients and the large pool of local talent available in both the finance and technology sectors.

Industry growth has been aided by a concerted government effort which aims to accelerate the development of Luxembourg as a FinTech hub. The government's objective is to optimise the uptake of ICT as an enabling technology for various sectors and to further develop the existing ICT sector in Luxembourg by encouraging networking and collaboration between the private and public sector.

As **funding** is a crucial precondition for start-ups, Luxembourg continuously expands its offer regarding **financial aid and business mentoring**. Luxembourg provides a wide range of private and public support for start-ups throughout the various phases of their development.

The University of Luxembourg's Interdisciplinary Centre for Security, Reliability and Trust (SnT) is an important interface with the financial industry. Focusing on the **security of communication networks and software systems**, it develops joint programs with the private sector, notably with the aim of securing financial transactions.

4th

Luxembourg is ranked 4th and 5th respectively in terms of government success in ICT promotion and the importance of ICT to government vision.

Source: Global Information Technology Report, World Economic Forum 2015.

x3

The number of e-money and e-payment institutions in Luxembourg tripled between 2012 and 2015 and includes players such as Amazon Payments, Rakuten and Yapital of the German retail giant Otto.

1st

Luxembourg was the first country in Europe to grant a payment institution licence to a virtual currencies operator.



Did you know...

With €3.5 trillion in assets under management, Luxembourg is the number one investment fund centre in Europe and second worldwide.

Building on cross-border expertise

Luxembourg has developed its financial centre by demonstrating its excellence in cross-border financial services.

As early as the 1960s, Luxembourg had the vision and openness to merge local expertise with international talent and developed a financial centre offering a diverse range of multicurrency services and products to the international business community.

This unique **cross-border expertise is central to various segments of the financial centre**. Luxembourg is the perfect EU onshore hub for banking activities, wealth management, investment funds, private equity and insurance.

Banking

Banks in Luxembourg have established several areas of expertise, including:

- private and institutional wealth management;
- corporate banking;
- retail and commercial banking;
- a full range of investment fund services.

The EU passport allows banks in Luxembourg to offer their services throughout the European Single Market. The majority of banks operate under a universal banking license and offer a wide range of financial services to private, corporate and SME clients. In addition to services related to the launch, acquisition, transfer or sale of a company, they offer intragroup treasury and liquidity management services, as well as international wholesale lending. They also organise and structure syndicated loans to finance international projects. Banks in Luxembourg have developed strong expertise in global custody, fund administration and offer a full range of fund services from product creation, management company services to custody.

Whether in private banking, fund services, commercial or corporate banking activities, Luxembourg is the ideal location for banks to set up a pan-European hub to offer financial products and services on a cross-border basis.

- Private banking figures for 2014: AuM €318 billion (up 4% compared with 2013).

Wealth management

Clients with international interests, who have their families and business spread across several countries, benefit from Luxembourg's diverse financial centre ecosystem and find the right cross-border expertise **to manage their wealth and businesses from a central location**.

Luxembourg is also one of the first countries in the world to have implemented a specific regulatory framework for **family office** activities to ensure a high level of service quality and investor protection.

Thanks to its toolbox of cross-border investment vehicles, Luxembourg provides a one-stop shop for international wealth management, with a service offer that ranges from investment advice, asset management and family office services to wealth structuring, real estate services, succession planning or philanthropy. It is quite common for Luxembourg private banks to act as the **centre of competence** within their group.

143

Luxembourg is home to 143 banks from 27 countries.

70%

Liquidity ratio (EU minimum = 30%).

67%

Clients with assets over €5 million represented 67% of total AuM in Luxembourg private banking in 2014.

778 bn

Total assets of banks in Luxembourg.

20.8%

Solvency ratio: (EU minimum = 8%).

Automatic exchange of information

Luxembourg applies current OECD standards on exchange of information and on 1 January 2015 introduced the automatic exchange of information on EU residents' income savings. Reportable information from 2016, including all types of investment income such as interest, dividends, specific insurance contracts, annuities and account balances, will be reported in 2017.

Trailblazer



CHINA'S BRIDGE TO EUROPE AND THE WORLD

The six largest Chinese banks (Bank of China, ICBC, China Construction Bank, Agricultural Bank of China, China Merchant Bank and Bank of Communications) have set up their continental European hubs in Luxembourg.

From the Grand Duchy, Chinese banks manage a network of branches in other European countries and **serve the needs of their Chinese clients doing business in Europe as well as their European clients doing business in China.**

The strong presence of Chinese banks has helped Luxembourg develop into one of Europe's leading renminbi centres, with the highest volumes in deposits, loans and trade finance. In September 2014, **China designated ICBC as the RMB clearing bank in Luxembourg.**

As Europe's largest investment fund centre, Luxembourg also hosts most RMB-denominated investment funds outside Asia. Some of the most prominent fund managers use their Luxembourg platform to tap into the large pool of RMB-hungry investors in Europe and beyond. **The Chinese authorities have granted Luxembourg a 50 billion renminbi qualified foreign institutional investor (RQFII) quota.**

The Luxembourg Stock Exchange is today the leading listing centre for yuan-denominated bonds in Europe and the third in the world after Hong Kong and Singapore.

CHINESE FIRSTS IN LUXEMBOURG

- Bank of China chose Luxembourg in 1979 for its very first international presence anywhere in the world since the People's Republic of China was created.
- Luxembourg was the first European country to authorise a RMB-denominated investment vehicle.
- Luxembourg's regulator was the first European regulator to authorise a mutual fund to invest through the Shanghai-Hong Kong Stock Connect scheme.
- Luxembourg's Stock Exchange was the first to list a Dim Sum bond outside Greater China. ●

6

The six largest Chinese banks have set up their continental European hubs in Luxembourg.

43%

The Luxembourg Stock Exchange has a market share of 43% of Dim Sum bond listings outside Asia.

1979

In 1979, Bank of China chose Luxembourg to set up its very first international presence in the world since the creation of the People's Republic of China.

Funds for growth

Luxembourg is the **second largest investment fund centre in the world** and is the undisputed global leader in the cross-border distribution of funds. Luxembourg has not only played a crucial role in establishing a truly European financial product, UCITS, but it has turned UCITS into a globally recognised brand.

At the end of 2014, assets under management in Luxembourg-registered funds topped €3 trillion, with a total of **€3.5 trillion** recorded in June 2015. More than half of this growth, or 52%, was due to inflows of new money from investors.

With its broad range of vehicles, Luxembourg is a major alternative investment fund centre. It has bespoke structures for all the main alternative asset classes and investment strategies including:

- hedge funds;
- funds of hedge funds;
- private equity and venture capital;
- real estate.

Fund initiators can take advantage of an entire ecosystem specialised in cross-border investment services, including product development experts, lawyers, accountants and service providers who are able to assist in the development, launch and distribution of their funds.

The largest **cross-border fund management groups** choose Luxembourg because of its unique and international distribution network. The Luxembourg fund industry has almost 56,000 distribution agreements with points of sale abroad.

Given the vast costs involved with setting up funds in different countries of origin, fund promoters come to Luxembourg to benefit from its global distribution platform to reach international investors.

Figures

- Number **1** investment fund centre in Europe
- The world's **2nd** largest investment fund centre after the United States
- Fund promoters from **64** countries
- More than **67%** of UCITS funds distributed internationally are based in Luxembourg
- **69** custodians
- Cross-border fund distribution to **69** countries
- An average of **100** new fund initiators choose Luxembourg to domicile their funds in the country each year
- **160** central administrators
- **191** alternative investment fund managers (AIFMs) approved
- **316** professional service firms (PSFs)
- **608** AIFMs registered (below threshold)
- **633** Luxembourg limited partnerships (LLPs)
- **3,893** investment funds
- **12,545** sub-funds set up by multiple compartment funds
- **13,902** investment fund units
- **14,000** people employed in the industry

€3.5 trillion

assets under management.

56,000

distribution points.

Out of Luxembourg, Franklin Templeton Investments distributes funds in 50 countries, HSBC in 43 countries and BlackRock in 41 countries.

Private equity

Luxembourg is an ideal EU onshore hub to domicile both private equity funds and private equity acquisition vehicles in the same jurisdiction.

Assets under management in Luxembourg-domiciled private equity vehicles have **doubled in the last three years.**

Luxembourg offers a host of services for the private equity industry. It provides competitive structures for setting up private equity and venture capital funds, making it possible to facilitate acquisitions both within individual countries or on a pan-European basis.

A large number of the European General Partners have established a presence in Luxembourg. **Over 50 private equity firms are present in Luxembourg.**

To ensure maximum compatibility and flexibility, Luxembourg tapped into the opportunity offered by the implementation of the Alternative Investment Fund Managers Directive (AIFMD) to overhaul and modernise its limited partnership regime and create the special limited partnership. Special limited partnerships do not have a legal personality distinct from that of their limited partners and are widely used by asset managers from the Anglo-Saxon world. This is further proof of Luxembourg's ability to combine the specificities of various jurisdictions to offer clients and financial professionals solutions that they are most familiar with.

Whether clients come from a country whose system is based on common law or civil law, Luxembourg can accommodate their needs.



Nine out of the ten largest global private equity firms are represented in Luxembourg.

Trailblazer



LUXEMBOURG: FIRST IN FINANCE

Throughout its long history, the Luxembourg financial centre has featured open-mindedness and efficiency. It has continuously adapted to a changing environment and has developed a strong track record in innovation by embracing and implementing change.

1953

First bond listing in USD on the Luxembourg Stock Exchange (LuxSE).

1962

First investment fund listing on the LuxSE.

1963

Euromarket launches from Luxembourg when the **first Eurobond lists on the LuxSE**.

1978

Luxembourg hosts the **first Islamic finance institution in a western country**: the Islamic Banking System Holdings Limited Luxembourg.

1979

Bank of China chooses Luxembourg to set up its first international operations.

1983

The **first sharia-compliant insurance company in Europe** is established in Luxembourg.

1985

The first UCITS Directive is adopted and Luxembourg becomes the **first country to implement the UCITS Directive into national law**.

From this point, most large asset management companies choose Luxembourg as the platform from which to set up and distribute their investment funds worldwide.

1990

First global depositary receipts listing in Europe on the LuxSE.

2002

First Sukuk (sharia-compliant bonds) listing in Europe on the LuxSE.

2007

First Green Bond listing worldwide on the LuxSE.

2008

First Masala bond listing on the LuxSE.

2011

First Dim Sum Bond listing in Europe on the LuxSE.

2012

Luxembourg was the **first country in Europe** and one of the very few countries in the world **to regulate the family office industry**.

2013

Luxembourg was **one of the first countries to implement the Alternative Investment Fund Managers Directive (AIFMD)**. All other funds that are non-UCITS – notably hedge funds – now fall under the scope of the AIFMD. This means that they are also granted a “European passport” enabling funds to be sold in all EU Member States.

2014

The **first offshore RMB bond, or Schengen bond, in the Eurozone** is issued on the LuxSE by a Chinese mainland company.

First Luxembourg UCITS receives authorisation to use the **Shanghai-Hong Kong Stock Connect** program.

The CSSF, which is responsible for oversight of the financial sector in Luxembourg, becomes the **first European regulator to take an official position on how to deal with virtual currency operators**, considering virtual currencies as money.

Luxembourg issues the **first Euro-denominated sovereign Sukuk**. ●

Highly developed market infrastructure

From listing and trading, to clearing and settlement, Luxembourg offers a strong capital markets environment.

The Luxembourg Stock Exchange: an exchange that sets itself apart

The date that marks the rise of Luxembourg as an international financial centre is July 1963, when the world's first Eurobond was listed on the Luxembourg Stock Exchange. This debt security, issued by the Italian highway operator Autostrade, was emblematic of what has remained a key strength of Luxembourg's financial centre to this day – the ability to provide financial services in a cross-border and multicurrency environment.

While most stock exchanges at the time focused on listing bonds denominated in their local currency and by companies established in their country, this bond was unlike no other on the market. It was issued by an Italian company, denominated in US dollars, governed by English issuance law and listed in Luxembourg.

Today the Luxembourg Stock Exchange is a global specialist in the listing of international securities. It is well known for its fast, customer-focused and stringent listing process.

The Luxembourg Stock Exchange offers two markets to issuers: the Bourse de Luxembourg market regulated by European rules and the Euro MTF, a market regulated by the rules of LuxSE enabling issuers to list under more flexible requirements on a recognised European market.

For more than fifty years the Luxembourg Stock Exchange has been assisting companies, institutions and sovereign issuers around the globe to get access to the international capital markets. By actively contributing to innovation in these markets, LuxSE is the **front-runner in listing new products** like Green Bonds, Dim Sum Bonds and Sukuk.

55

Strong market recognition from international issuers (3,000+ issuers from 100+ countries) and securities listed in 55 different currencies.

20%

The global leader in listing international securities (20% global market share and 40% market share in Europe).

99%

of securities are listed in less than two days.

72

countries are listing their sovereign debt in Luxembourg.

10,600

new listings in 2014.

40,000+

securities

66% bonds, 17% funds, 15% warrants, 2% shares / global depositary receipts.

Post-trade services

With the arrival of the European Central Bank Target 2 Securities (T2S) settlement platform and the recent introduction of the EU regulation on Central Securities Depositories (CSDs), Luxembourg has strengthened its position as a leader in securities services with four CSDs: Clearstream, LuxCSD (belonging to Clearstream International and the Banque Centrale du Luxembourg), VP Securities – a subsidiary of the Danish VP group – and the recent creation of globeSettle, the subsidiary of the London Stock Exchange specialised post-market entity Monte Titoli.

Clearstream, a leading supplier of post-trade services, was founded as Cedel in Luxembourg in 1971. Today with around **€12.8 trillion in assets under custody**, Clearstream is one of the world's largest settlement and custody firms for domestic and international securities.

In its role as an International Central Securities Depository (ICSD), Clearstream provides the post-trade infrastructure for the Eurobond market and services for securities from 54 domestic markets worldwide – for approximately 2,500 financial institutions in more than 110 countries. It also supports **98 currencies for issuance**.

Its services include the issuance, settlement and custody of securities, as well as investment fund services and global securities financing.

98

Clearstream supports 98 currencies for issuance.

Insurance: offering a unique level of protection

Luxembourg is widely recognised as a **centre of excellence for the distribution of insurance products in the EU**. Our financial centre currently hosts 96 insurance companies and 223 reinsurance companies, many of which are subsidiaries of multinational corporations.

Thanks to the **“super privilege”** enshrined in Luxembourg law, policy holders of a Luxembourg life assurance contract benefit from a level of legal **protection** that is unique in Europe. This privilege gives the subscriber priority over all other creditors if the insurance company gets into financial difficulty and has contributed to making Luxembourg life assurance contracts a wealth management tool that provides access to a wide range of financial products within a secure framework.

The Luxembourg insurance industry specialises in unit-linked **life assurance**, a product that enables clients to combine insurance cover with a return on investment, notably in policies linked to dedicated investment funds.

Luxembourg life assurance companies provide tailor-made wealth solutions that are compliant, secure and offer unique flexibility in asset allocation.

Luxembourg **property and casualty (non-life) insurance companies** – particularly in maritime mutual insurance and other specialised areas of insurance – principally target the international market.

Many industrial, commercial and financial groups choose Luxembourg for their **reinsurance activities**.

The insurance/reinsurance profession is **strictly regulated**.



2014: over €26 billion in insurance premiums

Revenues rose 11.9% in 2014, partly due to the increasing popularity of life insurance products, sales of which rose 20% in 2014. Revenues from non-life insurance products increased by 4%.

82%

of written premiums are for international life assurance.

96

insurance companies and

223

reinsurance companies.

Trailblazer



IMPROVING THE EFFECTIVENESS OF WORLDWIDE RAPID RESPONSE

When disaster strikes, every minute counts. Luxembourg is helping to provide faster connectivity and improved coordination for a more efficient humanitarian response – all with one goal in mind: saving more lives.

SATELLITE-BASED TELECOMMUNICATIONS

In 2011, Luxembourg launched **emergency.lu**, a public-private partnership that offers a satellite-based telecommunications platform allowing rapid response to natural disasters and humanitarian missions.

Two hours after an alert is given, teams are airborne. Once they are on the ground, it typically takes less than an hour to connect a telecommunications terminal to an inflatable antenna for a satellite connection. Working in close collaboration with the United Nations World Food Programme, emergency.lu draws on the expertise of three Luxembourg-based companies – Hitec Luxembourg, SES and Luxembourg Air Ambulance (LAA). Ericsson Response is also involved in the project and serves as technical partner.

HAITI

Immediately after the January 2010 earthquake, Haitian President Préval was standing in the ravaged streets of Port-au-Prince holding his cell phone, which he was unable to use to call for

help. Effective aid deployment was impossible because all telecommunications were down. Following Haiti, Luxembourg understood that a solution had to be developed to restore telecommunications within several hours of a major natural disaster in order to improve aid coordination and save lives.

Thanks to emergency.lu, aid workers can now register their phones and laptops on the system to communicate and improve the delivery of critical services.

TRANSPORTATION DURING EBOLA OUTBREAK

Luxembourg Air Ambulance is a non-profit founded in 1998 that operates **rescue helicopters and ambulance aircraft** worldwide, saving human lives and preserving people's health. In 2015, LAA put new medical equipment for the transportation of patients with highly infectious diseases into operation. This medical evacuation module can be used to transport Ebola patients safely, while ensuring that the crew and the airplane don't come into contact with the pathogen. The development of this special isolation ward for the Learjet 45 XR took several months and covered all medical and aeronautical requirements. Pilots, medical staff and ground handling staff were also required to take a special training course in cooperation with Doctors Without Borders. Cargolux operated several flights to Monrovia during the Ebola crisis and provided medical supplies during critical times. ●

emergency.lu

The entire service chain – including air transport, satellite infrastructure, terminals and related services – is funded by Luxembourg and provides:



FAST TRACK DIAGNOSTICS

Fast Track Diagnostics (FTD) is one of the leading global suppliers of real-time PCR multiplex **testing for infectious disease detection**. Rare infections such as Ebola can quickly spread and become a general health hazard. The FTD test is simple to use and minimises uncertainty in the diagnosis. ●

ADVANCED MATERIALS TO PREVENT CONTAMINATION

DuPont Tyvek® protective clothing – produced by DuPont de Nemours Luxembourg – is designed to keep wearers safe by repelling liquids and aerosols while remaining permeable to both air and water vapour.

Due to its outstanding qualities, it was the **personal protective equipment chosen for the workers dealing with the aftermath of the nuclear disaster in Fukushima, Japan**. Healthcare workers and

other involved in fighting the deadly Ebola virus rely on **Tychem®**, another DuPont brand that includes an entire line of **protective garments and accessories that helps prevent contamination**. ●



Did you know...

Luxembourg developed with Tokyo the first Parkinson's disease map. The map compiles information from more than one thousand research articles and opens new avenues in the research on neurodegenerative diseases.

Paving the way for personalised medicine

Health sciences and technologies have experienced strong development in Luxembourg in recent years and are currently specialising in the fields of **personalised medicine, diagnostics, bioinformatics and digital health or HealthIT**.

Companies as well as public research laboratories are active in a variety of fields, such as biomedical analyses, compound and biomarker discovery, laboratory and hospital equipment and health-related ICT applications and services.

Personalised medicine is becoming a reality for a variety of diseases, making it possible to develop more **individually targeted care for patients**. In recent years, the focus has therefore been on neurodegenerative diseases, immunology, and oncology.

Advances in the field of personalised medicine are fundamentally changing healthcare services and **creating new opportunities in biomedical sciences**. Luxembourg has been at the forefront of personalised medicine since 2008, when it announced important investments in this field and teamed up with world-renowned research institutes. This initiative led to the creation of the Integrated BioBank of Luxembourg (IBBL), the Luxembourg Centre for Systems Biomedicine (LCSB) and the Lung Cancer Project, now managed by the Luxembourg Institute of Health (LIH).

The research activities of the LIH are concentrated in the areas of oncology, infection and immunity and population health. Research focusing on neurodegenerative diseases such as Parkinson's disease, metabolomics and disease network analysis is conducted by several companies in Luxembourg, most of them working with the LCSB of the university.

A collaborative approach

Luxembourg is ideally placed for companies to cover the entire EMEA (Europe, Middle East and Africa) region, using Luxembourg as a hub to access every important market in Europe. Today, the life sciences sector in Luxembourg attracts researchers from across the globe. They have **access to some of the most advanced biomedical facilities in the world and become part of a multidisciplinary community of scientists**.

Digital health hub

A lot of work in life sciences is virtual and requires cross-border collaboration. Luxembourg's **ICT infrastructure is a key facilitator for international cooperation in the medical sector**. Privacy and security are top priorities when it comes to transferring sensitive biological data, patient records and analyses between medical organisations worldwide.

300%

The number of researchers in Luxembourg's public research organisations has increased three times between 2007 and 2014.

x2

The number of life sciences companies in Luxembourg has more than doubled between 2006 and 2013.

The Integrated BioBank of Luxembourg offers the only continuing education certificate programme in the Principles of Biobanking in the world, helping scientists learn how to ensure optimal management of biospecimens and bioresources for future research and conservation.

Biobanking

Biobanking plays a key role in helping scientists to learn more about human diseases, their causes, their effects, and to develop better prevention measures, better diagnostic tests and better therapies. IBBL is a public biobanking and biotechnology institute that supplies biological data and analyses to medical research organisations in Luxembourg and abroad.

Offering opportunities for innovation

The House of BioHealth is a unique facility where research meets business in an atmosphere that favours communication and exchange. It hosts both established companies and start-ups specialised in biotechnology, clean technology and ICT. The goal is to stimulate the creation, establishment and growth of companies and the transformation of research results into marketable products and services.

WaferGen: Enhancing Next-Generation Targeted Sequencing

WaferGen develops advanced genetic testing technologies for life sciences and clinical research laboratories. Collaboration with various institutions in Luxembourg has helped the company to gain market traction and to increase their operations year after year. Today, besides development and sales, WaferGen runs a demo laboratory in Luxembourg.

Did you know...

The Luxembourg building Solarwind stands out as the spearhead of sustainable construction. The building is based, a world-first, on a triple environmental certification. It meets the highest sustainable development and eco-citizenship standards, and incorporates key renewable energy sources: biomass, solar, wind, geothermal and water.

Turning innovation into business

Luxembourg is home to a significant number of CleanTech companies specialised in **renewable energy, waste management, water treatment and eco-construction**. Luxembourg provides an attractive economic environment to entrepreneurs keen to add value and generate growth by optimising the use of materials, resources and energy, whilst focusing on three critical areas: the **circular economy, sustainable construction and mobility**.

6-10 minutes

Luxembourg will be the test arena for a leading sustainable transportation project with Volvo. A fleet of Volvo Plug-in Hybrid buses, recharging from electricity grids via a collector installed on the roof, will be tested in Luxembourg. The plug-in buses have a large battery package, making it possible to drive quietly and free from emissions. The batteries are charged at the bus terminus between six and ten minutes.

1st

In Luxembourg, we have developed the first 100% bio-based paint for interior. Verdello® is made from tall oil and is a colour of vegetable origin.

Leading the way in circularity

Luxembourg is gradually demonstrating its leadership in terms of circular economy initiatives ranging from healthy interiors to the leasing of steel and building materials substitution, with knowledge-based ICT and leasing industries driving circularity logistics and services. The commitment to circular models impacts traditional industries such as construction, manufacturing, retail and logistics as well as the tech sector in ICT and 3D manufacturing. Even the Luxembourg financial sector is developing new financing models supporting this disruptive approach. The Environmental Research and Innovation (ERIN) department of the Luxembourg Institute of Science and Technology (LIST) develops technologies and tools to better monitor, assess, use and safeguard natural and renewable resources alongside industrial partners. The University of Luxembourg also conducts specific projects for the CleanTech sector, particularly in photovoltaic engineering and sustainable energy.

International success stories

- **Apateq:** winner of the 2014 European Technology Leadership Award, is specialised in oil-water separation that can be used in fracking applications. Without using chemicals in the treatment process, Apateq's OilPaq has an estimated total cost of ownership between 50 cents to less than \$1 per barrel whereas current market solutions cost between \$3 and \$30.
- **Carbon process and plant engineering:** specialist technology provider of air pollution control processes (turnkey plants) for the removal of sulphur oxides, nitrogen oxides and carbon dioxides.
- **Solartec:** manufacturer of decentralised independent power systems based on renewable energies.

Sustainable construction for the future

Sustainable development is one of the major challenges for the construction sector and Neobuild is the first innovation cluster in sustainable construction that set up its own modular building to **test new technologies under real life conditions**. The company's 2,200 m² net-zero energy headquarters constructed with over 100 building materials, products and systems, are also used as a laboratory to promote innovation in the construction sector and to coach innovative construction start-ups and projects. Neobuild is a public-private partnership supported by the Ministry of Economy.

SurprisingLux