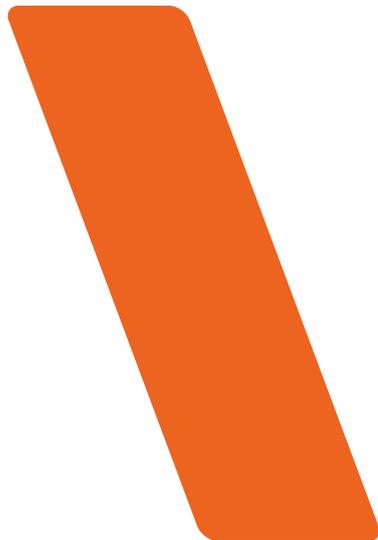




Unlocking
IP-backed
Financing
Series



Country
Perspectives
**Luxembourg's
Journey**



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Country Perspectives
Luxembourg's Journey



THE GOVERNMENT
OF THE GRAND DUCHY OF LUXEMBOURG
Ministry of the Economy



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Disclaimer

The views expressed in this publication are those of the authors and do not necessarily represent those of the institutions to which they are affiliated nor those of WIPO.

Acronyms

BOIP	Benelux Office for Intellectual Property	IPO	initial public offering
CJEU	Court of Justice of the European Union	IPR	intellectual property right
EFSI	European Fund for Strategic Investments	LBAN	Luxembourg Business Angel Network
EIB	European Investment Bank	OPI	Office de la propriété intellectuelle de la Ministère de l'Economie [Intellectual Property Office of the Ministry of the Economy]
EIF	European Investment Fund	R&D	research and development
EPO	European Patent Office	SME	small and medium-sized enterprise
ESA	European Space Agency	SNCI	Société Nationale de Crédit et d'Investissement [National Credit and Investment Institution]
EU	European Union	WIPO	World Intellectual Property Organization
EUIPO	European Union Intellectual Property Office		
GDP	gross domestic product		
IP	intellectual property		
IPIL	Institut de la Propriété Intellectuelle Luxembourg [Intellectual Property Institute Luxembourg]		

Executive summary

Small and medium-sized enterprises (SMEs)¹ within Luxembourg represent roughly two-thirds of total employment and 99 percent of businesses.² Moreover, they account for around 70 percent of Luxembourg's GDP.³ These figures underline the need for a specific framework that ensures SMEs thrive and grow.

There is an untapped potential to use intellectual property (IP) for access to finance for innovative SMEs within Luxembourg. It is not only important to unleash such potential for future economic growth, but also to use intellectual property rights (IPRs) to boost a digital, green and energy transition within Luxembourg.

A fully developed legal and regulatory framework in the field of IP, together with a strong banking and financial sector, are present within Luxembourg. But there is currently a lack of synergy between the two, which for SMEs complicates access to finance based on IPRs.

Five main barriers and areas for improvement have been identified:

1. commercial banks within Luxembourg have a conservative attitude toward financing SMEs and lack expertise concerning IPRs;
2. most SMEs are unprepared for the inclusion of IPRs in annual accounts, being unaware of the potential benefit of doing so in order to meet their financing needs;
3. valuation of IPRs is often prohibitively costly for SMEs;
4. IP marketplaces are lacking;
5. a financing strategy is required that covers all IPR needs. This must take into consideration the different nature of various IPRs, requiring a targeted approach to be taken for each different IP right (i.e., patent, trademark, design, author's rights and related rights).

In light of the contribution made by SMEs to economic growth and innovation, the Government of Luxembourg could decide to provide support to overcome these challenges by undertaking the following actions:

1. open a dialogue between all parties concerned with IP-backed finance in order to analyze their needs;
2. evaluate the current tools and the legal framework related to IP-backed finance in order to assess their adequacy in relation to the use of IP for accessing finance;
3. establish competence for IP-backed finance by setting up academic training in IP linked to accessing finance;
4. evaluate IP markets carefully before deciding whether to support their establishment; and
5. launch targeted awareness-raising campaigns to improve preparedness for IP-backed finance for all parties concerned.

Luxembourg's Journey

Introduction

This report explores both current practices and the untapped potential of the SME ecosystem within Luxembourg. In particular, it focuses on support for intellectual property (IP)-intensive companies.⁴

The relevance of this topic has been recently highlighted in a study published by the European Patent Office (EPO) and the European Investment Bank (EIB) which underlined the fact that "Patent protection is vital for the small and medium-sized enterprises (SMEs) that invest in innovation. [...] Favourable financing conditions are another vital precondition for firms developing fourth Industrial Revolution technologies to flourish."⁵

This report comes at a time when IP is increasingly attracting interest from rights holders, businesses, consumers and the general public alike.

Scope and objectives

Knowledge-intensive sectors reliant on intellectual property rights (IPRs) play a vital role within economies, contributing to GDP, employment, tax revenue and strategy.⁶

For the past 25 years, the global value of intangible assets – including IPRs – has increased more than seven-fold, amounting to EUR 54 trillion in 2022.⁷ In some economies, the share of intangibles in the total asset base of the largest companies listed on the stock market can be as high as 90 percent (e.g., United States of America (US), Ireland and Denmark), while the global share in intangibles is around 48 percent.⁸

The value of IPRs within the European Union (EU) plays a crucial role in economic development:

- IPR-intensive industries generated 29.7 percent (61 million) of all jobs within the EU during the period 2017–2019;
 - 39.4 percent of all employment within the EU (81 million) can be attributed, directly or indirectly, to IPR-intensive industries;
 - 47 percent of the total economic activity (GDP) within the EU is attributable to IPR-intensive industries, and is worth EUR 6.4 trillion;
 - IPR-intensive industries pay significantly higher wages than other industries.⁹
-

Within Luxembourg, the almost 40,000 already established SMEs¹⁰ represent 99 percent of all businesses and around two-thirds of total employment (229,000 employees¹¹). Moreover, they account for around 70 percent of GDP.¹²

In 2019, a European Union Intellectual Property Office (EUIPO) survey revealed that only 25 percent of medium-sized IPR owners had had their intangible assets professionally valued.¹³ This figure drops even lower to 20 percent for micro and small-sized entities. Among those SMEs that owned IPRs, only 13 percent had attempted to use them to access finance.¹⁴ A mere

9 percent claimed they had successfully made use of their intangible assets;¹⁵ and it is notable that, most of those were SMEs active in biotech and health care.

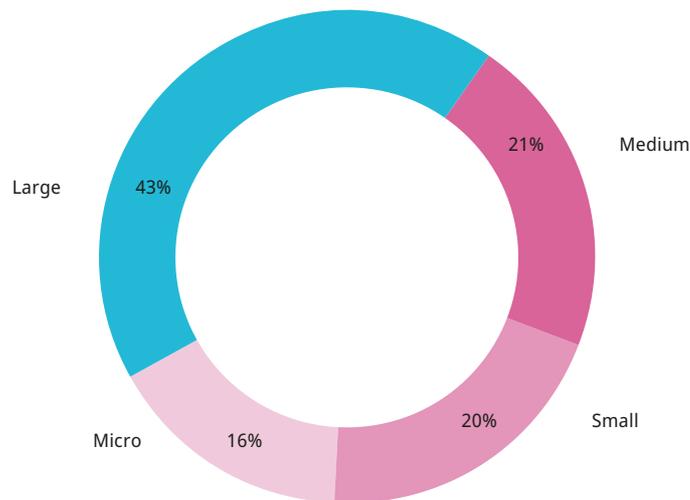
Until now, IPRs have played a limited role in directly accessing finance for SMEs within Luxembourg. Instead, they have been viewed as either a bonus or minimal security in negotiations for finance by third parties.

However, in the context of the ongoing green and digital transition of the EU economy, a further push is needed to promote the commercialization and scale-up of innovative and sustainable products, services and processes. In this context, special attention should be paid to the European Green Deal,¹⁶ set up to address the challenges constituted by climate change and environmental degradation. Its aim is to transform the EU into a modern, resource-efficient and competitive economy.

To accomplish such a transition, increasing attention has been given by the European Commission to the need to support “deep tech” start-ups and scale-ups.¹⁷ Deep tech companies rely heavily on intensive research and development (R&D), which can result in lengthy technology development cycles and delay market entry. Limited resources further compound the financial challenges faced by this type of company.

SMEs are actively contributing to the European Green Deal’s objectives. A study published by EUIPO in 2021 titled *Green EU trade marks* takes trademark filings to be an indicator of innovation relating to environmental protection.¹⁸ The study demonstrates the importance of “green” trademarks over time and highlights the active participation of SMEs within this field (figure 1).

Figure 1 Green EU trade marks: analysis by size of applicant, 2015–2020



Source: EUIPO.¹⁹

Luxembourg has implemented a range of measures designed to create a responsive and supportive environment for stimulating IP management. For example, the government has established specific institutional actors to support companies in their development. These include The Institut de la Propriété Intellectuelle Luxembourg (IPIL) [Intellectual Property Institute Luxembourg] and Luxinnovation. Established in 2014, IPIL acts as the first point of contact for any company, research center or interested party seeking information and guidance regarding IPRs. Luxinnovation, the national innovation agency, supports entrepreneurs, managers of start-up companies and researchers interested in launching or scaling-up innovative activities within Luxembourg.

Luxembourg has also put in place an extensive financial aid package in support of innovation. This covers a range of activities that play a role in generating or marketing IP, although most initiatives do not target IP specifically. Two examples of measures that directly account for IP are

the R&D and innovation state aid scheme created in 2017 and the tax incentives provided by the revised IP Box scheme.

National initiatives are complemented by European policy measures, such as the IP Action Plan put in place by the European Commission.²⁰

This report provides an overview of the legal, institutional and financial landscape for IP within Luxembourg. It aims to provide an overview of the existing instruments and practices, identify current challenges for developing IP-backed finance to the benefit of SMEs, and formulate policy recommendations.

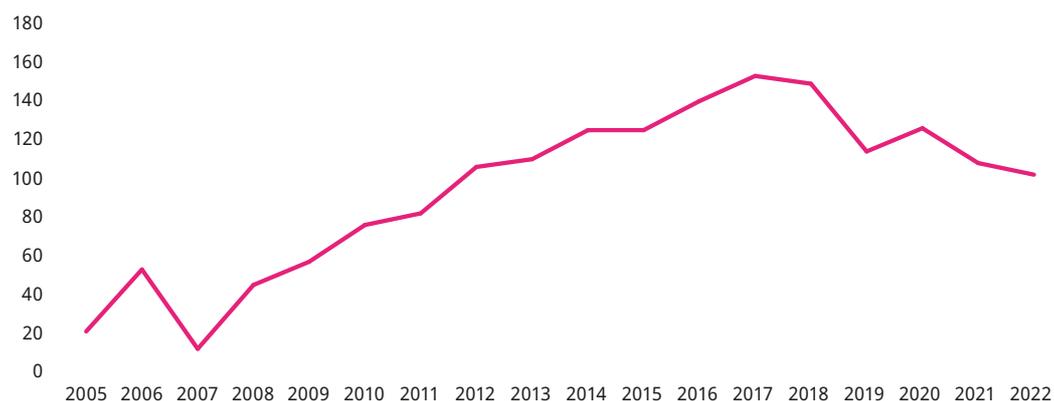
IPRs within Luxembourg

Luxembourg, being a member of various international agreements and organizations, offers a comprehensive framework for IP protection. What follows is an overview of those IPRs available within Luxembourg.

Patent protection within Luxembourg is granted through either the EPO or by the Office de la Propriété Intellectuelle [Luxembourg Intellectual Property Office] (OPI). A European patent, once granted by the EPO, can be validated within Luxembourg and provides protection covering multiple European countries. National patents can also be obtained through the OPI covering only Luxembourg.

The number of domestic patent registrations grew steadily up until 2007, after which they have undergone a decline (figure 2).

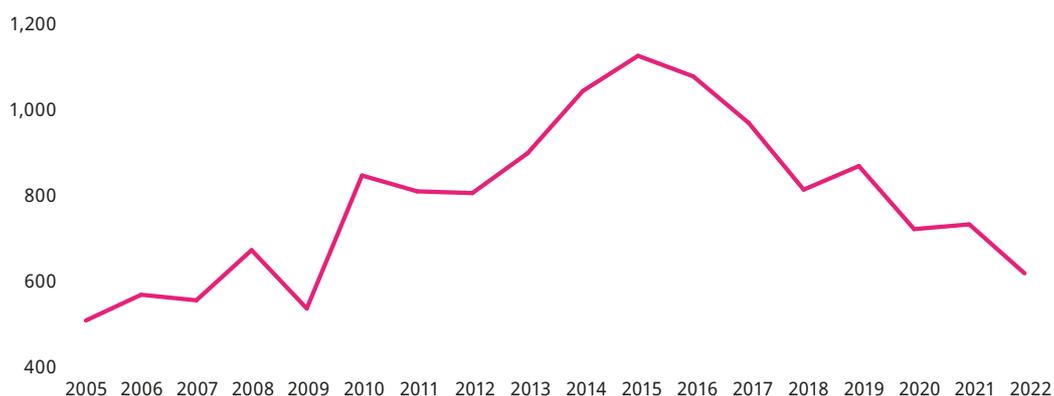
Figure 2 Domestic patent applications filed at the OPI (Luxembourg Intellectual Property Office), 2005-2022



Source: Intellectual Property Office of the Ministry of the Economy.

Trademark protection is available through the EUIPO for EU-wide protection or the Benelux Organization for Intellectual Property (BOIP) for national protection (figure 3). The number of domestic trademark applications filed within Luxembourg has remained rather stable over the last decade.

Figure 3 Trademark applications filed at the Benelux Organization for Intellectual Property (BOIP) originating from Luxembourg, 2005–2022



Source: Intellectual Property Office of the Ministry of the Economy.

Registration for community designs can be done through EUIPO, while national design protection is available through BOIP. The number of design applications originating from Luxembourg has been rather limited over the past 15 years, which can be explained by the fact that the services sector, including finance, is a large proportion of the country's economy.²¹

Creators can also safeguard their economic and moral interests using author's and related rights. Importantly in respect of IP financing, such rights are not subject to a registration system within Luxembourg. However, i-DEPOT offers a solution for that purpose (see box below).

Creators can struggle to prove that they were the first to come up with an idea. The Benelux Office of Intellectual Property (BOIP) makes it easier through i-DEPOT. An i-DEPOT is a proof, provided by the BOIP, of the existence of documents on the date they were received. This proof can be used to support the existence of author's rights and related rights. Documents submitted are kept by the Office for a period of five or 10 years, depending on the period chosen by the applicant. This retention period may be extended by further five-year periods.

Institutional landscape for IP

According to the European Innovation Scoreboard 2022, Luxembourg features among the group of member states to qualify as “strong innovators.”²² In 2023, the World Intellectual Property Organization’s (WIPO) Global Innovation Index (GII), which ranks the world’s economies according to their innovation capabilities, listed Luxembourg as 20th among 50 high-income group economies and 13th among 39 European economies.²³

Luxembourg has many advantages for SMEs, which may explain the country’s high innovation ranking. Luxembourg, for example, serves as a test-bed for innovative products. Luxembourg also functions as a reliable data hub, with world-class connectivity, top-notch cybersecurity and data processing capacities. Moreover, the country’s central location within Europe positions it as a primary launch-pad for the entire EU market. Moreover, Luxembourg’s international environment, coupled with a multicultural talent pool, facilitates easy access to public and private decision-makers, making it a hub for attracting talent.²⁴

Recognizing the critical role intangible assets play in business performance and economic growth in knowledge-based economies, Luxembourg has taken numerous measures to foster a responsive and supportive environment for stimulating IP management. This is described in the next section.

The ongoing dual digital and ecological transition of the economy generates new challenges and opportunities, among them the need to adapt legal and economic frameworks to new ways of innovating, creating and consuming. Luxembourg aims to create and preserve those conditions that best guarantee a high level of protection for rights holders and foster an innovative, sustainable and competitive market, while at the same time ensuring wide-ranging and simplified access to protected content by users.

The role of IP in economic policy

The Roadmap for a Competitive and Sustainable Economy 2025 (“Roadmap 2025”) sets out the Government of Luxembourg’s vision for a digital and sustainable economy.²⁵ The strategy that is proposed underlines the significant contribution made by IP policy in preserving and strengthening technological innovation.²⁶ IP assets play a significant role in determining the market value and competitiveness of Luxembourg-based companies.²⁷

Intangible assets are constantly increasing in importance. And IP has been identified as an essential element in helping businesses to grow, create jobs, and protect and develop what makes them unique and competitive. Considering the low adoption rates for IP by SMEs, improving awareness of its importance becomes critical to a coherent, sustainable investment strategy and for instruments to also achieve sustainability.

More generally, Luxembourg’s governmental program 2018–2023 underlines the point that any innovative public policy in the economic, cultural, R&D and educational spheres must take account of the tools that IP offers.²⁸ In this context, IP should be strategically integrated within initiatives across various ministerial departments, regardless of the economic sectors involved, to encourage companies and stakeholders in integrating IP aspects into their R&D strategies. Similarly, Roadmap 2025 features IP as one of its eight building blocks, treating IPRs as a horizontal matter across all sectors.²⁹ Similarly, Luxembourg’s data-driven innovation strategy calls for the development of a world-class regulatory and IP environment for innovation, coupled with strong investment and financing tools within Luxembourg itself.³⁰

These policies reflect the fact that the overall contribution of IP-intensive industries to Luxembourg's GDP is over 45 percent.³¹ Which is why the development of IP strategies has been identified as a key action by the government. The Intellectual Property Office of the Ministry of the Economy and IPIL act as privileged interlocutors in IP matters for all interested parties. Private IP professionals within the field are also available to offer multilingual advice and services.

The Intellectual Property Office (OPI)

All areas of IP are dealt with by Luxembourg's national intellectual property office, the Office de la propriété intellectuelle (OPI), based at the Ministry of the Economy.³² OPI is in charge of the legal and regulatory framework regarding instruments offered to enterprises and creators wanting to protect and value IP assets.

The OPI is tasked to:

- define and coordinate IP policy with public and private actors;
- create and monitor the legal frameworks for all types of IPR (patents, trademarks, designs, author's rights, and related rights);
- inform the public about legal and practical issues (patents, trademarks, designs, and related rights);
- ensure the administrative and accounting management of patents and supplementary protection certificates (through the Benelux Patent Platform (BPP));
- represent Luxembourg in European and international organizations and on expert committees;
- pursue awareness-raising activities;
- monitor collective management organizations.

Intellectual Property Institute Luxembourg

The Institut de la Propriété Intellectuelle Luxembourg (IPIL) [Intellectual Property Institute Luxembourg] was created in 2014 in the form of an Economic Interest Grouping (EIG) by the government, based on a Ministry of the Economy initiative.

To promote the development of IP to meet the needs of the Luxembourg economy, the government entrusted IPIL with the following tasks:

- coordinate the implementation of IP policy and federate the actors involved;
- develop and offer support services for companies, research actors, public institutions and any other interested parties;
- develop and provide training, promotion and awareness-raising activities;
- carry out projects and studies to advise the government.

IPIL's awareness-raising and support activities have two main objectives. First is to create a better understanding of IP, its importance and its value. Second is to help interested parties develop an "IP reflex" in order to gradually develop an IP strategy that allows them to fully exploit and actively manage their IP assets.

For example, IPIL's Boost IP offers free coaching sessions to raise awareness among Luxembourg's companies and other interested parties about the importance of IP. Sessions equip businesses to make informed decisions regarding the protection of intellectual assets. In practice, Boost-IP consists of an interview between an expert from IPIL and a company, which allows a privileged exchange of information.

Since 2016, IPIL has conducted an average 150 Boost IP sessions annually. A typical session lasts between 1–2 hours. Sessions cover a wide range of IPRs that companies need to know about when starting up. This includes issues like how to protect a name, logo or creative work. Sessions often cover how to register IP and how to create strategies for filing domestically within Luxembourg and abroad internationally.

Boost IP provides strictly neutral and objective information, rather than offering personalized legal advice. Beneficiaries are also made aware of what IP professionals there are in Luxembourg that would be able to provide further assistance regarding their particular situation.

IP financing

This section is an overview of the instruments available today within Luxembourg and which impact finance provision, either directly or indirectly, with respect to IP. There are distinct measures at both the EU and national level. Regarding the national level, a difference is made between public support schemes, such as state aid, loans and guarantees, and private financing tools.

European context and strategy

European IP Action Plan

In 2020, the EU adopted an Action Plan on IP to strengthen the bloc's economic resilience and COVID-19 pandemic recovery. The plan comprised measures in five key focus areas designed to improve IP protection. They were to do the following:

- upgrade the system of IP protection;
- incentivize IP use and deployment, notably by SMEs;
- facilitate access to and sharing of intangible assets while guaranteeing a fair return on investment;
- ensure better IP enforcement; and
- improve fair play at the global level.³³

Within this context, the European Commission focused key initiatives in support of SMEs. Among them were offering financial support via IP vouchers, rolling out IP assistance services in public funding programs and creating a one-stop shop IP information and filing system.

The European Commission also emphasized the need to make it easier for SMEs to leverage their IP when trying to access finance. In this Action Plan, the Commission underlined its intention of discussing with the financial community how IP valuation could take more account of SMEs' intellectual assets.

The initiatives in question were developed in cooperation with all 27 EU Member States, together with EUIPO.

SME Fund

In its Action Plan, the European Commission committed to promoting the effective use and deployment of IP tools, particularly by SMEs. It offered financial support for those SMEs impacted by the COVID-19 crisis, helping them to manage their IP portfolios, as well as transition toward green and digital technologies.³⁴

In 2021, the European Commission, together with EUIPO, launched the first SME Fund, a grant scheme designed to help EU SMEs by providing them with financial support in planning the management and protection of their IPRs within either the national, regional or EU IP system. The Fund reimbursed 75 percent of IP pre-diagnostic services (IP Scan). These services were provided by national and regional IP offices. They examined an SME's business model, product or services, and growth plan, and helped the SME formulate an appropriate IP strategy. The Fund also reimbursed 50 percent of any national, regional or EU trademark and design application fee.

Following the success of the initial SME Fund, a new SME Fund initiative was launched based on a multi-annual program. This initiative provides financial support for IPRs, including patents, within the national, regional, EU or international IP system. Support will be available between 2022 until 2025. This second SME Fund enables EU-based SMEs to apply for “vouchers” accessing a partial refund. Owners, authorized employees or representatives can apply.³⁵

Once applicants have received a grant decision from EUIPO, they can apply and pay for one of the activities covered by the Fund.

In 2023, SMEs could obtain a reimbursement covering up to:

- 90 percent for IP pre-diagnostic services (IP Scan);
 - 75 percent of trademark and/or design application fees, additional class fees, and examination, registration, publication and deferment of publication fees at national, regional or EU level;
 - 50 percent of trademark and/or design basic application fees, designation fees and subsequent designation fees outside the EU;
 - 75 percent of patent pre-grant (e.g., filing, search and examination), grant and publication fees at national level;
 - 50 percent of plant variety online application fees.
-

In 2022, EUIPO received over 22,000 applications for support under the SME Fund.³⁶ More than 18,000 IP-related activities were reimbursed, with a total payout of EUR 10 million.³⁷ A joint outreach effort by national offices and EUIPO has been successful in attracting SMEs, the vast majority of whom (77 percent) have been introduced to IP protection through the SME Fund.³⁸

In 2022, 90 Luxembourg SMEs applied to the Fund. More than EUR 40,000 was paid to Luxembourg SMEs over the year. On average, each company received EUR 866. Efforts are being made to further promote the use of this facility.

InvestEU Fund and EFSI

For access to finance, SMEs in Europe are able to take advantage of the InvestEU Fund.³⁹

This fund offers dedicated finance to SMEs and small, mid-cap companies (up to 499 employees). It also finances R&D and innovation projects. The offering specifically targets companies bringing research results to market and innovative companies in the scale-up phase. It provides support to recipients deemed economically viable according to the internationally accepted standard.⁴⁰

The facility is managed by the EIB and rolled out through financial intermediaries such as banks and other financial institutions.⁴¹ They provide direct and intermediated financing solutions for private and public project promoters.

Between 2021 and 2027, the EU-wide guarantee funds to be made available are EUR 6.9 billion for SMEs and EUR 6.6 billion for R&D and innovation, including digitalization. The total size of the Fund is EUR 26.2 billion and it is expected to mobilize more than EUR 372 billion of public and private investment.⁴²

In addition to the Fund, InvestEU also includes an Advisory Hub and a Portal. The InvestEU Advisory Hub connects project promoters and intermediaries to advisory partners, who work together to help projects reach the financing stage. The Advisory Hub assists with the preparation, development, structuring and implementation of investment projects. The InvestEU Portal allows project promoters to reach investors that they may not have been able to reach otherwise.

The InvestEU Fund builds on experience gained from the [European Fund for Strategic Investments](#) (EFSI), by providing first loss guarantees⁴³ and enabling the EIB to invest in more of those projects that come with greater risks. The projects approved for financing under EFSI are expected to mobilize almost EUR 390 billion in investment and support 929,000 SMEs in the 27 Member States.⁴⁴ The EFSI provides guarantees and counter-guarantees on debt financing of between EUR 25,000 and EUR 7.5 million to improve access to loan finance for innovative SMEs and small mid-caps (up to 499 employees).

Within Luxembourg, through the EFSI, the results as of March 2022 are as follows:⁴⁵

- EUR 114 million in total financing;
- approximately EUR 406 million worth of investments set to be triggered, with some 1,570 SMEs and mid-cap companies expected to benefit from improved access to finance;
- seven agreements approved by intermediary banks, that is, by the main Luxembourg commercial banks, or funds financed by European Investment Fund (EIF), with EFSI backing.

The guarantee scheme supports banks through a de-risking mechanism set at 50 percent of a loan commitment to finance projects undertaken by SMEs that have neither tangible nor intangible assets. This scheme is a very efficient in providing finance to companies so that they can produce intangible assets and IP, as well as generate revenue.

The EIB plays a key role in creating financial instruments accessible to EU SMEs.

The main instrument through which the EIB is able to finance innovative businesses and entities is [InnovFin](#). Operational since 2014, InnovFin is the successor to the Risk-Sharing Finance Facility. It is designed to take greater risks than traditional investments by providing loans, guarantees and equity. Since 2021, InnovFin has been thematically focused on energy demo projects, infectious diseases and sector-specific investment platforms, for example, the circular bioeconomy.

Although InnovFin was initially open to financing IP, the EIB has decided to cease the financing of IPRs as collateral through InnovFin.

Luxembourg public financing tools and initiatives

Financial aid for SME innovation

The law on research, development and innovation covers the cost of the whole innovation chain.⁴⁶ Currently, it is the only state aid scheme that is, in part, directly targeted at financing access to IP protection, within the context of a broader scheme aimed at promoting R&D and innovation in general.

With respect to IP, the cost of generating an IPR (procedures, fees, but also consultancy, advisory and/or prior art search costs), of purchasing an IPR and filing an IPR are all an eligible cost within a financial aid package for R&D projects.⁴⁷

Research and development-related activities can be considered part of experimental development or industrial research. Costs eligible for financial aid are those incurred in acquiring, combining, shaping and using scientific, technological and commercial knowledge and skills with a view to developing a new or improved product, process or service (experimental development). The cost of planned research or critical investigation aimed at the acquisition of new knowledge and skills required for developing a new product, process or service, or for significantly improving an existing product, process or service (industrial research) is also covered.

All costs related to R&D projects and programs are eligible and this covers all staff costs, including that of researchers, technicians and support staff. This is the case also for those expenses incurred by contracting research or research services, the purchase of knowledge and patents or licenses from external sources (under fully competitive conditions), as well as the cost of consultancy and equivalent services incurred exclusively for that project or

program. This means that companies new to innovation can obtain co-finance for the hiring of external experts.

Additional financing is available under this same program, on the condition that the resulting knowledge or innovation is either widely shared (through conferences, publications, open access repositories) or free, or else is freely accessible software. The fund also provides additional support when a project is the result of a collaboration, either between businesses or with research institutions located within the EU.

Fit 4 Innovation

Launched in 2018, Fit 4 Innovation⁴⁸ is a state aid scheme in support of SMEs during those first steps along the innovation path. It is to help optimize operations and free up resources with the assistance of external experts. Resources provided can be human as well as financial, and can be reassigned to medium- and long-term innovation projects. The program aims to eliminate inefficient processes, increase productivity and quality, and identify areas of innovation.

In many of those areas covered by the scheme, IPRs can be obtained through the support of external consultants. The program finances 50 percent of related fees, up to a maximum of EUR 15,000 (excluding VAT) for the initial analysis. An implementation phase should follow on from the recommendations identified by the consultant and lead to new work processes. In the implementation phase, the consultant must commit to improvements and the Ministry of the Economy supports 25 percent of the cost of the consultant during this phase.

Luxembourg Future Fund

Set up in 2015, the Luxembourg Future Fund is an equity investment instrument that plays an important role in financing start-ups. It invests directly or indirectly in venture capital funds and SMEs, so as to foster the sustainable development of strategic sectors identified as being key to the diversification of the country's economy; for example, information and communication technology (ICT), cleantech and other technology sectors. The Fund plays an important role in the generation of new IPRs within Luxembourg.

To be eligible, any potential investment must have a spillover effect within Luxembourg. Such an effect could be produced by generating new turnover or additional revenue generated, by demonstrating an efficiency gain through cost reduction, by attracting or training new key skills, or by creating employment.

The Luxembourg Future Fund was set up as a "fund-of-funds," together with the EIF. With an overall fund of EUR 150 million, it aims to stimulate the diversification and sustainable development of the country's economy by attracting venture capital fund managers and early-to-late stage innovative businesses into Luxembourg. It was set up by the EIF and the Société Nationale de Crédit et d'Investissement (SNCI) [National Credit and Investment Institution] and combines a EUR 120 million contribution from SNCI with EUR 30 million from the EIF. In parallel with its investment into the Luxembourg Future Fund, the SNCI has invested EUR 25 million into a dedicated life sciences fund.⁴⁹

LuxIMPULSE for Space

LuxIMPULSE serves as a national capital investment tool dedicated to the support of R&D activities undertaken by Luxembourg's space companies. It is funded by the Ministry of the Economy and managed by the European Space Agency (ESA). The Luxembourg Space Agency selects which entities are to receive funding, based on an economic assessment of the project in question, including expected revenue and other relevant business aspects.

Because Luxembourg is a member of the ESA, its space companies are also able to benefit directly from the ESA program.

Luxembourg IP Box

Luxembourg has introduced a preferential tax regime for that income resulting from IPRs generated locally.⁵⁰ The Income Tax Law allows an 80 percent exemption on income derived from the commercialization of an IPR. The Law also provides a 100 percent exemption from net wealth tax (NWT) for IPRs.

In order to qualify for the tax exemption, a corporate taxpayer must be able to account for R&D expenditure incurred in producing its IP income. Moreover, the said taxpayer must have been able to prove significant economic activity within Luxembourg, and must also track and trace expenditure and income as they relate to the IP asset, so as to justify a claim for IP expenditure under this regime.

Intellectual property assets that qualify under the preferential tax regime are as follows:

- patents;
- utility models;
- author's rights on computer software;
- supplementary protection certificates for medicinal and plant protection products;
- extensions of supplementary protection certificates for pediatric medicine;
- orphan drug designations.

Excluded from the regime are IP assets such as author's rights (not related to computer software) and related rights, trademarks and domain names.

Income derived from qualifying IP assets can be as follows:

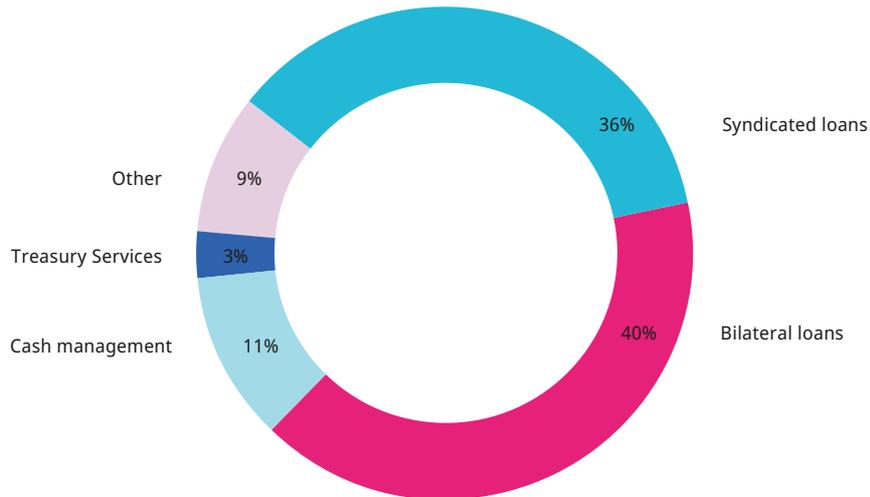
- royalties, revenues resulting from usage of the IP asset by a third party;
 - income included in the sale price of a product or service, which is related to the IP asset;
 - income resulting from the disposal of the IP asset;
 - indemnities obtained after a judicial or arbitration proceeding related to the IP asset.
-

Access to private financing

Private banking sector

Corporate banking revenues from commercial banks within Luxembourg are growing. The Luxembourg Bankers' Association estimates total 2020 revenue at EUR 3.0 billion, which is 58.8 percent more than in 2016.⁵¹

Bilateral and syndicated loans are the most predominant financial instruments, collectively accounting for approximately 76 percent of the revenue and 81 percent of the profit of Luxembourg's corporate banks (figure 4).⁵²

Figure 4 Corporate banking revenue within Luxembourg

Source: ABBL Corporate Banking Survey Results.⁵³

The large proportion of syndicated loans shown in figure 4 is no surprise, as Luxembourg's banks are involved in financing multinationals seeking cross-border financing.

In coming years, commercial banks anticipate that loans will continue to drive further revenue and profit growth. Especially for SMEs, there is an expectation that cash management services will continue to grow, with 15 percent of commercial banks believing they will contribute to revenue growth and 12 percent believing it will add to their contribution margin.⁵⁴

It is notable that Luxembourg's banks participate neither in business set-ups, business transfers nor in supporting companies going public, for example, through an initial public offering (IPO).

Within Luxembourg, five major commercial banks provide loans to businesses and SMEs, namely, BIL, BCEE, ING, BGL BNP Paribas, and Raiffeisen.

Commercial banks are currently not very active in financing loans where intangible assets are used as collateral. The major commercial banks cite the following barriers as a reason:

- *Difficulty trading in intangible assets.* In the case of a credit default, commercial banks are most accustomed to trading in tangible assets, and find difficulty in disposing of intangible assets. This is because they do not have dedicated human resources to value IPRs and also lack the capacity to readily monetize intangible assets.
- *Lack of a relationship between revenue and intangible assets.* In those cases where companies do not monitor closely R&D costs and related revenues, a commercial bank is unable to directly trace relevant income.
- *Complexity of IP asset valuation.* In the case of the relationship between revenue and IPRs, the IPR valuation becomes complex in the absence of a third-party evaluation. (Luxembourg's major commercial banks do not currently have the capacity to assess the value of an IPR.)
- *Lack of incentive to finance intangible assets.* The market for corporate banking is growing fast within Luxembourg, even excluding financing based on intangible assets as security. Currently, there is no state guarantee scheme for financing intangible assets within Luxembourg, resulting in a lack of an incentive to include intangible assets in SME financing that would make it attractive for commercial banks.

Business angels and other alternative investment sources

Business angels within Luxembourg are organized into the Luxembourg Business Angel Network (LBAN). The association has more than 100 members who invested more than EUR 8.3 million in 2021, EUR 4.4 million of that within Luxembourg itself.⁵⁵

Over the past several decades, Luxembourg's entrepreneurial and start-up landscape has focused strongly on service innovation, owing to the importance of the country's financial sector. Business angels have traditionally been more interested in the service portfolio and business model of start-ups, rather than in the technologies themselves. However, with the recent development of high technology and research-intensive sectors, such as aerospace and the life sciences, business angels have started to take a greater interest in the IP protection of such technologies.

Indeed, a business angel may only be interested in financing a project if the start-up in question can prove that it owns all relevant IPRs, that they are free of any encumbrance, and that the company owns the rights to the creations produced by its employees and founders.

To stimulate access to finance for innovative SMEs from business angels a broader incentive scheme is needed. Mitigation of potential risks for business angels investing in high-tech start-ups, for example through offering tax advantages or by other means, could potentially encourage investors to invest in young, innovative companies.

Other considerations

Markets for IPRs

The use of IPRs to back up finance benefits from active markets where such assets can be traded. Such markets enable financial institutions to independently verify the value of IPRs and sell them in case of default.

The development of IP marketplaces is an international issue and not one specific to Luxembourg. There have been many attempts to establish IP marketplaces, of which the most well-known within Europe is the IP-Marketplace set up by the Danish Patent and Trademark Office. In 2016, IP-Marketplace listed 766 patents, 206 trademarks and 39 designs on its exchange. About half were from European countries, excluding Denmark. The Danish Patent and Trademark Office concluded that, to be effective, such an IP marketplace would need to be part of an international network of IPR exchanges.⁵⁶ The platform has now closed, after market analysis found a standalone platform focusing on IP alone to not be viable.⁵⁷

The European Commission initiated an expert group on IPR valorization. Following extensive analysis of different options for patent valorization, its conclusion was that there is no clear value added in supporting the creation of an IPR exchange platform at the European level and therefore it is unnecessary. The expert group stated that such an IPR exchange "would not represent a superior alternative to commercial platforms." In addition, because of existing risks, options for putting into place IP markets should be submitted to thorough investigation prior to any consideration of further development.⁵⁸

One barrier to further development of IP marketplaces is the lack of guarantees for IPRs.⁵⁹ In 2016, a Joint Research Centre of the European Commission working group concluded that public guarantees for IPRs for investors would boost innovation and large-scale scientific development. And that the cost for governments of providing such guarantees would be limited in comparison to other governmental interventions, like subsidies, which are provided to all parties eligible for the intervention. Indeed, in the case of an IP guarantee, public fund disbursement would only be required in cases of failure.

Valuation of IPRs

Within Luxembourg, the fees charged by IP lawyers or other IP professionals for performing an IP valuation, even though in line with international practice, are often prohibitively expensive for SMEs. There have been attempts to set up public services for the valuation of IPRs, but they have proven unsuccessful, owing to a lack of trust by SMEs regarding sharing detailed confidential business information with public authorities and a lack of agreement on the valuation methods to be applied.

Conclusion

Intellectual property rights can play an important role in Luxembourg's international companies accessing finance, for instance, during mergers and acquisitions.⁶⁰

So far, IPRs have had a limited role in directly accessing finance for SMEs within Luxembourg; rather, they are considered to be a bonus or to offer minimal security in negotiations for finance by third parties. If IPRs are used in a product or service and that product or service generates a revenue, they could be an important lever for accessing finance.

Considering the above, there are five challenges to be met in order for SMEs to be able to actively use their IP in accessing finance within Luxembourg. They are as follows:

1. Commercial banks within Luxembourg are reluctant to provide access to financing for SMEs.

Owing to a growing local market for corporate finance, there is currently no strong incentive for Luxembourg's commercial banks to consider IP when providing finance to SMEs. Commercial banks regard financing enterprises based on IP alone as a high-risk investment. Transactions are also more expensive, because of the relatively higher cost of valuing IP, when compared to tangible assets. Because they currently do not foresee a need to become active in financing enterprises based on IP, commercial banks fail to attract specialized expertise into the area, which in turn results in their lack of active involvement in IP valuation. In order for IPRs to play a more important role, there are structural issues that first need to be overcome, as banks do not have the capacity to value IPRs nor are they able to trade in IPRs in cases of credit default.

2. Most SMEs are unprepared with regards to seeking IP-backed finance.

The majority of SMEs are unaware of the value of their IP, or of existing possibilities regarding IP-backed finance in general. They are also unaware of the fact that they can have IPRs recognized on their balance sheet; but only if they keep a separate book on the costs incurred in obtaining those IPRs and the income they have generated. The latter is required by international accounting standards and is the general accepted accounting standard within Luxembourg.

SMEs must therefore be prepared to include IPRs in annual accounts; something which most are unaware of.

3. The cost of valuing IPRs is often prohibitively expensive for SMEs within Luxembourg.

Even though significant expertise about the valuation of IPRs is available within Luxembourg, service providers are primarily geared toward large international clients. However, even were the fees charged by IP lawyers within Luxembourg to be in line with practices internationally, they would remain prohibitively expensive for a number of SMEs. There have been attempts to set up public services for valuing IPRs. Unfortunately, they did not succeed, because SMEs were reluctant to share detailed financial information with public authorities, and because of a lack of agreement on the valuation methods to be applied.

4. There is a lack of IP marketplaces in which to trade IPRs.

The backing up of finance with intangible assets would benefit from an active market where those assets could be traded. Such a market would enable financial institutions to

independently verify the value of an intangible asset and to then sell it should a debtor default on a loan.

Although such an initiative did exist at the Benelux level, it was not as successful as expected. To be successful such a marketplace would need to reach a critical mass and provide a sufficient level of liquidity.

5. A financing strategy that covers all the needs of IPRs must take into account the different nature of IPRs.

There is no one-size-fits-all solution to improving the financing of IPRs within Luxembourg, as IPRs are quite varied in nature. A strategy to improve IP-backed finance should take such particularities into account, and this could lead to a targeted approach being taken for each of the different types of IPR (patent, trademark, design, author's rights and related rights).

Policy recommendations

The main policy recommendations derived from this report by the Government of Luxembourg are as follows:

1. Open a dialogue between those parties concerned with IP-backed finance in order to analyze their needs.

Findings at this stage underline the rather limited use of IP to access finance. This shows the importance of developing a dialogue between those parties likely to be involved in the process of using IP to access finance. Deeper knowledge related to the needs of the different stakeholders is fundamental in order to take sensible actions within this field. The needs of the different types of enterprises, of the financing entities, of valuation and accounting experts, and of the various business sectors, *inter alia* would need to be analyzed.

2. Evaluate the current tools and the legal framework related to IP-backed finance.

A more detailed evaluation of the tools and practices mentioned in this report (e.g., public IP financing tools, IP insurances, formalities), as well as of the legal framework related to securities⁶¹ (e.g., pledges), is recommended in order to assess their adequacy with regards to the use of IP for accessing finance. Actors and experts within the various fields ought to be involved in the evaluation.

3. Launch targeted awareness-raising campaigns and create a category dedicated to IP assets within financial reporting.

Raising IP awareness is an important lever for enhancing involvement in IP-backed finance. Efforts already invested into awareness-raising activities, such as the Luxembourg Intellectual Property Day, dedicated workshops, social media campaigns, advertising, etc., should continue and be reinforced as much as possible, so as to reach all parties involved in IP-backed finance.

This report shows that SMEs need to be prepared to include IP assets in their annual accounts. Targeted awareness-raising campaigns can be used to make companies aware of the importance of this practice.

Campaigns could be carried out by the main actors within Luxembourg, namely, the Intellectual Property Office of the Ministry of the Economy and IPIL, with the support of the relevant accounting, financial and banking actors.

Moreover, the creation of a specific category for IP within financial reports would provide companies with a reference document containing all relevant information regarding the financial value and the financial management of IP assets. This document could be used to facilitate exchanges with banks and other private investors.

4. Carry out an assessment regarding the feasibility and appropriateness of a state guarantee scheme for IP-backed finance, especially with respect to SMEs.

In order to create an incentive for banks and financial institutions to provide IP-backed finance, it is necessary to lower the risk of investing in IP. This could, for example, be achieved by a state guarantee scheme, which could be set-up as a stand-alone instrument or in cooperation with other institutional players such as the EIB.

The potential of setting up such a tool could be explored through consultation with all relevant actors to identify possible needs and establish the feasibility and desirability of such a tool, which may depend on other factors such as the existence of robust and affordable IP valuation tools or access to highly liquid IP marketplaces.

5. Create and strengthen knowledge and competences related to IP-backed finance.

Given the findings of this report, and in order to allow IP-backed finance to develop, knowledge about IP-management tools should be significantly enhanced and put at the disposal of the parties involved (e.g., companies, public and private stakeholders involved in financing companies, consultants involved in IP and financing). Such knowledge could be developed by setting up academic and vocational training programs in IP, linked to this issue. As part of training, IP management, IP management tools, IP and accounting, the valuation of IPRs, as well as the particularities of each type of IPR, could be taught, so as to enhance expertise related to IP-backed finance. Training could also include IP litigation and involve the legal protection of IPRs in court. It might, for example, be developed in cooperation with the University of Luxembourg, professional chambers, the Court of Justice of the European Union (CJEU) and the new Unified Patent Court. Dedicated expertise in IP management, securities, accounting, banking and finance, could ultimately result in opportunities for exchanging and developing knowledge and best practice between the different stakeholders for the benefit of the various actors.

6. Proceed to a careful evaluation of IP markets before supporting their establishment.

With regard to experience related to IP marketplaces, implementation of the above-mentioned policy recommendations could increase potential demand for this type of intervention. Careful evaluation of the needs and experiences of the parties involved in IP-backed finance, as well as the structure and the effect IP marketplaces might have, the benefit and suitability of such marketplaces and of alternative solutions, all need to be taken into consideration.

It may be advisable that any interventions with respect to creating an IP market are implemented as part of a European or international network of IPR exchanges, so as to ensure sufficient scale and liquidity.

Endnotes

- 1 The definition of company size (micro, small and medium-sized companies) follows the official Eurostat Structural Business Statistics definitions. Specifically, staff headcount, combined with turnover or balance sheet total, was used to determine a company's eligibility and assign it to one of three size classes.

Company category	Staff headcount	Turnover		Balance sheet total
Medium	<250	≤€ 50 m	or	≤€ 43 m
Small	<50	≤€ 10 m		≤€ 10 m
Micro	<10	≤€ 2 m		≤€ 2 m

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