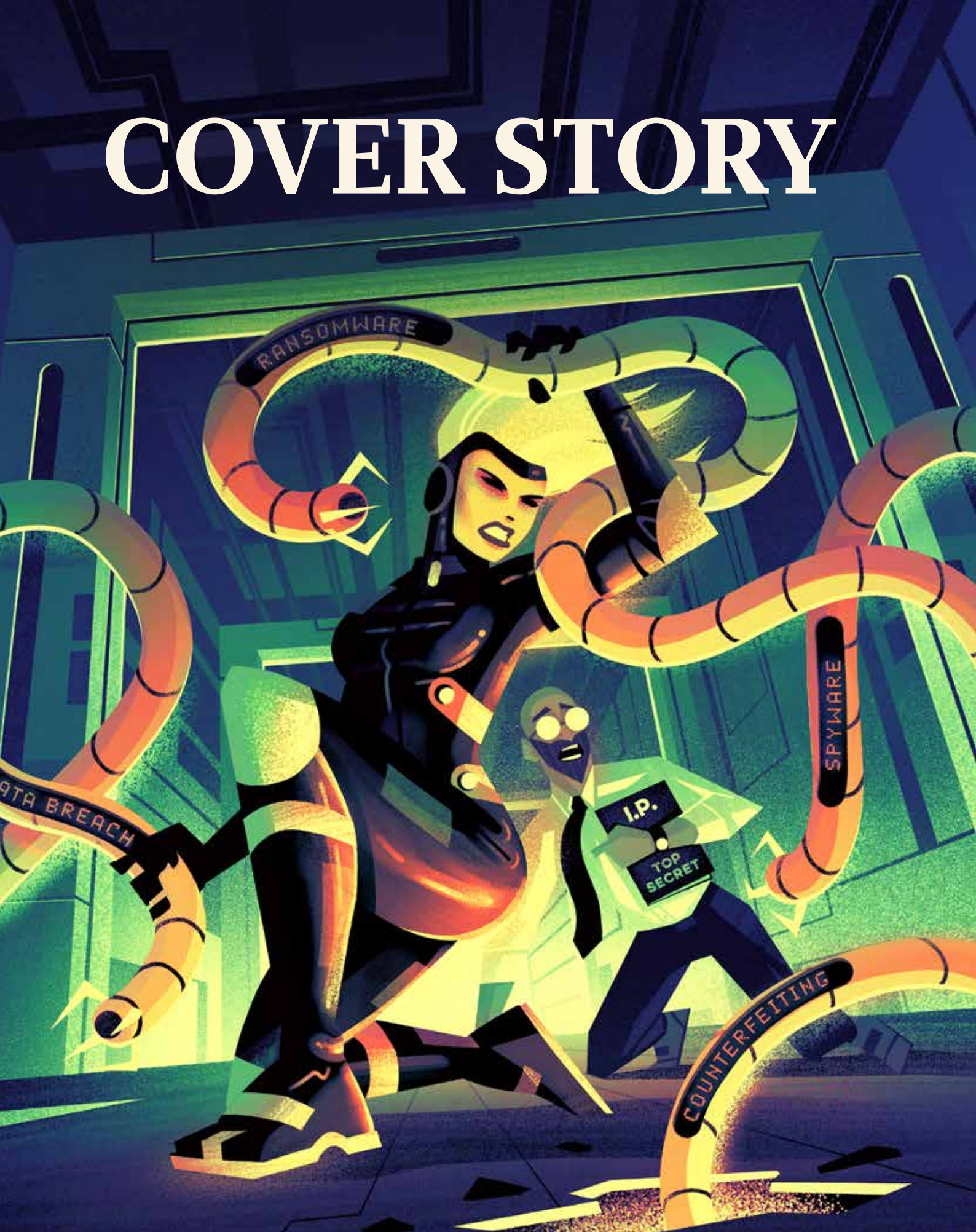
COVER STORY


RANSOMWARE
ATA BREACH
I.P.
TOP SECRET
SPYWARE
COUNTERFEITING

Photos: Martin Green

The famous adage of Desbois, "ideas are free" recalls that ideas are not protect-able, only the original form in which they are expressed.

KNOWLEDGE ECONOMY

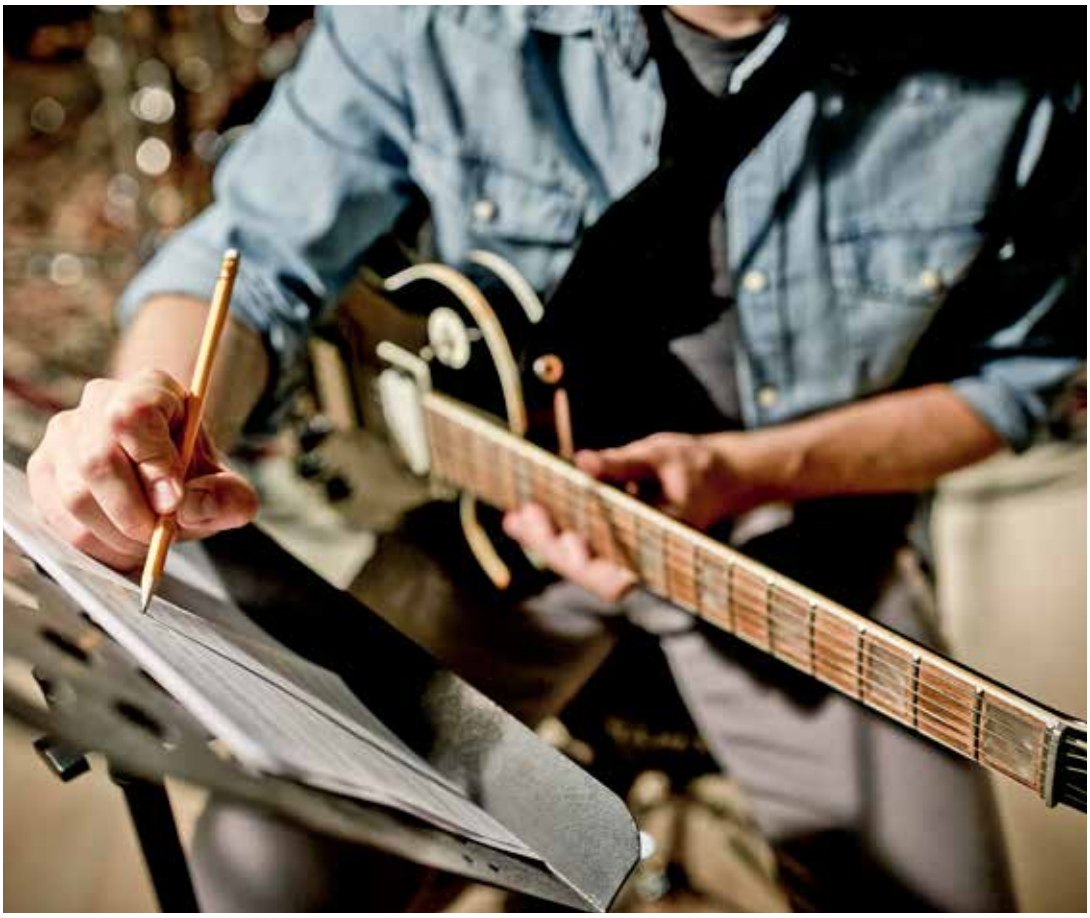
PROSPERING IN AN IMMATERIAL WORLD

Until the 1990s, a company's assets were generally composed of two types, financial and physical assets, but since then the growth of intangible assets has been dazzling. In advanced economies, aging populations and shrinking natural resources make growth more and more dependent on knowledge-based productivity gains, which, in contrast to labour, natural resources and physical capital, do not run out. To acknowledge this "knowledge economy", the Chamber of Commerce has devoted its 23rd edition of "News & Trends", to the key role played by intellectual property. Some of the greater lessons to have emerged are presented in this article.

Text: Christel Chatelain / Corinne Briault

Information and communication technologies (ICT), particularly the Internet, have facilitated the emergence of a "knowledge economy" by enabling the economy to become networked and by accelerating the dissemination of knowledge. In this dematerialised world, the process of value creation is turned upside down: not only do companies profit by selling a final product, but also by splitting up the value chain and striving to make each of its parts profitable: for example their R & D, their patent portfolio, their internal software and their brands. The roots of growth and competitiveness are shifting from material to intangible capital.

For companies that can rise to the significant challenge of managing this transition and their intangible assets there can be a source of value and performance. Identifying, exploiting and valuing intangible capital will enable the company to differentiate itself from its competitors, which is particularly important in today's increasingly globalised economic environment, and, ultimately, to increase, or at least maintain, its competitiveness. In this context, intellectual assets become strategic factors in companies' value creation. They are becoming increasingly important in facilitating productivity and efficiency gains. They are ▶



01.

Protecting the Olympic symbol

By signing the Nairobi Treaty of 1981, States committed to protecting the Olympic symbol, i.e. five intertwined rings – against its commercial use without the authorisation of the International Olympic Committee. Fact: if the International Olympic Committee authorises the use of the Olympic symbol in a State party to the Treaty, the National Olympic Committee of that State is entitled to a share of the revenue collected by the International Olympic Committee.

also a determining factor in business processes and product innovation.

WHAT IS INTANGIBLE CAPITAL?

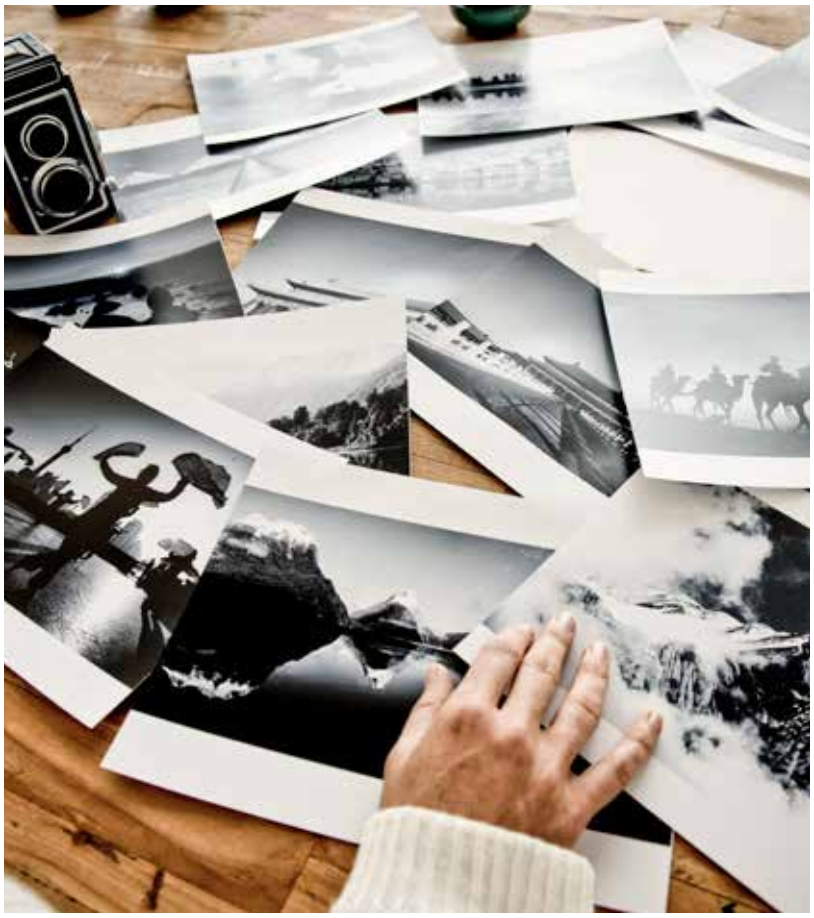
For a company, intangible capital can be divided into three main parts:

- **human capital**, namely the ability of the company to create and sustain value by attracting and retaining skills and talents targeted for its strategy, the quality of its managerial knowledge, the potential for creativity to develop products or services that meet the expectations of customers, the ability to work in a community of interests and practices;
- **internal structural capital**, i.e. the company's ability to create and sustain value throughout its organisation and its information systems, its processes, its innovation capital, its capital innovation, its risk management;
- **external structural (or relational) capital**, i.e. the company's ability to create value and perpetuate it in its relations with external partners. These include customer capital, brand equity, relationships (with shareholders, company stakeholders and more generally its ecosystem), and the ability to work as a network and within networks.

For a company, the impact of investing in intangible assets depends to a large extent on its managers' ability to implement an appropriate strategy to protect and manage these assets and reap their full benefits. Part of these can be legally and juridically protected through intellectual property rights. The famous adage of Desbois, "ideas are free", recalls that ideas are not protected, only the original form in which they are expressed. An intellectual property right confers on its owner a temporary exclusive right in a given territory and for a given "production of the mind". Thus, intellectual property is a generic term that covers multiple concepts, from industrial property to literary and artistic property. The main distinction between these groups of intellectual rights is the way in which the right is created. Most industrial property rights are obtained through a formal procedure, usually consisting of a registration, while the latter, especially copyright and associated rights, automatically arise when a work of art is created.

SEVERAL TYPES OF INTELLECTUAL PROPERTY EXIST:

A patent is a legal title that confers on its holder, in a particular country or region and for a certain period of



02.

01, 02. Intellectual property is a generic term that covers multiple concepts, from industrial property to literary and artistic property. The main distinction between these groups of intellectual rights is the way in which the right is created.

time, the right to prohibit third parties from exploiting an invention for commercial purposes without authorisation. However, most laws on the protection of inventions do not really define what an invention is. Several countries define inventions as new solutions to technical problems. In addition, the invention must meet the following three criteria: it must be new; involve an innovative step; and be susceptible to industrial application. Patents can attract value through licenses, transfers, or sale to venture capital organisations. Although the patent regimes are quite similar throughout the world, there are some differences: in Europe, a patent is granted to the applicant who was "first-to-file" but in the United States to the applicant who was "first to invent", with the difficulties that this presupposes in terms of proof.

The **trademark** is a legal protection of a graphic sign which distinguishes the products or services of a company from those of its competitors. To be registered, a "… mark is represented in any suitable form by means of commonly available technology, provided that it can be reproduced in the register in a clear, precise, distinct, easily accessible, intelligible, durable and objective manner, in order to enable the competent authorities and the public to deter- ▶

INTERVIEW
SERGE QUAZZOTTI
Director of the Luxembourg Institute of Intellectual Property (IPIL)

"A showcase of intellectual property"

Can you explain in a nutshell what are the main tasks of IPIL?
IPIL has several major tasks. It builds the capacity of all stakeholders to understand what IP is, why it is important to them, what are the main issues and how they can benefit from it. IPIL provides a first level of information, support and support services for companies, researchers, public institutions or anyone interested in the subject. It can then redirect them to lawyers or specialised industrial property consultants.
It also coordinates the implementation of public policy by bringing together all the stakeholders in the field concerning intellectual property and it can conduct studies to advise the government. IPIL always works in partnership, whether with beneficiaries such as large companies, SMEs, startups, public researchers or intermediaries such as professional chambers, various clusters, Luxinnovation and the professionals in intellectual property through the International Association for the Protection of Intellectual Property (AIPPI) and the Federation of Industrial Property Attorneys in Luxembourg (FCPIL) … The IPIL is a showcase for intellectual property, it develops and offers training in everything that relates to promoting and raising awareness in this topic.

What support or aid can you provide to businesses?
IPIL has different ways of providing information and raising awareness about intellectual property issues. Every year in April the Luxembourg Intellectual Property Day is organised in cooperation with the Intellectual Property Office of the Ministry of the Economy. This event brings together the main players in intellectual property, in a conference and a fair, generally in partnership with actors from research, innovation and the promotion of entrepreneurship in Luxembourg. Another important meeting in October, the "Afterworks" of Intellectual Property are organised in the form of round tables, based on testimonials from companies on different, very concrete and practical themes in intellectual property. In addition, the IPIL also offers awareness and coaching sessions, called "BoostIP"; seminars co-organised with different partners; answers questions through our helpline, and offers face-to-face or e-learning training. Finally, the IPIL publishes a whole series of brochures or fact sheets intended to raise awareness on specific topics and can also carry out work in monitoring, researching and providing information on patents.

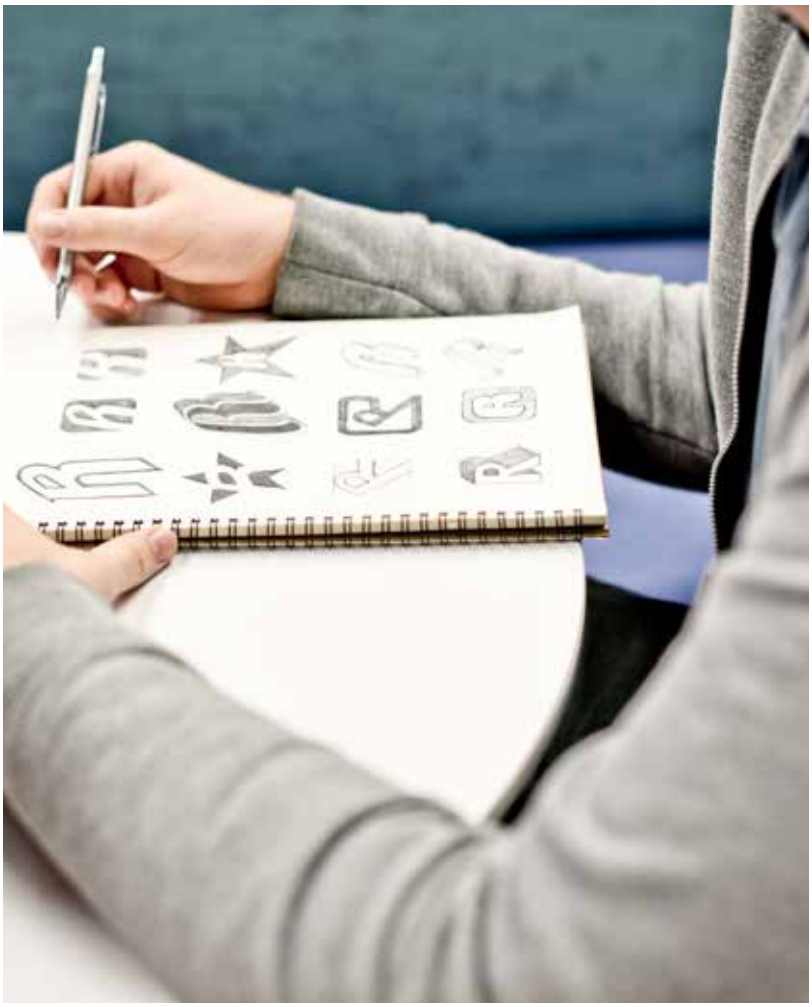
Photo : Premier Cercle 2019

INTERVIEW
MICHEL CANCELLIER
Group IP Senior Expert, Tarkett Group

The decision to protect an invention or not is taken collectively

Tarkett Luxembourg is the Group's global Research & Innovation centre. What solutions have you adopted to protect your innovations?
Indeed, Tarkett Group organises its industrial protection strategy from its Research & Innovation centre in Luxembourg. This strategy is deployed in 24 development and application laboratories located in 15 countries around the world. We work on combined strategies that combine business secrecy, patents (for part of the innovation) and trademarks. The decision to protect an invention or not is made collectively by the Patent Management Committee comprising R & D, marketing and industrial protection managers. Inventions are evaluated against criteria chosen to be widely used by non-specialists in industrial property. Representatives of our various markets may request that a given invention be protected in the geographical area for which they are responsible.

You file between 10 and 15 new patents every year. What are the business areas affected by these patents? (Technological innovation? Model creation? Materials?)
Our patents may also concern improvements (for example: the choice of a specific material in a formula...) or broader concepts (for example: the eco-design of a product allowing it to be totally recycled at the end of use ...). These patents can be filed at any stage of development, from the earliest stages (concept patent) to the more advanced (advanced patent).



03.

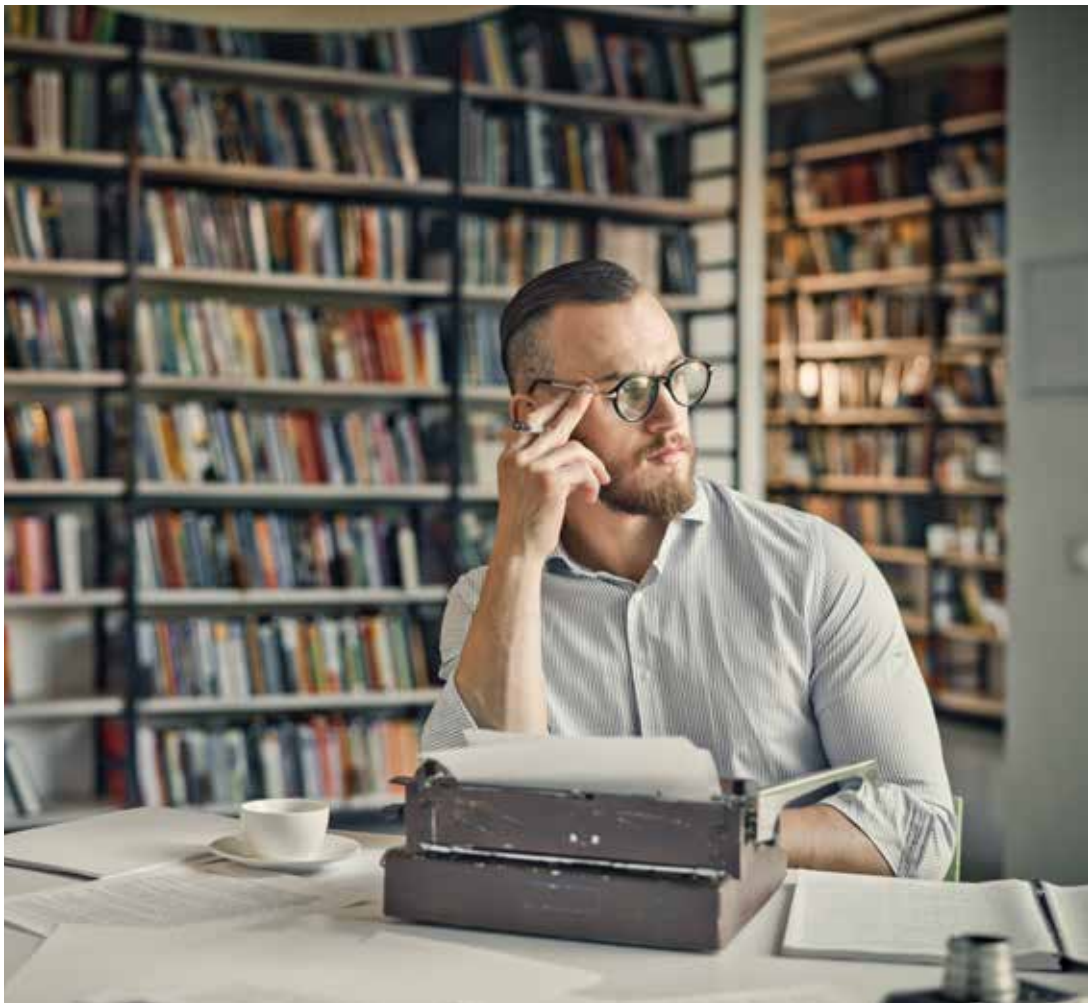
mine clearly and precisely the object of the protection afforded to its holder".

Additional conditions apply if a trademark is a colour. For example, Milka's "mauve" colour cannot be used by competitors in the packaging of their chocolate, but the colour can be used on household appliances. In addition, it must be a particular shade, "natural" colours cannot be trademarked. Designations and signs contrary to public order and morality and those likely to deceive the public (for example, calling a margarine "blue butter") may not be given a trademark.

The registration of a **drawing** (two-dimensional representation) or of a model (three-dimensional) makes it possible to protect the visual and aesthetic aspects of a product, that is to say any ornamental aspect which does not result from any functional considerations. It confers an exclusive right to make, import, export, use or store any product on which the industrial drawing is present or incorporated, or to allow a third party to use it under agreement.

Copyright allows creators to protect their literary and artistic works, namely books, musical works,

03. Copyright allows creators to protect their literary and artistic works, namely books, musical works, paintings, sculptures, films, computer programs, databases, advertising creations and maps and technical drawings.



04.

paintings, sculptures, films, computer programs, databases, advertising creations and maps and technical drawings. Copyright arises from the mere fact of creating the work, and therefore no formal registration procedure is required to obtain copyright protection. Associated rights are a set of copyright-like rights granted to certain people or bodies that contribute to making works available to the public, for example, performers, record producers and broadcasters.

TO WHOM SHOULD APPLICATIONS BE MADE TO REGISTER INTELLECTUAL PROPERTY OUTSIDE LUXEMBOURG?

In a (very) simplified way, to file a **patent**, a company can apply globally to the World Intellectual Property Organization, WIPO, and at the European level to the European Patent Office, EPO.

If applying to register a **trademark**, a **drawing** or a **model**, WIPO is also the reference body at world level, while at the European level it is the European Union Intellectual Property Office, EUIPO.

These organisations offer inventors a single filing application procedure that can take effect in all the affiliated countries.

THE LUXEMBURG SYSTEM OF INTELLECTUAL PROPERTY

In the Grand Duchy, two major players are shaping the landscape of Luxembourg intellectual property:

- **The Institute of Intellectual Property Luxembourg** (IPIL), an Economic Interest Group (EIG) in which the Chamber of Commerce is involved, was created in 2014 and aims to promote intellectual property and support and assist the economic actors (notably companies) and institutions that use it.

- **The Office of Intellectual Property (OPI)**, an organ of the Ministry of the Economy, oversees setting up the legislative and regulatory framework, as well as the instruments offered to companies and creators to enable them to protect their intellectual property assets. ▶

Top 10!

In Luxembourg, patent applications have exploded in recent years. Top of the rankings of the main patent applicants in Luxembourg under the PCT procedure: ArcelorMittal with 92 applications in 2017, followed by Delphi International, LIST, Adient Luxembourg Holding, AZ Electronic Materials Luxembourg, Luxembourg Patent Co, International Electronics & Engineering (IEE), XYlem IP Management, XIEON Networks and Tarkett Luxembourg (see interview p.48).

05.

For **patents**, to obtain protection in the Grand Duchy, an inventor must file a Luxembourg patent application with the Office of Intellectual Property.

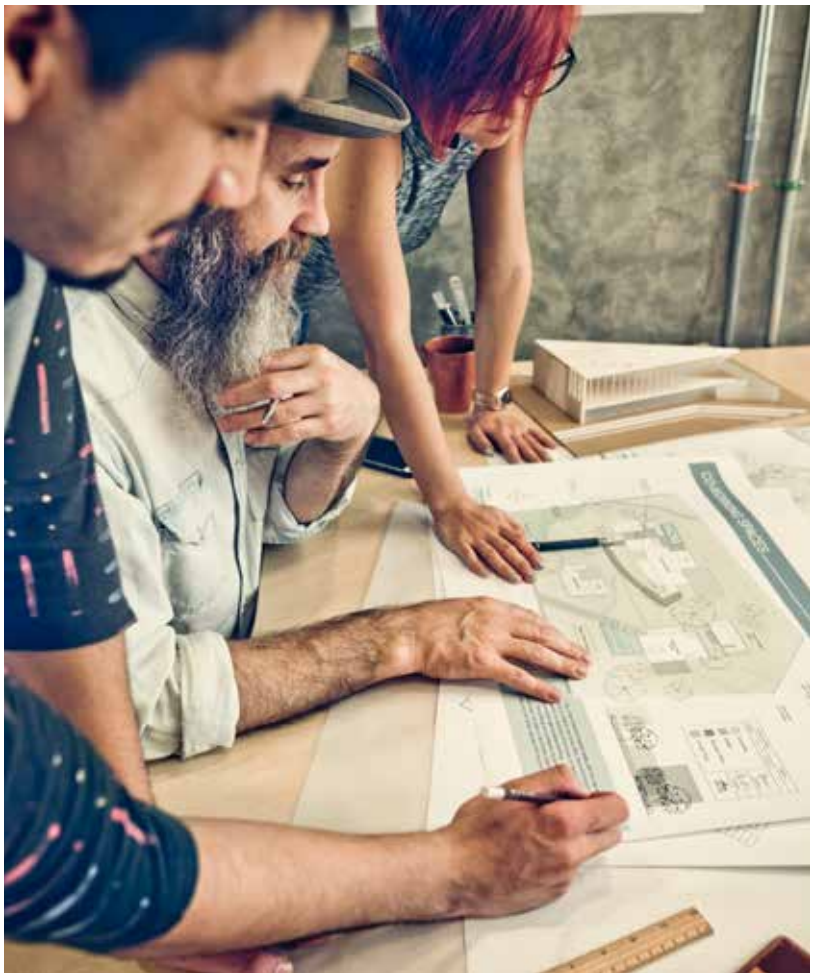
As for trademarks, drawings and models, the three Benelux countries Belgium, the Netherlands and Luxembourg decided in the early 1960s to combine their efforts in an unprecedented way. It is no longer possible to register a trademark only in Luxembourg, since national filing was replaced by a "Benelux" application, covering protection in all three territories. The application must be filed with the **Benelux Office for Intellectual Property (BOIP)** or through the IPO.

SUPPORTING AND PROTECTING YOUR INTELLECTUAL PROPERTY

Within a company, intellectual property assets need to be kept under constant review.

Companies must ensure that they own their intellectual property. While many companies believe that they own the intellectual property created on their behalf or used by them, many examples of litigation prove that this is not always the case and above all that ownership is not automatic. For example, companies that use the services of an advertising agency to promote their business and create their commercial and advertising documents will not automatically become the owners of the content and the agency may restrict the use of media, for example by imposing a limitation on the number of copies or prohibiting their use without prior agreement. Contracting the assignment of the rights to use an agency's creation is therefore essential. Inventions by employees or the achievements of trainees are also regularly at the heart of litigation.

In the case of patents and trademarks, regular monitoring is essential because the owners may lose their rights. For example, if an annual fee is not paid, patents can be cancelled. If trademarks are not used for 5 consecutive years they may lapse under a "forfeiture for non-use" procedure, which though not automatic, may be solicited by a third party. This can have a significant impact on companies and must be considered in any internationalisation strategy. If seeking protection in too small a territory can be harmful, opting for a territory that is too large can be even more so. Indeed, if the company chooses a



06.

05, 06. Contracting the assignment of the rights to use an agency's creation is therefore essential. Inventions by employees or the achievements of trainees are also regularly at the heart of litigation.

European trademark but does not use it in all countries, a third party in one of the countries where the trademark is not used could launch a procedure for revocation for non-use which, if it succeeds, would cancel the European trademark as a whole. On the other hand, if the company initially opts for a Benelux trademark and then extends it to the European Union, the forfeiture of the European brand will not impact the initial trademark and it would remain protected in the Benelux countries. Choosing the most suitable territory for your strategy is therefore far from being a superfluous consideration.

A second type of forfeiture known as "a genericised trademark" may be invoked when the trademark has become a word in common use, as was the case with Frigidaire, Kleenex, Tipex, Thermos or Zipper.

COUNTERFEITING, A WORLDWIDE SCOURGE

Defending intellectual property rights against counterfeiting should be an integral part of a company's strategy. "Counterfeiting" must be understood in its broadest sense as being any infringement of the exclusive rights of the intellectual property's owner ▶

INTERVIEW
EMMANUEL LEBEAU
Director Puressentiel

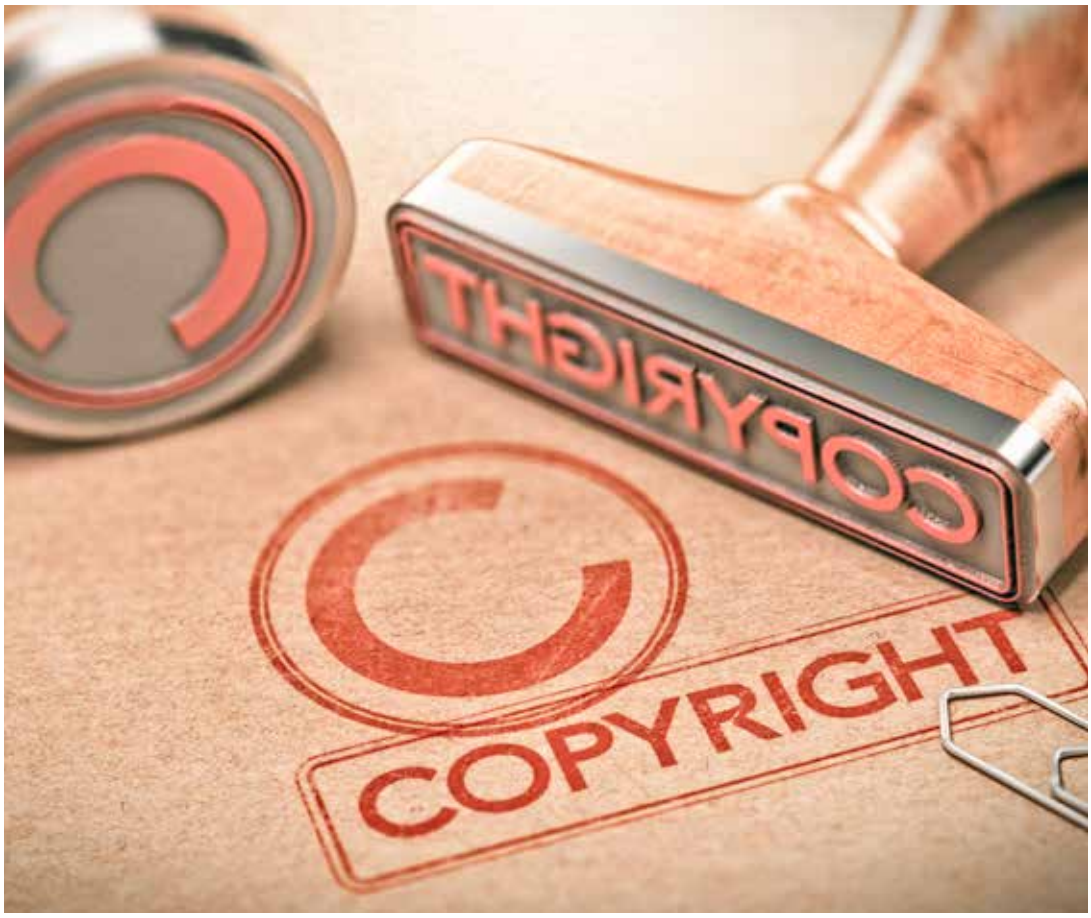
"It is important to monitor and defend our trademarks"

Surrounded by botanists, engineers, aromatherapy experts and toxicologists, doctors and pharmacists, you formulate innovative products. Do you have a team dedicated to patents and trademarks?
The Puressentiel brand was created in 2005 and has built up a remarkable reputation over the last ten years. The brand offers "ready-to-use" solutions, composed of essential oils and natural active ingredients, designed to take care, daily, of the health, form, beauty and well-being of everyone in the family. Puressentiel offers 280 aromatherapy products and organic or natural cosmetics. The products are available in nearly 30 versions and in 8 languages and are distributed in 90 countries. That's why, for Puressentiel, intellectual property has real importance. The Puressentiel Intellectual Property Manager based in Luxembourg intervenes at different levels of new product development projects and supports the teams in international marketing, R & D, digital, communication, regulatory affairs and export in their efforts to ensure protection of intellectual property rights right from the development stage. Our Intellectual Property Manager has a role in advising these various teams on their projects and the possibilities of legal protection regarding intellectual property. They also raise awareness within the Puressentiel Group of all these intellectual property issues that are encountered daily in the teams' various tasks.

With a range of more than 200 products, how do you fight against counterfeiting?
Puressentiel ensures the protection of our brands through daily action at different levels. Thus, Puressentiel carries out several activities in France, in Europe and throughout the world to defend our trademarks. The filing and registration of a trademark is our first step in protecting intellectual property, but this is not enough – it is important to monitor and defend our trademarks. Beyond the trademarks, models and patents that constitute registered and protected assets, the Puressentiel Group sometimes faces litigation concerning unfair and parasitic competition involving elements that are not registered and not protected by intellectual property rights. The visual displays, packaging, products and colour schemes developed by the Group, which do not always benefit from intellectual property protection, are constantly being imitated and copied by competitors. The actions carried out then fall under another legal framework and tort law. Puressentiel TM is also coordinating two important cases concerning parasitism, which have been in progress since the beginning of 2016 and for which decisions are expected in 2019. As the Puressentiel brand has become a well-known brand, Puressentiel must actively defend our trademark portfolio.

National trademark

There are more specific intellectual property rights, such as geographical indications which are a designation used on products that have certain qualities or are essentially known due to their place of origin. In Luxembourg, a "national trademark" has been created to guarantee the quality and packaging of agricultural and horticultural products. Eight types of products benefit from it: butter, eau-de-vie, honey, pork, ham, wine, sparkling wine and, more specifically, crémant.



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and any unauthorised use. The burden of proof is on economic operators who believe their rights have been violated and they have 5 years to act after they ascertain the facts. If they fail to act, a "foreclosure by tolerating acts of counterfeiting" may be pronounced because they did not actively defend their trademark and were too tolerant of the abuse.

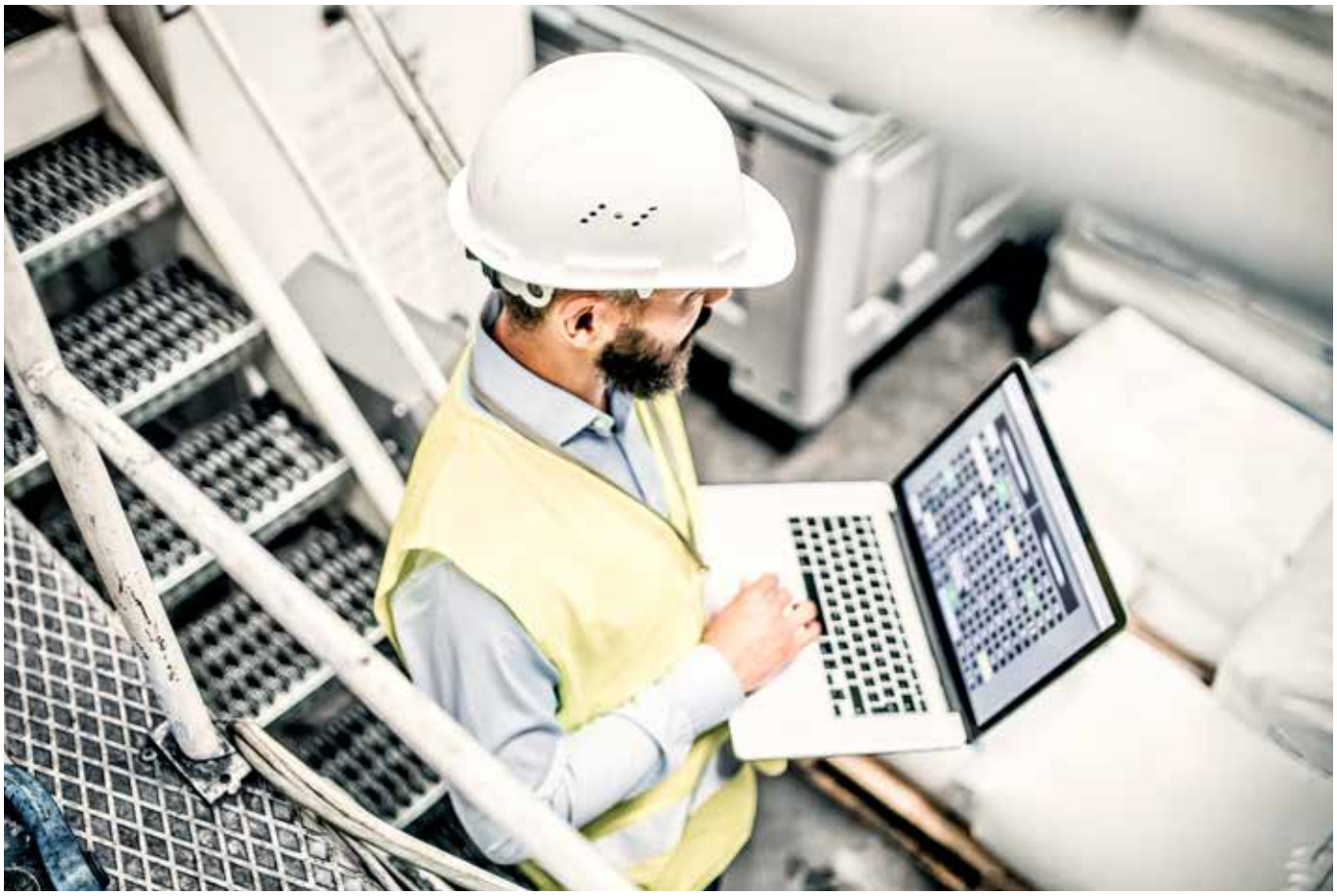
In addition to the potential dangers to consumer health and safety, counterfeiting has a significant impact on the economy as all sectors are affected. Thus, a company whose products are counterfeited will see its market share and sales decrease, negatively impacting its turnover and, consequently, threatening jobs. Poor quality imitations could quickly ruin a company's reputation and image, as the consumer may not always be aware that it is not an original product. In addition, companies must incur significant expenses to prevent the fraudulent imitation of their products and to defend themselves if their rights are infringed. The results imply a lower return on investment and companies may be less inclined to innovate, thus proving damaging and inefficient for the economy.

According to the OECD, in 2016, counterfeiting and trade in pirated products accounted for 2.5% of world trade, nearly EUR 338 billion, resulting in the loss of around 800,000 jobs and a loss of approximately EUR 14.3 billion in tax revenue per year.

As far as the European Union is concerned, EUIPO, through the European Observatory on Infringements of Intellectual Property Rights, considers, among other things, that the presence of counterfeits in Luxembourg causes the 13 most vulnerable sectors to lose 7,8% of their direct annual sales, around EUR 90 million or EUR 159 per year per Luxembourg inhabitant. Luxembourg thus pays a higher price than the European average.

And contrary to popular belief, emerging economies, including China, are also witnessing an upsurge in their domestic companies' IP being infringed.

If clothing and footwear, medicines, leather goods, cosmetics, wines and smartphones are among the most affected sectors, all companies risk seeing their products counterfeited as offenders are diversifying. The development of e-commerce has given counterfeiters a new means to access consumers (who may not be aware they are buying "fake" goods), and sell their products, via postal or courier services in small consignments, thus reducing the risk of being identified and subjected to financial consequences.



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Despite the serious threat counterfeiting represents to any modern, knowledge-based economy, sanctions against offenders appear to be extremely weak in some Member States, which not only does not deter counterfeiters but can also discourage the authorities from prosecuting, thus creating a vicious circle. From the demand side, there are several factors that encourage consumers to consciously purchase counterfeit goods, including lower prices, easy accessibility, and the fact that these purchases are not stigmatised socially.

ALTERNATIVES TO INTELLECTUAL PROPERTY RIGHTS

Due to the time resources required to build a file, the cost of filing, the time to obtain protection but also the obligation to disclose the technical features of the invention, some companies use additional and complementary alternative means to defend their intellectual property, the most frequently used form being the trade secret. The "trade secret" is defined as information that meets certain conditions and it is therefore no longer enough for a company just to keep its information secret, but it must implement measures to keep it secret.

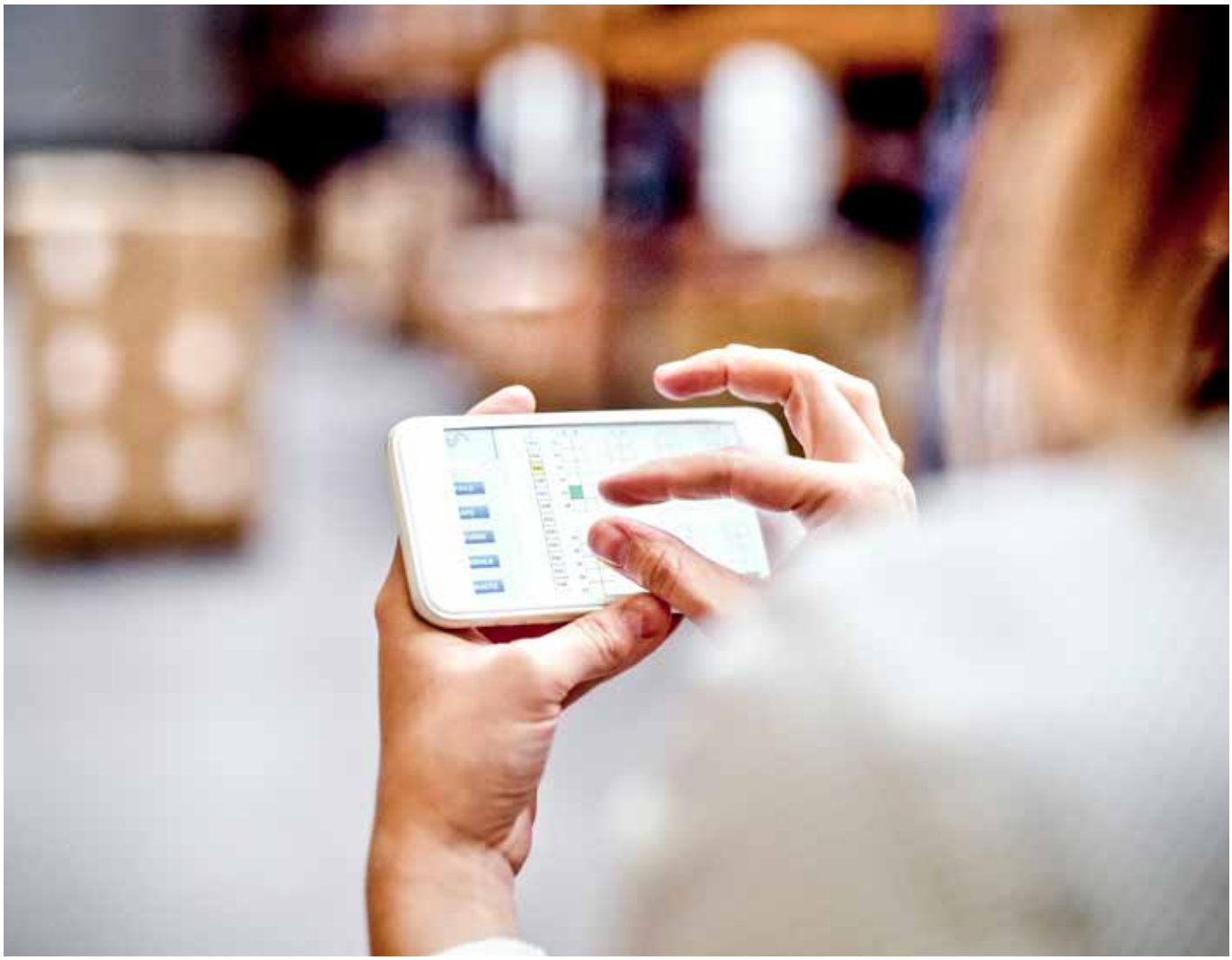
Many companies prefer trade secrets to patents because there are numerous advantages: the lack of costs for registration or extension; the possibility of keeping it for an unlimited period; the absence of any obligation to disclose and publish and the lack of any delay in being protected as it takes effect directly; it applies in all countries and protects a greater amount of information, including not only inventions, but other non-patentable know-how such as commercial, administrative, financial or other working methods.

The downside is that legal remedies are more limited, and there is no guarantee of exclusivity if secrets are revealed.

SMEs, A SPECIAL CASE?

According to the OECD, the propensity to file patents, and to seek the protection of other intellectual property rights, is strongly linked to company size, even among innovative firms, and so SMEs are least likely to use it. Various reasons explain this trend. Firstly, SMEs often do not know how the intellectual property system works. Secondly, building application files can be time-consuming and SMEs do not always have enough human resources or experts ▶

07. Many organisations, at both global and national levels, are responsible for procedures to protect patents or anything else related to intellectual property.
08. Companies must ensure that they own their intellectual property. While many of them believe that they own the intellectual property they have created or used, many examples of litigation prove that this is not always the case and above all that ownership is not automatic.

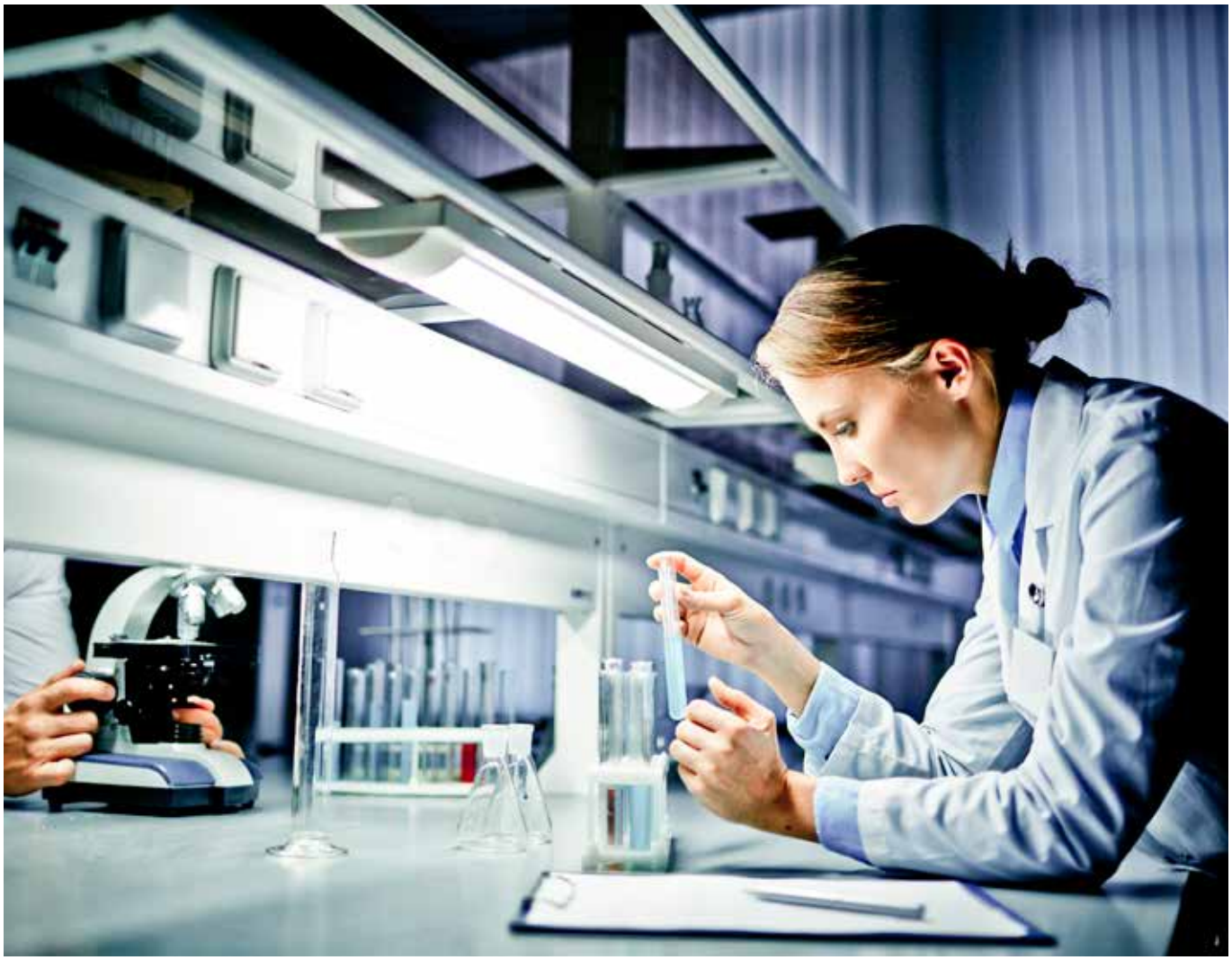


09.

to complete the task. Then, as the cost of filing is often considered excessive and waiting times too long, SMEs therefore believe that the resulting benefits do not outweigh the risks. In addition, monitoring their rights, and any resulting conflicts, may also deter SMEs from using traditional IP instruments, especially if they operate in more than one market. Finally, according to WIPO case studies, not only do SMEs submit applications less frequently, but when they do their success rate (in terms of obtaining the patent) is significantly lower than for larger firms. This may be due to insufficient information about the previous state of the art, inappropriate wording of patent applications, or limited access to appropriate legal advice. This then sets in motion a vicious circle since an SME that has failed to obtain the desired patent could reject the IP system. Given all this, SMEs often choose to protect their innovations through other channels: secrecy, confidentiality clauses, speedy implementation, technological complexity, trust-based relationships, and so on.

PATENT, STOP OR CONTINUE?

One of the key factors driving a company's decision to invest in innovation is the extent to which it can recover its investments and make a profit once its R & D effort has resulted in an innovative product or process being deployed. Generating new knowledge usually entails high costs – in the case of technology it is the cost of investing in R & D – while copying or imitation usually leads to lower costs. In addition, since knowledge and innovation have the characteristics of being a non-rival good (its consumption by several agents does not entail a loss of well-being) and non-excludable (there is no way to exclude people from access to this knowledge), it is difficult for a company to "own" the results of its investment in R & D. If R & D spending is unlikely to translate into higher prof-



10.

its, the company will be strongly discouraged from investing in innovation. Thus, patents strengthen the incentive to innovate at the cost of temporarily restricting competition.

Another positive point concerning patents: they make it possible to disseminate technical information on inventions and consequently increase the circulation of new technological knowledge, as inventions must be described in patent applications which are published, in most countries, 18 months after filing. Indeed, in return for revealing an invention, the inventor is granted a monopoly on its use.

Finally, disclosure of patent applications is likely to reduce wasting resources which would otherwise be devoted to duplicating R & D work.

But the attribution of intellectual property rights may also restrict the freedom of action of other companies, and thus reduce the production of innovations. There is also sometimes a strategic interest in holding patents, even of poor quality, just to obstruct competitors. This behaviour is detrimental to innovation and competition, and therefore has a significant cost to the community. In addition, at a macroeconomic level, each country may have an interest in weakly protecting intellectual property, which enables its citizens to benefit from existing low-cost innovations but does not reduce national innovation.

The challenge is therefore to design intellectual property regimes that balance the various advantages and disadvantages of a temporary restriction of competition in order to encourage more innovation: how long; what scope; what conditions in terms of innovation; what competitive policies to add; what cost; what procedures, especially in terms of litigation; are among the many parameters to be defined in advance and which will undoubtedly impact the direction of the system, and ultimately the behaviour of economic actors. ▶

09. Digital transformation is revolutionising innovation in all sectors of business, but intellectual property regimes have not always evolved at the same pace, revealing many challenges in this new intangible economic model, where competition and collaboration are intertwined more than ever before, even though they seem, by their very nature, to be opposites.

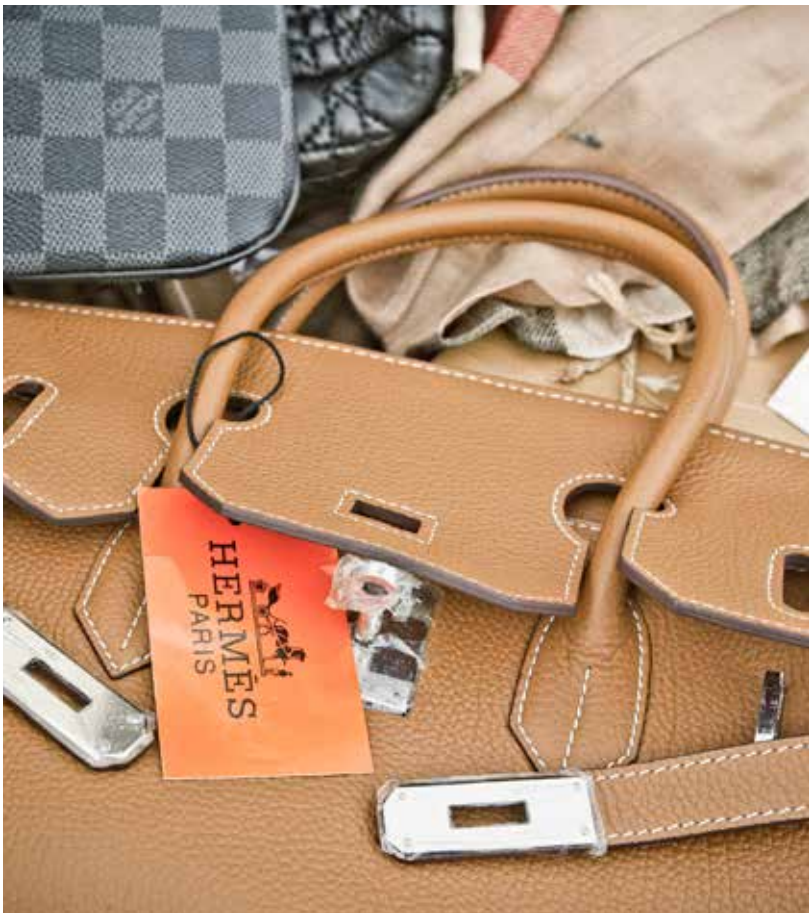
10. One of the key factors driving a company's decision to invest in innovation is the extent to which it can recover its investments and make a profit once its R & D effort has resulted in an innovative product or process being deployed.

INTERVIEW
LEX KAUFHOLD
Head of Management, Office for Intellectual Property, Ministry of the Economy

"The OIP is responsible for setting up and managing a framework and tools to enable enterprises and creators to protect their intellectual property assets"

What is the role of the Office for Intellectual Property (OIP)?
The Office for Intellectual Property is a directorate of the Ministry of Economy. It is responsible for setting up and managing the framework and tools available to companies and creators to enable them to protect their intellectual property assets (patents, trademarks, designs, copyrights and related rights). The product of intellectual efforts is recognised by national and international laws and conventions as an intellectual property right to protect certain intangible assets. The Office represents Luxembourg at the European level and in international forums such as the World Intellectual Property Organization (WIPO), the European Patent Office (EPO), the European Union Intellectual Property Office (EUIPO) or the Benelux Office for Intellectual Property.
The Office is also the initiator of all laws and regulations relating to this subject and registering patents.

What are your links with other actors working in Luxembourg on intellectual property issues?
We work with private and institutional partners. Our relations with private actors in charge of industrial property, patent agents, lawyers, the different associations and collective management societies are excellent and they are also very good with large institutions such as the Chamber of Commerce, Chamber of Trades and the various ministries.
Then, we can say that we are complementary to the work done by the IPIL.
To illustrate this a little more clearly, we, at the OPI, are more theoreticians, while the IPIL is more on the ground.

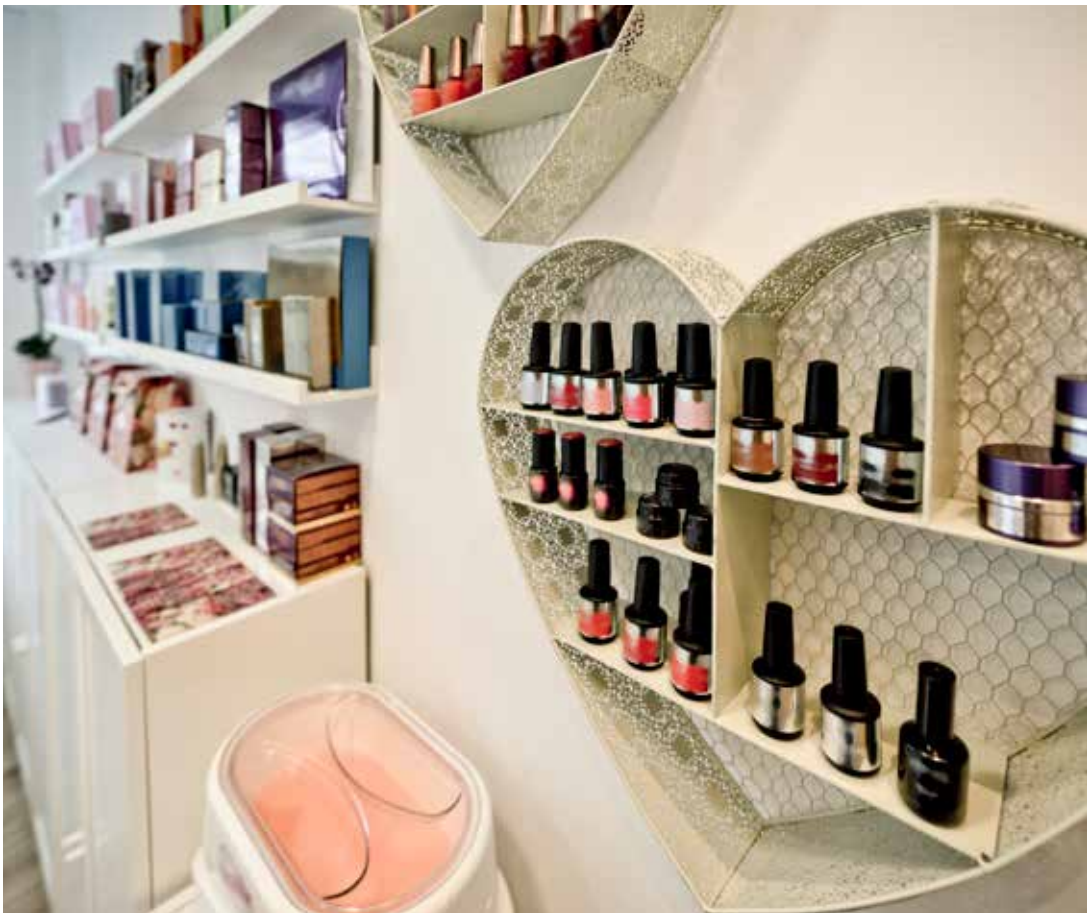


11.

DIGITALISATION, OPPORTUNITY OR THREAT?

The digital transformation is revolutionising innovation in all sectors of business, but intellectual property regimes have not always evolved at the same pace, exposing many challenges to this new intangible economic model, where competition and collaboration coexist more than ever, even if they appear, by their very nature, to be opposed. Technological evolution facilitates copying and imitation, so protecting corporate data is at the heart of the debate and the challenge is great: finding the right balance between disclosure and protection, in order to foster innovation and the development of new technologies whilst providing enough protection to rights-holders. Copyrights, for example, are under strain as the system was primarily designed for the world of paper and print. Digitisation favours the dissemination and communication of works, facilitates reproduction, and so on. In addition, what rights should be granted to artificial intelligence (AI) works and to whom should the copyright be granted? In Luxembourg, Artificial Intelligence Virtual Artist (Aiva), an artificial intelligence capable of composing symphonic and

11. According to the OECD, in 2016, worldwide counterfeiting and trade in pirated products represented 2.5% of world trade, or nearly EUR 338 billion, resulting in the loss of around 800,000 jobs and a shortfall of approximately EUR 14.3 billion of tax revenue per year.
12. If clothing and footwear, medicines, leather goods, cosmetics, wines and smartphones are among the most affected sectors, all companies risk seeing their products counterfeited and offenders are diversifying.



12.

emotional music, which, notably, created the music for the animated film "Let's make it happen" for the "Inspiring Luxembourg" campaign, is recognised as a fully-fledged composer by SACEM, the collective copyright management society for authors, composers and publishers in Luxembourg. But some dispute this choice. Copyright also protects software, which is not patent-able as such in Europe, since the European legislators consider that protecting a computer program for 20 years is disproportionate. Patent protection will only be granted if the computer program is an integral part of a technical innovation, for example a program that controls the washing cycle of a washing machine or the braking system of a car. Thus, a patent is granted to protect the technical effect of a computer program, while the copyright protects the expression of this program, and this without any preliminary filing formalities. But remember that copyright protects the form, not the ideas: the algorithms or the functionality of software is not protected, unlike the source code. The early 1980s were marked by the emergence of free or "open source" software: Linux, Android, Mozilla or MySQL are just a few examples but certainly the best known. But what is meant by "free"? Free of copyright? This abbreviated term is used too often. Because, even if the name does not say so, this freedom may be subject to conditions because it is up to the copyright regulator to determine the level of "freedom" in terms of use, copying, distribution, etc. A principle not to be neglected is that "all that is not allowed is prohibited", so as not to slip into forgery. Open source and intellectual property are not rivals but complementary.

It may seem paradoxical that private companies make their knowledge available to their competitors. But in an intangible economy, the one who exchanges an idea leaves with two ideas, unlike a so-called material economy, in which the one who exchanges a good leaves with a single good. And open source is the perfect illustration of "win-win" for the various protagonists, but also for the economy as a whole: on the one hand, the authors of new software gain significant time by not having to rewrite entire programs that already exist, but which they want to improve. On the other hand, allowing the community to look at it constantly improves their software, detects bugs and improves security, making these programs more often of excellent quality. For businesses, the challenges remain daunting. ●

Parody, an exception to copyright

When it comes to making people laugh without causing harm, copyright is flexible in the name of sacrosanct freedom of expression. Thus, if it is a parody, a pastiche or a caricature, and there is no possible confusion with the original work, the latter can be used freely, and counterfeiting or infringement of rights cannot be invoked by the author.

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