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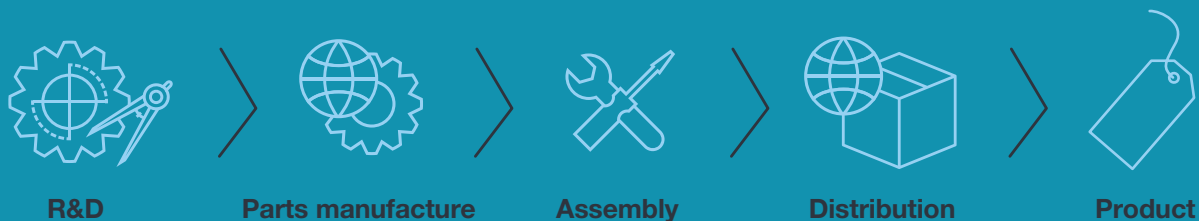
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IP and other intangibles add twice as much value to products as tangible capital



Value added = The difference between outputs and inputs at each stage of the global production chain.

Tracking the value of intangibles

By **Toby Boyd**,
Communications Division,
WIPO

What is intellectual property (IP) worth? A new report from WIPO includes fresh evidence. Lead author **Carsten Fink**, WIPO's Chief Economist, explains.

The latest World Intellectual Property Report examines the role of intangible capital in global value chains. What exactly does that mean and why is it important?

Let's start with global value chains. These days, products are manufactured all over the world and production is global. Your smartphone, for example, includes lots of different components made in factories in different parts of the world. Some microprocessors may be made in the Republic of Korea, the screen may be made in the United States, other parts elsewhere, and then they may all be sent to another factory in China for assembly and packing before being shipped off to retailers and, ultimately, consumers.

The idea of the global value chain basically relates to the production process, from the conception of a product through to its delivery to the consumer. It means looking at the product supply chain in its broadest sense and measuring the value that is contributed at each stage in that chain.

And what about intangible capital?

Going back to our example of the smartphone, the value of different components of a phone consists of far more than its physical parts. A huge amount of the value comes from intangibles – things like the design of the phone, all the technology behind it, including the skills and knowledge of those who make it, and the way it is branded. Even the design of the box the phone comes in may be a valuable asset for the phone manufacturer, helping to distinguish their phone from that of competitors.

Intangibles can be hard to measure – they are, after all, things that you literally can't put your finger on – but they are crucial to the look, feel, functionality and appeal of smartphones and the other products we buy. In this edition of the *World Intellectual Property Report*, we seek to shed some light on just how much these intangibles are worth, in their various forms, and the role they play in the production process.

That sounds challenging. How did you go about it?

There were two main strands to our research. First, we sought to calculate the value of intangibles at the macroeconomic level to put a figure on their overall worth. It was technically challenging but we worked with a team of researchers at the University of Groningen who assembled data on global value chains for manufactured products covering around one-quarter of global output.

In particular, the Groningen team estimated the value added within the global value chains of 19 different manufacturing industries. Value added basically means the difference between what goes in and what comes out at each stage of production. The final step was to combine these value added estimates with data on capital and labor inputs to determine how much value was generated by the workers performing different production tasks, how much came from investment in capital goods such as factories and machinery, and how much was down to investment in intangibles.

What did you discover?

Intangibles are highly important. According to our research, they account for more than 30 percent of the total value of production – meaning that in 2014, the latest year for which data were available, intangibles were worth around USD 5.9 trillion.

Now, it has been recognized for some time that investment in intangibles is crucial to success in modern manufacturing. As economies have become richer, consumers have come to expect more sophisticated technology and a choice of distinctive brands, so it was reasonable to suppose that intangibles added a lot of value to products. But the research published in our report represents the first attempt to actually put a number on that value.

When you say intangibles, do you mean intellectual property (IP)? Does your research prove that IP is worth USD 5.9 trillion?

I wouldn't go that far. Technology, design and branding are indeed often protected by formal IP rights such as patents, industrial designs and trademarks. But there are also other types of intangible assets which are important in the way many products are made, but which are harder to track because they are not registered or recorded publicly, for example the "know-how" of workers and managers in operating machinery and organizing production.

Taking all those things together, it is likely that a good part of the income earned from intangibles is related to IP, one way or another. But the USD 5.9 trillion figure also includes things that could not be described as IP, such as the large returns generated by companies through the wide adoption of their technology platforms.

Intangibles are key to seizing new opportunities in the coffee market

#WIPR17

Changes in the coffee market are offering farmers new opportunities to boost their incomes.

Farmers can boost their earnings by selling premium coffees. That means upgrading their farms and investing in branding.



Image: WIPO / Hassink

You said that this macroeconomic analysis was one of two elements of your research. What was the other one?

We wanted to generate some deeper insights into the role that intangibles play in the global value chains for different products. Even at the macroeconomic level, it is clear that intangibles are more important in some industries than in others. For example, we found that they account for 38 percent of value added for chemical products but only 24 percent for fabricated metal products. But we wanted to dig deeper than that, to try to understand how different industries function and the types of intangibles companies invest in, and why.

That is why we selected three contrasting products – coffee, solar panels and smartphones – and studied the role of intangibles in the global value chain for each of them.

Was it possible to come to any general conclusions?

All three case studies reinforced the key point that intangibles, and especially IP, are an essential part of successful business strategies in competitive global markets. But in each case, different kinds of IP are important, and in different ways.

For instance, coffee highlights the value of branding. We chose to study coffee because it is one of the world's most



important traded agricultural commodities, providing a livelihood for around 26 million farmers. Almost all coffee is produced in developing economies for consumption in richer countries. And it is also businesses in high-income countries that tend to earn most of the money from coffee sales – they get around 70 percent of the total value of the market. This is partly because of the short shelf life of roasted coffee, which means that many of the economically valuable supply chain activities take place close to the consumer.

But changes in the coffee market are offering coffee farmers new opportunities (see page 5). Consumers have shown that they are willing to pay a premium for specialty coffees. This means that farmers can boost their incomes by targeting these higher-end market segments. Some are teaming up directly with independent *baristas* to develop gourmet brands of so-called “third wave” coffee that command a particularly high price. In the process, they are cutting out many of the traditional intermediaries and transforming the supply chain.

How about solar panels? What has been happening there?

Solar panels – also known as photovoltaic (PV) modules – have seen big changes in the global value chain in recent years. Production used to be dominated by Western companies, but now China is the undisputed world leader, with more than 80 percent of global manufacturing capacity for most PV technologies.

Again, that transformation testifies to the importance of intangible capital. As PV technology matured, patent rights lapsed on many of the core inventions. Chinese companies were able to catch up in their technological capabilities by purchasing state-of-the-art production equipment and hiring skilled and experienced workers and managers from abroad. In this way, they were able to undercut many Western firms, some of which went bust or merged. But today, companies that are active in this sector – both Western and Chinese – are investing very heavily in new research and development and filing lots of patents, so the story is by no means over.

And smartphones?

Smartphones are probably the example *par excellence* of how important different types of intangibles and IP can be. As I said earlier, a smartphone consists of a huge number of components, and when you factor in intangibles the picture becomes even richer. The smartphone global value chain is incredibly complex.

A huge number of different businesses are involved in producing these phones and the technology that underlies them – component manufacturers, organizations that develop mobile telephony standards, assembly plants, and so on. They all benefit to a greater or lesser extent from their place in the value chain. But overwhelmingly it is a handful of leading firms that profit, because they own key intangible assets. For example, we calculated that Apple gets to keep 42 percent of every iPhone 7 that it sells. That doesn’t directly correspond to the return to intangibles, but without doubt intangibles are the driving force behind it.

In particular, Apple’s success is rooted in its cutting-edge technology, its strong brand name – ranked the most valuable in the world by many analysts – and its commitment to design. And the same is true of other leading smartphone makers. Samsung Electronics is the second-biggest company in the world in terms of R&D expenditure, while Huawei is eighth, and they are all actively filing patents, trademarks and industrial designs.

So the overall lesson is: if you want to thrive in the global marketplace, invest in IP?

I would say, for businesses looking to compete globally, intangibles have to be part of their strategy and that ultimately requires careful thinking about IP. That doesn’t always have to mean being at the cutting edge of technology – coffee farmers in certain developing economies have been able to increase their income mainly through branding and marketing – but for some products R&D is essential. In such cases, investment in intangibles is clearly key to giving consumers the innovative products they demand.

Perspectives on access to medicines and intellectual property rights

By **John Zarocostas**,
freelance journalist

"It is now widely acknowledged that the biopharmaceutical industry has made tremendous progress in addressing public health needs and the cost of drugs," says IFPMA's Thomas Cueni.

On average, people around the world are living significantly longer than their grandparents. In part, this is thanks to innovation in vaccines and to medicines reaching increasing numbers of patients. But as people live longer and new medical breakthroughs create even greater opportunities for new treatments, many governments find their limited resources spread ever wider. Against this backdrop, the issues of access to medicines and intellectual property (IP) have become hotly contested topics. Two leading experts give their views on these issues.



Photo: Courtesy of IFPMA

Thomas B. Cueni (above), Director General at the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA), offers an industry perspective on the hurdles to access and the challenges that lie ahead in the search for innovative healthcare solutions.

The high cost of medicines is straining health budgets in all countries. What is the way forward?

Thomas Cueni: I understand concerns surrounding the cost of individual drugs and that companies have to justify the value they bring, but I believe the price debate is overblown. On aggregate there is no sign that drug costs are out of control. The latest OECD data, for example, show that between 2009 and 2015, there was a 0.5 percent annual reduction in per capita expenditure for pharmaceuticals. More importantly, expenditures on health should be seen as an investment towards increased welfare, productivity and economic growth. They should not be seen exclusively as a fiscal cost at a given point in time. The research-based biopharmaceutical industry is delivering breakthrough medicines for patients. Over the last 10 years, we have seen dramatic improvements in treatments for HIV, HCV (hepatitis C), oncology and many rare diseases that have transformed the lives of patients. The wider developments driving healthcare spending, and the systemic challenges that limit access to high-quality, safe and effective medicines around the world, need to be considered.

It is now widely acknowledged that the biopharmaceutical industry has made tremendous progress in addressing public health needs and the cost of drugs. One among many examples is the use of tiered-pricing for treatment of HIV/AIDS, malaria and vaccines, and more recently in treating multi-drug-resistant tuberculosis (MDR-TB). Johnson & Johnson's new drug (bedaquiline), for example, both brings an effective therapy for MDR-TB to the table and introduces a very innovative and clearly structured, tiered-pricing approach.

Are there opportunities for more public and private partnerships?

Thomas Cueni: Basically, all of the therapeutic progress that has been made comes out of the labs of private industry. But now many more public-private partnerships are emerging and there is greater openness to collaboration and open innovation. There are, in fact, currently over 300 active health partnerships listed in our directory. There is a strong sense that we have to tackle healthcare issues together. This is most evident in tackling neglected tropical diseases (NTDs). The pharmaceutical industry together with the Gates Foundation, the United Nations (UN) and the World Health Organization (WHO) have made great progress in meeting targets set out in the 2012 London Declaration on NTDs. With this Declaration, pharmaceutical companies, donors, endemic countries and civil society groups pledged to work to control, eliminate or eradicate 10 NTDs by 2020. The work of the Medicines for Malaria Venture (MMV) and GAVI, the vaccine alliance, are two important examples of progress in terms of research and access. But there is clearly scope to do much more.

The UN High-Level Panel on Access to Medicines and the Lancet Commission on Essential Medicines have called for R&D to be de-linked from drug prices. What are your views on this?

Thomas Cueni: De-linkage as called for by the UN High-Level Panel is a dead end. Companies should be paid for the therapeutic value of their drugs to society and patients rather than the cost of research and development or manufacturing. You want to pay for outcomes rather than input. In my view, the de-linkage debate focuses too narrowly on intellectual property and fails to address the multi-faceted and complex issues that prevent so many people from accessing the medicines they need.



Ellen F.M. 't Hoen (left), researcher at the Global Health Unit of the University Medical Centre Groningen, Director, Medicines Law and Policy and former Executive Director of the Medicines Patent Pool (MPP) offers her perspective on ways to improve access and to increase innovation in areas of unmet medical need.

The high cost of medicines is straining health budgets in all countries. What is the way forward?

Ellen 't Hoen: There are measures that countries can take immediately. Ten years ago access to medicine was an issue exclusively for developing countries but that is no longer the case. Today, many high-income countries can't afford the medicines they need and are even rationing certain medicines on the World Health Organization's Essential Medicines List. Clearly something needs to be done. We can draw lessons from the way countries dealt with the HIV drug pricing challenges, for example, by making use of flexibilities in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) to purchase lower-cost generics.

We are now also seeing people in some European countries and the United States calling for the use of compulsory licensing. The Irish Medical Association, for example, has asked the Irish government to make use of compulsory licensing to ensure that everyone in Ireland who needs hepatitis C treatment can get it. Similar calls have been made in France. And in Italy and Switzerland individuals are explicitly allowed to import generic medicines to treat hepatitis C. These examples show that governments can access lower-priced generic medicines even when patents exist. That's one part of the answer. The bigger question is how to finance the development of these products in such a way that new medicines remain affordable. That's where the real problem lies. The current mechanism for financing pharmaceutical innovation is predominantly based on granting market monopolies, which inevitably means high drug prices.

Are there opportunities for more public and private partnerships?

Ellen 't Hoen: An important mechanism for such collaboration of course is the Medicines Patent Pool (MPP), which is now expanding beyond HIV into other diseases such as hepatitis C. They are also exploring a potential role in non-communicable diseases (NCDs) such as cancer. It is important to acknowledge that companies are increasingly willing to engage with the MPP. GSK, for example, has publicly committed to license its oncology portfolio to the MPP. But we also need to ensure that more public money is available to fund research into new treatments. We cannot exclusively rely on charitable institutions like the Wellcome Trust or the Gates Foundation. When it comes to public funding, we need to make sure that the financing mechanisms in place don't mean that patients pay twice, first through taxes and then through high drug prices. If you look at the U.S. National Institutes of Health (NIH), or the European Commission's Horizon 2020 program, both important funders of pharmaceutical research, the conditions

Health is one of the priorities of the Sustainable Development Goals (SDGs). What can be achieved between now and 2030?

Thomas Cueni: Clearly, any progress in delivering on the SDGs will require partnerships and joint action by governments, civil society and the private sector. In terms of non-communicable diseases (NCDs), most of the essential medicines to treat cardiovascular disease are off-patent, but still patients do not have access to them. This is a clear indication that patents are not a barrier to access. If we are to improve access, we need stronger health systems, more professional health workers, and we need to empower women in health care and to address the lifestyle factors that cause poor health. We need to make sure that treatments for diseases like diabetes, cardiovascular disease and cancer reach patients. Coalitions of partners across the health delivery spectrum are critically important. That's why IFPMA recently joined a multi-stakeholder coalition led by PATH, a global non-profit health organization, to support initiatives like their No Empty Shelves project, which is looking at why essential medicines and technologies to treat diabetes are not reaching patients in low-resource settings.

The nexus between innovation and patents has been politically contentious since TRIPS took effect in 1995. Does it need to be revisited?

Thomas Cueni: Revisited? No. The TRIPS Agreement acknowledges that IP is a driver of innovation. The pharmaceutical industry has learned since the South African lawsuit in 2001, where it was seen as getting in the way of people being properly treated. That was perhaps the dumbest thing the industry ever did. But now, least developed countries (LDCs) enjoy a waiver of TRIPS provisions relating to patenting of pharmaceutical products up to 2033. And with the Doha Declaration, LDCs can import the drugs they need from manufacturers in third countries. These adjustments certainly help to meet public health needs. But all parties have to work together and the industry has to make sure that patients in less developed countries have access to innovative drugs. That is one of the reasons why 23 of our companies joined ranks with the World Bank and the Union for International Cancer Control (UICC) in January 2017 to launch the Access Accelerated partnership to tackle access barriers to NCD medicines in low and lower middle-income countries.

Could multilateral agencies like WIPO be more creative in addressing patents and medicines?

Thomas Cueni: On October 1, in partnership with WIPO, IFPMA signed an agreement establishing the Patent Information Initiative for Medicines, or Pat-INFORMED. The initiative will clearly link public patent information to registered medicines in a new online gateway. The purpose is to help health agencies responsible for procuring medicines assess the patent status of medicines in different countries. Under the partnership, 21 leading research-based pharmaceutical companies represented by IFPMA have committed to make available their patent data on small molecules via a



“We need to encourage much greater diversity in the incentive mechanisms we use to finance innovation,” says Ellen ‘t Hoen.

placed on entities that apply for research funding are very weak. Commercial companies acquire IP rights over government-funded innovations which they can then sell at a high price. Luckily, there is an ongoing debate about the need to tackle this, including in academia, which is exploring equitable licensing policies.

The UN High-Level Panel on Access to Medicines and the Lancet Commission on Essential Medicines have called for R&D to be de-linked from drug prices. What are your views on this?

Ellen 't Hoen: The High-Level Panel actually calls for international negotiations to conclude a medical R&D treaty to regulate the sharing of both the costs and the benefits of R&D based on de-linkage principles. You need to have a mechanism at the international level to deal with

free-riders. The Lancet Commission also recommends progressive de-linking for a set of priority products – the so called missing essential medicines. Take, for example, anti-microbial resistance (AMR) and the pressing need to develop new antibiotics. The pharmaceutical industry is being honest when it says those products will not be developed under the current model because it makes no business sense for them to do so. This is an area where you see greater acceptance by companies of de-linking R&D and drug prices. But de-linkage models of innovation can also be applied for other diseases. The Drugs for Neglected Diseases initiative (DNDi) has shown how this can be done successfully. If the cost of R&D is financed directly, there is no need for market exclusivity and high prices. We have to find a way to finance the development of these products that does not depend on the ability to sell them at a high price.



Photo: ZUMA Press, Inc. / Alamy Stock Photo

“Many more public-private partnerships are emerging... There is a strong sense that we have to tackle healthcare issues together,” says Thomas Cueni.



Photo: Shutterstock / E+ / Getty Images

data bank to be hosted by WIPO. We expect to launch the platform in early 2018. The objective is to make the management of patent issues in medicines procurement less time- and resource-intensive and to help ease access to patent information for public health authorities and help them establish smarter procurement strategies.

Pat-INFORMED is a major step forward and shows the sort of practical action that can be taken to help reduce the complexity surrounding patent information. Then, of course, there is WIPO Re:Search, established back in 2011 by WIPO with the active participation of leading industry players and others to catalyze the development of medical products to treat neglected tropical diseases, malaria and tuberculosis. The industry also has a number of other well-established partnerships with, for example, the Medicines Patent Pool (MPP), the Drugs for Neglected Diseases initiative (DNDi) and its joint initiative with the WHO, the Global Antibiotic Research Development Partnership (GARDP). I envisage and certainly hope we will see more partnerships like these in the future.

Do you agree that there is a need for greater transparency in the pricing of medicines and vaccines?

Thomas Cueni: Clearly, governments and companies need to show value for money, but pharmaceutical companies also need to be able to argue for the value of the products they bring to the market. The flaw in the transparency debate is that it tends to look at the costs of drugs that make it to market and to overlook how much is spent on those that don't. Calls for cost-plus pricing are a recipe for creative accounting, not for driving efficient outcomes. Companies should be paid for outcomes (value) and not for input (costs). Successful innovation should be rewarded because it's good for patients and society. This approach, rewarding true innovation, has effectively dealt with the debate about "me-too" drugs. Today, the focus is on significant, often transformative innovation, and on "follow-on" drugs that add value by providing a useful alternative or enhanced therapeutic options and introducing price competition. Rewarding true innovation has led to a focus of biopharmaceutical research on areas of high medical need where significant innovation is rewarded by the market.

Health is one of the priorities of the Sustainable Development Goals (SDGs). What can be achieved between now and 2030?

Ellen 't Hoen: The SDGs are rooted in the principle of the human right to health. That puts certain duties on governments to act. This includes making sure that the innovations that are needed happen and are accessible to those who need them. The SDGs strive for universal health coverage and will help advance that goal, but that will require government action.

The nexus between innovation and patents has been politically contentious since TRIPS took effect in 1995. Does it need to be revisited?

Ellen 't Hoen: The TRIPS Agreement has enormous flexibility and allows governments to do the things that need to happen. Problems arise when legislation closes down those flexibilities. For example, new forms of IP rights such as data exclusivity are being introduced which can be draconian if the law does not provide a waiver to data exclusivity that can be used, for example, in the case of a compulsory license. Such legislation otherwise paralyzes a government's ability to intervene when a compulsory license is necessary. And when these arrangements are exported to other countries through trade agreements, for example, they become a cause of concern. We also need to move away from the notion – which tends to be reinforced by the TRIPS Agreement – that patents are the only way to stimulate and finance innovation. We need to encourage much greater diversity in the incentive mechanisms we use to finance innovation. We need to find a different way – one that is not primarily driven by commercial interests – to set priorities in medical R&D. That does not require rewriting the TRIPS Agreement, it requires governments to explore different approaches.

Could multilateral agencies like WIPO be more creative in addressing patents and medicines?

Ellen 't Hoen: WIPO remains focused on NTDs, where there is a strong consensus that progress can be made. But WIPO could do more to help countries operationalize TRIPS flexibilities, for example by providing model legislation and more detailed practical advice on how to implement legislation relating to patent law and public health. We have seen the marvelous things that WIPO can achieve for the public good with the Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled. The public interest

really is at the heart of that agreement. One could imagine something similar in the area of patents and health and further exploration of a variety of ways to support R&D such as open source innovation and prize fund models – see, for example, *Alternatives to the Patent System that are used to support R&D Efforts* (CDIP/14/INF/12).

WIPO is the UN agency dealing with IP, and yet discussions about IP and some of the most complex issues from a public policy perspective often happen outside the Organization. A more substantive and evidence-based debate should be held at WIPO that moves away from ideological postures and political positions. Only then can a sound policy debate take place.

Do you agree that there is a need for greater transparency in the pricing of medicines and vaccines?

Ellen 't Hoen: The argument that it is in the public interest to keep the price of medicines secret makes no sense. Secret pricing is never a good idea. We saw with antiretroviral medicines that as soon as prices were made public and people could find them more easily, the market dynamics changed completely. Another issue of concern is the fact that governments often cannot make public the results of drug price negotiations with pharmaceutical companies. This lack of transparency goes against the basic principles of democracy and is not acceptable. Secret price negotiations put enormous power into the hands of the pharmaceutical industry and prevent countries from comparing the outcome of drug price negotiations. I don't believe this is in the public interest. We also need greater transparency on the costs of R&D. Industry claims that the costs of drug development are astronomical. We know drug development is costly but how can we make important policy decisions on unsubstantiated claims?

Greater transparency would lead to a better-informed policy debate and better public policies. Take, for example, supplementary protection certificates granted in the EU to extend the basic patent of a registered medicine to ensure the company can recoup its R&D investment. At present, the company is not asked to demonstrate that extra market exclusivity is indeed necessary. It would be sound public policy to ask companies to open their books and show why their 20-year patent is not long enough before additional public resources are spent on high-priced medicines. Today, however, these decisions are made on assumptions, not real data.

Embraer: Brazil's pioneering aviation giant

By Catherine Jewell,
Communications Division, WIPO

Embraer is one of the world's leading manufacturers of commercial and executive jets, with substantial and growing operations in defense and security.





Photo: Courtesy of Embraer





Photo: Courtesy of Embraer

Innovation is deeply rooted in Embraer's culture and mindset.

Brazil's Embraer is at the forefront of global aviation technology. Its pioneering spirit and commitment to innovation and excellence have enabled it to become one of the world's leading aircraft manufacturers, building jets for the commercial, executive and military markets. **Wander Menchik**, Head of Embraer's Technology Development Program, offers an insider's view on the importance of innovation and intellectual property (IP) to the company and its future goals.

How did Embraer get started?

Embraer grew out of a national drive to develop aeronautical engineering and aircraft manufacture in Brazil. The company was founded in 1969 by Ozires Silva, a former major in the Brazilian Air Force.

Where does Embraer stand within the global aerospace industry today and what is the scale of its operations?

Embraer is one of the world's leading manufacturers of commercial and executive jets, with substantial and growing operations in defense and security. In commercial aviation we have a client portfolio of more than 100 airlines in 60 countries, with 1,700 planes in operation. To date, Embraer has also delivered more than 1,000 executive jets to clients in 70 countries, and more than 50 armed forces around the world operate defense airplanes and systems supplied by Embraer.

“We live to stretch the limits of what is possible, and give wings to what is still unimaginable. We live to innovate.”

Embraer

What role does innovation play at Embraer?

Innovation is deeply rooted in the company's culture and mindset. It is part of our daily routine and is not just limited to the development of new aircraft. Innovation permeates everything we do across the value chain, from the development of new and improved products, processes and business models to finding better ways to position ourselves in the global market. You could say that innovation is in our DNA.

How do you encourage innovation within the company?

We actively encourage innovation in various ways. Our *Innova Program*, for example, is a structured approach that seeks to encourage our highly skilled professionals to develop and implement new solutions, processes and strategies that benefit the company. Over the years we have also cultivated a working environment that encourages new ideas and rewards achievement. So there is a great deal of spontaneous innovation by employees as they go about their daily work. In our constant search for excellence, we actively support incremental innovation and encourage employee participation in improving internal processes.

How does Embraer stay at the cutting-edge of innovation?

Our long-term survival depends on our ability to come up with and apply game-changing ideas and concepts. That is why every year we invest nearly 10 percent of our revenues in research and development (R&D) and in upgrading our industrial facilities. This is essential because it allows us to remain competitive within the global aviation market.

Innovation is at the heart of Embraer's business strategy and since we began operating nearly 50 years ago, innovation has driven our success, enabling us to constantly break new ground, identify unexplored niches and reach new heights. Today, almost half of Embraer's revenue comes from innovations or significant improvements implemented over the last five years.

Embraer has a number of partnerships with universities. Why are these important?

The company is constantly reinventing itself to come up with new products and solutions. These partnerships are an important part of this process because they enable

us to access cutting-edge scientific knowledge, to share best-in-class R&D infrastructure and to support the development of highly qualified technical professionals. These collaborations are an important part of our R&D strategy.

What role does intellectual property (IP) play in the business?

Our intellectual property strategy is closely aligned with our business strategy. Our goal is to create and preserve the best possible portfolio of IP assets to ensure the company remains competitive and can leverage its partnerships and business opportunities.

How has the company's IP strategy evolved?

Prior to 2007, Embraer's intellectual property strategy was built around trade secrets and know-how. Thereafter, in line with the rapid global expansion of the company's operations, our growing portfolio of products and services, and the need to protect our innovative technologies in global markets, the company became an active user of the patent system. Today Embraer holds some 800 patents in a variety of countries, many of which have been filed through WIPO's Patent Cooperation Treaty (PCT). We regularly cross-license these assets with our partners – often at no cost – to complement our technical expertise.

What are the advantages of using the PCT for Embraer?

The PCT is an extremely useful tool that is supporting our drive to expand our global footprint. It is particularly useful because it provides a preliminary opinion on the possibility of obtaining a patent grant on a given technology in different countries, and buys the company additional time to take strategic business decisions in relation to a particular technology for which protection is being sought. So it is a cost-effective option that takes the legwork out of the process of obtaining patents in international markets and provides us with feedback that is invaluable in shaping the patenting strategies for our new technologies.

What factors determine your patenting strategy and who decides whether or not to patent a new invention?

An internal high-level management committee is responsible for deciding whether and how to protect new inventions. The decision as to whether we use the

PCT or simply file for protection directly with the national patent office of our choosing (the so-called Paris route) depends on the nature of the invention and the products, processes or services to which it can be applied as well as the markets it can influence.

What are the main IP challenges the company faces?

When it comes to managing our IP portfolio, our overriding concern is to assure the best cost-benefit ratio between the size of our portfolio and appropriate and effective IP protection.

What impact has Embraer had on the Brazilian economy in broad terms?

Embraer is the largest Brazilian exporter of high-value-added products, and contributes significantly to the country's trade balance.

The company is also responsible for generating many highly skilled jobs, and as such has a significant positive impact on direct and indirect employment and income generation opportunities in Brazil and elsewhere.

The company's activities drive the entire Brazilian aerospace chain, which is made up of more than 60 companies, including, for example, suppliers of airplane parts and components.

And finally, we have partnerships with universities and research centers in our R&D programs which support research at the frontier of knowledge and establish a valuable basis for innovation. Through these joint programs new lines of research are established, laboratory infrastructure is improved and researchers help keep the country at the forefront of technology.



Photo: Courtesy of Embraer

Embraer's Ipanema is the only airplane in the world to run 100 percent on ethanol.



In commercial aviation Embraer has 1,700 planes in operation and a client portfolio of more than 100 airlines in 60 countries.



Embraer has built a reputation as an industry leader with a range of 37- to 130-seater commercial jets.

Photos: Courtesy of Embraer

Embraer's Business Innovation Center recently established a partnership with Uber to create the Uber Elevate Network. What are you seeking to achieve there?

This partnership is focused on the establishment of an ecosystem – dubbed the Uber Elevate Network – that will allow the deployment of small electric vertical take-off and landing vehicles (VTOLs) for shorter urban commutes. The first prototype is planned for 2020 with entry into service foreseen by 2025. We think that the development of VTOLs is an opportunity both to help improve urban mobility and to pursue the development of new technologies that have the potential to improve performance and efficiency in a range of aerospace applications. We believe it is important to explore a number of

new business concepts that have the potential to shape air transport in the future. Our partnership with Uber is a unique opportunity to complement our air-transport knowledge with that of a visionary and revolutionary ground-transport company. Through this partnership we will be developing new technologies, new products and new business models which could generate interesting opportunities for Embraer in the future.

Does 3D printing have a future in the aerospace industry?

The use of additive manufacturing or 3D printing in the aerospace sector has strong potential to generate significant savings in the aircraft manufacturing process and to enhance the quality, resilience and durability of

manufactured outputs. We already have a number of 3-D printed non-structural pieces installed in our planes, and our researchers are evaluating other applications.

Do you foresee greater use of biofuels in the future?

Embraer manufactures the world's only general aviation aircraft to run on ethanol. The first model of our ethanol-fueled Ipanema was certified in 2004. As a whole, the aviation industry is fully committed to reducing greenhouse gas (GHG) emissions, whether by improving aircraft technology or using aviation biofuels. But aviation biofuel needs to be sustainable, price competitive and able to be produced on a large scale. We believe that aviation biofuel will play an important role in reducing emissions in the future. The recently approved global Carbon Offsetting and Reduction

Scheme for International Aviation (CORSA), approved by the International Civil Aviation Organization (ICAO), will foster the use of aviation biofuel around the world and help reduce GHG emissions.

Embraer recently launched its Phenom 300E private jet. How long does it take, on average, to develop a new aircraft?

On average, it takes from five to seven years to develop a new aircraft, and the number of people involved in that process varies from case to case.

What is Embraer's approach to open innovation?

One of the key characteristics of this industry is the need to be at the forefront of the development of innovative,



state-of-the-art technologies. We believe that long-term thinking about technological development is essential for the competitiveness and sustainability of our business. Open innovation is increasingly moving beyond pre-competitive technologies. That is why we have in place an open innovation strategy that includes risk-sharing partners, suppliers and start-ups, and others. Today, Embraer has outposts in some of the most innovative environments in the world, including Silicon Valley and Boston. Our aim is to look for new technologies and business models in partnership with start-ups and accelerators. This way, we can bring the most advanced technologies to our headquarters, strengthen the innovative process that is already underway and increase our competitiveness.

In Brazil, Embraer also participates in an investment fund that seeks to strengthen the national aerospace, defense

and security sectors by investing in small companies operating in these sectors.

What are the company's main challenges?

We need to improve fuel efficiency, reduce noise, greenhouse gas emissions and operational costs, and, of course, continue our focus on enhancing the passenger experience. These are common challenges facing all airline manufacturers.

What is the future of flight?

All the main players in the aerospace market tend to agree that the future of flight is tied up with greater fuel efficiency, a low carbon footprint, and faster, safer, more comfortable, quieter and hopefully more affordable air travel.



To date, Embraer has delivered more than 1,000 executive jets to clients in 70 countries.

Innovative app boosts literacy and social inclusion

By **Catherine Jewell**,
Communications Division, WIPO



Photo: Courtesy of Hablando con Julis

Daniela Galindo (left) and her sister Julis (right) with the Hablando con Julis app. This innovative software application promises to boost literacy and transform the lives of millions who live with disabilities and for whom communication is a daily challenge.

It is often said that necessity is the mother of invention. This was the case for Daniela Galindo, a young social entrepreneur from Colombia.

Her younger sister, Julis, was born with a disability that does not allow her to speak, making it extremely difficult for her to communicate with her family and the wider world – a source of great frustration for both Julis and her family. Determined to find a way to communicate with her sister and improve her quality of life, Ms. Galindo developed a software application that now promises to transform the lives of millions who live with disabilities and for whom communication is a daily challenge.

The idea for the application emerged at a family dinner when Ms. Galindo and her parents were brainstorming about ways to better communicate with Julis. “We were in a restaurant sharing ideas and my Dad sketched out what is now our user interface on a napkin,” she explains. It took two years to turn the idea into reality. When Ms. Galindo graduated from her studies in computer science and business in 2011, she set up her company, Hablando con Julis, and set about developing the app. “We initially developed the solution for my sister to resolve a family issue,” she says. “The application changed my life. I found out who my sister is, what she wants, everything about her. It has also changed her life.”

Moved by the technology's impact on her own family, Ms. Galindo set out to make it widely available to others facing similar challenges. "Just as the software has changed my life, I want it to change the lives of others," she says. "Communication is the basis of human development. It allows us to learn, to socialize and have friends, to study and work and play an active part in society." Hablando con Julis is therefore a crucial tool for social inclusion.

Thanks to a grant from the leading IT specialists CISCO, which had learned about her work from an interview, this aspiration became reality. "The financial support I received from CISCO enabled me to develop Version 2 of the software and to start commercializing it," she notes.

ABOUT THE SOFTWARE

Hablando con Julis is a software program that makes it easier for people living with a variety of disabilities to communicate with the world around them. It is also being used as an online education tool to support literacy programs. "Our software makes it possible for anyone between the ages of 3 and 85 to learn to read and write and to express their wishes, thoughts and needs in an easy and simple way," Ms. Galindo explains.

The application draws on a database of over 65,000 words, each of which is supported by an image to make it easily recognizable and a voice for pronunciation. "We have created a universal language based on images that everyone recognizes," Ms. Galindo notes. "Each word is enhanced with written and spoken descriptions and a video to show the expression of a word using sign language. The software allows users to construct a sentence using a variety of images which the program converts into written, spoken and/or signed speech depending on what is required."

Categories of words such as food, colors, transport, animals, nature, places, clothes, sports, body and feelings appear at the top and bottom of the screen, and grammatical categories such as verbs, nouns and adjectives appear on the right. When users select a verb, for example, they can see how it conjugates in past, present and future tenses. "We developed the language with input from teachers, designers and engineers. Associating the words with appropriate images and sounds took a huge amount of work," she notes.

The application also allows users to click and search for any item they may need. Version 2 is available in Spanish only, but Version 3, launched in November 2017, is available in both Spanish and English, with image dictionaries tailored to each language. Users can also customize and create their own image dictionaries and add their own vocabulary. Version 3 also connects with widely available apps like Whatsapp and Facebook.

UPTAKE AND USE

Hablando con Julis 2.0 is already being used by some 8,000 people across Latin America and impacting the lives of many more families and friends. "The technology works for all disabilities except blind people," explains Ms. Galindo, noting that people living with autism, cerebral palsy, Down syndrome, deafness and even stroke patients all benefit from the software. "Within three months all users see a significant

improvement,” she notes. And when it is used in literacy programs, users “start to read and write as soon as they start using the technology, and within four months they can read and write by themselves.”

“We sell our product to families, institutions and governments, and are changing people’s perception of disability in a positive way. Our users are studying, working, writing books, using Facebook and Whatsapp, and are playing an active role in society,” she notes.

The company supplies individuals with its technology and support services, and is also targeting the education sector to promote literacy and social inclusion in schools. “We work with individuals and public and private schools,” explains Ms. Galindo, noting that beyond Colombia, the company is working with the Ministry of Education in Costa Rica and in Panama, where its software is being used in literacy programs offered by public schools.

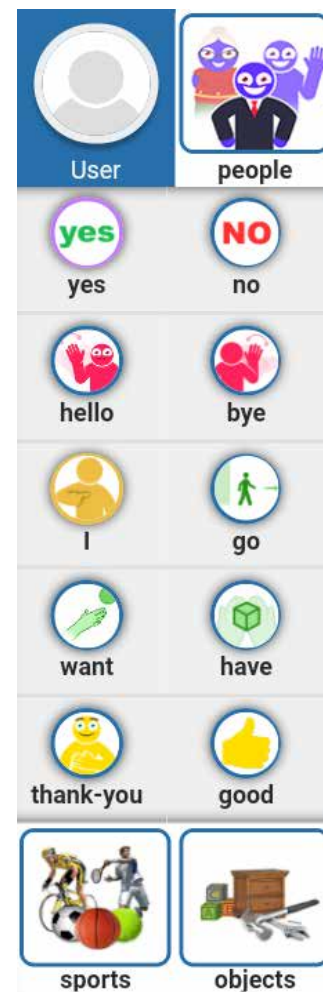
“Our software can be used by people with or without disability, making it possible for children of varying abilities to work together. It is an important part of inclusion,” says Ms. Galindo. “People with disabilities often live in poverty and are excluded because they have no opportunity to study or work. Our technology allows people to learn together and helps those living with disabilities to see that they are part of society and can contribute. That’s my goal. If we don’t use technology to achieve results, especially in the area of social welfare, it serves no purpose. Software on its own doesn’t do anything, but if you have good people and a business model that works, you can make things happen and make a big difference to people’s lives.”

AN EVOLVING BUSINESS MODEL

Initially the company sold individual software packages to customers for around USD 300. Recently, however, it has moved to a subscription model whereby customers pay around USD 20 per month. “We have changed our business model in the interests of scalability and sustainability,” she says, noting that it allows them to provide a cheaper and more affordable option for many parents.

Version 3 of the software comes with a range of online support services, including a call center and training modules for teachers and parents to get the best use out of the application. “We are now in a position to offer a complete solution that integrates software, a unique learning experience and active support that can make a significant difference to the lives of users within three to four months.”

“Developing the technology has been a big challenge,” notes Ms. Galindo. “When we came up with the concept we didn’t have all the solutions, but with Version 3 we have overcome many challenges and now have a more complete solution.”



CHANGING PERCEPTIONS

Setting up a successful business is a tough undertaking in any sector. It is particularly challenging when targeting a sector that is typically excluded from or ignored by the mainstream. “All too often people don’t believe in people with disabilities,” notes Ms. Galindo. “That was my sister’s experience, but my family continued to believe in her and thanks to Hablando con Julis, within a year she was able to read and write and can now express herself and live independently. She has become more sociable and now goes to the café on her own and orders what she wants. She has also trained as a junior accountant. My sister is living proof of what can be achieved using this tool.”

One of the first challenges Ms. Galindo faced in establishing her company was to demonstrate that her software app was effective and worked. “We worked with many different people, including in poor areas, to demonstrate what our technology could do. People started to believe in it and began buying it,” she says. Making inroads into the education sector, however, is proving more difficult. “Making alliances is very difficult in the education system because everyone wants to work on their own, but we are making progress here too.”

Beyond her drive to change perceptions about people living with disability, Ms. Galindo is also working to change deep-rooted stereotypes about the role of

The Hablando con Julis application draws on a database of over 65,000 words, each of which is supported by an image to make it easily recognizable and a voice for pronunciation. Using the software, users can construct sentences using a variety of images which the program converts into written, spoken and/or signed speech as required.



Photo: Courtesy of Hablando con Julis

women in technology and innovation. “More needs to be done by policymakers and the media to break down gender stereotypes and change the way people see the role of women and men,” she says, underlining the importance of encouraging a “can-do” attitude in girls and young women to start their own innovation journey. “Working in the field of technology and making things happen is not always easy, but is it very satisfying and worthwhile,” she says. “The fact that people are now using *Hablando con Julis* for greater inclusion in schools and to communicate with family members in other countries is a great source of satisfaction for me.”

ON INNOVATION AND INTELLECTUAL PROPERTY

“Innovation is not just about technology, it is about how we work, how we understand a person’s needs and how we collaborate together,” she observes, noting that in her company she is committed to creating a culture in which women and men are equal. “If women and men who are equally talented are given the same opportunities then we will end the gender gap in innovation,” she says.

Her company relies heavily on copyright to protect its software. As the recipient of various prestigious international awards, *Hablando con Julis* is also benefiting from useful business advice and mentoring programs, including in terms of the strategic use of IP. She notes, however, that “more government support and information on intellectual property rights and how they can be best used by businesses like mine would have been very helpful.”

NEXT STEPS

Looking to the future, Ms. Galindo has her sights set on global markets. “We are committed to meeting the needs of a potential market of more than 600 million around the world,” she says. “The English version of our app launched in November 2017, and we hope to develop other language versions in the future. This will help us change more lives and make social inclusion a reality around the world.”

“In 10 years we want *Hablando con Julis* to be a communications solution for everyone, with or without a disability. We want it to be used in schools and in companies so that people with disabilities and those who are free of them can work together. We need to show that a person with a disability is not disabled but someone who does things in another way.”

With an expanding network of international distributors and growing interest in the technology from schools as a means of promoting education and social inclusion, *Hablando con Julis* looks set to transform the lives of millions in the years ahead.

“More needs to be done by policymakers and the media to break down gender stereotypes and change the way people see the role of women and men.”

Daniela Galindo

Regulating machine data: less is more for global growth

By **Thaddeus Burns**, Senior Counsel,
Intellectual Property & Trade,
General Electric Company

The exponentially growing importance of data derives from several interrelated technological trends in the digital economy, including the Internet of Things (IoT), machine learning, big data, machine-to-machine communication, artificial intelligence and cloud computing.

The IoT comprises a vast number of connected industrial systems that communicate and coordinate their data analytics and actions to improve industrial performance. Its key principle is the implementation of cyber-physical systems, i.e., networks of microcomputers, sensors and actors embedded in materials, devices or machines, connected through the Internet. For example, a single oil well equipped with 20-30 sensors can generate 500,000 data points every 15 seconds. According to estimates, over 26 billion devices will be connected to the Internet by 2020.

More broadly, the digital economy contributes significantly to the social, economic and environmental advancement of the world. First, IT solutions diffuse at unprecedented speed, permitting rapid deployment of technology to the poorest people in the world and improving access and participation opportunities. Second, digital technologies place people at the center of products and services, allowing for attractive offerings at reduced cost with improved sustainability and user-friendliness. Third, they enable new business models that enhance innovation and growth in a wide range of sectors.

In order to allow the digital economy to realize its enormous potential, it is crucial to devise an adequate policy framework, in particular one that encourages the free movement of data on a global scale. Policymakers throughout the world have been considering how to respond. A case in point is the European Union. In early

2017, the European Commission published *Building a European Data Economy*, a communication which outlines its *Data Economy Package*, the final building block of its *Digital Single Market Strategy*.

The communication aims to review the rules and regulations hindering the free flow of non-personal data. To this effect, it makes a number of important proposals to remove unjustified or disproportionate data location restrictions. In recent years, governments have been erecting borders in cyberspace, including in particular data localization requirements. These can take the form of rules that prohibit information from being sent outside the country, subordinate such data transfers to the prior consent of the data subject, require copies of information to be stored domestically, or provide for taxation of exported data. Many data localization requirements have an unclear justification or are overbroad.

The Commission also discusses legal issues pertaining to access to and transfer of non-personal machine-generated data. One of the concepts floated in the communication is the creation of a “data producer’s right” that would protect industrial data. As the Commission points out, neither the prevailing intellectual property (IP) regime, especially copyright, nor the *sui generis* right provided under the Database Directive (96/9/EC) allow for the protection of machine-generated raw data. Copyright covers only acts of authorship conducted by human beings, while the *sui generis* database right protects exclusively data structured in a “database.” The communication also underlines that the right should cover the data only at the syntactical (in terms of the structure and arrangement of contents of databases) – not the semantic – level, and that care should be taken to ensure that ideas and information remain free.

Photo: Wenji Dong / iStock / Getty Images Plus





The Commission's stated objective is to improve access to anonymous machine-generated and machine-to-machine data, thereby facilitating and incentivizing the sharing of such data. However, for a variety of reasons, it seems that doubtful that the introduction of a *sui generis* property right is a plausible approach.

First, there seems to be no incentive problem – the standard economic justification for the establishment of a property right – with regard to the production and use of non-personal data. Technical protection measures allow data holders to exclude others or charge them a price for making data available. What is more, today access to machine-generated industrial data is governed primarily by contracts. These agreements are the outcome of negotiations between sophisticated parties who have a sound understanding of the data involved and how it will be generated, used, exchanged and accessed.

Current contract law and practices allow adaptation to the considerable variety of scenarios involving machine-generated data in business-to-business (B2B) dealings, including emerging business models and new technologies. Companies that create new products and services in fast-changing markets require flexibility to determine a solution that best fits their objectives. Ultimately, it is of key importance to maintain contractual freedom. Regulatory intervention would risk imposing a uniform approach that is unsuited to the varied and complex contracting needs at issue.

Second, creating a new layer of rights in machine-generated data would interfere with the two existing IP regimes in the area of data and information, namely copyright and database rights. For instance, insofar as a film shot with a digital camera would qualify as a machine-generated data subject, it would benefit not only from copyright but also from "data producer's right" protection. As a consequence of such overlap, the "data producer's right" would undermine statutory limitations and exceptions under laws governing copyright or database rights. For example, under current EU law, both copyright and database rights allow users to copy or extract data from databases for non-commercial research purposes. Unless the "data producer's right" reproduced all relevant existing exceptions, it would compromise these important user freedoms. A case in point is the area of data mining: the currently debated *Proposal for a Directive on Copyright in the Digital Single Market* contains a mandatory exception to both copyright and database rights for text and data mining by non-commercial research organizations.

In addition, a new data right would erode the economic incentives embedded in IP rights. For example, the main rationale for the *sui generis* right is to further investment in the building of databases from pre-existing data and other materials. A parallel no-threshold right in machine-generated data would weaken this incentive.

Third, the proposal to introduce a new right for non-personal machine-generated data could result in considerable legal uncertainty for anyone creating and reusing data. For instance, according to the Commission the General Data Protection Regulation (GDPR) of 2016 “continues to apply to any personal data (whether machine generated or otherwise) until that data has been anonymised.” In practice, however, it is hard to distinguish between those cases involving data relating to persons from which an individual is not identifiable and those cases involving the processing of data whereby an individual is identifiable. In addition, personal data can be changed to non-personal data through the process of anonymization, and non-personal data can be transformed at some future point into personal data – to which all of the rules of data protection would be reapplied. This ongoing legal uncertainty for data controllers complicates the decision-making process as to the legal regime that applies. In particular, the proposed property right seems to undermine the new right of data portability (Article 20 GDPR) that the regulator conceived to support the free flow of personal data in the EU and foster competition between data controllers.

A further concern relates to big data, that is, the extraction of information through large-scale data analyses. Big data is premised on the idea that non-personal data is most valuable when utilized in large quantities. Exclusive rights over small amounts of data would hamper big data analyses as it would necessitate a multitude of data acquisitions from a host of different data owners.

In the EU’s public consultation process, which generated more than 300 responses from businesses and other organizations, the vast majority of respondents rejected the proposal to create ownership-type rights. Currently there is no *sui generis* right in industrial data, and the ongoing success of the data industry essentially draws on contractual agreements. Thus, it is difficult to perceive a clear policy rationale – such as an incentive problem – for an intervention on the part of the regulator. On the contrary, a new right of ownership could needlessly complicate the existing framework.

From a policy perspective, the key challenge is to guarantee that all countries benefit from the rapid dissemination of new technologies. Rather than instituting a new IP right, to unleash the digital economy’s enormous potential for more inclusive growth worldwide policymakers should embrace a legal and regulatory environment that allows for unhindered cross-border data flows on a global scale. Such an environment necessitates the absence of unjustified data location requirements as well as the implementation of clear and enforceable rules.

Trade secrets: the hidden IP right

By **Prajwal Nirwan**, Associate,
Miller Sturt Kenyon, London,
United Kingdom



Photo: RyanLane / iStock / Getty Images Plus

The Coca-Cola recipe is one of the world's most valuable trade secrets.

Our world is becoming ever more open and inclusive. New ideas are widely shared on public platforms and more research is being published than ever before. In this increasingly complex, highly competitive, hyper-connected world, some things that might ordinarily be protected by traditional intellectual property (IP) rights such as patents, trademarks and design rights are best kept secret.

Some of the world's most famous trade secrets – including the Coca-Cola recipe and Google's search algorithm – have immense value. These companies quickly recognized that the value of these particular intellectual assets lay in their secrecy, and by treating them as trade secrets they could maintain their competitive advantage.

WHAT EXACTLY ARE TRADE SECRETS?

Trade secrets are secrets that add value to a business. A generally less well-known form of intellectual property right, for many years trade secrets have been in the shadows, but today they are gaining traction as an effective way to protect certain intellectual assets. Any commercially valuable and sensitive information – a business strategy, a new product roadmap, or lists of suppliers and customers – can qualify as a trade secret. And unlike other IP rights, trade secrets can protect a much wider range of subject matter and are not limited to a set term of protection. Trade secrets are not exclusive rights like patents, and therefore cannot be enforced against anyone

who independently discovers the secret. However, any unlawful acquisition or misuse of a trade secret either under breach of confidence or theft is actionable. And the proprietor of the trade secret can get compensation and an injunction in respect of such unlawful acts.

TRADE SECRET LAWS AROUND THE WORLD

Like other IP rights, trade secrets are subject to the national laws of the country in which they are protected. Unlike patents and trademarks, there are no formal requirements to register trade secrets with an official authority, but most countries have laws that deal with the misappropriation or unauthorized acquisition of trade secrets. For example, in the United Kingdom no formal definition of a trade secret exists and there is no restriction as to the type of information that can constitute a trade secret. The legislation around trade secrets is largely drawn from case law relating to breach of confidence, with effective remedies for instances in which trade secrets have been improperly acquired, disclosed or used.

In the United States, the policy on trade secrets states that they consist of information that may include a formula, pattern, compilation, program, device, method, technique or process. And to qualify as such, a trade secret must be used in business and give an opportunity to obtain an economic advantage over competitors who do not know or use it. The Defend Trade Secrets Act of 2016 strengthens trade secret protection in the United States and offers parties the option of settling disputes under either state or federal laws. While they differ in some respects, there is a great deal of similarity among state laws because almost all of them have adopted some variation of the Uniform Trade Secrets Act.

In Europe, policymakers took a major step forward in codifying trade secret laws in all countries of the European Union (EU) in June 2016 with the adoption of the EU Trade Secrets Directive. The Directive covers the unlawful acquisition, use and disclosure of trade secrets. EU member states are required to bring their domestic laws into line with the objectives of the Directive by mid-2018. According to Article 2(1) of the Directive:

“trade secret” means information which meets all of the following requirements:

- a. it is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question;*
- b. it has commercial value because it is secret;*
- c. it has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.”*

The recent adoption of policies on trade secrets by the world’s strongest economies underlines the growing significance of trade secrets in the current business climate.



Photo: inkt / iStock Unreleased / Getty Images Plus

By keeping its search algorithm secret, Google has been able to maintain its competitive advantage.



Photo: gorodenkoff / iStock / Getty Images Plus

When it comes to protecting an intellectual asset, one tough decision businesses have to make is whether to protect it with classical IP rights or to keep it as a trade secret.



Photo: pixdeluxe / E+ / Getty Images

TRADE SECRETS AND PATENTS

When it comes to protecting an intellectual asset, one tough decision businesses have to make is whether to protect it with classical IP rights, for example by filing for patent protection, or to keep it as a trade secret. While in some cases the answer may not be quite so straightforward, in many instances answering the following questions can clarify a company's thinking on the best way forward.

- Is the technology in question a patentable invention? Note that most countries do not grant patents for business methods, software (which is typically protected under copyright law), mathematical formulas, presentation of information, and the like. However, any of these assets may be protected as a trade secret!

- Is the asset in question commercially valuable and worth keeping secret?
- What are the chances of competitors being able to find out how your asset works by reverse engineering or other means?
- Is there a high risk of someone else patenting your asset?
- Is your asset something that could remain valuable for a much longer term of protection than that which is provided by a patent (usually 20 years)?
- Would the company be able to ensure its secrecy?

There are, of course, other considerations that need to be taken into account, such as costs of protection and investor interests. Both patents and trade secrets are effective forms of IP protection, but one may be more suitable than the other depending on the subject matter

and circumstances. It is important that those taking decisions about IP strategy are aware that trade secrets can potentially be as valuable as patents (if not more so), if they are protected diligently and used strategically.

TRADE SECRETS: A BOON FOR SMALL BUSINESSES

While most large multinational companies have the resources and funds to invest in the patenting process, which can be costly and time-consuming, small and medium-sized enterprises (SMEs) often struggle with it. Trade secrets, on the other hand, are relatively straightforward, entail no registration costs or lengthy legal processes and can add real value for small businesses. That is why it is so important to raise awareness among SMEs about the value of trade secrets and how to protect them effectively. To benefit directly from trade secrets, an SME may:

- Consider keeping undetectable manufacturing techniques or hidden components in their products as trade secrets.
- Consider keeping lists of suppliers and customers as trade secrets, especially if operating in a niche business.
- Consider keeping patentable inventions as trade secrets if they are short of funds, and only file for patent protection when funding becomes available or a keen investor is identified.
- Consider licensing their trade secrets, but ensure a confidentiality agreement and enforceable contracts are in place before revealing the secrets to third parties.
- Educate their employees and decision makers about trade secrets.

Various intellectual property authorities and educational institutions around the world are reaching out to the business community to improve awareness of the usefulness and value of trade secrets, but there is still a long way to go to raise their profile and strengthen the laws surrounding them.

“BREXIT” passes EU trademark test

By **Myrthe Pardoën**, Competence Center, Novagraaf, Amsterdam, Netherlands



Photo: Rosemary Roberts / Alamy Stock Photo

In September 2017, the EU Intellectual Property Office (EUIPO) issued its judgment in an appeal case related to the question whether the term “BREXIT” is itself eligible for trademark protection.

In September 2017, the European Commission published a position paper on intellectual property (IP) rights after Brexit, setting out its ideas on how it wants to see unitary IP rights handled after the United Kingdom departs from the European Union (EU). But this wasn't the only Brexit story to interest IP practitioners at the time: the EU Intellectual Property Office (EUIPO) also issued its judgment in an appeal case related to the question whether the term “BREXIT” is itself eligible for trademark protection.

The application in question dates back to 2016, when registration was sought for an EU word mark to protect BREXIT in class 5 (which includes dietary/food supplements and vitamin drinks), class 32 (energy drinks, beer, fruit and vegetable juices) and class 34 ((electronic) cigarettes). The application was refused by the EUIPO on the absolute grounds that it was “devoid of distinctive character” (Article 7(1)(b) of EU Trade Mark Regulation (EU)2017/1001) and “contrary to public policy or to accepted principles of morality” (Article 7(1)(f)).

In the EUIPO examiner's view, the term BREXIT was not eligible for trademark protection because European citizens would be too familiar with it, the UK's widely discussed withdrawal from the EU being a “serious moment in modern European history.” In addition, the registration had the potential to offend, especially if it were allowed for products such as energy drinks and (e-)cigarettes. Here, the examiner referred to the 48 percent of Britons who had voted in favor of staying in the EU.

THE QUESTION OF PUBLIC POLICY AND MORALITY

Considering the applicant's subsequent appeal, the EUIPO's Board of Appeal explained that a trademark could be considered immoral if it was “directly contrary to the accepted principles of morality in the context of current attitudes which prevailed at the filing date of the contested mark.”

In this instance, the Board of Appeal found that the term BREXIT had no moral connotation and concerned a



sovereign political decision taken in conformity with all legal and constitutional requirements. It also considered that refusal of the BREXIT trademark might be a breach of the fundamental right to freedom of expression, as set out in Article 11 of the Charter of Fundamental Rights of the EU and Article 10 of the European Convention for the Protection of Human Rights and Fundamental Freedoms. Any limitation to this fundamental right must be provided for by law, must be necessary in a democratic society and must meet the objectives of general interest. In light of the above, the Board of Appeal found that the word BREXIT could not be deemed immoral:

“BREXIT is not a provocation or incitement to crime or disorder. Nor is it an emblem for terrorism or oppression or discrimination of any kind. Nor is it a synonym for social unrest. ‘BREXIT’ is not a byword for hate, sexism, racism or anything of the sort. Nor is it lewd or salacious. Of course, ‘BREXIT’ is a contentious and controversial topic. Nevertheless, when applied as a brand to electronic cigarettes, beer or fruit juices, the political and hotly controversial message of ‘BREXIT’ dissolves in humour. Its polemical meaning largely disappears when it is used as a brand indicating the commercial origin of those goods.”

In its decision, the Board of Appeal also referred to a number of already-existing national UK BREXIT-related marks, such as “BREXIT THE MUSICAL” and “ENGLISH BREXIT TEA.” If the term BREXIT did fall foul of public policy or morality, the acceptance of these trademarks would be odd, especially since the impact of BREXIT is likely to be more intense in the UK compared to other parts of the EU.

THE DISTINCTIVENESS HURDLE

To be eligible for trademark protection, a sign must be capable of identifying the commercial origin of the branded goods or services, thus enabling the relevant public to distinguish those goods or services from those of another business (*GretagMacbeth v. OHIM*). When considering whether the word BREXIT fulfilled this criterion, the Board of Appeal noted that the term BREXIT is not laudatory; it is not a promotional formula such as the slogan “made in Britain,” for example. The Board of Appeal also found the term to be a memorable and fancy combination of words with a playful take on the words “Britain” and “exit,” commenting that it creates a “striking and surprising impression on the consumer”; in other words, it has distinctive character. In consequence, the appeal was successful.



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