WIPO MAGAZINE

JUNE 2020

No. 2

Supporting environmental sustainability with GIs: The case of *Madd de Casamance*

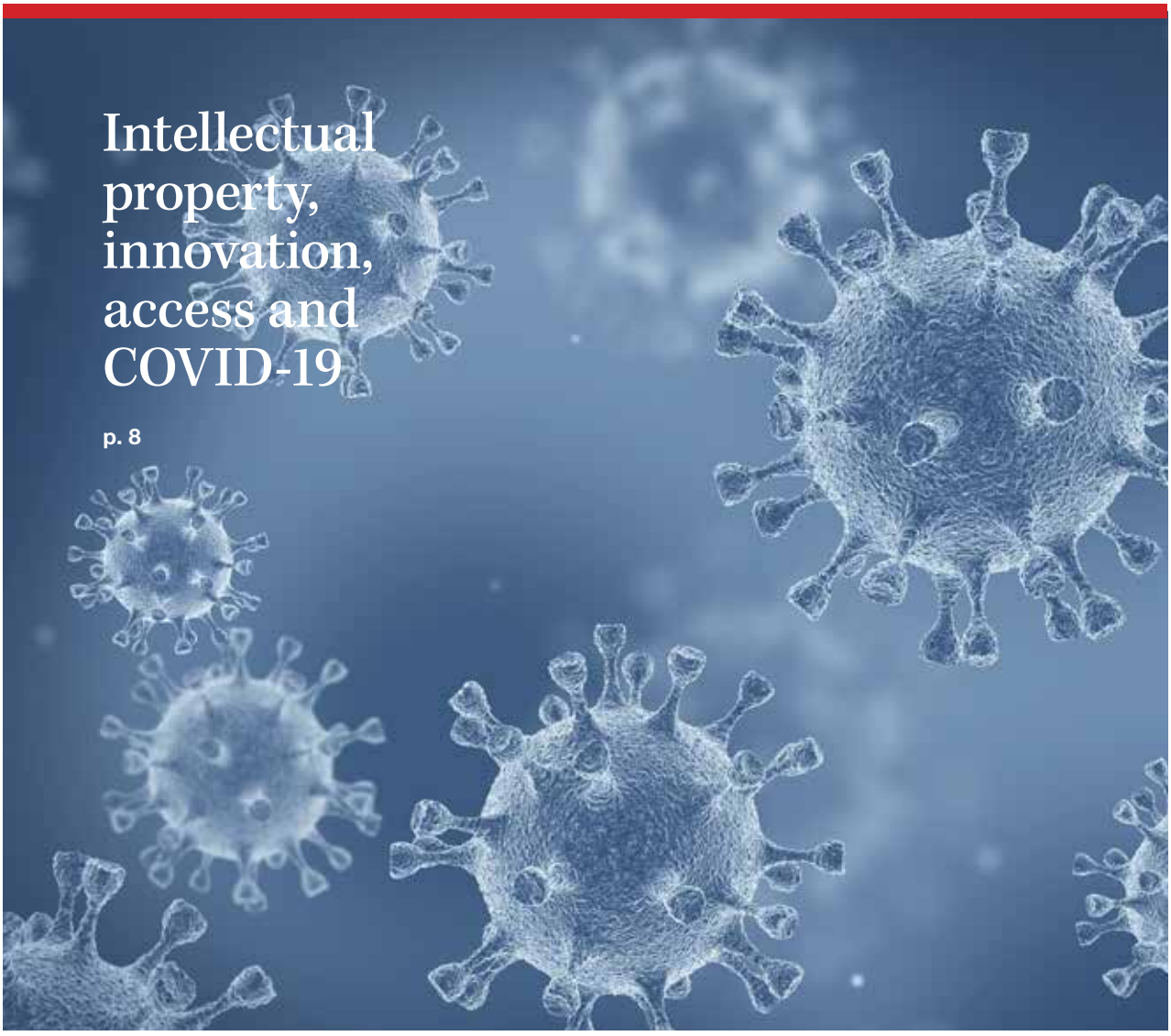
p. 36

Drug repurposing and the COVID-19 pandemic

p. 22

The written word can still change the world

p. 46



Intellectual property, innovation, access and COVID-19

p. 8

Table of Contents

Acknowledgements:

2 **Yoshiyuki Takagi**, Global Infrastructure Sector, **Dennis Francis Murathaty**, Security and Information Assurance Division and **Linda Lloyd Da Silva**, Marketing and Customer Service Division, WIPO

16 **Wang Yi**, WIPO Office in China

22 **Marco Aleman**, Patent Law Division, WIPO

30 **Tomoko Miyamoto**, Patent Law Division, WIPO

36 **Alexandra Grazioli**, Lisbon Registry, WIPO

43 **Monica Halil Lövblad**, Copyright Management Division, WIPO

Editor: **Catherine Jewell**
Layout: **Ewa Przybyłowicz**

Cover images:
Left to right: Courtesy of ETDS; Coprid / iStock / Getty Images Plus; WIPO / E. Berrod
Main image:
AltoClassic / iStock / Getty Images Plus

Introducing WIPO PROOF: An interview with Francis Gurry

In May 2020, WIPO launched WIPO PROOF, the latest in the Organization's suite of services to support businesses in the management of their innovative and creative assets. WIPO Director General Francis Gurry introduces the new service and explains how it can support innovators and creators in the digital economy. The Director General also reflects on the broader issue of data governance and the fundamental importance of innovation and creativity in tackling current economic and health challenges.

Photo: WIPO / E. Berrod

"WIPO PROOF is an important development as it moves intellectual property protection further into the digital world," says WIPO Director General, Francis Gurry.

What is WIPO PROOF?

In practical terms, WIPO PROOF is like a digital notary. It provides irrefutable proof of the existence of a digital file at a given point in time. In the digital business environment, data needs to be safeguarded and WIPO PROOF helps to do that. Digital businesses are subject to vulnerabilities, including the loss or theft of information and data. WIPO PROOF addresses that vulnerability by providing reliable tamper-proof evidence of the existence of a digital file at a given moment in time. WIPO PROOF creates a digital fingerprint of the file and adds a time stamp to that record. When data files are formally documented in this way, it becomes more difficult for a third party to steal or later claim ownership over them. Such proof can also be critical in securing licensing deals and raising capital.

WIPO PROOF also allows those who contribute to the development of a work, a product, a research project and so forth, to provide proof of their participation. In the digital world, there are countless creative, technological and scientific ventures that involve a great deal of collaboration and the sharing of innumerable data files. For example, many musicians record their music

in collaboration with artists in various parts of the world. One records the vocals, sends the digital file to another who adds the instrumentation, and so on. Using WIPO PROOF, artists can provide incontrovertible evidence of their contribution to the exercise. Such evidentiary proof can be extremely important for many individuals, companies and organizations engaged in innovation and creativity by showing that the digital file originated with the person who is purporting to be the owner.

Why is WIPO PROOF important for the digital world?

WIPO PROOF is an important development as it moves intellectual property protection further into the digital world. The economy is currently undergoing a huge transformation from industrialization to digitization. Most IP rights were developed for the industrial age. While, as statistics suggest, they remain relevant – large numbers of patent applications are filed for digital communications and information technologies, for example – classical IP rights do not necessarily cover all types of intellectual assets, especially with respect to safeguarding data. That makes WIPO PROOF a small but significant step in providing IP services that target the needs of the digital economy.

Are similar services already available?

Yes. While the service does exist at the national level in certain countries, our market research clearly indicated a need for such a service to be offered by a trusted and impartial international authority. The intense competition surrounding intellectual property in all parts of the word underlines this need. That is why WIPO moved forward in developing WIPO PROOF. Imagine a scenario where two enterprises from two different countries that are experiencing tensions in the area of trade or technology, for example, are engaged in a court battle. If the enterprise in country A presents evidence in the form of a digital file with a date- and time-stamped fingerprint acquired in its own country to the courts of country B, it may not be respected as evidence or proof to the same extent as that provided by an impartial international authority.

Can WIPO PROOF support innovators and creators in other ways?

Yes, WIPO PROOF also addresses the needs of innovators and creators during the period prior to formalization of IP rights and can be useful in safeguarding intellectual assets at every stage of development, from concept to commercialization, whether or not they eventually become formal IP rights. Bringing a patentable invention or a creative work to maturity is preceded by a lot of work, and during that development phase, inventors, creators and indeed, startups, are quite exposed. In that phase, many will be pitching their ideas to different actors, including venture capitalists or large companies, to secure the financial backing they need to bring their product to market. While such activity is often governed by non-disclosure agreements, many smaller enterprises, startups and individuals do not have the legal advice to conclude such agreements effectively. But with WIPO PROOF they can document the existence of their intellectual asset, and thereby secure irrefutable proof that they controlled their idea or concept, or made a specific contribution to the development of a work, at a given point in time.

What is WIPO's role in administering the service?

WIPO acts as a trusted authority and provides a user-friendly service for a modest fee to cover operating costs. At minimal cost, individual innovators, creators and startups anywhere in the world can establish a record of their work at a given point in time. They simply access the service via the WIPO PROOF website (www.wipo.int/wipoproof/en) and with just a few clicks, they can generate a WIPO PROOF token (a unique digital fingerprint with a time stamp) for their file, which, if the need arises, can prove the existence of their work at a given time. WIPO PROOF tokens issued in this way are valid indefinitely.

The service has been built to the highest global standards using robust industry-standard public key infrastructure and encryption technologies, and is backed with a business model that favors small players across the globe and WIPO's credibility as a trusted provider of global IP services.

WIPO PROOF handles digital files, including data sets, in any format and size. WIPO does not copy or store the original file – which stays with the user of the service on their own device. WIPO simply certifies that it existed in that form and was in the possession of the user at a specific time.

Why did you launch the service now?

For some time, we have been thinking about the need to offer better protection for the huge amount of activity that takes place in the pre-formal IP rights space and

→

How WIPO PROOF works

WIPO PROOF creates tokens using the highest standard of Public Key Infrastructure technology and is compliant with the RFC 3161 protocol.

Access

1. Connect to the WIPO PROOF web application via the url wipoproof.wipo.int using any modern browser.

Request a WIPO PROOF token

2. Choose a digital file(s) in any electronic format.
NB: A WIPO Account is required to process a purchase request for a WIPO PROOF token.

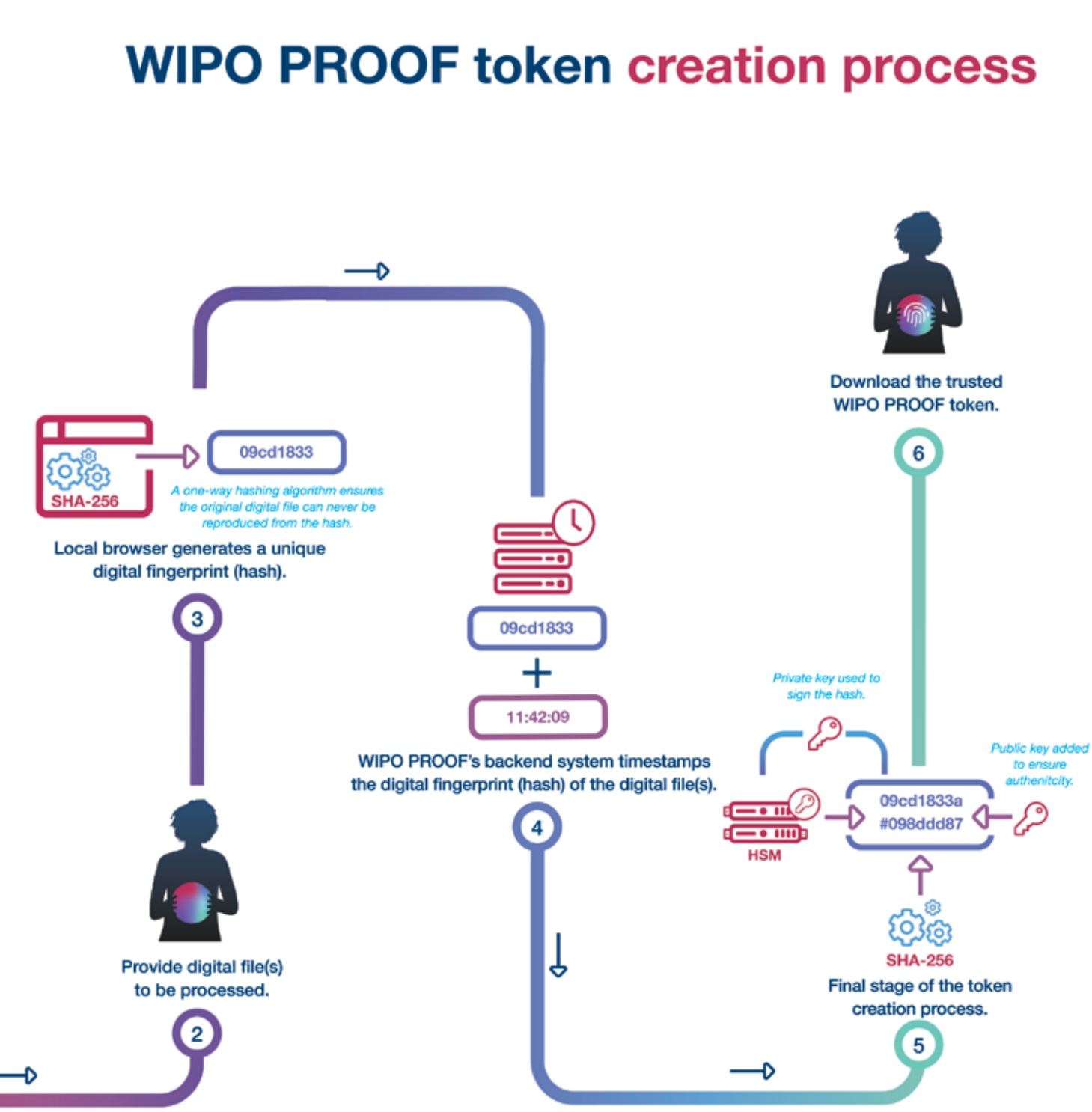
3. The local browser generates a unique digital fingerprint (a hash) of the file using a strong SHA-2 (256bit), one-way hashing algorithm.
NB: At no point in time is the original digital file uploaded to WIPO PROOF. The customer retains full possession of the digital file(s). Only the hash of the digital file(s) that is calculated in the customer's browser is uploaded to WIPO PROOF.

WIPO PROOF token creation

4. WIPO PROOF's audited and high-integrity backend system, fully compliant with industry standards, timestamps the hash of the digital file(s). The hardware-based timesource used to timestamp the hash is synchronized to the Coordinated Universal Time (UTC).

5. The hash is signed with the private key stored in a locked-down Hardware Security Module (HSM) certified to FIPS-140 level 3 standard, creating a digital signature. A public key is added to the digital signature to ensure authenticity.

6. Download the resulting WIPO PROOF token which provides unalterable proof of existence of the digital file(s) at the point in time the token was created.


WIPO PROOF token creation process
Download the trusted WIPO PROOF token.
6
09cd1833
SHA-256
A one-way hashing algorithm ensures the original digital file can never be reproduced from the hash.
Local browser generates a unique digital fingerprint (hash).
3
09cd1833
11:42:09
WIPO PROOF's backend system timestamps the digital fingerprint (hash) of the digital file(s).
4
Private key used to sign the hash.
Public key added to ensure authenitcity.
09cd1833a
#098ddd87
HSM
SHA-256
Final stage of the token creation process.
5
Provide digital file(s) to be processed.
2

indeed, for trade secrets, which are extremely valuable business assets, yet do not enjoy IP protection in the form of a registered right. WIPO PROOF allows us to do that. The pre-formal IP rights space and trade secrets are areas of particular vulnerability for small and medium enterprises and startups, which, of course, play an extremely important role in driving innovation and economic performance. As the digitization of business transactions and economic activity gathers pace, WIPO PROOF offers innovative and creative individuals and enterprises an additional tool with which to manage and safeguard their intellectual assets.

What has been the reaction so far?

All evidence shows that we have struck the right note in launching WIPO PROOF. After just two weeks, users from a wide range of countries across the globe had taken advantage of the service. This is an indication that WIPO PROOF fulfills an unmet need and provides a useful service, which people can make use of under appropriate circumstances. I think the uptake will be very good.

What impact will WIPO PROOF have on the global landscape for innovation and creativity?

WIPO PROOF acknowledges that proof of the existence of data in the form of digital files can be very important in a digitized world where data have value and are widely shared. WIPO PROOF makes a small but important contribution to the process of adapting existing incentive structures, which were forged in the industrial era, to foster innovation and creativity in the digitized world. Of course, many of the classical mechanisms still apply, but there are gaps. Safeguarding data is one of those gaps, which WIPO PROOF addresses.

At the "Road to Bern Second Dialogue: on Data Protection" in April, you spoke of the need for a comprehensive and coherent framework for data protection. Is WIPO PROOF a step towards creating such a framework?

The need for a comprehensive data governance framework points to the overwhelming complexity of the current governance architecture created by globalization and inter-connectivity. No single actor can regulate a complex problem without collaboration. The same applies when it comes to protecting data, which is integral to the economic and social system as a whole. Data are multi-dimensional – some are of immense social and economic importance and value, and some are of great personal significance and value – and the effective protection of data will require coordination among many different entities and policy approaches. In that huge universe, WIPO PROOF offers a small but meaningful contribution towards helping to ensure the security and confidentiality of data.

How does WIPO PROOF complement WIPO's global IP systems and services?

Our aim has been to create a full suite of business services for innovation and cultural creativity. Our international filing and registration systems for patents (the Patent Cooperation Treaty), trademarks (the Madrid System), industrial designs (the Hague System) and Geographical Indications (the Lisbon System) are the classical centerpieces of this offering. Over the past decade, these services have enjoyed increasing global participation (see Figure 1) and demand for them has surpassed global economic

growth rates, which is an indicator of the commercial success of the innovation and creative sectors. In 1994, we added dispute resolution services to our offering. If you are an innovative enterprise operating in the market, first you need protection, but then you need to be able to ensure that any dispute arising from the exploitation of your IP right can be resolved in an impartial and credible manner. We have seen significant growth in the uptake of our Arbitration and Mediation Services in recent years (see Figure 2). And now, as a response to the ongoing digital transformation, with WIPO PROOF we are offering a new service to help digital businesses and other actors safeguard their intellectual assets in the digital environment.

Figure 1: A Decade of Growth for WIPO's IP Services.

Service	2009	2019	10-year growth
PCT (Patents)	155,408	265,800	71.0%
Madrid System (Trademarks)	36,094	64,400	78.4%
Hague System (Industrial designs)	8,166	21,807	167.0%

Source: WIPO Press Release, PR/2020/848.

Figure 2: Number of Domain Names Cases and Domain Names.

Year	Number of cases	Number of domain names
2000	1,857	3,760
2001	1,557	2,465
2002	1,207	2,042
2003	1,100	1,774
2004	1,176	2,599
2005	1,456	3,312
2006	1,824	2,806
2007	2,156	3,545
2008	2,329	3,958
2009	2,107	4,685
2010	2,696	4,367
2011	2,764	4,780
2012	2,884	5,080
2013	2,585	6,191
2014	2,634	5,603
2015	2,754	4,364
2016	3,036	5,354
2017	3,074	6,371
2018	3,447	5,655
2019	3,693	6,298

Source: WIPO Press Release, PR/2020/848 (Annex 9).

As the world continues to grapple with COVID-19 and faces economic recession, why is it important for governments and companies to continue to invest in innovation?

In broad terms, if we want to get out of this crisis, and if we want to have new and effective vaccines and therapeutics, then we need innovation. Innovation is fundamental to the scientific, technological and health management of the crisis. Innovation is also fundamental to recovering from the economic recession caused by the necessary measures taken by governments to control the pandemic.

But how does such innovation come about?

It is a very complex process involving a multiplicity of institutions and actors, from educators and the educational system as a whole, through to venture capitalists and financiers. It also has an international dimension. UNESCO estimates that around 70 percent of global R&D is funded and performed by the private sector and 30 percent by the public sector. The IP system is the glue that holds all the different players across the innovation landscape together, providing them with the confidence to invest safely in intellectual production, innovation and creativity and the security that their market position will be protected against misuse or misappropriation. And in the current crisis there is an additional dimension, which needs to be taken into account, namely, the fundamental humanitarian considerations raised by health technologies. In dealing with international emergencies like COVID-19, frameworks already exist at the international and national levels to facilitate access to needed medical technologies in appropriate circumstances and on affordable terms. We are now seeing huge investment by both the public and the private sector in the development of vaccines, therapeutics, contact tracing applications and so forth. Therefore, fostering the innovation that is needed means working with the complexity of the innovation landscape as a whole and engaging with all players, public and private, to develop solutions to the global economic and health challenges facing humanity. Simplistic approaches are naïve and won't work.

Intellectual property, innovation, access and COVID-19

By **Francis Gurry**, Director General, WIPO

The main challenge *at the present time* is not access to vaccines, treatments or cures for COVID-19, but the absence of any approved vaccines, treatments or cures to have access to. The policy focus of governments at this stage should therefore be on supporting science and innovation that will produce a vaccine, treatments or cures.

In respect of access, the first task is to identify the barriers to access. Many barriers to access exist, such as the lack of manufacturing capacity for vital medical supplies or equipment, impediments to the movement of such supplies and equipment across borders, import duties, lack of internal transportation and delivery mechanisms and lack of adequate health systems and infrastructure. These obstacles need to be addressed by governments.

FACILITATING ACCESS TO INNOVATION AND CREATIVE CONTENT

Intellectual property (IP) may also constitute a barrier to access if innovation produces effective results and if countries are not able to obtain the innovation on appropriate and affordable terms. In this regard, provisions exist at the national and international levels to facilitate access where IP is a barrier. The application of these provisions should be targeted and time-bound, in other words, related specifically to demonstrated IP barriers to access in the course of the COVID-19 pandemic and bearing in mind that, without innovation, there will be nothing to have access to.

In the cultural and creative sector, exceptions and limitations exist in IP systems to facilitate access in certain circumstances and under certain conditions to books, publications and other creative content. Such creative content has a vital role to play in the distribution of data, information and knowledge that may be essential for innovation or for dealing with the adverse conditions of confinement and lock-down necessarily imposed in response to the COVID-19 crisis. The exercise of these flexibilities in relation to the COVID-19 crisis should again be targeted to demonstrated

"The main challenge *at the present time* is not access to vaccines, treatments or cures for COVID-19, but the absence of any approved vaccines, treatments or cures to have access to."

lack of access, and limited to the purpose of remedying any such lack of access for the duration of the crisis. It should be noted that many rights holders across the world have voluntarily taken steps, through innovative licensing arrangements and other measures, to provide free access to vast quantities of relevant content during the crisis.

IP AS A DRIVER OF INNOVATION

In a global economy that is increasingly driven by technological advances, intellectual property (IP) plays an increasingly central role.

One of the main roles of IP is to provide an incentive framework in which innovation can be encouraged and provided with a safe passage through the many, often perilous, stages from invention to commercial product or service. Likewise, in the creative industries, IP is central to the business model that rewards and facilitates relationships and transactions between, authors and composers, performers, publishers, music and audiovisual producers, broadcasters and distributors such as libraries or the various electronic distribution platforms.

BALANCING COMPETING INTERESTS

Well-functioning IP systems seek to achieve a balance between the various competing interests that surround technological and business innovation and cultural creativity.

In the area of technology, these interests include those of startups, research and development institutions, both public and private, universities and corporations, as well as the interests of financial backers, whether public or private, and of the general public, for whose ultimate benefit innovation takes place.

In the area of the creative industries, the various interests include those of writers and journalists, composers of music, photographers, visual artists, musicians, actors, publishers, music and audiovisual producers, media, those authoring, developing and producing video games, broadcasters, libraries, archives, music and video platforms, and the consuming public.

If innovation produces effective results and if countries are not able to obtain the innovation on appropriate and affordable terms, provisions exist to facilitate access where IP is a barrier. However, the application of these provisions should be targeted and time-bound, because without innovation there will be nothing to have access to, explains Mr. Gurry.

Photo: gopixa / iStock / Getty Images Plus

→

MITIGATING EMERGENCIES LIKE COVID-19: IP POLICY MEASURES

The COVID-19 pandemic is causing widespread and profound suffering and misery across the world. The measures being undertaken by governments to fight the pandemic, to reduce suffering and to stop the further proliferation of the virus are also causing, as a necessary side effect, widespread economic disruption, which, in turn, is causing and will cause widespread suffering as businesses stall, global value chains cease to be able to function and employees and entrepreneurs and the many participants in the gig economy lose their livelihood.

The IP system recognizes at both the national and the international levels that emergencies and catastrophes may call for measures that may disrupt the normal functioning of the incentive framework upon which the IP system is based during the period of the emergency or catastrophe.

The policy measures that are available in international and national IP law to manage and to mitigate emergencies and catastrophes include compulsory licenses and licenses of right of patented technology embodied in vital medical supplies and medicines; and the use of exceptions in relation to cultural and educational works to ensure the availability of vital data, information and knowledge for the purposes of combatting and containing the virus, reducing the human suffering that it is causing and enabling disrupted institutions, such as schools and universities, to continue to carry out their missions in remote or virtual conditions. These measures, when deployed in a targeted and time-bound manner, may be useful or even vital when there is evidence of a need to which they may be addressed.

VOLUNTARY ACTIONS AND OTHER ECONOMIC POLICY MEASURES

The assessment of the existence of lack of access and any policy measures are to be considered also in the light of the many voluntary actions being undertaken by organizations, corporations and other rights holders in the exercise of social responsibility during the COVID-19 crisis.

In the technological field, these actions include innovative licensing arrangements, the publication of scientific data on a free-to-use basis, the publication of technical specifications of vital equipment, such as ventilators, to enable others to manufacture, and the renouncement of the enforcement of certain patents in certain jurisdictions.

In the cultural sector, many rights holders have taken steps to make their works easily available to schools, universities, libraries, research institutions and the general public. These steps include innovative licensing arrangements, free access to research related to SARS-CoV-2, the virus strain that causes COVID-19, free access to newspaper and media articles about COVID-19, free access to many educational texts, online learning platforms and e-books and the free transmission of concerts, operas and other cultural works.

"The IP system recognizes [...] that emergencies and catastrophes may call for measures that may disrupt the normal functioning of the incentive framework upon which the IP system is based during the period of the emergency or catastrophe."

Policy measures and voluntary initiatives in relation to IP may complement measures being taken in other areas of economic policy that may affect technology and the products of technology, such as the requisitioning of manufacturing capacity, the use of public procurement or the injection of capital and the easing of credit for start-ups and small and medium enterprises to ensure the survival of much needed innovation during the economic recession that is setting in around the world.

THE INNOVATION IMPERATIVE

The COVID-19 crisis is unfolding at an extremely rapid pace and information concerning it changes or becomes available at a similarly rapid speed. *At the present time*, it may be noted that there does not appear to be any evidence that IP is a barrier to access to vital medical preventive measures, such as vaccines, or to treatments or cures. The problem is, rather, that there is, as yet, no vaccine or scientifically proven and approved treatment or cures to have access to. Thus, *at the present stage*, the main policy challenge is to encourage the innovation that may lead to a vaccine and treatments and cures, as well as innovation that assists in managing the crisis, such as the development of tracing applications based on data concerning the virus and its infection patterns or improvements in the manufacturing and performance of ventilators and other items of vital medical equipment.

Focusing on access to non-existent vaccines, treatments or cures, rather than the encouragement of needed innovation, *at this stage*, may not only represent a misunderstanding of the sequencing of innovation and access, but also create a disincentive to investment in needed innovation.

As noted above, there are many other policy challenges in the management of the COVID-19 crisis that are not directly related to IP and innovation. It is important for governments first to identify the obstacles to the effective management of the crisis in the interests of health and human welfare and safety and to address these obstacles. As mentioned, these obstacles include the lack of relevant manufacturing capacity for needed medical equipment, such as ventilators and personal protective equipment; impediments to the movement or transportation of medical supplies and equipment; the lack of adequate medical facilities; the availability of health workers; lack of access to broadband; and the lack of adequate health systems and health infrastructure. None of these is a question of IP blocking access to vital medical vaccines, treatments or cures.

→

The innovation ecosystem is extremely complex and includes many different State and market actors and many different policies, programs and undertakings. The Global Innovation Index, for example, uses over 80 indicators to measure innovation capacity and performance, covering areas such as educational systems and institutions, research and development expenditure, scientific publications, IP applications, access to capital markets, regulatory frameworks and business and market sophistication.

Given the drastic impact of the COVID-19 crisis on human health and welfare and on economic production and economic welfare, the world needs to deploy *all* available innovation strategies, incentives and systems in the pursuit of vaccines, treatments and cures. It would be a misreading of the complexity of innovation to focus on one single strategy or solution or to over-simplify the complexity of innovation systems.

It is to be noted that, generally speaking, nearly 70 percent of research and development (R&D) is funded by the commercial sector, while around 30 percent is funded by the State. Around 70 percent of R&D is also performed by the commercial sector and 30 percent by the State. An effective strategy or approach to encouraging innovation must ensure that the right incentives are in place to encourage the major funders and performers of R&D to deliver results. IP is a central part of those incentives.

HOW GOVERNMENTS AND MARKET ACTORS CAN ENHANCE INNOVATION

There are many measures that can be undertaken by governments and market actors to enhance innovation performance and, specifically, innovation outcomes that will contribute to the mitigation and, ultimately, the resolution of the COVID-19 crisis. Many persons, institutions and corporations across the world are working tirelessly to achieve such outcomes. Since the world came to know about SARS-Cov-2, there are more than 360 clinical trials are underway globally for potential treatments.

Success will require the application of all available policy measures and business practices, including increased public research funding, scientific collaboration and the sharing of scientific results, public-private partnerships and the use of market incentives to attract investment in relevant innovation.

WIPO: SERVING THE INTERNATIONAL COMMUNITY

WIPO is available to any of its member states that so wish to provide advice and assistance on innovation policies, the targeted use of exceptions and limitations, the appropriate use of flexibilities to ensure access where there is evidence that IP is a barrier, and the modification of IP rules and regulations to mitigate the damage resulting from the COVID-19 crisis and its economic consequences.

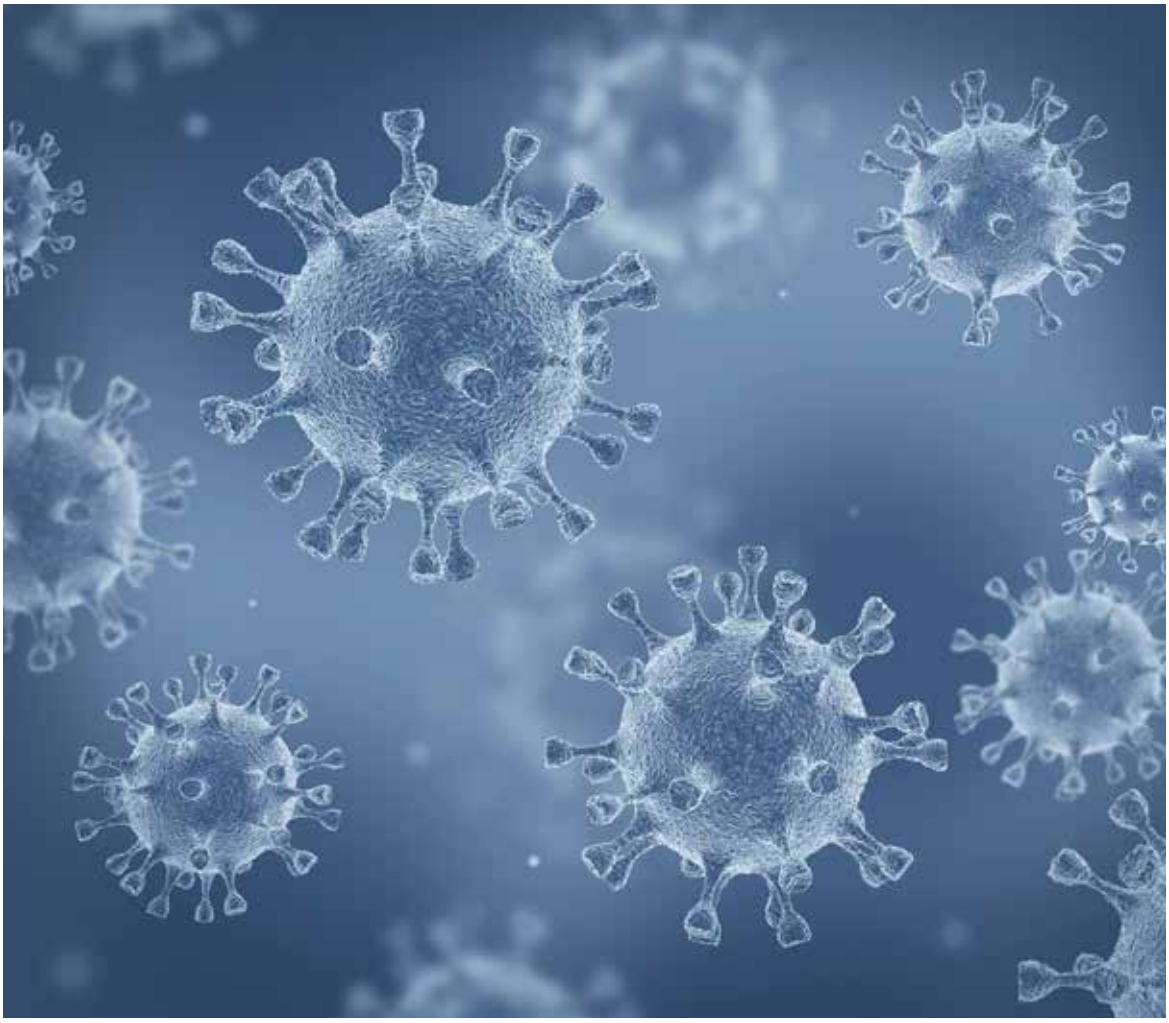


Photo: Coprid / iStock / Getty Images Plus

"Given the drastic impact of the COVID-19 crisis [...] between COVID-19 and "the world needs to deploy *all* available innovation strategies, incentives and systems in the pursuit of vaccines, treatments and cures."

Photo: filadendron / E+ / Getty Images

"The assessment of the existence of lack of access and any policy measures are to be considered also in the light of the many voluntary actions being undertaken by [...] rights holders in the exercise of social responsibility during the COVID-19 crisis," says Mr. Gurry.

We believe that measures should be targeted to the crisis and to lack of access, where there is evidence that IP is the barrier, as opposed to other factors, such as lack of relevant manufacturing capacity or disrupted supply chains, which require different forms of action.

We believe that the measures should also seek to alleviate suffering as a first priority, but bear in mind the needs of inventors, authors, creators, performers, startups and other economic agents in the cultural and technological communities which are distressed as a consequence of the necessary measures being taken to contain the virus. Their survival will be vital to the recovery and to the well being of the economy and society as we seek to come out of the crisis and to restore functioning economies and societies.

SUPPORTING THE INNOVATION CHALLENGE IN THE COVID-19 ERA

Measures that have been undertaken within WIPO to contribute to the innovation challenge include:

- The establishment of a clearing-house or policy-tracker providing information on measures undertaken by IP offices to contribute to innovation by addressing distressed economic actors through the extension of deadlines and the establishment of grace periods for the payment of fees. In addition, the policy tracker will provide information on any policy measures available or enacted with respect to exceptions, limitations or compulsory licenses.

- The provision of a database, PATENTSCOPE, with over 80 million technology disclosures, multi-lingual search capabilities, an automatic translation system, and a specially developed COVID-19 search and retrieval facility dedicated to enhancing access to technological information disclosed in published patents with regard to inventions relating to the detection, prevention or treatment of COVID-19. This invaluable source of technological intelligence is widely used by hundreds of thousands of scientific and technological institutions and commercial enterprises around the world on a daily basis.

- The establishment of a partnership with scientific, medical and technical publishers, Access to Research and Development for Innovation (ARDI), which provides free online access to major scientific and technical journals to local not-for-profit institutions in least developed countries and access at a modest cost to institutions in middle income developing countries.

- The establishment of some 900 Technology and Innovation Support Centers worldwide to provide access to patent and scientific data and publications and ancillary facilities for researchers in least developed, developing and transition economies.

As the agency within the United Nations system responsible for IP services, policy, information and cooperation, WIPO is well equipped to address the issues arising for IP and innovation, with expertise and experience in the policy, economic and legal aspects of IP dating from its foundation in the 19th Century.

It is recognized that among the many effects of the COVID-19 crisis is the disruption of the normal processes by which policy is formulated at the international level. Those processes usually involve inclusive meetings of the full membership of the Organization, something that is practically impossible at this stage of the COVID-19 pandemic. This guidance is therefore issued under the responsibility of the Director General and cannot be considered to bind any member state.

Baidu's AI-related patented technologies: Doing battle with COVID-19

By **Victor Liang**, Senior Vice President and General Counsel of the Baidu Group

Photo: Courtesy of Baidu

The coronavirus (COVID-19) pandemic poses a serious threat to public health and presents a major economic challenge for countries across the globe.

Three of the foremost challenges confronting countries in this ongoing healthcare crisis are: First, how to screen people with symptoms in an effective and timely way to avoid cross-infection in crowded places; Second, how to ensure patients get quick and appropriate treatment amid the rapid spread of the virus and in the face of limited medical resources. Coupled with this are issues regarding how to speed up the pace of medical research and how to best share high-quality, accurate information with the public. Third, how to solve labor shortages in the areas hardest hit by the virus and ensure that society continues to operate in relative safety, while stay at home orders are in place.

In responding to these challenges, Baidu has swiftly applied its expertise in artificial intelligence (AI), and associated technologies and products, to support frontline efforts to prevent and control the pandemic. Baidu's ability to quickly respond to the present health crisis is enabled by its long-standing investment in cutting edge research and development. Baidu's substantial AI patent portfolio is testimony to the quality and breadth of Baidu's research and development effort. As reflected in the examples below, Baidu is proud to be able to use these patented AI technologies to help address the urgent needs of society in today's battle with COVID-19.

Baidu has innovation in its genes; it is China's best-known Internet company and a pioneer of AI research, with a unique portfolio of patents and licensing agreements with its partners upon which to build a thriving AI innovation ecosystem.

OVERCOMING THE SCREENING CHALLENGE

Accurate and efficient screening is critical to safely reopening society. To aid screening, Baidu has developed and deployed an AI-based temperature measurement system that quickly and easily monitors people's temperatures. The system was deployed swiftly in transportation hubs, such as railway stations and subway stations, and has become an effective anti-epidemic technology.

Baidu has been building its AI patent portfolio for techniques, such as its AI temperature measurement system, since 2016. The company now has more than 100 patent applications in this field. Baidu continues to innovate in this area by further developing and optimizing its AI temperature detection technology. For example, among other techniques, Baidu is developing new innovations for the infrared temperature measurement of people wearing masks.

Baidu's AI infrared vision technology helps solve the problem of rapidly detecting the body temperatures of large numbers of people in densely populated areas with high volumes of traffic. Because the system involves no human contact, it can quickly screen crowds to improve detection efficiency and accuracy with minimal disruption to the public. Importantly, it does so while keeping people at a safe distance, thereby, reducing the risk of cross-contamination.

In March 2020, as the virus began moving around the globe, the demand for technology to tackle COVID-19 started to increase daily in many countries. Baidu's successes in developing and deploying products to tackle the disease and its spread in China was immediately recognized and attracted significant international attention. Many of Baidu's AI-based technologies are now being exported overseas, allowing the company to play an important role in combating the global pandemic. As a result, the company is adopting a more comprehensive international patenting strategy to facilitate the transfer of its products and technology to the global market.

ENSURING RAPID ACCESS TREATMENT

Baidu has been building its portfolio of patents relating to "AI + Medical" since 2018, and is continuing to focus on this area of innovation. In the fight against COVID-19, AI + Medical has played and continues to play an active role in the prevention and control of the virus around the world.

Since the outbreak, there has been a surge in public demand for online consultation. Hospitals in China have started using the company's "Smart Consulting Assistant" to help doctors make

> "Baidu has swiftly applied its expertise in AI, and associated technologies and products, to support frontline efforts to prevent and control the pandemic."

Photos: Courtesy of Baidu

Baidu's AI-based temperature measurement system quickly and easily monitors people's temperatures. Rapidly deployed in transport hubs, it has become an effective anti-epidemic technology.

Baidu has leveraged CT imaging technology to develop an open-source AI model for pneumonia CT image analysis to speed up diagnoses, which is being used in hospitals in China.

rapid diagnoses and initiate treatment online. This increased efficiency for medical consultations significantly reduces the burdens that would otherwise be placed on medical resources.

Baidu also provides free API interfaces to online health consulting platforms, public disease prevention and control platforms, online hospitals, and more. These platforms provide a direct interface with members of the public, providing responses to their questions, general information about COVID-19, as well as consultations. Using the tool can result in exponential efficiency gains because it can service tens of thousands of users a day.

Baidu has also leveraged its technology in the CT imaging field, which plays an important role in the diagnosis of coronavirus-related pneumonia. Traditional manual

inspection of CT images requires significant work from highly trained professionals. To support the increased CT screening required by the virus, using PaddlePaddle, the company's open-source deep learning platform, Baidu has partnered with LinkingMed (a Beijing-based oncology data platform and medical data analysis company) to develop an open-source AI model for pneumonia CT image analysis, which has now been put into use in hospitals in China. The open-source platform is also being used to support COVID-19-related clinical research and clinical product research and development across the medical sector.

Given the severity of the ongoing global healthcare crisis, Baidu has fully utilized its advanced technical capabilities, expertise and resources in developing specialized platforms for its Overseas Anti-Epidemic Philanthropic Program, which launched recently. The program provides four major services: online medical consultation, psychological consultation, expert live streaming, and safeguarding tools for users overseas. So far, the program has provided online consulting services for more than 400,000 overseas users in more than 100 countries. "I'm grateful for the technology and platform provided by Baidu. Baidu has become a powerful promoter for providing communication with high-level experts in the fight against the novel coronavirus," says Carlos Larrea, the Ambassador of Ecuador to China.

Baidu technology is also making important contributions to the search for a cure to COVID-19. The LinearDesign algorithm, developed by Baidu Research in collaboration with Oregon State University and University of Rochester in the USA, is being used by mRNA vaccine companies to accelerate and optimize the design of possible COVID-19 vaccines. Baidu also provides a webservice, LinearDesign Webserver, to provide easy and free access to the algorithm. The algorithm needs only 16 minutes to design a stable mRNA sequence that has substantially better stability compared to wildtype sequences or randomly generated designs.

As in the example above, Baidu is making its AI + Medical-related patented products and services available to public organizations, contributing to disease detection, auxiliary diagnosis and treatment, public epidemic prevention and control.

MANAGING LABOR SHORTAGES

In the drive to maintain some kind of normality in people's lives, demand for autonomous services is surging. Baidu's Apollo low-speed autonomous car is a typical example of such technology.

The company has made available its Apollo open-source autonomous driving platform – with complete low-speed driverless micro-car kits and autonomous driving cloud services, to companies that are on the frontline fighting the coronavirus. The Apollo platform helps partners quickly develop and distribute vehicles for disinfection function to support frontline workers.

These products and services are underpinned by Baidu's portfolio of patented autonomous driving inventions, which involves multiple core patents in the field of autonomous logistics vehicle and cloud computing technology. Baidu is voluntarily sharing these patented technologies and services with many partners, such as Neolix, Idriverplus, Jinlong Bus, Qingdao Wuniu Technology, Zhongke Huiyan, and many more. In so doing, its aim is to provide non-human-contact, autonomous services, such as the disinfection of medical vehicles, meal delivery, and real-time monitoring of the coronavirus. These collaborations have allowed Baidu to further enhance its contribution to the fight against the spread of COVID-19.

→

Photo: Courtesy of Baidu

An example of Baidu's Apollo low-speed autonomous vehicles, which are being used to support frontline workers and the surge in demand for autonomous services.

SUPPORTING URGENT SOCIETAL NEEDS

Baidu's leading AI-related technological advances and patented technologies, as well as its commitment to work with its partners in sharing and deploying these technologies, is enabling the company to help address some of the urgent needs of society during the pandemic.

Hundreds of patented technologies and patent applications for new, groundbreaking technologies are playing a part in fighting this pandemic. They are also supporting technological innovation in the area of AI and the implementation and deployment of AI-based technologies in society.

BAIDU'S "INNOVATION GENES"

Baidu has innovation in its genes; it is China's best-known Internet company and a pioneer of AI research. As such, Baidu has always attached great importance to intellectual property when developing its AI technology. Baidu has a unique portfolio of patents, and licensing agreements with its partners, upon which to build a thriving AI innovation ecosystem.

Through proactive patent analysis and forward-looking patent portfolio management, Baidu has demonstrated its expertise and competitive advantage in the field of AI. From its first foray into AI in 2010, to the establishment of its deep learning laboratory in 2013, Baidu is now among the leading companies in China in terms of the number of AI-related patents it holds and the number of such applications it has made.

Last year, the *WIPO Technology Trends 2019* report on Artificial Intelligence ranked Baidu second globally for the number of patent applications in the field of deep learning. And in the *Artificial Intelligence China Patent Technology Analysis Report,* released by the National Industrial Information Security Development Research Center of China in December 2019, Baidu was ranked number one in China, with 5,712 national patent applications.

In addition to focusing on accumulating and expanding its patent portfolio, Baidu has also paid great attention to improving the quality of its patents. Every patent drafted by Baidu is carefully examined to ensure it has the technical depth to achieve high value for the company. In December 2019, Baidu ranked first in the *Chinese Artificial Intelligence Patent Value and Competitiveness Report*, published by the *China Intellectual Property Press*. The report measured the number of patent applications as well as the value and competitiveness of the company's patents. Baidu's emphasis on both quantity and quality is now widely recognized.

AN EXPANDING NETWORK OF PARTNERSHIPS UNDERPINNED BY IP

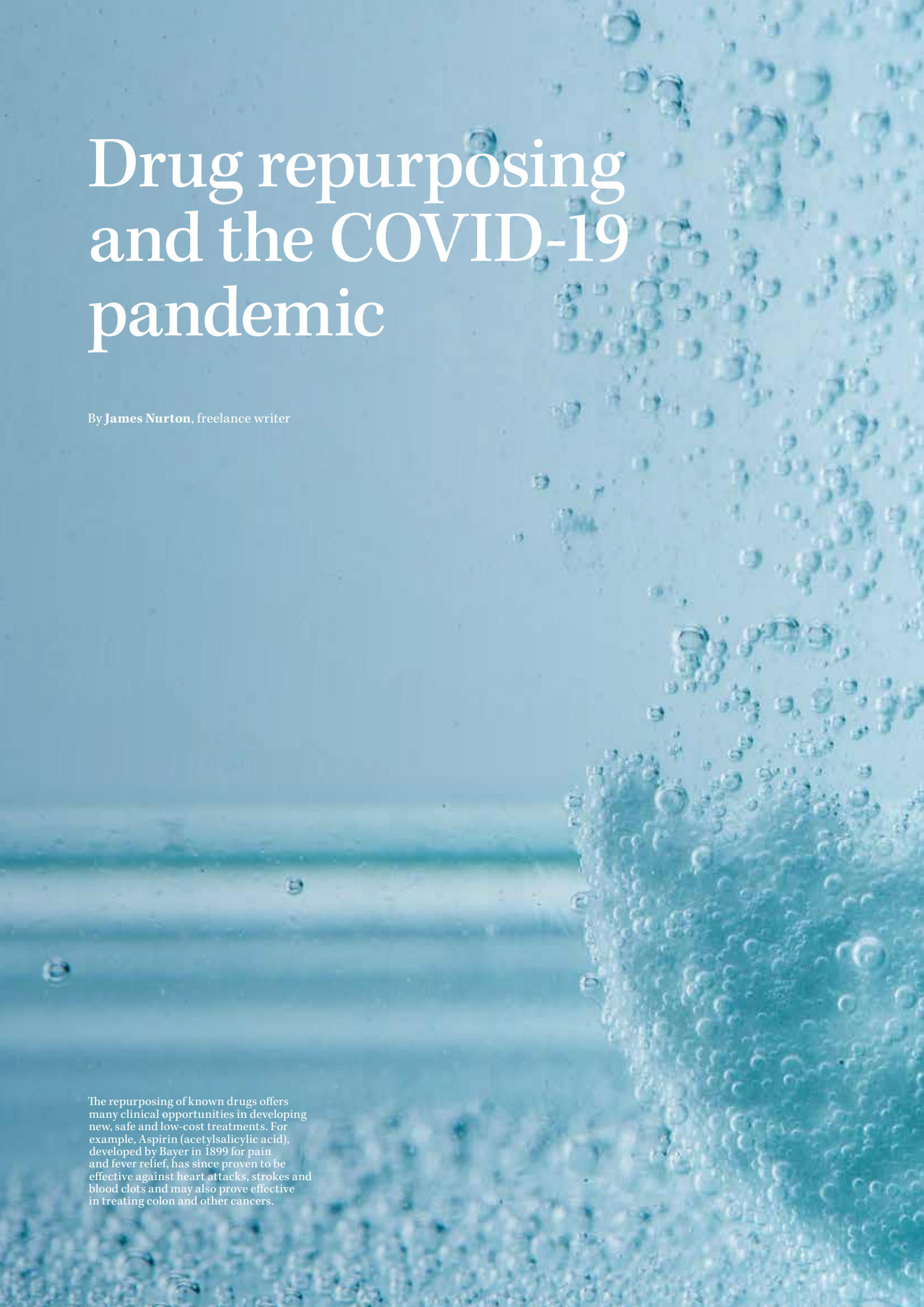
Baidu's growing network of business collaborations is also underpinned by the company's extensive AI-related patent portfolio. In terms of patent licensing, Baidu has always maintained an open attitude towards collaborating with domestic and foreign partners in the spirit of creating an ecologically-sound, prosperous and sustainable society. The integration of AI technology across industries has led to new and diverse areas for patent protection, including innovative AI algorithms and applications of AI technology. Based on its experience in acquiring large numbers of quality patents, Baidu is now able to use AI patents to help partners quickly implement AI technology and promote its use across the industrial landscape.

In 2015, Baidu brought together more than 20 leading companies to form an Intellectual Property Industry Alliance for AI-based voice to empower partners through patent licensing. In 2019, Baidu and Haier signed an IP cooperation agreement to carry out cross-border cooperation in the field of AI and Internet of Things (IoT), share the advantages of both parties through mutual patent licensing, and pursue the implementation of "AI + IoT" smart homes. Baidu will further explore such collaborations to support the development of a prosperous AI ecosystem in the near future.

In the course of this pandemic, Baidu has fulfilled its corporate social responsibility (CSR) and devoted its know-how and technological resources to public welfare. The company has used its strengths to help fight the coronavirus and demonstrated its commitment to good corporate citizenship and accountability through action. It has made available patent-related products and services to public service organizations, such as scientific research institutes and medical institutions. And in a spirit of solidarity, Baidu is working with society as a whole and collaborating with its partners to help prevent the transmission and eventually stop the spread of COVID-19.

Drug repurposing and the COVID-19 pandemic

By **James Nurton**, freelance writer



The repurposing of known drugs offers many clinical opportunities in developing new, safe and low-cost treatments. For example, Aspirin (acetylsalicylic acid), developed by Bayer in 1899 for pain and fever relief, has since proven to be effective against heart attacks, strokes and blood clots and may also prove effective in treating colon and other cancers.

Photo: amriphoto / iStock / Getty Images Plus

The COVID-19 pandemic has prompted worldwide interest in the repurposing of drugs such as remdesivir and dexamethasone. Repurposing can be crucial for delivering new treatments to patients, but also raises a number of IP-related questions.

In May 2020, the US Food and Drug Administration (USFDA) authorized emergency use of the anti-viral drug remdesivir for the treatment of COVID-19 after research suggested that patients who received it recovered four days faster than those receiving a placebo. The drug has not yet been approved, and further clinical trials are taking place to assess its effectiveness against COVID-19, including in combination with the anti-inflammatory drug baricitinib (sold under the brand name Olumiant). In June 2020, in a breakthrough in treating seriously-ill COVID patients on ventilators or oxygen, the low-cost anti-inflammatory steroid dexamethasone, which has been shown to significantly improve survival rates, became the "standard of care" in the UK.

With COVID-19 now affecting the entire world, and no vaccine or treatment approved, researchers are looking at the potential of many existing drugs, and particularly those that have been effective against similar viruses such as MERS and SARS.

Remdesivir was originally developed to treat Ebola, though it has not yet been approved for any condition. It is one of four treatments that are part of the WHO's Solidarity trial for treatments, the others being chloroquine or hydroxychloroquine, lopinavir with ritonavir and lopinavir with ritonavir plus Interferon beta-1a. These treatments have previously shown results against diseases such as malaria, SARS, HIV and multiple sclerosis. The Solidarity trial will involve tests on thousands of patients in more than 100 countries.

Dexamethsone, on the other hand, is a low-cost, on-the-shelf, anti-inflammatory steroid, that has been around for some 60 years. Widely used in treating arthritis, asthma and various skin conditions, dexamethasone has been shown to reduce deaths by up to one-third among seriously-ill patients with COVID-19. The findings emerged from the RECOVERY (Randomised Evaluation of COVID-19 Therapy) clinical trial led by researchers from Oxford University in the UK.

"COVID-19 is a global disease – it is fantastic that the first treatment demonstrated to reduce mortality is one that is instantly available and affordable worldwide," said Martin Landray, Professor of Medicine and Epidemiology at the Nuffield Department of Population Health at Oxford University, one of the trial's lead researchers.

THE IMPORTANCE OF REPURPOSING

The repurposing of known drugs is vital to developing new, safe and cost-effective treatments for a wide range of conditions. For example, Aspirin (acetylsalicylic acid) was developed by German company Bayer back in 1899 as a treatment for pain and fever, and has since been proved to be effective against heart attacks, strokes and blood clots. And today it is in phase 3 clinical trials for treating colon and other cancers.

But Aspirin is not the only example of a drug that has an afterlife. For example, thalidomide, originally developed for treating morning sickness, has since been used against leprosy and is now also approved for treating multiple myeloma. And several drugs have been found to be effective against different types of cancer: examples include

Merck's Keytruda (pembrolizumab), which was developed for advanced melanoma but is now approved for 14 cancer types, and Bristol-Myers Squibb's Opdivo (nivolumab) which is approved for 10 cancers and is being tested for more. In December 2019, AstraZeneca and Merck announced that Lynparza (olaparib) had been approved for treating pancreatic cancer in the US in addition to ovarian and breast cancer.

CLINICAL OPPORTUNITIES AND COMMERCIAL BENEFITS

Patents and the protection they confer help to justify the significant costs and risks associated with developing a new drug and bringing it to market. However, with the cost of developing a new drug estimated to be around USD 2.6 billion, drug repurposing is unsurprisingly becoming a priority for pharmaceutical companies as well as organizations such as the Anticancer Fund in Europe and the US-based Cures Within Reach, which has so far funded 80 repurposing projects. Improved use of data and the application of AI tools such as machine learning, also have the potential to facilitate repurposing, which until now has often depended on serendipity. And repurposing is particularly important for the world's estimated 7,000 rare diseases, where low patient populations make original research financially unrewarding.

As well as clinical opportunities, there are commercial benefits in repurposing, as Allie Nawrat explained in an article for *Pharmaceutical Technology* published in November 2019: "The gold mine of therapeutic repurposing has been greeted especially warmly by life sciences investors. Not only does this approach save pharmaceutical companies money, it also speeds up the time it takes to bring a new treatment option to

Photo: BartekSzewczyk / iStock / Getty Images Plus

In June 2020, UK researchers revealed that the steroid dexamethasone, which is widely used to treat arthritis, asthma and various skin conditions, has been shown to reduce deaths by up to one-third among seriously ill patients with COVID-19 in the hospital setting.

suffering patients. This is primarily because researchers are not required to repeat the earlier stages of development that simply demonstrate the safety of the drug."

Yet many observers agree that the potential of repurposing drugs has yet to be fully explored, due partly to the "technological and regulatory challenges that need to be addressed" ("Drug repurposing: progress, challenges and recommendations" in *Nature Reviews Drug Discovery* 18). According to one estimate, just 10 of the 1,541 new drug approvals in the United States from 1990 to 2007 were for new uses of generic drugs.

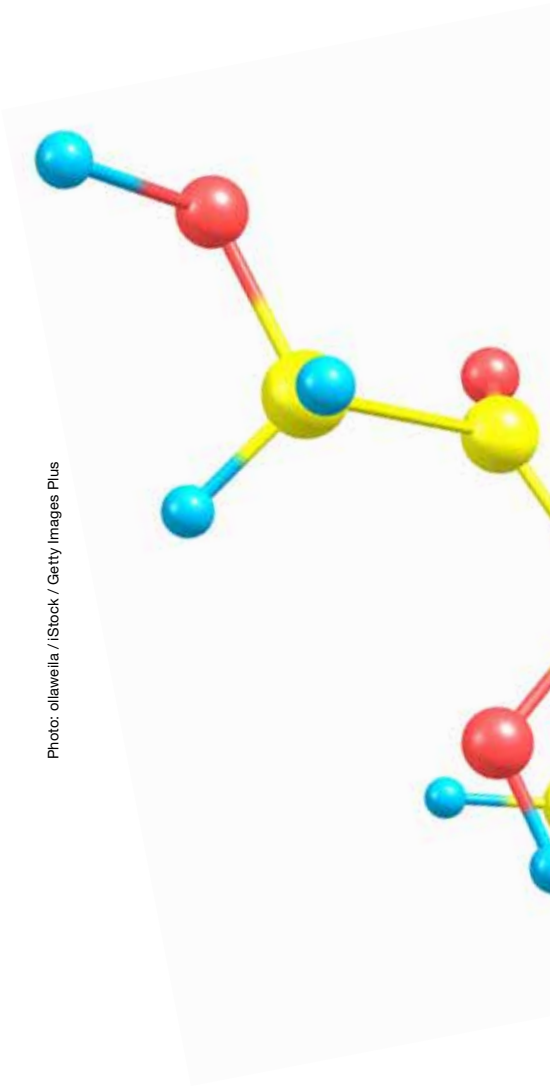


Photo: ollaweila / iStock / Getty Images Plus

ANOTHER ARROW IN THE QUIVER

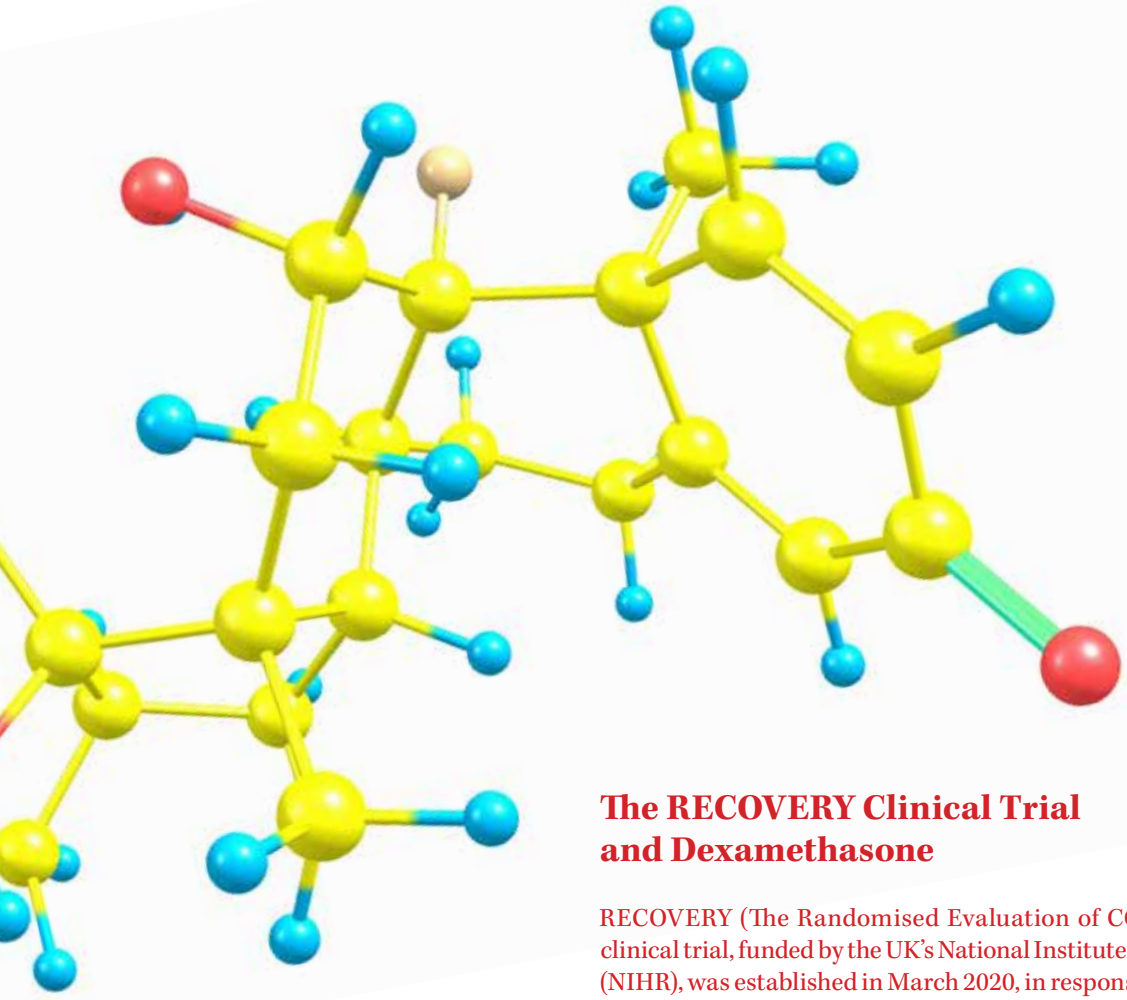
Many of the legal and regulatory questions surrounding drug repurposing were addressed at the "Clinical Innovation: Fair and Effective Incentives for New Uses of Established Drugs" Conference organized by University College London and Georgetown University Law Center in Washington DC in 2018. The Conference included researchers, doctors, lawyers, regulators and judges. Transcripts of all the sessions are available online. Opening the Conference, Professor Robin Jacob of the UCL Institute of Brand & Innovation Law, said: "If you find a new use for a known medicine, you have in fact really found a new medicine. You have put another arrow into the quiver of the doctor… And, because it is cheaper to do it than to find a wholly new molecule, it ought to be possible somehow to encourage it."

Given the expense of pharmaceutical R&D, innovators rely heavily on patents to provide a period in which they can recoup the huge investment made. In some jurisdictions, that period can also be extended to compensate for time lost in the drug approval process. But there are problems in obtaining and enforcing patents for new uses of existing drugs, related in part to concerns about so-called "evergreening" of patents. If the original innovation is old, it is hard to satisfy the novelty and inventiveness tests in patent law, while if the evidence of the new use is thin, the invention may not be sufficiently disclosed. Even if a patent is granted and valid, there are real questions about what constitutes infringement in the complex drug prescribing system.

FROM SWISS-STYLE TO EPC 2000

In Europe, applicants have been able to obtain patents for second medical uses, formerly by the legal fudge known as the Swiss-style claim, and since 2011, by the so-called EPC 2000 claim "product X for treating disease Y" – a purpose-limited product claim. However, cases over the validity and infringement of second medical use claims continue to come before the courts in Europe, with mixed outcomes. The consequence is that there is considerable uncertainty about the enforceability of second medical use claims, as former GSK patent counsel Julia Florence discussed in a webinar hosted by the Chartered Institute of Patent Attorneys (CIPA) in December 2019 ("Second Medical Use Claims – is there a cure for their ills?").

Many of these cases have arisen in situations where a company owns a patent for a first use of a drug and a later patent for a second use. When the first patent expires, generic rivals can sell their versions of the drug, but only for the first use. Any use of the drug for the indication protected by the second patent would infringe it. Generic manufacturers seek to overcome this problem by using so-called skinny labels, specifying that the drug should



Drug repurposing also offers commercial benefits given the high cost of developing a new drug, which is estimated to be around USD 2.6 billion. Repurposing also speeds up the time it takes to bring a new treatment option to patients, as has been the case with dexamethasone in the treatment patients that are seriously ill with COVID-19.

The RECOVERY Clinical Trial and Dexamethasone

RECOVERY (The Randomised Evaluation of COVID-19 Therapy) clinical trial, funded by the UK's National Institute of Health Research (NIHR), was established in March 2020, in response to the COVID-19 public health crisis.

The largest randomized clinical trial of potential COVID-19 treatments for hospitalized patients in the UK, RECOVERY has enrolled over 11,500 patients so far from 175 NHS hospitals across the country.

The trial included a study of the potential of dexamethasone, an inexpensive steroid that is widely used to treat arthritis, asthma and various skin conditions. Led by Professor Peter Horby and Professor Martin Landray at Oxford University's Nuffield Department, the study found that deaths among patients on a ventilator or receiving oxygen fell by one-third and one-fifth respectively, when they were treated with dexamethasone. The drug demonstrated no benefit among patients that did not require respiratory assistance or patients in the community.

The RECOVERY trial, which is constantly reviewing information on new drugs with the potential to improve COVID-19 health outcomes, is currently testing:

- Lopinavir-Ritonavir (commonly used to treat HIV)
- Low-dose Dexamethasone (now only recruiting children)
- Azithromycin (a commonly used antibiotic)
- Tocilizumab (an anti-inflammatory treatment given by injection)
- Convalescent plasma (collected from donors who have recovered from COVID-19 and contains antibodies against the SARS-CoV-2 virus).

→

"The repurposing of known drugs is vital to developing new, safe and cost-effective treatments for a wide range of conditions."

Photo: Coprid / iStock / Getty Images Plus

not be prescribed for the uses that remain patented. Nevertheless, there is a significant risk of patent infringement.

THE PREGABALIN BATTLE

An example of the complications that can arise involved the drug pregabalin, developed by Pfizer and sold under the brand Lyrica as a treatment for epilepsy, generalized anxiety disorder and pain. It is one of the world's biggest-selling drugs. Since the first patent lapsed in Europe in 2013, generic companies have sold versions of pregabalin with skinny labels carving out the pain indication (which was protected by a second medical-use patent). Nevertheless, evidence presented in court suggested that some 70 percent of prescriptions for pregabalin were for the patented use.

Over the past several years, Pfizer has brought cases throughout Europe with mixed results. In Denmark, it successfully sued the country's pharmacies, which resulted in the Danish medicines agency changing its substitution rules to specify that if a prescription is issued for treating a patented indication, the pharmacy should dispense only the product with the patented indication. In the United Kingdom, the pregabalin litigation reached the Supreme Court, where a panel of five judges gave four different opinions in a judgment in November 2018. Three of the judges held that the disclosure in the specification did not support neuropathic pain, as the patentee had not provided data or a credible hypothesis showing efficacy, though the two dissenting judges preferred a lower standard of plausibility.

Other recent decisions involving Swiss-form and EPC 2000 claims include the EPO Board of Appeal rulings relating to zoledronic acid (Case T0239/16) and a multiple sclerosis treatment (Case T-2570/11) as well as the UK Supreme Court judgment in *Actavis Group PTC EHF and others* v *ICOS Corporation and another* [2019] UKSC 15 of 27 March 2019 (concerning a patent for the use of the drug tadalafil in a dosage form for the treatment of sexual dysfunction). This judgment, upheld the Court of Appeal finding that clinical tests, involved familiar and routine procedures and the patent was

therefore invalid for lacking an inventive step. "Hopefully this will not render all inventions that come out of clinical trials as obvious," said Ms. Florence in the CIPA webinar.

HOW TO INCENTIVIZE REPURPOSING

The extensive litigation over second medical use patents has provided some clarity but also revealed that patent law alone may not provide the necessary incentives for drug repurposing. As former US Court of Appeals for the Federal Circuit Judge Arthur J. Gajarsa said at the Georgetown Conference: "We need to have some new legislation at least to recognize that the new uses of drugs from old drugs that have been in existence for a while might need to have some incentive for the market to be provided so that the patent and the new use can be protected." Some of the solutions suggested include:

- Prescribing: Change prescribing habits, either by separating the patented market by requiring prescribers to write the brand name for patented indications and the international non-proprietary name for non-patented indications, to require indications to be stated on prescriptions (as is the case in Denmark) or to prescribe drugs by category (as in Belgium). However, there are objections on the grounds of practicality and confidentiality.

- Pricing: A radical proposal made by Ben Roin of MIT Sloan School of Management is to price drugs by indication rather than by product. Another suggestion is to add a tax to each prescription to fund the development of new uses.

- Empowering physicians: many doctors prescribe drugs off label (that is, for indications the drugs are not yet approved for). Drugs companies are not generally authorized to promote off-label use, but rules could be loosened to facilitate repurposing. In addition, better use could be made of real-world evidence of efficacy in doctors' day-to-day experience.

- Term of protection: IP consultant Bob Armitage, formerly of Eli Lilly, has proposed that patentees be able to choose a 14-year fixed period term of protection for newly approved drugs rather than a 20-year term from date of filing, with no extension, but other options could also be explored.

LIFE AFTER PATENT EXPIRY

"Drug rediscovery is invaluable because it can increase therapeutic options and reduce drug-development-associated costs. However, there is a need for a structured protocol for further development of old drugs to optimize licensing and avoid long-lasting procedures," say the authors of a study of Thiosix (thiroguanine), which was published in *Drug Discovery Today* in January 2018. Thioguanine was developed as a treatment for leukemia in the 1950s and approved for treating irritable bowel disease in 2015. Its success shows that there can be a second act for innovative drugs, but also that much more work needs to be done to incentivize and encourage such repurposing.

Open Innovation – Embracing collaboration

By **Joel Smith**, **Rebekah Gay** and **Rachel Montagnon**, Herbert Smith Freehills, London, United Kingdom

Photo: Orbon Alija / E+ / Getty Images

Innovation ecosystems are becoming ever more complex and diverse. Technology is connecting individuals and businesses across sectors and it is easier than ever before for anyone, anywhere, to innovate. As organizations try to stay ahead of the curve, the imperative for increasingly rapid innovation seems to grow ever stronger. This all adds up to a compelling need for organizations to look externally when it comes to innovation.

CHANGING INNOVATION BEHAVIORS

The days when innovation took place exclusively within an organization's dedicated and often siloed internal R&D team are long gone. While knowledge and technology might still come from more traditional collaboration partners, increasingly, these partners are taking on a variety of guises.

More and more often, innovation partners include startups and scale-up businesses, consumers and not-for-profit organizations. Partners may come from related sectors or they may come from multiple non-related sectors as is often the case for technology-based innovations, which depend on niche expertise. Ideas, innovations and technologies may also be co-created by various actors in the value chain or fostered in group forums or via innovation competitions.

In theory, this is all great for pushing the boundaries of possibility. But not all open innovation pursuits are successful. Effective innovation requires clear and properly executed strategies, discipline, leadership and a genuine innovation culture; it will involve skills, tools and expertise – and it takes time to embed. Not surprisingly, that means that while most companies understand the importance of innovation to their business, far fewer report that they are satisfied with their innovation performance.

OPEN INNOVATION – OPEN TO INTERPRETATION?

For one school of thought, "open innovation" has been happening for decades – there is nothing new about companies working with outside partners. But it is clear that as businesses across sectors look to innovate by collaborating with a broader and more diverse range of partners, they are also looking to structure those collaborations in more open and flexible ways to provide quick access to new ideas and technology.

"[W]hile organizations define open innovation in a variety of ways, it is almost always based on the fundamental idea and realization that knowledge is spread throughout a business, industry or society, rather than just being held internally."

Innovation models can be seen as a spectrum, with "closed innovation" at one end, when a business develops new products in-house, through to what may be termed "free innovation" at the other end, when ideas and information are shared freely with no restriction on their use. Between these two extremes sits a range of innovation approaches, involving varying levels of collaboration, structural flexibility and openness to external parties. The term "open innovation" has come to encompass a number of different ways of improving efficiency, utilizing new technology and allowing organizations to gather multiple ideas from a range of sources.

REVIEWING APPROACHES TO INNOVATION

Herbert Smith Freehills has been exploring the ways in which businesses, and particularly their in-house legal teams, have been grappling with the opportunities and challenges presented by collaborative innovation. Our findings were illuminating. We found that:

- Many businesses are tapping into the creativity of the public at large through initiatives such as online challenges, contests and hackathons, which open them up to fresh perspectives and allow them to identify potential innovation partners with diverse skills.

- Almost everyone we spoke to reported an expansion in their range of external collaborators. In some cases, collaborations were focused on actively sharing non-core assets with competitors as well as expanding out from a business' traditional remit, to developing a more diverse range of internally generated technologies across different fields.

- Sometimes these collaborations are with external startups, which are effectively incubated by, and then integrated into, the business once successful. Others may then be spun out. In some cases, internal "startups" are encouraged, and the best concepts retained by the business.

- A number of businesses are looking to ensure that anyone across their company can be part of the innovation cycle. Here, again, the use of technology platforms such as intranets allows anyone in the business to get involved.

- There are also indications that many businesses are interested in moving towards the creation of common platforms. However, businesses in some sectors felt more restricted due to their heavily regulated nature, often using startups or independent ventures to innovate in a less restrictive environment, before absorbing successful innovations back into the main business in a fashion acceptable to its regulators.

It is also apparent that, while organizations define open innovation in a variety of ways, it is almost always based on the fundamental idea and realization that knowledge is spread throughout a business, industry or society, rather than just being held internally. By accessing both internal and external knowledge in a variety of different ways, organizations are able to exploit a wealth of information and create a bigger pool of ideas and solutions.

STARTING BLOCKS FOR COLLABORATION

It is clear that most businesses are becoming more receptive to new forms of collaboration to stay ahead of the curve, or at least to prevent being left behind. In doing so, they are looking to implement processes and structures that are built on some key fundamentals: speed, flexibility, trust, and talent and diversity.

- **Speed**
  Businesses stressed the importance of getting access to market first; if the collaboration is slow, it loses value. In the race to innovate, first or early mover advantage is key. This commercial driver has focused organizations towards efficiency rather than perfection, even if it makes the initiative riskier.

- **Flexibility**
  The key is to "declutter innovation". As with any project, it is not always clear at the outset whether it will gather traction and interest. It is important to be flexible in order to be able to reach the best outcome from the collaboration. After all, technology transfer is the "art of the possible." Moreover, businesses need to be light on their feet to allow a collaboration to gather momentum. Not every project is taken forward, and a more flexible approach means businesses can avoid wasting time on the details of initiatives that may not progress. To address this, a staged approach to new projects has been suggested by many. Having a clear, up front understanding of your baseline position on key issues, such as intellectual property, can also give you flexibility on the rest of the deal at an early stage.

Photo: Sushiman / iStock / Getty Images Plus

"[I]ntellectual property is core to the value of many businesses. However, the way in which it is used and valued is shifting – increasingly, it is used to facilitate collaboration."

Most businesses are becoming more receptive to new forms of collaboration to stay ahead of the curve and are implementing processes and structures built on:

- Speed
- Flexibility
- Talent
- Diversity

- **Trust**
  Businesses identified that a major stumbling block for innovation projects can be whether you look at people as competitors or as partners; that is, whether things end up being collaborative or adversarial.

  You have to be more up front, more open, and clear about what you want and where you are going. Collaboration partners need to "speak the same language". You need to act quickly but also in a way that preserves long-term goodwill.

- **Talent and diversity**
  The battle to attract the best talent has intensified, as it is a critical part of driving internal innovation and creativity within the business. There is also widespread recognition of the advantages of ensuring that a diverse pool of talent is being recruited, to ensure that teams are bringing the broadest range of ideas, perspectives and skill sets to the innovation table.

STRUCTURES AND OBSTACLES

Hurdles to structural success

While recognizing that all of these factors are key, ultimately, there is still a need to decide how to frame each collaboration; some sort of structure is required, after all – there is no "one size fits all" approach. Particular hurdles in establishing an ideal structure might include:

- collaboration with academia, where there might be a clash of interests or priorities;
- the approaches and histories of different jurisdictions or subsidiaries;
- striking a balance between the profit and charity elements of social entrepreneurship; and
- the need for compliance in heavily regulated sectors.

In this regard, startups or newer businesses might be more comfortable with the idea of open innovation, while mature companies may be more inclined to run with policy-driven approaches to ensure consistency and efficiency.

Ownership

At least one of the reasons that startups or newer businesses may be more aligned with the drivers of open innovation is their shift in thinking around ownership of intellectual property. Businesses told us that while the emphasis has historically been on owning and protecting the products of innovation, they are increasingly adopting a more flexible approach to ensure access to technology through collaborations.

That does not mean that nothing is worth owning; on the contrary, more than ever before, intellectual property is core to the value of many businesses. However, the way in which it is used and valued

is shifting – increasingly, it is used to facilitate collaboration through access regimes ranging from licensing to open source platforms, rather than to lock others out of the market.

THE ROLE OF IN-HOUSE LEGAL TEAMS

The alignment of business goals with the output of the legal team is crucial to successful innovation. To achieve this, some businesses have adopted approaches which embed the legal function into the innovation process, so that in-house lawyers are involved from the start. This allows a mutual understanding of commercial and legal perspectives, and the early identification of legal issues and risks.

Whatever the approach taken, it is clear that most businesses recognize – at least in theory – that getting the legal team involved early maximizes the team's ability to contribute constructively and to be part of the ultimate solution.

THE DIRECTION OF OPEN INNOVATION

Despite some inherent challenges, businesses are seeing significant benefits from open innovation, which typically outweigh the risks of pursuing the narrow, inward-looking R&D approach. Their pool of external collaborators is expanding, and non-core assets are being shared more widely, creating routes into increasingly diverse technologies.

External collaborations are often seen as essential to ensure the speed with which innovation needs to happen. Exclusivity and rights ownership may sometimes be worth sacrificing to ensure a "first to market" position or simply to keep pace with the sector. Insourcing, – using their own personnel to come up with ideas – rather than relying solely on their R&D teams and consultants, is also gaining traction.

Businesses generally rate their existing internal talent as a pool of untapped potential, intimately connected with the business and well placed to develop innovative solutions. As a consequence, businesses are investing in systems to connect employee innovators with the appropriate expertise, frameworks and opportunities to facilitate the development of their ideas.

As the ways in which businesses innovate and collaborate, and the range of internal and external innovators and collaborators rapidly expands, in-house legal teams have had to adapt. Open innovation is an entirely new ball game for many legal teams and warrants a shift in culture and make-up. Risk models must reflect the emerging collaborative landscape and challenge long-standing norms and protocols.

This has not always been an easy process and businesses continue to report on the challenges of moving from more rigid, policy-driven approaches to strategies which provide speed and flexibility and are built on trust – now seen as essential to effective innovation and collaboration.

Supporting environmental sustainability with GIs: The case of *Madd de Casamance*

By **Pape-Tahirou Kanouté**, Agricultural economist, ETDS, Ziguinchor, Senegal, and **Michele Evangelista**, Lisbon Registry, WIPO

Photo: Mike Goldwater / Alamy Stock Photo

Madd (or *Saba senegalensis*) is a wild species of fruit; a berry with a hard, yellow peel that can be found predominantly in the woodlands and certain savannahs of Burkina Faso, Senegal, Guinea, Guinea Bissau, Mali, Ghana and Côte d'Ivoire. The plant is a climbing vine with tendrils that allow it to cling to the trunks and branches of trees in the forest, where it grows wild.

"GIs have the potential to support efforts to scale-up environmentally sustainable practices, which might otherwise be more difficult to achieve with individual companies."

Amid the ongoing climate crisis, the need to preserve the natural environment has become a focus of growing public concern. Consumers, especially young people, are calling on governments and the private sector to actively commit to implementing strategies and policies that support environmental sustainability.

On top of this, the world's population is expanding and is expected to reach some 9.8 billion by 2050. These factors raise significant challenges in terms of the quantity and quality of food required and the impact of agriculture and food production systems on the environment. But what does this have to do with an intellectual property right known as a geographical indication (GI)?

The answer lies in the fact that quality products originating from a given geographical area – that confers specific characteristics or quality on them or gives them a unique reputation – are highly marketable and create value for millions of producers around the world. Producers often protect and commercialize such quality origin-based products as GIs, a type of brand that generally consists of, or includes the geographical name in which a product is rooted. While environmental sustainability is not a prerequisite for acquiring a GI, the process of securing GI status can serve as a useful vehicle for promoting environmental sustainability goals.

GIs: AN INCENTIVE FOR EFFECTIVE NATURAL RESOURCE MANAGEMENT

A GI identifies a product that originates from a special geographical location. The quality, reputation or characteristics of that product are intrinsically linked and essentially attributable to that geographical origin. The strong link that GI-branded goods have with their *terroir* (the location in which they are produced (including natural and human factors) creates an incentive for producers to maintain the integrity of the natural resources responsible for producing them. This explains why well-established GIs such as, Grana Padano, Scotch Whisky, and Banano de Costa Rica, embraced "green" policies long before consumers and the public started questioning big companies and brands about the impact of their operations on the natural environment.

Such environmental awareness, however, is not confined to established GIs. Producers of goods with the potential to qualify for GI protection, such as the fruit, *Madd de Casamance*, are also working to ensure that sustainability considerations are embedded in the regulations and control mechanisms they are establishing to govern harvesting practices and production of derivative products.

Photo: Courtesy of ETDS

The Madd (or *Saba senegalensis*) fruits are ovoid and orange when ripe and are full of pulp-coated seeds. The fruits are rich in carbohydrates and vitamin A, K and C.

ABOUT *MADD DE CASAMANCE*

Madd (or *Saba senegalensis*) is a wild species of fruit, a berry with a hard, yellow peel that is found predominantly in the woodlands and certain savannahs of Burkina Faso, Senegal, Guinea, Guinea Bissau, Mali, Ghana and Côte d'Ivoire. The plant is a climbing vine with tendrils that allow it to cling to the trunks and branches of trees in the forest where it grows wild. Its yellowish-white and greenish-white blooms are highly fragrant and its ovoid fruits, orange when ripe, are up to 10 centimeters long and 8 centimeters wide and full of pulp-coated seeds.

The fruits are rich in carbohydrates and vitamin A, K and C. Eaten fresh, the seeds have a tart flavor and are typically seasoned with sugar, salt or pepper or used as a condiment. The fruits are also used to make juices, syrup and preserves. *Madd de Casamance*, which grows in the Casamance region of Southern Senegal, is widely reputed for its flavor and medicinal properties and has been commercialized with some success by women, in particular, in cities like Dakar. It has great potential to become a flagship GI for the region, and the first GI in Africa for a wild product.

→

REGISTERING *MADD DE CASAMANCE* AS A GI: THE JOURNEY

The process of registering *Madd de Casamance* as a GI began in 2017, with a sub-regional conference organized by the Food and Agricultural Organization of the United Nations (FAO) and the World Intellectual Property Organization (WIPO) in collaboration with the African Intellectual Property Organization (OAPI) and the Senegalese Agency of Industrial Property and Innovation (ASPIT). A study presented at that meeting during the Conference, assessed the potential of the fruit as a GI and the level of interest among local producers to engage in the GI registration process. The study acknowledged the reputation and distinctive characteristics of the fruit and its derivative products. It also identified other critical factors to support its registration as a GI, including the need to define the geographical boundaries of the area of production and to establish the traceability of the fruit and derivative products identified by the GI.

Local producers confirmed their interest in protecting the fruit and in 2019, with the support of the National Agency for Agricultural and Rural Consulting (ANCAR), ASPIT, FAO, OAPI and WIPO, they formally launched a pilot project for the development and registration of *Madd de Casamance* as a GI. The project also has the potential to support the development of the region of Casamance in line with the objective of Senegal's Decentralization Act III to organize the country into viable, competitive and sustainable development territories by 2022.

COMMUNITY ORGANIZATION: STRENGTH IN NUMBERS

From the beginning of the process, local actors such as ETDS (*Economie Territoires et Développement Services*), a Senegalese non-governmental organization, started working with local producers – mostly women initially – who were interested in adding value to the goods they derived from the Madd fruits harvested in the region.

ETDS' first order of business was to support the local producers – who would be responsible for governing the GI once registered – in establishing a formal association to manage and administer the GI. These efforts culmi-

> "From the outset, the local actors in the *Madd de Casamance* value chain recognized the pivotal importance of preserving the environment in which the fruit grows."

The Madd vine that grows in the region of Casamance in Southern Senegal is widely reputed for its flavor and medicinal properties and has been commercialized with some success by women, in particular, in cities such as Dakar.

Photos: Courtesy of ETDS

nated in the launch in November 2019, of APPIGMAC (*Association pour la Protection et la Promotion de l'Indication Géographique Madd de Casamance*). The objective of the Association is to bring together all those engaged in the harvest, production and distribution of the fruit from the region and is responsible for protecting and promoting *Madd de Casamance* and its associated products.

Bringing the local producers together to establish the APPIGMAC makes it possible for them to exchange ideas and agree on common strategies for the management of their GI value chain. For example, it enables them to develop and implement a quality assurance scheme to ensure the fruits are harvested under specific conditions and meet required standards. APPIGMAC is also working to identify new markets and schemes to boost the value and sale of its distinctive products.

PRODUCERS EMBRACE ENVIRONMENTAL SUSTAINABILITY

Recognizing the pivotal importance of preserving the environment in which *Madd de Casamance* thrives, local producers have worked, from the very beginning of the GI registration process to ensure that their harvesting and production practices are governed by sustainability considerations. Why? Because the forests in the Casamance region are under threat from population growth, urban sprawl and unfettered exploitation of natural resources. Over-exploitation of the forests, fires, drought, and overgrazing have heightened the risk of flooding and erosion, causing the disappearance of many animal species and posing a real threat to the production of *Madd de Casamance*.

In light of this, local collectors and processors across the *Madd de Casamance* value chain have agreed on clear methods of forest exploitation to restore and maintain the integrity of the original forest ecosystem. These best practices balance natural resource exploitation with the need to regenerate the forests where the fruit grows and form part of the mandatory requirements (the book of specifications) that each producer will have to respect if they wish to label their products with the GI when registered. The Association hopes to complete the registration process before the end of 2020.

Buoyed by the positive results flowing from this approach, ETDS is working with local communities to strengthen a number of other emerging community-based forest management mechanisms. For example, in 2019, thanks to the efforts of volunteers to promote better forest management, the department of Oussouyé (in the Casamance region) was the only department in Senegal to record no forest fires.

The experiences in managing *Madd de Casamance* are also inspiring other communities to take positive environmental action. For example, inhabitants of Dablé, a neighborhood in the village of Thiobon, in the department of Bignona, have established a committee and agreed to only harvest the wild fruit, ditakh (*Detarium senegalese*) which is an important part of the local economy, when it is ripe and on weekends. Anyone infringing these rules risks being barred from the forest and having any harvested fruit confiscated. The community is also employing young people to supervise the forest and ensure the rules are applied correctly. Similarly, with the support of ETDS, various local associations are working to regenerate the forests in the area around the village of Sindian.

ETDS is keen to identify new partnerships to support other reforestation activities in the region.

SUPPORTING SUSTAINABILITY AND EMPOWERING COMMUNITIES WITH GIS

Madd de Casamance is an interesting example of how GIs can support the environmental, social and economic dimensions of sustainability and the transition to a green future. As a collective endeavor, GIs have the potential to support efforts to scale-up environmentally sustainable practices, which might otherwise be more difficult to achieve with individual companies.

Moreover, economic actors in GI value chains – producers, processors and distributers – are used to independent audits, such as production/product quality audits. Unlike many other products, GI-protected products are subject to regular controls to ensure that their associated qualities are delivered to consumers. As such, adapting GI-recognized products to sustainability audits may be relatively easy.

→

To maintain the reputation and characteristics of quality goods originating from a given area, producers need to recognize the importance of effectively managing the resources that shape the very qualities of their products, especially when it comes to natural and agricultural products and foodstuffs. This is not just a moral obligation toward the environment; it is a matter of economic self-interest. Sustainable production of these goods, and indeed the social and economic well-being of the communities responsible for producing them, hinges on effective and sustainable land and natural resource management practices.

In the case of *Madd de Casamance*, which is also a valuable source of nutrition for the community, securing GI status is not only supporting the community's environmental goals, it is also galvanizing the empowerment of young people and women.

Young people, for example, are typically responsible for gathering the fruit. They use their earnings to finance their studies. For their part, women play a key role in processing and selling the juices, syrups and preserves derived from the fruit as well as in building the reputation of their products and establishing its value chain. In fact, women took the first steps towards seeking GI status for *Madd de Casamance*.

GI certification is a collective effort involving many actors along the value chain and insofar as the entire community is committed to the same goals, the impact of collective action in achieving those goals is heightened.

In the case of *Madd de Casamance*, and indeed, various other GI-protected products, we see that when environmental sustainability is identified as a shared goal, the community organization required to secure GI status can be a powerful vehicle in responding to the sustainability challenges and environmental concerns of our time.

New European Directive adds impetus to international efforts to promote accessibility

By **Catherine Saez**, freelance writer

Photo: BSIP SA / Alamy Stock Photo

The European Accessibility Act complements the WIPO-administered Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled. Its objective is to ensure that when e-books are created, the associated files include accessibility features, such as structured text and image descriptions, and that consumers with disabilities are informed about such features when they buy an e-book.

The Accessible Books Consortium (ABC) is a public-private partnership led by the World Intellectual Property Organization (WIPO). It includes organizations that represent people with print disabilities such as the World Blind Union (WBU); libraries for the blind; standards bodies; and organizations representing authors, publishers and collective management organizations.

The goal of the ABC is to increase the number of books worldwide in accessible formats - such as braille, audio, e-text, large print – and to make them available to people who are blind, have low vision or are otherwise print disabled.

In particular the ABC promotes the production of "born accessible" publications that are fully accessible to all readers, the overall aim being to make the same product usable by everyone.

The aims of ABC are very much in line with the 2019 European Union (EU) Directive, also known as the European Accessibility Act. Inmaculada Placencia Porrero, Senior Expert on Disability and Inclusion in the European Commission's Department for Employment, Social Affairs and Inclusion, discusses the main aims of the Directive from the perspective of inclusive publishing for persons with disabilities, including for visually impaired and blind people.

What is the main aim of the European Accessibility Act?

The main purpose of the Act is to make certain products and services that are manufactured and provided in the EU market accessible to persons with disabilities. The main products covered are computers and operating systems, self-service terminals such as payment terminals, ATMs and some ticketing and check-in machines, as well as interactive self-service terminals that provide information. It also includes smart phones, TV sets and set-top boxes and e-readers. Services covered include most telecommunication services, the European emergency number "112", access to audio-visual media services, some elements of transport services, consumer banking services, e-commerce, e-books and dedicated software.

The Directive will ensure that persons with disabilities (as well as many older persons) will benefit from a greater supply of accessible products and services, and will thus be able to participate more actively in society and the economy. The Directive also contributes to the implementation of the European Pillar of Social Rights, an EU-wide drive to deliver new and more effective rights for citizens – and in particular, inclusion of people with disabilities (Principle 17 of the Pillar). In addition, manufacturers and service providers will be able to sell and distribute their products and services across the EU without having to adapt them to divergent national provisions. Imported products and services will also have to comply with these requirements.

What is the timeline for the Directive's implementation?

From the date of its publication on June 28, 2019, EU member states will have three years (i.e. up to June 28, 2022), to transpose the provisions of the Directive into national law, and a further three years (i.e. up to June 28, 2025), to apply those provisions.

A number of transitional measures have been introduced. For example, products that are already in use, and service contracts concluded prior to June 28, 2025, may enjoy an additional five years (up to June 28, 2030), before compliance is required. And for Self Service Terminals, the transitional period is 20 years after their entry into use. However, in most cases, compliance with the Directive will be required from June 2025.

"The Directive will ensure that persons with disabilities (as well as many older persons) will benefit from a greater supply of accessible products and services, and will thus be able to participate more actively in society and the economy."

Photo: WIPO / E. Berrod

On October 1, 2018, the European Union signed up to the Marrakesh Treaty. From the right: Ms. Claire Bury, Deputy Director General, Directorate-General Communications Networks, Content and Technology of the European Commission; Ambassador Elisabeth Tichy-Fisslberger, Permanent Representative of Austria to the United Nations in Geneva and representative of the 28-member European Union (EU); Francis Gurry, Director General of WIPO; and Ambassador Walter Stevens, Head of the EU Delegation to the United Nations Office and other International Organizations in Geneva.

What will change for manufacturers and publishers?

From June 28, 2025, businesses, including manufactures and publishers will only be able to supply the European market with products and services that comply with the Directive's accessibility requirements. In doing so, they will get access to the internal market as a whole. Businesses will also have to comply with certain reporting obligations. For example, they will have to inform consumers about the accessibility features of their products and services.

How does the European Accessibility Act relate to the WIPO-administered Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled?

The Act complements the Marrakesh Treaty. Its objective is to ensure that from their creation, new electronic books (e-books) are accessible. It is not about retrofitting non-accessible books; it is about ensuring that when e-books are created, the associated files include accessibility features, such as structured text and image descriptions. The Act also requires that information about the accessibility features of these e-books is available so that customers with disabilities know what they are buying.

Beyond EU manufacturers and publishers, are other economic actors, such as distributors and importers, concerned by the Directive?

The Directive is relevant to all economic operators in the publishing supply chain – manufacturers, service providers, importers, distributors, authorized representatives and consumers. The Directive also suggests that with respect to e-books, the concept of a service provider could include publishers and other businesses involved in their distribution.

→

Which e-book formats or features are foreseen?

The Directive does not specify any particular format, rather it outlines functional accessibility requirements that could be fulfilled using several formats. However, the Directive does include a process whereby the Commission may identify standards and adopt technical specifications, which would provide a presumption of conformity with the Directive's accessibility requirements.

Once the Directive is implemented, how many books will be available in accessible format in the EU?

It's difficult to say, because it will depend on how many books are published after June 28, 2025, the date from which the Directive will apply. In principle, the Directive covers all new books. We also hope that the Directive will support the adoption of best practice in terms of making e-books accessible beyond what is required by law.

Can you tell us more about the exemptions or exceptions that are included in the Directive?

There are, indeed, a number of exceptions under the Directive. For example, micro-companies are not obliged to comply. Small and Medium-Sized Enterprises (SMEs) remain under an obligation to publish accessible books but may enjoy some relief in terms of reporting requirements. A number of other safeguards from which businesses may also benefit have also been built into the Directive. For example, the implementation of accessibility requirements is compulsory only to the extent that it does not impose a disproportionate burden or does not result in the fundamental alteration of the product or service. Moreover, the Directive requires an e-book publisher to provide accessible e-books but does not require the publisher to produce paper versions of books in Braille.

How will the Directive be enforced?

Enforcement of the Directive is a process. First, businesses will have to declare compliance, then market surveillance authorities and those authorities responsible for compliance of services will check that everything is in order. Ultimately, consumers will be able to take action under national law before the courts.

Each member state will be responsible for establishing its own market surveillance authority and the authorities responsible for compliance of services. It's still too early to say who they will be and how they will be organized, but member states will be duty bound to inform the public about these authorities, their responsibilities and the decisions they take when they become operational.

The written word can still change the world

By **Michiel Kolman***, Senior Vice President, Information Industry Relations; Academic Ambassador, Elsevier

*Michiel Kolman is also Presidential Envoy for Diversity and Inclusion at the International Publishers Association, Board member of the Accessible Books Consortium and Workplace Pride.

The written word in its most basic form enables a transfer of knowledge from the ideas of an author directly into the hearts and minds of readers across the world. For centuries, it has transformed our society and in 2020, we need the written word - and publishers - more than ever.

The publishing industry, tasked with the responsibility of guiding the public discourse on topics from climate change to mental health, is driving change. Publishers are agents of change and there are good reasons why we still need them in the modern world.

AGENTS OF CHANGE

The publishing industry is at the forefront of efforts to promote diversity and inclusion. In my role as the Presidential Envoy for Diversity and Inclusion for the International Publishers Association (IPA), I see that the publishing industry is increasingly embracing these ideals. That is a good thing. It is right that everyone in publishing should feel welcome and included.

PublishHER, an industry-led initiative, spearheaded by the IPA's Vice President, Bodour Al Qasimi, herself a driving force for the development of publishing in the Arab world, is a striking example of what the industry is doing to promote gender equality. PublishHER is a call to action by leading female publishers to tackle deep-routed gender imbalances in the industry and to drive an international agenda for change.

But beyond being the right thing to do, there is also a clear business case to support diversity and inclusion. Companies that embrace diversity and pursue inclusion perform significantly better financially. Those led by executive teams that do not reflect the diversity of today's societies, with respect to gender or ethnicity, for example, pay a penalty in terms of poor economic performance.

Data from the Global North show that the publishing industry is making great progress on gender diversity. For instance, UK data by the Publishers Association on

the Publishing Workforce show that more women than men work in publishing. More importantly, they show that women hold 54 percent of leadership and senior executive roles within the industry. More challenging is the situation around ethnicity, where it has been difficult to attract and retain staff belonging to ethnic minorities.

In the Global South, hard data are not easily available but anecdotal evidence shows over and over again that many women, such as Moroccan children's publisher Amina Hachimi Alaoui, are starting their own publishing businesses. The smaller and newer publishers, in particular, are proving to be more innovative and willing to challenge the status quo by publishing work that is beyond the mainstream and that provides a platform for new voices in the world of literature and culture. More and more of these voices are female, offering a great illustration of how diversity and inclusion serves societal and cultural change.

Publishers are also increasingly embracing diversity and inclusion in relation to what we publish. Children's book publishers are setting stories where families are not always traditional but where kids are allowed to embrace their own identity in a world that is more colorful and forward-looking. There are great examples of children's books that depict a variety of family configurations. They also celebrate children embracing their true self, even if this is not the typical gender role as determined by their biological sex. The trend towards expressing self-identity in children's books is well illustrated by *Julian is a Mermaid*, which was an outstanding success at the Bologna Children's Book Fair in 2019. More recently, the Swedish publisher Olika made a push for gender equality with their books on Sweden's top female football stars.

THE SUSTAINABLE DEVELOPMENT BOOK CLUB

Also in the area of children's books, publishers are charting children's future around the Sustainable Development Goals (SDGs). The IPA is proud to have launched with

Photo: WIPO / E. Berrod

Smaller and newer publishers, in particular, often led by women, are proving to be more innovative and willing to challenge the status quo by publishing work that is beyond the mainstream and that provides a platform for new voices.

the United Nations, and the support of many other players in the book ecosystem, the Sustainable Development Book Club.

Over 17 months we announce monthly book recommendations for each of the 17 SDGs in all official UN languages (Arabic, Chinese, English, French, Russian and Spanish). These are books for kids between 6 and 12 years of age around the themes of the SDGs. So, a boy in Peru can read books on gender equality (SDG 5) in Spanish and a girl in China can read books linked to clean water and sanitation (SDG 6) in Chinese.

I have to admit, I am a little proud that this initiative launched during my presidency of the IPA. It is a great illustration that publishers are agents of change and are investing actively in the next generation.

THE ACCESSIBLE BOOKS CONSORTIUM

Publishers are also at the forefront of efforts to expand the number of books available in the formats required by the hundreds of millions of blind or visually impaired individuals around the world, through

Photo: www.braingyanfoundation.in/projects/education-projects/

Launched by IPA and the United Nations with the support of various other organizations, the #SDGBookClub helps children learn about the Sustainable Development Goals. People around the world are hosting SDG book club meetings. Members of the BrainGyan Foundation's SDG Book Club (above).

their active participation in the Accessible Books Consortium (ABC). In Autumn 2019, Hachette Livre became the 100th signatory of the ABC Charter, sealing its commitment to making its products fully accessible to all users.

The ABC is a public-private partnership led by WIPO that brings together key players, including publishers, to increase the number of books worldwide in accessible formats such as braille, audio and large print and to make them available to people who are print disabled.

INNOVATION IN PUBLISHING

Publishers have always embraced innovation and continue to do so. We see this today, by the way Scientific, Technical and Medical (STM) publishers are increasingly deploying block chain and artificial intelligence (AI) in their operations. Springer Nature, for example, has compiled and published an innovative book prototype using a machine learning algorithm developed in collaboration with the Applied Computational Linguistics Lab of Goethe University in Germany. And at Elsevier we are using AI to extract the relevant information for a physician in the emergency room, for instance.

In fact, while building on the high-quality content they have been publishing for decades if not longer, many publishers are now turning into Big Data enterprises, developing analytics that in combination with their content can help medical professionals make faster decisions, and can support scientists in enhancing their research capabilities.

We are now in a remarkable era where the majority of the major STM publishing houses are led by female leaders, a situation considered unimaginable just a few years ago. With the exception of Wolters Kluwer, the vast number of science publishers have been led by male CEOs – that is no longer the case today!

Publishers are also agents of change in their fight for freedom to publish, which is one of the two core pillars of the IPA. We fight against censorship and we fight alongside our fellow publishers when they are under attack for what they publish. It is our responsibility and duty as publishers to support the freedom to publish wherever and whenever we can.

Finally, publishers are also embracing change where copyright – IPA's second core pillar – is concerned. Copyright needs to be updated and brought into the digital age. Having said that, it should be recognized that it is copyright that has been enabling innovation in the publishing industry. And it should also be acknowledged that it is copyright that has secured the ecosystem in which science publishers can deliver trusted information in the areas of health and research. Always important, but especially so now during the Corona pandemic when it is more crucial than ever to have trustworthy information on which public policies can be based. In such times, it is the reliability of information, secured by the copyright framework, that can literally make the difference

> "Publishers are agents of change and there are good reasons why we still need them in the modern world."

→

between global and national policies that are effective and those that do not deliver. Trustworthy information powered by copyright can literally mean the difference between life and death. Therefore today, the role of publishers in securing reliable content is even more important than ever.

A robust copyright framework is essential to support a publishing ecosystem in which diversity can flourish. An ecosystem where female publishers in the Global South can enter the market and publish new, groundbreaking, and at times even controversial, literary works. An ecosystem that allows poetry from Portugal to be published alongside fiction from Finland, celebrating the diversity of topics, subjects, authors and readers; books that may not be bestsellers, but which should be published for reasons that go beyond economic interest; and books that may be controversial and subject to censorship in some countries but that are prime examples of why we fight for the freedom to publish. That is why a robust copyright framework goes hand in hand with innovation, diversity, inclusion and freedom to publish.

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

34, chemin des Colombettes
P.O. Box 18
CH-1211 Geneva 20
Switzerland

Tel: +41 22 338 91 11
Fax: +41 22 733 54 28

For contact details of WIPO's External Offices
visit: www.wipo.int/about-wipo/en/offices

WIPO Magazine is published quarterly and distributed free of charge by the World Intellectual Property Organization (WIPO), Geneva, Switzerland. It is intended to help broaden public understanding of intellectual property and of WIPO's work, and is not an official document of WIPO.

WIPO Publication No. 121(E)
ISSN 1020-7074 (print)
ISSN 1564-7854 (online)

For comments or questions, contact The Editor at WipoMagazine@wipo.int.

To order a print version of the WIPO Magazine, contact publications.mail@wipo.int.