

WIPO MAGAZINE

SEPTEMBER 2020

No. 3



Reflections on IP: An interview with WIPO Director General Francis Gurry

p. 2



Hachette and accessibility: Creating content that can be used by everyone

p. 34



Enda: Kenya's first home-grown running shoe

p. 26



Global Innovation
Index 2020:
Who Will Finance
Innovation?

p. 9

Table of Contents

- 2 Reflections on IP: An interview with WIPO Director General Francis Gurry
- 9 Global Innovation Index 2020: Who Will Finance Innovation?
- 14 Meet WIPO's first IP Youth Ambassador: Santiago Mena López
- 20 The invention of rechargeable batteries: An interview with Dr. Akira Yoshino, 2019 Nobel laureate
- 26 Enda: Kenya's first home-grown running shoe
- 34 Hachette and accessibility: Creating content that can be used by everyone
- 39 The Skolkovo Foundation: Fostering innovation and entrepreneurship in the Russian Federation
- 47 Saudi Arabia gears up on IP
- 52 WIPO opens its first virtual exhibition on AI and IP

Acknowledgements:

- 2 **Ulrike Till**, Division of Artificial Intelligence Policy, **Michele Woods**, Copyright Law Division, **Sacha Wunsch-Vincent**, Department of Economics and Data Analytics, WIPO
- 9 **Carsten Fink** and **Lorena Rivera Leon**, Department of Economics and Data Analytics, WIPO
- 14 **Sherif Saadallah**, WIPO Academy
- 20 **Ena Furukawa**, WIPO Japan Office
- 26 **Victor Owade**, External Relations Division, WIPO
- 34 **Monica Halil Lövblad**, Copyright Management Division, WIPO
- 39 **Michal Svantner**, Department for Transition and Developed Countries, WIPO, **Zaurbek Albegonov** and **Olga Morgulova**, WIPO Office in the Russian Federation
- 47 **Walid Abdelnasser** and **M'Hamed Sidi El Khir**, Regional Bureau for Arab Countries, WIPO

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

© WIPO, 2020



Attribution 3.0 IGO
(CC BY 3.0 IGO)

The user is allowed to reproduce, distribute, adapt, translate and publicly perform this publication, including for commercial purposes, without explicit permission, provided that the content is accompanied by an acknowledgement that WIPO is the source and that it is clearly indicated if changes were made to the original content.

Adaptation/translation/derivatives should not carry any official emblem or logo, unless they have been approved and validated by WIPO. Please contact us via the WIPO website to obtain permission.

When content published by WIPO, such as images, graphics, trademarks or logos, is attributed to a third party, the user of such content is solely responsible for clearing the rights with the right holder(s).

To view a copy of this license, please visit <https://creativecommons.org/licenses/by/3.0/igo>

Cover images:

Left to right: WIPO / E. Berrod; BSIP SA / Alamy Stock Photo; Courtesy of Enda

Main image:

WIPO / E. Hassink

Reflections on IP: An interview with WIPO Director Francis Gurry

Francis Gurry reflects on his experience over the past 12 years at the helm of the World Intellectual Property Organization (WIPO) and discusses some of the major challenges that lie ahead for the international intellectual property (IP) community.

What has been the high point of your career at WIPO?

The fact that the Organization now has on board so many fine professionals who are collaborating across vertical reporting lines to develop and bring some of our best new ideas and projects to fruition. I don't think there is anything now that does not require horizontal collaboration. It has been great to see that come together.

What has been your greatest achievement as Director General?

I think that is for others to judge. But for me, the Marrakesh Treaty and the Accessible Books Consortium (ABC) stand out (see box). They successfully address a specific need and have the good will of all member states and relevant stakeholders. My colleagues have done wonderful work in building up the ABC Global Book Service, a repertoire of over 635,000 works in more than 80 languages, which is one of the key ways the ABC makes operational the legal framework established by member states in the Marrakesh Treaty. That has been a great exercise.

What enabled that success?

First, the Marrakesh Treaty and the ABC deal with a specific problem, which makes it easier to measure the impact and raise comfort levels around the proposed solution.

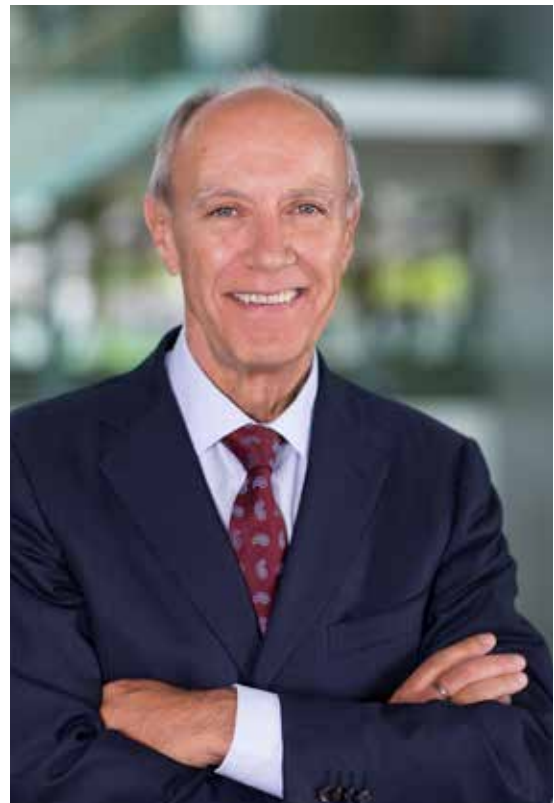


Photo: WIPO / E. Berrod

Director General Francis Gurry has been at the helm of WIPO for the last 12 years.

About the Accessible Books Consortium

WIPO and its partners created the Accessible Books Consortium (ABC) in 2014 to help implement the objectives of the Marrakesh Treaty at a practical level. Less than 10 percent of all published works are produced in accessible formats according to World Blind Union estimates. To increase the overall number of accessible works that are globally available, the ABC works in three areas:

Capacity building – over 12,800 educational titles in national languages have been produced in accessible formats through funding, training and technical assistance provided by the ABC in 17 developing or least developed countries in the past five years.

Accessible publishing – the ABC promotes the production of “born accessible” works by publishers, that is, books that are usable from the start by both sighted persons and the print disabled. Publishers and publisher associations around the world are invited to sign the *ABC Charter for Accessible Publishing*, which contains eight high-level aspirational principles relating to digital publications in accessible formats. Hachette Livre, one of the world’s largest publishers, was the 100th signatory of the ABC Charter.

ABC Global Book Service – is a global library catalogue of accessible formats that enables participating libraries for the blind from around the world to share items in their collections and distribute accessible titles obtained through the ABC to their patrons. The ABC Global Book Service now has over 635,000 accessible works in more than 80 languages available for cross-border exchange to benefit people who are print-disabled. Over 70 libraries for the blind from around the world have joined the Service.

Second, they address a truly international problem. Thanks to the Marrakesh Treaty, it is now possible to produce just one accessible version of a publication in a given language and to make it available through the ABC Global Book Service, thereby eliminating the need to produce multiple accessible versions of the same publication in the same language for different countries. It’s a perfect example of an international solution that addresses an international need.

And third, the cause is indisputable. Nobody takes issue with enabling blind persons to have equal access to publications, which are the basis of the transmission of knowledge.

All three conditions rarely come together in this way.

Are there any other developments that stand out?

Yes. There is a greater acceptance around the world, albeit nuanced, that IP is an extremely serious issue that requires high-level policy attention. While there are inevitable differences of opinion with respect to approach, which is to be expected, we have reached the stage where everyone agrees that IP is important. Today, for example, many developing countries are embracing IP not because they have to, but because they want to see what they can get out of it and how they can use it to realize their own development goals. That’s a great thing.

And what have been the greatest challenges?

The greatest policy challenge has been the fact that international cooperation is not currently the default policy response of decision makers to achieve solutions, even when the problems are global in nature. This is a widespread phenomenon and there are many possible explanations. Deep analysis will be required to understand why it is occurring.

Globalization, for example, is an important factor that has generated new policy challenges. Technology has fueled global competition, which as a result of the rapid development of certain regions, has become multi-polar. Inevitably, this is engendering a degree of reticence about international solutions that may affect competitive positions. At WIPO, we see this playing out, in particular, in our normative program, making it extremely difficult to achieve international agreement on new rules.

The big challenge, therefore, is how to develop the reflex among decision makers to seek international solutions for what are clearly international problems. Linked to this is

Photos: WIPO / E. Berrod



Adoption of the Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled, Marrakesh, Morocco, June 2013.

About the Marrakesh Treaty

The Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled addresses the global “book famine.” It requires contracting parties to adopt national law provisions that permit the production of books in accessible formats, such as Braille, e-text, audio or large print, by organizations, so-called authorized entities, that serve people who are blind, visually impaired or otherwise print disabled. It also allows for the exchange of such accessible texts across national boundaries, without the need to request permission from the copyright owner.

The World Health Organization estimates that 253 million people are living with visual impairments around the world, with over 90 percent of them located in lower-income countries.

The Treaty was adopted on June 27, 2013, at a diplomatic conference organized by WIPO and hosted by the Kingdom of Morocco in Marrakesh. The Treaty entered into force on September 30, 2016, three months after it gained the necessary 20 ratifications or accessions by WIPO member states. The membership of the Treaty has grown rapidly since its entry into force in 2016. At the time of writing, the Treaty has 70 contracting parties covering 97 countries.



WIPO Director General Francis Gurry and recording legend Stevie Wonder celebrate the conclusion of the historic Marrakesh Treaty in June 2013.

the possibility of fragmentation in this world, which is another huge challenge. Whether it affects the functioning of the Internet as a technology of universal connectivity or trade, fragmentation has many negative implications.

And what about successes at the operational level?

At the operational level, we have been able to harness the power of information technology (IT) for greater connectivity in delivering the Organization's services and platforms, which are used by member states and other stakeholders. And this has been a great advantage.

What lessons have you drawn from your experience as Director General?

There are two lessons, in particular. The first is the value of openness, which allows us to learn from the experiences of others. Beyond its personal rewards, openness also has great institutional and strategic value. There are many historical examples of societies and economies that have been successful because they were open. These include the Arab Caliphates of the 9th and 10th centuries and the Republic of Venice, where the first formal patent law originated. A more recent example is Silicon Valley. As the findings of the *2019 World Intellectual Property Report* show, its willingness to attract talent from across the globe has been a key ingredient in its success.

The second lesson is the value of collaboration. At WIPO, this flows not only from different parts of the Organization working together, but from different member states and other stakeholders working together. So many of the initiatives we have launched have been vastly improved through collaboration.

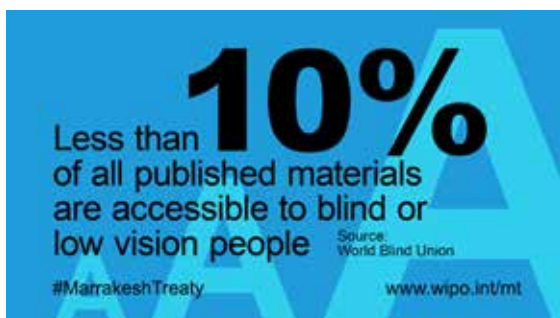
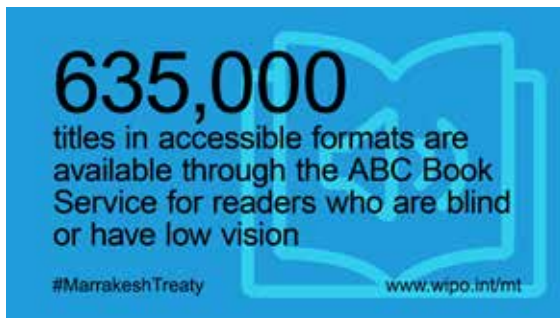
What are the biggest challenges facing policymakers in the future?

The speed of technological change is a huge challenge that everyone, everywhere is grappling with every single day. The institutions that exist today were not designed for such speed. Parliaments, for example, are not formulating "regulatory" or policy frameworks in advance of a new technology – they normally legislate after the fact, because the new technologies and their implications are unknown.

We are all in this position. The international system as we have known it for the last 70 years also needs to transform itself to reignite confidence in international cooperation. That, too, is a huge challenge.

For organizations like WIPO, the real challenge is to develop timely responses that are fit for the given purposes. This task is far more challenging than at the national level, where things move more quickly, because the process involves the global community.

One possible solution, which we are already doing to some extent, may be for the international community to see what works at the national level and then, after 20 years or so, form an international rule. However, the interna-



tional nature of the problems we face may require an international solution sooner. That may involve a different approach, but one that is underpinned by discretion and care, to guard against putting forward solutions that are not fit for the purpose.

Turning to a current challenge, does IP have an important role in this era of COVID?

IP has an extraordinarily important role technologically in dealing with COVID. IP exists to create the right incentives for innovation to occur and what we need now is innovation for effective vaccines and therapeutics. Questions of access, equity and justice, are all legitimate and fundamental, but they do not arise until we have something to have access to.

And how have IP-dependent sectors fared in the pandemic?

Certain segments of the economy that rely on IP are distressed by COVID and the necessary policy actions that are being implemented to contain it. The creative industries are particularly distressed. For example, with confinement, musicians cannot perform live and are losing a major source of their revenue. Many authors and creators of all kinds, and many thousands of others who work in the creative industries, are in a catastrophic situation. Beyond the economic distress caused, we also need to think about the harm that COVID is inflicting on our culture.

Startups are another casualty of COVID. As discussed in the recently published *Global Innovation Index 2020: Who Will Finance Innovation?*, this extremely rich layer of entrepreneurship, which is built on new ideas and IP, and the financing on which it depends, are reeling from COVID-induced economic uncertainty and recession.

As a new age of artificial intelligence (AI)-driven innovation dawns, what other issues will IP policymakers face?

They will face many questions of fundamental importance to the IP framework, which has been developed to deal with invention and creation. They include the dichotomy – which may be false – of machine invention and creation on the one hand and human invention and creation on the other hand. IP was designed with human invention and creation in mind. To the extent that machine

invention and creation occurs – and that is a question to explore – what is the impact on and how should the IP system respond?

For creation, for example, the simple technical answer is that the copyright statute requires the author to be human. But is that really the ultimate answer? If algorithms are capable of making original creations that are interesting and attractive to the market, what sort of regulatory framework is required to govern that? What sort of incentives do you want to create? Do you want to allow free copying? All of these traditional IP-related questions will arise.

There are also questions relating to how AI-driven invention and creation can distort creative works and make new works out of existing performances, and the whole issue of deep fakes.

Another question relates to the extent to which copyright-protected data can be used to create new works. Everyone agrees that research is entirely legitimate in the human world – rules have been developed to legitimize it. But how do we apply that to a machine which is “researching?” Last year, WIPO initiated a Conversation on AI and IP with member states to explore these and other related issues.

What message do you have for policymakers in addressing these issues?

First, deal with specific problems, such as whether copyright-protected data can be used to feed an algorithm to produce new creative content. Trying to have a general legislative instrument on AI will not work because the technology is developing too rapidly and it will be impossible to cover everything. The more specific the problem and the proposed solution, the easier it will be to measure the impact of legislating and to agree on a solution.

Second, dealing with the issues must be a multi-stakeholder process. Today, for the most part, the expertise, knowledge and developments are created in the non-governmental, private sector. That expertise needs to be involved in the process to help policymakers understand these complex issues.

And third, policymakers need the humility to know what they don't know.

“I see the evolution [of the IP system] being focused in terms of possible new layers to address the new technologies which were not around when the classical system was designed.”

How do you see the IP system evolving in the future?

Some argue the classical IP system, which was designed for industrial technology, is not fit for the digital age, but the statistics tell us otherwise. The classical IP system is more popular than ever and keeps expanding at a rate much greater than the world economy. But there are gaps in the classical system. Take AI, and digital technology more broadly, as examples. I see the evolution being focused in terms of possible new layers to address the new technologies which were not around when the classical system was designed.

And the innovation landscape?

In recent years, great emphasis has been placed on innovation and creativity. In some respects, this has led to value being placed on the new, simply because it is new. There are already indications that, in future, society will require innovators and creators to pursue “responsible innovation” to address concretely what are perceived as society’s greatest needs. How to channel that creative energy, however, is a difficult question because when you require that innovation and creativity are task oriented, in a certain sense, you are confining the future to the present. It’s a great dilemma. As with all things, the answer probably lies in establishing a balance between the freedom to create and the responsibilities that come with exercising that freedom.

Of the world’s wealth of inventors and creators, which do you find most inspirational?

I am inspired by all inventors and creators. They make and re-make our world and our future. It is great to see.

What are your plans for the future?

I will be doing some teaching, some advisory work and some writing.

Mr. Gurry has served as Director General of WIPO since October 1, 2008. He will be succeeded by Mr. Daren Tang from Singapore, who was appointed by WIPO member states as the Organization’s next Director General in May 2020. Mr. Tang’s six-year term will begin on October 1, 2020 (see box).



Photo: WIPO / E. Berrod

The baton passes to Mr. Tang

In early May 2020, WIPO’s member states appointed by consensus Mr. Daren Tang as the Organization’s next Director General. Mr. Tang’s six-year term will begin on October 1, 2020.

Mr. Tang’s appointment by the General Assembly, WIPO’s highest governing body, followed his nomination by the WIPO Coordination Committee in March, 2020.

Mr. Tang will succeed Mr. Francis Gurry, who has served as WIPO’s Director General since October 1, 2008.

“I look forward to working with the member states and staff of WIPO, as well as the many stakeholders in the global IP community, to build our future IP ecosystem – one that is balanced, inclusive and vibrant,” said Mr. Tang in his acceptance speech.

Mr. Tang will be the fifth Director General of WIPO, following Mr. Gurry of Australia (2008-2020), Mr. Kamil Idris of Sudan (1997-2008), Mr. Arpad Bogsch of the United States (1973-1997) and Mr. Georg Bodenhausen of the Netherlands (1970-1973).

Global Innovation Index 2020: Who Will Finance Innovation?

By **Catherine Jewell**, Publications Division, WIPO

The 2020 edition of the Global Innovation Index (GII), launched in early September in Geneva, Switzerland, reveals the latest global ranking of countries in terms of their innovation performance. Now in its 13th edition, the GIJ supports policymakers' understanding of how to foster innovation in support of their national social and economic development goals. Amid the economic turmoil triggered by the COVID-19 pandemic, the 2020 edition of the GIJ explores the question of who will finance innovation? **Sacha Wunsch-Vincent**, Senior Economist at WIPO and co-editor of the GIJ 2020 at WIPO, discusses some of the report's key findings.

What do the GIJ 2020 rankings reveal?

Switzerland, Sweden and the United States continue to lead the innovation ranking. For the first time, the Republic of Korea (ranked 10), broke into the top ten group of countries. China (ranked 14), remains the only middle-income country to feature in the top 30 GIJ economies, with the United Arab Emirates (ranked 34) making it into the top 35 for the first time this year. Similarly, India (ranked 48) and the Philippines (ranked 50) fall within the top 50 countries for the first time. The continuous rise in the rankings of the Philippines is notable having moved up 50 places since 2014.

Over the past seven years, China, the Philippines, India, and Viet Nam have made the most significant progress in the rankings.

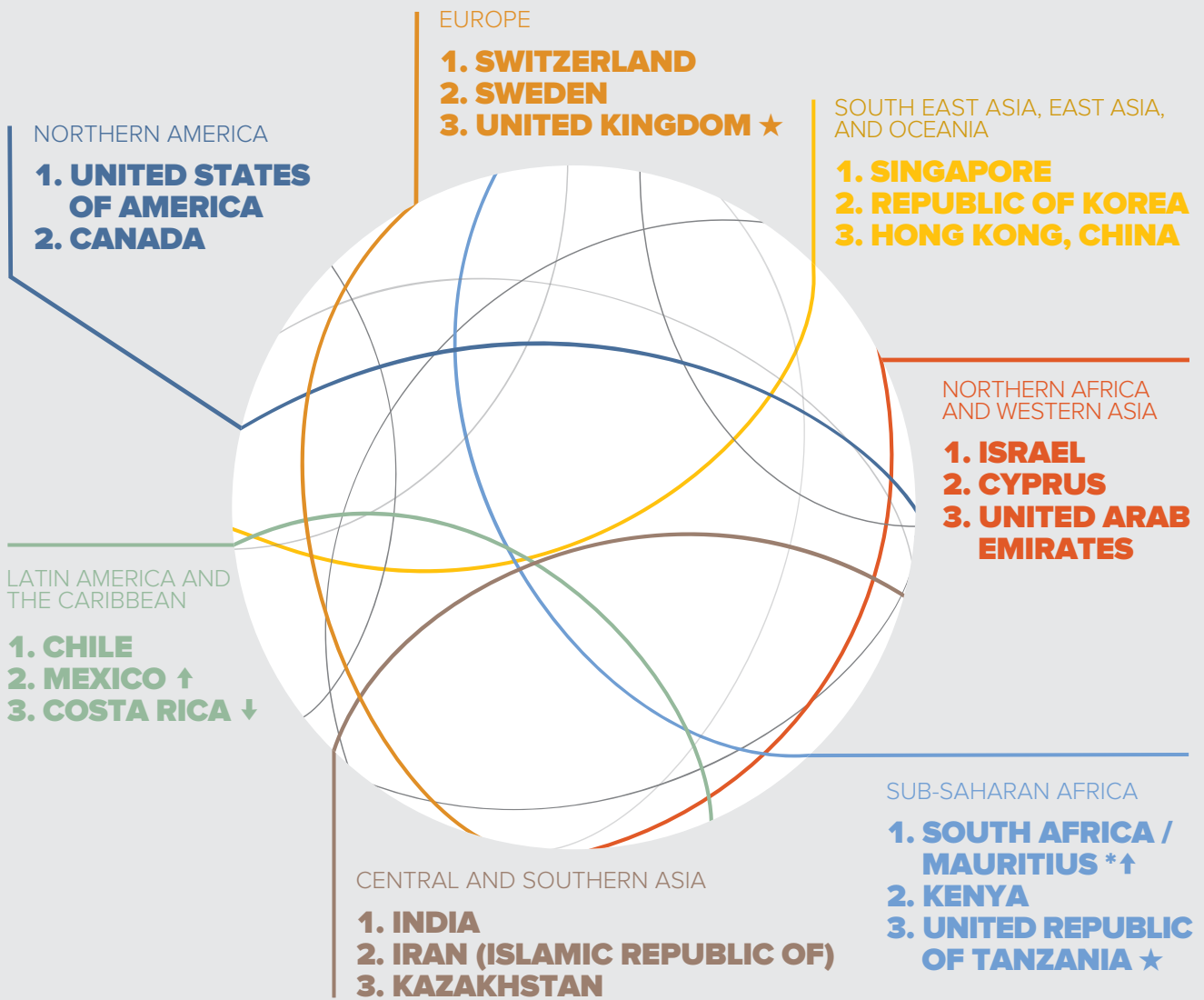
While regional innovation divides persist, the GIJ 2020, which comprises a broad range of metrics, reveals strong innovation performance by a number of emerging economies. For example, Thailand and Malaysia rank first in business R&D and high-tech (net) exports, respectively; Botswana and Mozambique top the leader board for education spending and innovation investment, respectively; and Mexico emerges as the largest creative goods exporter relative to total trade worldwide.

Moreover, of the 25 economies that performed better on innovation than their current level of development would predict, eight are from sub-Saharan Africa. Interestingly, India, Kenya, Moldova and Viet Nam have been among this group of "innovation achievers" for ten consecutive years.

Global leaders in innovation in 2020

Every year, the Global Innovation Index ranks the innovation performance of more than 130 economies around the world.

Top 3 innovation economies by region



* Mauritius is ranked above South Africa this year but with wide significant data variability as compared to last year.

↑↓ indicates the movement of rank within the top 3 relative to 2019, and ★ indicates a new entrant into the top 3 in 2020.

Top 3 innovation economies by income group



GII 2020 also reveals that with respect to science and technology clusters, innovation is concentrated in select high-income countries and China. Tokyo-Yokohama (Japan) is the top-performing cluster once again, followed by Shenzhen-Hong Kong-Guangzhou (China), Seoul (Republic of Korea), Beijing (China), and San Jose-San Francisco (USA).

Why is this year's GII focusing on the financing of innovation?

The ability to secure access to sustainable funding sources is a constant challenge for innovators around the world and is becoming particularly difficult as a result of the current COVID-19 pandemic. Finance plays a role at every stage of the innovation cycle from the conceptualization of a product, service or technology through to its commercialization and beyond. Prior to the pandemic, new actors, such as sovereign wealth funds and non-profit organizations, were entering the innovation finance scene. And while public schemes remain an essential vehicle for innovation funding, a variety of new funding mechanisms, such as IP marketplaces, crowdfunding and fintech solutions, were beginning to emerge. While the current crisis has put a brake on these developments and as they are unlikely to disappear, they merit closer examination.

What impact has the COVID-19 crisis had on innovation?

To fathom the impact on innovation, it is important first to consider the context in which the COVID-19 crisis struck. The GII 2019 sent a very upbeat message about the outlook for global innovation. Over the last decade, growth in average innovation spending worldwide grew faster than the global economy, which had not fully recovered from the 2009 global financial crisis, venture capital was at an all-time high, and global intellectual property (IP) filing activity reached new heights with every passing year. On top of that, across the globe we saw the emergence of an overwhelmingly strong political determination to foster innovation in support of national social and economic development goals. The global innovation landscape was thriving. Then, the world was shaken by COVID-19.

Economic literature tells us that we should expect a strong negative impact on innovation as a result of the

COVID-19 crisis. Historically, pandemics have been followed by sustained periods of depressed investment in innovation. Like past economic downturns, such as the 2009 global financial crisis, R&D and other innovation expenditures are likely to fall in 2020.

However, the impact of the crisis on innovation will depend on recovery scenarios and the business and innovation practices and policies that are in place. Past crises have affected different sectors and countries in different ways, with some experiencing higher levels of innovation. This is possible again today. Indeed, COVID is already catalyzing innovation, in particular, in the health sector, where unprecedented sums are being invested in the race to develop a vaccine and other COVID-related therapies and diagnostics.

What is the current state of R&D funding by business?

The GII 2020 shows that expenditure on research and development (R&D) is heavily concentrated among a few thousand R&D-based firms across the globe – the top 2,500 R&D spending companies are responsible for more than 90 percent of the R&D funded by businesses globally. For most of these companies, innovation is central to their business strategy.

Which sectors are likely to be more resilient to the crisis?

Buoyed by ongoing digitalization, the ICT (information and communication technologies) and software sectors are likely to experience resilient revenue and R&D growth. In the race for effective treatments for COVID, pharmaceutical and biotechnology companies are also likely to enjoy robust performance in the current context. The same is true for the alternative energy sector.

Optimists expect that these R&D intensive sectors will help avoid a rapid R&D downturn in the mid- and longer-term. While firms, most notably those dealing in household goods (retail and wholesale), travel & leisure (including restaurants) and professionals in the creative sectors (including concert venues and artists), are hit hardest by the COVID-19-related economic lockdown, they are not typically among the big players when it comes to formal innovation spending.

And what is the expected impact on innovation finance?

In contrast to the global economic crisis of 2009, the good news is that the current situation is not caused by a crisis in the financial or banking sectors. The bad news is that indicators for venture capital, on which companies, especially startups, depend show that money to fund innovative ventures is drying up. Preliminary evidence suggests that rising levels of risk aversion are restricting access by young firms to capital. Indeed, venture capital and other sources of innovation finance are likely to be in shorter supply, especially for firms with longer research horizons. Such a decline risks having a negative impact on the future development of major breakthrough innovations.

At the same time, key high-income and fast-growing emerging economies, such as the United States and China, which are magnets for venture capital, are likely to rebound quickly. There is still a strong appetite for innovation and a hunger to supply capital in search of returns. Chinese venture capital deals, for example, contracted by about half earlier this year due to the pandemic, but are already rebounding strongly, catalyzing innovation in online education, big data, software and robotics.

What are policymakers doing to mitigate the impact of the current crisis on innovation?

Most governments in high- and middle-income economies are setting up emergency relief packages to buffer the impact of the lockdown and the looming recession to prevent short- to medium-term harm to their national economies. So far, an estimated USD 9 trillion has been allocated for this purpose.

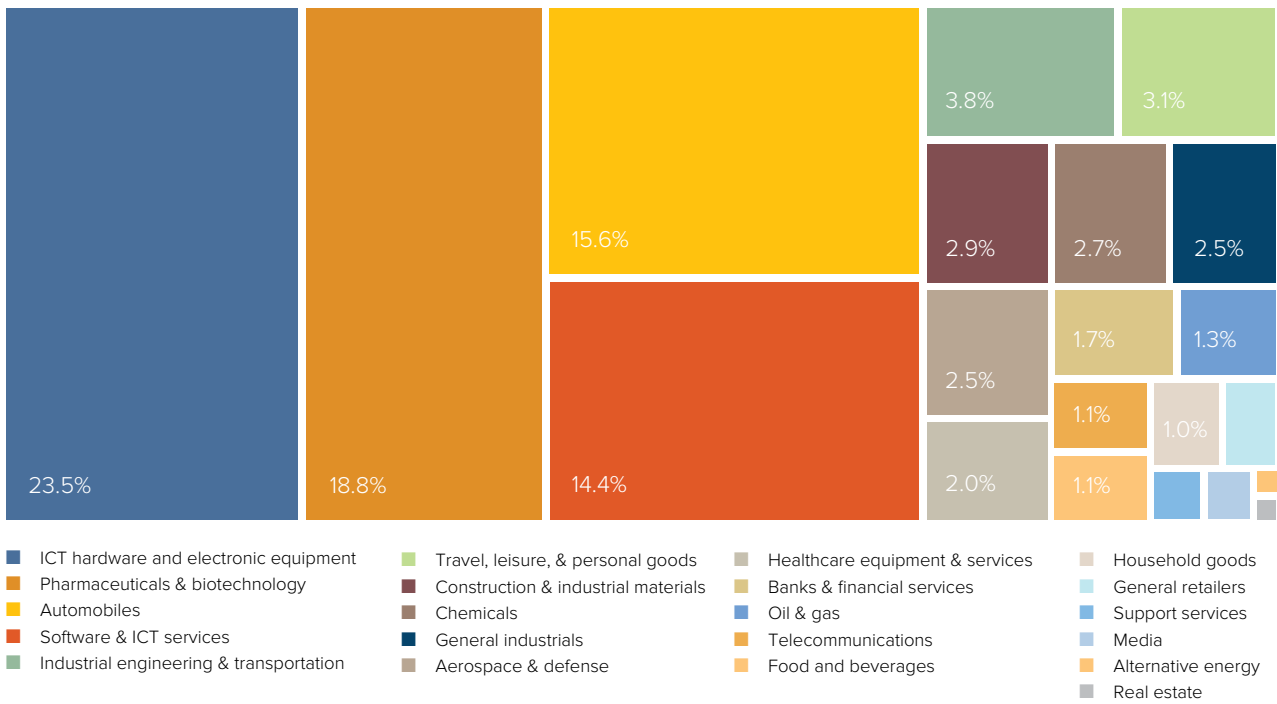
In general, however, these measures are not, as yet, explicitly directed at financing innovation and startups. Indeed, many startups do not qualify for available schemes or have difficulty in accessing them if they do. However, a handful of countries, mostly European, are setting up special funds to support startups. France, for example, has set aside EUR 80 million to bridge the innovation finance gap facing startups. Similarly, in Switzerland, CH 154 million in loans has been made available for startups facing pandemic-related cash flow problems.

And in the longer-term, what should governments focus on?

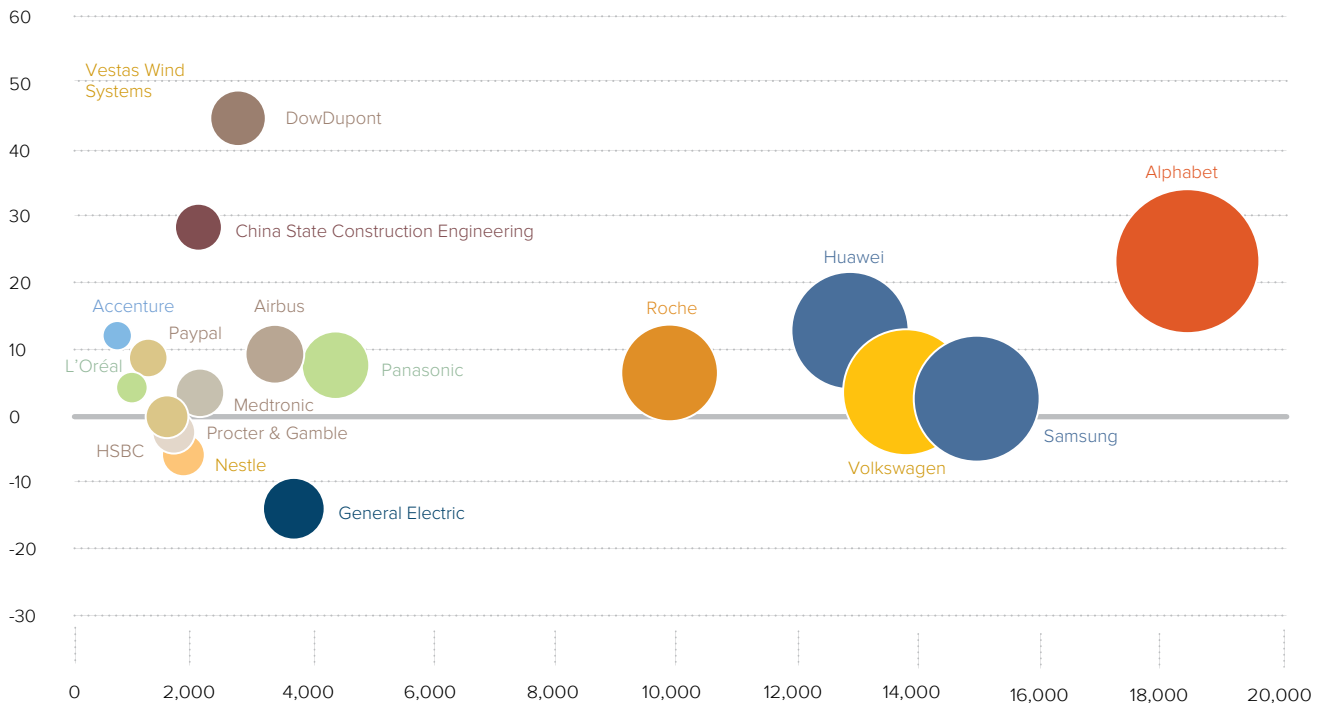
After the worst scenarios of the lockdown have been averted, it will be crucial for governments to embrace forward-looking innovation strategies – even in the face of higher public debt. Failure to reverse the decline in innovation spending will reduce opportunities for long-term growth. In the aftermath of the 2009 global economic crisis, governments implemented such pro-growth policies, which included measures to stimulate innovation and innovation financing, and came out all the stronger for doing so. Some countries are already shifting their focus from containment to recovery. The United States and China, for example, are considering investing additional large sums of stimulus money in building infrastructure and boosting innovation.

Policy measures that stimulate investment, unlock future sources of growth, and encourage the pursuit of longer-term goals will be critically important going forward. And as the impact of the pandemic's economic fall-out will be uneven across sectors and countries, evidence-based policymaking will become even more important to acquire a better understanding of these effects.

Top R&D-spending sectors as share of global top R&D spenders, 2018–2019



Top R&D-spending firm in each sector, 2018-2019



- ▲ R&D one-year growth (%), 2018
- ▶ R&D investment (€ million), 2018–2019
- Bubbles sized as total R&D volume per company

Source: GII 2020, p. 4.

Meet WIPO's first IP Youth Ambassador: Santiago Mena López

By **Natalie Humsi**, WIPO Academy



Photo: Courtesy of INDECOPI of Peru

Award-winning writer, Santiago Mena López, is WIPO's first Intellectual Property (IP) Youth Ambassador.

Award-winning writer, Santiago Mena López, is WIPO's first Intellectual Property (IP) Youth Ambassador. Recognized as Peru's youngest author, he published his first novel, *Encogidos* (The Shrunken) at the age of 14. As an IP Youth Ambassador, Mr. Mena López will help promote IP education among young people in the Latin American and Caribbean region under the WIPO Academy's IP4Youth&Teachers project. The young author talks about his novel and shares his views about the importance of IP to creators and the need to raise IP awareness among young people.

What prompted you to start writing?

I started writing because of a strong desire to share my perception of the world through the ideas and stories that are developing in my mind. I also want to encourage young people like me to read more.

Where do you get your creative ideas?

The things I see and experience in my daily life inspire me. I get my creative ideas from the news, people's stories and conversations with family and friends. My stories always have a message. Either I build the storyline around that message or the message emerges from the storyline.

Tell us about Encogidos. What inspired you to write it?

In writing my first novel, *Encogidos*, I drew inspiration from stories I came across in the novels I read and the TV series and films I watched. That's how the idea of creating a novella with a science fiction slant started to take shape. I wanted to create a storyline where a range of distinctive characters break stereotypes and enrich their personalities.

Encogidos is about a socially-awkward and nerdy young boy named Lucas who is bullied at school by a group of fellow students. In an attempt to stand up to them, he sets about creating a chemical formula to make himself bigger and stronger than his peers. But his experiment goes wrong and he ends up shrinking both the bullies and himself. The story recounts their experiences of life when just 2 millimeters tall and how they overcame their differences and put their heads together to find a way to return to their normal size.

What do books represent for you?

Literature is a time vault. Books, short stories, novellas and poems are where we store the experiences and thoughts we consider valuable and worthy of preservation. In writing them down, we turn them into a source of knowledge for all those who seek to be captivated by them and the beautiful language used to express them. A book offers a gateway into the mind of the author, a bridge to another time. Reading is a wonderful way to acquire knowledge and explore experiences that took years to collect, in a matter of hours. As the saying goes, "A reader lives a thousand lives before he dies... The man who never reads lives only one."

What does creativity mean to you and why do you think it is important?

For me, creativity is humanity's way of taking previous knowledge and relating to it in an entirely new way. It is the ability to build new ideas based on what we have learned from the past. Creativity is linked to the very essence of human nature. Critical thinking or reflection on more profound issues is impossible without creativity. It is extremely important for human progress.

Do you have a favorite book or author?

My favorite book at the moment is *The Humans* by Matt Haig. It is a beautiful story. The author uses a wide range of science fiction techniques to analyze humans and life in society from the perspective of an outsider, outlining its contradictions and flaws, but above all, highlighting its successes and its beauty. The reader, like the main protagonist, falls in love with humanity.

It is impossible for me to choose an all-time favorite book, but my two favorite authors are Julio Ramón Ribeyro and Gabriel García Márquez. Julio Ramón Ribeyro has an ability, like no other, when writing short stories. His work is raw and immersive, and full of irony, hidden meaning and symbolism. He also tackles the real issues facing Peruvian society. Gabriel García Márquez captivated me with his fascinating stories that are full of magic and traditionalism, and his discontinuous narratives that challenge and stimulate the reader. His work explores searing themes in Latin American society. It is incredibly compelling.

Why is copyright important to you as a young author?

Copyright is a way of protecting and recognizing the work that you have created. It is an essential tool for young authors to allow them to add value to, and defend, their work, which is an exhausting labor of creativity. Copyright is a key input in the creation of new works. It recognizes and rewards the author for their effort and ensures that their work is available to anyone interested in reading it.





Photo: Courtesy of Carlos Enrique Pedreros Balta

About the IP4Youth&Teachers Program

IP4Youth&Teachers is an educational program launched by the WIPO Academy in 2018. Through interactive learn-as-you-play games covering topics such as patents, copyright and trademarks, the program supports students and their teachers in learning about IP. The solutions-oriented program approaches IP teaching from the perspective of cultivating creativity, inventiveness and entrepreneurial thinking with emphasis on building on students' talents and group work.

The IP4Youth online course targets school children between the ages of 4 and 17. The IP4Teachers training course and teaching guide are designed to support the work of educators and policymakers in ministries of education responsible for developing academic curricula and implementing education policy. IP4Teachers also includes an annual face-to-face training course to build dialogue among educators, policymakers working the field of education policymakers and IP offices.

Image on the book cover of *Encogidos*, Santiago Mena López's first novel.



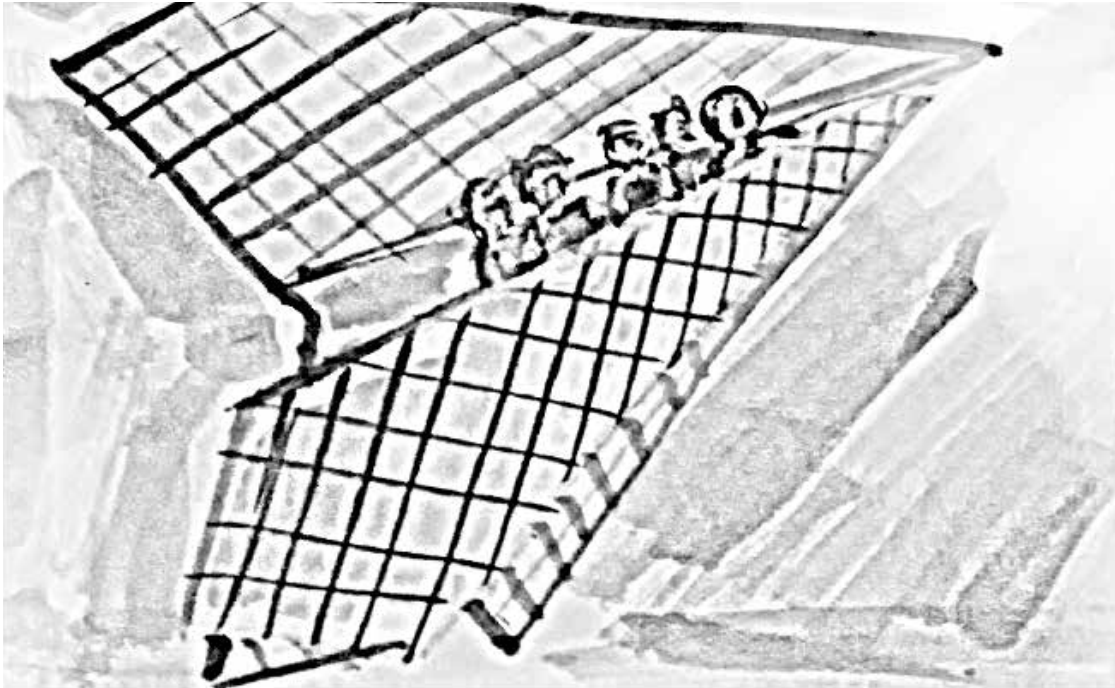


Photo: Courtesy of Carlos Enrique Pedreros Balta

In *Encogidos*, a young nerdy student who is bullied at school develops a chemical formula to shrink his bullies. He ends up shrinking himself and the bullies! The story recounts their experiences as they begin working together to find a way to return to their normal size.

“Literature is a time vault.
Books, short stories, novellas
and poems are where we store
the experiences and thoughts
that we consider valuable and
worthy of preservation.”

What did you learn about IP through your experience in publishing a novel?

I have learned about the tremendous importance of copyright and all that goes with it. It is very important for authors like me in terms of having our work recognized and valued, and in enabling us to continue to invest our time and energy in developing new works.

Do young people know enough about IP and its potential benefits?

No, unfortunately, there are very few education programs for young people that deal with intellectual property. And this means we are losing many valuable opportunities to develop the ability of young people to create new stories and new knowledge that enrich the cultural landscape, and to earn a living from doing so.

What do you think needs to be done to make young people more IP savvy?

More spaces need to be created for young people to show and promote their own creations and to be recognized for their work. And IP should be considered a key pillar of the school curriculum. Classes that explain the importance and value of IP in schools are the only way to cultivate real interest in the subject among young people so they can get the most out of it.

What do you wish you had known about writing and publishing a novel before you started?

I would definitely like to have been more knowledgeable about copyright and intellectual property in general. This would have allowed me to better value my creative work and would have made it easier for me to protect it and make the most of its value.

What is your favorite school subject and did it help you become a writer?

My favorite subject is history, but it didn't necessarily help me become a writer; it was my study of Spanish language and literature that led me to become a writer. The support I received from many of my teachers at certain points in the writing process was essential and I am eternally grateful to them.

What can teachers do to encourage young creative individuals like yourself?

I think it's really important that teachers give their students a grounding in how to be creative and give them the

space to be creative. Teachers can play a critical role in cultivating students' interests and supporting them in their learning. It is simple to say, but very difficult to accomplish without guidelines to support and enable teachers to do so. Those teachers who succeed in empowering the creativity of their students are unquestionably the best and are worth their weight in gold. You remember those teachers for the rest of your life because you formed a great bond with them. There are few things as valuable as a teacher who takes you and your work seriously.

What's your next project?

I plan to continue writing short stories and poems and to start working on a new book.

What advice would you give another young person who is creative like you?

First, believe in yourself. If you have something in your head that needs expression, whether it's an idea, a work of art, a story, a song, a poem, or a dance, give it a chance to be and give yourself a chance to recognize how valuable it is and what you can do with it. Second, seek support. You don't have to do it on your own. There is always someone, somewhere, who can see your potential and cares enough to help you improve, grow, and reach your goals. And third, do not give up. There are always going to be difficulties along the way. Believe in yourself and the value of what you have to show.

What can readers do to support you and other young authors?

Read our work, share it, and respect our intellectual property rights. That alone is a huge amount of support.

This year's World Intellectual Property Day campaign highlighted the need to support innovation for a greener future. How can young people contribute to building a green future?

I want to believe in a future that is saved by this generation. A future where, thanks to the spaces opened up for young people to create, innovate, think and decide, environmental awareness becomes widespread and allows us to move towards preserving life and the riches of our planet. To achieve this, innovation, creativity and intellectual property are absolutely essential.

The invention of rechargeable batteries: An interview with Dr. Akira Yoshino, 2019 Nobel laureate

By **Tomoki Sawai**, WIPO Japan Office

In 2019, Dr. Akira Yoshino, Dr. Stanley Whittingham and Dr. John Goodenough were awarded the Nobel Prize for Chemistry for their seminal work in advancing the development of lithium-ion batteries, the miniature energy systems that we depend on to power our mobile devices. These lightweight rechargeable power packs have fueled the boom in mobile electronics and are already yielding environmental dividends by enabling the development of long-range electric vehicles and efficient storage of energy from renewable sources.

Dr. Yoshino invented and patented the world's first lithium-ion battery and has since worked continuously to improve the technology. He has secured over 60 patents on lithium-ion battery technology during his career. Dr. Yoshino talks about the challenges he overcame in developing lithium-ion batteries and the role that strategic use of patents rights has played in building a booming global market for them.

What motivated you to take up chemistry?

I have always been interested in the natural world. And when I was in elementary school one of my teachers suggested that I read *The Chemical History of a Candle* by Michael Faraday. And that stirred up a lot of questions for me. I hadn't been interested in chemistry until then. That's how it all started. I then went on to study quantum organic chemistry at the University of Kyoto.



Photo: Courtesy of the WIPO Japan Office

2019 Nobel laureate for chemistry, Akira Yoshino, (above) developed the first commercially viable lithium-ion battery. © Courtesy of WIPO Japan Office.

And how did you come to work on lithium-ion batteries?

In the early 1970s, I joined the Exploratory Research Team at Asahi Kasei Corporation to explore new general-purpose materials. The projects I worked on initially didn't work out, so I was looking for a new research focus. At the time, there was great interest in polyacetylene, a fascinating electro-conductive polymer that had been predicted by Dr. Kenichi Fukui, Japan's first Nobel Laureate, and discovered by Dr. Hideki Shirakawa, winner of the 2000 Nobel Prize for Chemistry. At first, I explored practical applications for polyacetylene. But at the time, Japan's electronics industry was looking for a new lightweight and compact rechargeable battery to power the mobile devices they were developing. Many researchers were working on this, but existing anode materials were unstable and raised serious safety concerns – a new anode material was required. My research on polyacetylene suggested that it could be used as an anode material (because lithium-like cations move in and out of it), so I started experimenting with it and it worked.

My basic research on lithium-ion batteries began in earnest in 1981, the year Professor Fukui won the Nobel Prize for Chemistry. Interestingly, research into lithium-ion batteries has been supported by eight Nobel laureates, which gives an indication of how challenging their development has been. By 1983, I had come up with a new type of rechargeable battery using a combination of polyacetylene for the anode and lithium cobalt oxide for the cathode. Dr. John Goodenough, one of my fellow laureates, had identified lithium cobalt oxide, the first cathode material to contain lithium ions, in 1980.

How did your research evolve following this breakthrough?

All went well for a while. The prototype was one-third lighter than a standard nickel-cadmium battery, which was good, but we only achieved a slight weight reduction and were unable to reduce the size of the battery. This put the whole venture into question because miniaturization was a priority for the electronics industry. The problem was the small relative density of polyacetylene, which made for a lightweight but bulky battery that was too big to be practical. We began looking for a higher density material with polyacetylene-like properties. The idea was to use a carbon material (it has a relative density of about 2.2 and is made of the same conjugated double bonds as polyacetylene). But no suitable carbon material existed, which was very disappointing. However, the answer came from within Asahi Kasei; another research team had developed a new carbon material with a distinctive crystalline structure, known as Vapor-phase Grown Carbon Fiber (VGCF), that made it a good substitute for polyacetylene. I managed to get hold of a sample of the material and, sure enough, when we used it to make the anode, we created a lightweight and compact battery.

How did you learn about the importance of miniaturization?

As we were not battery specialists at Asahi Kasei, in-house discussions about what industry needed led nowhere. And of course, you can't just go to a battery manufacturer and expect them to share their confidential early stage research with you. But I met a former classmate of Asahi Kasei's executive officer who was a battery company executive and he highlighted the importance of miniaturization – smartphone manufacturers needed batteries that could fit into narrow slots. For me, this highlights how important it is for people from different fields to get together to discuss and exchange their ideas. Such collaboration is extremely important in fostering technological development as well as the broad circulation and uptake of new technologies.

Was Asahi Kasei Corporation's general focus on materials science advantageous for lithium-ion battery development?

The initial plan was to develop new polyacetylene-based materials, but as the research progressed, we realized multiple new materials were needed by industry – for cathodes, electrolytes, separators and so on. Rather than focusing on simply making a new anode, the image of a battery emerged. Asahi Kasei got into the battery field simply because it was researching new materials and was able to develop the lithium-ion battery precisely because it was not a specialist in the field. Had I been a researcher with a battery manufacturer, I probably wouldn't have encountered polyacetylene or VGCF. In the end, new materials and the freedom to develop them are what trigger new products.

What has been the impact of lithium-ion batteries?

Lithium-ion batteries have made today's mobile IT society a reality. And in the future, they will play a central role in building a sustainable society. A rechargeable battery with the ability to store electricity is a key device for solving environmental problems. This became more widely recognized around 2010, when electric vehicles (EVs) came on the scene. That was the year the Nissan Leaf was launched. It was a truly epoch-making advance. From then on, lithium-ion batteries were used to power EVs. Since then, a lot of progress has been made in improving the energy density of lithium-ion batteries (i.e. how far you can go on a single charge), and in lowering costs. But issues around durability (the life of the battery) still need to be overcome. Although lithium-ion batteries alone will not solve all environmental problems, when combined with other new innovations, like artificial intelligence (AI) and the Internet of Things, they will be central to building a sustainable society.

As the holder of multiple patents, what are your views on the patent system?

The fundamental spirit of patent law is to encourage technological development for the benefit of all. In return for acquiring exclusive patent rights, you reveal [disclose] a new technology to the world, and thereby support its broad dissemination. That is what happened with lithium-ion batteries.

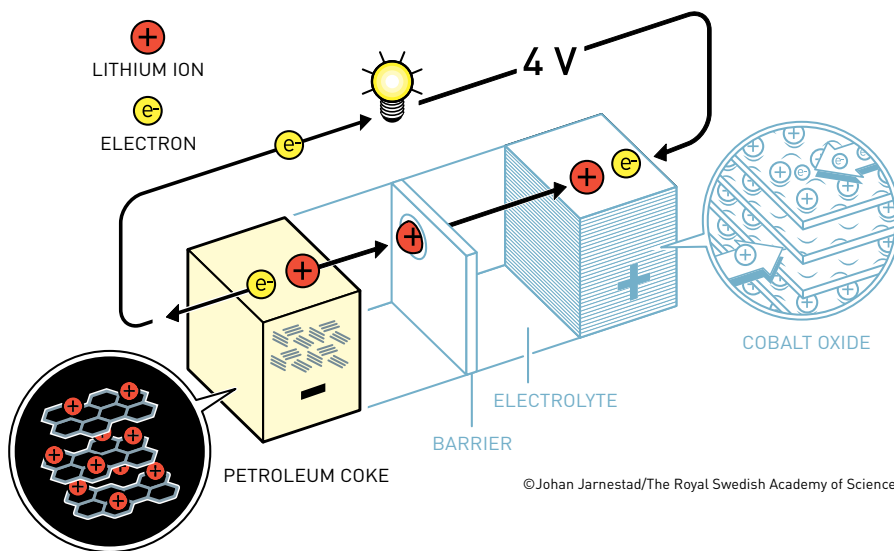
Asahi Kasei was good at developing battery technology, but was not a battery specialist, so we had to decide what kind of business to build around the technology. After much discussion, we decided to: a) team up with a suitable partner (Toshiba) to establish a battery business; b) integrate other battery-related materials into Asahi Kasei's existing business; and c) to actively license lithium-ion battery technology. The licensing program opened lithium-ion battery technology up to many new manufacturers, which allowed for the technology to be improved in terms of its cost, reliability and safety. It also helped the technology to spread, strengthened consumer confidence and generated licensing revenues for the company. Everyone could access the technology quickly and benefit from it. That's the whole point of inventions.

“Lithium-ion batteries have made today's mobile IT society a reality. And in the future, they will play a central role in building a sustainable society.”



Photo: Courtesy of Asahi Kasei Corporation

In 1985, Dr. Yoshino filed a patent (JP 85127669) for the first rechargeable lithium-ion battery (using a lithium-cobalt oxide and carbon-based anode), opening the way for the global uptake and use of mobile electronic devices, such as smartphones, notebooks and laptops.



©Johan Jarnestad/The Royal Swedish Academy of Sciences

Dr. Yoshino used lithium-cobalt oxide (discovered by his fellow laureate John Goodenough) in the cathode and a carbon-based material (Vapor-phase Grown Carbon Fiber), which can also intercalate lithium ions, in the anode. The battery's functionality is based on the flow back and forth of the lithium ions between the electrodes, which gives the battery a long life.



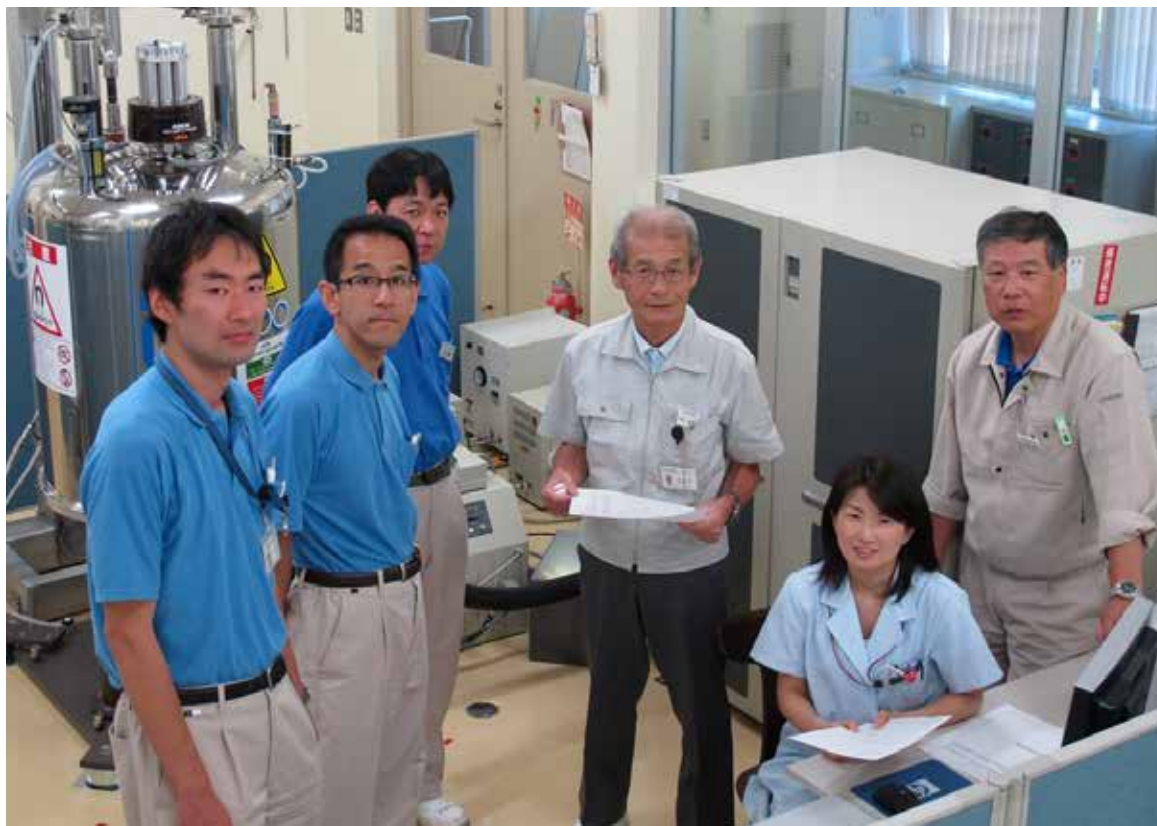


Photo: Courtesy of Asahi Kasei Corporation

Dr. Yoshino (center) is honorary fellow at Asahi Kasei and President of the Lithium Battery Technology and Evaluation Center (LIBTEC).

How do you think the intellectual property system needs to improve?

In today's globalized world, it has become difficult to exercise exclusive patent rights on patents. Even if you tell people not to imitate, they do! Moreover, patent rights are time limited so it is very difficult to take advantage of their economic value through licensing alone. I think it is important to think about other ways to get a payback or financial return. For example, this might involve developing a business model around lithium-ion batteries where the technology is commercialized as a service, rather than an end product, and you receive downstream payments. Platforms like Google, Apple, Facebook and Amazon use this model. It offers a better return. They have succeeded in designing platforms and in establishing a global standard that has expanded the market for their technology-based services. Some are even provided free of charge. Google, for example, provides its OS Android system for smartphones free of charge to expand the Android-user community. Here we see that the value of the smartphone business doesn't come from the phone itself but from its use. This business model is common in the IT world, and may well become the way of the future.

Did the patent system help you to win the 2019 Nobel Prize for Chemistry?

Researchers from industry differ from academic researchers in the way they announce their results. Academic researchers publish their work, whereas the work of industrial researchers is embedded in patent literature, which is hard to understand and, until recently, was not highly considered in academic circles. However, the Nobel Committee's citation did refer specifically to the prototype of the lithium-ion battery I

“My advice to young people is: be curious and use your energy to develop the skills, the confidence and the knowledge to make the big discoveries and the groundbreaking inventions that will mark this century.”

had created and patented in 1985. So, it seems to have been an important factor. An endorsement from an independent authority also seems to have played a role. I had won the European Patent Office’s European Inventor Award for having patented the first patent for lithium-ion batteries – recognition from the European Patent Office for that patent seems to have been an important factor in the screening discussions for the Prize. In general, I think industrial researchers are handicapped when it comes to Nobel Prizes because, typically, only patent examiners, for whom I have great respect, can understand the technologies outlined in patent applications. So, if industrial researchers want to be considered for a Nobel Prize, they need to win a major award!

What message do you have for young scientists?

The time frame for taking on new challenges is limited to a certain age; around 35. That’s when successive generations of Nobel Prize winners started their research. I started basic research on lithium-ion batteries at 33. At that age, you understand the workings of a company and of society and have the confidence and authority to start a new venture, and if it fails, you still have time to start something else. I think Japan’s capacity to produce Nobel winners in the future will be determined by the kind of environment people around the age of 35 are working in today and whether they have the freedom to follow their own way of thinking and to work on the research that can lead to a breakthrough worthy of a Nobel Prize.

What advice do you have for young people with aspirations to become the scientists of tomorrow?

Today, young people can easily access any information they want, but many feel that there are no new big inventions or discoveries for them to unravel. But they are mistaken. There are still so many things we don’t understand about life and nature and many treasures to unearth. My advice to young people is: be curious and use your energy to develop the skills, the confidence and the knowledge to make the big discoveries and the groundbreaking inventions that will mark this century. There is plenty we don’t know yet. Invest in your future through study. Imagine your 35-year old self and what you could be working on. In principle, I don’t believe in forcing children to learn. We need to enable them to think for themselves and decide on their own path. I think that’s the best way.

Enda: Kenya's first home-grown running shoe

By Kathryn Carrara, freelance writer





Photo: Courtesy of Enda

“Enda is unique; it’s the only company of its kind in Africa. We are not simply testing or marketing technical running shoes made by others, we are actually making our own shoes.”

Kenyan entrepreneur Navalayo Osembo-Ombati gave up a job at the United Nations in New York to set up a business making running shoes in Kenya, fulfilling her dream of building on Kenya’s rich sporting heritage while creating livelihood opportunities for local communities.

Tell us about Enda. What makes it different?

“Enda” means “Go!” in Swahili, the local language here in Kenya, which is also spoken widely in East Africa. We work with Kenyan athletes to design running shoes and sell them to runners around the world. Most running shoe companies are based in the United States or Europe. Enda is unique; it’s the only company of its kind in Africa. We are not simply testing or marketing technical running shoes made by others, we are actually making our own shoes.

Our debut product, a lightweight trainer called the *Iten* is available in green, red and black, the colors of the Kenyan flag. They have been designed in close collaboration with Kenyan athletes and sports professionals. The *Iten* is the ideal shoe for shorter and faster runs and is named after a little village on the western edge of Kenya’s Rift Valley where Kenyan marathon champions come from.

Our second product is a daily trainer called the *Lapatet* – which means “run” in Kalenjin, the language spoken by many of Kenya’s great runners – and is ideal for longer, slower runs. All our shoes are designed to support a mid-foot strike and maximize the runner’s natural metatarsal footprint, in line with the Kenyan running style. At present, most of our shoes are sold overseas as they are too expensive for the local market. About 90 percent of our sales are in the United States, 8 percent in Europe, where we still have supply chain challenges, and the rest in Kenya. We hope to launch a more affordable model here in Kenya soon.

Why did you choose to manufacture running shoes in Kenya?

I had a strong desire to return to Kenya after spending significant time studying and working abroad. I have always been interested in sports and wanted to do something that had a positive social impact and was scalable. I decided to focus on something that takes advantage of Kenya’s sporting culture. Running was the logical conclusion. I soon discovered that there is a big market for running shoes and that no one in Kenya had manufactured a running shoe before! That’s quite something given our running heritage. So, I decided to go for it.

How are you leveraging the business for social good?

By making the shoes in Kenya we’re supporting local communities. Manufacturing is one of the best ways to get people out of poverty.



Photos: Courtesy of Enda

Enda's aim is to build up its manufacturing capability in Kenya and for its shoes to be 100 percent Kenyan-made.

By making our shoes here, we are not only supporting those who work with us to make them, we are also supporting various subsectors that supply us with raw materials. It would have been much easier to outsource all of the manufacturing processes to China, but we made a conscious decision to build up our manufacturing capability in Kenya. The idea is that, progressively, our shoes will be 100 percent Kenyan-made. Right now, we're at around 52 percent. My aim is to create an enterprise that not only supports top athletes, but also generates opportunities and benefits for the broader community. That's why we donate 2 percent of our revenue to community projects.

Through the evolving work of the Enda Foundation, we are currently supporting a project in the slums, which protects people at risk, and a community center for children with autism. We see these community projects as an integral part of the business. Enda is a certified B-Corporation and a certified Climate Neutral company. Certified B-Corporations are businesses that meet the highest standards of verified social and environmental performance, public transparency and legal accountability to balance profit and purpose. And as a Climate Neutral company, we measure and offset our carbon footprint.

Where do you source the basic materials to make your shoes?

Not all the basic materials we need are readily available here in Kenya. We currently import some parts from China and supplement those with materials that are available locally as we progressively build the local supply chain. That said, we still lack expertise, for example, in mixing and handling the chemicals used, which can be dangerous. But we are making good progress. We have already increased local production, thanks to a local factory that has invested in the machinery for part of the manufacturing process, and a team from a partner in China that comes to Kenya to train the staff. Our aim is to train and improve the skills of our staff so we can produce a high-quality product using a range of materials.

What key challenges are you facing?

A key challenge is the need to ensure consumers are educated and can tell the difference between what's a gimmick and what's not. The running shoe industry is full of hype about products and claims that a shoe with a new, cool feature will make you run faster. This is not true. Without proper training, nutrition, running form and consistency, nothing will make you a better runner. That is the ethos of Kenyan running culture that we are trying to share with runners around the world.

Another challenge was the reluctance of local manufacturers to bet on Enda. Securing investors has been a huge challenge. Only in late 2019, when we secured our first seed funding, were we able to persuade local investors to back us. In our first year of operation, thanks to angel funding, we developed our first prototype. Then we had to get creative and decided to launch a Kickstarter crowd-funding campaign. That enabled us to launch our first shoe, the *Iten*, in 2017. A second campaign in 2019 made it possible to create and launch our long-distance *Lapatet* model, which went on to win first prize in the Body and Mind category at ISPO, the world's leading trade fair for the sporting goods industry, in Munich, Germany, the same year. We were the first African company to win such a prize. That really boosted our profile and enabled us to attract five new investors, which will make a huge difference to our production, distribution and marketing capacity. The whole idea of moving the manufacturing process from China to Kenya and training everyone is challenging, but we have chosen this as our path. In the end, we believe it will create jobs, attract investment and help build Kenya's reputation as a manufacturing hub for sports shoes.



Photo: Courtesy of Enda

Kenyan entrepreneur Navalayo Osembo-Ombati (right) gave up a job at the United Nations in New York to build Africa's first running-shoe brand, fulfilling her dream of building on Kenya's rich sporting heritage while creating livelihood opportunities for local communities.

“My aim is to create an enterprise that not only supports top athletes, but also generates opportunities and benefits for the broader community.”

And as a small Kenyan enterprise?

From experience, it is much easier for a foreign direct investor than it is for a local company to operate in Kenya. Many government incentives are geared towards making foreign direct investment work. For example, a foreign manufacturer set up in the export processing zone (EPZ) is exempt from valued-added tax (VAT), import duty and other taxes for a specified period of time and also has ready access to offices and factories. But for a local company like Enda that is looking to the export market, it's far more challenging.

As a contract manufacturer we don't qualify for support because even though we do everything a foreign export-oriented manufacturer would do in Kenya, we don't have a physical factory nor do we intend to build one. This detail is important because under Kenya's EPZ law, to benefit from tax incentives, you must have a physical factory. This creates two problems. First, it means that only those people with enough money to build or lease a factory can benefit from the incentives. When you consider Kenya's demography and economy, it means that young people like me will hardly ever get into export manufacturing. Second, it creates a cashflow problem with regard to working capital. When we import, we pay VAT, which is zero-rated for exports. Because most of our sales are exports, the government always owes us refunds, meaning that a good chunk of our day-to-day capital is tied up in VAT payments, which we wouldn't have to pay if we were in a special economic export zone.

If I don't need to own a car to move from one location to another, or to own a luxury beach house to enjoy a holiday in one, then I certainly don't need to own a factory to be deemed a manufacturer. The regulatory and legal environments really need to reflect the realities of today's shared economy and support local businesses.

And is being a female entrepreneur challenging?

It depends. It's true, I am usually the youngest and the only female in most rooms and there is definitely a great absence of women in manufacturing and in decision-making roles. This points to various structural issues. But that hasn't held me back. In general, my difference has always been an opportunity for me to express my ideas, explain my business and discuss the challenges I face. Being a woman can be difficult, but it can also be an opportunity.



Photo: Courtesy of Enda

Enda's running shoes are designed to support a mid-foot strike and maximize the runner's natural metatarsal footprint, in line with the Kenyan running style.

“We want [Enda] to become a global brand with a global impact, and we want to move the entire production process to Kenya and make it environmentally sustainable.”

What role does intellectual property play in your business?

Intellectual property (IP) is king. Without IP rights, we would have no legal means of defending ourselves against copycats or other unscrupulous operators. IP rights enable us to protect Enda's business interests and grow the company, ensuring that when people buy our shoes, they get an authentic, high-quality product. In the running-shoe world, everyone is trying to revolutionize running, so there is a lot of IP. We have registered trademarks and design patents, and we are developing more of these assets. IP rights are particularly important for Enda because we are a young company with global ambitions. It's of paramount importance that we secure our IP so we can build our commercial reputation and client base. We have to be proactive about this in today's fiercely competitive global market. IP for us is precautionary – an insurance policy if you like. It enables us to protect the beautiful things we make and expand our business. You never know what the future holds.

Is IP critical for small businesses?

Yes, it certainly is, but in Kenya, unfortunately, some small businesses often think IP is exclusively for big businesses. The fact is, IP is for everyone. In Kenya there's a misconception that IP is expensive. It's true, one doesn't always see an immediate benefit when paying for an IP right, but in the long-run it is extremely important, both in protecting your business interests and creating commercial opportunities. Look at innovations like Mpesa, the banking app that grew up in Kenya and has become an international phenomenon. IP is critical in protecting it. While creators in Kenya are generally quite IP-aware and understand how it can serve their interests, more needs to be done to ensure that they are more proactive about IP.

What could be done to increase awareness of IP in Kenya?

I would like to see better access to accurate IP information. A more user-friendly process for acquiring IP rights would also be welcome. The process is cumbersome and sometimes difficult for non-specialists to navigate. I was well informed, but it still took an insane amount of time. That in itself makes the whole process more expensive, especially if you aren't based in Nairobi. Access to basic legal assistance, practical training

courses for entrepreneurs, or at the very least, access to clear and up-to-date general guidelines on how to complete different applications would be very helpful.

What are Enda's plans for the future?

In January 2020, we launched our first daily distance trainer and are preparing to launch a trail shoe in early 2021. We also plan to revamp our short-distance shoe with new materials and technical features and will be launching an affordable shoe made 100 percent from local materials for the Kenyan market. Last year, we recorded good results in the US market and our focus in 2020 is on developing our presence in Europe.

What are your ambitions for the company?

Our long-term vision is to be among the top three global sports brands in the world. The more shoes we make, the more people we employ and the more revenue goes back into the community. We want to become a global brand with a global impact, and we want to move the entire production process to Kenya and make it environmentally sustainable. My dream is to make our operation 100 percent circular, so that people wear our shoes, then send them back to us to tear apart and make new ones. Complete recyclability would be awesome!

What advice do you have for aspiring young entrepreneurs?

Life is an adventure. You have one life and it's your responsibility to find your reason for being alive. You won't find it sitting in a corner. Try to resist the expectations of others and the fear of failure.

That takes courage.

Yes, it takes courage and luck. If I hadn't had my job at the United Nations in New York, to be honest, I wouldn't have been able to do this. I wouldn't have been able to grow the business for a long time while just living from my savings. Even when you are experimenting you need to pay your bills and meet other obligations and it was important to me to give the business time to grow without saddling it with too many expenses in its formative years. I recognize how lucky I am to have been able to pursue this journey and I am always grateful for that – as well as the opportunity to establish Kenya's and Africa's first running shoe brand!

Hachette and accessibility: Creating content that can be used by everyone

By **Catherine Saez**, freelance writer



Photo: Courtesy of Hachette

In late 2019, Hachette Livre, the world's third largest publisher, became the 100th signatory of the ABC Charter, committing to making its products fully accessible to all users.

In late 2019, Hachette Livre, the world's third largest publisher, became the 100th signatory of the Accessible Books Consortium (ABC) Charter, committing to making its products fully accessible to all users, and in particular to people living with blindness or visual impairment.

Hachette Livre is at the forefront of accessible e-book production. From 2018, all the novels it has published have been "born accessible," that is, produced in accessible formats for visually impaired people.

Accessibility has been a priority for Hachette Livre over the last decade, with efforts spearheaded by Luc Audrain,

Hachette Livre's technical expert on digital accessibility standards.

The new European Union (EU) Directive 2019/882 on accessibility requirements for products and services brings new obligations for publishers and distributors in the European Union that need to be applied by 2025.

Luc Audrain hails the EU Directive as a necessary jolt for the publishing industry in Europe but warns that current standards, in particular "EPUB accessibility 1.0", should be retained. Inventing a new standard, he suggests, would be detrimental to both visually impaired people and publishers.

Tell us about Hachette Livre and your role in the company.

Hachette Livre is a large global publisher with about 100 imprints. The group publishes general purpose books, such as novels, essays, primary, secondary, and higher education books on social science; personal development; tourism and cookery, and has large subsidiaries in Spain, the United Kingdom and the United States. Hachette Livre Group is the world's third largest publisher.

I am a technical expert on digital accessibility standards and until the end of March this year, worked with Hachette for many years. Now, as a consultant, I continue to represent Hachette Livre in various inter-professional standardization organizations on e-books at national, European and international levels.

Why is accessibility important for Hachette and why did the company join the ABC?

When we create content, we want it to be used by everyone, including people with visual impairment. When we began publishing e-books, we set up a publishing process that allows simultaneous publication of print and digital formats so our digital production channel runs parallel to print production. In this way, at Hachette Livre, access by visually impaired people to culture and knowledge through e-books is on an equal footing with that of sighted people.

Hachette already meets all the commitments set out in the ABC Charter, but we had no public recognition of our commitment to accessibility. Signing the ABC Charter gives us that recognition.

Coming back to the EU Directive, what is its main purpose and how will it support the objectives of the ABC?

The Directive is based on the principle of social inclusion and access to products and services for all people with disabilities. The main objective of the Directive with respect to publishing is to ensure that accessible e-books are available on the market. This is perfectly aligned with the born accessible policy of Hachette Livre and the ABC.

The Directive encourages production of born accessible e-books and sets market surveillance principles so that meta-data on e-books are widely available. It is an extremely positive step for culture, and access to culture and education for visually impaired people.

Do you think the EU Directive will encourage more publishers to sign up to initiatives like the ABC, and can smaller publishers manage the changes it implies?

In addition to my role at Hachette, I am also a technical expert for the Federation of European Publishers, which is a strong advocate for accessible e-books. The Federation believes that the Directive provides a market incentive but also establishes a regulatory obligation. Many stakeholders need both to spring into action.

I think the Directive will shake up the European publishing sector and will push publishers who have not yet embraced accessibility to act, and to actively contribute to advancing the development of tools, processes, and mindsets in this space.

For small publishers, the implementation of the Directive is more delicate, in particular for those producing complex books with intricate and sophisticated page layout, elaborate graphic and aesthetic elements, and multiple images which are difficult to describe. Take, for example, the challenges associated with making accessible a travel book on wilderness areas. Pictures are often not very easy to describe. The same issue arises when making comics or *mangas* (Japanese graphic novels) accessible.

What exactly is an accessible e-book?

Accessible e-books are not fundamentally different from regular e-books. The file, the format, and the coding of an accessible e-book and a regular e-book are the same. Essentially, the inclusion in the file destined for the sighted public of various technical parameters is what makes that file an accessible e-book for visually impaired readers.

To make e-books accessible, we benefit from a great deal of work at the international level on standards. Web technology standards, in particular, ensure that Internet websites are accessible. For e-books, we use the EPUB format which is also based on Web technologies. At Hachette, we are using EPUB3, the third version of the EPUB standard, to produce born accessible e-books.

Does the EU Directive both serve people who need special formats and create new business opportunities for publishers?

Yes, I think the EU Directive is a win/win, especially if current accessibility standards for publishing e-books

are adopted. If, following the Directive's adoption, the European Commission imposes other accessibility rules or applies formats that differ from those currently in use to produce accessible e-books, both publishers and visually impaired persons will be disadvantaged.

Since 2018, all novels published by Hachette Livre have been and continue to be born accessible, according to the EPUB3 standard and international accessibility rules, in particular those established by the DAISY Consortium.

At present, no decision has been made with respect to the format and technical standards that will have to be used to implement the EU Directive. These questions and the issue of applying a harmonized European standard will arise when the Directive is transposed into the national laws of EU member states.

What impact will the EU Directive have on the work of publishers and distributors?

As it stands, the Directive does not require us to enter new territory. Open file formats and accessibility standards, as well as tutorials and training are all widely available. We simply have to embrace the principle of accessibility and include these standards and file formats into the production process.

From a strategic point of view, an important first step for publishers is to establish a dedicated "internal champion or team" for accessibility.

Will the EU Directive apply to products that are already on the market?

This is a difficult issue, especially if the expectation – as set out in the Directive – is that by June 2025, all commercially available e-books are to be accessible. E-book catalogues include millions of e-books, and as things stand, these works are not accessible. Making existing e-book catalogues accessible will be a very expensive undertaking.

Since Hachette has been publishing all of its novels in accessible formats since 2018, most of the company's novel catalogue will be accessible by 2025, but books published prior to 2018 will not be accessible and this is a real hurdle.

The obligations set out in the Directive in relation to products and services already on the market will have a strong impact on small and medium-sized publishers in particular.

Hachette's commitment to accessibility and our decision to publish born accessible e-books makes us a key driver of accessibility within the publishing industry. Production of our born accessible e-books is subcontracted to suppliers who also work for the rest of the publishing sector in France. If those subcontractors know how to produce born accessible e-books for us, they can do the same for other publishers.

So, to some extent, this may ease the pressure on publishers when implementing the Directive. It is clear, however, that some e-books, especially older collections, will not be made accessible by 2025. Without a doubt, EU publishers will need



“Hachette’s commitment to accessibility and our decision to publish born accessible e-books makes us a key driver of accessibility within the publishing industry.”

Hachette Livre is at the forefront of accessible e-book production. Since 2018, all the novels published by the company have been produced in accessible formats for visually-impaired people to ensure they are on an equal footing with sighted people in terms of access to e-books.



Photo: Courtesy of Hachette



financial assistance if they are required to modify and make accessible all e-books that are already on the market.

Do you think the exceptions established in the Directive (Article 14) are useful and adapted to the publishing industry?

Article 14 seeks to avoid placing a disproportionate burden on the economic operators that are required to make their works accessible. This is a very useful exception, in particular for publishers who produce extraordinary books that are often extremely complex. Ensuring that these works meet accessibility standards is likely to be costly and to involve disproportionate effort compared to their very small market share.

The Directive, however, notes that exceptions will not be made on frivolous grounds. A lack of awareness of the obligations outlined in the Directive will not be accepted. Publishers need to play fair.

Is the timeline for publishers to implement the Directive realistic and feasible?

The June 2025 timeline could be feasible if the Directive is successful in creating immediate awareness about the future accessibility requirements. But a large number of European publishers have not heard about accessibility and have no knowledge of the DAISY Consortium standards or the EPUB3 format.

There is a huge need to raise awareness across the industry. The Directive is useful because it gives a strong signal to publishers that they need to take accessibility seriously and that strict requirements on accessibility will need to be respected.

Whose role is it to raise awareness about accessibility?

Raising awareness about accessibility is a responsibility that needs to be shared by governments and the publishing industry. For my part, as a pioneer in pushing accessible publishing, I feel responsible for delivering the accessibility message to publishers in France and in Europe, alerting them to their obligations and offering technical support where I can. It is really important that publishers understand that embracing accessibility and the requirements of the Directive does not involve any new standards or technical issues; they simply need to get with the program and begin working with subcontractors who have the required knowledge.

Governments also have a role to play. For example, in France in 2018, the Ministry of Culture launched a strategic plan for born accessible publishing. Moreover, there is a genuine effort to provide all actors in the supply chain with the information they need to comply with the Directive.

In 2020, disseminating information about the implications of the Directive will be a key challenge, not least because the Directive is, in large part, the work of lawyers. Few industry actors with first-hand knowledge of production processes, technical issues and formats participated in the process.

I am also concerned about the need for an effective information campaign to reach out and inform visually impaired people about the Directive. The visually impaired community needs to know about the availability of born accessible e-books and needs to be trained on how to use them. My hope is that the Directive will also help to boost the number of people using accessible e-books.

The Skolkovo Foundation: Fostering innovation and entrepreneurship in the Russian Federation

By **Igor Drozdov**, Chairperson of the Skolkovo Foundation, Moscow, Russian Federation

This year marks the tenth anniversary of the creation of the Skolkovo Innovation Center, a landmark initiative designed to create a sustainable innovation ecosystem and foster a culture of entrepreneurship to support the development and commercialization of advanced technologies in the Russian Federation and beyond.

Under the oversight of the Skolkovo Foundation, also established in 2010, the purpose-built high-tech innovation area in Skolkovo has become the country's leading innovation hub. Its fully integrated and vibrant innovation ecosystem comprises a broad range of facilities and services to support innovation and entrepreneurship in the fields of information technology, biomedicine, energy, nuclear technologies and space technologies.

EUROPE'S LARGEST TECHNOPARK SET TO EXPAND

Skolkovo's Technopark is the largest in Europe. Covering an area of some 100,000 square meters, it offers resident companies modern office space, including coworking arrangements, as well as laboratories equipped for rapid prototyping and testing of new technological developments.

In little over a year of its construction, the Technopark was completely filled with startups. It now houses over 400 companies operating in a wide range of technology sectors: from private space travel ventures to precision agriculture and digital medicine.

In response to demand, plans are in view to expand the Technopark site; the space available for startups will practically double within five years. Importantly, companies wishing to benefit from the Skolkovo's facilities do not have to be physically located within the Technopark itself. Research teams simply need to submit an application and an outline of their research project via the Skolkovo website. Once their project is approved by a panel of independent experts with specialist knowledge in the relevant area of work, they will gain Skolkovo resident status. In this way, international teams willing to work in the Russian Federation, and to set up a business under Russian law, may apply for residency at the Skolkovo Innovation Center.



Photos: Courtesy of Vitaly Shustikov, Skolkovo Foundation



The Skolkovo Innovation Center, a fully integrated innovation ecosystem, comprises a wide range of facilities and services to support innovation and entrepreneurship in the fields of information technology, biomedicine, energy, nuclear technologies and space technologies.

“Many of the technologies developed by Skolkovo startups have already gone into mass production and are market leaders in Russia.”

Every day, the Skolkovo Foundation receives around ten residency applications. While they don't all make it through the review process, on average, 500 new residents join the Skolkovo Innovation Center every year. At present, close to 2,500 companies, including subsidiaries of foreign companies located in practically all regions of the country, hold Skolkovo residency status. Residents of the Skolkovo Technopark enjoy significant benefits both in terms of earnings and business growth. In 2019, for example, the total earnings of Skolkovo Technopark residents exceeded USD 1.5 billion, representing a year-on-year increase of more than 40 percent.

MEDICAL TECH IS BOOMING

Many companies with Skolkovo residency status have become global leaders in their field of technology. Medical biotech, a particularly vibrant area of activity, continues to witness the greatest demand for patent rights. The value of a patent for a molecule can reach tens of millions of dollars. In 2019, over one hundred of the patents granted by IP offices outside the Russian Federation – more than half of all such patent applications – were granted to Skolkovo residents for medical technology solutions. Examples of innovative medical tech companies include Hepatera, which developed the world's first drug to treat hepatitis D, a previously untreatable illness. The company's drug, Myrcludex, was registered in the Russian Federation in late 2019 and in the European Union in 2020 and has been designated a “breakthrough therapy” by the United States Food and Drug Administration (USFDA).

Similarly, the biotech company Viriom has developed a drug to treat patients with the human immunodeficiency virus (HIV); the drug was registered in Russia in 2017. The company is currently working on improving the drug's formula with the aim of reducing dosage frequency. A new version of the drug is expected by 2022.

EXPERTISE IN OTHER ADVANCED TECHNOLOGIES

Skolkovo startups are also successful in other spheres of technology. Take for example, CRT-Innovations, one of the world's leading developers of innovative speech synthesis and recognition technology systems. The company's technologies are used in 75 countries. Under a contract with the Mexican government, CRT-Innovations created the first nationwide voice identification system in the world.

Similarly, quantum communications experts at T8 are developing telecommunications equipment for optical communications networks. In terms of its economic and technical features, T8 rivals global leaders like Huawei and Nokia. The company's share in the Russian market is currently around 20 percent.

In the area of space technology, Sputnix is the first private Russian company to put a microsatellite into orbit and has plans to launch seven microsatellites in 2020, including on behalf of companies from Tunisia and Saudi Arabia.

And in the area of additive manufacturing, AMT is a world leader in 3-D printing for construction. A printer developed by the company created Europe's largest 3-D printed residential building – a fully-fledge house in the Russian city of Yaroslavl – using this technology.

These are just a few examples of the long list of groundbreaking achievements of startups emerging from Skolkovo. Around 250 of them have already entered foreign markets.

SKOLKOVO MAKES HEADWAY IN BUILDING A CULTURE OF INTELLECTUAL PROPERTY (IP)

As a general rule, patent protection is key to attracting investors and boosting sales, and enabling business growth when a company enters a new market, whether at home or abroad.

Unfortunately, however, Russian companies have some way to go in terms of securing patent protection in markets beyond the Russian Federation. Data for 2019 show that applicants from the Russian Federation filed just 1,102 international applications under the Patent Cooperation Treaty (PCT) administered by the World Intellectual Property Organization (WIPO). Of these, 159 international applications (14.5 percent) were filed by companies connected with the Skolkovo ecosystem. In 2019, Skolkovo startups were granted 205 foreign patents, of which 35 percent were granted by patent offices in Western European countries and the United States. That's a pretty good result!

COOPERATION WITH INDUSTRIAL PARTNERS

In general, cooperation with major industrial partners is an important factor in a startup's success. That is why the Skolkovo Foundation facilitates links between Skolkovo startups and major companies, with a view to making it possible for startups to scale up their technologies in those companies. This is an important area of our work, as it is the only way, in practical terms, that startup technologies can have a substantial impact on the economy and everyday life.

Many of the technologies developed by Skolkovo startups have already gone into mass production and are market leaders in Russia, in particular, in the areas of the Industrial Internet of Things, banking security and remote banking, and waste disposal and recycling.

MAJOR INTERNATIONAL COMPANIES JOIN SKOLKOVO'S INNOVATION SCENE

Many major companies have also opened their own research centers on the grounds of the Skolkovo Innovation Center. Such companies include Boeing, Enel, Huawei, Hyundai, Koninklijke Philips, Nokia, Orange Business Services, Panasonic, Syngenta, and Telnet, among others. These research centers are enriching innovative activity at Skolkovo by helping to create a favorable environment and a concentration of intellectual capital. These are important factors in creating the conditions for scientific research and business collaboration to take off.

Photos: Courtesy of Vitaly Shustikov, Skolkovo Foundation



From the outset, the Skolkovo Institute of Science and Technology (Skoltech) brought education, science and entrepreneurial activity under one roof. Skoltech hosts more than 20 scientific centers and laboratories.



SKOLTECH: PROMOTING SCIENCE, TECHNOLOGY AND ENTREPRENEURSHIP

The Skolkovo campus also includes the Skolkovo Institute of Science and Technology (Skoltech). Established less than ten years ago, Skoltech offers a range of master's degree and other post-graduate programs.

From the very outset, Skoltech brought education, science and entrepreneurial activity under one roof. Instruction at Skoltech is conducted exclusively in English and is currently free of charge, making it possible for talented students from across the globe to study at the Institute.

At present, around 1,100 students are enrolled at Skoltech. Foreign students account for more than 20 percent of the student population. The majority of the students at Skoltech are mature young people who have decided to devote their lives to science and technological entrepreneurship. Around 40 percent of enrolled students are following post-graduate programs.



Skoltech also employs close to 200 professors of which some 30 percent are from other countries. Another 30 percent are Russian nationals who, having spent 10 or 20 years abroad, have returned to work in Russia and at Skoltech, in particular.

Skoltech hosts more than 20 scientific centers and laboratories. All of the Institute's professors and students engaged in educational programs are also employees of those centers. Many of the centers work with industry and a number of industrial laboratories have been created jointly with foreign companies, including Huawei and Oerlikon.

COMMERCIALIZING SCIENTIFIC KNOWLEDGE: A PRIORITY

Creating an effective system for the commercialization of scientific knowledge is also a priority for Skoltech's professors and students. Around 70 companies that have been spun out from Skoltech have become residents of Skolkovo's Technopark.

Last year, Skoltech was the only University in the Russian Federation to feature among the Nature Index 2019's top 100 young universities. In terms of the number of journal publications per professor, Skoltech is on a par with the top three young universities in the 2019 Nature Index ranking, namely, Nanjing Technology University (China), Hong Kong University of Science and Technology (Hong Kong SAR), and the Korean Institute of Advanced Technologies (Republic of Korea).

FACILITATING ACCESS TO INVESTMENT

Investors are a further priority for the Skolkovo Innovation campus. The appetite among investors to plough funds into high-tech startups in the Russian Federation remains low. However, over the past two years, Skolkovo startups as a whole have attracted annual investments of around USD 200 million.

While the investment trend is moving in a positive direction, the Skolkovo Foundation recognizes that there is still great scope for improvement. That is why the Foundation is actively working with venture capital funds and business angels to boost the investment environment for Skolkovo startups. The Foundation also offers mentoring and other business incubation services to support the development of Skolkovo startups and enable them to pitch their work effectively to Russian and foreign investors.

“Our ambition is for the Skolkovo model to be replicated across the Russian Federation and beyond and for our campus to become a magnet for talent from around the world.”

IP AND SKOLKOVO'S INTELLECTUAL PROPERTY CENTER

The emergence of new technologies inevitably raises questions relating to IP; first, in terms of protecting those technologies with IP rights, including patents; and second, with respect to mergers and takeovers, which typically involve the exchange of valuable business holdings, including IP assets.

IP is a startup's most valuable asset, particularly in the early stages of its development. That is why it is so important to ensure that the startup has in place an effective IP strategy that supports its business development goals. Recognizing the crucial importance of advising and supporting startups on matters relating to IP, one of the Foundation's first actions was to create the Intellectual Property Center.

The Center's patenting services are now available to Skolkovo residents under market conditions, although some of the associated costs may be recovered, at least in part, through various grant programs.

Patents obtained by Skolkovo residents with the help of Skolkovo IP Center's patent attorneys are regularly included among the top 100 best inventions in Russia and are ranked highly at international exhibitions.

The Center is one of the leading providers of patent services in the Russian Federation. The number of international patent applications filed under the PCT by the Skolkovo IP Center on behalf of Skolkovo residents, or companies with a connection to Skolkovo, account for around 14.5 percent of all such applications filed by applicants from the Russian Federation.

The Skolkovo Foundation works closely with WIPO. Indeed, the WIPO Russian Office, the only WIPO External Office in Eastern Europe, is located on the grounds of the Skolkovo Innovation Center. Each year, Skolkovo and WIPO co-organize the IP Academy, the largest educational conference on IP in the region, bringing together more than a thousand participants from across Russia and neighboring countries.

Skolkovo's Technopark is the largest in Europe. Covering an area of some 100,000 square meters, it offers resident companies modern office space, coworking arrangements and laboratories for rapid prototyping and testing of new technological developments.



Photo: Courtesy of Vitaly Shustikov, Skolkovo Foundation

SHAPING NATIONAL IP LEGISLATION FOR THE FUTURE

At the national level, the Skolkovo Foundation plays a significant role in drafting and advancing amendments to IP legislation. Technological developments are outpacing legislative changes at a rapid rate. New phenomena require clarification of legal terminology and the regulation of new social relationships and business models.

In addressing these issues, the Foundation has contributed to draft laws that seek to better regulate the registration and sale of computer programs and relations among co-owners of IP rights. It has also been examining the possibility of using blockchain technology to register and record IP rights. The Foundation also contributed directly to the drafting of a law on regulatory sandboxes – experimental legal regimes for drones, telemedicine, etc. That law was adopted by the Russian Parliament at its first reading and it is foreseen that such experimental legal regimes will be established at Skolkovo in the near future.

ARTIFICIAL INTELLIGENCE AND BIG DATA

In recent years, major technological advances within the information technology sector have given rise to broad discussions, including at the international level, on the impact of artificial intelligence technologies and big data processing on IP policy and practice. The Skolkovo Foundation stands ready to work with WIPO and the international IP community to develop best practices and common approaches to ensure that the IP system continues to serve as an effective incentive mechanism to foster innovation and creativity in the digital environment.

While much has been accomplished over the last decade, there is still a great deal to achieve. The Foundation is already implementing the large-scale expansion of the Skolkovo campus to further strengthen this dynamic innovation ecosystem. Over the next five to seven years, we anticipate a four-fold increase in the number of Skolkovo residents. We also expect two major technology companies, Sberbank, a state-owned Russian banking and financial services company, and Yandex, the Russian-owned technology company, and the country's leading web search engine, to build large campuses at Skolkovo.

Our ambition is for the Skolkovo model to be replicated across the Russian Federation and beyond and for our campus to become a magnet for talent from around the world. That will be our focus over the next decade.

Saudi Arabia gears up on IP

By **Yasser Al-Debassi**, Executive Director of the Intellectual Property Rights Protection Department, Saudi Authority for Intellectual Property, Riyadh, Saudi Arabia

Membership of WIPO treaties

Saudi Arabia joined WIPO in 1982. It has since acceded to the following international treaties administered by WIPO:

- The Berne Convention for the Protection of Literary and Artistic Works
- The Locarno Agreement Establishing an International Classification for Industrial Designs
- The Marrakesh Treaty to Facilitate Access to Published Works For Persons Who Are Blind, Visually Impaired, Or Otherwise Print Disabled
- The Paris Convention for the Protection of Industrial Property
- The Patent Cooperation Treaty
- The Patent Law Treaty
- The Vienna Agreement Establishing an International Classification for Figurative Elements of Marks

Innovation and creativity, and the intellectual property (IP) system that provides the incentives to encourage such human endeavor, lie at the heart of human progress. IP is a significant factor for the future evolution of Saudi Arabia's economy. The "Saudi Vision 2030," a reform program that seeks to diversify the national economy and reduce its dependence on oil, sets out a number of objectives, some of which are directly enabled by IP.

Saudi IP legislation dates from 1939, with the adoption of the first Saudi IP law on distinctive marks. Since then, Saudi policymakers have worked to expand and strengthen the national IP system. In 1982, Saudi Arabia joined the World Intellectual Property Organization (WIPO) and has since signed up to a number of WIPO-administered international treaties (see box).

Recognizing the strategic importance of IP in enabling the country to fulfill its ambitions, and the central role that IP rights play in stimulating business growth, competitiveness and national economic performance, the Government of Saudi Arabia recently established the Saudi Authority for Intellectual Property (SAIP) as the sole competent IP authority in Saudi Arabia.

This important move is fueling progress in building an innovation culture in Saudi Arabia. Efforts by SAIP and other government authorities to create a favorable investment climate and a more diversified and competitive national economy are boosting IP awareness and fostering business growth.

A UNIFIED IP AUTHORITY

Established in 2018, SAIP serves as a "one-stop shop" for all matters relating to the protection, regulation and enforcement of IP rights in Saudi Arabia. SAIP's mission is to promote local innovation and to improve the competitiveness of the national economy by supporting local businesses in their strategic use of IP.

As an independent IP authority with a global perspective, SAIP is also working to establish itself as a leading IP hub in the Middle East and North Africa (MENA) region. As the competent authority for all matters relating to IP policy and administration in Saudi Arabia, SAIP is responsible for developing the country's IP strategy and for coordinating its implementation in collaboration with all relevant authorities. SAIP is also responsible for proposing new rules and regulations relating to IP rights to ensure national legislation keeps pace with the rapidly evolving global technological landscape.

BUILDING A CULTURE OF IP

Saudi Arabia is committed to building a culture of IP and to strengthening the enforcement of IP rights in the country. SAIP is actively working to build greater respect for IP rights through a variety of programs that focus on: IP awareness (to create a broad understanding of the benefits of an effective IP system); IP enablement (to encourage more effective use of the IP system); and IP enforcement (to fight IP infringements and abusive use of IP rights).

To this end, a number of practical initiatives have been launched. For example, IP Clinics have been set up to provide small and medium-sized enterprises with the practical advice and guidance they need to develop IP strategies to effectively manage, protect and leverage their innovation-based projects. SAIP is also working with its IP Academy to launch a number of IP education programs, including an IP summer school, a joint IP Masters' program and an IP trainers' program.

To boost public understanding and awareness of IP, SAIP is rolling out a range of media campaigns across broadcast and social media channels on IP-related themes. For example, its recent "Copyright Enforcement" campaign, which was delivered in cooperation with relevant partners in various regions across the country, sought to raise awareness about the negative social and economic implications of piracy with respect to computer software, satellite broadcasting and print and audio-visual materials. SAIP also runs a range of practical workshops on IP and regularly participates in exhibitions and conferences to promote its work. These initiatives continue to attract broad community engagement.

In implementing its enforcement activities, SAIP is working closely with private sector partners; they play an indispensable role in its IP enforcement activities. To formalize and strengthen the participation of the business community in this work, SAIP recently established the IP Respect Council. The Council brings together private and public sector actors to discuss and exchange views on a variety of IP issues, including the challenges confronting IP owners, opportunities for collaboration, new enforcement initiatives, and policy developments requiring public comment. At its first meeting in January 2020, the Council brought together key players within the international and national pharmaceutical and biologics industries to map the challenges confronting this sector and to identify possible solutions.





Photo: Courtesy of SAIP

In 2018, the Government of Saudi Arabia established the Saudi Authority for Intellectual Property (SAIP) as the sole competent authority for IP for the country. It serves as a “one-stop shop” for all matters relating to the protection, regulation and enforcement of IP rights in Saudi Arabia.

“Saudi Arabia is committed to building a culture of IP and to strengthening the enforcement of IP rights in the country.”



HANDLING IP INFRINGEMENTS

To date, SAIP has received over 460 complaints relating to all types of IP violations. Complaints are assessed to determine whether the issues can be settled without litigation or whether they need to be transferred to the specialized IP courts for adjudication.

Concerned parties may contact SAIP via its public webpage: www.saip.gov.sa/en/contact-us/ or by email: saip@saip.gov.sa. SAIP is committed to addressing all IP issues under Saudi IP law, and encourages all companies to support these efforts by providing specific and actionable information and evidence.

SAUDI ARABIA AND THE INTERNATIONAL IP FRAMEWORK

In line with its mission to strengthen the nation's IP system, cultivate an innovation culture and fulfill its ambitions to become an IP leader within the MENA region, SAIP is working to boost Saudi Arabia's profile within the international IP community. To this end, SAIP is preparing the groundwork for Saudi Arabia to join various WIPO-administered international treaties. For example, Saudi Arabia recently submitted instruments of accession to the Vienna Agreement Establishing an International Classification of Figurative Elements of Marks and the Locarno Agreement Establishing an International Classification for Industrial Designs, respectively. In due course, it also expects to formally join the Nice Agreement Concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks, the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purpose of Patent Procedure and the Strasbourg Agreement Concerning the International

SAIP recently established the IP Respect Council (below) to formalize and strengthen the participation of the business community in its work.



Photo: Courtesy of SAIP

“As an independent IP authority with a global perspective, SAIP is also working to establish itself as a leading IP hub in the Middle East and North Africa (MENA) region.”

Patent Classification. Accession to the Madrid Protocol and the Hague Agreement, respectively, are also under review. These developments will further strengthen Saudi Arabia’s national IP system, bringing it into line with international best practice.

Similarly, SAIP has extended its cooperation with a range of international affiliates and signed formal cooperation agreements with the China National Intellectual Property Administration (CNIPA), the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the United States Patent and Trademark Office (USPTO), and WIPO. These agreements are designed to facilitate the exchange of IP expertise and to support the further development of the national IP system. These crucial contributions are essential in advancing SAIP’s goal to become a cutting-edge IP authority.

SAIP has also signed patent prosecution highway (PPH) agreements with the USPTO, the JPO and KIPO. Such agreements fast-track patent procedures through the sharing of patent information between participating offices, thereby reducing the workload of patent examiners and improving patent quality.

PLANS FOR THE FUTURE

In the coming months and years, SAIP will continue to invest in building IP awareness and greater respect for IP rights. A number of initiatives are in the pipeline. These include the appointment and deployment of IP Respect Officers within government agencies. These officers will be at the forefront of efforts to protect and promote IP rights across those agencies. The officers will be trained by SAIP to become the “go-to” person within their respective agencies for all matters relating to IP.

Plans are also afoot to establish an IP National Committee to coordinate all IP enforcement across government. Chaired by SAIP and comprising representatives from a range of government enforcement agencies, the Committee will ensure broad compliance with IP laws and regulations across the Kingdom.

Saudi Arabia recognizes the importance of protecting IP rights to enable innovators, creators and innovative businesses, small and large, to leverage the economic value of their intangible assets. By fostering innovation, creativity and business growth in this way, the broader population will benefit from access to a constant flow of new technologies and creative products as well as the advantages of a thriving economy. The recent evolution of Saudi Arabia’s IP landscape promises to yield significant benefits and is an important step towards achieving the objectives set out in the Saudi Vision 2030.

WIPO opens its first virtual exhibition on AI and IP



Ever wondered about the future of innovation? Check out WIPO's new virtual exhibition – *AI and IP: A Virtual Experience*. Step into a virtual world of artificial intelligence (AI) and find out what it means for intellectual property (IP), innovation and creativity.

Until recently, invention and creation were exclusively human activities. IP systems have been developed over the centuries to incentivize such human endeavor for the benefit of humanity – and have been very effective in doing so. But what impact will AI have on these systems and the global creative landscape?

As advanced AI-based technologies gain traction in all sectors of the economy and yield an ever-growing influence on our daily lives, we need to gain a better understanding of the changes that AI will bring, in general, and more specifically, what AI means for innovation and creativity and for the systems and policies that seek to ensure that these activities continue to thrive.

The exhibition, *AI and IP: A Virtual Experience*, the first of its kind at WIPO, offers visitors an interactive opportunity to discover this radical new technology and to explore some of the many ways it promises to transform culture and industry.

Join this exciting virtual journey, explore the relationship between AI and IP, and discover some of the ways AI is shaping art, music, entertainment and technology.

The exhibition will be live from September 18 to December 18, 2020 and can be accessed at: www.wipo.int/exhibition-ai.



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 bimonthly 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.

The designations employed and the presentation of material throughout this publication do not imply the expression of any opinion whatsoever on the part of WIPO concerning the legal status of any country, territory or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

This publication is not intended to reflect the views of the Member States or the WIPO Secretariat.

The mention of specific companies or products of manufacturers does not imply that they are endorsed or recommended by WIPO in preference to others of a similar nature that are not mentioned.

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.

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