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Dear Readers,

We are pleased to inform you that from January 2023, the WIPO Magazine will be moving to a digital-only format.

This move will enable us to provide you with a more regular stream of content on topical issues relating to IP, innovation and creativity. It is also in line with the Organization's commitment to reduce its carbon footprint.

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Editor: **Catherine Jewell**

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GII 2022 explores the future of innovation-driven growth

By **Catherine Jewell**, Information and Digital Outreach Division, WIPO

Now in its 15th edition, the Global Innovation Index (GII) 2022 tracks global innovation trends and ranks the innovation performance of 132 economies amid the ongoing COVID-19 pandemic, geo-political tensions and supply chain and energy disruptions. The GIi provides benchmarking data on innovation performance and serves as a useful guide for the development of innovation policies.

The GIi 2022 also explores the future of innovation driven-growth at a time when the socio-economic impact of innovation is at an historic low, despite a surge in R&D investment. The co-authors of the report, Senior Economists **Klaas de Vries**, from The Conference Board, and **Sacha Wunsch-Vincent**, from WIPO, share the key findings.

What were the most striking developments in the GIi 2022 rankings?

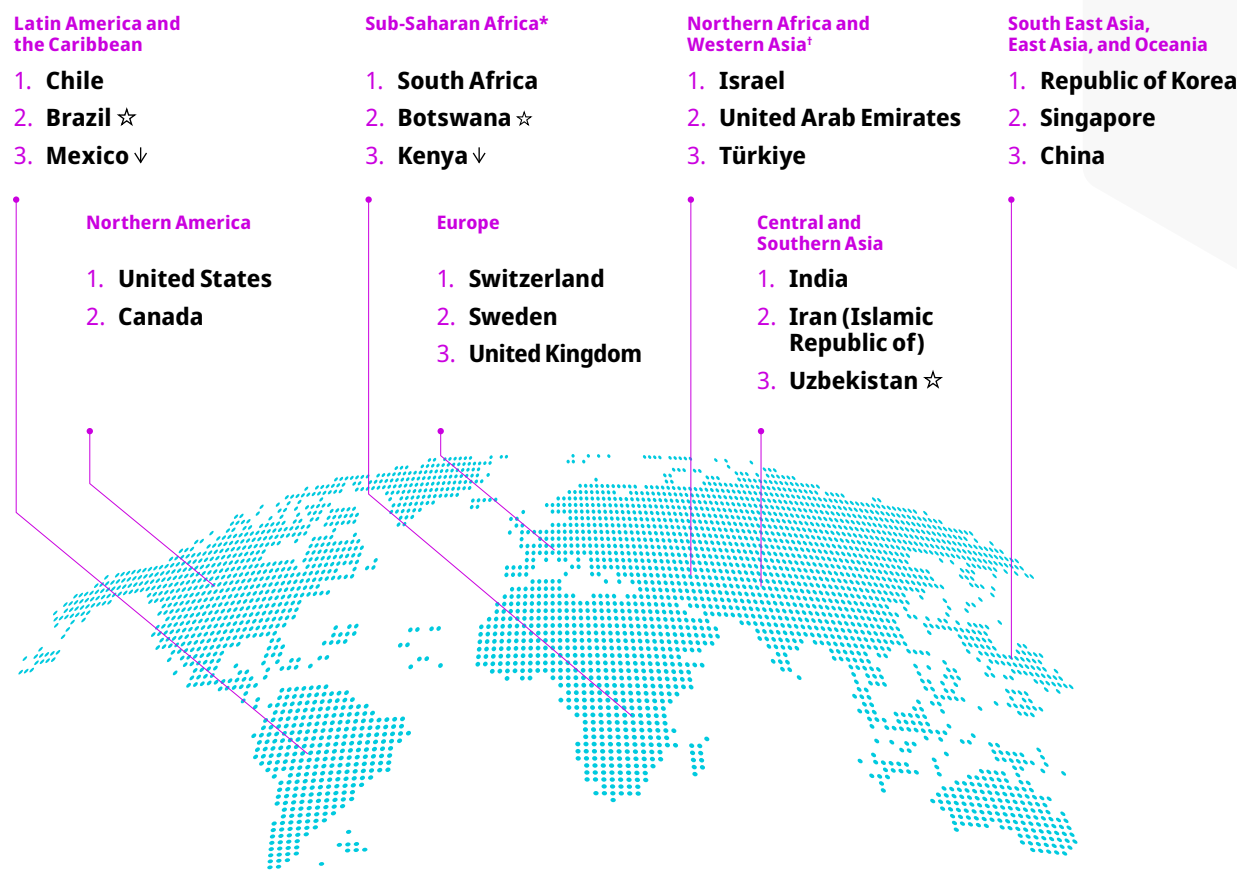
GIi 2022, which maps the world's most innovative economies, reveals a number of interesting moves, with some new powerhouses emerging. Switzerland topped the rankings for the 12th consecutive year, followed by the United States, Sweden, the United Kingdom and the Netherlands. China (rank 11) is knocking on the door of the top ten, with consistently strong performance from India (rank 40) and Türkiye (rank 37), which entered the top 40 for the first time.

The middle-income economies with the fastest innovation-performance growth to date include Viet Nam (48), the Islamic Republic of Iran (53) and the Philippines (59).

We also see several developing economies performing above expectation on innovation relative to their level of economic development. These include newcomers Indonesia (75), Uzbekistan (82) and Pakistan (87). Eight so-called "innovation over performers" are from Sub-Saharan Africa, with Kenya (88), Rwanda (105) and Mozambique (123) in the lead. In Latin America and the Caribbean, innovation over performers include Brazil (54), Peru (65) and Jamaica (76).

GLOBAL LEADERS IN INNOVATION IN 2022

Top three innovation economies by region



☆ Indicates a new entrant into the top three in 2022.

↑↓ Indicates the movement of rank (up or down) within the top three, relative to 2021.

* Top three in Sub-Saharan Africa (SSA) – excluding island economies. The top four in the region, including all economies, comprise Mauritius (1st), South Africa (2nd), Botswana (3rd) and Kenya (4th).

† Top three in Northern Africa and Western Asia (NAWA) – excluding island economies. The top four in the region, including all economies, are as follows: Israel (1st), Cyprus (2nd), United Arab Emirates (3rd) and Türkiye (4th).

Top three innovation economies by income group

High-income	Upper middle-income	Lower middle-income	Low-income
1. Switzerland	1. China	1. India ↑	1. Rwanda
2. United States ↑	2. Bulgaria	2. Viet Nam ↓	2. Madagascar ☆
3. Sweden ↓	3. Malaysia	3. Iran (Islamic Republic of) ☆	3. Ethiopia ☆

Source: Global Innovation Index Database, WIPO, 2022.

Notes: World Bank Income Group Classification (June 2021). Year-on-year GII rank changes are influenced by performance and methodological considerations; some economy data are incomplete (see Appendix I).

What major trends does the GII 2022 reveal?

GII 2022 shows that research and development (R&D) and other investments, which drive innovation, continued to surge in 2022, despite the COVID-19 pandemic. The world's most innovative companies increased investments in R&D by 10 percent to over USD 900 billion invested in 2021, higher than pre-pandemic levels. Venture capital (VC) deals also surged by 46 percent in 2021, with Latin America, the Caribbean and Africa experiencing the strongest VC growth. However, the VC outlook for 2022 is more somber, with a significant deceleration expected, raising significant concerns for more fragile economies. GII 2022 reveals emerging challenges in translating innovation investments into impact. In fact, the socio-economic impact of innovation is at an all-time low, with productivity growth stagnating.

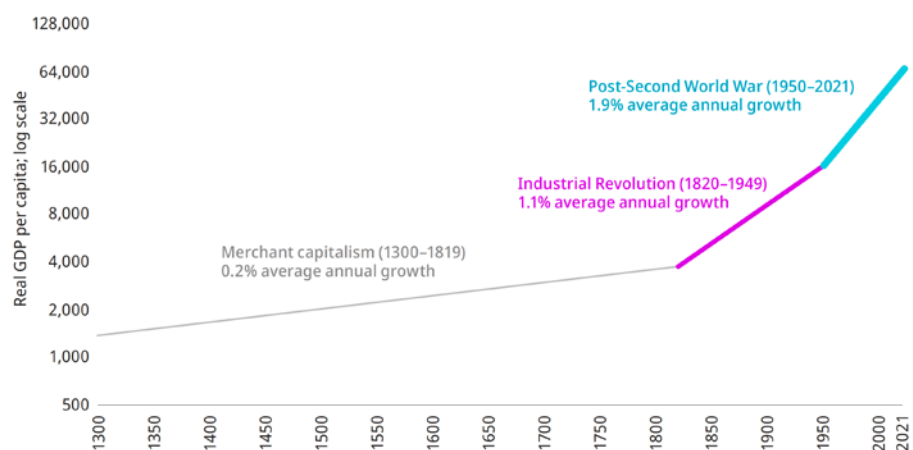
What is the relationship between innovation and productivity?

Traditionally, innovation has been the key to improving levels of productivity. GII 2022, however, points to a pronounced slump in economic productivity since the 1970s. Put simply, productivity is about how efficiently we produce things. Improvements in productivity directly boost economic output relative to the population, improving living standards, for example, by lifting people out of poverty, and eradicating arduous tasks.

Major economic downturns aside, productivity and economic output grew year-on-year worldwide throughout the 19th and 20th centuries (see Figure 1).

While it took 50 years for productivity to double after 1870, it has since doubled roughly every 25 years. As a result, in 2021, an hour worked in high-income economies produced, on average, 24 times more goods and services compared to 1870. The rise in living standards since the 19th century and the First Industrial Revolution can be traced to technological breakthroughs, new waves of invention and innovation, and the effective diffusion of new technologies across economies.

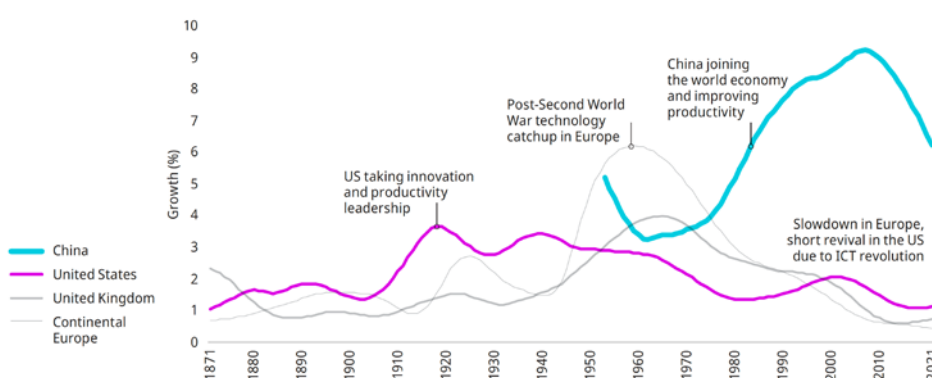
Figure 1: Real GDP per capita levels at the frontier, 1300–2021



Source: GII 2022, Special Theme Chapter, Figure 13.

Unfortunately, since the 1970s, there has been a sustained slowdown in productivity. The slowdown intensified during the global financial crisis of 2008/2009 and has since worsened. In 2021, global labor productivity fell sharply to zero, and is forecast to stagnate in 2022, largely because of higher energy costs.

Figure 2: Labor productivity growth, 1871–2021



Source: GII 2022, Special Theme Chapter, Figure 14.

For middle-income economies, the trend is not so clear-cut. China's productivity growth gathered speed from the 1980s, but has slowed already over the last decade. Most other emerging economies, however, were never part of the productivity spurt, in particular Africa, Latin America, and most economies in the Middle East and Asia. Notable exceptions are India, Indonesia and Türkiye. Indeed, the problem for most developing economies is that they have never enjoyed increasing productivity growth.

How pessimistic or optimistic are you about innovation in future productivity-driven growth?

Technology pessimists argue that the supply of innovation has fallen, slowing improvements in living standards. They argue that innovations are more difficult to come by and that those that are emerging will not have the same transformative impact on productivity as past "great" inventions like the combustion engine, electricity, plumbing, airplanes and barcodes. In other words, despite massive innovation investments, it is becoming more costly to find and develop transformative innovations and we are living in a period of stagnation.

However, technology optimists, whose arguments we favor, note that it takes time for the impact of innovations to unfold given the many challenges associated with the diffusion of innovation at every level.

What are the challenges associated with diffusion of technology?

You may think the main challenges relate to investing money into R&D, filing patents and driving different forms of inventions. But the eternal challenge is the uptake of technology; how to get firms and households in as many countries as possible to use

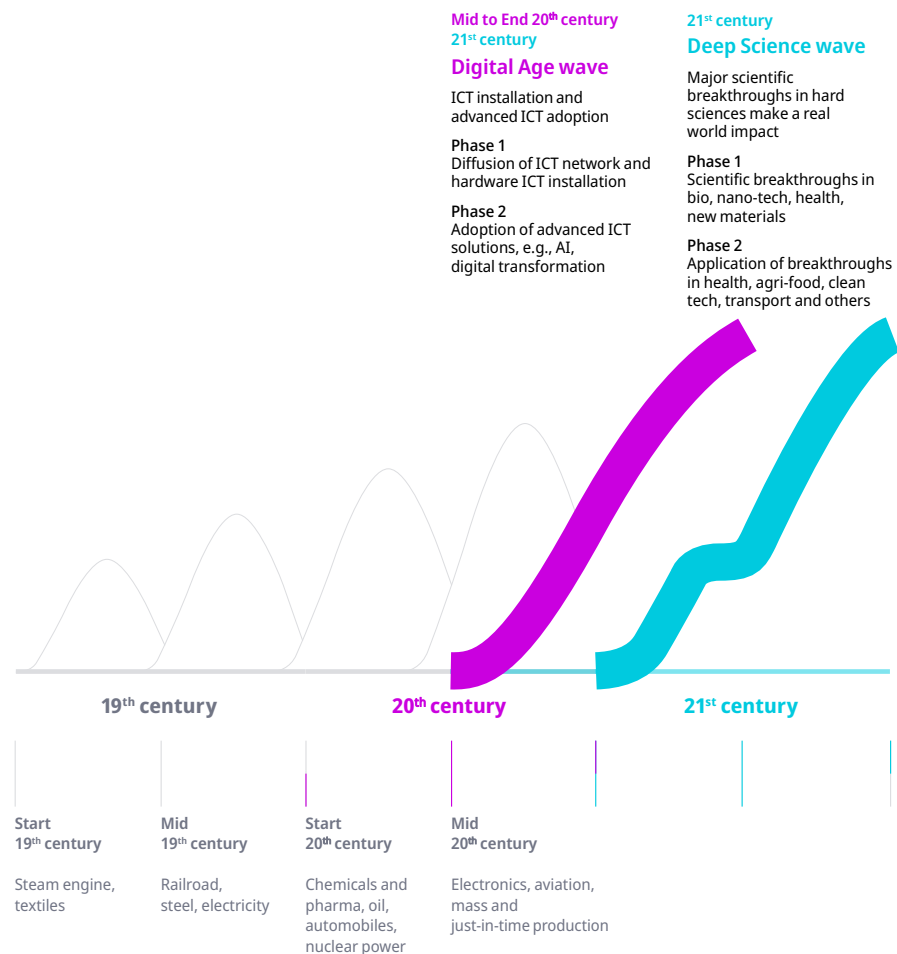
these inventions. And today, that process is too arduous and slow. The adoption of green technologies to mitigate the catastrophic effects of climate change is a case in point. The technology exists, but its use, and therefore its impact, lag starkly.

What then is the outlook for an innovation-driven productivity revival?

Evidence is building of the emergence of two innovation waves, each with the potential for large, measured – and possibly unmeasured – productivity and welfare impacts.

The first is the ICT wave, which started in the 1970s and is forecast to regain strength over the coming years. This is best conceptualized as the “Digital Age wave” (Figure 3) made up of two consecutive surges. The first led to the installation of sophisticated communication networks and equipment, such as the Internet and mobile devices. The second relates to the diffusion of general-purpose digital technologies, such as supercomputing, cloud computing, the Internet of Things (IoT), artificial intelligence (AI) and automation.

Figure 3: Past and future innovation waves from the 19th through the 21st century



Source: GII 2022, Special Theme Chapter, Figure 20.

The impact of this Digital Age unfolds in two ways. First, in terms of a powerful effect on scientific advances and R&D in fields like bio-informatics, pharmaceuticals, green tech and others, leading many to observe a convergence of ICT, bio- and nanotechnology, and cognitive science research. Second, in terms of its profound effect on non-ICT sectors, in particular through the application of AI-driven automation, large-scale digitalization, 3D-printing and advanced robotics. The large-scale adoption of these technologies would hike productivity in every manufacturing sector and agriculture, as well as those large service sectors – education, health, construction, hospitality and transport - which are currently trailing in productivity.

There is also the real possibility of a “Deep Science” wave building around breakthrough inventions and innovations in the life sciences, health, agri-food, energy, clean tech and transport. This wave will drive scientific progress in an array of technical fields (beyond ICT), which have matured over the last decades and which are erupting.

Both the Digital Age and the Deep Science waves have been building for some time. Breakthroughs in biotechnologies, biochemistry, nanotechnologies, new materials and other advances in basic science over recent decades are paving the way for downstream innovations and signal a strong comeback for the hard sciences.

Taken together, these dynamics have driven radical progress in diverse fields, including the life sciences, health, agri-food, energy, clean tech and transport innovation see (see Table 1).

On balance, if adoption is high – and that is the crux of the matter – innovation-driven productivity growth propelled by the Digital Age and Deep Science waves could be high.

What are some of the innovation policy priorities that you identify?

First, the funding of research relevant to future innovation waves remains a key role for government.

Second, in all future innovation waves, policymakers need to influence the translation and adoption of research through the application of both supply and demand-side policies that set innovation targets and focus on specific areas. Such decisions can no longer be left to the market alone.

“Research and development (R&D) and other investments, which drive innovation, continued to surge in 2021 despite the COVID-19 pandemic.”

Table 1 Deep Science wave impacts in four fields

<p>Life sciences and health</p> <p>New scientific breakthroughs, treatments, and cures</p> <ul style="list-style-type: none"> Genetics and stem cell research Nanotechnology Biologics Brain research New generation of vaccines and immunotherapy Pain management Mental health treatments New medical technologies (precision and regenerative medicine) 	<p>Agri-food</p> <p>New scientific breakthroughs</p> <ul style="list-style-type: none"> New-generation sequencing Bioreactor-based synthetic food production Lab-grown real meat and other future foods with higher yields and better nutrient content Self-fertilizing crops Precision farming Smart fertilizers Advanced packaging Total recycling
<p>New health innovation systems</p> <ul style="list-style-type: none"> Novel approaches in health care research (e.g., AI) New ways of delivering health care (e.g., telemedicine) 	<p>New food production systems</p> <ul style="list-style-type: none"> Digital agriculture enabled by remote sensing, and geographic information systems Bio-controlled and artificial agro-ecosystems Vertical farming Innovation along the agri-food value chain, from seeds to farming and harvesting Digitalization of retail and logistics
<p>Energy and clean technology</p> <p>New scientific breakthroughs</p> <ul style="list-style-type: none"> Cheaper and efficient renewable energies Battery technologies Fusion technology Geothermal Green hydrogen Sustainable alternative fuels Carbon dioxide catcher <p>New energy delivery and storage systems</p> <ul style="list-style-type: none"> Digitalization of energy system Smart grid Ultra-high voltage lines Utility-scale storage of renewable energy Small-scale renewable systems to provide electricity to people living far from the grid 	<p>Mobility</p> <p>New scientific breakthroughs</p> <ul style="list-style-type: none"> Electric batteries and other elements of energy and clean tech Autonomous vehicles Tunneling for high-speed transport Supersonic and electric aviation <p>New transport systems</p> <ul style="list-style-type: none"> Charging infrastructure Urban air mobility companies Drone delivery Ultra-highspeed train networks Novel traffic management systems

Sources: GII 2019, 2018, 2017 and this volume, in particular GII 2022 Expert Contribution from Gutierrez de Piñeres Luna.

Source: GII 2022, Special Theme Chapter, Table 11.

Third, the rising inequality among firms and regions that lead, and those that lag, between high-paid and low-paid workers, and across countries, is a major drag on technology diffusion, adoption and productivity. Tackling these inequalities will be key to realizing the benefits of any upcoming innovation wave.

Fourth, a skills gap stands in the way of new innovation waves materializing and creating impact. This is most evident in the fields of advanced ICT, programming, AI and data science and is valid even in the most advanced high-income economies. Similar skills gaps will also emerge in the fields driving the Deep Science wave.

Fifth, access to, management and valorization of data are cornerstones of all future innovation waves. New data infrastructure and management systems are essential.

Sixth, over the coming years, topics such as humanoid robots, AI, bio- or genetic engineering, new health solutions, and novel food types, will challenge social acceptance and will require public debate to explore the risks, social values and the pros and cons of these ground-breaking innovations. Developing a common understanding of the social benefits of these advances will be central to facilitating their uptake and adoption.

Finally, the current international environment poses real challenges to the diffusion of technology through trade, investment and other international knowledge flows. This is particularly problematic for emerging and developing countries, which are in dire need of integrated global value chains and innovation networks in order to catch up. Keeping alive the possibility of quick productivity wins will be crucial. Developing economies will also need specific approaches to absorb existing technologies – particularly in health and agriculture. Fostering incremental, grassroots innovations and making traditional innovation policy measures more relevant to less formal innovation are important factors in this context. Local governments and firms need to actively steer the development of innovations that respond to local needs – rather than relying on technology diffusion alone.

“Evidence is building of the emergence of two innovation waves, each with the potential for large, measured – and possibly unmeasured – productivity and welfare impacts.”

Tencent, video games, the metaverse and diversity: an insider's view

By **Catherine Jewell**, Information and Digital Outreach Division, WIPO

Tencent is a global technology firm that operates the world's leading video game development, publishing and operations platform. It is also a global leader in invention and technology investment with prominence in fintech, cloud services, digital communications (it has its own free messaging and calling app, WeChat, known as Weixin in China) and its own Netflix-like streaming platform, Tencent Video. Tencent's Interactive Entertainment Group (IEG) is responsible for developing the interactive entertainment side of the company's business, including games and esports.

Jia Wang, a veteran leader in data science and engineering within the interactive entertainment industry, recently sat down with *WIPO Magazine* to share her views on the future of the video games industry and the role that intellectual property (IP) plays in her daily work. Jia Wang is Deputy Director of the Technology Service Center at Tencent's office in Palo Alto, California, USA.

Tell us about your role in Tencent games?

I am the Deputy Director of the Technology Service Center for the North Americas Team, which is part of Tencent's Interactive Entertainment Group. My team works on advanced technologies like AI, big data and cloud capabilities. Our role is to optimize gaming experiences and ensure that everything works smoothly so players can enjoy their games.



Photo: Courtesy of Tencent

Jia Wang (above) explains that Tencent sees the metaverse as part of "hyper-digital reality," a concept that integrates the digital world with reality to create a blended experience, which will allow people to connect more deeply with the virtual world.

How did you get into gaming?

My first encounter with video games came during my undergraduate studies in computer science. One of my first projects was to create a game. But my passion for games only really took off when I joined King, the creators of *Candy Crush*, where I worked as a data scientist with a really creative group in their Stockholm office. Now, I can't imagine working in any other sector. Working on games is a lot of fun, both professionally and socially. I work with a great team, and we bring a lot of joy to people's lives.

What challenges have you faced as a woman in the games industry?

Women in all sectors face many challenges. In the games industry we are definitely in the minority. Thankfully, that's changing. At Tencent America, there are many women in leadership positions and there's a strong sense that women can be successful here. The company's commitment to diversity and inclusion is one of the reasons it's such a great place to work. The good thing about this industry is that it requires many different skill sets, with roles for designers, creators, product and project managers, developers, data scientists and more. That creates a lot of opportunity for everyone. In 2020, recognizing the need to "walk the talk," at Tencent America, we set up our Diversity, Equity, and Inclusion (DEI) Group. It works to reinforce these values within the company and is raising awareness of the unconscious biases we all have.

How do you see the global video games landscape evolving?

The video games landscape is changing very rapidly thanks to the new technologies that are coming on stream. In the early years, people played games on a console or on a PC. Video games really took off when smartphones and other portable devices entered the market. That, and the launch of the free-to-play model, really boosted the popularity of games and fueled growth. These days, technologies like augmented reality (AR), virtual reality (VR) and artificial intelligence (AI) are transforming the way people interact with technology and creating opportunities for more immersive playing experiences. That, in turn, is creating opportunities for game studios to develop more innovative and creative game play for people to enjoy. It also means they are publishing their games on multiple platforms. And that's great news for players!

How do you think the industry is going to evolve?

The games industry will continue to evolve because, as technologies improve, we can do interesting new things. Every player wants to find a game they like, which is driving innovation and the development of new game genres as new audiences enter the games universe. The focus today is better understanding our audiences to deliver the games they want. We really are living in the "golden age" of video games. The industry is booming thanks to good stories, new gameplay and next-generation technologies. And there is a great deal more to come.



Photo: EvgeniyShkolenko / iStock / Getty Images Plus

“A lot of investment is going into developing technologies to embed a “real world feeling” into the virtual world so people develop stronger emotional connections with it and have a better game experience,” Jia Wang explains.

Tencent partners with many companies around the world, and our aim is to create a global gaming universe that supports their success. And that’s important to me because, while gaming is a shiny industry, it creates many job opportunities and is a major source of entertainment for hundreds of millions of people. It also has huge potential to foster the development of innovative and creative solutions in other areas of social need. There’s tremendous scope for growth in the global games industry and it’s really exciting to be part of that.

And what of the metaverse?

Although there’s a huge buzz around what many call the metaverse, it’s not yet clear what it is or how it will evolve. At Tencent, we see it as part of “hyper-digital reality,” a concept that integrates the digital world with reality to create a blended experience. It will offer people real-time immersive experiences and will allow them to connect more deeply with the virtual world and to switch seamlessly between the virtual and the real world. It will spark people’s imagination and push the boundaries of possibility. I can see a whole new creative landscape emerging. It’s very exciting.

What role do AI and machine learning play in the games industry?

AI and machine learning are used in various ways. For example, they make it a lot easier for artists to create landscapes more

“We really are living in the ‘golden age’ of video games [...] And there is a great deal more to come.”

quickly. They also enable us to inject more realism into animations by ensuring the movements of the characters we create are life-like. A lot of investment is going into developing technologies to embed a “real world feeling” into the virtual world so people develop stronger emotional connections with it and have a better game experience. As mentioned, my team is working on advanced technologies like AI, big data and cloud capabilities and we’re super excited to bring these to the global market and to help other game studios, including new market entrants, realize their dreams.

What role do games have beyond pure entertainment?

“Tech for Good” is a central ethos across the Tencent universe. There’s a lot of innovative work in this area. Game technologies are also being used to develop a variety of small apps for social impact. For instance, video games are an effective way of preserving historical and cultural artifacts and making them accessible to everyone. In 2018, Tencent developed a super cool 3-D AI technology that reconstitutes old architectural structures, like the Great Wall of China, enabling users to explore these structures in their original, pristine form. The level of detail they can achieve is amazing.

Other applications are being developed for use in healthcare settings. A recent example is an intelligent eye test that screens for ocular disease in children. It was developed by LightSpeed Studios, a leading Tencent game studio, in partnership with the Zhongshan Ophthalmic Center (ZOC) at Sun Yat-sen University in China. In the test, the children watch a two-minute video, which engages them on a mission to save baby turtles. The engaging storyline requires them to focus their eyes on the spotlight that searches for turtle eggs. The test is completed in less than five minutes, is 90 percent faster than traditional eye tests, and offers the children a lesson in environmental protection.

How long does it take to develop a game and what makes a successful game?

It can take years to develop and launch a successful game. From a design perspective, a successful game enables people to start playing without having to pay

anything. At some point in the game, they will be given an option to buy into the game, or to unlock gameplay, but it’s their choice whether they do so.

In our games, we often offer “skins” — a graphic download that players can buy to change the appearance of a character in a game. What people generally don’t realize is that producing one of these beautiful “skins” is an expensive and long creative process that can take up to a year to produce.

What role does IP play in your daily work?

Within Tencent, there is a shared understanding of the importance of IP to our business. Tencent is strongly committed to IP and recognizes its enabling role in generating a more vibrant, creative, and innovative ecosystem for games and other areas of our business. A game is both a creative and a technical product and IP protects both aspects. There’s a lot of IP involved in the games we develop, from the technical mechanisms that enable and enrich the user’s experience to the storyline and the heroes we create.

Game development involves working with many different partners. Each is responsible for creating different elements of the game industry. My team understands that we need to be switched on to IP because it represents an important business interest for the company and our partners. We have clear guidance on what we need to do and when. We ensure our partners know that, while protecting our IP is a priority, we recognize they also need to protect their work. When discussing a project, we always clarify the IP boundaries to ensure we don’t overstep the mark. It’s a reflex. It ensures everyone’s IP rights are respected. But it’s important to balance the need for IP protection with the need to support the creative process because bouncing ideas around together sparks still more creativity.

What is your message to young people who want to get into the industry?

Follow your passion. The game industry is full of passion, and there are many fun people with the same dream. Most people work for their paycheck but at Tencent many more are working to make their dreams come true.

Fashion forward: pioneering African designer eyes luxury brands market

By **Paul Omondi**, freelance writer

Photo: Courtesy of Taibo Bacar

Taibo Bacar's statement pieces recount personal stories with a pop of color, intricate cuts and details.

Today, Taibo Bacar's eponymous fashion house is holding its own on international catwalks and in highbrow stores, belying its humble Mozambican origins. Taibo Bacar is one of Africa's leading fashion houses, renowned for its imaginative combination of high and fast fashion goods. The brand's statement pieces recount personal stories with a pop of color, intricate cuts and details, which have won numerous awards and propelled it to the international stage. A trailblazer in the industry, the pioneering fashion brand was the first African brand to showcase at the Milan Fashion Week in 2010.

IN THE BEGINNING

Before Taibo Bacar the fashion label, there was Taibo Bacar the designer, whose first foray into fashion was inspired by his seamstress mother. The designer's journey towards the fashion hall of fame was sealed when, in 2006, he crossed paths with the model Tatiana Ismael at a fashion show. Three years later, that chance meeting blossomed into a thriving business, the Taibo Bacar label.

Tatiana Ismael is a fashion insider with global experience of the business side of the industry, making her an ideal business partner for Taibo Bacar, the designer. Ismael handles the business side of things, while the designer Bacar brings his imagination to its creative side. As a brand, Taibo Bacar aims to create a personal connection with its customers.

"From the time we conceptualize our ideas or themes to the production process, we are very intentional in our designs. We want to make a connection with our clients at a personal level. That's how passionate and sentimental we are about our work," says Ismael.

That ethos is setting the Taibo Bacar label on another pioneering business adventure, as the company rallies to expand beyond elegant fashion, glossy magazines and ventures into the niche luxury brands market to complement its fashion business.

"It's about diversity. We have a lot of projects lined up for the future that have been inspired by what we have been doing for the last 12 years, even though not all of them are related to fashion," says Bacar in commenting on the company's planned expansion into the exclusive luxury market.

THE INTELLECTUAL PROPERTY CHALLENGE

But things have not always been rosy, especially in a country new to the fashion business where public understanding of why it is important to respect the work of creators and inventors, is low.

"Intellectual property protection in Africa is generally very hard. It's harder for creative industries like fashion, and even more difficult for us in Mozambique, where fashion as a business is not well defined," says Ismael.

Ismael notes that in Mozambique, as in most parts of Africa, more needs to be done to educate the public about IP to ensure that it is taken seriously as a business asset.

While the Taibo Bacar brand, its associated logos and images, are registered as trademarks, the legal protection of these rights is often hard to enforce. Ismael sees this as a burden the company has to bear as the industry grows, noting that while the registration of trademark rights is an important step in supporting future business growth, it is not enough to deter acts of infringement.

“Businesses and individuals have to constantly deal with the challenge of people appropriating their brands and profiting from their work, even if they have patents, copyrights or trademarks,” she notes.

This challenge is a real threat that Taibo Bacar is all too familiar with, having had its logos imitated and T-shirts ripped off by counterfeiters. The challenge is often compounded by a complex and cumbersome legal landscape, which discourages many creators from taking legal action to seek redress.

“How is it even possible for someone to understand the importance of respecting IP rights when they are not aware that what they are doing is illegal in the first place?” Bacar asks. “Campaigns to create IP awareness should not only target inventors and creatives, they also need to target the general public who consume our products and services and interact with our brands.”

It’s a difficult position for a pioneering fashion business to find itself in, and one that is not helped by dated IP laws, which when drafted, did not anticipate a fashion business like that of Taibo Bacar or the challenges of the digital age. The uncertainty around how to deal with emerging IP challenges and where to go for help in navigating them also creates confusion for industry players. However, beyond Mozambique, in more mature economies like South Africa where the Taibo Bacar brand is strong, the situation is much better. “We know that as an international brand, we need to cover our IP bases in multiple countries. Thankfully, South Africa has more robust IP laws and the lawyers there are more conversant with the matter,” the designer adds.

As the Taibo Bacar brand gains global recognition and breaks into the international market, IP protection has become an imperative for the company. That’s why the company decided to set up a division to handle all IP matters, freeing up Bacar and Ismael to focus on the day-to-day business of creating, producing and marketing their goods.

At present, Taibo Bacar’s trademark portfolio includes its logos, the brand name and images. In Mozambique, the company has protected 10 logos with trademark rights, reflecting the brand’s evolution over the years. The company also has four registered logos in South Africa. It is also considering patenting some of its processes and products, but the cost of doing so remains a challenge, as is the uncertainty surrounding whether their intended patents can withstand legal challenges.



Photos: Courtesy of Taibo Bacar



Taibo Bacar's creativity comes from deep within his African roots.



“By availing our traditional knowledge and showcasing the beautiful work we can do in Africa, we open ourselves to opportunities beyond our borders.”

Taibo Bacar



Photo: Courtesy of Taibo Bacar

Taibo Bacar (above) challenges African designers to look outwards and share the continent's cultural heritage.

“Patents are very expensive. The lawyers we've been in touch with have advised caution because we have to be able to defend our innovations and products in case someone else comes up with a variation of them,” explains Ismael.

Notwithstanding the challenges, the designer still wants to protect the creations and designs that are unique to the Taibo Bacar label. These include the entire range of their leather goods, comprising mainly handbags and belts.

COLLABORATING WITH CREATIVES

Fashion by its very nature is collaborative, often bringing together photographers, videographers, models, filmmakers, jewelers, and even software developers. Taibo Bacar appreciates the challenges that poses at times, as creatives have to expose or trade their IP to work together. That's why it's so important for creatives to be IP savvy.

“Collaborations often create a challenge for us. That's why we are very particular about signing contracts or non-disclosure agreements before striking deals,” Bacar explains.

Such action, he notes, is critical when it comes to photography, because the untimely release of images can jeopardize campaigns, especially now that even models take photos of their shoots with their phones.

“When we have a campaign, the images cannot be released before the event on any platform. Photography is a crucial component of our business and we have to be in control at every stage, from the shooting, editing to design stage, because it’s our business, reputation and brand at risk. We have very strict contracts to guide our commissions and the photographers’ IP rights,” Bacar explains. He adds that they are committed to respecting the IP rights of photographers by ensuring their work is appropriately credited when used by third parties, like magazines. When it comes to managing the models and the photos they take, this is less of a problem as typically they work under very specific contracts with international modeling agencies.

ADVANTAGES OF GLOBALIZATION

Taibo is a champion of globalization. His challenge to African designers is to look outwards and stop being overly protective of the continent’s cultural heritage.

“We need to embrace globalization and recognize that we can’t expect to benefit from other cultures while closely guarding our own heritage. By availing our traditional knowledge and assets to the world, and showcasing the beautiful work we can do in Africa, we open ourselves to opportunities beyond our borders,” says Bacar.

His argument is based on experience. After winning the Emerging Designer of the Year Award at the Africa Fashion Week in Johannesburg in 2012, for his creative use of the traditional and colorful Mozambican capulana fabric, he was able to secure a once-in-a-lifetime invitation to meet with over 100 world-renowned designers in Rome, Italy.

Bacar is hopeful that Africa will not always play at the end of the fashion business spectrum, but that the industry will mature and grow into a competitive, fabric-manufacturing sector. At present, the company is selling its designs globally online and has shops in Mozambique and South Africa. Plans to expand got off the ground in 2019 through a franchising venture in South Africa, but had to be shelved due to COVID-19. However, their designs are still stocked by several retailers to serve the South African market.

PARTING SHOT

The designer advises aspiring young African designers to build brands and businesses and not be sidetracked by fame or celebrity status.

“The problem is that most of these young creatives want to be designers, but don’t understand that their focus should be on building a brand. That means their work must be organized within the framework of a company that operates as a profitable business, and not as an individual.”

That advice comes from the knowledge and experience of Taibo Bacar’s own entrepreneurial journey. And it’s how the designer has managed to stand out and be different.

Brazilian agri-tech startup digitizes farm management with dividends for cattle farmers and sustainability.

By **Monica Miglio Pedrosa**, freelance writer





Photo: Daniel Guiceno / Unsplash



Brazilian agribusiness generated USD 102.4 billion in exports from January to October 2021, according to a report by the National Confederation of Agriculture and Livestock (CNA). Following the same growth trend, investments in Brazilian agritech startups surpassed USD 160 million in contributions made since 2009, according to the annual AgTech 2021 report by open innovation platform, Distrito Mining. One of these agritech startups, JetBov, founded in 2014 by Xisto Alves de Souza Jr., offers a tech management solution for over 2,700 beef cattle farms across Brazil.

JetBov's platform and app enable farmers to track the weight, health and reproductive status of their cattle more effectively. Data is collected through the JetBov app and then synchronized to the cloud platform, generating useful information for optimal farm management. Through algorithms and machine learning, the platform also allows for the simulation of predictive scenarios to support decision-making by managers.

JetBov offers its software as a service (SaaS), which it promotes through digital marketing channels, pointing to the need for an effective branding strategy. Xisto Alves de Souza Jr. only learned about the importance of registering the JetBov trademark in 2016, when he took part in a training course by SEBRAE, the Brazilian Micro- and Small Business Support Service, some two years after establishing the company.

After filing an application to register his trademark at the National Institute of Industrial Property (INPI), Alves de Souza Jr. was surprised to receive a court notification requesting JetBov to change its logo. "When we launched our website, we did a lot of research to choose and define the name JetBov, but we did not pay much attention to the image we used in the logo and inadvertently ended up choosing one that was very similar to a well-known trademark. We learned the hard way, how important it is to focus on all aspects of the brand from the outset," explains Alves de Souza.

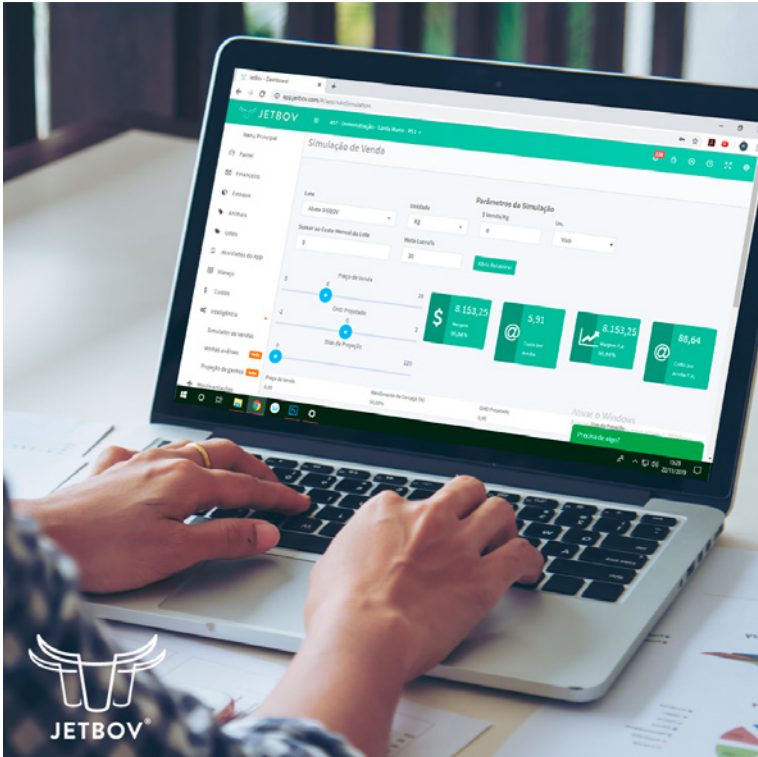
How did you come to create JetBov?

I have a degree in Business Administration, with focus on foreign trade, and in 1996, I started my career as a software developer with DataSul. At the time, it was one of Brazil's most relevant software companies, operating in the Enterprise Resource Planning market. After a few years of business consulting as a partner in one of DataSul's companies, I founded my own consulting, project and process management and strategic planning company, where I worked from 2003 to 2014. In 2014, I started JetBov. The inspiration came from my wife's family. She is a veterinarian, and her family has farms and raises beef cattle. When visiting them, I noticed that their farm management processes were manual and that the family faced many difficulties in organizing, controlling and managing their farms. I saw an opportunity to use technology to optimize the process.

How did you go about developing the JetBov service?

Initially, we understood that there was a need for basic data collection. On the farms, records were simply noted in a pocket journal. So I spent the whole of 2014 understanding the everyday needs and concerns of the family's farms. The following year, we developed the solution and validated the JetBov prototype. We then began selling subscriptions for the app through our website, with prices starting at 90 Brazilian reals (around USD 15) a month.

Photos: Courtesy of JetBov



The data collected with JetBov’s app allows farmers to follow all stages of the herd’s life cycle and also provides managers with an overview of the farm’s cash flow, field and land use data.



What types of farms use JetBov?

The service is available to beef cattle farms of any size. We developed a user-friendly management methodology to help farmers adopt practices that help them keep track of their livestock. The first step is to identify each animal using radiofrequency ear tags. This technology is being rapidly disseminated and facilitates automated data collection, making it possible, for example, to track the weight, the health, and vaccine status of each animal. The data are entered into the application, which can operate off-line. This is important, as many farms do not have network coverage in their fields. At some point, the farmer connects to the Internet to sync the application with JetBov’s cloud platform. They can do this either at the farm’s headquarters or in town, depending on the site’s infrastructure. Our platform’s algorithms analyze the data and convert it into a format that allows managers to have a detailed view of the performance and profitability of each animal and to take animal husbandry decisions in the best interests of the business.



Photo: Courtesy of JetBov



In 2021, JetBov was recognized as one of the three best startups by Smart Farm Mapa Connecta at AgroBIT Brasil, the largest technology and innovation agribusiness event in Brazil.

What other information does JetBov offer farmers?

As we process the data collected by the app in the cloud, farmers can follow all stages of the herd's life cycle on the farm, from breeding and fattening to sale. This information offers managers an overview of the farm's cash flow, field data and details of how the land is being used.

One of our plans offers subscribers satellite imaging of pastures to enable managers to make better decisions in relation to how intensively the land is grazed. The platform allows managers to make decisions more rapidly and with confidence, based on structured information.

How is JetBov making farms more sustainable?

Our technology helps farmers increase their productivity and profits, and at the same time, it helps make beef cattle farming more sustainable by optimizing land use and allowing farmers to regulate how intensively they use given areas. In 2021, we were recognized as one of the three best startups by Smart Farm Mapa Connecta at Agrobot Brasil, the largest technology and innovation agribusiness event in Brazil. We were also among the three companies selected by the Thrive Latam Challenge for the People's Choice Award.

“Keeping an eye on all aspects of your logo is as important as searching for and clearing the name of your business.”

At what point did you register the trademark?

In early 2016, when we started commercializing our service, my two partners and I participated in a training program for startup founders and managers called Startup SC by SEBRAE. That's where we learned about intellectual property and trademark registration. As we promote our service exclusively through digital marketing, we understood that it was essential to register the JetBov trademark to protect our brand. When we launched our website in 2015, we conducted an Internet search to see if the JetBov domain name was available on Nic.br (Ponto BR Information and Coordination Center, linked to the Internet Steering Committee in Brazil) and opened accounts with major social networks. But it was only after we took part in the SEBRAE course that we understood the importance of registering our trademark.

How was the trademark registration process?

We registered the brand through a partnership with ACE Startups, an accelerator based in São Paulo, which provides legal advisory services for startups in its ecosystem. The legal office filed the case at INPI in 2017, and everything was going well until we received a court notification from a well-known brand in the energy drinks business, claiming that we could not use the JetBov logo, as it was too similar to theirs.

And what happened?

We decided to change our logo. In fact, this is an interesting story, because as I said before, we did a full search on the company's name when launching the website, but did not pay enough attention to the image we used for the logo. And, as a result, without realizing it, we ended up using an image similar to a well-known trademark. This was an important learning experience and is a warning to other new entrepreneurs. Keeping an eye on all aspects of your logo is as important as searching for and clearing the name of your business. In 2018, we went through a new round of investment with SP Ventures, and one of the questions they asked was whether our trademark was registered at INPI. Trademark registration was not necessarily a prerequisite for their investment decision, but it helped, and underlines the importance of being one step ahead in this process.

Does JetBov have any plans to move into other markets?

We have clients in Angola, Bolivia, Mozambique, Paraguay, and Uruguay. They found us on the Internet and hired us. We will go international at some point, but at the moment, our main focus is the Brazilian market. It is one of the biggest markets in the world, so there is still a lot of room to expand at the domestic level.

What are your plans for the future and how do you see the platform evolving?

So far, we have doubled in size every year and plan to continue growing at this pace. The company currently employs 47 people. Regarding the platform, we are investing in converting data into intelligence through algorithms and machine learning because the number of variables involved in rearing beef cattle is huge. This phase of our work also includes merging farm information and market data. In the future, we plan to integrate with other platforms and business models to bring greater value to our customers, making it easier for them to buy and sell their produce and obtain credit.

Why vaccine independence is so important for Africa

By **Catherine Jewell**, Information and Digital Outreach Division, WIPO

During the COVID-19 pandemic, we saw warp-speed development of vaccines in some parts of the world. But for Africa, the pandemic highlighted the urgent need to build capacity on the continent to develop and manufacture much-needed vaccines. This is something the African Vaccine Manufacturing Initiative (AVMI) has been advocating for over 10 years. In a wide-ranging interview with *WIPO Magazine*, AVMI Executive Director and co-founder Patrick Tippoo, who is also Head of Science and Innovation at the South African bio-pharmaceutical company, Biovac, explains why vaccine independence for Africa is so important.

Why is it important for Africa to focus on vaccine development and manufacture?

During COVID, we saw that Africa was at the back of the queue, in spite of initiatives like COVAX, which fell short of expectations for multiple reasons. The best way to secure supply is to make it yourself. Then you have full control and can determine when and how much you are going to make and the markets you are going to supply.

Another important consideration is the need for a more diversified global vaccine supply chain so we are not overly dependent on Europe, India and the USA and thereby exposed to the risk that they will clamp down on vaccine exports. Those are the key reasons for building vaccine-manufacturing capacity in Africa.

What will it take to develop a sustainable vaccine-manufacturing ecosystem in Africa?

The question is, why hasn't it already happened? AVMI has been trumpeting the need to build vaccine production capacity in Africa for some time. The challenge goes beyond getting goods at a competitive price. It's more about the resilience of our health systems. Governments always have to manage competing priorities and while they don't deny that pandemics occur, they're not easily convinced that they're an immediate threat. And we know the answer to that!

Photo: Adene Sanchez / E+ / Getty Images



The COVID-19 pandemic highlighted the urgent need to build capacity in Africa to develop and manufacture much-needed vaccines.

In Africa, prior to the pandemic, the supply of routine vaccines for infant immunization was secure. GAVI and UNICEF have taken care of this exceptionally well, such that 60 percent of UNICEF's vaccine doses come into Africa. But during the pandemic, the vulnerability of depending exclusively on external sources of supply for COVID-19 vaccines came into full focus.

China, Europe, India and the USA were well positioned to respond to the pandemic and to manufacture COVID-19 vaccines, because they had warm facilities churning out routine vaccines on a daily basis. With the operational facilities, the workforce, the quality and regulatory approval systems in place, they could repurpose and scale-up their operations to produce COVID-19 vaccines relatively easily. Therein lies the conundrum. Without building the capacity for routine vaccine production, you will never be ready for pandemics. That's why we need to build a sustainable vaccine manufacturing ecosystem in Africa for routine vaccines.

So, is there a need to change existing vaccine procurement systems in Africa?

Yes, definitely. It comes down to simple economics. For a company to be sustainable, it needs to make a profit to cover overheads and continue operating. And to generate a profit, it needs to sell product and to sell



“Without building the capacity for routine vaccine production, you can and will never be ready for pandemics. That’s why we need to build a sustainable vaccine manufacturing ecosystem in Africa for routine vaccines,” says Patrick Tippoo.

product it needs a market. Currently, less than one percent of the vaccines used in Africa are made in Africa. Only around 10 countries self-procure vaccines; the others rely on GAVI and UNICEF. So we need to look in three directions. We need to look at the dominant position GAVI and UNICEF hold in the African vaccine market. We need to look at the countries that depend on them and we need to look at the countries that self-procure vaccines.

Countries that self-procure vaccines need to implement a coherent strategy underpinned by fully aligned internal policies to support local vaccine manufacture. It’s a challenge because different government departments have competing priorities, but they need



to align their efforts to support local vaccine manufacture. Countries that are not yet self-procuring need to signal to GAVI that they want their vaccines to come from African suppliers, as and when these suppliers are ready. GAVI recently published a white paper on the role it can and should play in shaping the African vaccine market. This is a major development. So things are shifting in the right direction.

Are there vaccine manufacturers in Africa with capabilities to do end-to-end vaccine manufacture?

African vaccine manufacturers certainly need to be doing end-to-end production. Most new initiatives and investments in vaccine production have been on the drug product, fill and finish, side of things. This requires less expertise and is easier and quicker to achieve. It's an important starting point, but we need to continue investing time, effort and money into building upstream drug substance manufacturing capacity and expand on the very limited drug substance capacity we currently have in Africa. For example, the Pasteur Institute in Dakar (IPD) is an end-to-end manufacturer of yellow fever vaccine. Drug substance manufacture also generates more economic value that feeds into the sustainability equation. Biovac and others have plans to build drug substance manufacturing capacity, but I would like to see vaccine product development capability included as well. Because when you know how to develop the product, you own the product and you have full decision-making control over the product.

What role can technology transfer partnerships play in building vaccine production capacity in Africa?

Technology transfer partnerships are the best mechanisms we have to drive accelerated capacity building. They get the ball rolling in the right direction and can help build product development capacity. That is important because it enables you to populate your vaccine-manufacturing pipeline and because it is where the scientific know how and deep understanding of the technology and product is generated.

Can African vaccine manufacturers be cost competitive?

That's the question! The answer is there is no way African vaccine manufacturers can compete against the economies of scale enjoyed by mature competitors who produce millions of doses of these vaccines. Many of them have been in business for decades and some have amortized their capital investment several times over. The costs for African startups are completely different to those of mature manufacturers based in India or China, for example.

What's the answer?

We have to introduce what some call a "resilience premium," on the vaccines we buy, and invest that premium in the development of vaccine manufacturing infrastructure in Africa. That will give African vaccine manufacturers the chance to become part of the global vaccine supply chain.

What can be done then to boost Africa's vaccine R&D capability?

We need to work from the ground up. We need to work with companies like Biovac (South Africa), Innovative Biotech (Nigeria), and others with proven vaccine R&D

“Currently, less than one percent of the vaccines used in Africa are made in Africa.”

capabilities, and identify specific projects they are working on and back those projects with funding and technical expertise to drive them to completion. It may take a little longer to see results, but the capabilities will be stronger in the end.

What are your views on the TRIPS waiver adopted by the 12th WTO Ministerial Conference in July 2022?

Under specific pandemic conditions, it will make a huge difference to access. But accelerated access to know how is what shifts the needle in terms of building vaccine production capacity. And that requires mutual technology transfer partnerships, which are not easy. In transferring mRNA technology, for example, it's not simply a question of Moderna or BioNTech agreeing to help BIOVAC produce the vaccines. It took the concentrated, around-the-clock effort of a relatively small group of researchers in those companies, to get the first product out. So, from day one, even if they wanted to share their technology, they didn't have the people to send out to Africa or elsewhere to teach them. It was only as these teams and manufacturing operations expanded, that this became an option. So these are some of the logistical realities we have to deal with in technology transfer partnerships in pandemic situations.

What is the role of IP in establishing effective drug manufacturing?

IP has a very important role to play. It's because of IP laws and ownership that there is an incentive to invest in R&D, which carries huge risks. Without IP, such investment will dry up. I don't see how it would be possible to incentivize investors, manufacturers and developers to risk their time, effort and money without protecting the reward that comes from that.

What in your opinion are the standout developments over the last 12 months in relation to vaccine development?

We have seen that we can rise to the occasion and work together when we need to in a way that we've never seen before. We've seen how it is possible to work in an accelerated way, without compromising safety, or the quality of the product at all. But we also learned that human nature is human nature and will forever be governed by self-interest. That's why we've got to build a system that enables vaccine independence for Africa.

Tell us about the WHO mRNA technology hub.

The hub was a unique move by WHO to set up a platform for multilateral technology transfers. The aim is to build up mRNA vaccine production-capacity in low- and middle-income countries. The hub is located at Afrigen, in Cape Town in South Africa and is made up of Afrigen, which is responsible for getting the technology out of the starting blocks, the South African Medical Research Council (SAMRC) and South African university groups, which provide the research, and Biovac, the first manufacturing spoke. Biovac will ensure that the technology can be scaled up and will produce

the material for the phase three clinical trials. Once the hub establishes the technology and demonstrates its validity, it will share it with multiple partners (or spokes) in other low- and middle-income countries selected by the WHO, for example, in Africa, India and Latin America. The aim is to develop and produce vaccines locally in these countries. The hub seeks to solve the almost universal challenge of access to technology. It is, however, for each company to decide how they're going to commercially exploit the technology they access through the hub.

How can market access and policy support sustainable vaccine manufacture in Africa?

Market access needs to be shaped by policy and these policies need to incentivize investment and improve vaccine production capacity in Africa. Without these policies, no sustainable production capacity will be built.

And how long before real tangible results start emerging?

Tangible results are already emerging. We've seen Aspen produce vaccine. Biovac has just run its first mRNA demonstration batch in its partnership with Pfizer. We are on track to get regulatory approval within months and will start mRNA vaccine production in 2023. Biovac is also producing the hexavalent (6-in-1) vaccine for Sanofi. We have activities in Egypt, Morocco and Senegal, and other countries, like Ghana and Kenya, are putting plans into place.

What impact do you think the recently established African Medicines Agency (AMA) will have?

It has the potential to have enormous impact, especially if, over time, it establishes itself as a credible Pan African regulatory authority and a one-stop shop for the approval of medicines in Africa. We can also expect that vaccines authorized by AMA will be accepted, in future, in other regions of the world as well.

A word for policymakers?

The time to act is now.

How would you like to see things evolve in the future?

As Nelson Mandela said, "it always seems impossible until it's done." Prior to COVID-19, it was very hard to convince anybody to pay serious attention to building vaccine manufacturing capacity in Africa. Now, it's all about how quickly we can do it and how best we can do it – thankfully! I would like to see the day when we'll be asking what are we going to do next? That's the paradigm shift we need to see, so that the world not only looks to Europe, India and the US for vaccines, but also looks to Africa. Africa has the potential to play a significant role in contributing to the global vaccine manufacturing supply chain. I'm very optimistic about our future.

Green trademarks and the risk of greenwashing

By **Kathryn Park**, Principal, Strategic Trademark Initiatives, Connecticut, USA

The last decade has seen a rapid increase in demand from consumers for “environmentally friendly” products and services. Climate change and its impacts — record-setting tsunamis and hurricanes, out-of-control wildfires, floods and landslides, droughts and scorching temperatures — are driving demand for goods that are sustainably produced and can be used without harming the environment. One recent study by Dentsu International and Microsoft Advertising suggested that over 90 percent of consumers are interested in brands that are committed to and can demonstrate they are making sustainability a priority. It further noted that companies that fail to implement this as a strategy will face a consumer backlash in the next few years. Other studies show that well over 50 percent of millennials and Gen Z consumers will pay more now for such goods. Offering green goods can be very good for business.

With its potential to lure consumers, companies have embraced green marketing in many ways. These include adopting brand names that suggest green; using words like sustainable, compostable, green, organic, eco, zero impact and natural; featuring glossy shots of beautiful mountains, oceans and forests as backdrops in their advertising; use of green-based color schemes for advertising fonts and text; and making claims about the environmental benefits their products confer. But consumers are skeptical of such marketing unless the company can transparently demonstrate the factual basis for making such claims. Equally important, false or unsubstantiated green marketing claims can attract the attention of regulators, lawmakers and potential litigants, such as competitors, customers or consumer watchdogs.

GOING GREEN THE RIGHT WAY

First, companies that are successful green marketers typically embrace sustainability across their business operations. For example, they make explicit and measurable commitments to reduce their impact on the environment, which are publicly reported and capable of being verified externally. Transparency is key. The claims must be factually supported and meaningful or material to consumers.

Photo: Brian Yurasits / Unsplash



Consumers are skeptical about green marketing unless the company can transparently demonstrate the factual basis for green claims. Moreover, false or unsubstantiated green marketing claims can attract the attention of regulators, lawmakers and potential litigants.

Second, and hand in hand with the above, successful green marketers do not overstate their sustainability impacts. Companies that make specific claims about particular products are more likely to convince consumers that the claims are legitimate if they are not couched in overly broad terms, but carefully qualified and supported by sound data.

Third, successful green marketers avoid environmental claims that, while strictly true, are misleading. For example, claiming fewer emissions in one refinery while 99 percent of the business continues to release pollutants into the environment is such a miniscule benefit that it does not materially change the negative environmental impact of the refinery's business.

Customers are loyal to brands that have a proven track record of living up to their environmental commitments. For example, the women's clothing brand, Eileen Fisher®, has a dedicated consumer base, which is appreciative of the brand's commitment to sustainability. And that is highly visible because the company takes back its used clothing and recycles it into new goods.

BEWARE THE GREEN SHEEN – THE PERILS OF GREENWASHING

Guidelines promulgated by the Federal Trade Commission in the United States in the *Green Guides* and by the European Union in its directive on Unfair Commercial Practices, offer clear guidance on what constitutes misleading information. Under both regimes, using vague terms such as “sustainable,” “green,” “eco,” and the like, are not acceptable if false or misleading. Additionally, claims need to be supported by clear factual evidence and qualified so as not to overstate their benefits. Moreover, the environmental benefit claim must pertain directly to the product as manufactured or used.



While regulators pursue companies that run afoul of consumer protection laws, claims are also pursued by non-governmental entities. Competitors may also sue, as will consumers who are misled, often as part of a consumer class action.

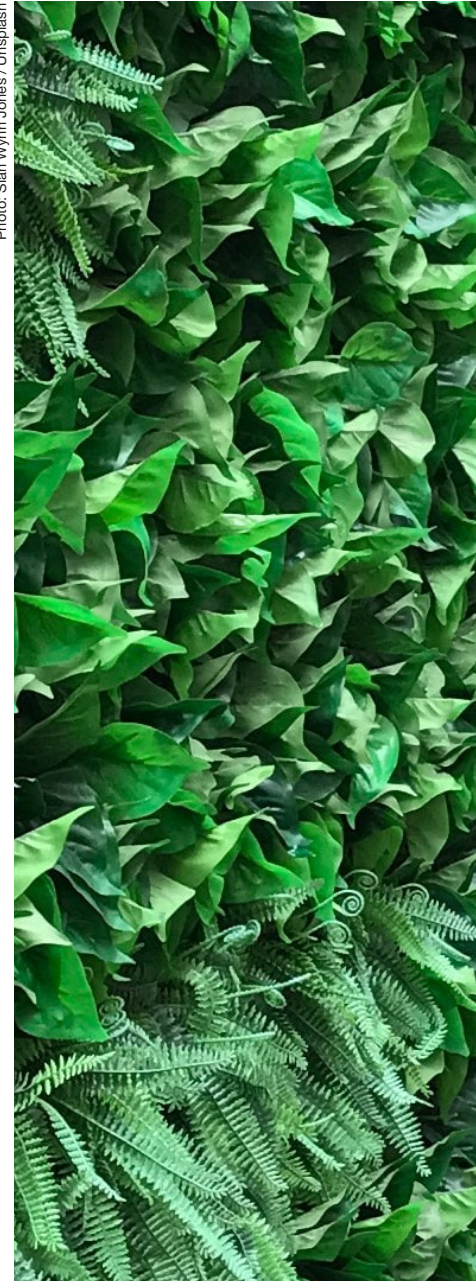
In a recent case of first impression arising in Italy, a court upheld a competitor's false advertising challenge based on greenwashing. It sustained an interim injunction prohibiting the defendant from continuing to make vague and unsubstantiated green claims. The plaintiff, Alcantara, which makes a micro-fiber used in automobiles, claimed that its competitor, Miko, was making false claims about the green nature of its micro-fiber. The court held that the claims were unverifiable and false, and ordered their immediate removal from all of Miko's advertising and web uses. It also ordered Miko to publish the court's decision on its company website for 60 days.

An example of the potential havoc a consumer class action can wreak is the case of Wesson, a maker of cooking oil. Consumers of Wesson's cooking oil brought a putative class action over Wesson's claims that the oil was 100 percent "natural," when in fact the oil was made from genetically modified organisms (GMOs). The litigation, which lasted an astonishing eight years, eventually settled.

So what constitutes actionable greenwashing? An example is labeling something as compostable, such as a garbage bag that is destined for a landfill where it will not break down. Claiming that something is recyclable when the infrastructure supports only a fraction of the recycling that would be required to remove the environmental harm — think plastic water and soda bottles — may also constitute greenwashing. There have been a number of lawsuits in the United States in the past year against Coca-Cola, Blue Triton Brands (which manufactures Poland Spring, Deer Park and other water brands), and others, for making broad sustainability claims despite the fact the vast majority of their bottles end up in landfills and are not recycled. These lawsuits have been filed by various environmental advocacy groups like the Sierra Club.

One example of this trend is the lawsuit filed in August of 2021, by the environmental group Earth Island Institute against Blue Triton (*Earth Island Inst. v Blue Triton Brands*) arguing that its sustainability claims were in violation of a specific District of Columbia law, the Consumer Protection Procedures Act, which prohibits the use of deceptive trade practices. In response, the defendant Blue Triton, argued that its claims were aspirational and constituted puffery, and were thus not actionable. The case is still pending.

Photo: Sian Wynn Jones / Unsplash



"Green" wall made of plastic plants. As demand for truly green products grows, casting a green sheen on products that aren't truly better for the environment is bound to backfire.



“Customers are loyal to brands that have a proven track record of living up to their environmental commitments.”

And while companies may sometimes technically get away with these sorts of claims, consumers are wary. As demand for truly green products grows, casting a green sheen on products that aren't truly better for the environment is bound to backfire.

In January of 2021, the European Commission, working with national consumer authorities, published a report on its annual sweep of consumer websites, which were scanned for breaches of EU consumer protection laws. The study, for the first time, focused on greenwashing and looked at green claims from a variety of consumer products. It concluded that in 42 percent of the websites examined, claims were likely false and deceptive and might well constitute actionable claims for unfair commercial practices.

Beyond the threat of enforcement actions or litigation, which is costly, loss of business looms as an even more significant long-term cost. Customers are balking when greenwashing is blatant. A quick review of YouTube, for example, reveals content created by millennials or Gen Z consumers warning of the worst green washers, and poking fun at many well-known brands. This sort of notoriety is bad for brands, potentially undoing decades of goodwill by turning off the next generation of consumers who are willing to spend more money for brands that deliver on their environmental commitments.

APPLICATIONS FOR GREEN TRADEMARKS ON THE RISE

Trademark applications for goods and services that are related to the environment and to combatting climate change continue to grow. In September 2021, the European Union Intellectual Property Office (EUIPO) released its Green EU Trade Marks Report, which analyzed trademark filings by searching over 900 terms associated with environmental protection and sustainability, such as photovoltaic, solar, wind and recycling. It found the number of such trademarks has risen steadily, from under 1,600 in 1996, the first year the EUIPO was in operation, to almost 16,000 in 2020. Filings for such marks currently account for between 10 and 12 percent of all filings each year.

Trademark applications for marks that specifically include direct environmental claims, such as calling a product green, sustainable or eco-friendly, however, are likely to face a refusal. The basis for such refusals is most often because the mark is descriptive, but another potential basis for refusal is that the mark fails to function as a trademark. A third potential basis for refusal is that the mark is deceptive.

As a descriptiveness refusal analyzes the words comprising the mark in relation to the goods delineated, it is straightforward. For example, the United States Patent and Trademark Office (USPTO) has refused registration for marks such as GREEN CEMENT for a cement that is not damaging to the environment, GREEN-KEY for environmentally friendly key cards, CARBON NEGATIVE FIBER for natural fibers used in composite materials for manufacturing, and ZERO WASTE TEE for clothing. In the EU, a similar analysis

is used and indeed, terms like “eco” and “green” are specifically called out in the EUIPO Guidelines as being descriptive when used in connection with goods or services that purport to be environmentally friendly.

Use of unqualified green trademarks is likely to give rise to a claim of greenwashing, because of the inherent impossibility of adequately qualifying the claim in the few words that typically constitute a trademark. Because greenwashing occurs where the claim is not specific or qualified, by default, most trademarks will fail that test.

Creative marketers are adept at finding ways to identify trademarks that qualify for protection, and that are suggestive but not descriptive of the environmental benefit the brand promises. For example, the outdoor lifestyle-clothing brand Patagonia has registered trademarks such as BETTER THAN NEW® to identify consumer goods. Everlane, another clothing company, has been successful registering marks such as RECASHMERE® and REWOOL® for goods made of recycled textiles.

SEALING GREEN CREDENTIALS WITH A CERTIFICATION MARK

One proven way that companies can establish their green credentials is through use of a certification mark. Consumers increasingly rely on certification marks when making purchasing decisions. A certification mark is one owned by an entity that sets standards and testing methodologies that must be met by the companies seeking to use that mark. The Marine Stewardship Council (MSC), for example, has a certification program for fisheries that sets strict standards designed to lessen the negative impacts on the oceans of fishing. These standards are updated regularly as science evolves, and those seeking certification must establish that they meet those standards. The MSC certification mark is used directly on consumer facing products and by retailers and restaurants to signify that the seafood and fish that bear the mark have been harvested in accordance with these standards.

Another example is the Leadership in Energy and Environmental or LEED certification mark, used in the building and construction industry to indicate best practices in sustainable building. Considered the gold standard in certification programs, LEED certifications identify building projects that have positive material environmental improvements, such as lower water use, reductions in carbon emissions, and so on. And there are many others, such as BREAM (Building Research Environmental Assessment Method), which rates and certifies sustainability of buildings, the Rainforest Alliance certification for farms, Green Seal for consumer and commercial products, and SIP Certified for vineyards and wineries.

For brands that are looking for a way to quickly communicate a commitment to sustainability, a certification mark, used in conjunction with the brand, is often the best choice.





Arbitration and mediation: resolving patent licensing disputes in the world of standardized technology

by **Margarita Kato**, Legal Case Manager,
WIPO Arbitration and Mediation Center



With our mobile phone, we can play music on the move, phone a friend halfway around the world, or even print a document. Two important factors have made these things possible. First, impressive advances in technology, and second, the *standardization* of technology, which ensures our devices are able to communicate with one another. The aim of developing technology standards is to create a seamless and efficient business landscape for the commercialization of these technologies. However, in practice, market inefficiencies often emerge, which can create obstacles to business. Arbitration and mediation offer useful avenues to overcome such obstacles.

STANDARDIZATION FOR INTEROPERABILITY

Standardized technology enables interoperability between products. These standards often go unseen but play a crucial role in enabling seamless communication between our digital devices. 5G, a cellular communication standard, is an example. Devices adopting the 5G standard can benefit from using the global infrastructure that enables 5G use. 5G promises faster data transmission speeds, ultra-low latency, greater reliability and access to huge network capacity. Some estimates suggest up to 100,000 patents make up the 5G standard.

Other standards relate to WiFi, semiconductor manufacturing and even the ability to share your location automatically when making an emergency call. The patents which are “essential” to a standard are called “standard essential patents” or “SEPs”. Devices that will use 5G, which may include everything from game consoles, factory equipment, to wearable health tech, will need to license the patented technology, or SEPs, which makes up the 5G standard.

DEVELOPING AND MANAGING STANDARDS

Standards are developed and set by a variety of different stakeholders. Standards for 3G and 4G technology were designed by the International Telecommunication Union (ITU), which, together with its members, is now developing international standards for 5G networks. The European Telecommunications Standards Institute (ETSI) also develops standards for 5G and has a number of patented component technologies, which will be integrated into future 5G systems.

A patent holder of a technology that has become part of such a standard is in the enviable position of knowing that there will be a large market for that technology. For example, if a patent becomes part of the 5G standard, the patent holder knows its technology will need to be licenced by all relevant manufacturers using the 5G standard. However, this scenario also creates the risk that holders of standard essential patents decide to exploit their position and demand higher royalty fees than justified.

ENSURING A FAIR DEAL WITH FRAND

To solve this problem, and ensure use of SEP-related technologies on fair terms, standard-setting organizations introduced “FRAND” licensing. FRAND stands for “fair, reasonable and non-discriminatory.” Patent holders who wish to have their patents included in a standard must agree to license their patents on FRAND terms. If they do



Photo: urbazon / E+ / Getty Images

The *standardization* of technology ensures our electronic devices are interoperable and creates an efficient business landscape for the commercialization the technologies that make up a standard. Examples include the standards around 3G, 4G and 5G broadband cellular networks.

not offer a FRAND license, the licensees may take legal action and request the court to set a rate deemed to be in line with FRAND terms. Equally, if a licensee refuses to take a FRAND license but continues to use the patented technology, the licensee may be sued for patent infringement.

UNWRAPPING THE MEANING OF FRAND

So what does “fair, reasonable and non-discriminatory” licensing really mean? The “non-discriminatory” element of FRAND is fairly straightforward: patent holders agree to license their patents to anyone, thereby giving up their freedom to exclude anyone from using their technology. However, the terms of FRAND licenses also have to be “fair and reasonable,” which are inherently subjective concepts. This is where issues arise. For example, is a licensing rate, which at first seems too high, in fact reasonable insofar as it reflects the fact that other patents, which are not included in a standard, are also being licensed? Or are differences in rates justifiable because they are offered at different stages of the supply chain? For example, with one rate offered to the up-stream manufacturers of individual electrical components and another to the company further downstream, which is selling the final device. These are all considerations, which make the determination of what is “fair and reasonable” a very fact-specific process.

Some FRAND licensing negotiations inevitably end up in court with parties seeking clarification on what constitutes FRAND terms. However, such court disputes can

become very expensive and messy. In some instances, companies have sued each other in different countries, requested injunctions and even drawn out proceedings for strategic purposes. Perceptions have also been created, fair or not, that certain national courts are more favorable to patent holders and others more favorable to implementers. Parties then have an incentive to pursue litigation in one country over another, depending on their objectives, and to try to block their counterparty from pursuing litigation elsewhere. Such dynamics benefit no one, least of all end users, who may be the ones absorbing these costs of doing business.

INTERACTION WITH NATIONAL COURTS

That is why, increasingly, courts are recommending that parties try arbitration or mediation to resolve SEP-related disputes. For example, in *InterDigital v ZTE and Nokia*, the Delaware District Court in the USA expressed its view that arbitration may be a suitable alternative, with the judge stating: “It does not seem to me that the litigation by itself is a very effective means to make an agreement between willing parties. I understand that the parties cannot agree on the scope of arbitration. If they could, or they could decide to have the arbitrator decide the scope, that would appear to be a possible way to proceed.”

The WIPO Arbitration and Mediation Center, which administers a variety of arbitrations and mediations, is seeing an increase in the number of FRAND cases, in particular, in the number of FRAND mediations. Filing mediation requests with the WIPO Center can be of strategic value to parties because a crucial element of FRAND licensing is for the licensor to demonstrate it is a “willing” licensor. Depending on the jurisdiction, agreeing to a mediation process may be one factor a court considers when determining willingness to license. The WIPO Center has seen one party make such systemic use of WIPO Mediation – filing numerous requests for WIPO Mediation as one way of demonstrating its willingness to make a deal.

THE BENEFITS OF MEDIATION AND ARBITRATION

There are other notable benefits of using mediation and arbitration.

Mediation can help parties resolve their disputes confidentially and in a manner that focuses on commercial interests. During a mediation, the mediator discusses the dispute with the parties to better understand their individual perspectives on the dispute. The mediator then uses that information to help the parties reach their own settlement, or suggest possible ways forward.

The focus isn't on legal analysis but on identifying the mutual commercial benefit to the parties. And that's a real benefit. In a number of such cases handled by the WIPO Center parties have not only reached a settlement but have concluded new commercial agreements.

Many courts have recognized the benefits of mediation. For example, the IP Courts in China have referred ICT patent infringement cases to WIPO Mediation. In addition, courts with particular expertise in IP in the United States and Germany have been encouraging parties to attempt mediation throughout court proceedings. The United States Patent and Trademark Office has also recently expressed its support for mediation and arbitration, by partnering with the WIPO Center to facilitate the resolution of SEP disputes.

THE VALUE AND COST OF FRAND DISPUTES

There is a misconception that the patent portfolios at the heart of FRAND-related disputes and negotiations are of astronomically high-value. In fact, this is not always the case. For the many SMEs operating in this area, the sums at play in FRAND licensing simply do not justify the cost and time involved in going to court. Mediation is an affordable alternative, where costs can be kept low. For example, the WIPO Center often sees mediations where a mediator spends approximately 15 hours on a case. With indicative mediator fee rates between USD 300 and USD 600 per hour split between the parties, this can be a very affordable option, even if settlement isn't reached. Indeed in two recent FRAND mediations, while the parties did not settle in full, they managed to significantly narrow the issues in dispute. The mediations related to disputes pending before courts in Europe and China and the parties were able to review sensitive information, such as comparable licences – by virtue of the confidential nature of WIPO Mediation – and reach agreement on certain issues.

AVOIDING PARALLEL PROCEEDINGS

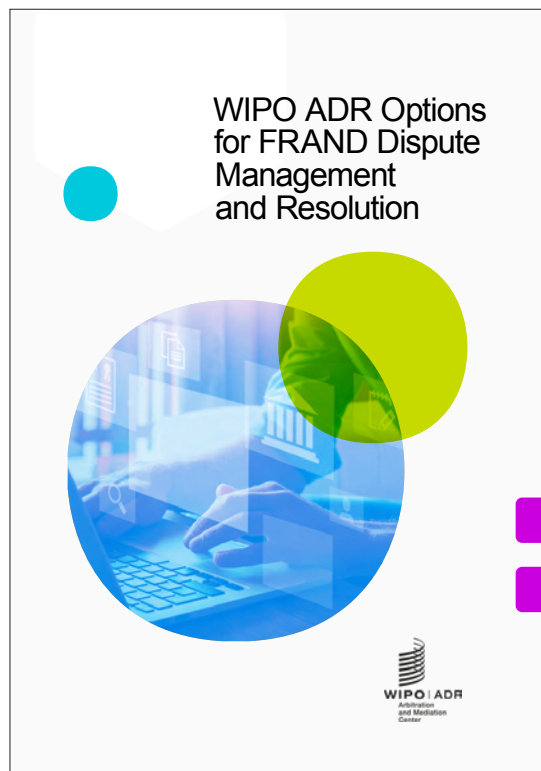
A final point to note is that mediation is a consensual procedure and a party can abandon the process at any time. Where parties want more finality, they can opt for arbitration, which offers a number of benefits over court litigation. For example, when a patent holder alleges breach of its patents in many different jurisdictions, inevitably, the patent holder will need to either start proceedings in those countries or choose to forgo enforcement in certain countries. However, with arbitration, parties can agree to consolidate all possible claims across all jurisdictions. This feature eliminates the uncertainty created by the broad use of injunctions where a party can apply for an anti-suit injunction to stop the other side from filing a claim in a different national court. However, what sometimes happens in FRAND disputes is that the other party then applies for its own anti-suit injunction. These conflicting anti-suit injunctions create additional costs and delays. These can be avoided with arbitration (and mediation), as parties can resolve their disputes and conclude a global license confidentially.

LIKE COURTS, ARBITRATION OFFERS INTERIM MEASURES

There is also a common misconception that if parties opt for arbitration, they must forego the legal tools available to national courts, such as, injunctions, measures for the preservation of assets, and orders for a party to provide security. However, under the WIPO Arbitration Rules, an arbitral tribunal can make such interim orders and parties are also permitted to seek interim orders from judicial authorities. This means that parties can benefit from a range of tools that are usually incorrectly associated with court litigation alone.

Given the support from courts to promote the use of arbitration and mediation for FRAND disputes, the hope is that parties will increasingly select mediation and arbitration as vehicles to resolve their disputes. This will benefit both the parties involved as well as end-users, who ultimately bear the costs of FRAND disputes.

Further information regarding the WIPO Center's services is available online and any questions can be emailed to arbiter.mail@wipo.int



WIPO Guidance on FRAND Disputes, developed in collaboration with ETSI, may be accessed by the following link: <https://www.wipo.int/amc/en/center/specific-sectors/ict/frand/>

Copyright piracy and cybercrime: enforcement challenges in India

By **Arpan Banerjee** and **Neil Gane**, Alliance for Creativity and Entertainment (ACE), Hong Kong (SAR), China



Photo: Courtesy of Lieutenant-General Rajesh Pant

“Malware is the starting point of all our cyberattacks, whether it is financial fraud, piracy, data theft or an attack against a strategic sector. Everything starts with luring or clickbaiting,” says Lieutenant-General Rajesh Pant (above), National Cyber Security Coordinator, India.

In recent years, concerns around online content piracy have increased around the world. The reasons are well-known: a rise in illicit streaming platforms and torrent websites; errant web hosting services that ignore piracy on their servers; and the ease and anonymity offered by certain online intermediaries. A further hazard arises from linkages between piracy and hi-tech cybercrimes. While governments worldwide are grappling with these obstacles, a country that merits special attention is India — where a globally prominent film industry is hindered by widespread piracy and a challenging enforcement environment.

THE PIRACY-CYBERCRIME NEXUS

In 2010, the Indian government's Committee on Piracy (CoP) linked piracy with large revenue and job losses. The CoP presciently observed that the advent of smartphones and 3G would make it "much easier to undertake all kinds of film piracy." Indeed, today, premium streaming services in India are routinely victims of mass piracy. Like in other countries, piracy syndicates in India profit mostly through user subscription fees or advertising revenues. The former method, though brazen, is self-explanatory. The latter method, however, is more insidious, owing to the presence of high-risk advertisers promoting suspicious links. Research, by McAfee, tracking pirated Indian movies and shows, has flagged such links for attempting "to install malware or steal passwords and personal information."

For further insights, we interviewed Lieutenant-General Rajesh Pant, a noted military cybersecurity veteran now advising the Indian government as National Cyber Security Coordinator (NCSC). Pant explained: "Malware is the starting point of all our cyberattacks, whether it is financial fraud, piracy, data theft or an attack against a strategic sector. Everything starts with luring and clickbaiting."

Pant listed some recent government initiatives meant to address the threat, including a National Malware Repository and the Indian Cyber Crime Coordination Centre (I4C). Notably, the I4C includes a National Cyber Crime Reporting Portal, where cases of piracy — with or without a malware nexus — may be reported. Pant added that piracy and malware attacks were separately punishable under the Copyright Act 1957 and the Information Technology Act 2000.

CRIMINAL ENFORCEMENT

Despite the impressive expertise of the NCSC and I4C, India's federal make-up means that the responsibility to investigate piracy generally lies with state governments. Thus, the success of anti-piracy enforcement in India is often determined by subnational rather than national efforts. Here, the CoP had observed that piracy is "very low in terms of priority in the radar of law enforcement agencies." Similarly, the International Intellectual Property Alliance has reiterated that criminal enforcement in India is "very daunting", and marked by "lack of appetite by local enforcement and significant time delays".

Pursuing pirates outside major cities appears to be particularly challenging. For example, we examined the records of a high-profile piracy case in the city of Jabalpur (*Rahul Mehta v State of Madhya Pradesh* (2015)). In 2015, the Jabalpur police had arrested a piracy syndicate responsible for pirating *Baahubali*, one of the highest grossing Indian movies of all time. The accused were granted bail by the trial court. However, the case is still pending and there is no record of a hearing after 2017. Gallingly, the accused were arrested again, in Hyderabad, for pirating *Baahubali 2*, the film's equally successful sequel. While in the recent case of *Knit Pro International v State of Delhi* (2022), the Indian Supreme Court declared criminal copyright infringement as a "non-bailable" and "cognizable" offence (i.e. one is arrestable without warrant and only a court can grant bail), the ground-level impact of the decision is unclear.



“The battle against online piracy in India (and beyond) is [...] weighed down by universal and local challenges.”

THE MIPCU MODEL

At the state level, a novel enforcement model exists in the form of a police unit in the state of Maharashtra (whose capital, Mumbai, is the hub of Bollywood). The Maharashtra government established the Maharashtra Intellectual Property Crime Unit (MIPCU) in 2017, to provide right holders better enforcement.

The MIPCU was established as a division of Maharashtra Cyber, the state police's cybercrime wing, and structured as a public-private partnership. To learn more, we visited the office of Maharashtra Cyber and met with the officers currently at the helm: Yashasvi Yadav, Special Inspector General of Police, and Sanjay Shintre, Superintendent of Police. We also met with a team of computer professionals, who make up the MIPCU's engine room, and interviewed them via a written questionnaire (which they preferred to answer collectively, as "Team MIPCU").

Yadav acknowledged that piracy was "rampant" in India. He also confirmed linkages between piracy and malware, stating: "Certain malware providers use pirated content as a trap. Their main business is not piracy. Their main intention is to infect computers, steal data or install spyware. People are prone to click on freeware and free content." Yadav added that it was "not an easy task" to track down such malicious actors, who frequently masked their footprints using technologies like VPN and Tor browsers.

Shintre, however, pointed out that cybercriminals did occasionally slip up. He cited the 2021 case of ThopTV, a popular piracy app funded by subscription fees. Apparently, ThopTV's mastermind had inadvertently disclosed his whereabouts, allowing Maharashtra Cyber to swoop in and arrest him. Interestingly, the arrest had occurred outside Maharashtra, in Hyderabad. In May 2022, an accomplice was arrested by Maharashtra Cyber near Kolkata. Yadav and Shintre explained that Maharashtra Cyber could pursue pirates outside Maharashtra if pirated content was being disseminated within Maharashtra. Such a move, however, is contingent on registering a "First Information Report" (FIR) in Maharashtra. In other words, such action can only take place when a copyright owner files a criminal complaint, after which the police prepare a report. The onus of filing the complaint lies on the copyright owner.

Despite potential advantages, the MIPCU does have limitations. For a start, the MIPCU cannot directly shut down piracy websites or apps. Such action is the administrative remit of the Indian Ministry of Electronics and Information Technology (MEITY). Further, Team MIPCU's responses to our questionnaire indicate that the unit relies heavily on voluntary compliance. In this regard, Team MIPCU listed many difficulties, ranging from non-compliant hosting services in "rogue geographies" outside India to "members-only" piracy platforms hidden from public view.

Other limitations raised include sluggish takedown times over weekends, with some mobile apps taking up to two weeks to act. Moreover, Yadav noted that despite the ubiquity of online piracy, right holders were not registering enough FIRs with Maharashtra Cyber. "I have not seen more than a handful," he remarked. Yadav felt that this limited the police's ability to escalate matters.

Many right holders, however, do see the benefits of using criminal prosecutions as deterrents. In a separate interview, Anil Lale, General Counsel of Viacom 18, informed

us that Viacom 18 had filed multiple complaints with Maharashtra Cyber, including the FIR in the ThopTV case (for which Lale praised the MIPCU's "commendable action)."

Lale declined to comment on the strategies of other content media companies, but offered some suggestions as to why the number of FIRs may be low. He pointed to systemic problems with the legal system and law enforcement, the difficulty in prosecuting overseas-based pirates, and the tendency of many right holders to prioritize (understandably) the removal of pirated content over the prosecution of offenders. Lale also felt that, insofar as it is a state-level body, the MIPCU had inherently limited powers and resources. Given these drawbacks, he suggested that the establishment of a larger, national body empowered to receive and investigate complaints from across India might be more effective.

CIVIL ENFORCEMENT

On the civil litigation front, the situation in India appears brighter. Many states in India have set up fast-track courts, and the Delhi High Court has recently established an Intellectual Property Division. The Delhi High Court's approach towards online film piracy (expertly summarized by Justice Pratibha Singh of the Intellectual Property Division in a recent WIPO presentation) has been especially noteworthy. In the leading case of *UTV Software Communications Ltd. v 1337X.to* (2019), the court recognized "dynamic" injunctions (to preempt pages from shifting across different URLs) and specified criteria to determine when to block "rogue websites" (i.e. websites that "primarily or predominantly share infringing content)." Pant explained that MEITY officials meet regularly among themselves and with intermediaries to implement such blocking orders. The MEITY instructs the Department of Telecommunications to inform ISPs to carry out the blocking of an IP address, which he notes can be done in "a matter of minutes." More recently, the Delhi High Court, in *Neetu Singh v Telegram* (2022), directed Telegram to disclose information about uploaders of pirated content.

However, by the time a court order is passed, and finally executed, the proliferation of pirated content may have already occurred. This shortcoming (which is not peculiar to India) is especially relevant for pirated streams of live entertainment and sports events. Legal costs, which may be prohibitively expensive for smaller outfits, present another major hurdle in the civil litigation process.

THE WAY AHEAD

The battle against online piracy in India (and beyond) is evidently weighed down by universal and local challenges. The universal challenges range from the technological sophistication of cybercriminals to problems of international jurisdiction. The local challenges, however, chiefly encompass systemic problems with law enforcement agencies and the criminal justice system. Realistically, it is perhaps only the latter issue that the Indian government can address.

The CoP has observed that piracy is inappropriately viewed as "a low-risk high-reward" crime in India, with law enforcement agencies challenged with tackling "heinous criminal activities." However, if the linkages between piracy and malware are better highlighted – through research studies, symposiums, and police training workshops – piracy should automatically rise in the pecking order of serious crimes and receive greater attention. This task could plausibly be undertaken by the Cell for IPR Promotion and Management (CIPAM), a training and awareness cell launched by the Indian government in 2016. CIPAM's website shows that it has organized several educational workshops and involved leading Bollywood stars in an anti-piracy campaign.

Finally, many state governments may consider setting up their own IP cybercrime units. Operated in a targeted and cost-effective manner, such units would likely attract the endorsement and support of industry. In prioritizing the certainty of punishment over its severity, these units would also, no doubt, offer a service that most right holders would like to see in place.



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

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

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