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Vol. 7, No. 1, January - March 2017
www.aripo.org

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INTRODUCTION
The African Regional Intellectual Property Organization (ARIPO) is an intergovernmental organization, which was established on 9 December, 1976 under the Lusaka Agreement signed in Lusaka, Zambia. Its mandate is to develop, harmonize and promote intellectual property in the Member States of the Organization and in Africa.

Membership of the Organization is open to all the States members of the United Nations Economic Commission for Africa (UNECA) or the African Union (AU). Currently there are nineteen Member States, namely; Botswana, The Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mozambique, Namibia, Rwanda, São Tomé and Príncipe, Sierra Leone, Somalia, Sudan, Swaziland, United Republic of Tanzania, Uganda, Zambia and Zimbabwe.

Substantive activities of the Organization are implemented through three treaties each focusing on a specific field of intellectual property. These treaties are: (a) the Harare Protocol on Patents and Industrial Designs; (b) the Banjul Protocol on Marks, and (c) the Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore, and (d) the Arusha Protocol for the Protection of New Varieties of Plants.

The Harare Protocol was concluded in 1982 and entered into force on 25 April, 1984. Among other functions, it empowers the ARIPO Office to grant patents and register industrial designs as well as utility models on behalf of the treaty's contracting states. The Harare Protocol incorporates other international treaties of relevance, for instance, the Patent Cooperation Treaty (PCT) and therefore enables applicants from the African region and elsewhere to file international applications and obtain protection of their intellectual property rights. The Harare Protocol has also been linked to the Budapest Treaty, which enables applicant to provide information on new microorganisms claimed in patent applications. All Member States of ARIPO, with the exception of Somalia, are party to this treaty.

Search services
ARIPO has custody of worldwide patent documents. With the available documentation and information retrieval systems, the organization offers several search services to the public including state of the art, novelty, validity, Bibliographic and Patent map searches.


The Protocol empowers the ARIPO Office to register marks for goods and services in respect of and on behalf of the contracting states. Similar to the Harare Protocol, the Banjul Protocol provides a centralised system of registration and provides a mechanism for the ARIPO system to co-exists with the national systems of the Banjul Protocol contracting states. Thus, an applicant can choose to register a mark with a national office for protection limited to that country or may elect to use the ARIPO route in which case the application should designate at least one contracting state up to the maximum of nine.

The Swakopmund Protocol was concluded on 9 August, 2010 at a diplomatic conference held in Swakopmund, Namibia. It entered into force on 11 May, 2015. It acknowledges that traditional and local communities have for long utilised their traditional knowledge and culture for their survival and livelihood, and that there is now a gradual disappearance, erosion, misuse, unlawful exploitation and misappropriation of this traditional knowledge and folklore. As such, the conference concluded that the treaty was the first huge step towards prevention of this unlawful exploitation. Thus, the treaty seeks to empower and enhance capacity of custodians of traditional knowledge and folklore to realise their aspirations and prosperity through an effective protection system that will create a conducive environment for the respect, recognition, development and promotion of traditional knowledge and expressions of folklore and their continued use and development.

The Arusha Protocol for The Protection of New Varieties of Plants
The Arusha Protocol for the Protection of New Varieties of Plants was concluded by a Diplomatic Conference that was held in Arusha, the United Republic of Tanzania on 6 July, 2015. The Protocol will enter into force only when four States have deposited their instruments of ratification or accession. The Arusha Protocol will provide Member States with a regional plant variety protection system that recognizes the need to provide growers and farmers with improved varieties of plants inorder to ensure sustainable agricultural production.

Protection of Copyright and Related Rights
ARIPOs mandate on Copyright and Related Rights aims to ensure the Organization coordinates and develop policies for the effective growth and protection of Copyright and Related Rights, recognizing the value of creative industries to the contribution of national economies and employment in Member States, the emancipation of copyright from all forms of piracy and strengthening infrastructure used for enforcement of copyright laws in the Member States and Africa at large.

Capacity Building Activities and Awareness Creation
ARIPO established a state of the art Academy, which was inaugurated on 15 February, 2006 to serve as a center of excellence in teaching, training, research and skills development in the field of intellectual property for different target audiences, including creators, inventors, artists, business managers and IP professionals, journalists, parliamentarians, policy makers, university lecturers, government officials of IP institutions, students and the civil society. The Academy provides intellectual property training in different areas including Masters in Intellectual Property, tailor-made courses, professional courses, research studies, attachments, internships and fellowships, and training programmes that focus on industrial property, copyright, enforcement, traditional knowledge, generic resources and folklore.
The main objective of intellectual property management strategies is appropriation. In addition, sound intellectual property management can help innovative SMEs achieve a range of objectives, including securing investment, identifying and attracting potential partners or buyers, deriving value from collaborations, and managing litigation risks. SMEs tend to work to a significant degree with external partners, in order to fill gaps in their own resources and expertise and also because their niche expertise is attractive to established players. Collaboration carries the risk of knowledge leakage to rivals and thus requires judicious management of intellectual assets. Given their limited resources, innovative SMEs need to develop strategies that are resource-effective to protect and manage their intellectual property.

Innovation enables companies to maintain their competitive edge, contributing to expansion of capacity and also generating additional capital investments, productivity, technological advancement, employment, and growth. It is not enough for a firm to create something new and useful. The firm must also succeed in appropriating the value of its innovation.

Collaborative innovation is particularly important for SMEs to overcome disadvantages linked to their relative lack of resources and scale, as well as gaps in business expertise, innovative SMEs often engage with entities with complementary assets. SMEs and bigger companies alike benefit from flows of knowhow resulting from formal and informal interactions, which can accelerate product development, improve the innovative process, and hasten the commercialization of new solutions. Successful collaborative innovation is underpinned by judicious management of IP to prevent unanticipated free-riding by partners or potential rivals.

Often innovative SMEs display proficiency in a specific niche field, whereas they generally lack expertise in crucial areas outside of their core offerings. Therefore collaboration can be instrumental in bridging gaps in competence that may otherwise hinder an SME’s success. SMEs use collaboration to shorten innovation time, gain complementary experience and resources, reduce risk and cost, and increase the flexibility of their. SMEs may partner to get access to market and sales channels at the commercialization stage, thus relying on established firms to help bring new solutions to market. Larger firms also benefit from collaborative research and development, in some sectors, innovative SMEs are an increasingly central part of the innovation pipeline of established players.

Innovative SMEs’ commercial success is enhanced by collaboration with research and development institutions, and industry. Collaboration can reduce the time to innovate, increase the scope of innovation, and promote its diffusion in products and processes. The benefits of collaborative efforts are maximized when the SMEs and research institutions are able to widely share information. SMEs collaborating with industry and academic institutions with significantly more resources at their disposal, and which can more readily commercialized the results of joint work. IP management strategies can help innovative SMEs to manage such risks.

We look forward to get feedback from you through our email below.

mail@aripo.org
OAPI and ARIPO Cooperation Agreement

The African Regional Intellectual Property Organization Director General Mr. Fernando dos Santos and sister organization, Organisation Africaine de la Propriété Intellectuelle [African Intellectual Property Organization] (OAPI) Director General Dr. Paulin Edou Edou, signed a four year Cooperation Agreement on 9 February, 2017 at the ARIPO headquarters in Harare, Zimbabwe. This Agreement, which is envisaged to take the relationship of the two organizations to new heights, abrogates two earlier agreements signed by the two organizations in 1996 and 2005 respectively.

The new Agreement establishes a comprehensive cooperation framework in intellectual property matters for the two parties. In the new Agreement, OAPI and ARIPO have agreed to: work towards the harmonization of their systems; exchange documentation and technical information; mutually cooperate in the development of training and joint capacity building programs including in user awareness. The agreement also requires that either party offers technical assistance to the other when such assistance has been requested for. Importantly too, OAPI and ARIPO agreed to take common positions on major IP issues affecting the Member States of the two organizations at continental and international levels. A joint commission was also established by the two will meet annually to assess the level of implementation of those agreed biannual work plans.

ARIPO and CISAC Sign MOU

The Director General of the African Regional Intellectual Property Organization (ARIPO), Mr. Fernando dos Santos and the Director General of the International Confederation of Societies of Authors and Composers (CISAC), Mr. Gadi Oron, a France based international non-governmental organization that works to protect the rights and promote the interests of creators worldwide, signed a Memorandum of Understanding (MoU) on 14 February, 2017.

The MoU comes at a time the world is beginning to appreciate the value and importance of the copyright industry in the economic development of nations. However, despite Africa seemingly possessing abundant natural creative talent in this area, the benefits of that to the continent are not commensurate.

Through this MoU, the two organizations aim to promote this creativity for the socio-economic and cultural development of ARIPO member states and Africa at large through effective administration and use of copyright protection systems as well as building the technical capacity of collective management organizations (CMOs). Officials from Zimbabwe Music Rights Association (ZIMURA), a local CMO, witnessed the signing of the MoU.
17th Annual Congress of the African Seed Trade Association

The 17th Annual Congress of the African Seed Trade Association (AFSTA) took place at the King Fahd Hotel in Dakar, Senegal from 28 February – 2 March, 2017 with the aim of providing a platform for the seed industry and stakeholders to connect and discussing how they can improve agricultural production, update on technologies for African Agricultural Transformation and discussing how to address the current challenges facing the seed industry. The conference also afforded opportunities for top seed traders and producers to exchange views and experiences covering a wide spectrum of issues including scientific and technological implications of bio-technology and climate change.

The purpose of the meeting, among others, was to gain understanding of the ARIPO system and the development and the implementation of the Arusha Protocol. At the end of the interactive session, it was agreed that the seed associations in Africa, particularly in ARIPO Member States should create awareness on the importance of the Arusha Protocol and the benefits to African farmers.

The meeting provided a solid framework for exchange amongst the major players of the African Seed Sector and afforded ARIPO the opportunity to appreciate the current state of play in the seed industry and strengthen networks amongst the seed stakeholders.

10th Pan-African Workshop on Access and Benefit-Sharing


The purpose of the workshop was to provide a forum for National ABS Focal Points and representatives of all relevant stakeholder groups including indigenous peoples and local communities, research and the private sector to obtain information, exchange experiences and discuss potential strategies for the implementation of ABS from an African perspective. Participants were also updated on international and regional processes in ABS and related fields, including on the outcomes of COP 13 / COP MOP 2 of the CBD and the Nagoya Protocol in Cancún, Mexico with the view to preparing for COP 14 / COP MOP 3. Over 140 participants including National ABS Focal Points, representatives of Competent National Authorities for ABS, relevant regional and international organisations and indigenous peoples and local communities, as well as stakeholders from research, civil society and the private sector involved in bio trade and bioprospecting attended the workshop. ARIPO was represented by Emmanuel Sackey, Intellectual Property Development Executive at ARIPO taking part during the AFTSTA Annual Congress.
Training Session for Officials of KISCH on ARIPO Procedures

On the invitation of the management of KISCH IP, to train their officials on the procedures of the ARIPO System, Ms Flora Mpanju (Head of Search and Substantive Examination) and Mr Charles Pundo (Head of Formality Examinations) were appointed to undertake the training mission on 10 March, 2017.

The training was conducted at the Sandton Office of KISCH IP. At least 25 officials from the Office participated in the training. Mr Kruger, Chairman of KISCH IP, gave opening remarks whilst Ms Mpanju gave opening remarks on behalf of the Director General Of ARIPO. In his remarks the Chairman thanked the Director General of ARIPO for accepting his invitation. He pointed out that his Office is expanding its business in Africa hence the need to engage ARIPO directly. KISCH IP has been filing ARIPO application but this has been through third parties. Ms Mpanju on behalf of the Director General of ARIPO thanked the Chairman of KISCH IP for the invitation and hoped that this is opportunity for future collaborations. She thanked the organisers for the hospitality extended to the ARIPO Officials.

The interest shown by the user in the ARIPO system was impressive and it was clear that the presenters managed to clear some negative myth about ARIPO system. This would be to the benefit of ARIPO to extend this initiative to other user in the region.

ARIPO and SAIC Renew Memorandum of Understanding

The African Regional Intellectual Property Organization (ARIPO) and the State Administration for Industry and Commerce (SAIC) of the People’s Republic of China signed a new Memorandum of Understanding at the ARIPO headquarters in Harare, Zimbabwe on 30 March, 2017. The Honorable Minister of SAIC, Mr. Zhang Mao, and the Director General of ARIPO, Mr. Fernando dos Santos signed the MoU on behalf of the respective parties. The new MoU abrogates two previous MoUs signed between the two Parties on 31 March, 2011 and 8 September, 2014 respectively.

This MoU establishes a general framework for bilateral cooperation between ARIPO and SAIC on activities aimed at improving the quality of administration and effectiveness of the trademark systems through the exchange of information and best practices, as well as through capacity-building activities. The objective is to streamline the trademark application process and deal with protection issues of well-known trademarks and geographical indications.

ARIPO and SAIC agreed to work on initiatives to promote awareness and encourage the use and understanding of the IP system relating to trademarks in each’s respective territory. In that regard, they shall develop and institute capacity-building activities, such as comparative research studies, workshops, training on examination, opposition and dispute resolution as well as on IT.

With regard to having geographical indications stimulate economic development, the Parties will increase efforts to promote value addition of agricultural products, and facilitating rural economic development by the registration and protection of trademarks and GIs for agricultural products thereby enriching farmers. The Parties will meet annually to evaluate the cooperation activities for the year and establish the cooperation plan for the following year.

For ARIPO, the MoU is timely in that, while China is increasingly becoming the single largest investor in the region, there is very little IP rights protection being sought by the Chinese investors in the same region.
Namibia Enacts the BIPA Act


The Minister of Industrialization, Trade and SME Development, Hon. Immanuel Ngatjizeko, in terms of section 33 of the BIPA Act, 2016 (Act No. 8 of 2016), made the determination.

The enactment of the enabling legislation transforms BIPA into a fully-fledged autonomous agency. The Authority comes to “improve service delivery and ensure the effective administration of business and intellectual property rights (IPRs) registration” according to the BIPA website.

ARIPO congratulates the Republic of Namibia for this positive step in the administration of its intellectual property.

Contact Address: Business and Intellectual Property Authority (BIPA), 7 Gold Street, Prosperita, Windhoek, Namibia, www.bipa.na

Malawi Roving Seminars

The 2017 edition of ARIPO’s flagship programme of roving seminars kicked off with two seminars being organized by the Organization, jointly with the World Intellectual Property Organization (WIPO), the Japan Patent Office (JPO) and in cooperation with the Government of the Republic of Malawi in the cities of Blantyre and Lilongwe from 20 - 21 March and 23 - 24 March, 2017 respectively. The year’s series of the seminars is running under the general theme “Fostering creativity and innovation for economic growth and development in Africa”.

The main purpose of the roving seminars is to promote the use of IP in the ARIPO Member States. The Blantyre leg of the roving seminars focused on the protection and promotion of patents, utility models, industrial designs, trademarks and computer software through the ARIPO system, while that of Lilongwe focused on economic benefits of copyright and related rights, and also on the benefits of protection and utilization of traditional knowledge, genetic resources and expressions of folklore to the people of Malawi and Africa in general.

The Honorable Minister of Justice and Constitutional Affairs of the Republic of Malawi Mr. Samuel Tembenu, officially opened the Lilongwe seminar with a call on ARIPO and the national IP office of Malawi to add value on traditional knowledge and genetic resources for the benefit of the knowledge and rights holders. The national offices were also urged to take leading roles in the establishment of the enabling legislation to adequately govern these new areas of IP.

The Director General of ARIPO, Mr. Fernando dos Santos, in his remarks expressed appreciation to Malawi for her support of ARIPO’s initiatives, which have seen the country ratifying the Harare Protocol on Patents and Industrial Designs, the Banjul Protocol on Marks and the Swakopmund Protocol for the Protection of Traditional Knowledge and Expressions of Folklore. He however urged Malawian innovators, entrepreneurs and all other IP rights holders to take full advantage of the country’s membership to ARIPO to protect their rights through the ARIPO regional system.
Culture Day at Avondale Primary School in Zimbabwe

A delegation of ARIPO staff took time to celebrate culture day at Avondale Primary School (Infants) in Avondale, Harare, Zimbabwe. The objectives of this cultural day were to raise levels of consciousness in understanding, awareness and tolerance of inter-culture differences, share different cultural experiences; network with key stakeholders involved in dealing with ethical and human rights issues relevant to education tourism and foreign nationals. Africa is believed to be the cornerstone of culture and every year, thousands of people from all over the world visit Africa to witness the beautiful culture, history and other amazing natural phenomena which Africa is blessed with and which it cherishes, for instance the earth surface features, wild animals, water bodies as well as hospitality of the people in the continent. Also, food, songs, costumes just to mention a few.

The culture day provides us with an opportunity to deepen our understanding of the values of cultural diversity and to advance the four goals of the UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions adopted on 20 October, 2005 in order to support sustainable systems of governance for culture; achieve a balanced flow of cultural goods and services and increase mobility of artists and cultural professionals; integrate culture in sustainable development frameworks and promote human rights and fundamental freedoms.

ARIPO supports the effective protection and utilization of Traditional Knowledge, Genetic Resources and Expressions of Folklore. The Organization donated publications on Traditional Knowledge, Genetic Resources and Expressions of Folklore to the Headmistress, Mrs. Masanganise. Culture day was graced by infant students wearing characteristics of a particular group of people and tribe from various African countries, defined by everything from language, religion, cuisines (traditional dishes), social habits, music and arts. Through culture we are governed by norms and customs, which are the pillars of any society.
What are the Ethical Issues Surrounding Biotechnological Inventions

by Ms. Roselyn Moyo, Documentation & Communications Assistant at ARIPO

Over the past two decades, biotechnology, pharmaceutical and human health care industries have increased their interest in natural products as sources of new biochemical compounds for drugs, chemical and agro-product development. This has brought about the resurgence of interest in traditional knowledge and associated genetic resources. This interest has been stimulated by the importance of traditional knowledge as a lead in advancing the frontiers of science and technology. Traditional knowledge has been extensively used to gain useful understanding of how ecological systems generally work and interrelate. This knowledge has contributed to the production in modern economy and played significant role in the Research and Development programs of industry.

Traditional knowledge has been and continues to be an element in the commercialization of natural products. It is currently supplied to commercial interests through databases, academic publications or field collection. This undue exploitation needs to be paid for in some form. Concern over the growing interest in and economic importance of traditional knowledge has generated a wide range of public policy issues including those associated with intellectual property protection.

According to the World Health Organization, up to 80% of the world’s population depends on traditional medicine for its primary health needs. It has been estimated that over 90% of food in sub-Saharan Africa is produced using customary farming practices. In China, traditional herbal preparations account for 30% - 50% of the total medicinal consumption whilst in Ghana, Mali, Nigeria and Zambia, the first line of treatment for 60% of children with high fever resulting from malaria is the use of herbal medicines at home. In Europe, North America and other industrialized regions, over 50% of the population have used complementary or alternative medicine at least once. In the United States, 158 million of the adult population use complementary medicines and according to the USA Commission for Alternative and Complementary Medicines, US$17 billion was spent on traditional remedies in 2000.

Recently, Bio-prospecting of African biological resources by big pharmaceutical companies and research institutions has witnessed an upsurge in accordance with similar searches in the tropical forests of the world. Unlike the synthetic route for developing new medicinal agents where the success rate may be 0.001%, the success rate with search for new therapeutic moieties based on medical plants used in Traditional Medicine can be as high as 74% or more. Unfortunately, many African researchers, THPs, plant gatherers, traders, etc knowingly and unknowingly have become active suppliers of the plant raw materials to Western investigators at very low one time cash payments. The general poverty, which prevails in most African communities, has facilitated this kind of unfair transaction. The paradox is that the medicinal plants acquired in Africa depletes the continent of its biodiversity and makes the people eventually poorer while strengthening the economies of the developed nations be selling the finished products at high rates to Africa.
Africa is endowed with rich and highly diverse biological resources and traditional knowledge which have been practised centuries before the advent of colonialization. This knowledge reflects the cumulative body of knowledge and beliefs handed down through generations by cultural transmission and the relationship of the local people with their environment. The African traditional systems have developed as a matter of survival of the communities in the management of socio-economic and ecological facts of life. It includes mental inventories of local biological resources, animal breeds, and local plant, crop and tree species. It may include such information as trees and plants that grow well together, and indicator plants, such as plants that show the soil salinity or that are known to flower at the beginning of the rains. It includes practices and technologies, such as seed treatment and storage methods and tools used for planting and harvesting. TK also encompasses belief systems that play a fundamental role in a people’s livelihood, maintaining their health, and protecting and replenishing the environment. TK is dynamic in nature and may include experimentation in the integration of new plant or tree species into existing farming systems or a traditional healer’s tests of new plant medicines.

In spite of the important role traditional knowledge plays in sustainable development, it continues to be largely disregarded in development planning. It currently plays only a marginal role in biodiversity management and its contribution to the society in general is neglected. Furthermore, traditional knowledge is being lost under the impact of modernization and the ongoing globalization processes. Traditional knowledge may contribute to improved development strategies in several ways such as by helping identify cost-effective and sustainable mechanisms for poverty alleviation that are locally manageable and locally meaningful; by a better understanding of the complexities of sustainable development in its ecological and social diversity, and helping to identify innovative pathways to sustainable human developmental that enhance local communities and their environment.

Global Initiatives on the Protection of Genetic Resources, Traditional Knowledge and Expressions of Folklore

The notion of the protection of traditional knowledge has taken the centre stage in the global debate on the actions that could be taken to preserve, protect and promote the development of the knowledge. Cross-cutting issues including rights of indigenous populations to benefit from the use of their resources, the relationship between the patent requirements of the TRIPs Agreement and the substantive obligations of the Convention on Biological Diversity (CBD), the asymmetry between the benefits obtained by companies that exploit traditional knowledge-based products and the lack of benefit for the traditional knowledge holders have engaged the attention of the international community. Considerable discussions have taken place in different forums (WIPO, CBD, FAO, WHO, UNCTAD, UNESCO and WTO etc) and a number of regulations and policies on the protection of traditional knowledge have been proposed or adopted. The deliberations and debates taking place at the international forums have contributed significantly to the clarification of many of the substantive issues and resulted in the development of national regimes and policies.

ARIPO’S Initiatives on the Protection of Traditional Knowledge and Expressions of Folklore

ARIPO’s initiatives on the protection of genetic resources, traditional knowledge and folklore began when the Council of Ministers of the Organization at its Seventh Session, held in Ezulwini, Kingdom of Swaziland from 24 - 25 August, 2000 resolved that “in view of the need of a coordinated strategy to deal with the problem of the protection of indigenous knowledge, the Organization should take initiatives on traditional knowledge and link its initiatives with those undertaken by the World Intellectual Property Organization (WIPO) through its active involvement in the WIPO activities in this field”.

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Role of Intellectual Property in Innovation and New Product Development

Christopher M. Kalanje, Consultant, SMEs Division, WIPO

"...Because its purpose is to create a customer, business has two—and only two functions: Marketing and innovation. Marketing and innovation produce results, all the rest are costs.”
Peter Drucker

Innovation

Generally put, an ‘innovation’ is developing a new idea and putting it into practice. As this article is focused on the competitive strategy of a private enterprise in a market-driven business environment, the term ‘innovation’ is used here to refer to the process of bringing valuable new products (goods and services) to market i.e., from the idea/concept formulation stage to the successful launching of a new or improved product in the marketplace, or the result of that process, so as to meet the explicit or implied needs of current or potential customers. In other words, through innovation an enterprise seeks to deliver unique new value to its customers. In this context, ‘marketing’ is the understanding of that unique new value and communicating it to the current and potential customers of a business so that the product sells itself.

Technological innovation may be classified in several ways: product vs. process, radical (basic or fundamental) vs. incremental (improvement), and disruptive vs. sustaining (sequential and/or complementary). Other important types of (non-technological) innovations that do not result from scientific and/or technological R&D, but are often crucial for profitably marketing the products and services resulting from the investment made in R&D are: marketing innovation, institutional innovation, and complementary innovation.

In this article, however, the focus is on technological innovations. Nowadays, it is generally accepted that in a knowledge-driven, competitive business environment, technological innovation (hereafter, for the sake of simplicity, simply called ‘innovation’) is a principal determinant of successful firm performance. But differences of opinion persist amongst economists and policymakers about the exact role of intellectual property (IP) in relation to innovation. On the one hand, in theory, the IP system is considered to be absolutely necessary “to encourage creative intellectual endeavor in the public interest,” and on the other, some observers believe that, in practice, the IP system hinders competition to the extent that it is often seen to be playing a negative role in innovation. Hence the need for a systematic and periodic study and review of the actual use by businesses of the tools of the IP system so that economists are able to provide empirical, evidence-based guidance to policymakers to adapt the IP system so that it continues to serve the conflicting private and public interest in spurring further innovation and its wide diffusion in the shortest possible time. This article, however, does not deal with these otherwise important aspects.

Managing innovation better than its competitors is one of the main objectives of a business that wishes to survive and thrive in today’s economy. By relying on practical examples, this article highlights the important contributions made by the effective use of the different tools in the IP system to the process of taking innovative technologies to market, through launching of superior products and/or services. For explaining the role of the tools of the IP system, it goes beyond merely looking at technological innovation as either radical or incremental technological breakthroughs. Instead, it looks upon technological innovation as an interactive process made up of a number of distinct stages. It begins with the formulation of a novel idea/concept and, through a series of stages, ends in the successful launching and marketing of a new or improved product in the marketplace. In other words, it looks at practical IP issues of relevance to different stages in the whole new product development process in which technological innovations may be introduced at different stages of the value chain from the producer to the end user. For the sake of simplicity, it focuses on the idea stage and the research and development stage.

Intellectual Property, Inventions and Innovations

So, what exactly is IP? Broadly speaking, the term ‘IP’ refers to unique, value-adding creations of the human intellect that results from human ingenuity, creativity and inventiveness. An IP right is thus a legal right, which is based on the relevant national law encompassing that particular type of intellectual property right. Such a legal right comes into existence only when the requirements of the relevant IP law are met and, if required, it is granted or registered after following the prescribed
procedure under that law. In practically all countries the world over, a national legal system of intellectual property rights have evolved; this has been created over varying periods of time during the last 150 years or so. It has enabled the grant of property-like rights over such new knowledge and creative expression of mankind, which has made it possible to harness the commercial value of the outputs of human inventiveness and creativity. This is usually done by its orderly use, exchange or sharing it amongst various types of business partners in a complex network of strategic relationships that generally work harmoniously during the new product development process for creating and marketing new and improved goods and services in domestic and export markets.

The grant of a property right by the government, albeit generally for a limited period of time, over useful intangible intellectual output provides the owner of such legal property rights the right to exclude all others from commercially benefiting from it. In other words, the legal rights prohibit all others from using the underlying IP asset for commercial purposes without the prior consent of the IP right holder. The different types of IP rights include trade secrets, utility models, patents, trademarks, geographical indications, industrial designs, layout designs of integrated circuits, copyright and related rights, and new varieties of plants.

While innovations are concerned with the commercialization of new ideas; in contrast, an ‘invention’ may not be directly associated with commercialization. As such, innovation may be seen as a process of interaction and feedback during the various stages of the new product development process. An invention is considered as the generation of a new idea or knowledge, which aims to solve a specific technical problem. Inventions could relate to products or processes and are characteristically protected by trade secrets, utility models/petty patents or patents. Utility models/petty patents or patents are granted/registered under the relevant national/regional law by the relevant national or regional patent office. As not all inventions are commercialized, so it is clear that not all inventions result in innovations. A lot of new ideas are created or born but, quoting Brandt (2002), “Most die a lonely death, never seeing the light of commercial success.”

Technological basic or fundamental innovations produce new markets and new industrial branches for a new product. Such an innovation is also described as a radical or disruptive innovation. An improvement innovation (also called an incremental, sustaining, sequential or complementary innovation) would lead to an improved product over its ancestor in terms of quality, reliability, ease of use, environmental protection, raw material use, labor cost, and so on. It may also include the application of new and better production processes or techniques that allow old or new products to be made more reliably, of better quality, or simply in larger quantities, or at a lower price. Trade secrets, utility models/petty patents and patents are relevant for protecting, managing, exploiting and leveraging both basic and improvement innovations.

An innovative new or improved product that meets customer expectations offers an existing or new business, new market territory without competition for so long as it retains its innovative advantage. The IP system plays a significant role in helping a business to gain and retain its innovation-based advantage. As a consequence, the competitive edge that an entrepreneurial business may gain with a basic or disruptive innovation is likely to be longer lasting than that obtained merely from an improvement innovation, assuming that the technological barriers to competitors taking advantage of similar innovations are approximately equivalent, since a basic innovation establishes a new class of product or service, entry of competition requires that the opportunity provided by that class is recognized by a potential competitor before it attempts to enter the market. In the case of an improvement innovation, not only are competitors for the class of product already in place, but since the improvement innovation typically amounts to a better, faster, or cheaper way to build the product, its advantages are far more quickly understood and replicated. Hence the need to use the tools of the IP system for both types of innovations, except that generally there is a need for devising an offensive IP strategy for a basic innovation versus a defensive IP strategy for an improvement innovation.

A survey of economic studies reveals that patents are the most preferred IP rights in relation to technological innovations. This seems to be due to the use of the terms ‘invention’ and ‘invention’ as synonyms. This may explain why studies on innovation have, in many cases, treated patents as proxy input for innovation. To be specific, the number of patents owned by an enterprise has often been used as one of the main indicators for determining innovation intensity of that enterprise. In addition, patents are also used as a measure of output of innovation. However, while such an approach is useful, it does not look at the “big picture” about the important role of the whole IP system, including the subsystem of enforcing IP rights (comprised essentially of the police, customs authorities and the judiciary), in facilitating the success of innovation in the marketplace. In this article, however, the focus is limited to all IP related actions that must be taken within an enterprise at different stages of the new product development process or cycle for using the different tools in the IP system for market success.
Innovation as a process, therefore, requires effective participation of individuals from different sections/divisions of an enterprise, such as technical experts in R & D, marketing, management, finance, legal, etc., apart from outside consultants, suppliers, outsourced component manufacturers/service providers, business partners and lead users.

However, for the sake of simplicity, it is assumed in this article that all actions concerning innovation in relation to new product development happen within an enterprise.

An enterprise would be well positioned to benefit from innovation if it takes into consideration from the initial stage of the new product development process the full range of IP issues. This is true whether the decision to innovate is taken as part and parcel of the overall business strategy, one-off development of a new idea, or as a reaction to developments in the marketplace.

Role of IP in Innovation
As there are many players involved in facilitating the market success of an innovation, the effective use of the tools of IP will play an important role in reducing risk for the players involved, who may then be able to reap acceptable returns for their participation in the process. IP plays an important role in facilitating the process of taking innovative technology to the market place. At the same time, IP plays a major role in enhancing competitiveness of technology-based enterprises, whether such enterprises are commercializing new or improved products or providing service on the basis of a new or improved technology.

For most technology-based enterprises, a successful invention results in a more efficient way of doing things or in a new commercially viable product. The improved profitability of the enterprise is the outcome of added value that underpins a bigger stream of revenue or higher productivity.

Perception of Innovative Ideas
Whether an enterprise’s decision to innovate has been influenced by the overall business strategy (e.g. growth through innovation) or a reaction to developments in the market-place, it is imperative that an innovative idea must be treated as a secret if an enterprise wishes to appropriate potential commercial benefits from the idea (i.e. the information surrounding the creation of the idea must be protected carefully as a trade secret). It should be noted that not all commercially viable ideas can be or will be patented, hence the importance of treating ideas as trade secret, in particular at the inception stage.

Empirical evidence indicates that generally small and medium-sized enterprises (SMEs) are more inclined to use trade secrets rather than patents as a form of protecting their inventions to stay competitive. The main reasons given by SMEs for shying away from patenting their inventions include high costs and complexity of the patent system. A study on patenting activity in Australia indicates that 44% of the firms used patents while 74% used trade secrets as a way of protecting their ideas. It also showed that size was an important factor in determining the propensity to patent, i.e. 35% of small firms with less than 20 employees used patents, while 75% of firms with more than 500 employees patented their knowledge.

In some cases, while patenting-related costs and complexity of the patenting process (especially relating to ‘prior art’ search and to the drafting of patent claims) may be seen to hamper innovation, (particularly, in cash ‘strapped’ SMEs) it is equally true that if used strategically, (i.e. in a patent-friendly business environment for SMEs or in partnership with others) patents can become a dependable source of new, additional or higher revenue for SMEs. For an idea that may result in a patentable invention, the ultimate choice between the use of either the trade secret route or the patent route for protecting it should be seen as a strategic business decision that should be taken only at a later stage of its development when all the requirements of patentability are met, namely, statutory subject matter, novelty, inventive step/non-obviousness, capable of industrial application, and adequate disclosure. At that stage, the choice would depend on the nature of the invention, its business potential, the nature of competition, the possibility of its independent creation by competitors and the ability of competitors to reverse engineer it easily from the product developed by using it. It should, however, be pointed out that whatever the ultimate decision, initially it must be protected as a trade secret so that, later on a part of it may be patented and the rest of it may still remain as the associated trade secret and know-how, or tacit knowledge owned by individuals that are associated with the patent.

Technical drawings, which are in most cases part and parcel of technological innovations, are protected as trade secrets and/or by copyright. It is important for the drawings to be dated so as to establish the date of creation. Technical drawings could also, at a later stage, form an important part of the relevant patent application.

The Information contained in existing patent documents (patent information) plays an important role in the conception, screening and development of an idea. Such information can provide useful insight into whether an idea is new or not (state-of-the-art) and whether to proceed further in developing an idea. Furthermore, proper analysis of patent information may provide an insight into
Research and Development Stage
Several indicators have been used to measure the efforts of an enterprise in undertaking research on and developing innovative ideas. These include, expenditure on research and development (R&D), information on innovation, total sales, firm size, innovation strategies, etc. These indicators are directly or sometimes indirectly influenced by IP. The IP tools used during the “conception of an innovative idea” stage continues to be relevant also during this stage. Thus, trade secret continues to be relevant, especially if the enterprise is yet to decide on whether to file a patent application. Keeping trade secrets continues to be relevant during the entire R&D phase, as one would not want the competitors to ever have access to vital information. If used by such competitors it would result in the erosion of a competitive advantage, derived from the final product.

During this period, researchers should periodically consult several sources of information that would provide input for the success of their project. Patent documents continue to be a relevant source of information that is often grossly underutilized. The European Patent Office (EPO) estimates that 70% of the information in patent documents is not available elsewhere, and with more than 800,000 patents granted annually around the globe it does not take a “rocket scientist” to realize the wealth of information available in patent documents.

Patent documents provide useful information on the state-of the art, which would enable an enterprise to avoid unnecessary wastage of resources, in terms of money and time, during the R & D process, thereby hopefully reducing the normally high R & D costs. Patent information can also provide useful information, which can lead to product improvement or to design-around inventions, which may help to “short-circuit” the lengthy time frame often required to take a new product to the market.

Unfortunately, for their business needs, many SMEs do not use patent documents as a source of competitive intelligence. SMEs, particular in developing and least developed countries, should be made aware of and be equipped to use business, legal, and technical information contained in patent documents, which is in the public domain to come up with innovative product, which have been adapted to local conditions.

Once an enterprise decides to rely on a utility model or a patent to protect its output of research and development, it must initiate the required process, e.g., file a utility model/patent application. Such a move would facilitate the establishment of filing date for determining the priority date and for claiming exclusive rights over the output even before a patent is granted (unless on absolute or relative grounds the patent office refuses to grant a patent). Most R & D results in both functional and aesthetic improvements. For protecting and leveraging new or original designs, which are solely judged by the eye, one should proceed with the industrial design registration process at the national/regional design office set up under the relevant national/regional design law.

IP as Life-line While Passing Through the “Valley of Death” of Innovation
In most cases, innovative technological ideas require further technical development so as to make them successful in the marketplace. SMEs and other small technology-based innovative enterprises may not have the technical resources and facilities to undertake such development, for example, for the development and testing of prototypes. The protection of such ideas by IP rights ensures that these are not “lost” while taking advantage of external technical resources and facilities owned by innovation centers, technology parks, universities, research institutes, and other (big) companies. Furthermore, in the future development of an invention/design and taking it to the market through partnerships (such as, joint ventures, strategic alliances, licensing agreements, merger or acquisition) the ownership of IP provides a strong negotiating position in the process of getting into such a partnership. Both parties would also avoid potential future conflicts if ownership of IP issues were resolved initially with clarity.

Inventors, be they independent or employed, are not necessarily skillful marketers or manufacturers; furthermore, even the best products need the best marketing skills to succeed in the marketplace. In most cases, taking a product to market has proven to be a big challenge to inventors, entrepreneurs, and enterprises, especially SMEs; hence the existence of the concept of “valley of death” in innovation (the “valley of death” normally starts from the period an invention has been made to the launching of a new product/process). This is the period where most inventions collapse due to the absence of external support or are found to be not commercially viable.

IP, particularly patents, often play a crucial role in facilitating access to business angels, providers of early stage capital, including seed capital, venture capitalists, financial institutions, and the like who/which may provide a “lifeline” for an invention to reach the marketplace. As an example, take a look at the invention of Xerography. In 1937, Chester Carlson invented Xerography, which he patented in 1939. It took almost eight years for Carlson to
find an investor who was willing to invest in the invention. Finally, the Haloid company (which later became the Xerox Corporation) successfully made the invention commercially available in 1950.\textsuperscript{18} It would be fair to suggest that the existence of a patent held by Carlson significantly contributed to Haloid Company’s decision to support the invention. Most potentially innovative ideas end up in the valley of death. Those ideas, which are protected by IP, stand a greater chance of surviving through the valley of death. In most cases, for successfully crossing the “valley of death,” an invention often needs external help in terms of funding, technical knowledge, marketing, etc. IP ownership plays an important role in influencing the decisions of external partners as to whether to assist in navigating through the “valley of death.”

IP rights provide the holder with several opportunities, which can facilitate the successful completion of an innovation. Such opportunities include sale, licensing, and various types of strategic business partnerships or alliances in commercializing it.

IP rights can also facilitate the establishment of joint ventures. SMEs facing serious financial constraints but rich with IP assets may find this form of partnership strategically useful. Ownership of patent and trade secrets may play a crucial role in attracting potential partners. Sometimes, an enterprise with patented product and/or valuable trade secrets may find it strategically beneficial to enter into a joint venture arrangement with an enterprise with a strong trademark so as to secure more sales.

Paying close attention to what competitors are doing while seeking to take advantage of its own IP assets may prove a worthwhile strategy for an enterprise seeking ways of crossing the “valley of death.” Owners of innovative ideas protected by IP rights may find it relatively easier to enter into strategic alliances with favorable terms and conditions. Such enterprises may benefit by getting access to R&D facilities owned by its partner or to distribution channels and sales networks. An enterprise may also benefit from further development of its IP protected product(s), as part of the strategic arrangement.

Venture capital investors play an important role in providing the much-needed funds, which enable enterprises to cross the valley of death safely. A well-managed IP portfolio may significantly contribute in influencing the decision of a venture capital investor if the business plan and strategy of an enterprise indicates actual or potentially effective use of IP rights that would enhance its potential for generating future revenue, market control or developing a strong market position and its competitiveness.

Marketing of Innovations

Since successful innovation includes taking a new product to market, other IP tools become very relevant. Above all, trademarks and industrial designs play an important role in the marketing process. These enable consumers to identify a product/service of a particular company and enable them to distinguish the product from other similar product.

A trademark is a useful tool in launching new product segments or entirely new products, technologically based or non-technologically based, i.e., through brand extension. In addition, trademarks can be very effective in penetrating new markets. Honda, for example, took advantage of its reputation in motorcycle engineering to penetrate the US car market.\textsuperscript{19}

Trademarks are also useful in extending commercial benefits beyond the life of a patent. The case of Aspirin® provides a good example. Developed in 1897 by Felix Hoffman, a research chemist working with Bayer Company in Germany, the drug was patented in 1899 by the Bayer Company. Knowing that patents have a limited duration, the Bayer Company embarked upon promoting a trademark for its new product. When the Aspirin® patent expired, the company continued to benefit from the sale of aspirin through its established trademark Aspirin®. The Bayer Company has also used the two-track IP strategy, i.e., using a trademark to protect market share after the expiry of a patent, for its Cipro® product (ciprofloxacin for treatment of infections, including anthrax).\textsuperscript{20}

Technological innovation can also be supported well by a combination of patent, industrial design and trademark. A look at the invention and development of the vacuum cleaner provides a good example of strategic use of a combination of different types of IP tools, namely, patents, industrial designs and trademark.\textsuperscript{21} In this case, one can see how the innovation is enhanced by the use of the three tools of IP protection.

Trade secrets, patents, trademarks, industrial designs, and copyright may separately or jointly facilitate the acquisition of technology and its commercial use. Strategic use of a combination of IP tools in the innovation process can significantly contribute to facilitating the appropriation of higher profits, maintenance of a premium market position, thus enabling technology-based, innovative SMEs to have a high return on investment.

Conclusion

Innovation is not the same as invention. Innovation is a process, which begins from the conception of an idea to the launching of a new product/process in the market place.
Intellectual property rights can be used effectively to facilitate successful innovation. Innovative technologies stand a better chance of successfully reaching the marketplace if IP is used strategically. Gauging the importance of IP in innovation by merely focusing on patents as input and/or output of innovation, does not do justice to the significant role that can be played by the other tools of IP. A broader approach to the contribution of IP in innovation is therefore needed.

IP also plays an important role in safely navigating the “valley of death.” It provides access to financing and technical facilities. In addition, IP provides a strong negotiation position when it comes to entering into and maintaining business partnerships.

Several examples have been given of businesses that have profited by exploiting the role of IP in innovation. More examples on the role of IP, not only on innovation but also in business in general and in particular by SMEs, are found under case studies at http://www.wipo.int/sme.

1 The opinions and views expressed in this article are solely those of the author and should not be attributed to WIPO. Any comments or suggestions pertaining to this article may be sent to christopher.kalanje@wipo.int. Many thanks to Guriqbal Singh Jaiya for his most valuable guidance and comments.

2 This can basically be called a Schumpeterian approach to innovation. See Cantwell, J. “Innovation, Profits and Growth: Schumpeter and Penrose”


6 Mark Rogers, 1998, The Definition and Measurement of Innovation, p. 5

7 Brandt, J. L., Capturing innovation: Turning Intellectual Assets into Business Assets, p66

8 William F. Zachmann, http://www.wfzachmann.com/Book86/Book86Chapter01.htm

9 Kemp, R., Folkeringa, M., De Jong, J., and Wubben, E., Innovation and Firm Performance: Differences between Small and Medium-sized Firms

10 Mark Rogers, 1998, The Definition and Measurement of Innovation, pg. 14

11 ibid.


13 Kemp, R.G.M et al call this stage as innovation intensity, p.7

14 See example of Australian camera man Jim Frazier who signed a confidentiality agreement with Panavision, regarded as the best lens manufacturer in the world, before he showed them his invention at http://www.wipo.int/sme/en/case_studies/frazier.htm


17 Fisher Philip. A. Common Stocks and Uncommon Profits, p. 124

18 For more information visit http://inventors.about.com/library/inventors/blxerox.htm

19 Mendonça S. et al., Trademarks as an Indicator of Innovation and Industrial Change, p.7


Small and Medium Enterprises: Financial Inclusion
by Ms. Roselyn Moyo, Documentation and Communications Assistant at ARIPO.

Introduction
Innovative financial inclusion means improving access to financial services for poor people through the safe and sound spread of new approaches. The enabling environment will critically determine the speed at which the financial services access gap will close for the more than two billion people currently excluded.

Entrepreneurship drives innovation, competitiveness, job creation and economic growth, thereby allowing new or innovative ideas to turn into successful ventures in high-tech sectors and can unlock the personal potential of disadvantaged people to create jobs for themselves and find a better place in society. Mostly we say an SME is practicing entrepreneurship by looking for what is missing, what is changing, what is needed and who will buy during the coming years.

Financial inclusion refers to the sustainable cost-effective provision of a wide range of financial services at affordable cost to the majority of the population, enables households and micro, small and medium enterprises to engage in income generating activities which improve their economic welfare.

Innovation is developing a new idea and putting it into practice through innovation that an enterprise seeks to deliver unique new value to its customers. In this context, ‘marketing’ is the understanding of that unique new value and communicating it to the current and potential customers of a business so that the product sells itself.

Intellectual Property Rights are like any other property right. In the increasingly knowledge-driven economy, intellectual property is a key consideration in day-today business decisions. New products, brands and creative designs appear almost daily on the market and are the result of continuous human innovation and creativity. Small and medium-sized enterprises (SMEs) are often the driving force behind such innovations. Their innovative and creative capacity, however, is not always fully exploited as many SMEs are not aware of the intellectual property system or the protection it can provide for their inventions, brands, and designs. If such creativity is left unprotected, a good invention or creation may be lost to larger competitors that are in a better position to commercialize the product or service at a more affordable price, leaving the original inventor or creator without any financial benefit or reward. Adequate protection of a company’s intellectual property is a crucial step in deterring potential infringement and in turning ideas into business assets with a real market value.

Taking full advantage of the IP system enables companies to profit from their innovative capacity and creativity, which encourages and helps fund further innovation. To help SMEs more fully utilize their IP assets in their business activities, the African Regional Intellectual Property Organization has established a program to assist entrepreneurs, SME-support institutions, and African governments in increasing awareness and use of the IP system among SMEs across the globe. But how do you form an IP strategy that is aligned with your business goals? At ARIPO we await your visit anytime in order to serve you....

These principles for innovative financial inclusion derive from the experiences and lessons learned from policymakers throughout the world, especially leaders from developing countries.
Leadership: SMEs require greater support; access to markets, finance and appropriate technology; education and research; economic reforms and trade facilitation; conducive regulatory environments and fostering of entrepreneurial spirit and business confidence. ARIPO recognizes women’s economic empowerment an important core cross-cutting issue requiring strengthened institutions, programs and legislation. SMEs account for the majority of jobs in all countries. They are the most significant economic units to promote wellbeing and inclusive growth. Focusing on SMEs makes business sense as SMEs lie at the core of inclusive growth and connect micro-enterprises and the informal sector with larger firms and international value chains. However, they face grave challenges in accessing finance, technology and innovation, skilled labour and knowledge, economies of scale and expanding markets. Many SMEs do not progress beyond the start-up phase and are less productive than large firms. This gap is larger in developing countries. There are calls for a national IP policy find to grow firms. This gap is larger in developing countries.

Diversity: There is need to implement science, technology, innovation, entrepreneurial, and strategic management policy approaches that promote incentives and reward creativity in new technologies, research and support innovation in developing countries. It is of paramount importance to create an enabled environment such as regulatory and governance framework, in nurturing science, innovation, the dissemination of technologies, particularly to SMEs, as well as industrial diversification and value added to products and services. There is need for SMEs to promote effective protection of intellectual property rights (patents, industrial designs, utility models, trademarks, trade secrets and copyright) in Zimbabwe, in line with nationally defined priorities and in full respect of The Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement was negotiated to foster technological innovation and transfer and dissemination of technology. TRIPS introduced intellectual property protection in-order to contribute to technical innovation and transfer of technology and to enable both producers and users to benefit, and economic and social welfare should be enhanced. The TRIPS Agreement promotes SME access to regional and international markets through negotiations of bilateral and multilateral agreements, provides information about the foreign markets, and organizes international trade fairs, missions and exhibitions for Zimbabwean companies including SMEs. ARIPO is also involved in enhancing the quality of products and promoting competitiveness of SMEs involved in international trade by ensuring that the products and services meet international standards.

Innovation: Is embodiment of an idea in a technology, product, or process that is new and creates value. An innovation is the implementation of a new or significantly improved product or service, or process which derives from creative ideas, technological progress, a new marketing method or a new organizational method in business practices, workplace organization and external relations. Innovation is one of the key driving forces for global sustainable development, playing a fundamental role in promoting economic growth, supporting job creation, entrepreneurship and structural reform, enhancing productivity and competitiveness, providing better services to the society and addressing global challenges.

Protection: There is need to encourage SMEs to build and maintain consumer confidence as it strengthens trust for them to work well in financial markets promotes efficiency and stability and helps to create positive outcomes for both financial institutions and their customers.

Empowerment: Financial inclusion provides a platform for assisting SMEs to widening access to a variety of financial products and services. Financial literacy is of paramount importance in today’s complex financial market. It is an essential component of the empowerment of the SMEs as it gives them an understanding of how to manage their finances in the real economy in order to avoid unnecessary risks, excessive debt and possible financial exclusion. ARIPO offers various training fora to educate innovators on IP valuation and IP Management.

Cooperation: SMEs need to create an environment with clear lines of accountability and co-ordination with various Associations and bodies that enable them to function effectively and efficiently; and also encourage partnerships and direct consultation across government ministries, business and other stakeholders.

Knowledge: SME adapted innovation contexts. SMEs need better linkages to innovation enabling contexts to access to research institutions: There is need for better linkages between business and research, not only through R&D cooperation but also through initiatives to stimulate entrepreneurs and business people to become inspired by R&D results with the view to promote R&D results are the basis for new innovations and should be transferred to industry for commercialization or licensing or franchising.
**Proportionality:** ARIPPO promotes and builds up capacity of SMEs regionally through as to IPR management and legal issues as well as on how to use IPR databases for technology searches in order for companies to utilize for their innovative products and services and is based on an understanding of the gaps and barriers in existing regulation.

**Framework:** Zimbabwe is signatory to many multilateral and bilateral agreements that are meant to be utilized by SMEs in order to continue to grow their business. There is also need for a legal and policy framework to improve on the modern collateral law system allowing non-possessory pledges as collateral to secure business loans to improve access to financing by SMEs, changing pool of assets such as intangible assets such as intellectual property rights.

**Case Studies Shared: How does protect intellectual property? What rights are protected?**

**Coca Cola**

Coca-Cola company owns a patent on a method of making “barrier coated plastic containers.” Meaning, no one has the exclusive right to make plastic containers, but Coca-Cola has the exclusive right to use the particular method of making those containers that they describe in their patent. Coca-Cola company owns copyright in the design of its bottles, the design of its logos, its advertising, and generally anything it creates that can be considered an original work requiring creative effort. The Coca-Cola company holds registered trademark in its distinctive shape of the Coke bottle, logo and script design. The original formula for making Coca-Cola was patented in 1893. The formula for making Coca-Cola is a trade secret, which is extremely valuable to the company; it would be all but useless to the company if it were known to its competitors. A company like Coca-Cola depends on a large part on its ability to obtain legal protection for its intangible creations and intangible assets.

**Samsung invests in R&D and training of its designers**

According USPTO data released last August by the Intellectual Property Owners Association, Samsung Electronics ranked first in U.S. design registrations last year. Samsung Electronics runs R&D center and offers systematic education in order to develop future oriented human resource in overall R&D, marketing and management sectors. Also Samsung Electronics develops global professional human resource through not only in company education programs and but industry work with overseas prominent universities and foreign regional specialist program.

**South Africa**

In 1987 in the heart of the local Portuguese community in Johannesburg, chicken was prepared according to a well-kept secret recipe. Nando’s, today is a fast-growing restaurant chain with over 500 outlets across the globe. The company has developed considerable international reputation and goodwill in its Nando’s name is readily and distinctively associated with its fast-food chicken outlets around the world, so much so that it now owns an extensive international portfolio of registered trademarks surrounding the word “Nando’s”.

In conclusion, the Small and Medium Enterprises (SME) Financial Inclusion conference was of paramount importance as it gave various SMEs an open opportunity to explore varied discussions and deliberations on the importance of Intellectual Property rights. SMEs were to acquaint themselves with all support systems available for their enterprises through Technology and Innovation Support Centers (TICs) program includes special training in searching and using technology information in various IP databases found on search engines namely; google patents, Patentscope database, WIPO global design database, WIPO global brand database amongst other IP database. The conference equipped SMEs with the knowledge, skills and experience; to be able to provide basic assistance to innovators and entrepreneurs on how to protect, use and manage IP assets for the benefit of innovation as a means to enhance financial inclusion.
Master in Intellectual Property (MIP)

Jointly offered by:
The World Intellectual Property Organization (WIPO);
The African Regional Intellectual Property Organization (ARIPO);
and Africa University (AU)

2017/2018 ADMISSIONS

THE PROGRAM
Applications are invited from suitably qualified candidates for admission into the Masters in Intellectual Property (MIP) Program. The Degree is jointly offered by the World Intellectual Property Organization (WIPO) Academy, the African Regional Intellectual Property Organization (ARIPO) and Africa University (AU), with financial support from the Government of Japan.

The duration is twelve months, from 1 May, 2017 to 30 April, 2018, structured in three parts, as follows:

- **First Part (1 May to 21 July, 2017):** WIPO Academy Distance Learning Courses, undertaken via the Internet;
- **Second Part (1 August to 8 December, 2017):** Residential phase requiring physical attendance at lectures undertaken at Africa University in Mutare (Zimbabwe) and practical training sessions at ARIPO in Harare.
- **Third Part (11 December, 2017 to 30 April, 2018):** Dissertation Phase requiring research and writing on an approved topic.

The Program adopts a comparative approach, with particular emphasis on Africa. Lectures are given by leading academics, intellectual property practitioners, intellectual property officers and other experts drawn from across Africa.

The provisional curriculum of the Program is available on the following website: Africa University (http://iplg.africau.edu/images/MIPCurriculumFinal.pdf), the WIPO Academy (www.wipo.int/academy) and ARIPO (www.aripo.org).

ADMISSION REQUIREMENTS
The MIP Programme is open to government officials, industry practitioners, senior students and young professionals from academic, research and development or other relevant background who wish to upgrade their knowledge and skills in Intellectual Property law and practice. To be eligible, candidates are required to hold a minimum of a Bachelor’s degree (second lower class) from a recognized university in any discipline and have a minimum of two years work experience. Proof of English proficiency is required, therefore, students coming from countries where the official language is not English will need to submit evidence of proficiency in an appropriate internationally approved English examination e.g IELTS, TOEFL.

AWARD
Upon satisfactory completion of the program, participants will be awarded a Masters Degree in Intellectual Property (MIP) by Africa University on behalf of WIPO and ARIPO.

FEES AND COSTS
For tuition, registration and accommodation fees please follow link (subject to annual review). Cost of meals and upkeep is estimated at US$350.00 per month per person.

SCHOLARSHIPS
With a view to contributing to the development of human resources in the field of Intellectual Property in Africa, WIPO, ARIPO and the Government of Japan will provide approximately 30 scholarships to qualified candidates from Africa. The scholarship shall cover the cost of a return air ticket, board and lodge at Africa University and ARIPO, tuition fees, registration fees and medical insurance.

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Email scanned copies to academic@africau.edu and studentrecruitment@africau.edu and applications@africau.edu

Application forms shall be accompanied by detailed curriculum vitae, **CERTIFIED** copies of university degree certificates/diplomas and transcripts and at least two letters of reference. These documents are to be received by Africa University no later than **5 March, 2017**. Applicants wishing to be considered for the various scholarships should specifically indicate so in their application, and ensure that they apply online at the WIPO website.

Detailed information concerning the MIP Program is provided on the websites of Africa University (http://iplg.africau.edu/index.php/masters-in-intellectual-property), the WIPO Academy (www.wipo.int/academy) and ARIPO (www.aripo.org).
3D Printing and IP Law

By Elsa Malaty, Lawyer, Associate in the law firm Hughes Hubbard & Reed LLP, and Guilda Rostama, Doctor in Private Law, Paris, France

3D printing technology emerged in the 1980s largely for industrial application. However, the expiry of patent rights over many of these early technologies has prompted renewed interest in its potential to transform manufacturing supply chains. The availability of low-cost, high-performance 3D printers has put the technology within reach of consumers, fueling huge expectations about what it can achieve. But what are the implications of the expanding use of this rapidly evolving and potentially transformative technology for intellectual property (IP)?

3D printing in a nutshell

The 3D printing process starts either with a digital file in which the object to be printed is digitally formatted using either 3D print software, or a 3D scanner. The file is then exported to a 3D printer using dedicated software, which transforms the digital model into a physical object through a process in which molten material is built up layer upon layer until the finished object emerges. This process is also referred to as additive manufacturing.

The 3D printers available today use a variety of materials ranging from plastics to ceramics, and from metals to hybrid materials. The technology is evolving at a breathtaking pace. For example, MIT’s Computer Science and Artificial Intelligence Laboratory recently developed a 3D printing technique to print both solid and liquid materials at the same time using a modified off-the-shelf printer, opening up a huge range of possible future applications.

3D printing technology is evolving at a breathtaking pace, with applications in areas ranging from food and fashion to regenerative medicine and prosthetics.

The expanding range of materials used for 3D printing means that the technology’s application is having an impact on a whole range of industries, fostering new opportunities for innovation and business development.

Within the medical field, for example, researchers at the National University of Singapore have found a way to print customizable tablets that combine multiple drugs in a single tablet, so that doses of medicines are perfectly adapted to the needs of individual patients. 3D printing is also making its mark in the fashion industry, as evidenced by the unveiling at New York Fashion Week in September 2016 of “Oscillation”, a multi-colored 3D-printed dress by threeASFOUR and New York-based designer Travis Finch. Even the agro-food industry is exploring the potential of 3D printing for customized food products.

Advantages of 3D printing

Even food is being 3D printed! It makes it possible to automate certain time-consuming aspects of food preparation and assembly, makes it easier to create freshly made snacks, has huge scope for food customization and can convert alternative ingredients like proteins from algae, beet leaves and insects into tasty meals!

The potential advantages of 3D printing are numerous for innovation-intensive companies. In particular, 3D printing allows them to reduce their...
Fostering the development of 3D printing
Recognizing the transformative potential of 3D printing, many countries have already adopted, albeit unevenly, different strategies to create an economic and technological ecosystem that favors its development. The European Commission, for example, has identified 3D printing as a priority area for action with significant economic potential, especially for innovative small businesses.

Lawyers in many countries are considering the capacity of existing legal provisions to orient this new technology, particularly with respect to intellectual property (IP). 3D printing technology affects virtually all areas of IP: copyright, patent law, design law, and even geographical indications. The question is, can IP laws in their current form embrace such an all-encompassing technology or do they need to be reformed? Does existing IP law ensure adequate protection for those involved in 3D printing processes and the products they make? Or would it make sense to consider creating a sui generis right for 3D printing to address emerging challenges, along the lines of arrangements in place in some jurisdictions for the protection of databases?

How current IP law handles 3D printing
One of the main concerns about 3D printing is that its use makes it technically possible to copy almost any object, with or without the authorization of those who hold rights in that object. How does current IP law address this?

Protecting an object from being printed in 3D without authorization does not raise any specific IP issues as such. Copyright will protect the originality of a work and the creator's right to reproduce it. This means that if copies of an original object are 3D printed without authorization, the creator can obtain relief under copyright law. Similarly, industrial design rights protect an object's ornamental and aesthetic appearance – its shape and form – while a patent protects its technical function, and a three-dimensional trademark allows creators to distinguish their products from those of their competitors (and allows consumers to identify its source).

Many commentators believe that a 3D digital file may also be protected under copyright law in the same way that software is. The justification for such protection is that "the author of a 3D file must make a personalized intellectual effort so that the object conceived by the author of the original prototype can result in a printed object," notes French lawyer Naima Alahyane Rogeon. With this approach, the author of a digital file that is reproduced without authorization could claim a moral right in the work if their authorship is called into question. Article 6bis of the Berne Convention for the Protection of Literary and Artistic Works, which establishes minimum international standards of protection in the field of copyright, states that the author has "the right to claim authorship of the work and to object to any distortion, mutilation or other modification of, or other derogatory action in relation to, the said work, which would be prejudicial to his honor or reputation."

If the printed object is protected by a patent, certain national laws, for example the Intellectual Property Code of France (Article L 613-4), prohibit supplying or offering to supply the means to use an invention without authorization. Following this approach, patent owners should be able to seek redress from third parties for supplying or offering to supply 3D print files on the grounds that these are an "essential element of the invention covered.

DID YOU KNOW?
3D-printed sunglasses co-created by fashion student Dávid Ring and Materialise’s consumer 3D printing service, i.materialise, featured in the fashion show of the Royal Academy of Fine Arts in Antwerp, Belgium, in 2016. The sunglasses are fully 3D printed "as a total concept with no need for hinges or assembly." (Photo: Courtesy of i.materialise.com).
What is the situation for hobbyists?

But what is the situation with respect to hobbyists who print objects in the privacy of their own home? Are they at risk of being sued for infringement?

The standard exceptions and limitations that exist in IP law also naturally apply to 3D printing. For example, Article 6 of the Agreement on Trade-Related Aspects of Intellectual Property (TRIPS), which has been transposed into EU law (EU Directive 2008/95/CE, Article 5), limits trademark protection to use “in the course of trade”. Similarly, with respect to patent law Article 30 of the TRIPS Agreement states that member countries “may provide limited exceptions to the exclusive rights conferred by a patent”. Some national laws consider that the rights of the patent holder do not include acts performed in private for non-commercial purposes. In other words, when an object that is protected by a trademark or a patent is printed for purely private use, it is not considered an infringement of IP rights.

In the area of copyright, the rights granted to authors can be limited according to the so-called three-step test. Article 13 of the TRIPS Agreement states that “members shall confine limitations or exceptions to exclusive rights to certain special cases which do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the right holder.” Accordingly, some countries have established a “right to private copying” authorizing a person to reproduce a work for private use. Countries often then levy a fee on storage devices to compensate any losses incurred by the rights holder; some countries are exploring the idea of levying a fee to offset private 3D copying. However, some lawmakers consider it premature to extend such a fee to 3D printing, as this would constitute “an inadequate response or even a negative message for companies” and would put a brake on the development and uptake by the patent”.

Gaps in the law

IP law in its current form, therefore, appears sufficient to effectively protect both 3D files and those using 3D printing technologies for non-commercial purposes. That said, the specificities of the 3D printing process mean that there are a number of questions that the courts will inevitably need to address. For example, who owns an object when it is first conceived by one individual, digitally modeled by another, and printed by a third? Can the person who designed the work and the person who digitally modeled it be considered co-authors of a collaborative work under copyright law? And if the object qualifies for patent protection, would these same individuals be considered co-inventors?

Other important questions include the type of protection that should be available to owners of 3D printers. Since their financial investment enables the creation of an object, might they qualify for the same type of related rights protection as that enjoyed by music producers whose investment enables the creation of sound recordings? And is the digitization of a pre-existing object considered an act of infringement simply because it is printed or its base file is loaded onto an online sharing platform for downloading? These issues still need to be ironed out.

Conventional eyewear design usually begins with the frame into which corrective lenses are fitted. This can have a negative impact on lens alignment and performance. With custom software developed by Materialise, the Yuniku platform uses 3D scanning, parametric design automation and 3D printing to design the customer's chosen frame around the optical lenses they require for a perfect look and fit. (Photo: Courtesy of i.materialise.com)

3D Oscillation dress by threeASFOUR in collaboration with Travis Fitch, 3D printed by Stratasys, a leading 3D print solutions company based in the United States, was unveiled at New York Fashion Week in September 2016. “3D printing is transformative for designers aiming to take complex designs and realize them as a wearable garment,” explains threeASFOUR's Adi Gil (Photo: Elisabet Davids, Jan Klier).

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Measures to curb unauthorized use
In the meantime, to curb unauthorized use, if the object is protected by copyright, rights holders can make use of technological protection measures, the circumvention of which is expressly forbidden under the WIPO Copyright Treaty (Article 11). These measures make it possible, for example, to mark an object and its associated 3D print file with a unique identifier to monitor use.

Close collaboration between rights holders and 3D printer manufacturers in applying these measures to models intended for 3D printers could be beneficial. Similarly, partnerships with sharing platforms that make 3D files publicly available could help curb unauthorized use.

With such measures in place, it would be possible to set up a legal offering of downloadable 3D print files or 3D-printed objects. While online 3D printing services such as i.materialise are now readily available, one can imagine that their future evolution will follow that of online music delivery with the emergence of subscription models that allow users to download 3D print files in return for a monthly fee. Indeed, these are already available for 3D printing software, for example through Fusion 360, Autodesk’s cloud-based product innovation platform.

The experience of online music streaming platforms suggests that such arrangements could have a positive impact on infringement levels. The 2016 Australian Consumer survey on Online Copyright Infringement, for example, showed a 26 percent decrease in the number of Australian internet users accessing unlawful content online and a marked increase in the uptake of streaming services.

3D printing technologies have many life-enhancing, even revolutionary, applications, from regenerative medicine to prosthetics and from complex airplane components to food and fashion. As the use and application of this exciting technology gathers pace and digital transformation continues to gain momentum, 3D printing is likely to become deeply embedded in our daily lives. Beyond the IP-related questions outlined above, the use of 3D printing raises other important legal questions, for example in relation to quality assurance, legal liability and public order. All of these issues still need to be resolved and they can be.

But as the potential of this fascinating technology continues to unfold, the real challenge will be to fully understand the implications of its uptake and use on manufacturing processes across the economy and its impact on our daily lives.

SOURCE:

DID YOU KNOW?
The world’s first 3D-printed consumer wheelchair by Benjamin Hubert from the Layer design agency. The GO wheelchair prototype was developed in collaboration with Materialise, a leading 3D print software, engineering and services provider based in Belgium (Photo: Courtesy of i.materialise.com).
### Member States Contact Details

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<tr>
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