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A Quest towards Fashion Design Protection Model for the Intellectual Property Rights Global Regime

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ABSTRACT

The aim is to develop a comprehensive fashion design protection (FDP) model based on the intellectual property rights (IPRs) global regime, recent advances in cutting-edge digital technologies, and anti-counterfeiting treaty agreement (ACTA) policies to combat piracy and counterfeiting. The research methodology utilizes literature review, and relevant databases analytics that facilitates broad keywords search, and identifies high-quality peer-reviewed papers to obtain a perspective on the current situation of IPRs globally for smart fashion wearables (SFW). This conceptual research enriches four main contributions creating invaluable knowledge in the literature : (i) describes the correlation between innovation, intellectual capital (IC), intellectual property (IP), piracy, and counterfeiting, (ii) introduction of three recent advances in cutting-edge digital technologies (smart monitoring system, smart traceability system and 4D printing) that offer on/offline adequate protection to combat piracy and counterfeiting, (iii) a multi-pronged strategy is developed to introduce a comprehensive model that integrates the IPRs classifications (Trademark, Trade dress, Copyright, Patent, Industrial Design, Sui Generis, and Trade Secrets), ACTA enforcement principles, three advanced technology systems to attain vigorous IPRs protection for the fashion industry globally, and (iv) demonstrates the FDP model to serve as a quintessential educational framework for academia, practice guide for fashion industry practitioners, policy makers, IP law practitioners, technology developers and non-profit organizations (NPOs).

Keywords-- Digital Technology, Intellectual Property Rights, Fashion, Innovation, Piracy & Counterfeiting

I. INTRODUCTION

Fashion is ubiquitous and a highly sophisticated thriving industry but not vigorously protected. In the year 2018, the value of the global fashion industry is 3 trillion US dollars and employs millions globally across diverse high-paying occupations. Beauty, style, aesthetics and wearable

technology construct the lifeblood of the global fashion business. The “information era”, “digital technology”, and “Internet” is stimulating the global fashion business to a significant growth. Smart Fashion Wearables, particularly apparel, fall between the seams of traditional IP protections. (<https://fashionunited.com/global-fashion-industry-statistics>). The fashion industry creates clusters of activity in the large fashion hubs of Paris, Milan, Madrid, London, New York, Los Angeles, and San Francisco, or in smaller hubs in several cities like Moscow, Sao Paulo, Mumbai, Shanghai, Tokyo, and Seoul. Research shows when businesses are in an industry cluster together, the following socio-economic benefits occur: (i) local and regional educational institutions develop specialized curricula and partner with area businesses to prepare students to enter jobs in the industry, (ii) knowledge-sharing foster innovation and enhance productivity, and (iii) enhance economic opportunity.

The concept ‘intellectual capital (IC)’ is not new. IC consists of intangible assets and much more than ‘intellectual property (IP)’. Many innovations can be protected through intellectual property rights (IPRs) that are legal rights resulting from the intellectual activity. IP is an enormous asset in the fashion industry

To date, piracy and counterfeiting (P & C) is still tolerated and openly allowed in the fashion industry globally. For some obscure reason, fashion P & C globally are treated more leniently than much lesser violations involving destitution of one’s rights and property. It is important to remember that copying in fashion is nothing new. Knockoffs always have been a pervasive part of the fashion industry. The author contends that the Internet makes copying so fast that it encourages fashion designers to innovate unceasingly. The fashion industry has not only survived P & C but thrived. Every time an innovative design is copied, fashion brand’s most powerful marketing force kicks in the trend. Copying makes trends, and trends sell fashion.

The protection of industrial property was born in the year 1883 at the Paris Convention and is the first step taken to help creators and innovators ensure their intellectual works are protected. The author characterizes the existing IPRs legal regime for fashion design protection as “freakish myopia” towards the artistry and creativity of fashion. The persistence of a truncated system of intellectual property rights (IPRs) in the fashion industry does not excoagitate from its efficiency in the creative design and production process. In fact, it establishes strong encumbrances to define, evaluate, legitimize, enforce, entitle and exchange of property rights for the fashion industry. Hence, fashion industry stakeholders have developed various kinds of strategic attitude to gain earnings and try to protect IPRs. The institutional attributes of the fashion industry lead to various historical models of management through IPRs.

Historical research has failed to provide FDP to recognize the dynamics of the intellectual property rights (IPRs) for the fashion design and application of the digital technology in a fashion design environment. To date, IP classifications (trademark, trade dress, copyright, patent, industrial design, sui generis, and trade secrets) are inadequate to provide global regime protection for the fashion industry. The dilemmas involving legal protection of fashion design consideration warrant special concern for researchers. The application of intellectual property for fashion industry deserves priority space in the fashion intellectual property (FIP) law deliberations to examine and analyze the feasibility, practicality, and usefulness of the IP global regime for the fashion design protection (FDP). In this context, it is important to attune intellectual property protection across national borders leading to protection of or lack thereof, for fashion design on a global regime perspective.

The common argument for fashion IPRs is utilitarian. The common theory of IPRs envisions that extensive copying will desolate the incentive for enduring innovation. On the contrary, fashion brands continue to innovate at a fast pace, precisely the opposite to the common theory. The global fashion industry creates, produces and offers a vast variety of creative goods but does so without a stout global regime of IP protection. However, incessant innovation, cutthroat competition, and investment in the fashion industry is still alive. The fashion industry’s cardinal creative elements—its smart fashion wearables are outside the domain of IP law globally. Design copying is ubiquitous but, nonetheless, the industry creates an extensive variety of wearables and accessory designs at a fast pace.

The emanation of digital technologies assists in preventing the rise in P & C of trademark goods and expanding acceptance of wearable design as a form of creative enunciation. All of these have augmented to a renewed interest in the relationship between innovation, IC, IP and piracy & counterfeiting (P & C) of smart fashion wearables.

This study is important and directed towards the stakeholders of the fashion industry and shall have benefit to the wider audience to understand the changes and challenges contributing to the discourse of FDP for fashion enterprises and principally relevant to two main groups:

(i) Fashion entrepreneurs, fashion designers, investors, and fashion management practitioners will be able to use to make decisions about the implementation of FDP capabilities for the development of new or existing fashion brands and other business opportunities.

(ii) Researchers, academic faculty members, legal professionals & scholars, and students will learn a methodology that explores principally the keywords search, literature review, uses various databases analytics and case studies to propose conceptual framework research.

Considering the above scenario, it is worthy of attention to fill the knowledge vacuum in the literature by conceptualizing a FDP model for the global regime to provide new knowledge important for all stakeholders of the fashion industry.

Hence the scope of this conceptual research:

(i) Confers the correlations between innovation, IC, IP, and piracy/counterfeiting of the fashion industry.

(ii) Based on the author’s extensive experience as a practitioner, three new recent advances in technologies are introduced that offers on/offline protection against piracy and counterfeiting for the fashion brands.

(iii) Development of an FDP model with a multipronged strategy for the global IPRs regime to provide a framework for fashion design protection to deter unauthorized reproduction of the products and brands.

Correlation Between Innovation, Ic, Ip, Piracy/Counterfeitig

Intellectual capital (IC) and Intellectual Property (IP) are topics of increasing interest to fashion firms that derive their profits from innovation, knowledge-intensive services, and the understanding of business knowledge context. Business knowledge broadly is of two types: one is codified, and the other is tacit. Strategically, this discernment is vital. The knowledge that is codified can be shared, transferred, and written down. Codified business knowledge is definable and can be protected by the legal system classification as trademarks, trade dress, copyrights, patents, industrial design, sui generis, and trade secrets, Codified information is easier to copy, if not protected by intellectual property law and through recent advances in cutting-edge technologies. In contrast, tacit knowledge (know how) is arduous to describe and can be manifested.

IC is an asset developed from the use of the Intellect. IP is a right of possession of an asset that is developed from the use of intellect. In other words, while both IC and IP are developed from the use of intellect, IP has explicit ownership rights associated with it whereas IC does not. IC is the most invaluable asset of a company and described as the difference between market value and the cost of replacing its assets.

Furthermore, the following are additional differences between IC and IP:

- i. IP can be legally protected, whereas IC remains within the confines of the company boundaries and need to be protected.
- ii. IC is intangible. IP is tangible.
- iii. IP is an event. IC is a process.
- iv. IP can be traded for financial consideration. IC cannot be traded.
- v. IP has a lifespan. IC does not have a finite lifespan.
- vi. IP does not necessarily lead to a competitive advantage. IC is a superset of IP. Meaning, a company may be able to obtain competitive advantage without IP, but it cannot obtain competitive advantage without IC.

Nowadays, many fashion design trends balloon up from the street. The short life cycle of a product as fashion trend come and go has deterred fashion houses from pursuing all avenues of design protection. The styles and trends are continually changing. Hence, the fashion industry is a special case for IP protection. Piracy and counterfeiting (P&C) bring fashion labels more publicity, stimulating nascent fashion trends increasing demand for the originals. Copying fails to deter innovation in the fashion industry because copying is not very harmful to creators (Originators). Thus copying, counter-intuitively, promote innovation and benefit originators. This eon, as shown in the figure 1, the author calls the “piracy and counterfeiting (P&C) paradox.”.

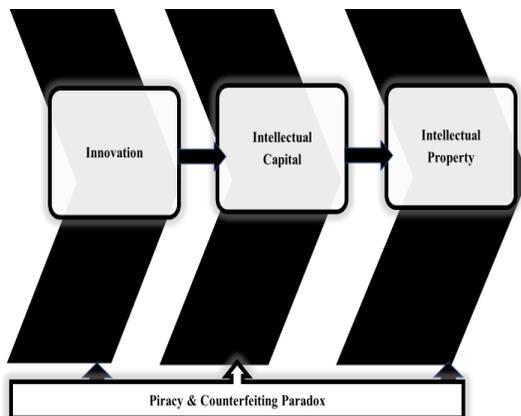


Figure. 1 Correlation Between Innovation, IC, IP, Piracy & Counterfeiting

Inventions are the bedrock of innovation. Meaning, creating something new that enhances a product, process or service is essential for every company. Innovation is defined as “creating and executing new ideas that create value”. IP protections encourage the research and development that drives innovation. Due to the market competition, globalization and rapid development of cutting-edge technology, companies should be protected through intellectual property (IP) rights.

Although current IP laws are partially to blame for the lack of greater protection for fashion designs, the fashion

industry has also neglected to pursue all avenues of intellectual property rights. Many brands protect their trademarks but forget other aspects of their designs that may also be protectable. However, while some trends change, some stay timeless and classic for ages. If a design succeeds and the designer has not obtained protection in the appropriate time frame, infringers will be able to copy their designs. In the long run, cheap knock-offs can damage the brand’s goodwill, loss of value. In the current cutthroat competitive environment, intellectual property rights can provide a competitive advantage for the fashion industry to further innovation and creative expression.

Piracy and Counterfeiting (P&C) is rampant globally and violation of intellectual property rights impact firms bottom lines. Example: Imagine Apple smartwatch is pirated and/or counterfeited. Such piracy and counterfeiting can impact the revenue and profit. Most importantly due to P&C, Apple can lose the competitive advantage.

The fashion industry may thrive in a high-IP environment that needs robust protections against copying and counterfeiting. Since a formal high-IP global regime has never existed in the fashion industry it is difficult to say whether raising IP protections would raise consumer or producer welfare. If fashion were treated like music or books by the law, the innovation of fashion designs might be quite limited. It is unlikely, however, that the fashion cycle as a phenomenon may cease to exist under a high-protection legal regime. In other words, the extant legal regime likely may have a causal effect on the structure of innovation in the fashion industry, but not an overwhelming effect.

Author’s philosophy of “Perpetual Product & Service Innovation (PPSI)”, as shown in figure 2, - a holistic approach regarding innovations’ unique relation to product, service, management, and strategy for sustainable development that truly works in practice. PPSI is essential to the development of new products, services and innovative climate for the sustainable success factors of an enterprise. Perpetual innovation ensures high quality of the products and services to maintain legal certainty through IP protection that helps to establish as a major player in the market raising the profile and unique differentiation from the competitors to attain the sustainable competitive advantage.



Figure. 2 Perpetual Product & Service Innovation Philosophy

Legislation targeting fashion design piracy has been enacted around the world, but the lack of piracy and counterfeiting enforcement globally has not protected the fashion creators and designers fully yet. Fashion firms have occasionally pressed for political action globally for expanded legal protections for their designs. These limited efforts have made little progress in the IP mechanisms governing fashion designs. Today, the fashion industry operates in what the author calls “low-IP equanimity.”—meaning the seven core forms of IP law— trademark, trade dress, copyright, patent, industrial design, sui generis, and trade secrets— provide only very limited protection for fashion designs. The persistence low-IP regime in the fashion industry makes the process of modeling innovation and diffusion difficult because fashion is no longer a top-down design enterprise.

Modern economic theories consider competition facilitate a dynamic interaction between innovation and imitation. Perpetual innovation creates superior and unique products and services. To create and sustain perpetual innovations, legal measures makes economic sense to attain perpetual creation to protect.

II. DIGITAL TECHNOLOGIES TO PROTECT FASHION DESIGN

Pro-active approach to protecting vital IP assets is essential. A holistic IP protection strategy should be built around multiple and complementary “detection, prevention and response mechanisms - offers an effective means of adapting to the challenges of the online environment. A holistic protection approach means assessing every channel, every tactic abuser may leverage, including those in on/offline settings.” It also requires, “working across organizational boundaries to achieve the synergy needed to effectively safeguard a fashion brand.

A comprehensive and proactive IP protection strategy can enable fashion companies to overcome some of the limitations of a conventional legal approach. Infringement identification and enforcement on/ offline are the important steps of brand’s IP protection strategy. For off-line, many companies are acting globally those who specialize in anti-counterfeiting and anti-piracy investigators to minimize or even to eliminate the threat of IP crime, fraud, and malpractice. The author contends that the “Fourth Industrial Revolution” has ushered in using big data to drive innovation to minimize the barriers between man and machine. It is important to note that continual tension still prevails between IP protection and technological innovation. A proper balance is essential granting enough protection for intellectual property creation to spur innovation.

With the recent advancement of the following innovative technologies, fashion designers can protect their IPRs on/offline:

- i. Smart monitoring system (SMS) that offers impactful on/offline IP protection [1].
- ii. Convergence of technologies such as artificial intelligence (AI), Blockchain (BC), Cloud Computing (CC), and Business Intelligence (BI) enables smart traceability system [2].
- iii. Advanced Printer Technology Protection (AFTP) with 4D printing [3].

Smart Monitoring System (SMS)

The author introduces a smart monitoring system (SMS), as shown in figure 3, a protection instrument in supporting on/off-line fashion design work (<https://www.phishlabs.com/services/brand-protection/>).

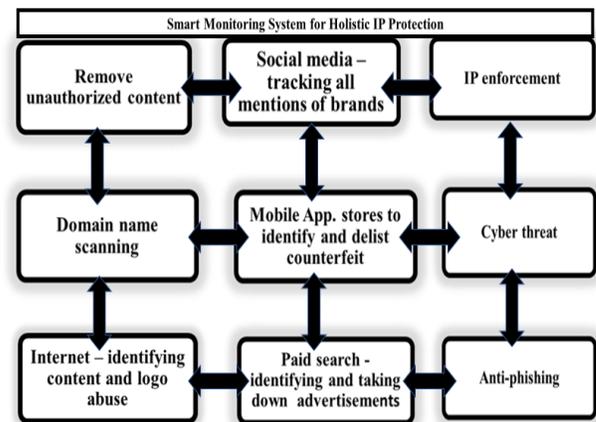


Figure. 3 Smart Monitoring System for comprehensive IPRs protection

SMS is a cluster technology that does the heavy lifting and helps to protect fashion brands from infringements within domain names online in an intelligent and cost-effective way and effectively can monitor the following functions to provide impactful on/offline brand IPRs protection:

- * Remove unauthorized content
- * Domain name - scanning the web for domain registrations that match the brand.
- * Internet – identifying content and logo abuse for fast enforcement
- * Social media – tracking a brand on social media and the content removal navigation.
- * Mobile App. – monitoring major App. stores to identify and delist counterfeit Apps.
- * Paid search - identifying and taking down various advertisements that cost the brand traffic and damage the brand value.
- * IPRs enforcement – taking actions against online infringements.

This cutting-edge digital technology can identify and remove web pages and other online content that infringe (unauthorized sales, unapproved distribution of proprietary information, inappropriate use of a logo or other abuse) fashion company’s intellectual property.

Smart Traceability System (STS)

The volume of the supply chain data for fashion brands has exponentially increased over the years. Big data becomes a great challenge to make sense of the information. Smart traceability system (STS) is at the heart of the convergence of new digital technologies such as blockchain (BC), artificial intelligence (AI), cloud computing (CC) and business intelligence (BI), as shown in figure 4, and brings the following benefits for the fashion industry:

- i. Brand Protection (BP) – for consumers the fashion brand becomes a symbol of quality and eliminates testing in every stage of supply chain transaction.
- ii. Manufacturing Performance (MP) – identifies counterfeit products, manages better raw material resources, waste, inventory and warranty cost.
- iii. Stakeholder Engagement (SE) –provides actionable fashion brand value chain insights and enhances loyalty.
- iv. Sustainability –traceability is fundamental to a brand's product life-cycle analysis, controls the environmental and social impact of the fashion brand.

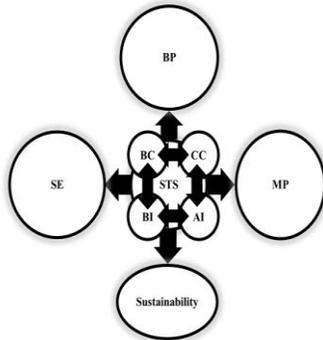


Figure 4. Smart Traceability System

STS is a cloud-based technology, acts as a control tower using its powerful serialization and traceability software to collect granular data along the supply chain, enables data sharing visibility, and can be digitally maintained with distributed ledgers technology (Blockchain) to restrict data access to create trust between fashion stakeholders. A data pool is created, allowing analytics and artificial intelligence to make smart, real-time decisions regarding supply chain allowing the fashion brand to create sustainable value. Artificial intelligence (AI) plays a vital role in the smart traceability system. Traceability integrates all the elements making it the prime driver of smarter supply chains. The potential to use digital technology, particularly artificial intelligence, for the management of IP rights is huge. The idea of IP organizations utilizing distributed ledger technology (DLT) to create "Intelligent IP Registries" in the form of a centralized solution would create an immutable record of events in the life of a registered IP right. It could include when a trademark was first applied for, registered, first used in trade; and when a design, trademark or patent was licensed, assigned, and so on. It would also resolve the practicalities of collating, storing and providing such evidence (<https://www.research.ibm.com/blockchain/>).

Advanced Printer Technology Protection (APTP)

In 2006, laser sintering technology was developed to create three dimensional (3D) objects. Two years later, the first self-replicating 3D printer was introduced creating 3D objects layer by layer and have been used to manufacture fashion wearables, robotic aircraft, prosthetics, and automobiles. 3D printing is the quick fabrication of three-dimensional products with a machine that essentially "prints" the products.

The 4D printing is the next-gen fabrication process encoding of "a dynamic capability--either function, or properties--that can change via the application of chemical, electronic, or nanomaterials 4D printed kinematics wearables were introduced in 2015. 4D printing is applied for piracy protection for the fashion industry and for other industries also. The following range of opportunities 4D printing technology bring to the fashion world:

- (i) Shape and function of sneakers can change according to consumer need and usage (running, walking, jumping, etc.).
- (ii) Wearables (Apparels, Jewelry, and Watches) that can adapt to the form of the body, change color and properties depending on the environment (weather, danger, etc.)
- (iii) Jewelry parts that are 4D printed, self-assembled, and automatically adapt to the form of the body.
- (iv) Apparels are printed in one piece despite being much larger than the space inside the printer and conform flexibly to the body.

Example: Nervous System, a design studio, has experimented with this new technology and has created Kinematics, a software tool for 4D printing that addresses mass-market production. (<https://www.dezeen.com/2016/03/08/nervous-system-4d-3d-printed-kinematic-nylon-petals-dress-fashion/>)

With a 4D printer technology, fashion designs can be easily printed and offer benefits to customize a product as per the needs of the customer. The pitfall of this advanced technology could be that the data files can be widespread freely allowing the consumers to download and benefit from the ideas due to the ubiquitous phenomenon of the Internet. Without a clear legal framework this advanced technology deals with infringement issues in 4D printed fashion and can be a source of legal disputes.

Fashion revolution in the digital age

Cutting-edge technological amelioration in the digital age revolutionize industries like fashion shaping the tomorrow to re-imagine the future by transforming the realities of today. The digital technologies change the evolution trends disrupting the fashion business globally. Cloud computing (CC), artificial intelligence (AI), virtual reality (VR), blockchain (BC), Internet of Things (IoT), augmented reality (AR) and cognitive technologies [4] transforming, the fashion industry landscape and is never going to be the same again.

III. RESEARCH METHODOLOGY

The choice of research methodology is dependent on the nature of the problem. Morgan and Smircich (1980, p.491) argue, “the actual suitability of a research method, derives from the nature of the phenomena to be explored” [5].

In this conceptual study, the research methodology [6] uses literature review, relevant databases (WIPO Global brand database, WIPO Lex, Fashion Institute of Technology, Google Scholar) facilitates broad search, identify high-quality peer-reviewed papers and analysis to obtain FDP perspective on fashion brands relevant to IPRs globally. (<https://www.wipo.int/reference/en/branddb/>; http://www.wipo.int/wipo_magazine/en/2005/03/article_0009.html; <https://www.fitnyc.edu>; <https://scholar.google.com>).

Literature Review

The literature review [6] includes the following two segments:

1. Explores various terms broadly and the search keywords include explanation on the following sections mentioned above: (i) introduction, (ii) Correlation between innovation, IC, IP, piracy and counterfeiting (P & C), (iii) recent advances of cutting-edge digital technologies for fashion design IP protection on/offline.
2. Also the literature review focuses on the following seven principal IPRs classifications that are independently applied and sometimes co-related to FDP attainment, as shown in figure 5: (i) Trademark, (ii) Trade dress (iii) Copyright, (iv) Patent, (v) Industrial Design (vi) Sui generis, and (vii) Trade Secrets. IP law offers the following tools (seven IPRs classifications), as shown in figure 5, to protect creations and innovations of the fashion industry:



Figure 5. Principal Classifications of IPRs

Trademarks

Trademarks are distinctive signs (words or symbols) that can be affixed on products to indicate their origin to the consumers. Creators in the fashion industry largely use trademarks, but their utility, particularly about the protection against copying. Trademarks are particularly useful when they clearly integrate the design of the products. So, trademark law can serve to prevent counterfeiting of products in the fashion industry, but it cannot prevent copying of fashion design.

Trade dress

Trade dress is a legal term of art that generally refers to characteristics of the visual appearance. Trade dress protection more appropriated to fashion products. Trade dress involves the total image of a product that involves size, shape, color(s), graphics, and texture. These features considered the packaging in trade dress to identify the origin of the product. As the standard is difficult to meet in the fashion industry, especially by new designers due to costs, time and uncertainty, trade dress seems to afford little protection to clothing products.

Copyright

Copyright is intended to protect the artistic and literary creations, but the creation must be original. Fashion creations can benefit from copyright protection. In France, as in the European Union, “applied arts” is given to fashion creations and thus are copyrightable. On the contrary, in the United States, copyright law does not protect “useful articles”, and therefore clothing is not copyrightable. Fashion products, particularly clothing ones difficultly pass the test of separability on which their copyrightable feature depends.

Patent

The patent confers an exclusive right, a temporary monopoly 20 years in Europe, 17 years in the United States to its holder respectively. Granting this temporary monopoly aims at encouraging research and innovation. To be patentable, a product must be new and useful. The novelty feature seems to be difficult to meet in the fashion industry. A patent could protect fashion designs, i.e. only the ornamental features of the product. Few innovative designs on the market are truly exceptional in form. Among the various IP tools, the protection of designs and models appears in many respects as the most relevant one for the fashion industry.

Industrial Design

An industrial design constructs the aesthetic or ornamental aspect of an article and may consist of features, such as the shape, patterns, lines or color. The holder of a registered industrial design has the right to avert third parties from selling, making, importing articles embodying a design which is a copy, or a substantial copy. Industrial designs are applicable to various products of an industry. In many countries, an industrial design needs to be registered to be protected. Industrial designs are protected under patent law in some countries.

Sui generis

Traditional Knowledge (TK) has been used for centuries and evolved from generations to generations continually and creates new information because of the advancement of technology. One of the main objectives of the Sui generis protection to provide exclusive monopoly enabling the holders of traditional knowledge (TK) for their contribution. Sui generis is a term meaning “a special kind”- a class by itself. In IPRs discourse the term sui generis refers to a special form of protection regime and the sui

generis right prohibits the re-utilization of any database. This right lasts 15 years from the date the non-creative database was created. The following highlights the main forms of sui generis rights: (i) Indigenous IP, Database Rights, (ii) (iii) Moral rights, (iv) Mask Work, (iv) Database Rights Plant and other rights such as Breeders' Rights, and Farmers' Rights. In many countries, Sui generis statutes exist that provide IP protection.

Trade Secrets

A trade secret is a form of IP that applies to business secrets. If a firm creates or compiles proprietary information that gives it an economic advantage over its competitors, that proprietary information can be protected as a trade secret and can be the "owner" of the trade secret. In the USA, trade secrets are not protected by law like patents or trademarks. A trade secret could hypothetically last forever. Unlike with patents, it is perfectly legal to reverse engineer and copy a trade secret.

Databases

WIPO Global Brand Database

The Global Brand Database is a gateway to more than 36,010,000 records from 35 national and international collections to perform research whether a mark similar or identical already exists. Prior to filing a Trademark application, one should perform a trademark search using WIPO global brand database. (<https://www.wipo.int/reference/en/branddb/>).

World intellectual property organization Lex

World intellectual property organization (WIPO) Lex is a global database that provides free of charge access to legal information on intellectual property (IP) such as treaties administered by WIPO, other IPRs-related treaties, and laws and regulations of the Members States of WIPO, the United Nations (UN) and the World Trade Organization (WTO). (<http://www.wipo.int/wipolex/en/>).

Fashion Institute of Technology (FIT)

FIT's library supports the academic and research needs for the fashion community that includes specialized electronic and digital resources and materials not often found in conventional academic libraries, such as the fashion and trend forecasting services, sketch collections, clipping files, fashion show DVDs, newspapers and periodicals more than 400 current subscriptions. FIT database provides access to thousands of full-text journal articles, books, images, research reports on the fashion industry and facilitate measurably and enrich the learning experience on the FDP perspective of fashion brands (<https://www.fitnyc.edu>).

V. CURRENT PASTICHE OF FASHION DESIGN PROTECTION

The global economy is increasingly based on knowledge, inter-connected in real time, continually driven by innovation and sustained by life-long learning. Policy

choices in IPRs are a matter of national discretion because IP law solely applies within the designated countries. No two countries outside the EU have identical IPRs protection. In recent years, this system of highly variable national rights has become incompatible with the globalization of markets, where companies exploit their technical advantages on a global scale. Pressure from USA and EU helped usher in stronger IPRs legislation in many countries such as China, India, Brazil, Turkey, Egypt, South Korea, Argentina, Thailand, Taiwan, and others. The bilateral investment treaties (BITs) between USA/EU required partner countries to establish IPRs as a core element of broader trade agreements.

The North American Free Trade Agreement (NAFTA) is the first trade treaty where IPRs protection was established. In Oct 2018, as per the new agreement (USMCA – United States -Mexico-Canada Agreement) between US, Canada, and Mexico, the IPRs are revised to provide better protection from the piracy a counterfeiting (<https://www.vox.com/2018/10/3/17930092/usmca>).

In 1883, the Paris Convention was adopted to protect industrial property in the widest sense of IPRs and open to all nations and administered by WTO. Starting from the 21st century, the IP law has improved for the fashion industry to combat piracy and counterfeiting. Fashion wearable matters have become part of the global agenda and most nations are reassessing the fashion design IP laws (<https://www.wipo.int/export/sites/www/about-ip/en/iprm/pdf/ch5.pdf>).

The IPR protection awareness has been raised globally through Trade Related Intellectual Property (TRIPs) agreement and stronger protection through the TRIPs-plus regimes and WIPO. The TRIPs agreement is the first comprehensive enforceable global set of rules covering IPRs. Some issues related to Copyright protection were not addressed explicitly in TRIPs and WIPO negotiations. (https://www.google.co.in/search/trips_agreement ; https://www.wto.org/english/tratop_e/trips_e/intel2_e.html).

WIPO is a UN specialized agency under Article 3 of the convention seeks to promote the protection of IP globally through cooperation among the countries. Its 184 members countries comprise over 90% of the world participate in negotiating treaties and set policy on IP matters. The Internet has made sharing of content easy and matters related to copyright have become more and more prominent. Copyright law is facing difficulties to cope up with digital technologies, especially the Internet. To adjust the legal system to be in consonance with the recent technological developments the WIPO has laid down WCT, and the WIPO Performances and Phonograms Treaty (WPPT) as the updates and supplements for the protection as an addendum to Berne Convention of the literary and artistic works. To ensure that unauthorized copying of a protected material can be prevented or detected, the WCT included new provisions dealing with Technological

Protection Measures (TPM) and Rights Management Information (RMI).

Given the five strategic goals of WIPO, the author contends that WIPO is the unique and appropriate agency for promoting an extensive intellectual property culture and enforcing to combat piracy and counterfeiting. Although WIPO administers 26 treaties that deal with IPRs, the WTO administers the most important treaty on IPRs, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) Agreement (<https://www.wipo.int/portal/en/index.html>).

There are three groups. The first group defines internationally agreed standards of IP protection for a contracting party. The second group is the global protection system treaties to simplify and reduce the cost for application filing. The third group create classification systems and manage the structure for easy retrieval.

In this study, the author has coined these seven International systems- ITMS, ITDS, ICRS, IPS, IIDS, ISGS, ITSS) for the protection of IPRs classification for Trademark, Trade dress, Copyright, Patent, industrial design, sui generis, and trade secrets respectively.

International Trademark System (ITMS)

The Madrid System for the International Registration of Marks, bringing the International Trademark System to 118 countries. Trademarks in multiple countries is attained by filing one international application that can provide the following benefits for the fashion brands through the Madrid System:

- saves time and money;
- includes members representing over 80% of world trade;
- enables brands to manage and renew marks through one centralized system

(<https://www.wipo.int/madrid/en/>).

International Trade Dress System (ITDS)

Is a type of Trademark and a form of IP that generally refers to the visual appearance of a product or its packaging. Three-dimensional configuration marks also known as Trade dress. The new Trade Marks Act 2003 in India introduced a new legal definition of a trademark encompasses all the elements of trade dress. In the U.S., like trademarks, a product's trade dress is legally protected by the Lanham Act. This is the primary law underlying most trade dress claims. The Patent and Trademark office of USA (USPTO) has been a member of the Madrid Protocol. Trade dress can be protected as getup under the law of "passing off", a common law remedy in the UK for protecting an unregistered trademark. In China, Trade dress is protected under trademark, patent, copyright, and unfair competition laws in China.

(https://www.wipo.int/export/sites/www/madrid/en/highlights/2015/pdf/madrid_highlights_special_edition_uspto.pdf ; <https://www.finnegan.com/images/content/4/7/v2/47432/WTR-Designs-AGlobalGuide2014.pdf> ; <https://www.columbia.edu/~mr2651/e-commerce/31st/Statutes/Lanham.pdf>)

am.pdf)

International Copyright System (ICRS)

Is with 96 countries of the world concluded in 1996 and enforced in 2002 as the WIPO Copyright Treaty (WCT). It is a special agreement deals with two copyright protection matters: (i) computer software program and the mode of their expression; and (ii) data or databases compilations. The term of protection duration is at least 50 years. The Treaty is open to all WIPO member states and the EU. It obliges each contracting party to abide by its legal framework.

(https://www.wipo.int/treaties/en/ip/wct/summary_wct.html)

International Patent System (IPS)

Is with 152 contracting parties of the world. Patent protection is attained in multiple countries by filing one international application can provide the following benefits for the fashion designers and their brands through the WIPO's PCT system:

- postpones the major the costs associated with international patent protection;
- provides fashion brands with a strong basis for patenting decisions;
- is used by the world's major corporations, research institutions, and universities.

The PCT is used by the world's major corporations, research centers of universities, small and medium-sized enterprises (SMEs), individual inventors to seek international patent protection. PCT applicants generally pay three types of fees for international applications:

- (i) an international filing fee of 1,330 Swiss francs,
- (b) a search fee which can vary from 150 to 2,000 Swiss francs, and
- (c) a small transmittal fee which varies depending on the receiving office.

On 24th Jan 2018, The PCT completed its 40th anniversary. The PCT is the largest of WIPO's international IP filing systems and was a significant achievement for WIPO. (<https://www.wipo.int/pct/en/faqs/faqs.html>).

International Industrial Design System (IIDS)

The International Registration of Industrial Designs entry into force of the twelfth edition of the Locarno Classification 1 of the Hauge agreement. A new edition of the international classification used for the purposes of the registration of industrial designs (Locarno Classification) will enter into force on January 1, 2019. In conformity with its previous practice, the International Bureau of the World Intellectual Property Organization (WIPO) does not reclassify the products, which constitute an industrial design or in relation to which an industrial design is to be used, in the international registrations classified according to a previous edition.

Industrial design in multiple countries with a minimum of formalities and expense can provide the following benefits through the Hague system:

- (i) replaces multiple registrations with just one;

(ii) can be registered up to 100 industrial designs with one form;

(iii) makes management of registered designs easier — record changes or renewals through a single step.

(https://www.wipo.int/edocs/hagdocs/en/2018/hague_2018_8.pdf).

International Sui generis System (ISGS)

In 2000, WIPO members formed an intergovernmental committee on IP and genetic resources, traditional knowledge and folklore (IGC) and agreed to develop a legal instrument (s) to even form a treaty eventually that would bind all the member states of WIPO. The modalities of intellectual property (“IP”) sui generis systems for the protection of traditional knowledge was discussed in 2001 at the WIPO, Geneva Intergovernmental Committee meeting. WIPO is developing new sui generis mechanisms to ensure adequate protection for other categories of TK. The elements of a sui generis system of traditional knowledge protection have been identified by some of the member states of WIPO. In 2010, the Innovative Design Protection and Piracy Prevention Act (“IDPPPA”) was introduced in the US Congress. Sui generis copyright protection for fashion design has been an important topic since IDPPPA providing protection for “both the ornamental appearance and utilitarian function.” (<https://www.gpo.gov/fdsys/pkg/CHRG-112hrg67397/pdf/CHRG-112hrg67397.pdf>)

Sui generis copyright protection should be granted for original fashion designs to combat piracy. The need of the hour has arrived is to develop a sui generis regime, a legal regime the author calls ISGS – for fashion design poses various complex conceptual and practical challenges such as the definition of the subject matter of protection; conferring rights, title holders; modes of acquisition, registration, and enforcement measures (<https://www.thefashionlaw.com/learn/proposed-copyright-legislation-for-fashion-designs>)

Traditional forms of creativity and innovation can be recognized as protectable intellectual property enabling communities (local and indigenous) as well as governments to have a say over the use of their traditional knowledge by others. WIPO’s work on TK addresses three areas:

- (i) technical know-how, practices, skills, and innovations);
- (ii) traditional cultural expressions/expressions of folklore; and
- (iii) genetic resources.

The International lawmakers are still facing challenges to establishing the treaty for sui generis system that will provide a balanced, robust and flexible international IP framework to protect traditional knowledge in everyone’s interest. (http://www.wipo.int/wipo_magazine/en/2017/01/article_0003.html).

International Trade Secrets System (ITSS)

Is a very broad, virtually any information or expression, whether recorded, qualifies for trade secret

protection. Its limited availability gives it economic value and is reasonably guarded with regards to drawing, data, equation, pattern, device, process, method, technique. Trade secrets, like other forms of IP, is governed by national legal systems. However, international standards for protecting secrets were established as part of the TRIPS Agreement in 1995. The trade secret laws have been adopted by more than 100 of the 159 members of the World Trade Organization.

To qualify for legal protection a trade secret must:

- (i) not be known or readily ascertainable by all of those who could profit from it;
 - (ii) have economic value by its limited availability; and
 - (iii) its owner must have taken reasonable effort to guard the secret and to protect it from unauthorized use or disclosure.
- (http://www.wipo.int/wipo_magazine/en/2017/06/article_0006.html).

The Lisbon System for Appellations of Origin (LSAO)

Is with 28 contracting parties, so far. One can obtain protection for appellations of origin through a single registration procedure in one language, with one set of fees in one currency. Like other forms of (IP), appellations of origin and geographical indications need to be protected and can be protected at the national level through a variety of systems (<http://www.wipo.int/lisbon/en/>).

Anti-Counterfeiting Treaty Agreement (ACTA)

Intellectual property rights are meaningless if they cannot be enforced. Hence ACTA treaty was signed by 28 contracting parties that deal with intellectual property protection and enforcement by preventing counterfeit goods as well as copyright infringement. It is a new governing body outside WTO, WIPO, TRIPS, the United Nations for the global trade of counterfeit goods and pirated works. Japan and the USA were the first to develop and ratify the treaty. The United States also first to develop the treaty. The author has included ACTA as an integrated part of the proposed FDP model for the following reasons:

- i. Creating new global IP strong enforcement standards.
 - ii. Enforcement of intellectual property innovation policies.
 - iii. Key legal framework specifically in the digital environment to target the Internet and its users.
 - iv. The treaty is open for all members of WTO.
- (<https://www.eff.org/issues/acta>).

VI. A QUEST TOWARDS COMPREHENSIVE FDP MODEL FOR THE GLOBAL REGIME

Nowadays digital technologies influence every waking moment of our lives. Advance innovation techniques in both software and hardware development, making a plethora of embedded platforms that includes computation, communication, sensing, monitoring and traceability capabilities enables rich experiences to consumers and creates intellectual capital. Recent digital technology development in the fields of information communication

technology, wearable technology, block chain, artificial intelligence, cloud computing and cognitive technology, Internet, IoT, AR, VR and switched digital (voice and data) communication systems provide the competitive edge for fashion companies to attain growth affecting day to day lives of the global community at large. However, technology itself is not an innovation. The match between technology and the market need to create customer value proposition is the path to innovation. It is vitally important to understand digital technology driven innovation may manifest in many forms. Technology is evolving constantly such that effective market opportunity for the fashion firms involves embracing technology evolution. Furthermore, the type of technology exploited, and the rate of technology exploitation is highly sector-specific [7] [8].

Integration and interaction of all the key contributions (innovation, digital technology in monitoring and tracing, high IP equilibrium, enforcement of IP law) can make a significant effect combating the fashion design protection against piracy and counterfeiting in a vigorous way.

To protect the fashion company's intellectual property (IP) assets robustly, as shown in figure 6, the following comprehensive, multipronged strategy and action among all stakeholders are required to enforce combating piracy and counterfeiting globally to inspire innovation and creativity unceasingly:

- Application of advanced cutting-edge technologies (SMS, STS, APTA) to combat on/offline piracy and counterfeiting.
- Fashion industry stakeholders to work closely with WIPO to enact further high equilibrium IP regime. WIPO to coordinate with member states of WTO, and TRIPs to enact IP laws for the global regime. Enhancement and promotion of protection systems (ITMS, ITDS, ICS, IPS, IIDS, ISGS, ITSS, LSAO) for the global regime.
- ACTA to enforce strong IP enforcement standards.

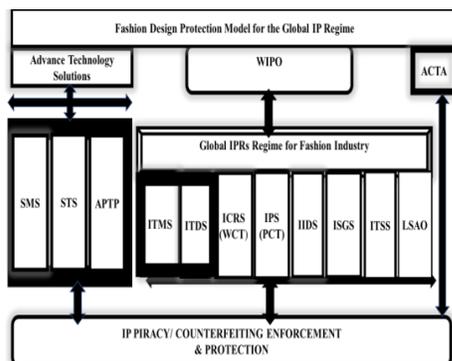


Figure. 6 Comprehensive FDP Model for the Global IP Regime

VII. CONCLUSION

Protection against fashion design IPRs infringement

has been a pivotal aim for most fashion brands. In general, fashion law is a kind of IP law that lacks adequate protection in its current form for the fashion industry globally. This will become even harder if technology further advances with regards to smart fashion wearables. If IP laws do not revise for stout protection from piracy and counterfeiting, the fashion industry could be damaged further in monetary losses. It is important for fashion companies to seek sound intellectual property (IP) management advice to protect their creativity through IP rights enabling business potential. Fashion firms globally should develop an IP strategy as an integral part of the overall business strategy. Governments around the world should create a conducive environment for an effective IP system and cooperation with institutions like WIPO for their jurisdiction. An effective IP protection system and enforcement for the global regime enables an environment for innovation and creativity. The qualitative evaluation strategy for every fashion company is imperative to file an application for the IP rights to be protected.

Each area of IP law for fashion industry has its own set of complex rules and statutes. From a practical point of view, it has been proven to be daunting to change current law in various countries around the world. So far, WIPO has made substantial strides to execute IPRs treaties and protocols for the global regime. Considering the WIPO's progress, the author believes WIPO should take a further lead role with good governance principles to execute comprehensive IP protection policies covering all the classifications of IPRs. WIPO should coordinate with the member states to form a sound legal framework for strong enforcement for the global regime to achieve "high IP equilibrium" for the fashion industry, specifically in the digital environment. Towards the correct balance in the intellectual property system between private and public interests globally, the WIPO has an ethical obligation to work with developing and developed countries of the world to build the intellectual property infrastructures. On 2nd October 2018, WIPO made further progress, particularly a Design law treaty, underpinning the global intellectual property (IP) system, indicating multilateral engagement by the member states and agreed to new guidance on WIPO's future work.

Fashion industry provides an interesting and important challenge to IP orthodoxy. This claim—that piracy is paradoxically beneficial for fashion designers—rests on attributes specific to fashion the status-conferring, or positional, nature of wearables. To better understand the proper domain of IP, we must consider those cases in which IP rights are not present, but innovation and creativity persist. Fashion is one such case. The fashion industry is facing many challenges including the impact of digital technology and global economic transformation. The Internet era propagates images of new styles instantly and aiding the P & C. Furthermore, greater cultural recognition of fashion has increased sympathy for fashion designers. It is no longer credible to claim legal protection for fashion design is

somehow elitist.

This is an extraordinarily complex topic and the quest is to provide a broader view of the most critical matters related to piracy, counterfeiting, and enforcement of IPRs. The author believes that WIPO treaties should usher in a stronger global system of protecting intellectual property rights (IPRs). Three new advanced cutting-edge technologies introduced in this article enabling adequate protection with regards to piracy and counterfeiting for the fashion industry. This study fills the vacuum in the literature with regards to combined impact of advanced cutting-edge technologies (SMS, STS, and APTA) and IP law relating to fashion design protection globally. Further research should be expanded in the field of fashion design protection specifically related to emerging cutting-edge digital technologies.

Global problems with IPRs enforcement are not insurmountable. But it is only through identification, monitoring, tracking, and understanding the core motivation of the problem, solutions can be implemented. Determination, fortitude, patience, and persistence on the part of fashion industry stakeholders are required to combat piracy and counterfeiting.

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Biography



Profulla Kumar Padhi, as a serial entrepreneur, has over 42 years of global business experience and held the Founder, CEO and Chairman of the Board positions for more than 25 years and managed up to US\$1.2 Billion revenue operations. His education

qualification includes a Master of Science degree from the prestigious Massachusetts Institute of Technology (MIT), Cambridge, USA and a graduate of the Ivy League Wharton School of Business, University of Pennsylvania (USA) and holds seven diploma certificates from the Ivy League Columbia University (USA), the Ivy League Dartmouth College (USA), and Kellogg School of Management (USA). For more than 40 years, as a pioneer, Mr. Padhi has been involved in entrepreneurial venture endeavors in disruptive technologies and smart fashion wearable ventures globally. So far, he has done business in 46 countries and traveled to 142 countries. He is an author, independent researcher, innovator, pioneer, product marketing architect (patent/copyright holder) and teacher in creation, design, marketing disruptive technologies and products.