

Ethics in Information Technology, Fourth Edition

Chapter 6 *Intellectual Property*

What Is Intellectual Property?

- ▶ Term used to describe works of the mind
 - Distinct and “owned” or created by a person or group
- ▶ Copyright law
 - Protects authored works
- ▶ Patent law
 - Protects inventions
- ▶ Trade secret law
 - Helps safeguard information critical to an organization’s success



What Is Intellectual Property?

Four entrepreneurs arrested in Karachi for alleged copyright infringement



KARACHI: Four members of a startup formerly contrived at Google-backed The Nest I/O have been arrested for infringing on intellectual property rights.

The brainchild of these entrepreneurs, Investors Lounge, a portal for budding

Copyright infringement: EMI issues notice to Shafqat Amanat Ali Khan

Entertainment Desk | Updated July 31, 2015

f 8 t 14



Shafqat Amanat Ali Khan. — Photo courtesy: Pakhungma.com

Another copyright infringement issue has arisen — and this time it is no one but the singer from one of the oldest musical families in South Asia, Shafqat Amanat Ali Khan of the Patiala household. It appears that Shafqat, who just released the music video for 'Dil Dharakne Ka Sabab' has violated the copyrights of the song, which belongs to EMI Pakistan.

According to the legal notice sent to Times Music, Shafqat Amanat Ali Khan and Naseeruddin Shah, the song was first performed by Ghulam

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US



What Is Intellectual Property?

THE EXPRESS TRIBUNE | LIFE & STYLE | MUSIC

Copyright infringement: Zoheb Hassan lashes out at PSL for using 'Disco Deewane'

By Our Correspondent Published: February 15, 2019

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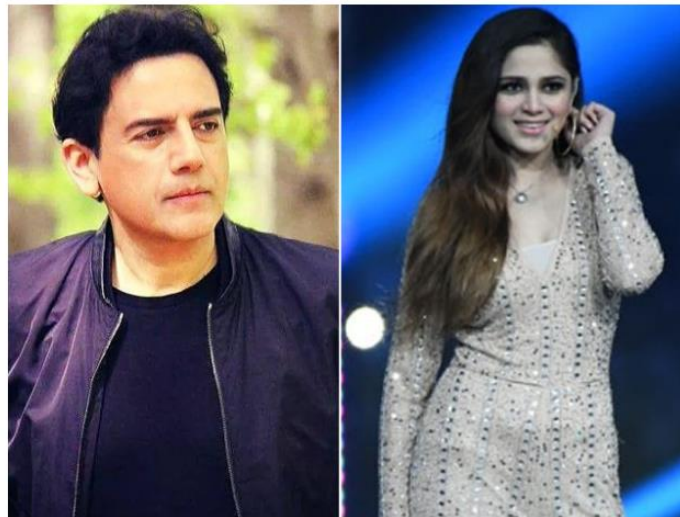
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EMAIL



KARACHI: Zoheb Hassan called out the organisers of Pakistan Super League on Friday for copyright infringement. He slammed PSL for using Nazia Hassan's hit number *Disco Deewane* on the opening night without permission.

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Copyrights

- ▶ Established in the U.S. Constitution
 - Article I, Section 8, Clause 8
- ▶ Grants creators of original works the exclusive right to:
 - Distribute
 - Display
 - Perform
 - Reproduce work
 - Prepare derivative works based upon the work
- ▶ Author may grant exclusive right to others



Copyrights (cont'd.)

▶ Copyright term

- Copyright law guarantees developers the rights to their works for a certain amount of time

▶ Sonny Bono Copyright Term Extension Act

For works:

- Created after 1/1/78, life of the author plus 70 years
- Created but not published or registered before 1/1/78, life of the author plus 70 years; no expiration before 12/31/2004
- Created before 1978 still in original or renewable term of copyright, 95 years from the date the copyright was originally secured



Copyrights (cont'd.)

- ▶ Types of work that can be copyrighted
 - Architecture
 - Art
 - Audiovisual works
 - Choreography
 - Drama
 - Graphics
 - Literature
 - Motion pictures



Copyrights (cont'd.)

- ▶ Types of work that can be copyrighted (cont'd.)
 - Music
 - Pantomimes
 - Pictures
 - Sculptures
 - Sound recordings
 - Other intellectual works:
 - As described in Title 17 of U.S. Code



Copyrights (cont'd.)

- ▶ Must fall within one of the preceding categories
- ▶ Must be original
 - Evaluating originality can cause problems
- ▶ Fair use doctrine
 - **Allows portions of copyrighted materials to be used without permission under certain circumstances**
 - **Maintains balance between protecting an author's rights and enabling public access to copyrighted works**
 - Factors to consider when evaluating the use of copyrighted material



Copyrights (cont'd.)

- ▶ Copyright infringement
 - Copy substantial and material part of another's copyrighted work
 - Without permission
- ▶ Software copyright protection
 - Raises many complicated issues of interpretation
 - Copyright law should not be used to inhibit interoperability between the products of rival vendors



Copyrights (cont'd.)

TABLE 6-1 Summary of the WTO TRIPS Agreement

Form of intellectual property	Key terms of agreement
Copyright	Computer programs are protected as literary works. Authors of computer programs and producers of sound recordings have the right to prohibit the commercial rental of their works to the public.
Patent	Patent protection is available for any invention—whether a product or process—in all fields of technology without discrimination, subject to the normal tests of novelty, inventiveness, and industrial applicability. It is also required that patents be available and patent rights enjoyable without discrimination as to the place of invention and whether products are imported or locally produced.
Trade secret	Trade secrets and other types of undisclosed information that have commercial value must be protected against breach of confidence and other acts that are contrary to honest commercial practices. However, reasonable steps must have been taken to keep the information secret.

Source Line: World Trade Organization, “Overview: The TRIPS Agreement,” www.wto.org/english/tratop_e/trips_e/intel2_e.htm.



Patents

- ▶ Grant of property right to inventors
- ▶ Issued by the Patent Office
- ▶ Permits an owner to exclude the public from making, using, or selling the protected invention
- ▶ Allows legal action against violators
- ▶ Prevents independent creation as well as copying
- ▶ Extends only to the United States and its territories and possessions



Patents (cont'd.)

- ▶ An invention must pass four tests
 - Must be in one of the five statutory classes of items
 - Must be useful
 - Must be novel
 - Must not be obvious to a person having ordinary skill in the same field
- ▶ Items cannot be patented if they are:
 - Abstract ideas
 - Laws of nature
 - Natural phenomena



Patents (cont'd.)

- ▶ Patent infringement
 - Making unauthorized use of another's patent
 - No specified limit to the monetary penalty
- ▶ Software patent
 - Protects feature, function, or process embodied in instructions executed on a computer
- ▶ 20,000 software-related patents per year have been issued since the early 1980s
- ▶ Some experts think the number of software patents being granted inhibits new software development



Patents (cont'd.)

▶ Defensive publishing

- Alternative to filing for patents
- Company publishes a description of the innovation
- Establishes the idea's legal existence as prior art
- Costs mere hundreds of dollars
- No lawyers
- Fast

▶ Patent troll firm

- Acquires patents with no intention of manufacturing anything; instead, licensing the patents to others



Trade Secrets

- ▶ Trade secret
 - Business information
 - Represents something of economic value
 - Requires an effort or cost to develop
 - Some degree of uniqueness or novelty
 - Generally unknown to the public
 - Kept confidential
- ▶ Information is only considered a trade secret if the company takes steps to protect it



Key Intellectual Property Issues

- ▶ Issues that apply to intellectual property and information technology
 - Plagiarism
 - Reverse engineering
 - Open source code
 - Competitive intelligence
 - Trademark infringement
 - Cybersquatting



Plagiarism

- ▶ Katie Couric gave a commentary about the joys of getting her first library card that plagiarized a column in the Wall Street Journal; the “ commentary ” was actually written by a network producer who was subsequently fired.
- ▶ Reporter Jayson Blair resigned from the New York Times after he was accused of plagiarism and fabricating quotes and other information in news stories. Executive Editor Howell Raines and Managing Editor Gerald Boyd also resigned in the fallout from the scandal.
- ▶ Science fiction writer Harlan Ellison successfully sued movie director James Cameron for taking key elements from two different episodes of the TV series The Outer Limits — written by Ellison — and using them in the 1984 classic movie **The Terminator**.



Plagiarism

- ▶ Stealing someone's ideas or words and passing them off as one's own
- ▶ Many students:
 - Do not understand what constitutes plagiarism
 - Believe that all electronic content is in the public domain
- ▶ Plagiarism is also common outside academia
- ▶ Plagiarism detection systems
 - Check submitted material against databases of electronic content



Plagiarism (cont'd.)

TABLE 6-3 Partial list of plagiarism detection services and software

Name of service	Web site	Provider
iThenticate	www.ithenticate.com	iParadigms
Turnitin	www.turnitin.com	iParadigms
SafeAssign	www.safeassign.com	Blackboard
Glatt Plagiarism Services	www.plagiarism.com	Glatt Plagiarism Services
EVE Plagiarism Detection	www.canexus.com/eve	CaNexus

Source Line: Course Technology/Cengage Learning.



Plagiarism (cont'd.)

- ▶ Interestingly, four high school students brought a lawsuit against iParadigms, accusing the firm of copyright infringement. The basis of their lawsuit was that the firm's primary product, Turnitin, used archived student papers without their permission to assess the originality of newly submitted papers. However, both a district court and a court of appeals ruled that the use of student papers for purposes of plagiarism detection constitutes a fair use and is therefore not a copyright infringement. A U.S. court of appeals ruled that such use of student papers is “ a highly transformative use that adds something new in purpose and character and does not harm the future marketability of the students' works.”



How to insert citations: Mendeley

The screenshot shows a web browser window displaying a paper titled "Model based image reconstruction with physics based priors" from the 2016 IEEE International Conference on Image Processing (ICIP). The paper is by Muhammad Usman Sadiq, Jeff P. Simmons, and Charles A. Bouman. The abstract discusses a method for CT reconstruction using a measurement model and a prior model.

Below the browser window, a Microsoft Word document is open, showing the citation inserted into the text. The citation is for the same paper: "Model based image reconstruction with physics based priors" by Muhammad Usman Sadiq, Jeff P. Simmons, and Charles A. Bouman, published in the 2016 IEEE International Conference on Image Processing (ICIP).

The Word document also shows two images: (b) 2D checkerboard and (c) $\sin^2(x)$.

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Reverse Engineering

- ▶ Process of taking something apart in order to:
 - Understand it
 - Build a copy of it
 - Improve it
- ▶ Applied to computer:
 - Hardware
 - Software
- ▶ Convert a program code to a higher-level design
- ▶ Convert an application that ran on one vendor's database to run on another's



Reverse Engineering (cont'd.)

- ▶ **Compiler**
 - Language translator
 - Converts computer program statements expressed in a source language to machine language
- ▶ **Software manufacturer**
 - Provides software in machine language form
- ▶ **Decompiler**
 - Reads machine language
 - Produces source code



Reverse Engineering (cont'd.)

- ▶ Courts have ruled in favor of reverse engineering:
 - To enable interoperability
- ▶ Software license agreements forbid reverse engineering
- ▶ Ethics of using reverse engineering are debated
 - Fair use if it provides useful function/interoperability
 - Can uncover designs that someone else has developed at great cost and taken care to protect



Open Source Code

- ▶ Program source code made available for use or modification:
 - As users or other developers see fit
- ▶ Basic premise
 - Many programmers can help software improvement
 - Can be adapted to meet new needs
 - Bugs rapidly identified and fixed
 - High reliability
- ▶ GNU General Public License (GPL) was a precursor to the Open Source Initiative (OSI)



Competitive Intelligence

- ▶ Gathering of legally obtainable information
 - To help a company gain an advantage over rivals
- ▶ Often integrated into a company's strategic plans and decision making
- ▶ Not the same as industrial espionage, which uses illegal means to obtain business information not available to the general public
- ▶ Without proper management safeguards, it can cross over to industrial espionage



Trademark Infringement

- ▶ Trademark is logo, package design, phrase, sound, or word that enables consumer to differentiate one company's product from another's
- ▶ Trademark owner can prevent others from using the same mark or a confusingly similar mark on a product's label
- ▶ Organizations frequently sue one another over the use of a trademark in a Web site or domain name
- ▶ Nominative fair use is defense often employed by defendant in trademark infringement case



Cybersquatting

- ▶ Cybersquatters
 - Register domain names for famous trademarks or company names
 - Hope the trademark's owner will buy the domain name for a large sum of money
- ▶ To curb cybersquatting, register all possible domain names
 - .org, .com, .info



Cybersquatting (cont'd.)

- ▶ Internet Corporation for Assigned Names and Numbers (ICANN)
 - Several top-level domains (.com, .edu, edu., .gov, .int, .mil, .net, .org, aero, .biz, .coop, .info, .museum, .name, .pro, .asis, .cat, .mobi, .tel, and .travel)
 - Current trademark holders are given time to assert their rights in the new top-level domains before registrations are opened to the general public
 - Anticybersquatting Consumer Protection Act allows trademark owners to challenge foreign cybersquatters



IP violations by students

- ▶ Top IP violations:
 - OS, word processors, engineering tools etc.
 - Movies
 - Books
- ▶ Software:
 - Most companies allow university subscriptions(e.g Microsoft Dreamspark)
 - Online versions or alternative software
 - Windows-Ubuntu, MS Word - iWord or Google Docs, MATLAB-GNU Octave etc.
- ▶ Books:
 - Purchase low-price or student editions
 - Google Scholar, Academia.edu, IEEE/ACM often have free versions
 - Go to scholar.google.com, type name, you'll find free PDF
- ▶ Movies:
 - Netflix/HBO inexpensive subscriptions
 - Limited streaming



Summary (cont'd.)

- ▶ Open source code
 - Made available for use or modification as users or other developers see fit
- ▶ Competitive intelligence
 - Uses legal means and public information
- ▶ Trademark infringement
 - Use of other's trademark in a Web site can lead to issues
- ▶ Cybersquatting
 - Registration of a domain name by an unaffiliated party

