



## **Explicating and Categorizing the Economic, Technologic and Cultural Effects of Copyright Law Violation on Iran Software Industry**

**Asal Basiji<sup>a</sup>, Mohammad Hamidian<sup>b</sup>**

<sup>a</sup> Shahid Beheshti University, Tehran, Iran  
basiji@outlook.com

<sup>b</sup> Shahid Beheshti University, Tehran, Iran  
hamidian@outlook.com

Received: 21 February 2020

Accepted: 25 March 2020

Published: 15 April 2020

### **Abstract**

This study has done to find the effects of copyright law violation on software industry of Iran. For this purpose, after investigating previous researches of the related fields inside the country, at very early step the authors held two sessions of group meeting with 11 members chosen among Iranian expertise of this industry. In first meeting the topic brought up and via brain storming method expertise declared their ideas without any limitation. After that in the second meeting controversial method exploited and two groups of expertise, one group stressed on pros and the other on cons, discussed the information acquired from brain storming session. Secondly final information was classified and through Delphi method and by means of a focus group results were reviewed. After all, following conclusions were obtained:

Violation of copyright law can affect software industry from economy aspect; it means that can directly affect costs and incomes of both families and consumer or producer companies of software products. Violation of copyright law can reduce the prime costs of companies' products and services and also family software requirements. Aside from that, because of its consequences for culture, technology and the way it affects approaches and attitudes of producers, can put limitations to export earnings of local markets. From technological aspect, violation of copyright can change people and organizations in to skillful users who are aware of latest changes in global market and can enjoy the benefits of free access to newest software products of the world. It can also help the local developers to produce strong high quality products without charging even one dollar. Although it can have some benefits the negative impacts are also undeniable, such as manipulated way of calculating the prime costs by producers and customers, promotion of consumerism in society and debilitating the motive for independent innovation. Talking about culture, violation of copyright law leads to ill consuming habits among customers and creates unusual expectations for costs and prices.

**Keywords:** copyright law, software Industry, Infrastructure Software, Business Software, general software, Open source Software, Database.

### **How to cite the article:**

*A. Basiji, M. Hamidian, Explicating and Categorizing the Economic, Technologic and Cultural Effects of Copyright Law Violation on Iran Software Industry, J. Practical Buss. Law, 2020; 1(2): 33-40,*

### **Introduction**

Nowadays human life has entangled with software in different aspects and many most affairs by governments, companies and people are highly dependent on software in a way the idea of living without software is something impossible. Software is an inseparable part of many people's life. Talking about organizations, software is one of the main parts of organizational life and business.

Nowadays many companies need software for their essential routines such as financial management, human resource management, accounting, customer relationship management, enterprise resource planning and etc. In a way that software has changed to a strategic asset for effective and efficient management in competitive world of today. Looking through another aspect to what has said so far, it can be easily found that one of the most critical needs of human being is

software, the variety of which has made an expanded and dynamic market through all over the world. In one hand this attractive market consists of many software developer companies that are challenging with continuous innovation and rapid growth of technology and most of the time are competing with other competitors in offering new products to the market. And on the other hand there are so many customers with remarkable growing level of expectations that also increases daily. Combination of software developer companies and these customers has changed software industry to one of the most lucrative industries of the world. Above all, rules controlling the software industry are so important. In this study we have discussed the effects of copyright law as one of the most significant rules on software industry of Iran.

### Copyright

Copyright is a legal concept, enacted by most governments, giving the creator of an original work [exclusive rights](#) to it, usually for a limited time. Generally, it is "the right to copy", but also gives the copyright holder the right to be credited for the work, to determine who may adapt the work to other forms, who may perform the work, who may financially benefit from it, and other [related rights](#). It is a form of [intellectual property](#) (like the [patent](#), [the trademark](#), and the [trade secret](#)) applicable to any expressible form of an idea or information that is substantive and discrete (WIPO; August 2008).

Copyright initially was conceived as a way for government to restrict printing; the contemporary intent of copyright is to promote the creation of new works by giving authors control of and profit from them. Copyrights are said to be territorial, which means that they do not extend beyond the territory of a specific state unless that state is a party to an international agreement. Today, however, this is less relevant since most countries are parties to at least one such agreement. While many aspects of national copyright laws have been standardized through [international copyright agreements](#), copyright laws of most countries have some unique features. (Mincov Law Corporation)

The regulations of the Berne Convention are incorporated into the World Trade Organization's TRIPS agreement (1995), thus giving the Berne Convention effectively near-global application.[15]

The 2002 WIPO Copyright Treaty enacted greater restrictions on the use of technology to copy works in the nations that ratified it. (MacQueen, Hector L; Charlotte Waelde and Graeme T Laurie ;2007).

Piracy is considered to be the illegitimate use of materials held by copyright. (Owen, Lynette 2001).

Several exclusive rights typically attach to the holder of a copyright:

- to produce copies or reproductions of the work and to sell those copies (including, typically, electronic copies)
- to import or export the work
- to create derivative works (works that adapt the original work)
- to perform or display the work publicly
- to sell or assign these rights to others
- to transmit or display by radio or video (Peter K, Yu ;2007)

### Software Industry

The software industry includes businesses for development, maintenance and publication of software that are using different business models, mainly either "license/maintenance based" (On Premise) or "cloud based" (such as SaaS, PaaS, IaaS etc etc). The industry also includes software services, such as training, documentation, and consulting.

The word "software" had been coined as a prank by at least 1953, but did not appear in print until the 1960s (Paul Niquette ; 1995). Before this time, computers were programmed either by customers, or the few commercial computer vendors of the time, such as UNIVAC and IBM. The first company founded to provide software products and services was Computer Usage Company in 1955( Elmer C. Kubie ; 1994)The software industry expanded in the early 1960s, almost immediately after computers were first sold in mass-produced quantities.

There are several types of businesses in the software industry (Karl M. Popp & Ralf Meyer 2010).

The software industry has been subject to a high degree of consolidation over the past couple of decades. From 1988 to 2010, 41,136 mergers and acquisitions have been announced with a total known value of US\$1,451 billion (Imaainstitute.org; 2013). The highest number and value of deals was set in 2000 during the high times of the dot-com bubble with 6,757 transactions valued at \$447 billion. In 2010, 1,628 deals were announced valued at \$49 billion. Business models of software companies have been widely discussed (Cusumano M.; 2003).

Network effects in software ecosystems, networks of companies, and their customers are an important element in the strategy of software companies (Cambridge, MA, USA: MIT Press; 2003).

### Infrastructure Software

Infrastructure software, including operating systems, middleware, and databases, is made by companies and organizations such as Microsoft, Google, IBM, SAP AG, EMC and Oracle. Enterprise software, the software that automates business processes in finance, production, logistics, sales and marketing, is made by

Oracle, SAP AG, Sage and Infor. Security software is made by the likes of Manage Engine Symantec, Trend Micro and Kaspersky. Several industry-specific software makers are also among the largest software companies in the world: IBM and CA Technologies for IBM mainframe environments; SunGard, making software for banks, BlackBoard making software for schools, and companies like Qualcomm or CyberVision making software for telecom companies.

### Business Software

Business software or business application is any [software](#) or set of computer programs that are used by business users to perform various business functions. These business applications are used to increase productivity, to measure productivity and to perform business functions accurately (James O'Brien & George Marakas; 7th ed McGraw-Hill). Some business applications are interactive i.e. they have a [graphical user interface](#) or user interface and user can query/modify/input data and view results instantaneously. They can also run reports instantaneously. Some business applications run in batch mode i.e. they are set up to run based on a predetermined event/time and business user does not need to initiate them or monitor them. Some business applications are built in-house and some are bought from vendors (off the shelf software products). These business applications either are installed on desktops or on big servers (Dictionary of Marketing Terms, 3rd Edition).

### General software

It refers to all types of software used on PCs and against business software has designed for daily and personal usage like Office, Multimedia and Graphics.

### Open source Software

Open-source software (OSS) is [computer software](#) with its [source code](#) made available and licensed with an [open-source license](#) in which the [copyright](#) holder provides the rights to study, change and distribute the software for free to anyone and for any purpose. Open-source software is very often developed in a public, [collaborative](#) manner. Open-source software is the most prominent example of [open-source](#) development and often compared to (technically defined) [user-generated content](#) or (legally defined) [open-content](#) movements (Verts, William T; 2008).

A report by the Standish Group (from 2008) states that adoption of open-source software models has resulted in savings of about \$60 billion per year to consumers (Rothwell, Richard & Standish, Newsroom; 2008)

Scholars Casson and Ryan have pointed out several policy-based reasons for adoption of open source in the following categories:

- Security
- Affordability
- Transparency
- Perpetuity
- Interoperability
- Flexibility
- Localization - particularly in the context of local governments (who make software decisions).
- Casson and Ryan argue that "governments have an inherent responsibility and fiduciary duty to taxpayers" which includes the careful analysis of these factors when deciding to purchase proprietary software or implement an open-source option.

Many people claimed that the birth of the [Internet](#), since 1969, started the open source movement, while others do not distinguish between open-source and free software movements (Muffatto, Moreno; 2006).

### Database

Formally, the term "database" refers to the data itself and supporting [data structures](#). Databases are created to operate large quantities of information by inputting, storing, retrieving, and managing that information. Databases are set up, so that one set of software programs provides all users with access to all the data. Databases use a table format, that is made up of rows and columns. Each piece of information is entered into a row, which then creates a record. Once the records are created in the database, they can be organized and operated in a variety of ways that are limited mainly by the software being used. Databases are somewhat similar to spreadsheets, but databases are more demanding than spreadsheets because of their ability to manipulate the data that is stored. It is possible to do a number of functions with a database that would be more difficult to do with a spreadsheet. The word data is normally defined as facts from which information can be derived. A database may contain millions of such facts. From these facts the database management system (DBMS) can develop information. (S.M.T.Roohani, Rankoohi; [Raghu Ramakrishna & Johannes Gehrke, 2002](#)).

### Effects of copyright law violation on software industry of Iran

#### 1. Stating the effects of violating copyright law on software industry from economy aspect:

##### 1.1. Individual level

Stating the effect of violating copyright law on decreasing the costs paid by people for buying software products.

Copyright violation brings about a situation in which there will be no limitation for accessing types of software lacking license, especially for

foreign software products. Therefore it's so obvious that individuals cover their software needs with lowest costs. In the other words, violating copyright law remarkably reduces the family's shopping cart costs.

## **1.2. Organizations level**

Stating the role of violating copyright law in decreasing the prime costs for organizations' products and services.

Copyright law Violation helps organizations to become more powerful by means of useful software they easily have access to. Also imposing no cost to organization will cut the overhead costs which reduces the prime costs of a company products and services in comparison to the case in which regarding copyright law is an obligatory factor. Further explanations about this subject has been provided in the following example:

Imagine a company that uses a kind of administrative automation software on the basis of Oracle data base. This company will definitely allocate part of its costs to administrative automation software that has been bought, but the point is that it wouldn't mention the real cost of Oracle data base software at all, because it was free .It happens while the cost of enterprise version of Oracle database software is about 18,000\$.

Now suppose that the company decides to implement a customer relationship management (CRM) system and in order to fulfill this requirement exploits the CRM by Microsoft. If the company isn't committed to copyright law then probably will simply count the costs for implementation of this product and considers no charge for buying the license and SQL database.

These are only few examples of organization software requirements which could be easily met in the case of breaching copyright law and shows how companies can become more powerful and reach more competitive advantages without actually paying the real costs for original version of software.

## **1.3 software developer companies level**

### **1.3.1. Stating the role of violating copyright law in reducing the costs of production in software developer companies.**

In act of producing software, the developer company exploits many middle wares and developing tools and therefore it's obvious by cutting down the costs for such kinds of activities the costs of production will also be decreased. Violation of copyright law has caused most software developing companies use the maximum capacity of available software in their productions.

### **1.3.2. Stating the effects of violating copyright law on export earnings of software developer companies.**

Breaching the copyright rule from one point of view has caused software developer companies pay less attention to prime cost of software according to global calculations and on the other hand caused them to deny some of International licensed production rules. Ignoring these two factors can lead to debilitation of competitive position of the software companies in global markets.

For instance in Iran, most of software companies implement their own products on the basis of strong data bases like SQL and Oracle because of easy and free access and pay less attention to similar open source ones. In such kind of situation as far as target market is local market these types of choices don't affect the prime costs, but in case of regarding the copyright law, the real implementing price of the developed software will dramatically change in customer view and it means nothing but destroying competitive ability of the product.

For further explanation it's necessary to mention that, according to copyright rules, software developer companies have to authenticate the applied software licenses that have been used in product creation. It's clear that absence of these licenses means that the company is not obeying the copyright rules and therefore the company can't export its products to those who are committed to the law.

### **1.3.3. Stating the effects of violating copyright law on enhancement of enterprise software developer companies in local markets.**

Enterprise software are those applied for management of organizations daily routines like administrative automation, accounting, finance, human resource management, supplies, payroll and etc. because of the nature of such software which could only be produced locally inside the country and also because of the obligations the government has identified for consuming only local products has brought up a good opportunity for expertise and software developing companies. These companies try to cover their requirements by means of available options.

### **1.3.4. Stating the effects of violating copyright law on increasing of general software developer companies.**

General software is that technical and nontechnical software used for fulfilling users' needs. Software like Office, Multimedia and graphics are examples of that. Cheap and easy access to latest software of the world has caused software developer companies lose their competitive ability and hence

having fewer motives for trying to make their own products.

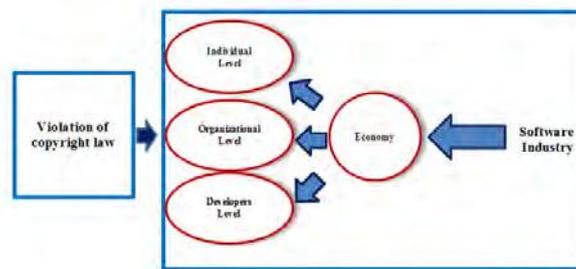


Figure 1: Effects of violating copyright law on software industry from economy aspect

## 2. Stating the effect of copyright law violation on software industry from technological aspect.

### 2.1. Stating the effect of violating copyright law on production and development of software technologies.

Although violating copyright law has cut down the costs for software developing companies and expertise, it has changed them to followers in the industry. It means that technology is being created outside of the country and expertise inside the country are only the end users. In the other words breaching the copyright law in long term can lead Iran software industry toward total technological dependency.

### 2.2. Stating the effect of violating copyright law on using new technologies of the world

Copyright law Violation has caused users either at individual level or organizational level to have access to latest software products. Hence organizations apply the latest technologies to their products.

### 2.3. Stating the effect of violating copyright law on expertise and other software users' level of knowledge

Violation of copyright law has provided the possibility of easy and free access to newest software. Combination of, software, expertise and users is the main factor for enhancing the knowledge level. In such situation it's not weird that skillful software developers would be cultivated and be aware of latest changes in industry and have the knowledge of working with all of them. Because of cheap and easy access of the whole society to latest versions of different software, level of public knowledge would enhance in Iran as well.

### 2.4. Stating the effect of violating copyright law on quality of local products

Violation of copyright law and easy access to latest versions has led software developer companies to design products matching the latest standards of the world.



Figure 2: Effect of copyright law violation on software industry from technological aspect.

## 3. Stating the effect of copyright law violation on software industry from cultural aspect.

### 3.1. Stating the effect of violating copyright law on enhancement of consumers' expectation level of software products.

Fulfilling the software needs in accordance with easy and free access to products with latest high standards has caused consumers' expectations to rise; therefore customers demanding best standards and comparing other local products to

standard ones have made local software developers face many challenges.

### 3.2. Stating the effect of violating copyright law on culture of developing and choosing infrastructure software.

Violation of copyright law has led many software developers to choose their required software only according to their infrastructure features and other developing tools. In the other words, in case of breaching copyright law, getting rid of many

limitations has caused consumer companies to pay less attention to alternative software with similar options and lower price that can cut down their costs in the case of obeying the copyright rules.

### 3.3. Stating the effect of violating copyright law on ways of calculating prime costs by consumers and software developer companies.

Violation of copyright law has led software developer companies to just count the costs for developing software and nothing for other tools and software have been exploited for developing the final version. Therefore in a loop consumers do the same thing and just consider the real costs and it's obvious that in the case of obeying the rules this way of calculating would be totally wrong.

### 3.4. Stating the effect of violating copyright law on consumers' culture of purchasing.

Violation of copyright law leads to easy and free access of consumers to different software. Such kind of accessibility affects the awareness of real value of software and the proportions between its price and cost. It means that paying nothing for real values of software makes consumers get used to cheap shopping. In such situation misunderstanding of consumers about real value of a product shapes a kind of wrong mental judgment in the society about pricing of all software products.

### 3.5. Stating the effect of violating copyright law on consumers' culture of choosing.

In the case copyright law is being breached, easy and free access to software makes consumers not paying any attention to main differences of products. . It means that they choose software with extra features that is really beyond their requirements .Actually cost – benefit estimation doesn't make any sense to them. For instance imagine a person who has encountered a graphic problem which could be easily managed by simple software like paint, but instead chooses Photoshop which is more expensive than paint simply because he doesn't pay any money for either of them.

### 3.6. Stating the effect of violating copyright law on culture of regarding the intellectual property right in the society.

Violation of copyright law is nothing more than using others' properties without their own permission .Illegal use of a product that has been created, priced and presented by an individual or company, especially when they have barely announced dissatisfactions about illegal usage of it can have negative effects on a society culture and will fade out subjects like regarding intellectual property right and copyright which can be the strongest motive deterrent for innovators.

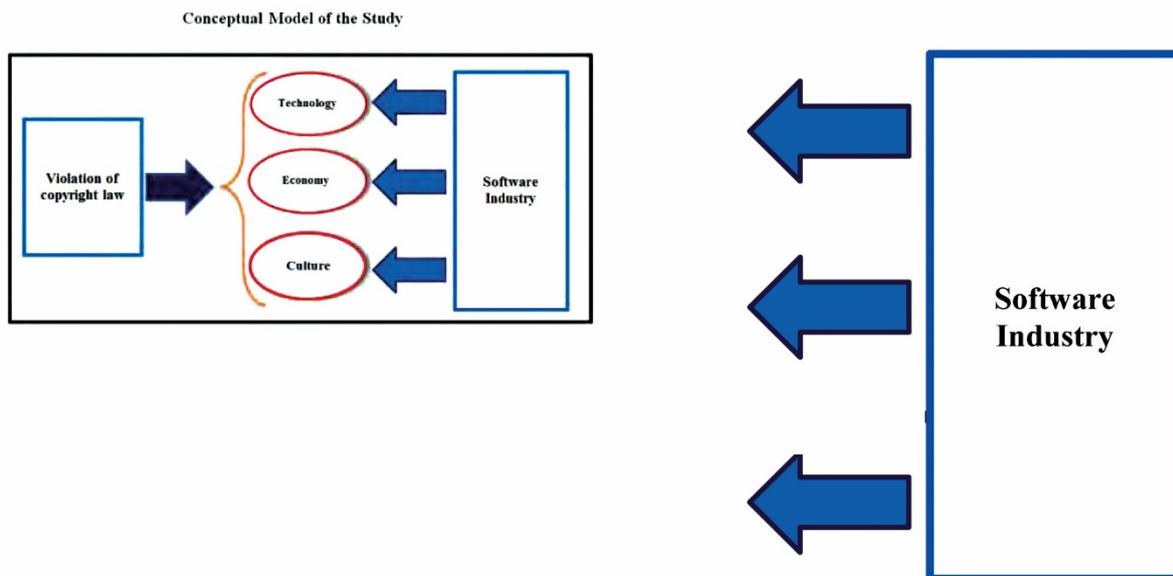


Figure 3: Effect of copyright law violation on software industry from cultural aspect.

### Research methodology

This research in terms of objective is fundamental – theoretical and in terms of methods is descriptive and based on Delphi method. Investigating previous researches of the related fields inside the country at very early step, for gathering of data, the authors held two sessions of group meeting with 11 top members chosen among Iranian expertise of this industry. In first meeting the topic brought up and via brain

storming method expertise declared their ideas without any limitation. After that in the second meeting, by means of controversial method two groups of expertise, one group stressed on pros and the other on cons, discussed about the information acquired from brain storming session. Secondly final information was classified and through Delphi method and by means of a focus group results were reviewed.



**Figure 4:** Effect of violating copyright law on software industry

### Conclusion & Recommendation

Violation of copy right law from economy point of view has direct effects on families, organizations, consumer and producer companies' costs and incomes. Although it can reduce their prime costs of products and services, puts barrier to export earnings of local software markets. From technological point of view it can turn people and organizations into dexterous users who are familiar with the latest software and global technologies and also enhances the local products quality. Anyway, free and easy access to latest global products of this industry directly deviates methods of pricing and prime cost calculation from real standards.

Talking about infrastructure products, developing tools and general programs, it has led individuals and companies toward consumerism and stopped them from independent thinking and innovation. Culture is one of the main subjects that have been affected by breaching of this rule. It means that cultures of purchasing, choosing, consuming, pricing, customers' expectations and also regarding the intellectual property rights all are affected by it.

The very important point is short term prospect versus long term one. If we consider the long term future, the effects of copyright breaching on software industry of Iran in the case of joining WTO can bring about irrecoverable detriments for this country and will impose heavy costs on organizations and individuals. Such kind of threats beside sober consideration of positive and negative effects were sooner mentioned, makes us change our attitudes and make decisions more carefully in national and organizational levels.

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