

# **Kuwait Bar Association**

**Conference on Intellectual Property, Electronic Crimes and  
Methods of Resolving their Disputes**

**A Lecture by  
Mr. Talal Abu-Ghazaleh  
Chairman of the Arab Society for Intellectual Property**

**Technical and Legal Solutions for Electronic Crimes related to  
Intellectual Property Rights**

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## **1- Definition of Electronic Piracy**

It is any usage of rights reserved for the Intellectual Property owner without the owner's approval, and it constitutes a crime that may be unconventional and is conducted via the Internet using a computer.

## **2- Forms of Electronic Piracy in General**

- 1- Penetration of networks and computers connected to the Internet such that a person or party penetrates the security system in the network and enters the computer and exposes its contents.
- 2- Destruction and damaging that take place after the penetration of the network and where the person undertakes the erasure or distortion of data or the disruption of stored software; thus, making them unusable.
- 3- Distortion and forgery: What is meant is the manipulation of information stored on the computer or interception of information sent between computers connected to the network with the purpose of deception by altering this information, distorting and forging it.
- 4- What is known as theft and embezzlement, as we may think that theft is limited to normal and material items such as money and material possessions, but theft has extended to electronic information stored on devices and sent through networks.
- 5- Some people abuse e-mail usage as viruses are sent in addition to the exchange of information that compromises ethics and security and this in itself is a crime that should not be underestimated.
- 6- Money laundering electronically through the Internet.
- 7- Piracy specific to the theft of intellectual property rights.

What we are concerned with in today's topic, is this type of electronic crime such as piracy specific to the theft of intellectual property rights which is -for example but not limited to- being conducted by piracy of new software, the theft of ideas and projects, whether these are related to the Internet –the virtual world- or the real world where we live. These crimes can be divided through the two primary constituents of Intellectual Property under which all intellectual property rights (IPRs) are listed, and these are: industrial property, literary or artistic property, copyrights and neighboring rights.

Among the forms of piracy related to industrial property we mention for example the piracy of trademarks through using them unrightfully in domain names, piracy of drawings and industrial models, patents, geographical indications, plant varieties, pharmaceutical preparations, etc.

As for piracy relating to copyrights and neighboring rights, we mention for example piracy of literary and artistic works by copying the works partially or completely without the composer's (author's) permission, alteration of literary and artistic works, the sale of counterfeited copies of literary and artistic works, degradation of literary and artistic works, violating the technical protection methods of works and transmitting the works via the Internet without prior permission.

### **3- Characteristics of Informational and Internet Crimes**

- Ease of committing the crime
- Ease of hiding the features of the crime
- Difficulty to track the criminals
- Professionalism of committing the crime
- Speed of committing the crime
- Resulting in major shakeups of state economies
- Characterized by mystery
- Non-material
- Easy to commit because they are of a technical nature
- Globalization of these crimes which leads to a dispersion of investigative efforts

### **4- Components of Intellectual Property in Websites**

- Search engines are protected by patents and industrial models
- Software is protected with the copyright law or with the patents law in accordance with the local law.
- Website content such as written material, images and music are protected with the copyright law. Also, there are components the website consists of which are protected, such as trademarks or any distinctive mark such as the domain name for example.
- Distinctive marks are protected in accordance with their nature (whether they are trademarks or trade names, etc.) for example, some of these are trademarks protected by trademark laws and conventions, trade names, geographical indications and domain names protected through jurisprudence by way of civil liability lawsuits represented in unfair competition. Within this context, we point out that trademarks are the strongest distinctive marks and the only type that the

legislator singled out protection laws for, upon registration only, by an anti-counterfeit lawsuit and therefore adding criminal protection to its owner. It is this criminal protection that placed trademarks in a ranking that surpasses all other distinctive marks.

- Due to the special status of trademarks, many distinctive mark owners have resorted to registering their marks as trademarks to ensure their protection through an anti-counterfeit lawsuit that adds penal protection for the owner thereof. This penal protection makes trademarks superior to other distinctive marks.

### **5- Steps that Need to be Taken to Protect Intellectual Property Components in Websites**

- Registration of trademarks used on the website
- Registration of the domain name as a trademark in case it is used as a trademark and distinction of goods and/or services from their counterparts.
- Registration of patents that are on the website such as search engines
- Filing the copyrights and neighboring rights in countries that allow this. We point out here that the copyright is established for the mere innovation, and filing is only an indication of ownership and does not establish the right of ownership. As for trademarks, ownership is only established through registration and in regards to patents; the exclusive right is only established through registration as well.
- The Abu-Ghazaleh Intellectual Property (AGIP) has been the pioneer in the Arab world in the registration of trademarks and filing copyrights and patents and reserving domain names etc. Following AGIP's example, Talal Abu-Ghazaleh Legal has had a role in confrontation of piracy through warnings and IPRs protection lawsuits represented in civil and criminal lawsuits.

### **6- Technical Solutions to Limit Piracy” Presented by TAGITI**

- Auditing websites continuously and periodically to ensure the website is free from any security gaps
- Following up with the latest information security technologies and website development technologies to implement them
- Creating a policy specific to passwords and changing these periodically
- Using encryption protocols, Secure Sockets Layer (SSL) protocols and digital certificates in transferring private and important information such as entry pages or pages for entering credit card data
- Using firewall to prevent external attacks
- Using the latest anti-virus software and updating it periodically
- Modernizing servers with security patches

- Using original and licensed software in servers
- Promoting awareness and warning of social engineering through training among employees and site supervisors
- Determining the powers of individuals in charge of websites and servers' administration
- Hiding the source code and encrypting it if possible
- Usage of technologies to prevent SQL injection, cross-site scripting and script injection
- Changing the default settings and verifying their secrecy
- Using Completely Automatic Public Turing Test to Tell Computers and Humans Apart technology "CAPTCHA". This is a technology designed specifically to enable the website providing the service to distinguish whether the user of the site is a person or a computer or software program
- Determining the types of files allowed to be uploaded on the site and the impermissibility of operating and uploading operational files (files with extensions such as exe, bat, ...) on the website
- In case the files are uploaded by users, examination of files must be conducted to ensure they are free of viruses.
- Verification of the correct content and form of data entered in electronic user forms
- Analyzing website's visits periodically and continually, following up and studying the website log file to verify its freedom from any penetration attempts
- Making additional copies of the website periodically and verifying the capability to reactivate the site quickly and efficiently in case penetration takes place
- Technical solutions for identifying theft crimes: Identity theft is considered another new form of fraud. It is considered a crime if someone impersonates somebody else's character with the intent of theft of money or achieving other gains. The victim in these types of crimes carries the burden of consequences of the actions undertaken by the impersonator. Identity theft is usually used in illegal immigration crimes, terrorism and industrial espionage. It is also used in fraudulent operations on automated payment systems that include credit card processing systems through the Internet and health insurance systems. It has also become common to use e-mail as a way of impersonating membership with a certain establishment and then starting to use its domain name as part of the fake e-mail address of the impersonator in dealing with the establishment's current or potential customers. This type of identity theft exposes the establishment to a potential loss of some of its clients if this fake e-mail is used in conveying false information that affects the reputation of the establishment or its ability to deal with business and projects. In some cases legal liability may result or a loss in capital if the identity theft crime is difficult to prove. Therefore, it has become

extremely necessary to confront this new type of piracy and protect the interests of profit and non-profit organizations. AGIP is considered a leader in IPRs' protection as we offer electronic solutions to protect institutions from this new type of crime.

**Explanation on some items in Technical Solutions to Limit Piracy Presented by Talal Abu-Ghazaleh Information Technology International (TAGITI)**

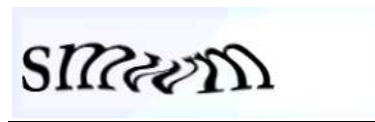
- **Definition of Social Engineering:**

It is an act of piracy against people primarily through the use of verbal social skills by the attacker with persons who work inside an organization who possess powers which facilitate the attacker's entrance into the organization's specific system. It is also defined as a method to acquire valuable information about the system from people in general, such that the attacker uses the little information he has to gain the trust of his victim and this ends up in the victim providing sensitive information to the attacker through which the attacker can find out the characteristics of the system.

- **Social Engineering through the Internet:**

The Internet is fertile ground for those looking for passwords. The weakness lies in using the same password to enter a number of systems. So when the attacker obtains one password, it becomes easy for him/her to enter into numerous accounts for the same person. The attacker may send an e-mail to the account holder impersonating one of the organizations that the user deals with requesting the user to update his/her information and in that manner gets the information he wants.

- **CAPTCHA technology:**



Model of a CAPTCHA image

CAPTCHA is an abbreviation for "Completely Automatic Public Turing Test to Tell Computers and Humans Apart". So CAPTCHA is a test where a computer may put down the questions and can also correct the answers; however, the computer cannot solve these questions because only a human brain able to differentiate can do so. Therefore any correct answer for any of these test questions is an answer by a human and not a software program.

CAPTCHA tests are used in numerous applications, such as forms specific for the creation of an e-mail address at websites which offer that service, in order to prevent programmed computer applications from automatically creating mailboxes specific to it in a repetitive fashion and in large numbers in order to use these mailboxes to send spam to users.

## **7- International Efforts to Combat Electronic Piracy Crimes (Legal Solutions)**

- **TRIPS Agreement:**

It is an attempt to minimize the gaps for protection of these rights worldwide, and presenting these rights in the framework of international rules. It defines the minimum limit of protection levels for every country in the World Trade Organization (WTO) to balance the long and short-term benefits. The TRIPS Agreement is considered a more comprehensive framework for Intellectual Property (IP) issues, as it has regulated the protection of software programs and databases in the realm of copyrights, and therefore added those compilations to literary property works. The agreement also founded another center for the management of IP globally, which is the WTO, which allocated an agreement and signed a cooperation protocol with the World Intellectual Property Organization (WIPO) in 1996, to avoid any inconsistencies that may take place between the two organizations in administering the organization of IP.

- **Berne Convention for the Protection of Copyrights:**

It was adopted by contracting states in 1886. The contracting states agreed to form a union for the protection of rights for the composer (author) of works protected by this convention and this union was called the Berne Union.

The Berne Convention is viewed as the legitimate entity for regulation of copyrights and neighboring rights at the international level, especially since it is one of the first agreements reached to address copyright issues.

The convention's passages were revised numerous times in light of the rapid developments in technology related to literary and artistic works. The last three revisions took place in Brussels in 1948, in Stockholm in 1967 and in Paris in 1971.

- **Geneva Agreement for Protection of Recordings' Producers (The Convention for the Protection of Producers of Phonograms against Unauthorized Duplication of Their Phonograms):**

As a result of the increase and circulation of unauthorized sound recordings and harming the interests of composers, performing artists and sound recording producers, protection



of sound recordings against these activities will benefit performers and composers and sound recording owners.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) and WIPO were keen not to obstruct international agreements in effect and in particular the Rome Convention of October 26, 1961 which provides protection for performers, broadcasting organizations and sound recording producers.

- **Rome Convention for the Protection of Neighboring Rights:**

The Rome agreement provides protection for performers in performances, in relation to sound recordings, sound recording producers and broadcasting organizations. In 1960 a group of experts from WIPO, UNESCO and the International Labor Organization (ILO) prepared a project that paved the way for the international agreement for the protection of performers, producers of sound recordings and broadcasting organizations known as the Rome Convention signed on October 26, 1961.

Considering that copyrights on traditional works are usually used in the production of sound recordings that have the rights of performers connected to them, these rights are known as rights connected to the composer's right or in other words are neighboring rights to it.

Also for this reason, the first article of the Rome Convention ensures that protection called for, for neighboring rights listed in the convention, shall in no way affect the protection of copyright in literary and artistic works.

- **WIPO Conventions on Internet Piracy:**

To combat Internet piracy, WIPO has adopted two treaties for copyright in Geneva in 1996. These are:

- 1. WIPO Copyright Treaty (WCT):**

The WIPO agreement states that any state that is a member in the Berne Convention can be a member in the WCT. Additionally, member-states in WIPO can join the agreement as well.

The treaty showed that protection granted to copyright is protection for the method of expression and not the ideas and this is what the Berne Convention was involved in.

- 2. WIPO Performances and Phonograms Treaty (WPPT):**

The treaty states that performers and producers of phonograms shall enjoy the right to a fair remuneration for the use of phonograms published for commercial purposes for broadcasting or for any communication to the public. The treaty commits the contracting parties to provide legal remedies against the circumvention of technological measures (such as encryption) that are used by producers of phonograms in connection with the exercise of their rights, and in combating the removal or alteration of information.

The treaty commits every contracting party to adopt, in accordance with its legal system, the measures necessary to ensure the application of this treaty. In particular, contracting parties shall ensure that enforcement procedures are available under their law so as to permit effective action against any act of infringement of rights covered by this treaty.

WPPT affirmed the role that protective technology measures can play, through the Internet and administration of licensing systems. It asks member-states to provide technological assistance to protect copyright and related rights, so that the Internet becomes a safe place for the distribution and licensing of protected works.

### **Efforts of WIPO and WTO in Combating Piracy Crimes:**

WIPO and WTO are working on a joint initiative to offer technical assistance to nations, by developing laws in the area of copyright, patents, trademarks and other spheres in IP and enhancement of such laws to fight piracy, counterfeiting of goods and other violations. Stages of technical cooperation include assistance in preparing legislations, training, the building of institutions and modernization of the strength of IP and its systems. Assistance is directed more towards less developed countries.

- **Internet Crime Complaint Center (IC3):**

The center was established based on a partnership between the Federal Bureau of Investigation (FBI), the National White Collar Crime Center (NW3C), to serve as a vehicle to receive criminal complaints regarding the Internet. IC3 conducts further investigation and directs criminal complaints to unions, local governments, international law enforcement and/or regulatory agencies for any investigation they deem to be appropriate.

### **8- Regional Efforts to Combat Electronic Piracy Crimes (Legal Solutions):**

- 1. Arab (Model) Guidance Law for the Combat of Information Systems Technology Crimes and other similar crimes: (Decision 417, D21/2004).**
- 2. Arab Organization for the Combat of Informational and Internet Crimes:**

This is a scholarly and professional non-governmental organization with a legal economic character and interests that is concerned with regulating the legal procedural and institutional frameworks to combat crimes that take place over the Internet and all

informational crimes. It was agreed to create an Arab organization named the Arab Organization for the Combat of Informational and Internet Crimes.

### **3. Arab Agreement for the Combat of Electronic Crime:**

The draft agreement was approved in the joint meeting for the councils of Arab ministers of interior and justice which was held in October 2008. The draft agreement deals with the most recent crimes in the field of computer systems. The Arab agreement is prepared along the lines of the international agreement while preserving the privacy related to the nature of Arab countries and the regional dimension.

- **Legislations of Arab States:**

Through their legislations, Arab states are working towards limiting piracy, in legislations of e-trade regulation through special laws such as copyright laws. Yet these need more activation and development.

### **9- Efforts of the Arab Society for Intellectual Property (ASIP) to Combat Electronic Crimes Related to Intellectual Property:**

The Society is a non-profit institution established in 1987 in Munich, Germany, in order to consolidate the efforts of those working in this field, and assist in increasing awareness and understanding of IP issues and their interactions. The Society aims to increase awareness through the Arab Certified Intellectual Property Practitioner (ACIPP) program that targets judges, lawyers, company owners, composers and others who wish to learn more about IP or specialize in it.

#### **Among the Society's efforts:**

##### **1. Arab Certified Intellectual Property Practitioner Program (ACIPP):**

This is the first Arab professional program that provides advanced teaching and training to the Arab practitioner. It aims to present an easier understanding of contemporary concepts that govern IP issues, and spread knowledge and international development in this field, so that the practitioner of the profession may conduct his/her duties according to global standards.

##### **2. Qualification of Judges Specialized in IP Areas:**

The Society prepared an IP guide for judges to be a reference and source for a specialized program that develops judges' skills so that they become professional in different IP domains. The guide seeks to qualify judges in this sphere to contribute in limiting piracy crimes. The guide includes six courses which are: Introduction to IP, Trademarks, Unfair Competition, Copyright, Patents and Trade Secrets. It also includes a study of situations and cases, and attempts to enhance judges' information and capabilities when they address IP cases, as they will be subject to training courses and workshops that discuss the guide's contents.

##### **3. Copyrights Committee:**

The Society established a committee that includes experts in the field of copyright which aims to conduct a study and found a unified Arab law in the realm of the Arab copyright and present the necessary recommendations to the ISESCO organization and all concerned ministers. The project is expected to be complete at the end of this year.

#### **4. Cooperation with Customs and the Institution for Standards and Metrology:**

The Ministry of Finance in the Hashemite Kingdom of Jordan - Customs Department, and ASIP signed a Memorandum of Understanding (MoU) in Amman on July 18, 2005 to enhance IPRs' protection activities, through the prevention of violations on these rights such as the entry of counterfeited goods and products via customs sites. The MoU calls for the development of the efficiency of the department's apparatuses for implementation of legislations relevant to IPRs and the combat of illegitimate trade. This in turn has a positive effect in creating an atmosphere that encourages investment in the Kingdom in regards to the execution and protection of trademark owners' rights –for trademarks legally registered in the Kingdom- against the violation of the law and their rights.

#### **5. Moot Court Competition (MCC):**

This is a competition held annually based on a Memorandum of Understanding signed in September 2004 between the Faculty of Law at the University of Jordan and ASIP. The competition is on IP topics among law students at the Jordanian universities. This competition was developed in collaboration with the University of Jordan following the successes achieved at global long-standing universities such as Harvard. It aims to provide law students with the required knowledge in the legal and IP field. It also seeks to enhance IP concepts at the local and regional levels.

#### **10- Efforts of Talal Abu-Ghazaleh Legal (TAG-LEGAL) to Combat Electronic Crimes Related to Intellectual Property:**

TAG-LEGAL is one of the largest legal institutions in the Middle East and offers its services on a wide basis through its seventy-one offices distributed throughout all Arab countries in addition to its existence in Europe, North America, Africa and Asia. These offices are run through the cooperation of more than 400 legal consultants and attorneys.

Through our commitment and discipline at the Talal Abu-Ghazaleh Organization (TAG-Org), we have effectively succeeded at TAG-Legal in enhancing the skills of our lawyers and IP experts so they are able to provide the best legal services relating to IP in consulting, representation, lawsuits and other areas.

Since these rights all exist online, violating them is considered electronic piracy. TAG-LEGAL endeavors to protect the owners of these rights and provide legal consultations in this regards to confront any violation or potential violation.

TAG-LEGAL offers a wide range of services for the public and private sectors. Its goal is to protect and exploit IPRs affiliated with these parties whether this usage is in the virtual world (on the internet) or in the real world where we live. It also aims to ensure and

protect IPRs and create programs to prevent the loss of trade secrets. Further, it helps clients take advantage of these IPRs through licensing, partnership and franchise agreements in addition to technology transfer contracts.

The guarantee and enforcement of legal protection in the sphere of informational crimes and/or electronic crimes require a comprehensive understanding of all aspects technology, law and affairs of international trade. With regard to this, TAG-LEGAL protects these rights and provides legal consultations on them worldwide.

### **Accreditation of TAG-LEGAL as an Arbitration Center for Uniform Domain Name Dispute Resolution (UDRP):**

TAG-LEGAL has recently been accredited as one of the arbitration centers for the Uniform Domain Name Dispute Resolution (UDRP). This accreditation was granted by the Internet Corporation for Assigned Names and Numbers (ICANN) based in the USA. According to this accreditation, TAG-LEGAL is authorized to resolve disputes and arbitrate in regards to any disagreement relating to electronic domain names on the Internet. This Center will be specialized in resolving disputes related to domain names in Arabic letters in addition to names in English letters. The Center will depend in dispute resolution on a number of experts from various Arab countries.

In addition, TAG-LEGAL provides mediation and arbitration services to resolve disputes of its clients in accordance with the international rules and procedures and with high professionalism.

Some examples of the actions related to mediation and arbitration that TAG-LEGAL offers in the field of electronic piracy include:

- Resolution of disputes resulting from domain names in accordance with international rules ( the Uniform Domain Name Dispute Resolution Policy (UDRP))
- Resolution of commercial disputes resulting from piracy
- Resolution of disputes relating to IP
- Qualification of experts, mediators and arbitrators in the areas of arbitration and dispute resolution

### **TAG-LEGAL Expertise in Formulating IP Laws and their Revision**

Some of TAG-LEGAL's experience in this field includes: formulating revisions to Trademark Law No. 21 of 1957 for the Ministry of Trade in Iraq, formulation of systems for IP laws in the Kingdom of Bahrain for the Ministry of Industry and Commerce, participation in the committee for formulating the new law for trademarks including the law for geographical indications for the Ministry of Economy and Trade in Lebanon, formulation of the e-trade and e-signature laws for the Ministry of Economy and Trade in Lebanon, formulating group systems for the protection of copyrights and neighboring rights for the Ministry of Culture in Lebanon, formulating revisions specific to the

internal bylaws related to publication of patent applications and commercial relations in the official gazette for the Lebanese prime minister's office.

### **11- Efforts of Abu-Ghazaleh Intellectual Property (AGIP) to Combat Electronic Crimes Related to Intellectual Property:**

Abu-Ghazaleh Intellectual Property (AGIP) protects various IPRs such as domain names, trademarks, patents and copyrights throughout its seventy-one offices in the Arab nations and the world.

According to a survey by "Managing Intellectual Property", AGIP is considered the best IP company in the Arab world and the Middle East. This survey takes into consideration the opinions of clients and IP companies in the region and globally.

AGIP contributed to the formulation of IPRs' protection laws for a number of Arab states and the training of IPRs registration office employees in Arab countries.

AGIP protects its clients' rights globally and assists in combating electronic crime through Talal Abu-Ghazaleh and Co. International Domains (TAG-Domains) which registers their trademarks and patents. The Company has exerted a great effort in informing companies of the significance of an electronic presence on the Internet to circumvent any potential piracy.

AGIP has participated in a number of international conferences that discussed electronic crime issues and the electronic presence on the Internet and has had numerous contributions in this area.

Abu-Ghazaleh Intellectual Property Renewals (AGIP-Renewals), which is one of TAG-Org companies, has provided the possibility of renewing trademarks and patents in the Arab states through its website and via a simple and easy mechanism. Renewal of trademarks is one of the methods to protect and preserve marks.

### **12- Efforts of Talal Abu-Ghazaleh Information Technology International (TAG-ITI) to Combat Electronic Crimes Related to Intellectual Property:**

TAG-ITI provides electronic solutions through which IP can be protected from electronic crimes.

It offers various services in this field among which are the auditing of websites according to Interstandards, in addition to services verifying administration of information systems and their governance in accordance with ISO27001 standards that are specific to the protection of IT infrastructure and systems. It also provides important services to banks and institutions such as penetration testing of networks externally and internally.

The company presents a number of consultative solutions in this significant and sensitive sphere. Through its IT experts, TAG-Org offers supervision and execution services for implementing international IT standards projects such as COBIT, in addition to projects applying the policies and procedures for information systems protection and auditing, along with audit consultations, supervising the execution of infrastructure and strategic planning for information systems. Other services include auditing and implementation of enterprise resource planning (ERP) systems.

All the aforementioned technical solutions are a part of the list of solutions for combating electronic piracy crimes.

### **Recommendations to Combat Electronic Crimes Related to Intellectual Property:**

Within this framework, there are recommendations that must be pointed out in the field of combating electronic piracy crimes including:

**First:** Urging the parties responsible to develop effective legislations and modernizing the bases for criminal procedures related to the investigation of informational crimes.

**Second:** Consolidation of the efforts by the government, media establishment and public and education institutions, in order to promote awareness on the negative social effects and risks of unsafe usage of information systems, along with putting controls in place that ensure avoidance of the negative effects of Internet cafes.

**Third:** Exchanging security and legal expertise, and the preparation and training of technically qualified cadres to support the capabilities of those working in the criminal justice apparatuses involved in fighting various Internet-related crimes, such as the introduction of the property protection division in the Directorate of Public Security in Jordan.

**Fourth:** Enhancing the ties with legal, technical and security research and studies centers in different states and especially in the field of distribution and exchange of the results of studies and researches involved in insuring information systems.

**Fifth:** Calling for an international conference with the participation of related international organizations, to create model international legislative policies under the sponsorship of the League of Arab States and WIPO.

**Sixth:** Working towards legislating criminal texts that address the topic of e-crimes in the penal code, such that these texts take into consideration the special nature of e-crimes.

**Seventh:** Arab countries shall seek to create an Arab organization concerned with coordinating in the realm of fighting information crimes on the Internet, while encouraging the erection of Arab unions involved in standing against Internet crimes and activating the role of Arab governments, administrations and organizations in the confrontation of these crimes.

**Eighth:** The necessity of reaching an effective international agreement to combat Internet and informational crimes in their various forms. Such an agreement should absorb all variables and developments taking place in these crimes.



**Ninth:** The state or the federations shall undertake certain producers in respect of artistic works by convening qualification courses and training program producers in addition to protective systems.

**Tenth:** Educating and promoting community awareness in the significance of IP protection and circulating studies specifically on the negative effects resulting from violations in this regard, which include piracy and theft of others' efforts and rights.

**Eleventh:** Approval of global frameworks in the field of information systems and their governance such that these allow business communities to harmonize between the objectives of the actions from boards of directors and providing solutions and clear action plans that are implementable in institutions of various sizes and activities at the same time. This provides a safe work environment to the extent that procedures are actually modernized and executed.

**Twelfth:** Implementation of procedures and policies for the protection of information systems and auditing these systems by finding the appropriate persons within the establishments to execute the policies and procedures and audit them. Or, the establishment may contract with specialized companies to conduct the final audit or assign a company specialized to undertake all these duties, in order to avoid difficulties such as the non-availability of high-level experts within the establishment or in order to obtain the opinion of external experts.