The Economic Contribution of Copyright-Based Industries in Thailand

RESEARCH TEAM

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Executive Summary

The primary aim of this research is to estimate the contributions to GDP and employment of the copyright-based industries in Thailand. These particular industries have been widely recognised as enabling factors for the economic growth and the development of the country. The study starts by presenting the development of the legal system regarding copyrights and related rights. It is reported that the copyright law in Thailand has been developed over more than a hundred years. At an early stage, the coverage was limited to novels and poems. Today, the scope of copyright protection has been expanded and adjusted to meet the accepted international standards and to better fit the modern age of information and communication technology.

As far as the estimation of economic contributions is concerned, the study follows the guidelines recommended by the WIPO Guide on Surveying the Economic Contribution of the Copyright-based Industries. According to the WIPO Guide, copyright-based industries are classified into four groups, namely, core copyright industries, interdependent copyright industries, partial copyright industries and non-dedicated support industries. The core copyright industries refer to the industries that produce copyright materials as their main products while interdependent copyright industries mean the industries that support and facilitate the creation of copyright works. The partial industries represent the industries whose activities are partially associated with the creation of copyright materials whereas the industries that distribute and facilitate the dissemination of copyright works belong to the group of non-dedicated support industries.

The emphasis of this study is put on measuring the share of GDP and the share of total employment of all four groups of copyright-based industries. To do so, the statistical data sets used include the Industrial Census, the Business Trade and Services Survey of Thailand, business survey data and interviews with entrepreneurs as well as business associations related to copyright and related rights. Besides, the analysis of the international aspect is derived from the international trade data from the UN Comtrade database system.

According to the study, the key findings about estimating the economic contributions of copyright-based industries in Thailand are as follows:

- Trade data from 2004 to 2008 displays a positive trend of export revenue generated by the copyright-based industries. In 2006, the total export value is USD 5.73 billion, which represents 4.56 percent of the total of exports of Thailand.
- In 2006, the copyright-based industries generated 350.96 billion baht worth of total value-added. The figure represents 4.48 percent of Thailand's GDP. In terms of employment, the industries hired 1.02 million people which accounts for 2.85 percent of the total employment of the country.
- To compare the four groups of copyright-based industries, the core copyright industries' contribution to GDP dominates those of the other groups. Their contribution represents 2.21 percent of the GDP. This is followed by the contribution of interdependent copyright industries. Their share is 1.02 percent of the GDP. In terms of employment, core copyright industries hire more workers than other groups do. The employment in this group of industries accounts for 1.50 percent of total employment while the share is only of 0.29 percent for interdependent copyright industries.
- As far as the international comparison is concerned, the share of copyright-based industries' contribution to the GDP is lower than those of Australia, Korea, Malaysia, the Philippines and Singapore. But it is higher than that of Colombia.
- With regards to employment, the share of total employment for the Philippines is 11.1 percent, which is the highest amongst the seven countries. This reflects the fact that the copyright industries are a significant source of employment in the country. However in Thailand, the contribution to employment is the lowest compared to other countries. The copyright-based industries in Thailand are less labour-intensive than the same industries in other countries. This is indicated by the ratio of employment contribution to the GDP contribution.

The international comparison of the four industrial groups shows similar significance as in the other countries. The size of the core copyright industries is the biggest while that of interdependent copyright industries is the second biggest. For Colombia, Malaysia and Thailand, partial copyright industries contribute to their respective GDP more than non-dedicated support copyright industries do. Nonetheless the latter group is more important than the former group for Australia, Korea, the Philippines and Singapore.

When conducting the estimation of copyright-based industries, some difficulties were faced by the research team regarding the identification, the classification and the mapping of statistical data. This is due to imperfect correspondence between the Thailand Standard Industrial Classification (TSIC) and the WIPO Classification. Thus, it is recommended that relevant government agencies should improve database system, conduct data collection on a regular basis and make the data at disaggregated level more available for public access. This requires an efficient coordination among government agencies and business associations as well as copyright collecting societies when collecting and recording the statistical data.

Overall, the findings in this study would benefit policy-makers who formulate economic and social policies to enhance the competitiveness of copyright-based industries in Thailand. The policy-makers would have inputs on how to set out the direction to prioritise the copyright sectors that urgently need support. This is because copyrights and related rights have been widely recognised as some of the tools in the drive of Thailand to strive to be a Creative Economy. Such aim is included in the 11th National Economic and Social Development Plan as part of the economic restructuring in Thailand. National strategies should be properly designed to raise international and domestic demand, and to address the supply-side constraints of copyright-based industries. The results of this study lead to the suggestion that the emphasis should be put on enhancing labour participation in the copyright-based industries. The support should primarily target labour-intensive copyright-based industries with the objective to increase the employment and payoffs of workers. To do so, the revenue generated by these particular industries could be distributed more widely to larger groups of people in a fairer manner.

Importantly, in order to help raise the payoffs for workers engaging in copyright-based industries, public and private partnership is needed to support the development of collective management organisations. This is to enhance the effectiveness in collecting remuneration and royalties from copyright users and to distribute them to copyright owners in a systematic way. The copyright owners and their workers would have higher incentives to continue to create high-quality copyright works. As a consequence, this would push forward to a greater extent the economic contribution of copyrights and related rights, and in turn, foster further economic growth and development for the entire nation.

This study provides the foundation for the analysis of copyright-based industries' contributions at the macro level. An extension of this study could be done by conducting an in-depth analysis of each specific copyright sector. This is to illustrate more detailed information on their economic contributions as well as to identify the strength and weakness of each sector. The outcome would be a discrete policy recommendation to support and address the problems at micro level.

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1. Introduction

In Thailand, the issues of intellectual property have become increasingly significant over the years. Seven intellectual property laws were enacted during the past few decades. These include Patent Act B.E. 2522 (1979), Trademark Act B.E. 2534 (1991), Copyright Act B.E. 2537 (1994), Protection of Layout-Designs of Integrated Circuits Act B.E. 2543 (2000), Trade Secret Act B.E. 2545 (2002), Protection of Geographical Indications Act B.E. 2546 (2003) and Optical Disc Production Act B.E. 2548 (2005) as well as the Plant Varieties Protection Act B.E. 2542. The purposes of these laws are primarily to encourage the creativity and invention and to assure that the benefits from property rights are recognised in the country. As far as copyright and related rights are concerned, such branch of intellectual property always gains the most attention from public. The right holders have greater than ever demands for their rights to be protected. At the same time, the copyright law is more actively implemented and enforced by the government.

Currently, the Thai government has a policy to develop Thailand into a Creative Economy. The National Creative Economy Policy Committee, chaired by the Prime Minister, was set up. A great deal of projects has been initiated with the aim to strengthen the capacity of creative industries in Thailand. To lay a good foundation for the Creative Economy, the growing importance of copyright and related rights industries and their economic contribution must be more widely recognised. Due to the strong interconnection between copyright-based industries and creative industries, it is essential to assess the economic contribution of the copyright-based industries and related rights in Thailand. The findings would benefit policy-makers, especially those from the Ministry of Commerce, as inputs for prioritising the copyright sectors that urgently need support, formulating policies to enhance the competitiveness of the weak sectors as well as magnifying the multiplier effects of the entire copyright-based industries.

Previous studies supported by the World Intellectual Property Organization (WIPO) to assess the economic contribution of copyright-based industries in other countries show that copyright and related rights industries have large impacts on their respective national economies. A number of jobs have been created and revenues are generated from domestic consumption as well as exports. According to the WIPO Guide on Surveying the Economic Contribution of the Copyright-Based Industries[1], the copyright and related rights industries are classified into four main categories, namely, core copyright industries, interdependent copyright industries, partial industries and non-dedicated support industries. Some of these industries belong to manufacturing sectors, while the others are in services sectors, which are the sectors with high value-added creation and are currently the main composition of the Thai Gross Domestic Product (GDP).

The level of interlinkages between the copyright and related rights industries and other industries in the economy is perceived to be relatively high. In other words, the copyright and related rights industries economically tend to have high value of input-output multiplier. The external linkage via the international trade aspect would examine the extent to which the copyright and related rights industries play a role in foreign trade. Therefore, it is undeniable that the copyright and related rights industries have become one of the engines of the Thai economic growth from several aspects, despite of the fact that the analysis from the statistical data might understate the real contribution of the industries to the Thai economy mainly due to copyright and related rights infringement.

In this study, the contribution of the copyright-based industries and related rights to the national economy of Thailand is analysed based on the WIPO Guide. This is to boost up the recognition of the industries' significance to the economy, and ultimately, to provide effective policy recommendations. The study puts emphasis on the measurement of the economic contribution to the economy in terms of job creation, value-added and export volume; it also presents a situation analysis concerning the copyright and related rights industries in Thailand. Quantitative methodologies were applied with the latest Thai economic data series to obtain the results for analysis. Moreover, interviews with the Thai entrepreneurs and associations in the copyright and related rights industries were conducted so as to understand the real situation in specific industries and allow the research team to analyse the findings both quantitatively and descriptively.

The research team comprises Watcharas Leelawath and Poonsri Sakhornrad from the International Institute for Trade and Development (ITD) as well as Danupon Ariyasajjakorn from Chulalongkorn University. During the

[1] Hereafter is referred to as the WIPO Guide.

time this research project was conducted, the major difficulties faced were about identifying and classifying copyright-based industries into four groups as presented in the WIPO Guide because there is no perfect correspondence between Thailand Standard Industrial Classification (TSIC) and WIPO Classification. However, with the guidance and suggestions from Dimiter Gantchev, WIPO and Vijayakumari Kanapathy, the research team could overcome such difficulty and improve the quality of the report. The team is very thankful for their great help.

1.1 Objectives

The primary objective of the study is to assess the economic contribution of copyright and related rights industries in Thailand. The economic indicators to be used include the percentage of GDP attributable to copyright and related rights industries, ratio of the industries' employment to the total employment and export volume of copyright and related rights industries in relation to other industries in the Thai economy.

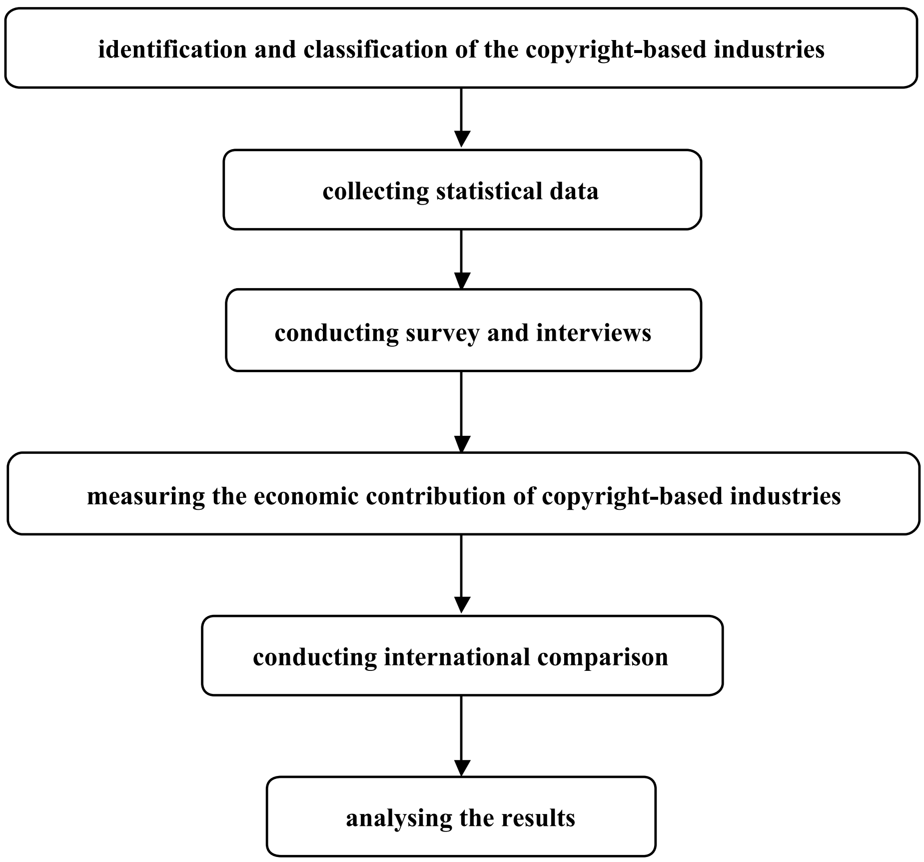
In addition, the study aims to create better understanding for the public and policy-makers on the overview and performance of the copyright and related rights industries in Thailand as well as the economic contribution of copyright and related right industries in comparison to other developed and developing countries.

Furthermore, the study provides policy recommendations to promote growth and development of copyright and related rights industries in Thailand.

1.2 Methodology and Data Sources

The study conforms to the methodology and the process specified in the WIPO Guide in evaluating the economic contribution of the copyright and related rights industries to the national economy of Thailand in terms of value-added, job creation and international trade. The study process can be illustrated in the following diagram.

Diagram 1.1: Study Process in Assessing the Economic Contribution of Copyright-based Industries to the Thai Economy



To start the process, all copyright and related rights industries have to be identified and grouped. According to the WIPO Guide, the copyright and related rights industries can be classified into four major groups by their characteristics, namely, (1) core copyright industries, (2) interdependent copyright industries, (3) partial copyright industries and (4) non-dedicated support industries.

(1) Core copyright industries

The core copyright industries are defined as those predominantly involved in creation, manufacture, production, broadcast and distribution and sale of copyrighted works and activities. These industries are listed as follows:

- Press and literature
- Music, theatrical productions, operas
- Motion picture and video
- Radio and television
- Photography
- Software and databases
- Visual and graphic arts
- Advertising services
- Copyright collecting societies

(2) Interdependent copyright industries

The interdependent copyright industries are industries which are engaged in production, manufacture and sale of equipment whose function is principally to facilitate the creation, production or use of works and other protected subject matter. The interdependent industries can be divided into two subgroups which include core interdependent and partial interdependent industries. The products of the former either are jointly consumed with the products of the core copyright industries and relate to signal transmission or are utilised to create the copyrighted works, while the products of the latter mainly facilitate the usage and broadcasting of copyrighted works predominantly through facilitating equipment.

- Core interdependent industries
  - TV sets, radios, VCRs, CD players, DVD players, electronic game equipment and other similar equipment
  - Computer and equipment
  - Musical equipment

- Partial interdependent industries
  - Photographic and cinematographic instruments
  - Photocopiers
  - Blank recording material
  - Paper

(3) Partial copyright industries

The partial copyright industries are industries in which a portion of the activities is related to works and other protected subject matter and may involve creation, manufacture, exhibition, broadcast or distribution and sales. These industries include the followings:

- Apparel, textiles and footwear
- Jewellery and coins
- Other crafts
- Furniture
- Household goods, china and glass
- Wall coverings and carpets
- Toys and games
- Architecture, engineering and surveying
- Interior design
- Museum

(4) Non-dedicated support industries

The non-dedicated support industries are industries in which a portion of the activities is related to facilitating broadcast, communication, distribution or sales of works and other protected subject matter and such activities are not included in the core copyright industries. The industries include general wholesale and retail trade, general transportation and telephony and internet.

Data Specification

The primary goal of this study is to estimate the size of the copyright and related rights industries in the Thai economy. The most common measurement is the use of gross value-added of the industries as a percentage of GDP. The Thai economic data sets were analysed to measure economic contribution of the copyright industries to the Thai economy. The data is obtained from the Office of the National Economic and Social Development Board (NESDB) and National Statistical Office of Thailand (NSO).

According to the WIPO Guide, the copyright and related rights industries can be classified corresponding to the United Nations' International Standard Industrial Classification (ISIC). The Thai data can also be mapped to ISIC classification, thereby the authors can verify the copyright-based industries in the Thai economic data sets using the WIPO Guide. The classifications are as follows:

1. The core copyright industries are sectors representing printing and publishing, recorded media, photography, production and sale of motion picture, cinema and radio, TV and related services which include advertising services, software and database.
2. The interdependent copyright industries include sectors representing paper and paper products including other blank recording material, manufacture of accounting and computing machinery, manufactures of radio, television set and communication equipment, manufacture of photocopiers, photographic and optical instruments, manufacture of musical instruments and manufacture of chemical and chemical products related to the production of the aforementioned sectors.
3. The partial copyright industries can be represented by sectors representing manufacture of apparel, textiles and footwear, wood products, furniture, plastic wares, glass products, metal furniture and fixture, jewellery and related articles, architecture, engineering and surveying and museum.
4. The non-dedicated support industries are the sectors representing wholesale trade, retail trade, transportation and telecommunication.

As far as the employment is concerned, the team verified the employment contribution of the copyright and related rights industries from the 2002 and 2006 Industrial Census and the 2002 and 2007 Business Trade and Services Survey.[2] The employment information is derived from the NSO in both terms of the number of persons engaged and number of employed workers[3] in the copyright-based industries. Nevertheless the number of persons engaged is used to represent the national employment since it covers all kinds of labour contribution. The classification in the Census and the Survey is based on Thailand Standard Industrial Classification (TSIC) which is consistent with the International Standard Industrial Classification (ISIC). The approximation of employment shows contribution of copyright industries to the Thai labour market and the economy. In addition, it is to be noted at the beginning that the employment data might be underestimated

[2] The Industrial Census is basically established every ten years while the Business Trade and Services Survey is established every three years.

[3] According to NSO, the statistics which represents the number of persons engaged and the number of worker employed is different in terms of the definition and coverage of the sample. The number of workers employed considers only the workers who receive salary as the return for their contribution to work. The number of persons engaged, however, incorporates not only the workers in the copyright-based industries who receive a return in terms of salary but also the self-employed workers and the owners of the business. The earnings of the persons engaged in the industries could be in form of return from equity and profit from business. The research team used the number of persons engaged to represent the employment.

due to statistical error and limitations in data collection process. One of such limitations relates to the definition of "occupation" in the survey manual.[4]

Moreover, external linkage across countries is investigated through international trade channel. The volume of international movement of copyright merchandise can be analysed through the international trade data in Standard International Trade Classification (SITC) of the United Nations Statistics Division (UNSD), the UN Comtrade database system. The research team utilised the international trade data of 4-digit and 5-digit classification of the years 2004-2008.

Field Research

The survey was conducted to obtain the Thai copyright factor for each sub-sector of copyrighted based industries. The survey responses cover 100 copyrighted and related right companies from all sub-sectors in 4 main groups of WIPO classification. In-depth interviews with entrepreneurs and copyright related business associations were carried out to investigate into more detailed information and their viewpoints. The business associations which have been interviewed are, for example, the Federation of National Film Association of Thailand (FNFAT), Association of Thai Software Industry (ATSI), Thai Software Export Promotion (TSEP), Thai Entertainment Content Trade Association (TECA), Motion Picture Association of America (Thailand), (MPA), Thai Animation and Computer Graphics Association (TACGA) including the experienced market players in music industry. The team also would like to extend the appreciation to Director General of the Department of Intellectual Property, Ministry of Commerce for the insightful interview.

1.3 Scope of the Study

In order to fulfil the primary objective of the study, the identification of copyright and related rights industries and a collection of data were performed following the WIPO Guide. As mentioned earlier, the categories of the copyright and related rights industries cover core, interdependent, partial and non-dedicated support industries. Using the methodology as stated in section 1.2, the assessment of economic contribution of copyright and related rights industries was undertaken. The indicators of economic contribution that were measured include the share of copyright and related rights industries to GDP, share of the industries' employment to total employment and export volume with the export volume as a percentage of total Thai export to the world.

The survey and interviews allowed the research team to assess the fraction of their activities, revenues, expenses including the employment which is attributable to copyrighted works and eventually come up with a copyright factor of each copyright industry. Subsequently, the copyright factor is used as a ratio which reflects a picture of the importance of copyright activities in a given industry. The questions concerning the importance of copyright in the daily operations, revenues and expenditures on royalties and licensing fees as well as total number of manpower involved in creative activities, just to name a few, were asked in the questionnaire and personal interviews.

Besides, an overview of the copyright system is described and situation analysis on copyright and related rights industries is presented. The study also provides profile of specific sub-sectors in core copyright industries. Moreover, an international comparison is analysed in this report. The comparison between this particular study and previous studies on six countries, namely Australia, Colombia, Korea, Malaysia, the Philippines and Singapore was conducted so as to examine the relative performance of copyright and related rights industries among different countries. It is important to note that the methodologies employed in these studies are not exactly the same but their findings are comparable and could show us how important the industries are in Thailand and the other six countries.

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[4] This information is obtained from the discussion with an NSO officer who is responsible to the employment data. For example, during the period of data collection called "the week of survey", even though the interviewees do many activities for a living, the interviewer will report only one occupation that the interviewees spend most time during that week. Other activities/occupations are recorded as part-time jobs. In case the interviewees reply that they spend equal time for two activities, the activity which generates most income to them will be kept in the record as their occupation. Therefore, for a number of Thai persons involved in the copyright-based industries (CBIs), their occupation recorded by the statistical office might not be any CBI. Such situation happens if the interviewee either does not spend most time on activities in CBIs or the copyrighted works do not bring them the most income amongst all their activities during the week of survey.

1.4 Structure of the Study

The report is organised as follows. The introduction, which includes scope and methodology of this study is presented in section 1. In section 2, the report contains an overview of copyright system in Thailand. The analysis of the economic contribution of copyright and related rights industries in Thailand is provided in section 3, where the measurements on the share to GDP, employment ratio and volume of exports are illustrated. Section 4 presents the overviews on selected sub-sectors in the core copyright industries. Finally, section 5 sets out the international comparison between Thailand and six other countries, namely, Australia, Colombia, Korea, Malaysia, the Philippines and Singapore. Lastly, the study is summarised in section 6.

2. An Overview of the Copyright System in Thailand

The copyright system in Thailand has been developed over more than a hundred years. In the early stage, the coverage was very limited, it related to novels and poems only. The protection did not cover a variety of literary and artistic works. In 1931, Thailand became a signatory member of the Berne Convention. Since then, the scope of Thai copyright law has been expanded and adjusted to meet the accepted international standards. In 1995, Thailand became a member of the World Trade Organization (WTO). As a consequence, domestic rules and regulations regarding copyright protection have been amended to be in line with the country's commitments under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). The protection has included computer program as a new form of literary and artistic work. This is to ensure the effective and appropriate enforcement of the country's copyright protection.

2.1 Institutional Framework on Intellectual Property Protection

With regard to the institutional framework, the Thai government set up the Department of Intellectual Property (DIP) in 1992 under the Ministry of Commerce. The initial aim was only to administer copyrights, patents and other intellectual property issues and to cooperate with related agencies both domestically and internationally. This reflects the fact that Thailand has determination and the intention to use intellectual property as a dynamic tool for social and economic development. The role of the DIP has been developed over the years. The department has been promoting the use of intellectual property for commercial purposes and also coordinating the enforcement activities with related government agencies. In 1997, the Central Intellectual Property and International Trade Court (IP&IT Court) was established. It has exclusive jurisdiction over disputes involving intellectual property. The IP&IT Court was set up under the joint effort between the Ministry of Justice and the Ministry of Commerce following the negotiations with the United States and the European Union on trade related aspects of intellectual property rights.

Recently, the Thai government in collaboration with several relevant business associations has been pushing forward the policies to promote IP. In January 2009, the National Committee on Prevention and Suppression of Intellectual Property Rights Violation was established upon the Council of Ministers' approval at the first Council meeting. The committee later was changed to The National Committee on Intellectual Property Policy. There were three significant IP related documents submitted by this committee. These documents include the National IP Strategy, the proactive plan on prevention and suppression of intellectual property rights violation and the renaming of the Policy Committee on Prevention and Protection of Intellectual Property to the Committee on National Intellectual Property Policy.[5] Regarding the legislation, there are several milestones marketing the efforts of the Thai government to suppress copyright violation. These include law enforcement (promoting consistent suppression of rights violation and integrated coordination between law enforcement agencies), judicial process and legislative changes.

2.2 The Development of Copyright Laws

The evolutionary stages of copyright protection system in the country are as follows:

a. The Announcement of the Vajiranana[6] Library in 1892

The Announcement prohibited the reproduction of novels, poems and articles published in Vajirayarnvises Books, which were published for the Vajiranana Library, without permission from the Board of the Library.

b. The Ownership of Authors Act B.E. 2444 (1901)

Since the scope of copyright protection under the Announcement of the Vajiranana Library was limited to Vajirayarnvises Books, the Ownership of Authors Act was enacted in 1901 to provide copyright protection to the authors of other books as well. The Act was influenced by the Statute of Queen Anne 1709 and the Literary Copyright Act 1842 which were in force in the United Kingdom during that time. The Act of 1901

[5] Department of Intellectual Property, Ministry of Commerce, Thailand (2010). *Thailand's Implementation on Intellectual Property Rights*.

[6] The Vajiranana Library had become a part of the National Library of Thailand since 1905.

provided exclusive right for authors to print and sell their works. It prohibited the reproduction without the authorisation from authors.

c. The Act for Protection of Literary and Artistic Works B.E. 2474 (1931)

The Act for Protection of Literary and Artistic Works was promulgated on June 16, 1931 as Thailand became a contracting state and adopted international copyright rules under the Berne Convention for the Protection of Literary and Artistic Works, in short, the Berne Convention. It was the first time ever that the word 'copyright' was defined. This Act was the first modern copyright law. It contained the universal principles of copyright law, especially the protection of artistic, scientific and foreign works. The Act set the time limit for copyright protection. Also, it listed actions considered violation of copyright and actions to be exempted from such violation. Importantly, this 1931 Act contained several provisions which were related to the protection of foreign copyright works.

d. The Copyright Act B.E. 2521 (1978)

This Copyright Act became effective on December 19, 1978, as a replacement for the Protection of Literary and Artistic Works Act of 1931. The 1931 Act was enforced for more than 40 years. It became obsolete and its protection was limited only to literary and artistic works. The penalties were so lenient that the infringement of copyright happened on a regular basis. In the Act of 1978, the penalties for infringement were more severe. The scope of copyright protection was expanded; it provided protection for audio-visual works, sound records and video broadcasting works.

e. The Copyright Act B.E. 2537 (1994)

The Copyright Act B.E. 2521 (1978) was repealed. In replacing such Act, Thailand adopted the Copyright Act B.E. 2537 (1994), which became effective on March 21, 1995 and is still currently in force. This Act, which is also called "Berne plus", conforms to the Berne Convention and TRIPS. It provides the protection for new forms of literary and artistic works such as computer programs, sound and visual recordings performances and the leasing of audio-visual works. Under the 1994 Act, the works are eligible for copyright protection as soon as they exist, the creators do not have to go through registration process. However, the copyright owners are encouraged to notify the creation of their copyrighted works by recording the copyrighted works and registration of relevant information with the Department of Intellectual Property (DIP), Ministry of Commerce, Thailand. Moreover, the protection of foreign copyrights is more clearly written than what it was in the previous copyright laws. The copyrighted works of foreign creators and international organisations are protected under this particular Act.

2.3 Copyright Protection in the Modern Days

Over the years, the copyright laws have been modified and modernised in compliance with the international treaty. Significant adjustments made to the Copyright Act B.E. 2537 (1994) from the previous Act are as follows:

- Types of subject matter: There was an expansion of the coverage of the copyright protection law. The Act embraces the copyright protection of databases and computer programs. Such works are protected as literary works.
- Performers' rights: The rights of performers were added to this Act. The performers have exclusive rights concerning broadcasting of their performances, the recording of their unrecorded performances and the reproduction of their recorded performances.
- Preliminary injunctions: Copyright owners may petition the court to order a preliminary injunction against infringers during or even before infringements. The recovery of legal costs and illicit profits made by infringers can be provided to copyright owners.
- New intellectual property court: The new court comprises three judges, two legal experts on intellectual property matters and a judicial assistant who has a wide knowledge in computer software and science.
- Rental rights: Copyright owners have exclusive rights to authorise or prohibit the commercial rental to the public of the originals or duplicates of computer program works, audio-visual works, cinematographic works and sound recording works as well as the reproduction of their recorded performances.
- Increase of penalties: Fine and prison sentence have been intensified for copyright infringement.

Scope of copyright protection

In the present copyright law in Thailand, the copyright protection is provided for literary works or any other work in the literary, scientific or artistic domain whatever may be the mode or form of its expression (Copyright Act B.E. 2537). Hence it includes computer programs, dramatic works, artistic works, musical works, audio-visual works, cinematographic works, sound recordings as well as sound and video broadcasting works. Works that are not deemed copyright works and are not protected by the Act include for example, news and facts, constitution and legislation, regulations, notifications, judicial decisions and their translations.

As far as digital works are concerned, the reproduction or adaptation as well as communication to the public in any forms such as publicising others' works on websites and distribution of electronic files without authorisation of the authors are interpreted as infringements of copyrights. Moreover, the amendment of the Copyright Act by inserting the provision on Technological Protection Measures (TPM)[7] and Rights Management Information (RMI)[8] has been proposed by the Department of Intellectual Property (DIP). The proposal is now under the process of approval by the Council of State.

The proposal for amendment of Copyright Act B.E. 2537 also includes landlord liability, which relates the liability of the person who provides physical or digital spaces for infringing activities. The amendment has been submitted to the Cabinet for approval in 2010. This is to expect that either landlords or owners of spaces will be sentenced to imprisonment, if there is evidence that they actively participate in the crime commitment although they take no part in the actual crime. The crimes cover the activities in facilitating the production, sales and warehousing IPR pirated products.

Moreover, the DIP has drafted the Anti-Camcording Law in order to protect the commercial interests of film industries, which are the important copyright-based industries in Thailand. It is realised that unauthorised camcording of films in cinemas has damaged the film industry and indirectly discouraged the creativity of right holders, both Thais and foreigners. The camcording piracy is viewed as criminal offence for some groups of people in the Thai society, especially, the people in film industry. This is because such piracy could be the source of supply of other illegal productions as pirated CD and file sharing.

The Department of Intellectual Property, Ministry of Commerce of Thailand, which is the authority in responsible for the IP Law amendment, has drafted the Anti-Camcording Law with an aim to pass it into law as soon as possible. The draft is currently under consideration.

Term of copyright protection

As common as copyright laws in other countries, the copyright protection in Thailand has time limits. In general, the duration for the protection of literary works is until the end of the fiftieth year after the death of the author. However, in the case of a work created by several authors, the protection continues to be active until the fiftieth year after the death of the last surviving co-author. But if every co-author died before the publication of the work, the copyright protection is provided for a period of fifty years after the first publication.

With regard to the photographic, audio-visual work, cinematographic work, sound recordings or audio and video broadcasting work, the copyright protection is given for fifty years starting from the date of its creation. Similar to cases mentioned earlier, if the work is published during such period, the protection lasts for fifty years from the date of first publication.

In the case of applied arts, the copyright protection subsists for twenty-five years from the authorship. However, if the works is published during that period, the copyright protection is given for another fifty years after the publication.

[7] Technological protection measures (TPMs) are technical locks, such as passwords, encryption software and access codes which copyright owners adopt to stop their copyright material from being copied or accessed.

[8] Rights Management Information (RMI) is defined as information which identifies the work, the author of the work, the owner of any right in the work or information about the terms and conditions for use of the work and any numbers or codes which represent such information, when any of these items of information is attached to a copy of a work or appears in connection with the communication of a work to the public.

Copyright infringement

The provisions on infringement of copyright are in part 5 of the Copyright Act B.E. 2537 (1994). According to the Copyright Act B.E. 2537, the reproduction or adaptation, communication to the public, letting of the original or copies or re-broadcasting without the permission in accordance with section 15(5) are considered an infringement of copyright. Furthermore, whoever knows or should have known that a work is made by infringing the copyright of another person and still sells, distributes and imports the copyrighted work against the work for profit shall be deemed to infringe the copyright as well.

Section 32 of the Act provides for exceptions from copyright infringement. It states that an act against a copyright work which does not conflict with a normal exploitation of the copyright work by the owner of copyright and does not unreasonably prejudice the legitimate interests of the owner of copyright is not deemed an infringement of copyright. For example, such actions include using for personal benefit, using as questions in an examination as well as not-for-profit research, teaching, studying, commenting, criticising and reporting with an acknowledgement of the copyright ownership of the work.

Penalties

As mentioned, the penalties stipulated in the Act in 1994 are more severe than those in the previous copyright laws. The fine for copyright infringement ranges from 20,000 up to 200,000 Thai baht. In addition, if the offence was committed for commercial purpose, the offender will be imprisoned for a term of 6 months up to 4 years or will be fined 100,000 up to 800,000 baht or both imprisonment and fine. As for the case of indirect infringement such as selling, distributing and importing copyright violated items, the offender will be imprisoned for a term of 3 months up to 2 years or will be liable to a fine from 50,000 to 400,000 baht or both. In the case that a wrongdoing is made within 5 years after being discharged from the earlier penalty, the double penalty will be imposed.

2.4 Copyright Notification and Infringement

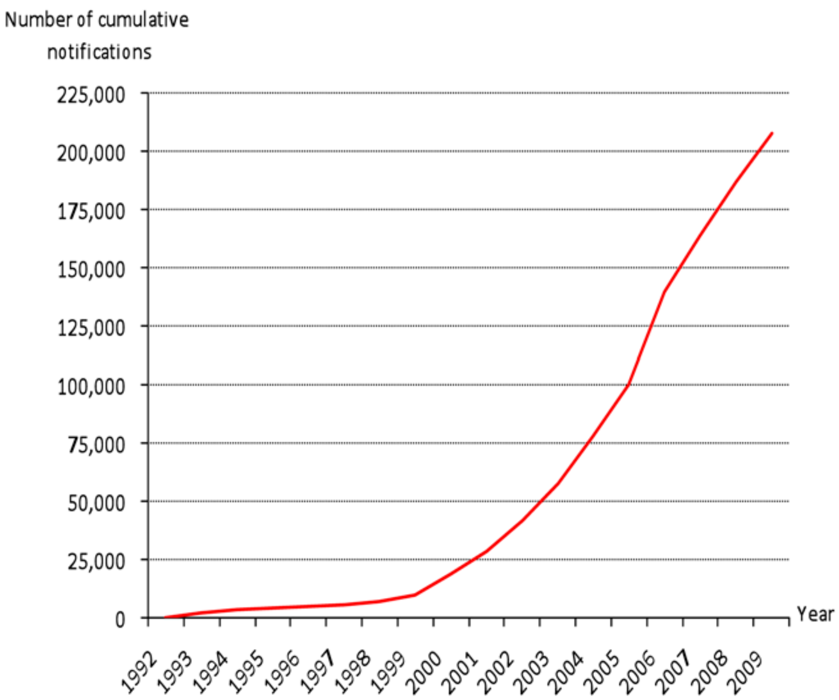
In connection to the notification of copyright works, the creators of any copyright works do not need to notify their works in order to be protected. The copyright works are automatically protected as they have been created. However, the notification of copyright works would be helpful in proving the right owners in any litigation. According to the DIP's statistics, the number of copyright notification has been increasing significantly since the inauguration of the DIP. As shown in table 2.1, the number of notifications per year has risen from 4 in 1992 to 1,134 in 1998 and 22,721 in 2008. To some extent, this reflects the effectiveness in creating awareness on the importance of copyright works by the DIP. The number has grown rapidly after the establishment of the IP&IT Court in 1997, as illustrated in figure 2.1, because of the creators' increasing confidence in the enforcement of the copyright law. In terms of the categories of works, the notification of musical works ranks first. Based on the latest available data, the total number of copyright notifications is 207,689. Out of this total number, the number of notified musical works is 134,322, as illustrated in table 2.2. The number of notified artistic works comes second with the figure of 37,249 in 2009.

Table 2.1: Number of Copyrighted Work Notification during 1992-2009

Year	Notification	Cumulative Notification
1992	4	4
1993	2,044	2,048
1994	1,350	3,398
1995	974	4,372
1996	562	4,934
1997	711	5,645
1998	1,134	6,779
1999	3,000	9,779
2000	9,233	19,012
2001	9,709	28,721
2002	12,714	41,435
2003	16,240	57,675
2004	20,418	78,093
2005	22,019	100,112
2006	39,511	139,623
2007	24,357	163,980
2008	22,721	186,701
2009	20,988	207,689

Source: Department of Intellectual Property (DIP)

Figure 2.1: Cumulative Notifications of Copyrighted Works in Thailand during 1992-2009



Source: Department of Intellectual Property (DIP)

Table 2.2: Copyright Notifications Classified by Work

Unit Number

Year	Total	Literary	Dance	Artistic	Musical	Audio-visual	Cinematographic	Sound recording	Broadcasting	Others
2553/2010	21836	4283	23	6776	9427	639	61	216	0	411
2552/2009	20988	3621	26	4968	10653	790	31	290	2	607
2551/2008	2271	2114	43	5430	13471	600	24	296	0	743
2550/2007	24357	1617	18	4823	15511	1172	76	282	0	858
2549/2006	39511	1892	4	3899	28347	1709	16	2329	0	1315
2548/2005	22019	1598	3	2607	15325	575	50	1757	2	102
2547/2004	20418	1128	5	2280	15395	698	195	595	0	122
2546/2003	16240	1074	3	2321	12230	361	0	153	0	98
2545/2002	12714	837	2	2777	8315	329	0	164	64	226
2544/2001	9709	599	17	2412	6354	156	0	171	0	0
2543/2000	9233	752	1	2758	5503	113	0	106	0	0
2542/1999	3000	524	13	416	1833	115	1	89	2	7
2541/1998	1134	2	206	299	113	2	33	6	24	449
2540/1997	711	1	165	214	45	0	75	10	6	195
2539/1996	562	1	104	232	47	1	12	2	7	156
2538/1995	974	0	221	480	56	3	0	0	30	184
2537/1994	1350	12	144	1003	105	0	0	3	10	73
2536/1993	2044	0	585	330	1019	0	0	2	0	108
2535/1992	4	0	1	0	0	0	0	0	0	3
Total	**229525**	**20055**	**1584**	**44025**	**143749**	**7263**	**574**	**6471**	**147**	**5657**

Source: Department of Intellectual Property (DIP)

As far as the infringement of copyright works is concerned, the reproduction and distribution of software, film and music content have gained a lot of attention from the government and media. According to the IP&IT Court statistics, almost all of the copyright infringement cases are retailing, distributing or importing of copyrighted works. As shown in table 2.3, the number of criminal cases filed against vendors or distributors of pirated CDs and DVDs accounted for more than 60 percent of the total number of copyright infringement cases. Retailing pirated CDs and DVDs, both domestically produced and imported, can be commonly seen in Bangkok's shopping areas. The prices range from 100 to 200 baht. The government has been enforcing the law and imposing measures to limit such type of copyright violation. Anti-piracy campaigns were carried out several times during the past years. The number of criminal cases on selling pirated musical works fell from 1,641 in 2004 to 701 in 2008. As for the total number of copyright infringements in Thailand, the number has been decreasing year by year. This has evidently proved that the government's measures have a positive impact in mitigating musical piracy incidences.

Regarding the infringement cases of retailing of cinematographic works, the reported number of the cases has led those of other categories. There were 958 cases in 2008 as compared to 719 in 2009. Still, numerous violation cases can be normally seen in shopping areas in Bangkok and other tourist destinations. Thus, the DIP (Ministry of Commerce), the Royal Thai Police as well as the Department of Special Investigation (DSI) under the Ministry of Justice are coming under pressure, especially after the Motion Picture Association of America implemented stricter and more consequential enforcement of the copyright law.

To summarise, the importance of copyright in Thailand is increasingly recognised as a tool to fulfil the government's Creative Economy goal. With regard to its legal system, the copyright law has been modified from time to time to better fit modern digital technology. There is a greater demand from right-holders for their rights to be protected. The empirical evidence shows that the cumulative number of copyright notifications, especially for musical works, is growing exponentially since 1992. This reflects the creators' confidence in the law enforcement in the country.

Table 2.3: Number of Copyright Infringements in 2008 and 2009

Types of copyright infringement	2008	2009
Reproduction or adaptation of copyrighted works	1	1
Reproduction or adaptation or letting audio-visual works, cinematographic works and sound recording works	6	3
Reproduction or adaptation or letting computer programs	2	0
Retailing, distributing or importing of copyrighted works	2,400	2,337
- Computer programs	108	96
- Literary works	43	24
- Cinematographic works	958	719
- Sound recording works	9	6
- Artistic works	197	385
- Musical works	701	753
- Audio-visual works	34	8
- Broadcasting	31	32
Violating performers' rights	0	0
Total	2,409	2,341

Source: Central Intellectual Property and International Trade Court (IP&IT Court)

3. Economic Contribution of the Copyright and Related Rights Industries to the Thai Economy

The analytical framework of the economic contribution of the copyright and related rights industries is developed from the methodology in the WIPO Guide, using the economic data from the National Statistical Office of Thailand (NSO) and the National Economic and Social Development Board (NESDB). The contribution in terms of value-added to GDP and employment to GDP is retrieved to present the proportion of the copyright-based industries to the national economy.

3.1 Defining Thai's Copyright and Related Rights Industries

The foremost core mission in order to reach the quantitative results is to precisely define and map the activities of the copyright and related rights industries to the national classification. In some countries, the national definitions of the copyright and related rights industries might vary because of the difference between the country's classification of copyright and related rights industries and the international one.

To obtain the consistent and comparable series of national study on the economic contribution of the copyright and related rights industries, the WIPO Guide has been strictly followed. The guide details the definitions of copyright and related rights industries with the guidelines to classify the copyright and related rights industries using the industrial classification in 4-digit ISIC. As noted earlier, the Thai Standard Industrial Classification (TSIC) is in line with the ISIC Rev.3 at 4-digit level ISIC, which is also utilised as a reference classification in the 2002 and 2006 Thai Industrial Census and the 2002 and 2007 Business Trade and Services Survey by the NSO.[9] Therefore, the classification of this study complies with that of the WIPO Guide and its recommendations.

According to the WIPO Guide, the copyright and related rights industries include the following industries:

1. Core copyright industries
2. Interdependent copyright industries
3. Partial copyright industries
4. Non-dedicated support industries

These four groups of industries comprise several sub-industries classified in the United Nations' International Standard Industrial Classification (ISIC). Furthermore, the research team categorised international trade classification, SITC classification from the UN Comtrade database system, into the 4 groups of copyright and related rights industries based on the WIPO Guide. The conversion table between the WIPO classification, the ISIC and the SITC is presented in Appendix 1.

Among all four groups of copyright industries, there is a presumption that these four groups of copyright industries are different in terms of the degree of relationship to copyright and related rights; thereby, the contribution of copyright and related rights of each group should be adjusted with the factor corresponding to their degree of depending on copyright and related rights called "copyright factor."[10] The copyright factors which are utilised to adjust the value-added, employment and international trade are derived from the survey. The population in the survey are the Thai entrepreneurs whose business are related to the copyright industries including the interviews with the copyright related associations. The research team received the survey result from 100 copyright and related rights companies with 5 in-depth interviews. The questions in the survey cover the business operation, employment, prospective development in the future, obstacles and the assistance they expect from the government. The questionnaire is included in Appendix 3.

[9]Note also that, according to NSO officer, the updated version of TSIC would be released in 5-digit level version in the near future. This version corresponds to the ISIC Rev.4. However, the authors utilised the current TSIC, the 4-digit ISIC, because it can be mapped to the classification of the 2006 Industrial Census and the 2007 Business Trade and Services Survey of Thailand.

[10]The detail and values of copyright factor is elaborated in appendix 2.

3.2 Economic Contribution of the Copyright and Related Rights Industries

3.2.1 *Copyright-Based Industries' Performance in Comparison*

1. Comparison between 2002 and 2006 of Economic Contribution of Copyright-Based Industries

This sub-section presents the comparison between 2002 and 2006 of economic contribution of copyright-based industries.

Table 3.1: Comparison between 2002 and 2006[11] of Economic Contribution of Copyright-Based Industries

Industry	Value-Added (billion baht)		Employment (persons)	
	2002	2006	2002	2006
I. Core copyright	115.85 (2.13)	173.68 (2.21)	385,621 (1.17)	533,727 (1.50)
II. Interdependent copyright	82.49 (1.51)	79.97 (1.02)	113,173 (0.34)	102,905 (0.29)
III. Partial copyright	30.50 (0.39)	54.87 (0.71)	197,292 (0.60)	242,723 (0.68)
IV. Non-dedicated support	28.13 (0.52)	42.44 (0.54)	107,797 (0.33)	138,923 (0.39)
Copyright-Based Industries (CBIs)	256.97 (4.55)	350.96 (4.48)	803,883 (2.43)	1,018,279 (2.85)
Thai Economy	5,450.64	7,850.19	33,025,781	35,699,958

Source: Authors' calculation.
Note: Data in parentheses indicates percentage of national value.

According to table 3.1, the total value-added of the copyright and related rights industries in Thailand in 2002 and 2006 constituted a share of 4.55 percent (worth of 350.96 billion baht) and 4.48 percent (a value of 256.97 billion baht) of the country's GDP, respectively. In addition, the data revealed that copyright-based industries employed more workers in 2006 as compared to that of 2002. The CBIs industries' employment as a percentage of national employment increased from 2.43 percent in 2002 to 2.85 percent in 2006. Note that the performance of almost all groups in GDP and employment contribution improved between 2002 and 2006, except for the group of interdependent copyright industries. The shares of national value added as share of GDP and employment contribution of core, partial and non-dedicated copyright industries increased between 2002 and 2006, while the shares of interdependent copyright industries decreased. The group of core copyright industries, not surprisingly, contributed most in value-added and job creation in both years.

In details the 2006 data showed that the group of core copyright industries accounted for 2.21 percent of total GDP (173.68 billion baht), while the group of interdependent copyright industries contributed 1.02 percent of the country's GDP (79.97 billion baht). The group of partial copyright industries and the group of non-dedicated support industries added a share of 0.71 percent (54.87 billion baht) and 0.54 percent (42.44 billion baht) to the GDP, respectively. The data in table 3.1 also revealed that among all four groups of copyright-based industries in the Thai economy, the group of core copyright industries in Thailand economically played the most important role both in terms of value-added creation and employment contribution in 2006. Partial copyright industries and non-dedicated support industries had created 242,723 jobs (0.68 percent of national employment) and 138,923 jobs (0.39 percent of national employment) for the Thai citizens, respectively. Note that the 2006 GDP contribution of four groups of copyright-based industries ranked in descending manner corresponded to the group's degree of relationship to copyright and related rights activities. Nonetheless, the employment contribution does not have a similar pattern. The group of interdependent copyright industries generated the second largest GDP contribution to the Thai economy among all four groups of copyright industries; however, the employment of the group was the smallest. It reflects the nature of the activities in this group where most sub-sectors are manufacturing sectors which are less labour-dependent compared to those of partial and non-dedicated copyright industries.

[11] Data in some sectors is obtained from the 2007 Business Trade and Services Survey and is deflated by the 2006-2007 GDP growth rate of the corresponding sector to obtain the 2006 figures. Thus, the data is reported on the same base year of 2006.

Table 3.2: Composition of Economic Contribution of Copyright-Based Industries by Group in Percent, 2002 and 2006

Industry	Value-Added		Employment	
	2002	2006	2002	2006
I. Core copyright	45.08	49.49	47.97	52.41
II. Interdependent copyright	32.10	22.79	14.08	10.11
III. Partial copyright	11.87	15.63	24.54	23.84
IV. Non-dedicated support	10.95	12.09	13.41	13.64
Copyright-Based Industries (CBIs)	100.00	100.00	100.00	100.00

Source: Authors' calculation.

Table 3.2 demonstrated the composition of economic contribution of copyright-based industries by group in 2002 and 2006. The data showed a similar pattern of the composition of value-added contribution of each group between 2002 and 2006. As for value-added, the group of core copyright industries ranked first in both years. The group of interdependent industries came in the second place. The partial copyright industries and non-dedicated copyright industries followed in the third and last place, respectively, in both 2002 and 2006. With regard to employment, the core copyright industries kept their first position in jobs generation for both years. The second place was occupied by the group of partial copyright industries. However, in 2006, the group of non-dedicated copyright industries ranked third. The group's rank improved from the fourth place in 2002.

Figures 3.1 and 3.2 show in details the relative share of value-added and employment contribution of copyright-based industries in 2006 by group. The group of core copyright industries generated the biggest share of value-added among the four groups in copyright-based industries (49.5percent). Its contribution was about half of the total copyright-based industries' value-added in 2006. The group of interdependent copyright industries, which ranked second, explained 22.8 percent of copyright-based industries' GDP contribution. The group of partial copyright industries and interdependent copyright industries came in the third and the fourth places respectively (15.6 percent and 12.1 percent).

Figure 3.1: Relative Size of Value-Added of Copyright-Based Industries by Group, 2006

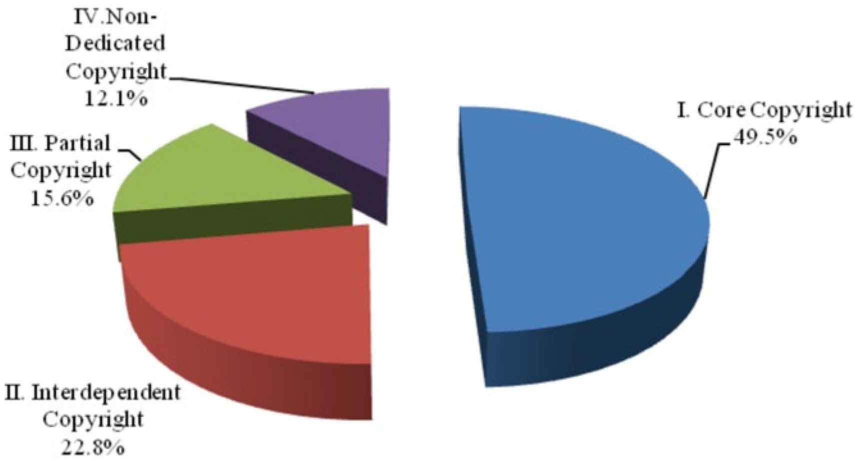
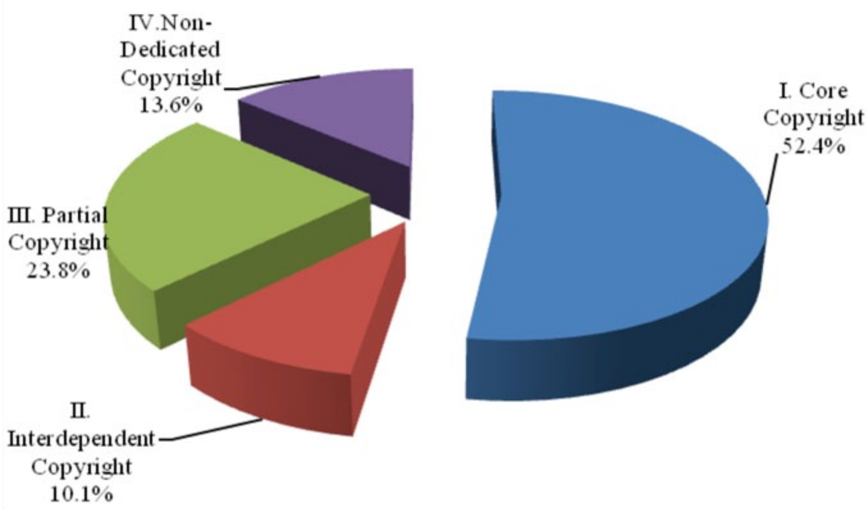


Figure 3.2: Relative Size of Employment in Copyright-Based Industries by Group, 2006



With regard to the contribution to employment, the number of persons engaged in the CBIs industries is reported. The number of job creation in the industries is the issue that the policy-makers have to take into account for the formulation of national development policies. The overall copyright-based industries employed 1.02 million workers, which accounted for 2.85 percent of total employment in the economy. The group of core copyright industries ranked first in terms of the employment among all four groups with a proportion of 1.50 percent of national employment. This number accounted for approximately 52.4 percent of total employment in copyright-based industries, as shown in figure 3.5. It indicates that the majority of workers in the copyright-based industries were in the core copyright industries. Partial copyright industries and non-dedicated copyright industries ranked third and fourth with a proportion of about 23.8 percent and 13.6 percent of the 2006 copyright-based industries' employment. The interdependent copyright industries came in the last place. The job creation was only 10.1 percent of the group's employment. The analysis in more details by subgroup is conducted in section 3.2.2 to provide a comprehensive picture of the copyright-based industries.

2. Inter-industry Comparison of 2006

In the overall picture of the Thai economy, the copyright-based industries' value-added contribution to the country was significant as compared to other major sectors of Thailand. Figure 3.3 depicts the comparison of 2006 value-added in the copyright and related rights industries and those of other sectors in Thailand as a percentage of GDP. It is illustrated that the contributions of copyright-based industries public administration and defence are about the same. The size of copyright-based industries is approximately half of that of agriculture sector, which is a relatively important sector in Thailand.

Figure 3.4 exhibits the employment by industry as a percentage of the 2006 total employment in the economy. As far as the employment is concerned, the group of copyright-based industries hired 2.85 percent of the national employment. The industries even created more jobs for the Thai citizens than hotel and restaurant sector, which is the high potential sector of Thailand.

Figure 3.3: Share of Value-Added as a Percentage of GDP by Industry, 2006

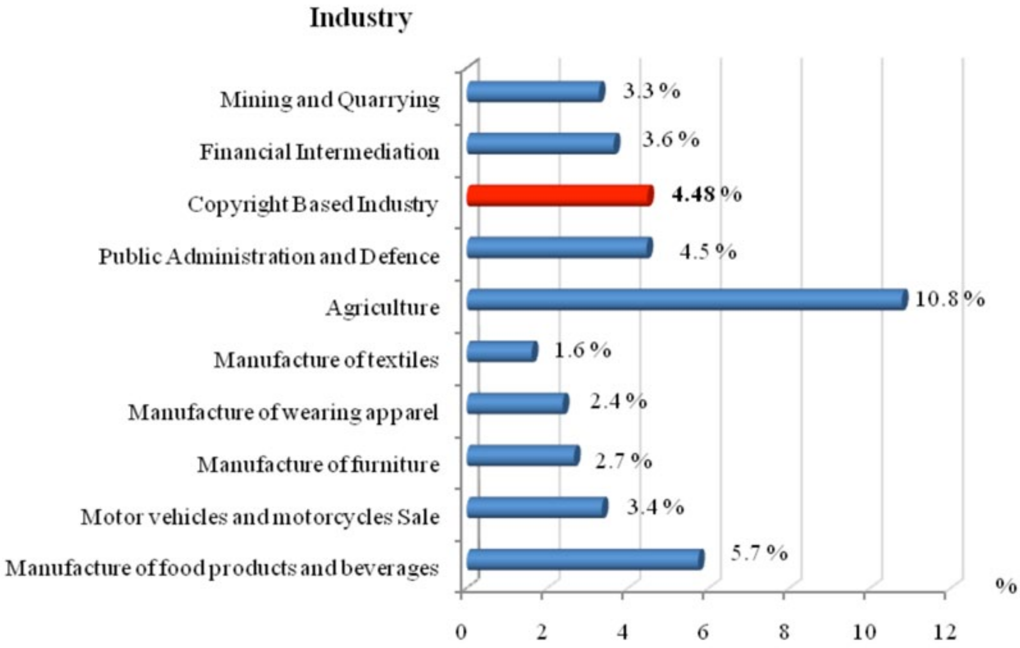
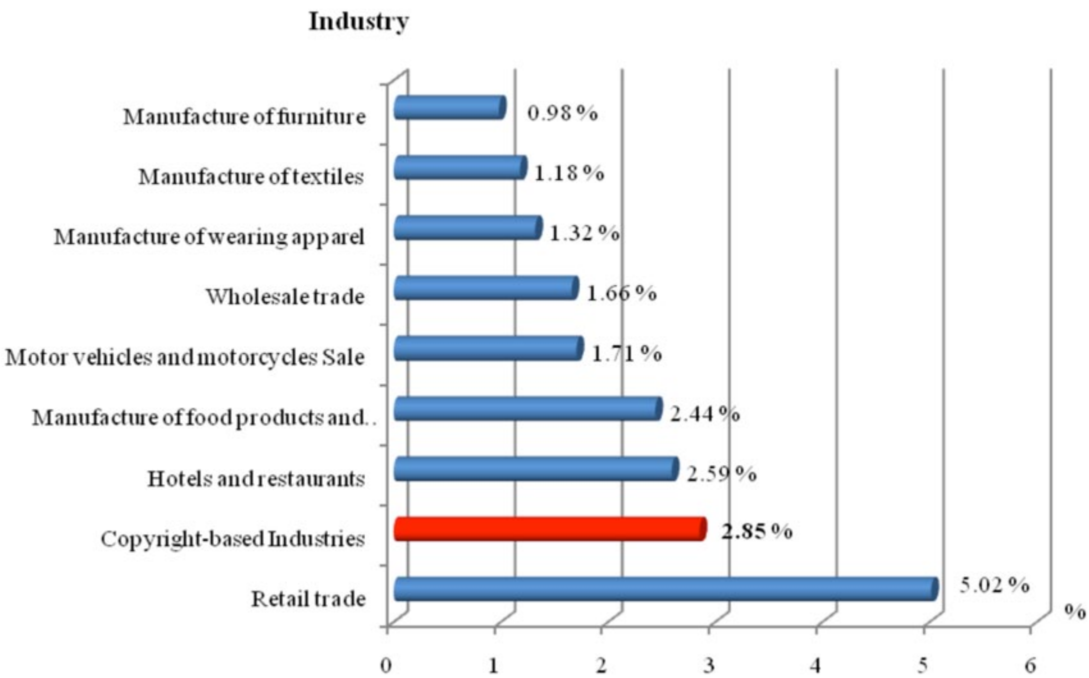


Figure 3.4: Share of Workers as a Percentage of National Employment by Industry, 2006



3.2.2 *Economic Contribution of Copyright-Based Industries by Subgroup*

The detailed economic contributions by groups of copyright-based industries are elaborated as follows:

Core Copyright Industries

As defined by WIPO, the activities in core copyright industry group directly relate to creating copyrighted works. Core copyright industries is composed of 9 sub-sectors, namely:

- Press and Literature
- Music, Theatrical Productions and Operas
- Motion Picture and Video
- Radio and Television
- Photography
- Software and Database
- Visual and Graphic Arts
- Advertising Services
- Copyright Collecting Societies

However, in the Thai economic data set, the sub-sector of copyright collecting societies neither perfectly corresponds to WIPO's classification nor is it available because of the level of data aggregation. The data for this business operation is not available from the NSO for both value-added and employment since it is not registered in the statistical office's system. This is due to the fact that its data may not be fully reported as such even though Copyright Collecting Societies have been established in Thailand for several years. Another factor is that Copyright Collecting Societies also known as Copyright Management Organizations (CMO) in Thailand mostly are limited to music company operation. Thus, the data may be reported under the music, theatrical production and opera sub-sector, the motion picture and video sub-sector and the software and database sub-sector. In the future, it is recommended that data for the sub-sector Copyright Collecting Societies be reported separately. If this is possible, the policy-makers could have a clear picture on the significance of the copyright issue in the Thai economy.

Table 3.3: Economic Contribution of Core Copyright Industries by Sub-Sector, 2002 and 2006

Industries	Value-added (billion baht)		Employment (persons)	
	2002	2006	2002	2006
1- Press and Literature	46.83 (0.86)	70.41 (0.90)	158,714 (0.48)	216,283 (0.61)
2- Music, Theatrical Productions and Operas	14.54 (0.27)	34.45 (0.44)	54,390 (0.16)	131,384 (0.37)
3- Motion Picture and Video	2.59 (0.05)	6.92 (0.09)	23,672 (0.07)	30,204 (0.08)
4- Radio and Television	3.88 (0.07)	18.14 (0.23)	10,736 (0.03)	24,054 (0.07)
5- Photography	3.15 (0.06)	4.29 (0.05)	20,894 (0.06)	24,953 (0.07)
6- Software and Database	39.71 (0.73)	24.35 (0.31)	79,144 (0.24)	37,170 (0.10)
7- Visual and Graphic Arts	1.27 (0.02)	3.35 (0.04)	19,952 (0.06)	41,113 (0.12)
8- Advertising Services	3.86 (0.07)	11.77 (0.15)	18,120 (0.05)	28,565 (0.08)
9- Copyright Collecting Societies*	n.a.	n.a.	n.a.	n.a.
Total	115.85 (2.13)	173.68 (2.21)	385,621 (1.17)	533,727 (1.50)

Source: Authors' calculation.
Note: Data in parentheses indicates percentage of national value.
* The data is not available since the Copyright Collecting Societies sub-sector is not categorised in the NSO database system.

Table 3.3 shows the value of value-added and employment in all industries that belong to the core copyright industry group in 2002 and 2006. Note that several sub-sectors in the group of core copyright industries have improved their performance in GDP and employment contribution, for example the music, theatrical production and opera sub-sector, the radio and television sub-sector, the visual and graphic arts sub-sector and the advertising sub-sector. As previously mentioned, the 2006 figures indicate that 52.4 percent of employment in copyright and related rights industries was in the group of core copyright industries. The share of core copyright industry group ranked first among all copyright-based industries. The detailed data revealed that the press and literature sub-sector led other sub-sectors in terms of value-added and employment as indicated in table 3.3, figure 3.5 and figure 3.6. Clearly, the statistical data showed that the press and literature sub-sector ranked in the first place in terms of both value-added and job creation among all sub-sectors in copyright-based industries. Most of employment in this sub-sector was in printing related activities.

The music, theatrical productions and opera sub-sector came in the second place; this subgroup accounted for 19.84 percent of the total value-added in the group and 24.62 percent of the group's employment. The software and database sub-sector was in the third place in regard to GDP contribution among the group of core copyright industries, while it ranked in the fourth place in the group's job creation. The sub-sector made up 14.02 percent of the group's value-added and 6.96 percent of the group's employment. The radio and television sub-sector also was significant. Note that this subgroup includes the activities of the national radio and television broadcasting companies, other radio and television broadcasters, independent producers, cable television (systems and channels), satellite television and allied services. It is one fast growing industries due to the advanced broadcasting technology and the promulgation of the 2008 Radio and Television Broadcasting Act. The sub-sector constituted 10.44 percent of the group's value-added and added up to 4.51 percent of the group's employment contribution.

Regarding the sub-sector of Copyright Collecting Societies, the data is not available since the copyright collecting societies sub-sector is not categorised in the NSO database system.

Figure 3.5: Value-Added of Core Copyright Industries by Sub-Sector, 2006

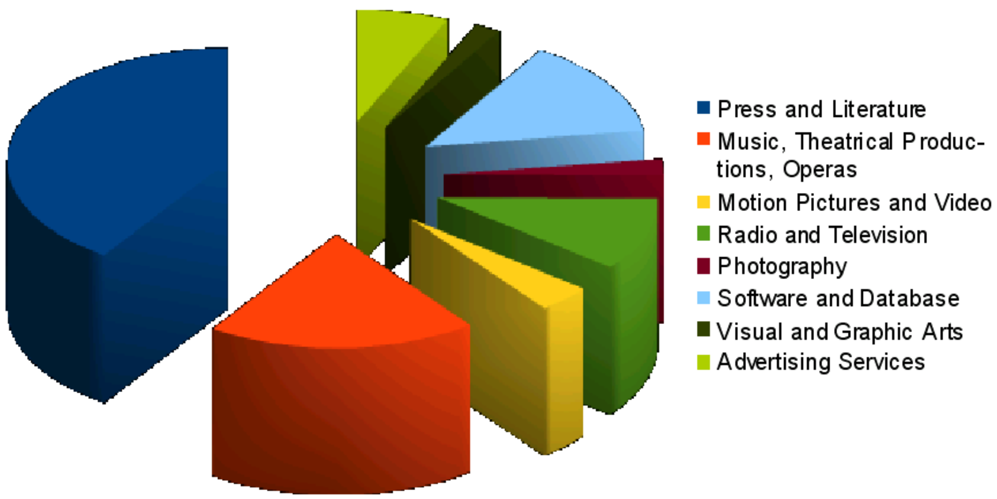
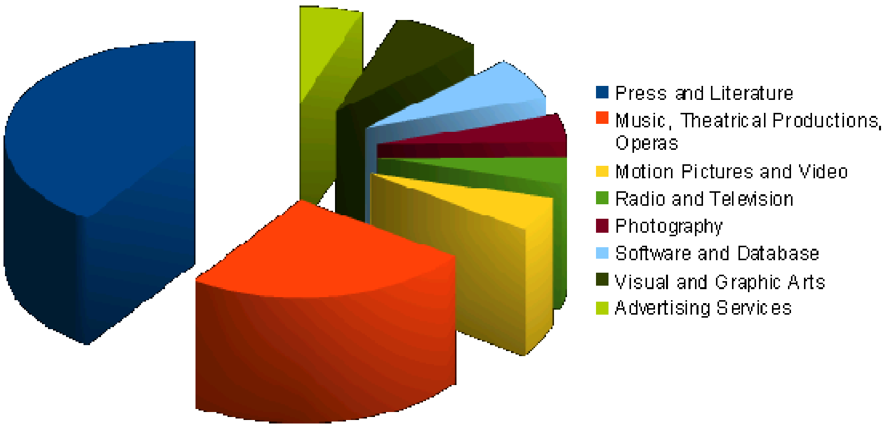


Figure 3.6: Employment in Core Copyright Industries by Sub-Sector, 2006



Furthermore, the press and literature sub-sector, the music, theatrical productions and opera sub-sector, together with the visual and graphic arts sub-sector and the software and database sub-sector absorbed almost 80 percent of the core copyright industries' employment. Each of them accounts for 40.52, 24.62, 7.70 and 6.96 percent of the group's total value, respectively as shown in figure 3.6.

Note that if the broadcasting and entertainment business are considered, the employment in the motion picture and video sub-sector, the music, theatrical production and opera sub-sector, the radio and television sub-sector and the advertising services sub-sector would be added up. The employment share of the broadcasting and entertainment business made up 40.13 percent of the total employment in the core copyright industry group.

Interdependent Copyright Industries

The interdependent copyright industry group is defined as the industry which produces the goods to be used in the production and consumption of copyrighted works. According to the WIPO Guide, seven sub-sectors are classified into interdependent copyright industry group as follows:

- TV sets, Radios, VCRs, DVD Players, Electronic Game Equipment
- Computer and Equipment
- Musical Instruments
- Photographic and Cinematographic Instruments
- Photocopiers
- Blank Recording Material
- Paper

Table 3.4: Economic Contribution of Interdependent Copyright Industries by Sub-Sector, 2002 and 2006

Industries	Value-added (billion baht)		Employment (persons)	
	2002	2006	2002	2006
1. TV sets, Radios, VCRs, DVD Players, Electronic Game Equipment	2.44 (0.04)	2.64 (0.03)	6,765 (0.02)	6,157 (0.02)
2. Computer and Equipment	39.92 (0.73)	29.15 (0.37)	447 (0.00)	470 (0.00)
3. Musical Instruments	9.98 (0.18)	3.63 (0.05)	41,399 (0.13)	6,820 (0.02)
4. Photographic and Cinematographic Instruments	6.34 (0.12)	18.24 (0.23)	26,891 (0.08)	40,752 (0.11)
5. Photocopiers	8.44 (0.15)	6.39 (0.08)	6,825 (0.02)	13,685 (0.04)
6. Blank Recording Material	4.32 (0.08)	5.66 (0.07)	9,711 (0.03)	9,423 (0.03)
7. Paper	11.04 (0.20)	14.25 (0.18)	21,135 (0.06)	25,598 (0.07)
8. Total	82.49 (1.51)	79.97 (1.02)	113,173 (0.34)	102,905 (0.29)

Source: Authors' calculation.
Note: Data in parentheses indicates percentage of national value.

Figure 3.7: Value-Added of Interdependent Copyright Industries by Sub-Sector, 2006

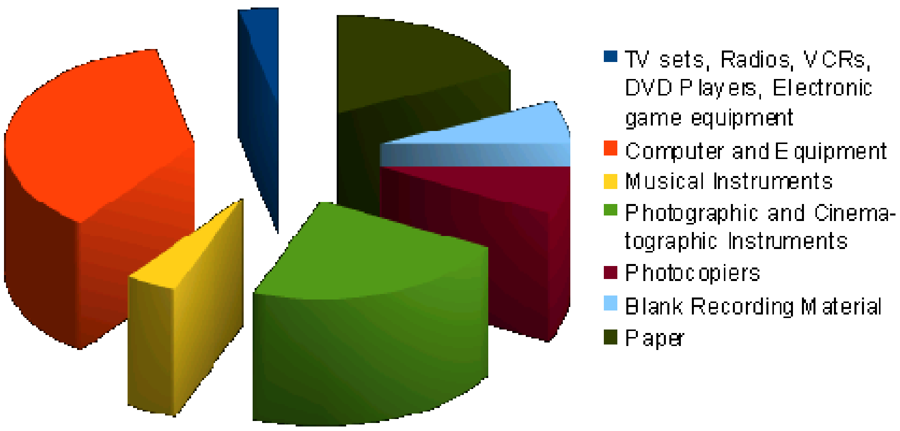
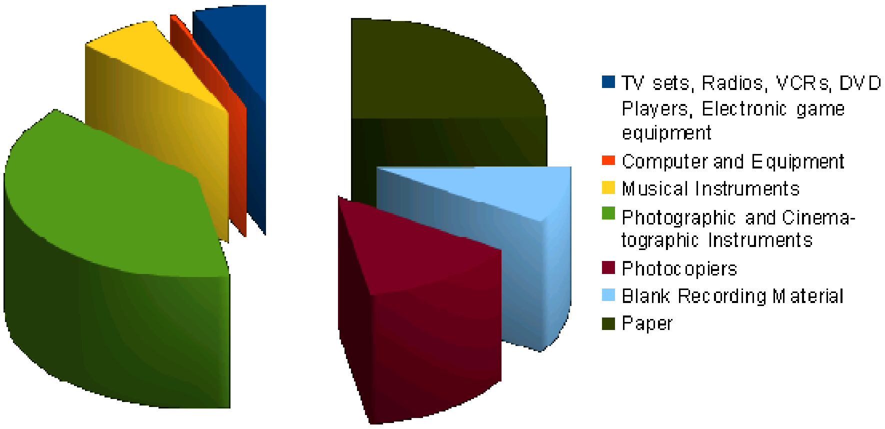


Table 3.4 shows the economic contribution of interdependent copyright industries in 2002 and 2006. The data revealed that there are only two sub-sectors in this group which presented a positive trend in their economic contribution between 2002 and 2006. They are the photographic and cinematographic instrument sub-sector and the paper sub-sector. Among the sub-sectors, the computer and equipment sub-sector and the photographic and cinematographic instrument sub-sector ranked first and second in terms of value-added generated. As shown in figure 3.7, they constituted 36.45 percent and 22.81 percent of the total value-added in the group of interdependent copyright industries, respectively. The combination of these two sub-sectors explained almost 60 percent of interdependent industries' value-added. In the third place is the paper sub-sector with 17.83 percent of the group's value-added contribution.

Attention should be drawn also to the blank recording material and paper sub-sector since their productions involves in the supply chain of the core copyright industries. These two sub-sectors' value-added creation was a little more than that of the radios and television sub-sector while the combination of their employment is as much as that of the software and database sub-sector in the group of core copyright industries. The government's support put into these sub-sectors could be, in effect, conducive to an improvement in the core copyright industry group, since their products mainly facilitates the usage of the copyrighted works.

Figure 3.8: Employment in Interdependent Copyright Industries by Sub-Sector, 2006



The composition of the employment in the interdependent copyright industries is depicted in figure 3.8. The sub-sector hiring the largest part of employment in the group is the photographic and cinematographic instrument sub-sector which made up 39.60 percent of the total of the interdependent copyright industry group's workers. The second highest portion of the group's employment was in the paper sub-sector. The share is 24.87 percent of total employment in interdependent copyright industries.

Partial Copyright Industries

The WIPO Guide defined the partial copyright industry group as the industries which is only partially involved in the production of copyright and copyrighted works. There are ten categories under the partial copyright industries as follows:

- Apparel, Textiles and Footwear
- Jewellery and Coins
- Other Crafts
- Furniture, Fittings and Furnishing
- Household Goods, China and Glass
- Wall Coverings and Carpet
- Toys and Games
- Architecture, Engineering and Surveying
- Interior Design
- Museum

The partial copyright industries consist of a variety of products. Most of them are consumer goods, in which parts of copyrighted works are included. The data for the 2006 value-added and employment is presented in table 3.5. The positive trend in the economic contribution of many sub-sectors was observed between 2002 and 2006. They are, for instance, the jewellery and coins sub-sector, the toys and games sub-sector and the other crafts sub-sector.

Within the group of partial copyright industries, the apparel, textiles and footwear sub-sector, the jewellery and coins sub-sector, the other crafts sub-sector together with the furniture, fittings and furnishing sub-sector represented three-quarters of the group's value-added, as shown in figure 3.9. Note that those four sub-sectors are the manufacturing factors of high competitiveness and export values of the country. The toys and games sub-sector is another sub-sector of high value-added creation in this group. The sub-sector generated up to 10 percent of the group's value-added. The apparel, textiles and footwear sub-sector is one among the top five sub-sectors creating the highest employment in the Thai economy. The sub-sector alone represented 0.31 percent of the national employment and made up 0.25 percent of 2006 GDP.

Table 3.5: Economic Contribution of Partial Copyright Industries by Sub-Sector, 2002 and 2006

Industries	Value-added (billion baht)		Employment (persons)	
	2002	2006	2002	2006
1. Apparel, Textiles and Footwear	13.18 (0.24)	19.32 (0.25)	103,431 (0.31)	111,487 (0.31)
2. Jewellery and Coins	4.94 (0.09)	11.03 (0.14)	23,993 (0.07)	37,372 (0.10)
3. Other Crafts	1.20 (0.02)	2.65 (0.03)	5,028 (0.02)	7,449 (0.02)
4. Furniture, Fittings and Furnishing	6.38 (0.12)	8.56 (0.11)	45,439 (0.14)	48,676 (0.14)
5. Household Goods, China and Glass	0.17 (0.00)	0.27 (0.00)	502 (0.00)	1,098 (0.00)
6. Wall Coverings and Carpet	0.04 (0.00)	0.18 (0.00)	181 (0.00)	546 (0.00)
7. Toys and Games	2.28 (0.04)	5.31 (0.07)	8,406 (0.01)	12,494 (0.03)
8. Architecture, Engineering and Surveying	1.31 (0.02)	3.26 (0.04)	3,614 (0.01)	6,848 (0.02)
9. Interior Design	0.99 (0.02)	4.30 (0.05)	6,699 (0.02)	16,754 (0.05)
10. Museum *	n/a	n/a	n/a	n/a
Total	30.50 (0.39)	54.87 (0.71)	197,292 (0.60)	242,723 (0.68)

Source: Authors' calculation.
Note: Data in parentheses indicates percentage of national value.
* The data for Museum sub-sector is not available in the NSO data set after 2000.

Figure 3.9: Value-Added of Partial Copyright Industries by Sub-Sector, 2006

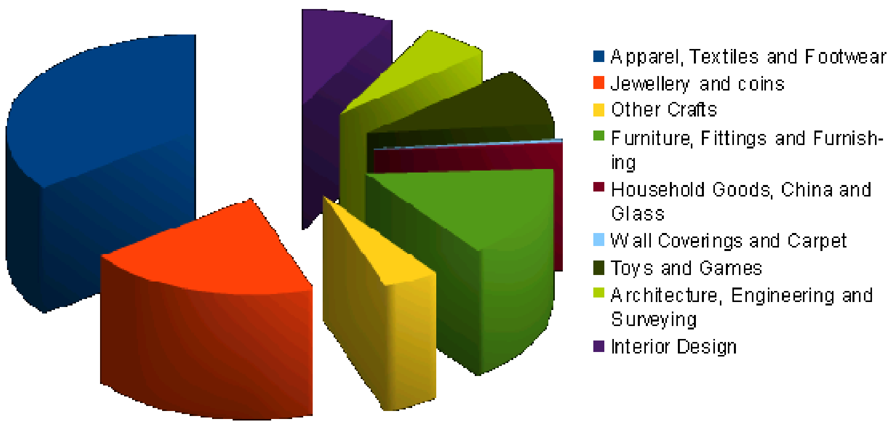


Figure 3.10: **Employment in Partial Copyright Industries by Sub-Sector, 2006**

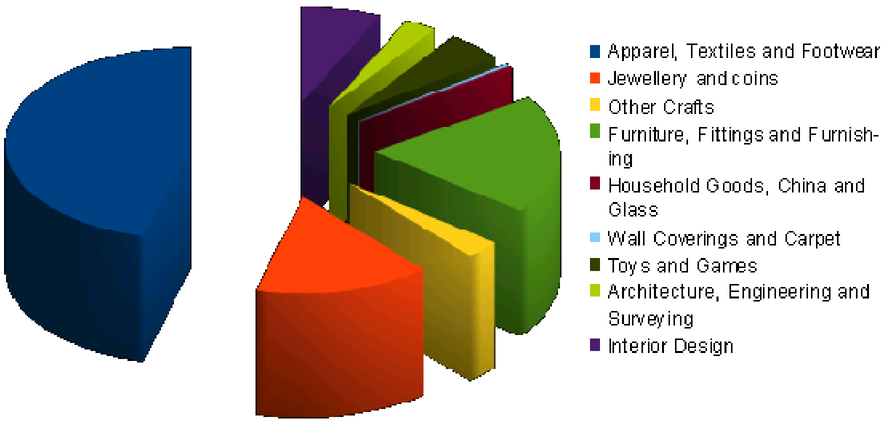


Figure 3.10 illustrates the composition of employment in the partial copyright industries by sub-sector. As mentioned earlier, the apparel, textiles and footwear sub-sector was one of the sub-sectors with the highest number of employment among all sub-sectors in the copyright-based industries. The employment in the apparel, textiles and footwear sub-sector alone explained almost as much as that of the music, theatrical productions and opera sub-sector, which was approximately 10 percent of total employment of the copyright-based industries.

Note that several sub-sectors in partial copyright industries are major export sectors of Thailand and are commonly known as labour intensive sectors. The data indicates that the apparel, textiles and footwear sub-sector made up 45.93 percent of the total employment of the group. The second place was the sub-sector of furniture, fittings and furnishing, which constituted 20.05 percent of the group's employment. The jewellery and coins sub-sector added up 15.40 percent of the total employment in partial copyright industries.

Non-dedicated Support Industries

The non-dedicated support industries comprise the industries which deal with distribution, measure spillover effects and in which a portion of the activities is related to facilitating broadcast, communication, distribution or sales of works and other protected subject matter, and whose activities have not been included in the core copyright industries. There are three sub-sectors in the group:

- General Wholesale and Retail
- General Transportation
- Telephony and Internet

All sub-sectors in non-dedicated support industry group are services-based industries. The activities in this group support the operation of the business. Its contribution accounted for 0.54 percent of GDP and the group engaged 0.39 percent of national employment. In addition, the group made up 23.8 percent of the copyright and related rights industries' employment.

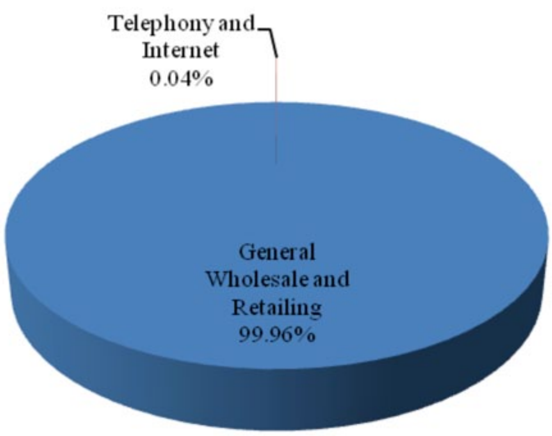
Table 3.6: Economic Contribution of Non-Dedicated Support Industries by Sub-Sector, 2002 and 2006

Industries	Value-added (billion baht)		Employment (persons)	
	2002	2006	2002	2006
1. General Wholesale and Retailing	28.13 (0.52)	42.43 (0.54)	533,727 (0.33)	138,886 (0.39)
2. General Transportation *	n.a.	n.a.	n.a.	n.a.
3. Telephony and Internet	n.a.	0.02 (0.00)	n.a.	37 (0.00)
Total	28.13 (0.52)	42.44 (0.54)	533,727 (0.33)	138,923 (0.39)

Source: Authors' calculation.
Note: Data in parentheses indicates percentage of national value.
* The NSO data set does not have the data for the general transportation sub-sector.

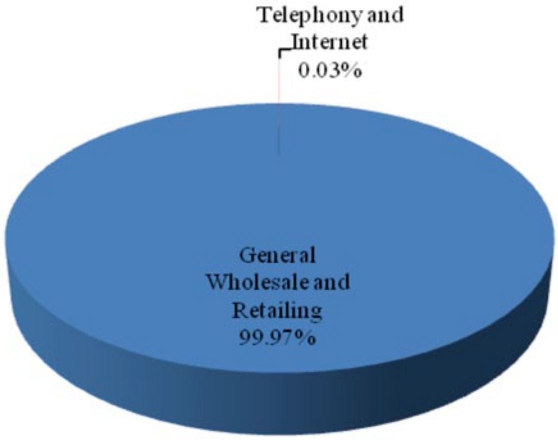
The economic contribution of the non-dedicated support industries to the Thai economy is summarised in table 3.6. The data demonstrates that the general wholesale and retailing sub-sector was the largest sub-sector in the non-dedicated support industry group in both value-added share and share of employment to the total number of the group. It represented almost all the economic contribution of the group.

Figure 3.11: Value-Added of Non-Dedicated Support Industries by Sub-Sector, 2006



Figures 3.11 and 3.12 depicted the share of value-added and share of employment by sub-sector, respectively. The sub-sector of general wholesale and retailing dominated other sub-sectors in copyright-based industries in terms of value-added creation. This sub-sector accounted almost 100 percent of total value-added generated by the group of non-dedicated support industries. As far as the employment is concerned, the sub-sector created the highest employment compared to other sub-sectors that belong to non-dedicated support industries. The number of employment accounted for almost 100 percent of all employment created in this group of copyright-based industries.

Figure 3.12: Employment in Non-dedicated Support Industries by Sub-Sector, 2006



3.3 Foreign trade

In the analysis of the international trade of copyright-based industries, the authors mapped the ISIC, which corresponded to the WIPO classification in the WIPO Guide, with the SITC classification by using the guide in the correspondence table from the European Commission website with some modification.[12] The mapping between ISIC and SITC is included in appendix 1. According to the correspondence table, there is no sector in the group of non-dedicated support industries that can be classified in SITC classification. Therefore, it should be noted at the beginning that the analysis in the Foreign Trade section will discuss the export value in three groups, namely, core copyright industries, interdependent copyright industries and partial copyright industries. The copyright factor for each group is multiplied to obtain the export data for each category.

Table 3.7: Thai Copyright-Based Industries' Export Value with Growth Rate and Share to Total Thai Export (2004-2008)

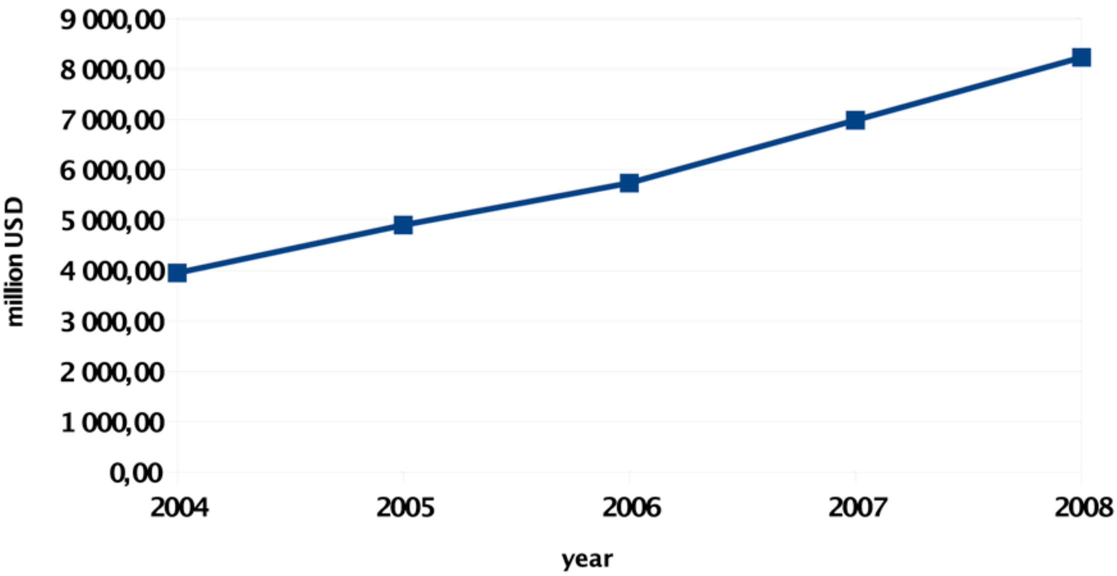
	2004	2005	2006	2007	2008
Copyright-based Industries					
Export value (million USD)	3,946.23	4,899.40	5,734.53	6,984.59	8,232.71
Growth rate by year (%)	-	24.15	17.05	21.80	17.87
% of export value to total Thai export	4.21	4.59	4.56	4.55	4.68
Core copyright					
Export value (million USD)	127.79	179.57	207.8	881.44	1,506.69
Growth rate by year (%)	-	40.52	15.72	324.18	70.94
% of export value to total Thai export	0.14	0.17	0.17	0.57	0.86
Interdependent copyright					
Export value (million USD)	2,220.69	2,917.83	3,683.72	4,075.50	4,387.98
Growth rate by year (%)	-	31.39	26.25	10.64	7.67
% of export value to total Thai export	2.37	2.73	2.93	2.65	2.49
Partial copyright					
Export value (million USD)	1,597.75	1,802.00	1,843.01	2,027.65	2,338.03
Growth rate by year (%)	-	12.78	2.28	10.02	15.31
% of export value to total Thai export	1.70	1.69	1.46	1.32	1.33
Non-dedicated support	n/a	n/a	n/a	n/a	N/a

Source : Authors' calculation from UN Comtrade database system

[12] http://ec.europa.eu/eurostat/ramon/relations/index.cfm?TargetUrl=LST_REL&StrLanguageCode=EN&IntCurrentPage=6

As far as the international trade is concerned, the Thai copyright-based industries have played their role as the growing export sectors for many years, as seen in table 3.7. For the overall copyright-based industries, the industries' export value increased with a double-digit growth rate over the observed time period. The average annual growth rate of the exports during 2004-2008 was approximately 20 percent. The 2006 export value as a percentage of the total export was 4.56 percent. Such share is considered high as compared to those of other export products of Thailand. The trend of export value of copyright-based industries is presented in figure 3.13.

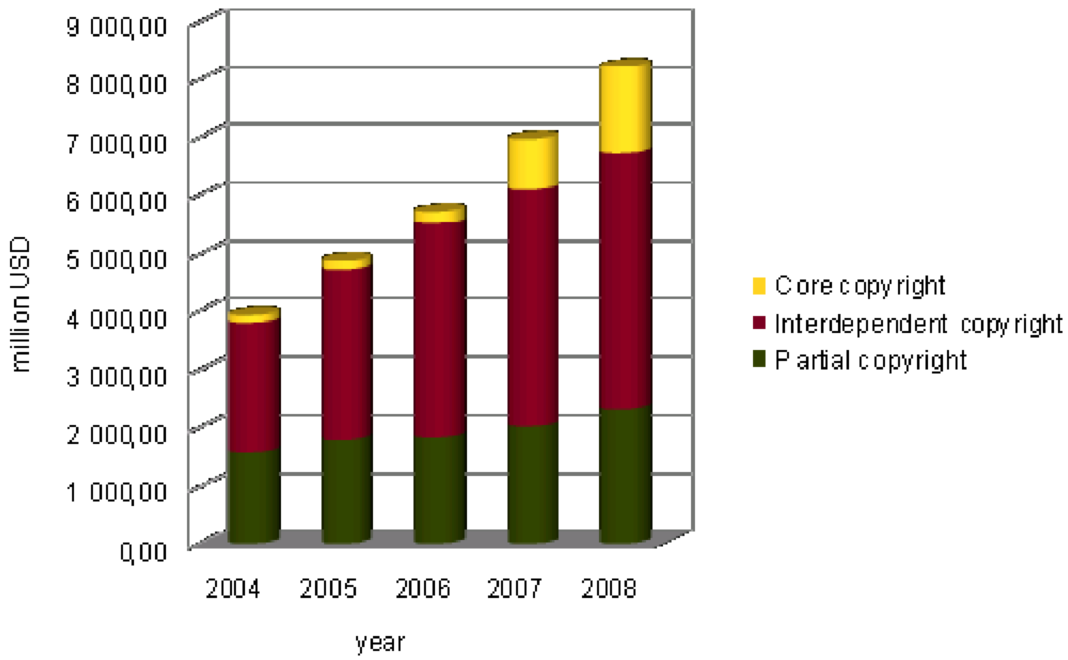
Figure 3.13: Total Export Values of Copyright-Based Industries during 2004-2008



In details, the export value of core copyright industries has been growing much more than those of the group of interdependent copyright industries and the group of partial copyright industries. This positive trend implies a good signal of the development of the copyright-based industries in Thailand. The reason is that the activities in the group of core copyright industries are the principal sources of pure copyright activities and creative industries. The pure copyright related activities are important since they are closely related to creativity and originality in the arts and creative works.

As for the export value of the group of interdependent copyright industries, the value ranks first among all copyright-based industries. However, the growth of its export value experienced a sharp downturn in recent years, in contrast with the trend of the group of core copyright industries. This is partly a result of the global financial crisis. This group's export share to total export of Thailand during 2004-2008 is roughly 2.4-3 percent. The partial copyright industries added up the export revenue of 1,843.01 million USD in 2006 (1.46 percent of the total export). Their export value was approximately half of the interdependent copyright industries' export value. However, the positive trend of partial copyright industries' export value was observed over the period of 2004 to 2008.

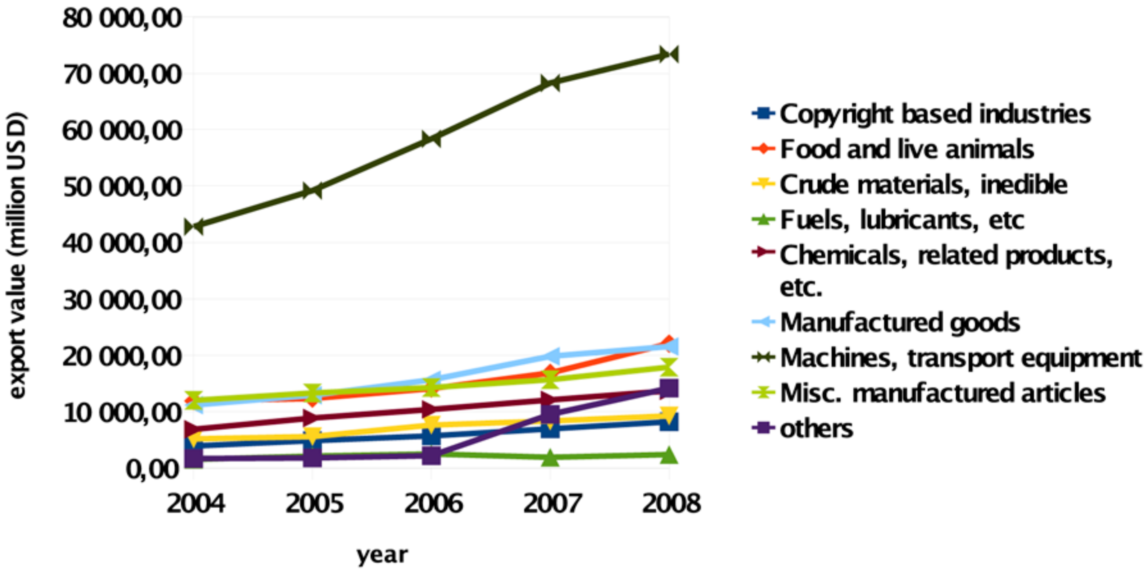
Figure 3.14: Composition of Export Value of Thai Copyright-Based Industries during 2004-2008



To consider the composition of the export of the copyright-based industries, the data is depicted in figure 3.14. The figure showed that the core copyright industries group has generated the smallest export revenue in comparison to the interdependent copyright industries and the partial copyright industries. Interestingly its export and export share to total export increased dramatically in 2007 and 2008. Meanwhile the export from the group of interdependent copyright industries has played outstanding role among all copyright-based industries during 2004-2008. Export from the group of partial copyright industries, however, was in the middle place and maintained its position for the whole period. Although the export value in the group of core copyright industries are low in relation to the other two groups, its better performance in terms of annual growth rate is significant from policy-makers' point of views. The trend signifies the success of the Thai government's policies to support the creative industries. Such policies are so called the policy of "Creative Thailand". The policies are to mainly assist the entrepreneurs in the group of core copyright industries to enhance their competitiveness.

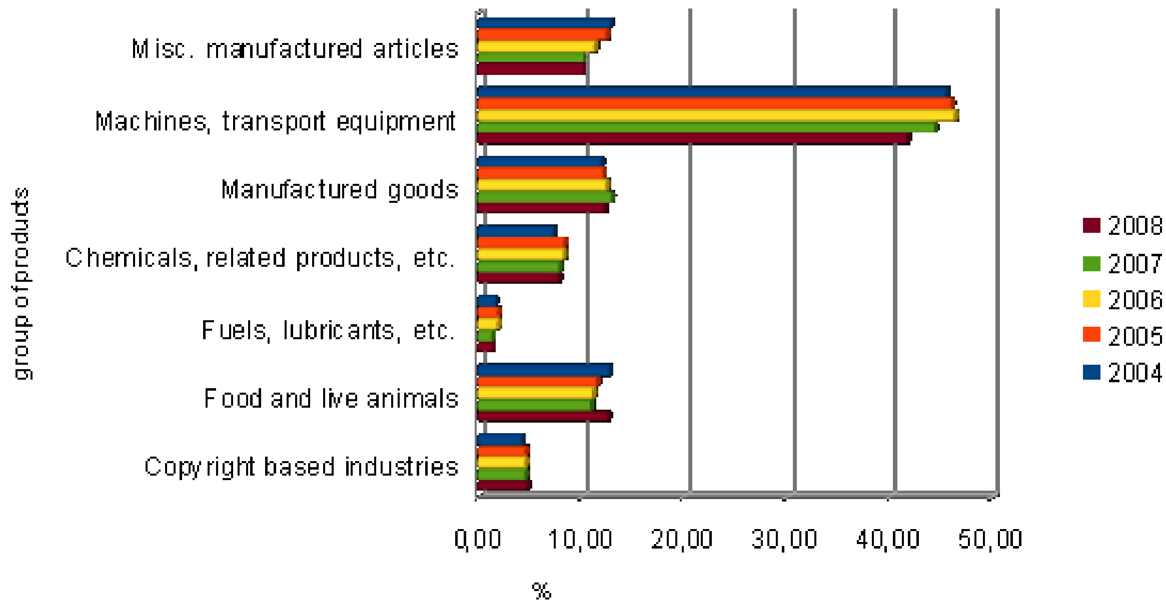
Furthermore, the export value trend of copyright-based industries' products in comparison with other export commodities is exhibited in figure 3.15. The data showed that export of copyright-based industries has increased over the years. The growth pattern of Thai copyright-based industries was the same as those of other main export commodities.

Figure 3.15: **Trend of Export Value of Copyright-Based Industries in Comparison with Other Export Commodities during 2004-2008**



Regarding the export share of copyright-based industries, the trend of export value of copyright-based industries in comparison with other exports is presented in figure 3.16. The pattern of the share of copyright-based industries export value to total export over the period of 2004-2008 seemed to be moderate. This situation also happened to almost all exporting commodities in that period. Note that 2006 export share of copyright-based industries was almost half of that of the food and live animal sector, which is one of the significant industries of Thailand.

Figure 3.16: **Export Value as a Percentage of Total Thai Export during 2004-2008**



	2004	2005	2006	2007	2008
Copyright based industries	4.21	4.59	4.56	4.55	4.68
Food and live animals	12.72	11.59	11.23	11.02	12.58
Fuels, lubricants, etc.	1.66	2.01	2.00	1.27	1.37
Chemicals, related products, etc.	7.37	8.34	8.30	7.90	7.82
Manufactured goods	11.96	12.13	12.47	12.93	12.28
Machines, transport equipment	45.61	46.06	46.38	44.47	41.73
Misc. manufactured articles	12.84	12.50	11.38	10.23	10.20

4. Profile of Selected Core Copyright Industries

4.1 Press and Literature

In the group of press and literature, there are several subgroups' activities and people related. They are, for example, newspapers, authors, writers, translators, magazine and periodicals, book publishing, wholesale and retail of press and literature. All activities are in the printing industry. The Thai printing industry has been developed under the government's driving force during the past decade. The main development plans which are adopted are the Master Plan for Major Industrial Sectors (Printing Industry) in 2004 and Competitive Benchmarking for Paper and Printing Industry in 2008. The most recent plan is the follow-up study of the previous two plans. It is called Implementing Strategies for the Development of Printing Industry 2010. The printing industry has successfully developed since 2004 and Sinsakorn Printing City and Industrial Estate was established subsequent to the implementation of the 2004 Master Plan. A few years after this, the Thai Print Association launched the Thai Print Awards in 2006. The Association at the meantime supported Thai people to participate in the Asian Print Awards (Ministry of Industry, Thailand, 2010). Apart from the Thai Print Association, other associations related to press and literature activities are, for example, the Press Association of Thailand, Thai Journalists Association, Writers' Association of Thailand and The Translators and Interpreters Association of Thailand. Currently, there are more than 30 newspapers and a hundred of periodicals in Thailand. They are released on daily, weekly or monthly basis. Some are launched every few days or twice a month. There are also English and Chinese newspapers in Thailand. However, they are well-recognised in specific groups of readers. The newspaper readership of daily newspapers during 2007-2009 is exhibited in table 4.1.

Table 4.1: Newspaper Readership of Daily Newspaper, 2007-2009

Newspaper	2007	2008	2009
Thai Rath	1,2669,000	12,526,000	9,759,000
Daily News	7,073,000	6,910,000	5,303,000
Khaosod	1,157,000	960	747
Matichon	998	955	717
Krungthep Turakij	179	95	90
Post Today	84	81	85
Bangkok Post (English)	71	115	70
The Nation (English)	55	33	29

Source: AGB Nielsen Media Research.

With respect to the book publishers which are the key players in the Thai printing industry, some publishers are listed companies in the Stock Exchange of Thailand while the others are small and medium sized businesses. Many listed book publishers not only run business in book publishing, they also do wholesaling and retail press and literature. They are, for instance, Se-Education Public Company Limited and Matichon Public Company Limited. In addition, Matichon PCL also issues daily newspapers and a number of periodical newspapers. Meanwhile, several book publishers have main activities in publishing textbooks, workbooks and reference books for schools and universities. Most of them are either known as university press or the book publishers who are subcontracted by the Ministry of Education.

Commercial printing is another key business in the Thai printing industry. They are mostly small and medium sized businesses and unlisted companies. Their activities include printing cards, maps, calendars, envelopes, writing paper, notebooks, designed paper, decorative packaging, commercial packaging and advertising materials. According to the study for Implementing Strategies for the Development of Printing Industry (2010), the study reported that all three groups in the scope of study had a constant growth during 2004-2009. In addition, the package printing sector showed the biggest growth among all three sectors due to the expansion of the food export. On the contrary, the book and commercial printing and cut-out printing sectors are negatively affected by data dissemination via the digital media. Notwithstanding, these two sectors still presented some growth due to their product variety.

Considering the characteristics and competitiveness of the Thai printing industry, there are many small companies and the competition is normally based on price since the products are not much differentiated. It is said that price competition in the market might hinder the industry's development since the entrepreneurs have to push down the cost and could not put emphasis on research and development. There are several weak points and threats in the industry: 1) the concentration of the industry in Bangkok and the central region, 2) the price competition which might slow down the quality development progress in the industry, 3) insufficient skilled labour to improve the printing technique, 4) the low productivity and lack of printing engineer knowledge, 5) limited overseas market development, probably due to the potential local market demand, 6) reliance on foreign technologies and machines and 7) political unrest. Nonetheless, the Thai printing industry has a number of strength and opportunities. They are: 1) big local market, 2) available local resources, 3) the developed cluster and supply chain which support the image of Thailand as the "Printing Hub" due to the collaboration between the public and private sectors in necessary infrastructure[13]; 4) strong educational institutes, 5) strong growth in digital printing, 6) exporting opportunities to free trade agreement partner countries, 7) government supporting policies and realisation of the industry's importance to the country and 8) Thai people's values towards a reading habit and education including parent's prioritisation of preschool education for children.

The analysis in weak points and threats including strength and opportunities of the Thai printing industry suggested that the potential of Thai printing industry could be improved, especially with several government supporting policies and earlier mentioned positive factors. The government supporting policies could include tax reduction on imported paper, promoting the reading habit campaign in school, Creative Economy policies and policies to promote life-long education and knowledge-based economy in the 11th National Economic and Social Development Plan. The policy sets of Creative Economy helps stimulate people's creativity and give rise to the press, literature and printing industry. Apart from those, annual book exhibition and International Book Fair are the popular events which are held annually in Thailand. These two events attract more than 100,000 people a year and create an appropriate forum for all levels of people to get inspired by the well-known authors and translators. This could help drive forward the development of the press and literature in the future.

From an economic point of view, the press and literature sub-sector employed 216,283 persons and created 70.41 billion baht of value-added in 2006. The sub-sector contributed most in both value-added and employment among all copyright-based industries. In addition, the industry is considered significant to the Thai economy since it also employs a great number of Thai people. Nonetheless, many of them may not be included in the reported statistics.[14] In addition, the industry has interlinkages with many sectors in the economy.[15] Relatively, it has high coefficients which demonstrated high forward and backward linkages with the sectors in the Thai economy.

4.2 Music, Theatrical Production and Opera

Among all sub-sectors in core copyright industries, music industry together with theatrical productions and operas is the second biggest sub-sector. In 2006, their value-added accounted for 19 percent of the total value-added in core copyright industries. While the employment in this sub-sector represented 22.5 percent of total employment in core copyright industries. According to the statistical data from the Department of Intellectual Property, the number of notified musical works has been increasing significantly since 1999, as illustrated in figure 4.1. The notification for musical works has been dominating those for all other categories of copyrighted works. In 2009, the total number of copyright notifications is 207,689, as shown in table 2.2. The number of notified music works is 134,322, which represents 64.7 percent of total notifications of copyright works. Such large number of notifications reflects both the increasing confidence of music creators on the enforcement of copyright law and, ironically, the greater extent of music piracy in the local market over the years. Based on the data from IP&IT court shown in table 2.3, the number of criminal cases on retailing, distributing or importing musical works has increased from 701 cases in 2008 to 753 cases in 2009.

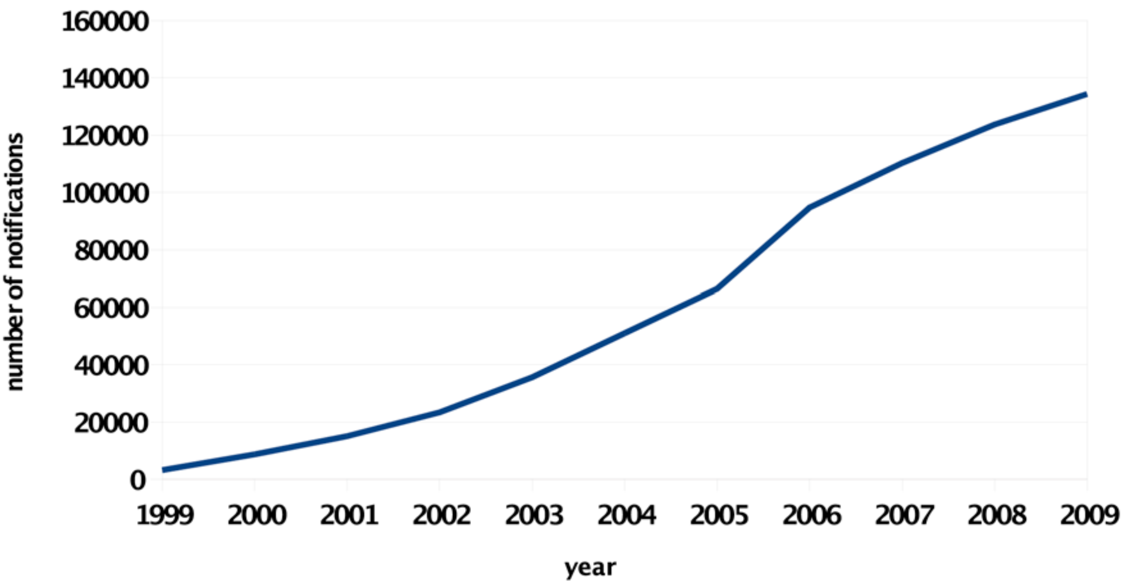
[13] The collaborations cover establishing printing industrial estate, laboratories and training institutions.

[14] As earlier mentioned in section 1.2, there are some limitations in data collection process which result in underestimation in employment figures.

[15] Ariyasajjakorn D. and Sakhornrad P. (2010). Creative Economy and Macroeconomics. In *Creative Economy and Development Issues* in Thailand, a research project (in Thai) commissioned by the International Institute for Trade and Development (Public Organisation), Thailand.

The number in the latter year ranks first among all types of copyright infringements. This figure represents 32.2 percent of total number of copyright infringement cases in 2009.

Figure 4.1: Cumulative Copyright Notifications of Music Works in Thailand during 1999-2009



Source: Department of Intellectual Property (DIP)

Consider market structure, the music market in Thailand consists of two big music companies and about 95 smaller companies. The two media conglomerate entertainment companies are GMM Grammy and RS. The former is the largest one, it controls approximately 70 percent of music market in Thailand. The company was established in 1983 with the registered capital of 0.5 million baht.[16] In 2009, the registered capital has grown to 530.56 million baht. Besides music business, the company is involved in concert production, artist management, film and television production and publishing. In 2010, GMM Grammy adjusted and developed the music business. So its revenue primarily comes from three business lines, namely digital music, artist management and show business. As for RS, the company was found in 1976. Its music was targeting Thai teenagers. In the mid 1980s, many bands such as Intanin, Fruity, Brandy and Kiriboon became popular. These bands generated quite substantial amounts of revenue for the company from the sales of their albums. RS has expanded its scope to include film and television series production as well as radio programming in the early 1990s. The company underwent a rebranding in 2007 to identify itself as a broader media company rather than just a music recording company.

Nowadays, there has been a tremendous change in the lifestyle of music consumers. This is because of the development of digital technology. A decade ago, it was very difficult and time-consuming for music consumers to download songs from internet. It took quite a long time to download just one song. Even the song could be successfully downloaded, its quality was far below the par and there were a lot of interruptions while listening to it. But these days, music consumers are easily able to download songs from internet for a minimal fee or no fee at all. So there is no need for music consumers to buy CDs. In 2007, it was reported that the value of the purchase of recorded music per person in Thailand was only USD 1. This is why the sale of music albums has gone down drastically. Recorded music sales have been declined at the annual rate of 17.9 percent (Kenan Institute Asia and Fiscal Policy Research Institute, 2009). It is impossible for an artist to sell her or his album more than one million copies of recorded music, like some did in the past. Today, it would be unusual if the sale of any album reached 10,000 copies.

[16]The exchange rate is approximately 31 Thai baht for USD 1.

In 1990, the recorded music sale of the album by Thongchai McIntyre, Thailand's most popular artist, reached two million copies. This is all-time highest sale and the record has not been broken since then. This has proven that the golden age of Thailand's music industry was in the 1990s. During that time, the primary source of revenue came from the sales of recorded music of local music companies in the forms of tape cassettes and CDs. So it was worthwhile for them to put significant amount of investment on the development of artists' skills and music technologies. However, due to the change of market environment today, large music companies such as GMM Grammy and RS have to change their investment strategies by scaling down their investments. As a result, music producers and composers as well as musicians earn less income. The lower payoffs would discourage them to create high-quality music works eventually.

Besides the change in investment strategies, the distribution strategies have been changed as well. The traditional distribution channel, which is selling CD albums in music stores, has become less important. There are a number of modern ways for music companies to distribute and sell their music. Convenient stores such as 7- Eleven and Tesco mini mart are ones of the modern distribution channels. CD singles from different music companies are sold there at very cheap price. Moreover, the on-line market has gained more popularity among teenage music consumers. It is not usual for this group of music consumers to buy CDs, due to their own purchasing power and a number of substituted alternatives. Generally, they download digital music on MP3 and ringtones for mobile phones. Therefore, it is crucial to attract teenage music consumers to do so legally from authorised websites, which partner with music companies.

To strengthen the music industry in Thailand, the government should be more actively coordinating with copyright owners the implementation of enforcement measures of copyright law. This would have a consequence in lessening music piracy in the local market. Better understanding and awareness should be created for Thai music consumers so they would recognise that copyright must be respected and that the purchase of pirated recorded music is a wrongdoing practice. Last but not least, the skill development of new music artists should be financially and technically supported by academic institutions, relevant government agencies and music companies. Music production should be targeted for wider audiences in the region, not just for Thai music consumers. This is to raise demand and further expand the market for Thai music industry beyond the domestic market in the future.

4.3 Motion Picture and Video

The activities in motion picture and video include pre-production, mid-production, post-production, marketing and wholesale and retailing including renting VCD, DVD and video. The Thai film industry is composed of production of Thai film as well as marketing and distributing both Thai and foreign films in various forms. It also incorporates the foreign film production in locations in Thailand. The Thai film industry has been evolving for several decades and the industry has been growing year by year, especially after the supportive policies from the government of Thailand under the umbrella called "Creative Thailand". The industry employed 30,204 persons and created 6.92 billion baht of value-added in 2006. A large part of employers in the industry is part-time workers who are employed on the project basis. There are more than 25 film makers in Thailand. Recently, a number of new film makers were established. Some of them formerly run cinema businesses before turning to film production houses. Several small film makers mainly produce short films while few film makers targeted at the production of romantic comedies, comedies and horror films. A major change in cinema pattern has been also observed since 2000. Stand-alone cinemas became less popular and were replaced by multiplex cinemas in shopping centres and big department stores. The trend of cinema goes towards smaller screen and less seat but more stylish. All films are to be inspected and rated by the Ministry of Culture, Thailand before they are launched at the cinema. The Ministry settles the criteria of the rating and censoring. Some films have been banned from being publicised due to some of their traditionally offensive scenes for young people.

The Federation of National Film Association of Thailand (FNFAT) had been established since 1991. The objective of the Association is to facilitate and solve problems in each sector of the Thai Film Industry which is scattered and in various different directions.[17] According to the interview with the representative from the Association, FNFAT is a non-profit organisation whose income mainly comes from distributing the Red Carpet

[17] See the official website of The Federation of National Film Association of Thailand (FNFAT): www.thainationalfilm.com for more details.

bulletin[18], arranging the Bangkok Film Festival, organising the Subanahongsa Thai Film Award[19] and partly comes from government support.

The statistics from FNFAT presents that the pre-production and mid-production expenditures are quite high compared to the total value of film industry. Table 4.2 shows the performance and structure of the Thai Film Industry during 2004-2009. Furthermore, the revenue from the box office of the Thai film has increased over the observed period while that accrued from the foreign film decreased. This implies the popularity of Thai films among the audience in Thailand recently. Considering the revenue from sales and renting VCD, DVD and video, it has slowed down over 2004-2009. This downward trend might result from some reasons, for instance, the dissemination of the films in other digital media forms, easier access to cinemas and the consumer behaviour to spend leisure time going out to see films at the cinema.

Table 4.2: Performance and Structure of Thai Film Industry during 2004-2009 (in million baht)

Description of market value	2004	2005	2006	2007	2008	2009
1. Pre-production and mid-production	2,398	3,152	4,974	9,622	9,717.12	8,469.58*
1.1 Related business	n.a.	n.a.	n.a.	6,605.80	5,945.22	5,647.96*
1.2 Thai film production	968	814	968	1,943.22	1,748.90	1,923.79*
1.3 Foreign film production in Thailand	1,430	2,338	4,006	1,073	2,023	897.83
2. Post-production	4,609	3,611	5,632	6,790.69	6,451.15	6,128.60*
3. Box office	4,500	4,644	4,520	4,272.98	3,655.15	3,734.26
3.1 Thai film	900	1,044	1,020	1,900.12	1,270.00	1,156.62
3.2 Foreign film	3,600	3,600	3,500	2,372.86	2,385.14	2,577.64
4. Marketing value from distributing film to cinemas in the up-country area including in forms of VCD, DVD and cable TV	3,380	3,034	3,160	3,458.00	3,112.20	2,800.98*
4.1 Thai film	800	444	440	466.00	419.40	377.46*
4.2 Foreign film	2,580	2,590	2,720	2,992.00	2,692.80	2,423.52*
5. Export revenue from selling Thai film abroad	400	1,600	1,200	934.48	887.75	798.98*
6. Selling and renting VCD, DVD and video	15,100	11,840	7,900	8,593.44	6,874.75	5,843.54*
Total Marketing Value	30,387	27,881	27,386	33,671.60	30,698.12	27,775.93*

Source: The authors gathered the data from the website of FNFAT and the FNFAT officer. Data in 1.1, 1.2, 2, 4 and 5 is obtained from Department of Business Development, Ministry of Commerce, Thailand. Data in 1.3 is obtained from Department of Tourism, Ministry of Tourism, Thailand. Data in 3.1 and 3.2 is obtained from www.boxofficemojo.com.
Note: * indicates forecasted data. The data will be revisited by Department of Business Development, Ministry of Commerce, Thailand

Table 4.3 presents the number of production by type with the total revenue. It shows that the number of the foreign productions and their revenue of 2010 and 2001 (January-September), which has been released by the Department of Tourism from the Ministry of Tourism improved in a great extent. Interestingly, the foreign productions revenue in 2010 increased to 1,869.15 million baht, an increase of 108.19 percent as compared to 897.83 million baht in 2009. In addition, the data at the end of September 2011 revealed that the foreign productions generated 1,231.61 million baht. Such productions concentrate on the productions of documentaries and advertisements.

[18]Red Carpet bulletin is a monthly bulletin owned by the FNFAT. It can be viewed digitally on the website of the FNFAT.
[19]The Bangkok International Film Festival has been held annually since 2003 by the Tourism Authority of Thailand, a Royal Thai government agency, in Bangkok, Thailand (www.bangkokfilm.org). Subanahongsa Thai Film Award is the national film award in Thailand, which has been awarded since 1992 and organised yearly by the FNFAT. Both festivals are the well known film festivals in Thailand.

Table 4.3: Number of Foreign Productions by Type and Revenue in Thailand, 2007-2011

Year	Number of production by type						Revenue*
	Documentary	Advertisement	Film	TV film	Music video	Total production	
2007	229	198	22	32	42	523.00	1,072.62 (n.a.)
2008	197	184	28	48	69	526.00	2,023.24 (+88.63%)
2009	181	166	37	52	60	496.00	897.83 (-55.62%)
2010	178	255	49	46	50	578.00	1,869.15 (+108.19%)
2011	128	249	27	65	29	498.00	1,231.61 (-34.11%)

Source: Department of Tourism, Ministry of Tourism, Thailand.
Note: * The numbers in parentheses indicates the change of revenue over the year.

Table 4.4: Number of Foreign Productions Filming in Thailand by Country of Origin, 2007-2011

Year	Number of production by country of origin										Total production
	Japan	Europe	US	Australia	China	Republic of Korea	Hong Kong	Taiwan	India	Others	
2007	154	102	22	18	8	39	25	6	92	57	523.00
2008	134	106	25	10	8	26	23	3	123	68	526.00
2009	108	96	25	8	16	27	20	10	108	78	496.00
2010	123	91	22	8	22	41	24	16	128	103	578.00
2011	95	82	27	13	27	45	23	8	83	82	485.00

Source: Department of Tourism, Ministry of Tourism, Thailand.

Table 4.4 shows the number of foreign productions filming in Thailand by country of origin during 2007-2011. The data presents that Thailand is the popular location for Japanese and European film producers. Apart from FNFAT and the Ministry of Culture, there are several other authorities, which are involved in the film industry. For example, the Department of Tourism is responsible for foreign film production in Thailand. According to the Film Act B.E. 2551 (2008), any foreign film maker wishing to shoot a film including documentary, music video, commercial, TV program and docudrama in Thailand, has to apply for permission from the Thailand Film Office at the Department of Tourism. Failure to seek the permission will subject violators to punitive fines and prison terms as stated in the Act.[20] Universities, both public and private, have designed the curriculum for film production and related activities. Submission of the short films created by groups of university students to the contests for new-face film makers has been becoming more prevalent.

As for the difficulties in running film production and related business in Thailand, the data from the interviews with FNFAT and the Motion Picture Association of America (Thailand) revealed that Thai film makers share the common obstacles. Firstly, many film makers are not able to obtain enough production funds. Secondly, from the point of view of the entrepreneurs, copyright infringement cases, which hinder the development of film production due to the leakage of the film industry's revenue, are not effectively managed. They also discourage the film makers and creators from producing and creating high-quality films. In addition, government actions to pass the Anti-Camcording Law and its enforcement by the authorities are the issues that do concern the film makers. The law is currently in the process of deliberation by the Council of State. The authorities and industry players are deemed to provide necessary information when required.

[20]The website of the Department of Tourism: www.tourism.go.th.

4.5 Radio and Television

The industries of radio and television comprise the activities of the national radio and television broadcasting companies, other radio and television broadcasters, independent producers, cable television (systems and channels), satellite television and allied services. Radio and television broadcasting in Thailand has evolved with advanced technology and developed network. At the beginning, the broadcasting was owned and operated by the government. Private entrepreneurs later joined the business and helped spur the industry's development. The broadcasting via radio and television are prevalent in almost every areas in Thailand. Table 4.5 shows the penetration of radio, television and PC in the Thai households during 2007-2009. The data demonstrates that television is the most popular equipment among Thai households. In addition, the number of households who own a television set increased year by year through the whole period observed.

Table 4.5: Household Owning Equipment in Thailand

	2007		2008		2009	
	Household (million)	% of Thai household	Household (million)	% of Thai household	Household (million)	% of Thai household
TV set	17.7	96.3	18.6	97.2	19.2	97.4
Radio set	11.6	63.9	11.4	60.3	n.a.	n.a.
PC	3.18	17.5	3.58	19.6	3.87	20.3

Source: Data for TV are from AGB Nielsen Media Research and data for radio and PC are from the National Statistical Office of Thailand (NSO).

As for radio, two types of radio stations are operated. One is FM radio station and the other is AM radio station. In comparison, AM radio station is more popular in remote areas and up-country provinces since the signal could cover farther distant areas regardless of the existence of the broadcasting station. However, FM radio stations offer much more variety of radio programs. They capture more audience and market shares in urban areas. Currently, there are more than eighty FM radio stations and ten AM radio stations nationwide.

Table 4.6: Radio Listenership for News Station in Bangkok by Monthly Regular Listeners, 2007-2009

Frequency	Station	2007	2008	2009
FM 99.0	Muang Thai Kang Rang	262,000	248,000	205,000
FM 96.5	Kluen Kwam Kid	151,000	112,000	149,000
FM 106.0	Family News	100,000	126,000	124,000
FM 90.5	Nation Radio	92,000	63,000	71,000
FM 105.0	Wisdom Radio	74,000	62,000	67,000
FM 100.5	News Station 24 Hr	110,000	62,000	40,000
FM 101.5	Chulalongkorn Radio	69,000	49,000	59,000
FM 99.5	Ruam Duay Chuay Kun	88,000	38,000	48,000
FM 101.0	INN	69,000	45,000	31,000

Source: AGB Nielsen Media Research.

Radio stations could be classified into news stations, entertainment stations and specialist stations. Table 4.6 presents radio listenership for news station in Bangkok by monthly regular listeners during 2007-2009. Some radio programs are operated by government authorities. For example, the radio programs of 106 FM, called Family News Station, are mostly run by the Thai Navy. Few stations are known for their specific services such as 100 FM, which disseminates real time data on traffic and road accidents in Bangkok and vicinities. Meanwhile, many radio stations run the programs to broadcast the content of the television program. The radio programs in Thailand mostly are run in Thai; only some programs during specified time period are operated in English.

With respect to terrestrial free-to-air television, there are five private (commercial) television broadcasters and one public television broadcaster, which is the National Broadcasting Services of Thailand (NBT). As shown earlier in table 4.5, TV set is the most popular equipment among the Thai households. All five commercial television broadcasters are either directly or indirectly owned by the Thai government. The operation in the channel can be classified into two patterns: 1) state-operated and 2) privately operated/concession agreement. Two private operators have build-transfer-operate (BTO) concession agreements with the owners in exchange for full ownership of airtime and programming. They were required to build-out national coverage through relay stations plus pay annual concession fees (Credit Suisse, Asia Pacific/Thailand, 2011, p.9).

Table 4.7: Thailand Broadcasting Industry Landscape

Channel	License Owner	Operator	BTO Concession Expiry	Annual Concession Fee
NBT	Prime Minister's Office	Public Relations Department	n/a	n/a
Channel 3	MCOT	BEC	2020	min BT 188 min/yr until 2020
Channel 5	Royal Thai Army	Royal Thai Army	n/a	n/a
Channel 7	Royal Thai Army	Bangkok Broadcasting & TV Co. (BBTV)	2023	Est. 1-5% of revenue
Channel 9	MCOT	MCOT Plc.	n/a	n./a
Thai PBS*	Prime Minister's Office	Public Relations Department	n/a	n/a

Note: * Before 2008, Thai PBS was known as iTV, a commercial TV station. Thus, the comparison should be made with care.
Source: AGB Nielsen Media Research.

Table 4.8: Market Share of Free-to-Air Television Stations, 2006-2009

Channel	2006	2007	2008	2009
NBT	3.0	2.4	4.6	3.4
Channel 3	25.6	29.6	27.3	27.6
Channel 5	7.3	6.7	7.1	8.7
Channel 7	41.2	41.9	44.3	45.6
Channel 9	10.2	9.2	9.7	10.0
Thai PBS*	12.6	10.3	7.0	4.9

Note: The authors modified the data from Credit Suisse, Asia Pacific/Thailand (2011). *Thailand Broadcasting Sector*.
Source: Company data, Commission Ministry of Culture. Cited in Credit Suisse, Asia Pacific/Thailand (2011). *Thailand Broadcasting Sector*.

Table 4.7 demonstrates the Thai broadcasting industry landscape and table 4.8 presents the market share of free-to-air TV station during 2006-2009. Among free-to-air television stations, channel 9 positions itself as a knowledge-based TV station. Channel 3 and channel 7, however, position themselves as news and entertainment channels. Channel 5, which is run by the Thai Army, also relays entertainment programs as its majority. Thai Public Broadcasting Service (Thai PBS), on the other hand, has quite similar program content with that of channel 9. In regard to the only public broadcaster in Thailand, NBT broadcasts wholly the knowledge-based TV programs and edutainment programs. No commercial advertisement is shown in the broadcasting time.

Apart from terrestrial free-to-air television station, cable TV and satellite TV are also widespread among households in Thailand. The entrepreneurs in both cable TV and satellite TV business have the association to support their business. These are the Thailand Cable TV Association (TCTA) and Satellite Television Association (Thailand) (STAT). According to the survey by AGB Nielsen Media Research, the market opportunities for cable TV and satellite TV business have been expanding during the past few years and are expected to have developed in good trend, as illustrated in table 4.9.

Table 4.9: Table 4.9 Platform for the Main TV Reception

	2007		2008		2009		2010*	
	Household (million)	% of Thai household	Household (million)	% of Thai household	Household (million)	% of Thai household	Household (million)	% of Thai household
Terrestrial reception	13.5	74.4	12.9	68.3	12.8	66.1	11.8	56.3
Cable and satellite reception	4.2	21.9	5.7	28.9	6.4	31.3	9.2	43.7
Internet Protocol TV	0	0	0	0	0	0	0	0
Total	17.7	96.3	18.6	97.2	19.2	97.4	21.0	100.0

Note: * Forecast by Satellite Association (Thailand).
Source: AGB Nielsen Media Research.

In terms of supportive legal and institutional frameworks, the new Radio and Television Broadcasting Act has been promulgated since 2008. It has stimulated the expansion in cable TV and satellite TV since it allows all cable and satellite TV providers who are qualified with the granted license to operate subject to regulations. In addition, advertising is permitted in cable and satellite TV channels for the first time. The Act sets a limit of advertising up to six minutes per hour. In addition, the National Broadcast and Telecommunications Commission (NBTC) have been recently formed and NBTC commissioners have been selected in September 2011. NBTC's role is to act as the regulator to oversee the broadcasting industry, both private and public players. The Thai broadcasting industry is expected to grow together with the advertising industry since the adoption of the 2008 Act pave the way for the expansion of the advertising and related business.

4.5 Software and Databases

The software and database industry is one of the fast growing and significant copyright-based industries in Thailand. The industry offers various services ranging from programming, data entry, document conversion, geographical information services, creation of graphic games and animation as well as web and software development. As shown in table 3.3, their contribution in terms of value-added is 9.81 billion baht and employment is 13,336 workers in 2006. Among all nine subgroups in the core copyright industries, their contribution to GDP is in the fifth place, the share is 6.15 percent of the total contribution of core copyright industries. As far as the employment is concerned, the industries hire 2.8 percent of the total employment in core copyright industries. The software industry in Thailand has grown at the good rates since 2006. Annual growth rates were 13.09 percent and 11.16 percent in 2007 and 2008, respectively. (NECTEC, 2009)

In terms of market structure, software market in Thailand could be justified as a monopolistic competition market where many competing firms sell the products that are differentiated from one another. There are approximately 1,300 software companies in Thailand. Most of them are small and medium enterprises (SMEs). The companies primarily produce software products for accounting and for renting management. However software solutions for enterprise risk management (ERP) and customer relationship management (CRM) are generally imported. As for the ownership structure of software companies in Thailand, the number of joint venture firms accounts for 14.64 percent of total number of software firms, while the rest 85.36 percent is not joint venture. Most of the companies located in the country produce their products to serve the local market. This is one of the reasons why 89.88 percent of the firms do not meet the requirements for investment promotion (Kenan Institute Asia and Fiscal Policy Research Institute, 2009). Only 10.12 percent of them could get access to the support under the investment promotion scheme whose measures include tax breaks and exemption of import duty for machinery.

The development of information technology in Thailand has started in the late 1980s. IT infrastructure has been built to serve government and private enterprises. Such infrastructure has been offering resources essential to the development of software products. These include reliable and swift broadband internet, network security, low incidence of power outages and excellent research and development as well as production facilities. In 2002, the Ministry of Information and Communication Technology (MICT) was established with main missions to concretely implement government ICT policies and to support the development of comprehensive electronic processes for government, business and education.

Specifically, to support and strengthen the software industry, the Software Park Thailand was established. It is a government agency under the National Science and Technology Development Agency (NSTDA). Since its inception, the Software Park Thailand has been stimulating the development of software industry and has been helping incubate growing software companies in different regions in Thailand. Its missions also include promoting transfer of technologies through training courses for professionals, promoting quality standard improvement of local companies to international level and promoting the usage of technology to all sectors to help increase productivity and competitiveness.

In 2003, the Software Industry Promotion Agency (SIPA) was established under the administrative supervision of the MICT. It is a leading agency in formulating plans and policies to advocate Thai software industry with a focus on developing software and digital content entrepreneurs, supporting investments and market opportunities as well as supporting measures to protect the rights of software copyright owners. Its goal is to enhance the recognition of Thai software industry in domestic and international levels. The SIPA has been assisting start-up software ventures in obtaining incubation space. So far, there are more than 50 software ventures operating at the facility (BOI: Thailand Investment Review, 2011). Moreover, SIPA has launched a funding scheme entitled "84 projects 84 years of His Majesty anniversary" to celebrate the auspicious occasion of 84 years of His Majesty anniversary. The primary aim is to provide funding for 60 new operators, 20 small operators and 4 medium operators.

Besides software supporting agencies established under the Thai government, there exists a number of business associations representing the interests of their members, who are software entrepreneurs in different sub-sectors. These key players in the industry include the Association of Thai Computer Industry (ATCI), the Association of Thai Software Industry (ATSI), Thai Animation and Computer Graphics Association (TACGA) and Thai Software Export Promotion Association (TSEP), just to name a few. More details on members and primary objectives of these business associations are in the following table.

Table 4.10: Members and Objectives of Software Business Associations

Associations	Members	Objectives
Association of Thai Computer Industry (ATCI)	Any company that sees information processing as core to business, including manufacturers and information service providers	– Promoting Thai ICT industry through business collaboration – Working with the government to formulate policy to stimulate ICT uses and technological advancement
Association of Thai Software Industry (ATSI)	Software producers and importers	– Strengthening the capacity of the software industry in Thailand – Promoting software related investment from domestic and foreign sources – Fostering practical human resource development to fit the software industry
Thai Animation and Computer Graphics Association (TACGA)	Animation and computer graphics entrepreneurs Academic institutions	– Strengthening the creation and production of animation and computer graphics – Promoting the exports of animation and computer graphics – Enhancing professional skills of human resources in the fields of animation and computer graphics
Thai Software Export Promotion Association (TSEP)	Software companies that sell their products in international markets	– Promoting the exports of domestically produced software – Raising the competitiveness of Thai software products in the global market

The big challenge faced by software and database industry is piracy. The Business Software Alliance (BSA)[21] reported that in 2010, 73 percent of personal computers in Thailand have illegal unlicensed software installed. The figure has dropped for four consecutive years. It fell from 75 percent in 2009 and 80 percent in 2006. However, it was estimated that the commercial loss incurred from unlicensed software has increased from USD 694 million in 2009 to USD 777 million in 2010. The reduction of the piracy rate for PC software reflects the greater extent of coordination among relevant government agencies and copyright owners in combating software piracy in local market.

In order to strengthen software and database industry in Thailand, the government should negotiate with software producers and encourage them to lower their prices. This is to attract end-users to buy legal software at more affordable prices and to undermine software piracy in local market. In addition, it is crucial to have education campaigns to make youngsters realise that piracy does not differ from stealing. This is to effectively convince the new generation that purchasing pirated software would be unacceptable in our modern society. In doing so, software inventors and creators would be able to receive fair deals on their intellectual investments. These would be incentives for them to continue to product software products to serve the demand in the market.

Furthermore, the government should have a clear direction in increasing the labour participation in Thailand's software industry. By nature of production, mostly people with high-technical skills have been engaging in software and database industry. The payoffs from selling and licensing software products are distributed within a small group of skilled and semi-skilled workers. Therefore, the government and relevant agencies should provide some incentives and implement measures to foster the linkages of software and database industry to other industries. This is to raise the number of people engaged in this particular industry and to further distribute the industry's benefits to the wider group of people.

4.6 Copyright Collecting Societies

Copyright Collecting Societies or known as Collective Management Organization (CMO) are the establishment which operates as the royalty collector for copyright owner in copyright and related rights industries. Currently, Thailand has 29 CMOs (as of January 17th, 2012). Those CMOs collect the royalty for the use of specific types of copyright, including musical works, sound recording works and audio-visual works.

It is important to note that since the Copyright Collecting Societies sub-sector is not categorised in the NSO database system, the statistical data in the sub-sector is poorly recorded. If the data had been collected and reported more systematically, the government would have been able to better design the development plan for the copyright-based industries as well as policies concerning copyright and related rights.

[21] The Business Software Alliance (BSA) is the voice of the world's software industry and its hardware partners on a wide range of business and policy affairs. BSA's mission is to promote conditions in which the information technology (IT) industry can thrive and contribute to the prosperity, security and quality of life of all people. BSA is the largest and most international IT industry group, with policy, legal and/or educational programs in 80 countries. While several of BSA's initiatives are global in scope, most of its policy, legal and educational efforts are led and conducted at the national level, with a growing emphasis on emerging economies.

5. International Comparison

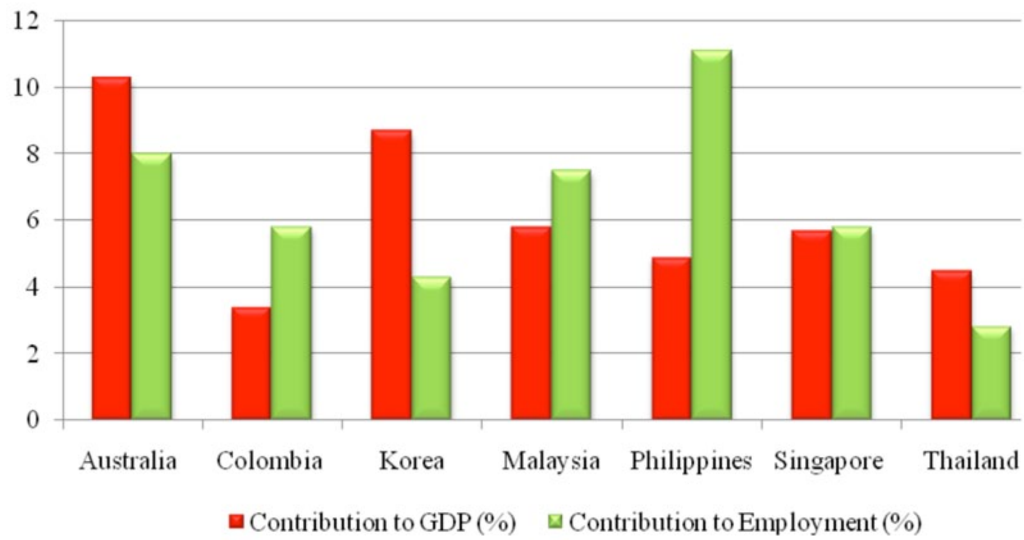
The studies on economic contribution of copyright-based industries and related rights to national economies have been carried out in several countries since 1999. Generally, there is no clear evidence that the contributions of copyright-based industries to GDP in developed countries are larger than those of developing countries. In this study, the research team conducted the comparison between Thailand and other six countries, namely Australia, Colombia, Korea, Malaysia, the Philippines as well as Singapore. Even though the methodologies and approaches to assess the economic contribution of copyright-based industries are not exactly the same, the findings could be comparable and could reveal broad picture on the significance of the industries in these countries. Besides the comparison for overall contributions, the comparison has been performed for all four copyright groups, which include core copyright industries, interdependent industries, partial copyright industries and non-dedicated support industries.

Table 5.1: International Comparison of Copyright-Based Industries' Contribution to GDP and Employment

Country	Contribution to GDP (%)	Contribution to Employment (%)
Australia	10.3	8.0
Colombia	3.4	5.8
Korea	8.7	4.3
Malaysia	5.8	7.5
The Philippines	4.9	11.1
Singapore	5.7	5.8
Thailand	4.48	2.85

Source: Authors' compilation from the series of WIPO studies and combined with the results from the Thai study.

Figure 5.1: Contribution of Copyright-Based Industries to GDP and Employment



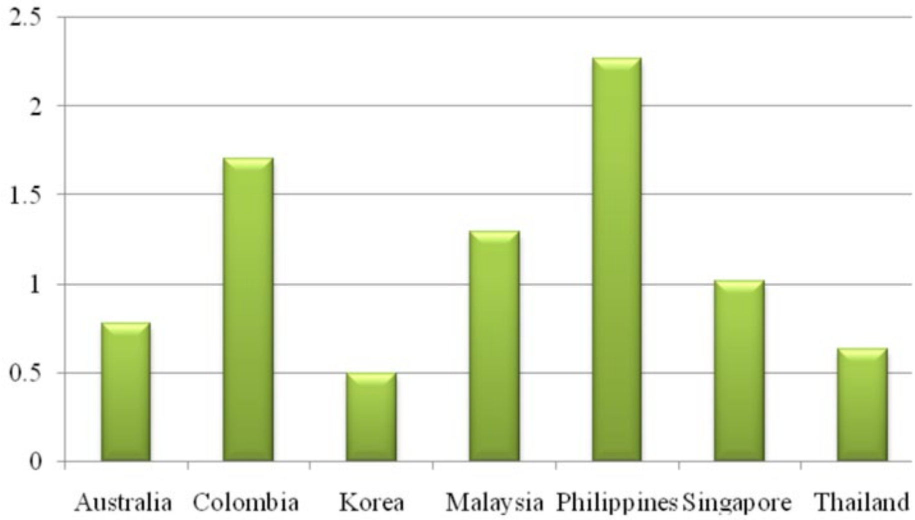
Source: Authors' compilation from the series of WIPO studies and combined with the results from Thailand's study.

To consider the overall contributions of copyright-based industries to the GDP, table 5.1 and figure 5.1 show that the numbers range from 3.4 percent to 10.3 percent. Among seven countries, the share of copyright-based industries to the GDP is the highest in Australia. The industries created about 10.3 percent of the GDP. While the copyright-based industries accounted for 8.7 percent for Korea. Thailand is in the sixth place, the industries generated 4.48 percent of the GDP. Among ASEAN member countries, Thailand's share of copyright-based industries to the GDP is lower than the others. The shares for Malaysia, the Philippines and

Singapore are about the same. Their shares are between 4.9 - 5.8 percent. As far as Colombia is concerned, its copyright-based industries generated only 3.4 percent, which is the lowest among all seven countries.

Regarding the contributions to employment, the copyright-based industries in these seven countries' contribution range from 2.85 percent to 11.1 percent. In terms of percentage, employment created by the Philippines' copyright-based industries is the highest compared to other six countries. Then it is followed by Australia whose share of employment in copyright-based industries is 8.0 percent. Malaysia ranks third, its employment in copyright-based industries accounted for 7.5 percent. In Colombia and Singapore, the employment in copyright-based industries represented 5.8 percent of total employment in their respective countries. Next to the bottom is Korea, the share of employment in Korea's copyright-based industries is 4.3percent. Moreover, in comparison among seven countries, the employment in Thailand is lowest, it represents only 2.85 of total employment. This result tells us that the benefit from copyright-based industries in Thailand is concentrated in a very small group of people. Therefore, more works need to be done with the partnership between the government and private sector so as to push forward and raise employment level in these particular industries.

Figure 5.2: Ratio of the Employment Contribution to the GDP Contribution



Source: Authors' calculation.

The ratio of employment contribution to GDP contribution reflects the degree of labour-absorption of copyright-based industries in the country. Figure 5.2 implies that the copyright-based industries in Thailand are less labour-absorptive than the same industries in five countries, namely Australia, Colombia, Malaysia, the Philippines and Singapore. The figure is only 0.64. Australia and Korea are in the fifth and last places, respectively. To consider the Philippines, the ratio of the GDP contribution to the employment contribution in the Philippines is 2.27, which is the highest among seven countries. In Colombia, the ratio is 1.71, which is the second highest. This is an evidence to show that copyright-based industries are the significant sources of employment in the Philippines and Colombia. Therefore, the governments' policy instruments to promote copyright-based industries would largely raise employment level. In turn, the benefits from the industries would be distributed to large groups of copyright-related employment.

Table 5.2: International Comparison of Economic Contribution of Copyright and Related Right Industries to GDP by Group

	Core Copyright	Interdependent Copyright	Partial Copyright	Non-Dedicated Support
Australia	7.30	2.00	0.40	0.70
Colombia	1.90	0.95	0.26	0.43
Korea	4.04	2.79	0.36	1.49
Malaysia	2.90	2.10	0.60	0.10
The Philippines	3.54	0.96	0.04	0.29
Singapore	2.85	1.76	0.09	0.97
Thailand	2.21	1.02	0.71	0.54

Source: The authors compiled the data from the series of WIPO studies and combined with the results from the Thai study.

As far as the comparative study on all groups of copyright-based industries' economic contribution by group is concerned, their shares of economic contributions are illustrated in table 5.2 and table 5.3. Among seven countries, the size of core copyright industries in Australia is the biggest. The industries generated 7.3 percent of the GDP. For Korea and the Philippines, the numbers are 4.04 percent and 3.54 percent, respectively. The size of Thailand's core copyright industries is lower than the other countries, but Colombia. These particular industries constituted 2.21 percent of the country's GDP. As for interdependent copyright, Thailand's share is in the fifth place. In the Philippines and Colombia, their interdependent copyright industries are less significant, the shares are 0.96 percent and 0.95 percent, respectively. The contribution of partial copyright industries in Thailand to GDP is more than that of other six countries. This group of industries generated 0.71 percent of the country's GDP. While Malaysia is in the second place and its share is 0.60 percent. As for non-dedicated support industries, the share in Korea ranks the highest. The number is 1.49 percent, which is far more than other six countries. The second in the rank is Singapore, the industries' contribution accounted for 0.97 percent of the GDP. Thailand is in the fourth place, the contribution represented 0.54 percent of the GDP. Malaysia's non-dedicated support industries contributed, in terms of percentage to GDP, less than those of other six countries. The number is only 0.1 percent.

Table 5.3: International Comparison of Economic Contribution of Copyright and Related Right Industries to Employment by Group

	Core Copyright	Interdependent Copyright	Partial Copyright	Non-Dedicated Support
Australia	4.97	1.80	0.57	0.65
Colombia	1.69	0.74	1.87	1.49
Korea	2.15	1.06	0.31	0.79
Malaysia	4.70	1.60	0.90	0.20
The Philippines	8.81	1.40	0.20	0.60
Singapore	3.64	1.24	0.18	0.75
Thailand	1.50	0.29	0.68	0.39

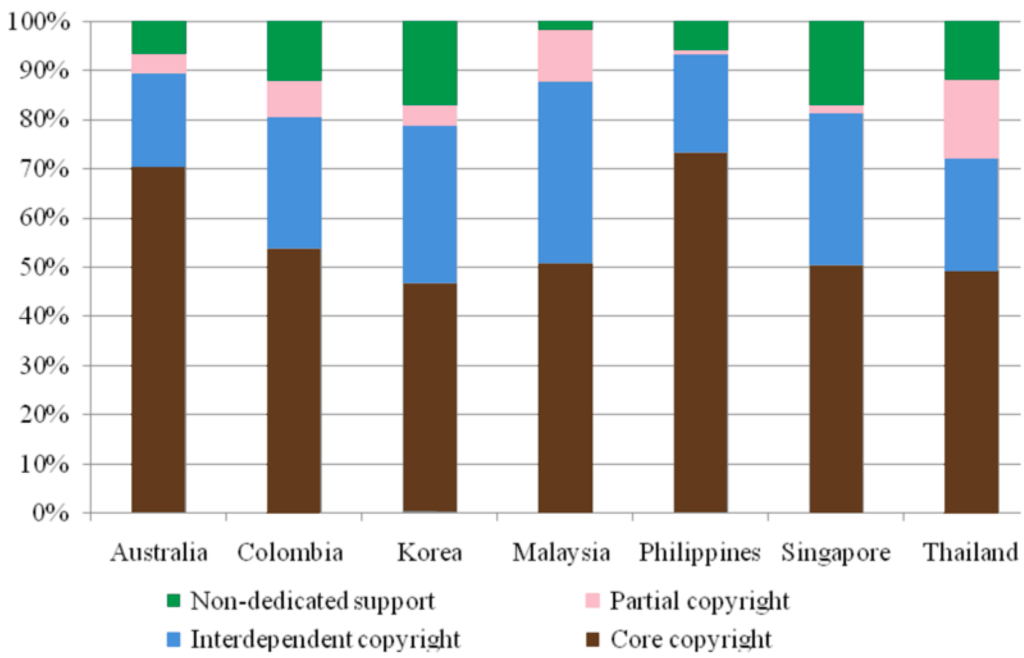
Source: The authors compiled the data from the series of WIPO studies and combined with the results from the Thai study.

With regard to the contribution of all four groups of copyright-based industries to employment, the employment in core copyright industries in the Philippines accounted for 8.81 percent, which is greater than the shares of the same industries in other countries. This confirms that the core copyright industries are the important sources of employment in the Philippines. As for Thailand, its share of employment of core copyright industries to total employment is 1.50 percent. This figure is very small in comparison with those of other countries. To consider the percentage of employment in interdependent copyright industries, the shares to total employment in respective countries range from 0.29 percent to 1.80 percent. The figure in Australia is the highest while again Thailand's share of employment in interdependent copyright industries is the lowest among seven countries.

Interestingly, Colombia creates bigger shares of employment in partial copyright industries and non-dedicated support industries than other countries. Its employment in partial copyright industries accounted for 1.87 percent in Colombia, whereas the shares range from only 0.18 percent to 0.9 percent in other countries. On this particular aspect, Thailand is in the third place; while Australia is in the fourth place. As for the non-dedicated support industries, the share of employment in Thailand is 0.39 percent, which is next to the bottom of the ranks. This figure is lower than those of Australia and the Philippines. Their non-dedicated support industries created the employment of 0.65 percent and 0.60 percent of national value, respectively. But it is higher than Malaysia's contribution, which represents only 0.20 percent of the country's employment.

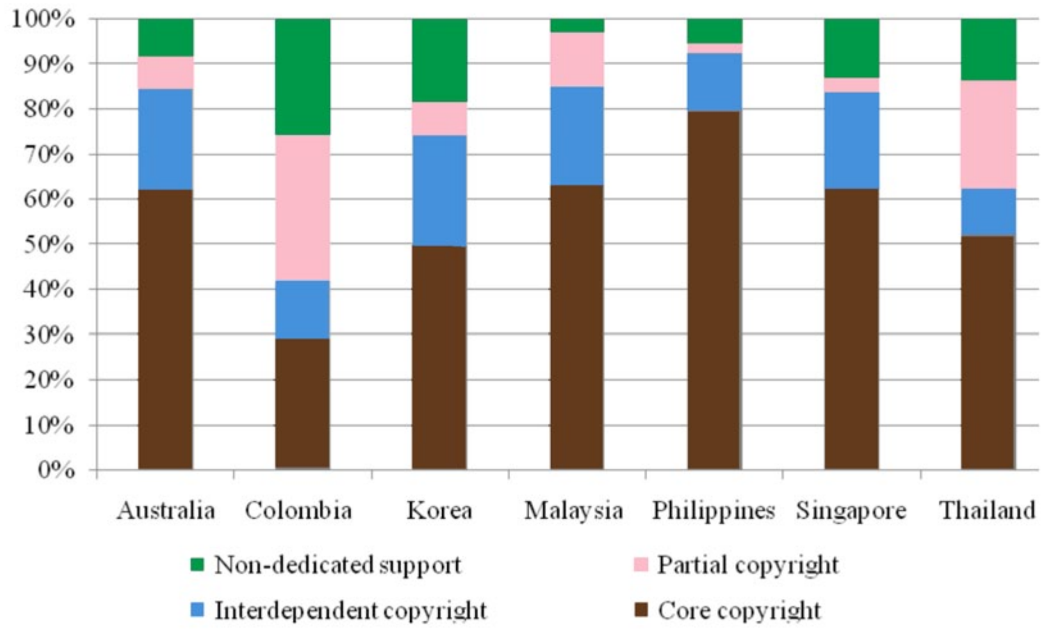
Figure 5.3 and figure 5.4 show the contributions of core copyright industries, interdependent copyright industries, partial copyright industries and non-dedicated support industries as percentages of total contributions of copyright-based industries to GDP and employment in Thailand and the other six countries. As shown in figure 5.3, the core copyright industries are the most important group of copyright-based industries in Australia, Colombia, Korea, Malaysia, the Philippines and Singapore as well as Thailand. The contributions of this group of industries range from 46 percent to 72 percent of total contributions of copyright-based industries to GDP. The share for Korea is the lowest, whereas the share for the Philippines is the highest among seven countries. Australia comes second followed by Colombia. The shares for these two countries are 70 percent and 56 percent, respectively. Such numbers for Malaysia, Singapore and Thailand are about the same. They are around 50 percent of total contributions of copyright-based industries to GDP of respective countries. This indicates that similar to other six countries, core copyright industries in Thailand are more significant than other copyright industries.

Figure 5.3: International Comparison of Composition of Copyright-Based Industries' Economic Contribution to GDP



Source: Authors' calculation based on WIPO studies

Figure 5.4: International Comparison of Composition of Copyright-Based Industries' Economic Contribution to Employment



Source: Authors' calculation based on WIPO studies.

Comparing interdependent copyright industries to other groups of copyright industries, this group is the second most important copyright-based industries in every selected country including Thailand. The shares of interdependent copyright industries to total GDP contribution of copyright-based industries range from 19.4 percent to 36.2 percent. Malaysia's interdependent copyright industries are more significant than those of other six countries. While Thailand ranks the fifth, the number for Thailand is 22.79 percent. As for the contribution of partial copyright industries, the degree of significance varies among seven countries. The share of partial copyright industries' contribution to total copyright-based contribution to GDP in the Philippines is only 0.82 percent, while it is 15.63 percent in Thailand. Generally speaking, partial copyright industries play an important role in Thailand compared to other countries.

Regarding the contribution of non-dedicated support industries, the result indicates that the role of these industries in Malaysia is minimal. Its contribution constitutes less than 2 percent of the total GDP contribution of copyright-based industries in Malaysia. The number is lowest in comparison to other six countries. However for Korea, this group of industries is more significant than those of other countries in terms of percentage to copyright-based industries' contribution to the GDP. The share is 17.1 percent. This is followed by Singapore, whose number is slightly lower and it is 17.0 percent. As far as Thailand is concerned, this group of industries is less significant than other groups of copyright-based industries. The contribution of non-dedicated support industries to total contribution of copyright industries accounted for 12 percent, which is about the same level as that of Colombia.

In terms of the contributions of all four groups in copyright-based industries to employment, figure 5.4 shows that Colombia has more diversified sources of employment in copyright-based industries, while the employment in copyright-based industries in the Philippines is concentrated on core copyright industries. In the Philippines, approximately 80 percent of copyright-based industries' workers are employed in core copyright industries. With regard to Thailand, the majority of Thai workers in copyright-based industries are employed in core copyright industries as well. However, the share of workers in core copyright industries to total workers in copyright-based industries is far less than that number in the Philippines. It is only 52.41 percent for the case of Thailand.

In relation to other groups of copyright-based industries, the group of partial copyright industries is considered another big source of employment. This industrial group employs 23.84 percent of total number of workers in copyright-based industries. Among seven countries, this particular group of industries in Colombia is the important industrial group that generates employment. Nonetheless the data does not display the same pattern in some countries, namely, Australia, Korea, Malaysia, the Philippines and Singapore. The shares of employment in partial copyright industries show 1.8 percent and 3.1 percent, respectively.

As far as the non-dedicated support industries are concerned, this industrial group in Colombia contributes to the employment more than those of other countries in terms of percentage to total employment in copyright-based industries. The share in Colombia is 25.7 percent. This is followed by Korea, its non-dedicated support industries employ approximately 19 percent of total employment of copyright-based industries. While this industrial group in Singapore and Thailand employ only 12.9 percent and 13.64 percent, respectively. The share of employment for Thailand ranks third in comparison to other selected countries. The lowest is Malaysia, the share is only 2.7 percent of total employment in copyright-based industries.

In summary, the comparative analysis of copyright-based industries shows that the economic contribution, in terms of percentage of copyright-based industries to GDP in Thailand is in the sixth place among seven countries. The share is 4.48 percent of the country's GDP. In Australia and Korea, the copyright-based industries are very important. Their shares to GDP rank first and second, respectively. As far as the contribution to employment is concerned, the employment created by copyright-based industries in Thailand is quite low in comparison to other six countries. The share to total employment is only 2.85 percent in Thailand, while it is 11.1 percent in the Philippines. To consider the degree of labour-absorption of copyright-based industries, such industries in Thailand are less labour-absorptive than those in Australia, Colombia, Malaysia, the Philippines and Singapore. Looking into more details on all four groups of copyright-based industries, the finding shows that the core copyright industries in Thailand are the most important industrial group among all four groups of copyright-based industries. While interdependent copyright industries are the second most significant. This is in line with the findings for all other six countries. In terms of employment creation, the data for Thailand and other countries except Colombia shows that core copyright industries create more employment than other three groups. However, for Thailand, partial copyright industries are the second most important employment source compared to the other three groups. This finding is not consistent with those of Australia, Colombia, Korea, Malaysia, the Philippines and Singapore.

6. Conclusion

In Thailand, copyrights and related rights are increasingly recognised as tools to fulfil the government's Creative Economy goal. Over the years, the copyright law has been modified several times to better fit modern technology. In terms of economic contribution, the copyright-based industries generated jobs for 1.02 million people. This represents 2.85 percent of total employment in the country. In addition, such industries created roughly 350.96 billion baht worth of total value-added. This is equivalent to 4.48 percent of Thailand's GDP. With regard to international trade, the copyright-based industries generated the export revenue of USD 3.95 billion to the country in 2004. The volume of exports has grown to USD 5.73 billion in 2006. These industries have experienced high export growth during the period between 2005 and 2008 with the average annual growth rate of 20.22 percent. The export data also shows that the export value of these industries accounted for 4.56 percent of the total value of exports from Thailand in 2006.

According to the WIPO Guide, the copyright and related rights industries are classified into four groups which include core copyright industries, interdependent copyright industries, partial copyright industries and non-dedicated support industries. Among the four groups of copyright-based industries, the group of core copyright industries is the group that has the biggest contribution to the country in terms of GDP contribution and job creation. Nonetheless, the group's export revenue was the lowest among all four groups, worth only USD 0.20 billion in 2006, which represented 0.17 percent of the country's export revenue. The group of interdependent copyright industries, on the other hand, ranked first in terms of export revenue. The group's export valued USD 3.68 billion in 2006, which accounted for 2.93 percent of the total of Thai exports.

When considering the percentage of contribution to the GDP, not surprisingly, the economic contribution of core copyright industries is the highest. This group of industries contributed the most in terms of value-added creation. Their contribution represented 2.21 percent of GDP and the employment in these industries accounted for 1.50 percent of the total employment in the country. The contribution of interdependent copyright industries to GDP comes second but the industries employ fewer workers than the other three groups do. This incidence could imply that the workers in interdependent copyright industries get good pays in comparison to the other three groups. Therefore, the policy instrumental in supporting copyright-based industries should be targeted on how to increase the payments in all three industrial groups, especially in the core copyright industries, and distribute them fairly. Currently, the Thai government has been on the right track in supporting "Creative Industries". This particular policy would potentially raise the demand for core copyright products and in turn, would eventually raise the payoffs of copyright workers. Moreover, the government and relevant private enterprises should play appropriate roles in supporting the development of Collective Management Organizations in the country. Collective Management Organisations will be a link between copyright owners and users of copyright works. Copyright owners will be ensured that they will receive remuneration for the uses of their works. The increase in their payoffs would give them incentives to continue creating high-quality copyrighted works.

The comparative analysis shows that the percentage of the contribution of copyright-based industries to the GDP in Thailand is relatively lower compared to the six selected countries, namely Australia, Colombia, Korea, Malaysia, the Philippines and Singapore. The industries contribution to employment is considered low as well. The copyright-based industries in other countries generate jobs in the range of 4.3 to 11.1 percent of their respective total employment. The findings also indicates that the copyright-based industries are less labour-intensive compared to other countries. This is reflected by the ratio of employment contribution to GDP contribution. Such ratio for Thailand is only 0.64, whereas, those of Colombia, Malaysia, the Philippines and Singapore range from 1.02 to 2.27. This evidence would raise the concern of policy-makers on which type of industries should be prioritised in supporting copyright-based industries. The choices of priority are either technologically dependent copyright-based industries or labour-dependent copyright-based industries. If the goal is to enhance the employment level of copyright-based industries, the government should place more focus on labour intensive copyright-based industries so that the level of employment in the country would be improved and the benefits of copyright-based industries could be shared more widely with the bigger groups of people. It is expected that the positive trends on economic contributions of these particular industries will carry on in the long run.

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Appendix 1 Conversion Table of Copyright and Related Right Industries' WIPO Classification, ISIC and SITC

WIPO	ISIC	Economic activity description	SITC
Core Copyright Industries	2211	Publishing of books, brochures and other publications	892.12
			892.13
			892.14
			892.15
			892.16
			892.19
			892.85
	2212	Publishing of newspaper, journals and periodicals	892.21
			892.29
	2213	Publishing the music	898.6
			898.61
			898.65
			898.67
			898.71
			898.79
	2219	Other publishing	892.41
			892.42
			892.83
			892.84
			892.87
			892.89
	2221	Printing	892.86
			642.31
			642.32
			642.33
			642.34
			642.35
			642.39
	2222	Service activities related to printing	726.35
	2230	Reproduction of recorded media	-
	5151	Wholesale of computers, computer peripheral equipment and software	-
	7221	Software publishing	-
	7229	Other software consultancy and supply	-
	7230	Data processing	-
	7240	Database activities and on-line distribution of electronic content	-
	7430	Advertising	-
	7494	Photographic activities	882.5
			882.6
	7499	Other business activities n.e.c.	-
	9112	Activities of professional organisations	-
	9211	Motion picture and video production and distribution	883.1

WIPO	ISIC	Economic activity description	SITC
			883.9
	9212	Motion picture projection	-
	9213	Radio and television activities	-
	9214	Activities by authors, music composers and other independent artists n.e.c.	896.11
			896.12
			896.2
			896.3
			896.4
			896.5
			896.6
	9219	Other entertainment activities n.e.c	-
	9220	News agency activities	-
	9231	Library and archives activities	-
	9249	Other recreational activities	-
Interdependent Copyright Industries	2101	Manufacture of pulp, paper and paperboard	251.2
			251.3
			251.41
			251.42
			251.51
			251.52
			251.61
			251.62
			251.91
			251.92
			641.1
			641.21
			641.22
			641.23
			641.24
			641.25
			641.26
			641.27
			641.29
			641.31
			641.32
			641.33
			641.34
			641.41
			641.42
			641.46
			641.47
			641.48
			641.51
			641.52

WIPO	ISIC	Economic activity description	SITC
			641.53
			641.54
			641.55
			641.56
			641.57
			641.58
			641.59
			641.61
			641.62
			641.63
			641.69
			641.71
			641.72
			641.73
			641.74
			641.75
			641.76
			641.77
			641.78
			641.79
			641.91
			641.92
	2429	Manufacture of other chemical products n.e.c.	431.1
			551.31
			551.32
			551.33
			551.35
			551.41
			551.49
			592.22
			592.23
			592.24
			592.25
			592.27
			592.29
			593.11
			593.12
			593.2
			593.31
			593.33
			597.21
			597.25
			597.29
			597.31

WIPO	ISIC	Economic activity description	SITC
			597.33
			597.71
			597.72
			597.73
			597.74
			598.41
			598.45
			598.5
			598.63
			598.64
			598.67
			598.69
			598.81
			598.83
			598.85
			598.89
			598.91
			598.93
			598.94
			598.95
			598.96
			598.97
			882.1
			882.2
			882.3
			882.4
			895.91
			898.41
			898.43
			898.45
			898.51
			898.59
	3000	Manufacture of office, accounting and computing machinery	726.55
			751.13
			751.15
			751.16
			751.18
			751.19
			751.21
			751.22
			751.23
			751.24
			751.28
			751.31

WIPO	ISIC	Economic activity description	SITC
			751.32
			751.33
			751.34
			751.35
			751.91
			751.92
			751.93
			751.99
			752.1
			752.2
			752.3
			752.6
			752.7
			752.9
	3230	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	761.1
			761.2
			762.11
			762.12
			762.21
			762.22
			762.81
			762.82
			762.89
			763.31
			763.33
			763.35
			763.81
			763.82
			763.83
			763.84
			764.21
			764.22
			764.23
			764.24
			764.25
			764.26
			764.81
			764.92
			764.99
	3320	Manufacture of optical instruments and photographic equipment	871.11
			871.15
			871.19
			871.41

WIPO	ISIC	Economic activity description	SITC
			871.43
			871.45
			871.49
			871.91
			871.92
			871.93
			871.99
			881.11
			881.13
			881.21
			881.22
			881.23
			881.24
			881.31
			881.32
			881.33
			881.34
			881.35
			881.36
			884.11
			884.15
			884.17
			884.19
			884.21
			884.22
			884.23
			884.31
			884.32
			884.33
			884.39
	3692	Manufacture of musical instruments	898.13
			898.15
			898.21
			898.22
			898.23
			898.24
			898.25
			898.26
			898.29
			898.9
	5149	Wholesale of other intermediate products, waste and scrap	-
	5151		-
	5152	Wholesale of electronic and telecommunications parts and equipment	-
	5159	Wholesale of other machinery, equipment and supplies	-

WIPO	ISIC	Economic activity description	SITC
	5233		-
	7123	Renting of office machinery and equipment (including computers)	-
	7129	Renting of other machinery and equipment n.e.c.	-
Partial Copyright Industries	173	Manufacture of knitted and crocheted fabrics and articles	655.11
			655.12
			655.19
			655.21
			655.22
			655.23
			655.29
			845.3
			845.4
			846.21
			846.22
			846.29
	1721	Manufacture of made-up textile articles	658.11
			658.12
			658.13
			658.19
			658.21
			658.22
			658.23
			658.24
			658.29
			658.31
			658.32
			658.33
			658.39
			658.41
			658.42
			658.43
			658.44
			658.45
			658.46
			658.47
			658.48
			658.51
			658.52
			658.59
			658.91
			658.92
			658.93
			658.99
			821.27

WIPO	ISIC	Economic activity description	SITC
			899.96
	1722	Manufacture of carpets and rugs	659.21
			659.29
			659.3
			659.41
			659.42
			659.43
			659.49
			659.51
			659.52
			659.59
			659.61
			659.69
	1810	Manufacture of wearing apparel	657.61
			657.62
			841.11
			841.12
			841.19
			841.21
			841.22
			841.23
			841.3
			841.4
			841.51
			841.59
			841.61
			841.62
			841.69
			842.11
			842.19
			842.21
			842.22
			842.3
			842.4
			842.5
			842.6
			842.7
			842.81
			842.82
			842.89
			843.1
			843.21
			843.22
			843.23

WIPO	ISIC	Economic activity description	SITC
			843.24
			843.71
			843.79
			843.81
			843.82
			843.89
			844.1
			844.21
			844.22
			844.23
			844.24
			844.25
			844.26
			844.7
			844.81
			844.82
			844.83
			844.89
			845.11
			845.12
			845.21
			845.22
			845.23
			845.24
			845.51
			845.52
			845.61
			845.62
			845.63
			845.64
			845.81
			845.87
			845.89
			845.91
			845.92
			845.99
			846.11
			846.12
			846.13
			846.14
			846.19
			846.91
			846.92
			846.93

WIPO	ISIC	Economic activity description	SITC
			846.94
			846.99
			848.11
			848.12
			848.13
			848.19
			848.41
			848.42
			848.43
			848.48
			848.49
	1920	Manufacture of footwear	851.11
			851.13
			851.15
			851.21
			851.22
			851.23
			851.24
			851.25
			851.31
			851.32
			851.41
			851.42
			851.48
			851.49
			851.51
			851.52
			851.59
			851.7
	2029	Manufacture of other products of wood	244.02
			244.04
			633.11
			633.19
			633.21
			633.29
			635.91
			635.99
			899.71
			899.73
			899.74
			899.79
	2109	Manufacture of other articles of paper and paperboard	641.93
			641.94
			642.21

WIPO	ISIC	Economic activity description	SITC
			642.22
			642.23
			642.41
			642.42
			642.43
			642.44
			642.45
			642.48
			657.35
			659.11
			892.81
	2610	Manufacture of glass and glass products	651.95
			654.6
			664.11
			664.12
			664.31
			664.39
			664.41
			664.42
			664.51
			664.52
			664.53
			664.71
			664.72
			664.81
			664.89
			664.91
			664.92
			664.93
			664.94
			664.95
			664.96
			665.11
			665.12
			665.21
			665.22
			665.23
			665.29
			665.91
			665.92
			665.93
			665.94
			665.95
			665.99

WIPO	ISIC	Economic activity description	SITC
			773.22
			813.91
	2899	Manufacture of other fabricated metal products n.e.c.	692.41
			692.42
			693.11
			693.12
			693.13
			693.2
			693.51
			693.52
			694.1
			694.21
			694.22
			694.31
			694.32
			694.33
			694.4
			697.41
			697.42
			697.43
			697.44
			697.51
			697.52
			697.53
			697.81
			697.82
			699.12
			699.13
			699.14
			699.21
			699.22
			699.31
			699.32
			699.33
			699.41
			699.42
			699.51
			699.52
			699.53
			699.54
			699.55
			699.61
			699.62
			699.63

WIPO	ISIC	Economic activity description	SITC
			699.65
			699.67
			699.69
			699.71
			699.73
			699.75
			699.76
			699.77
			699.78
			699.79
			895.11
			895.12
	3610	Manufacture of furniture	821.11
			821.12
			821.13
			821.14
			821.15
			821.16
			821.17
			821.18
			821.19
			821.21
			821.23
			821.25
			821.31
			821.39
			821.51
			821.53
			821.55
			821.59
			821.71
			821.79
	3691	Manufacture of jewellery and related articles	277.19
			277.21
			667.13
			667.29
			667.39
			667.49
			897.31
			897.32
			897.33
			897.41
			897.49
			961

WIPO	ISIC	Economic activity description	SITC
	3694	Manufacture of games and toys	894.21
			894.22
			894.23
			894.24
			894.25
			894.26
			894.27
			894.29
			894.31
			894.33
			894.35
			894.37
			894.39
	5131	Wholesale of textiles, clothing and footwear	-
	5232	Retail sale of textiles, clothing, footwear and leather goods	-
	7130	Renting of personal and household goods n.e.c.	-
	7421	Architectural and engineering activities and related technical consultancy	892.82
	9199	Activities of other membership organisations n.e.c.	-
	9232	Museums activities and preservation of historical sites and buildings	-
Non-dedicated Support Industries	61		-
	62		-
	511		-
	513		-
	515		-
	519		-
	521		-
	523		-
	525		-
	601		-
	602		-
	5139		-
	5233		-
	5239		-
	6301		-
	6302		-
	6303		-
	6304		-
	6309		-
	6411		-
	6412		-
	6420		-
	7240		-

Appendix 2 Copyright Factor

The copyright factor is the number which reflects the concentration of copyright related activities in each group of copyright industries in a particular country and it is to be used in computing and adjusting the value of the economic contribution of WIPO copyright industries to the national economy. The factor values vary from one industry to another in a country and may be different between countries. More specifically, the core copyright industries are the sectors which are most relevant to copyright and in effect have the highest value of copyright factor among all four groups which normally is set to be equivalent to 1. It implies that the activities, production and revenue in core copyright industries are attributable to copyright and related rights and their activities by 100 per cent.

With respect to the other three groups of copyright industries, namely, the group of interdependent, partial and non-dedicated support industries, there is an assumption following the WIPO series of similar studies that copyright and related rights do not result in the entire amount of those three copyright industries' production value, as well as revenue. Consequently, their copyright factors are less than one and will be used as a deflator to be multiplied by the value of production, employment as well as export value to obtain the economic contribution of the aforesaid three copyright industries. In this case, there need to be a process to investigate the copyright factor to be used as such deflator. This study mainly acquires the copyright factors from 3 sources: 1) the survey 2) the Malaysian study and 3) the estimation according to the WIPO Guide.

The copyright factors which are utilised to adjust the value-added and employment are derived from the survey from the Thai entrepreneurs whose business related to the copyright industries, including the interviews with the copyright related associations. The research team received the survey results from 100 copyright and related rights companies within 5 business associations. Even though the number of the companies who responded seems to be small compared to the overall population of the copyright companies in Thailand, the research team acquired the necessary information and pertinent answers to conclude the copyright factors for each group of copyright industries from the questionnaire questions. However, a copyright factor of non-dedicated support industries is derived from the methodology suggested in the WIPO Guide[22] because the number of respondent sample companies in this group of industries in Thailand is very limited. The formula for the copyright factor of the non-dedicated support industries is written below. The nominator is the aggregate of value-added of the group of core copyright industries, the group of interdependent copyright industries and the group of partial copyright industries. The denominator is the country's GDP less the summation of the value-added of the sub-sector wholesale and retail and that of the transportation sub-sector.

$$\text{Copyright factor of non-dedicated support industries} = \frac{\text{value-added (core+interdependent+partial)}}{\text{GDP} - \text{value-added (wholesale and retail+ transportation)}}$$

[22] WIPO (2003) p. 59 "a ratio has been calculated of the sum of the value-added for all other copyright-based industries (core, interdependent and partial) to the GDP less the transportation and trade sectors."

The copyright factor of each sub-sector of copyright-based industry is presented as follows:

	Description	Thai Copyright Factor (%)
2.1	TV sets, Radios, VCRs, DVD Players, Electronic Game Equipment	20
2.2	Computer and Equipment	22.50
2.3	Musical Instruments	30
2.4	Photographic and Cinematographic Instruments	40
2.5	Photocopiers	20
2.6	Blank Recording Material	20
2.7	Paper	15
3.1	Apparel, Textiles and Footwear	15
3.2	Jewellery and Coins	30
3.3	Other Crafts	30
3.4	Furniture, Fittings and Furnishing	30
3.5	Household Goods, China and Glass	0.38
3.6	Wall Coverings and Carpet	1.08
3.7	Toys and Games	40
3.8	Architecture, Engineering and Surveying	30
3.9	Interior Design	30
3.10	Museum	10
4.1	General Wholesale and Retail	4.94
4.2	General Transportation	4.94
4.3	Telephony and Internet	4.94

Appendix 3 Questionnaire on Economic Contribution of Copyright-Based Industries to the Thai Economy

Name of Contact Person: ______________________________

Telephone No. ______________________________

Part 1: Company Information

A1. Year of Establishment: ______________________

A2. Number of Years in Copyrights Activities: __________

A3. Ownership (Please tick one only):

_____ Wholly local _____ Majority local

_____ Wholly foreign _____ Majority foreign

_____ Equal share of Foreign and Thai

A4. Primary Business Activity: ______________________________

(Classified into one among four of the followings:

_____ Core copyright _____ Interdependent copyright

_____ Partial copyright _____ Non-dedicated support)

A5. Detailed business activity

1. Produce copyrighted works
   a. 100 percent of the product and/or services are produced on your own
   b. Majority of copyrighted works are produced on your own and partly are outsourced
   c. Partly of copyrighted works are produced on your own and the majority are outsourced
   d. 100 percent of the product and/or services are outsourced
2. Distribute and sale of copyrighted works
   a. Distribute and sell product and/or services of copyrighted works directly and collect royalty fee and other fee on your own
   b. Distribute and sell product and/or services of copyrighted works directly and outsource other companies to collect royalty fee and other fee for your company
   c. Outsource other companies to distribute and sell product and/or services of copyrighted works; and collect royalty fee for your company
3. Produce and distribute copyrighted works
4. Related to producing media and distribution of copyrighted works
5. Copyrighted works is attached with the products and services of your company
6. The product and/or services of your company support the distribution of copyrighted works
7. Others: please specify ______________________________

A6. Knowledge in copyright and related rights

	Question	Answer	
1.	Do you know that the owner of the copyrighted works possess the exclusive right in his/her copyrighted works?	Yes	No
2.	Do you know that copyright could be transferred to the designated person wholly or partly?	Yes	No
3.	Do you know that making business and/or reaping benefit from the copyrighted works of other people is copyright infringement?	Yes	No
4.	Do you know that duration for the protection of copyrighted works is until the end of the fiftieth year after the death of the author?	Yes	No

Part 2: Estimation of copyright and related rights' contribution to the company

B1. How important is copyright in the daily operations of your firm?

(Please circle one of the following options below.)

1. Very Significant 2. Significant

3. Slightly Significant 4. Insignificant

B2. Turnover/Revenue

B2-1. How much is the company's turnover/revenue in 2009?

B2-2. How much is the turnover/revenue in the company from copyright and related rights in 2009?

B2-3. What is the proportion of the turnover/revenue from copyright and related rights to the total revenue of the company in 2009?

B3. Employment : Workers

B3-1. How many workers do work in your company in 2009?

B3-2. How many workers in the company are working closely in producing and/or distributing copyrights works and related rights in 2009?

B3-3. What is the proportion of the number of workers who works closely with copyright and related rights to the total workers in the company in 2009?

B4. Please specify the difficulties related to employing and managing the workers who works closely with copyright and related rights (if any).

1. High turnover rate 2. Inadequate knowledge and skill

3. Inadequate workers 4. Brain drain

5. Other, please specify _____

B5. How do you think of the adequacy of the personnel who works closely with copyright and related rights (if any).

1. Adequate

2. Inadequate, please specify the specific kind of personnel ____________________________________

B6. Expenditure

B6-1. What is the proportion of the expenditure for the workers who works closely with copyright and related rights to the total expenditure of the company in 2009?

B6-2. Does your company set the budget for public relation to promote the turnover/revenue from copyrighted works and other related rights in 2009?

Part 3: Other opinion on Copyright and related rights

C1. Does the company need any support from the government?

(Please describe.)

____

____

____

____

____

____

C2. How do you think of the trend in copyright-based industries in Thailand?
(Please choose one of the following options below.)

1. Growing _____ % as compared to the previous year
2. Same as last year
3. Slowing down _____ % as compared to the previous year

(Please describe the reason.)

____

C3. Please specify the difficulties in running business in copyrighted based industries.

____

C4. In your opinion, what percentage of turnover in the company of the same kind as you is attributable to copyright or creative activities?_______ %

Thank you very much for your cooperation to this questionnaire.