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EDITORIAL TEAM

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EDITORIAL NOTE ON THE VOLUME 13, ISSUE 2, 2024

Dr. Ming-Liang Lai
Associate Professor,
Graduate Institute of Intellectual Property, National Taipei University of Technology (Taiwan)

This journal has been included in SCOPUS and WESTLAW citation databases since 2015. It presents that the steady efforts of the editing team and all authors in maintaining the quality of the publications and increases the visibility of the articles in the related academic field. We would like to express our appreciation to all the authors, reviewers, editors, advisors of the journal. The editorial board welcomes submissions from legal, management, or interdisciplinary areas related to intellectual property issues from all over the world. We will not limit the scope of the journal to any single jurisdiction, which can confirm the articles in the journal covers all aspects.

In this issue, the selected articles are from different jurisdictions and areas of intellectual property rights. The first article in the issue is about "Action Research: Integrating the Fair Trade Act Legal Education through Theatrical Teaching and ORID Methods". Next article is to discuss "Copyright Laws and Settlement of Music Copyright Infringement Case in the Court of Nepal". Then, the next article is about "Strategy in Developing a Community Model and Preparing a Specification Book of Geographical Indication Protection for Tropical Apple Variety of Batu City, East Java Province". Another article is about "The Application of Artificial Intelligence Technology in Analyzing Sustainable Green Energy Patent Information". Last, the article is about "Management Models for Achieving the Reasonable Measures Requirement of Trade Secret Protection Using Blockchain". In addition to expressing our gratitude to all contributors who made this issue possible, we strongly hope you keep to support us in the future. Your help can maintain the goal and quality of the journal.

Dr. Ming-Liang Lai
Associate Professor,
Graduate Institute of Intellectual Property
National Taipei University of Technology (Taiwan)

CALL FOR PAPERS

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Action Research: Integrating the Fair Trade Act Legal Education through Theatrical Teaching and ORID Methods

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ABSTRACT

This research was motivated by the researcher's experience in the Fair Trade Act course offered each academic year in the law school where the researcher teaches. The researcher found that the legal elements of various types of market competition behaviors are too complicated and abstract for students to understand. Second, it is difficult for students to understand the difference between similar restrictive and unfair competition behaviors and the legal elements. Third, the Fair Trade Act is not a required subject in the bar exam, and students' interest, attitude, and motivation to learn this subject need to be improved. Due to the above research motivation, the researcher used theatrical teaching and ORID methods as innovative teaching strategies to solve these problems. The research method is action research in this study, and the researcher used audio-visual recordings of the class and on-site observations of the teaching, quantitative and qualitative questionnaires and interviews after class as research data and collection tools to analyze. Finally, the researcher found positive outcomes in this research and she concluded the theatrical teaching and ORID methods are effective teaching methods for the Fair Trade Act legal education.

Keywords: theatrical teaching method, ORID method, the Fair Trade Act, restrictive conduct, unfair competition

[1] Dr. Lin is an associate professor in Graduate Institute of Financial and Economic Law in Feng Chia University in Taiwan. She teaches Fair Trade Act in her institute and has tried innovative teaching skills in her class several times in order to improve legal education and increase students learning interest. This research project is sponsored by MOE (Ministry of Education) Teaching Practice Research Program in 2022. The research project number is PSL1100264.

I. Motivation and purpose of the research

The research was motivated by the researcher's teaching experience in the "Fair Trade Act" course offered each academic year at the law school where the researcher teaches. The purpose of the law is to provide a free competition environment for enterprises, to maintain the order of trade, to ensure fair competition, and to promote the stability and prosperity of the economy. Therefore, the study of the Fair Trade Act is very important. The researcher found that the legal elements of various types of market competition behaviors, such as "restraints of competition" and "unfair competition", are very complicated and abstract, which are not easy for students to understand during teaching. For example, the constitutive elements of concerted action in the restraints of competition are so complex and abstract that students have difficulty in distinguishing and understanding whether there is joint pricing between enterprises or merely "concerted action" pricing with objectively the same price. Without understanding the constitutive elements, it is difficult to determine whether the conduct that prevents fair competition in the market has violated the Fair Trade Act which is not permitted by law. From the above, it is clear that understanding what constitutes an infringement of competition is fundamental to the study of the Fair Trade Act. Second, it is difficult for students to understand the difference between similar restraints of competition and unfair competition behaviors and the legal elements. In addition, Fair Trade Act is not a required subject in the judicial examination, and students' interest, attitude, and motivation to learn this subject also need to be improved, which is the problem that the researcher wants to solve in the field of fair trade law teaching. The above shows the importance and impact of this study.

II. Literature review

The literature review of this study includes three main innovative teaching methods in legal education commonly discussed in Taiwan and abroad: 1. a review of the literature on innovative teaching in legal education; 2. a review of the literature on psychodrama and theatrical teaching; and 3. a review of the literature on ORID method.

A. Innovative Teaching in Legal Education

1. **"The Socratic Method"** is a method in which the teacher asks the students about the content of actual court cases, such as the relevant legal theory, the main arguments for and against, and the students answer, which is a kind of inspirational dialogue and communication. In this way, the

students gain the ability to apply their knowledge of the law, argue and think[2]. The Socratic Method of teaching is said to have originated from the Western ethical and moral philosopher Socrates, who debated philosophical issues with students in the streets and alleys of Rome in this way, also known as "Socratic Interrogation." It is the most common method of teaching in American law schools apart from the traditional lecturing method and is often seen in Hollywood movies depicting law school teaching scenes (e.g., the comedy movie "Legally Blonde").

2. **"Mock Trial"**: this method of teaching puts students in a courtroom setting where there are judges, plaintiffs, defendants, witnesses, juries, and other roles and seats that occur in a real courtroom. Students learn legal theory and thinking through role exchange, scene memory, and case demonstration in the mock courtroom, and learn how to present legal arguments in the courtroom for defense and attack[3]. Legal education in a mock courtroom is an excellent contextual education because students can learn legal knowledge and experience the solemn atmosphere of a courtroom through realistic scenarios.

3. **"Legal Clinic"** is a form of education that focuses on the training of prospective students for the legal profession, in which students practice as attorneys to help clients (most likely in real cases) resolve legal problems and develop their ethics as attorneys[4]. Legal clinic education can be described as a practical exercise for law school students before they enter the practice world, sometimes in partnership with legal support foundations or non-profit organizations that provide underfunded legal assistance to disadvantaged clients and train students to experience real cases and even real courtroom arguments.

4. **Problem- based Learning (PBL)**: the Problem-based Learning or the case teaching method is inherited from Dean Landell of Harvard Law School, which advocates the use of case materials in combination with teaching topics, emphasizing teacher-student interaction and student active learning to further develop high-level understanding and ability to solve legal problems[5]. The advantage of the case teaching method is that it allows for the integration of practical legal decisions or current issues with theoretical instruction at the College, and the incorporation of these real-world materials allows students to apply the law to their lives and make good use of legal reasoning. The proponents also believe that now that Taiwan has inherited foreign law for many years, it should gradually develop local and international legal cases to facilitate the teaching of all legal subjects. The case teaching method can achieve student-centered teaching so that students can understand the multiple solutions of a case. Students can understand the relationship between legal norms and social reality through cases. Teachers and students can increase the effectiveness of learning through interaction so that students' active learning and legal norms criticizing abilities are also enhanced[6].

Each of these teaching methods has its own merits and is different from the traditional methods of teaching to arouse students' interest in learning, but each has its own drawbacks. The successful implementation of the Socratic method and mock trial teaching depends on students' thorough preparation and reading of legal case materials before class. Otherwise, the teacher may be the only one to ask questions but no one to answer them, or the role-play in the mock trial will only be based

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[2] Shyr Shrhau (石世豪), *Legal Education with Duo Faade of Profession and Humanities* (大學法學教育應開展專業與人文雙重面向—法學教育在「為司法而改革」之外的應有意涵), 29 (1) National Taiwan University Law Journal (台大法學論叢), 179-213 (1999).

[3] Ge Tianbo (葛天博), *Zai Peiyang Fake Syuesheng Falyu Sihwei Guocheng Jhong di Yingyong: Yi Jyuese Changjing Ancing Sanwei Goucheng wei Fensi Sucai* (在培養法科學生法律思維過程中的應用—以角色、場景案情三維構成為分析素材), 30 (5) Journal of Hotan Teachers College (和田師範專科學校學報), 16-17 (2011).

[4] Zhang Qiang, Wang Qingzhan (張強、王清展), *Fasyue Jiaoyu Jhong Anli Jiaoxue di Shihshih Lujing Yangjiou* (法學教育中案例教學的實施路徑研究), 27 (4) Journal of Hebei Normal University for Nationalities (承德民族師專學報), 95-97 (2007).

[5] Chen Huixin (陳惠馨), *Tan Anli Jiaosyue Fa yi Boli Wawa wei Li* (談案例教學法—以玻璃娃娃為例), 149 The Taiwan Law Review (月旦法學雜誌), 106-120 (2007).

[6] *Id.*

on the arguments of the legal case parties. The shortcoming of legal clinic education and case teaching method is that students who lack practical and life experiences can hardly empathize with the real feelings of the parties, let alone make intelligent judgments and defenses. In view of this, the researcher proposes to use "theatrical teaching" as an innovative teaching model for legal education, hoping to use the characteristics of theatrical teaching to achieve what the recent legal education reform calls for - cultivating liberal-spirit legal people who possess an understanding and empathetic, and tolerant heart.

B. Literature Review on Psychodrama Method and Theatrical Teaching

Theatrical teaching is a developing teaching method that combines the elements and techniques of psychodrama in the field of counseling and theater elements in the theater classroom. The first promoter in Taiwan of the theatrical teaching method is Professor Chi-Chu Chou of the Department of Economics at Feng Chia University, and it was first applied to business administration education. The "psychodrama" method, which originated in the field of psychiatry and was initiated by Austrian psychiatrist Jacob Levy Moreno, began as a form of psychotherapy using elements of drama, mostly in groups. It is applied in learning situations where members practice role-playing to learn professional knowledge through spontaneity and creativity. The psychodrama director uses a small stage or space, some simple props, and special acting techniques to induce sensitivity and creativity, and to guide members to explore issues and to interact experientially with themselves, others, and the environment in situations and contexts in order to achieve learning, growth, and therapy[7].

The basic elements of psychodrama include the director, stage, understudy, and supporting characters[8]. The application of these elements in theatrical teaching can make it possible for the teacher to act as a teacher-director to assist students in interpreting legal case situations so that students can learn to create legal case situations independently and freely. The teacher-director must have the ability to empathize, be tolerant, and understand the problem in depth as a psychological counselor does, and must also have the skills to use psychodrama to guide students in presenting legal cases in order to stimulate them to rethink the problem and find a solution. In addition, teachers can guide students to set up the stage and lead them into the theater classroom, so that students can feel as if they are the subjects of the case.

The theatrical teaching method has proven to develop students' corporate ethical decision-making skills,[9] increase students' willingness to learn, enable students to learn to solve problems on their own, stimulate students' creativity, improve students' communication and physical expression skills, allow students to practice leadership and motivation, and enable students to develop active learning.[10] Those who have applied the theatrical teaching innovative teaching method in legal education have found that it "enhances interest in learning, improves the ability to integrate legal knowledge, facilitates transpersonal thinking and training in situ responses, and fosters empathy,

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[7] Chou Chichu（鄒繼礎）, *Applying Psychodrama Methods in Promoting Competency of Business Ethical Decision Making*（運用心理劇方法培養學生之企業倫理決策能力）, 6 Journal of Humanities and Applied Science（人文與應用科學）, 35-45 (2013).

[8] Chen Shuhui（陳淑慧）, *Sinlijyu Jiaosyue Yingyong*（心理劇教學應用）, in *Humanities and Applied Science*（人文與應用科學）105-108 (Zhai Benrui 翟本瑞、Xu Weijie 徐偉傑、Chen Shuhui ed., 陳淑慧編著, 2018).

[9] Chou, *supra* note 7, at 35-45.

[10] Chent Mengyu（鄭孟育）, *Theatre of Management: Applying Psychodrama-based Modality in Teaching Management*（管理學劇場：應用心理劇方法於管理學教學）, 43 Journal of Overseas Chinese University (僑光學報), 155-166 (2020). C. H. Lin, *Play What, Like What! The Application of Psychodrama in the Business Management Education in Universities- Marketing Management an Example*, 4 (1) ASIAN J. EDUC. & SOC. STU., 1-7 (2019).

tolerance, and multiple thinking perspectives.[11]"

C. Literature Review on ORID Method[12]

ORID method is a discussion method that the researcher learned when she participated in the "Sharestart" workshop conducted by Mr. Hui-Cheng Chang. The ORID method provides students with a continuous process of reflection to test their understanding of the text or course content. Students are asked about their self-study of the text or course content through four levels of questioning: O Objective, R Reactive, I Interpretive, and D Decisional. The researcher believes that the application of the ORID method in this project can guide students:

On the Objective, factual level: This ensures that students focus on the case topic, understand the factual background of the case, and focus on the core. Questions to understand the objective facts of the case include: What did you see? What details did you notice? What happened to the personnel, case, time, location, and objects? What was the legal dispute?

On the Reflective level: Questions about feelings and reactions are used to examine students' reactions to cases and are questions that evoke internal emotions and feelings. These include: How do you feel? What made you feel moved or surprised or sad or happy? What did you find more difficult or easier to deal with? What struck you as impressive? What comes to mind? How did the plaintiff's or defendant's or judge's reasoning make you feel?

On the Interpretive level: questions about meaning, value, and experience are used to ask students' personal life experiences and link to the interpretation of the legal case. They can be connected to questions that explain the aforementioned feelings such as: Why were you moved or surprised or saddened or pleased by the reasoning of the judge's testimony or the part of the factual background of the case? What contributed to this outcome? What relevant law or legal reasoning came to your mind? How do you feel about the case or the verdict? What are some important insights? What are the implications of the decision?

About Decisions and Actions level: are questions that propose solutions, applications, impacts, or new directions which can guide students to identify new decisions and actions. Questions to identify new resolutions and actions include: What can be changed or how can the decision be reversed? What can be done next? What decisions need to be made? What additional resources or support will be needed to accomplish the goal? Or what actions will be needed to reverse the

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[11] Christine Meng-Ling Lin（林孟玲), *Applying Theatrical Teaching Project to Legal Education*（用演的比說的好懂？--以劇場教學專題實施法學教育), 23 (2) Curriculum & Instruction Quarterly（課程與教學季刊), 230-235 (2020).

[12] Hung Kaitang（黃凱螳), The Study of ORID Applied to Reflective Learning of Student Teachers（焦點討論法應用於師資生反思學習之研究), Institute of Curriculum Instruction and Technology master thesis, National Chi Nan University（國立暨南大學課程與教學與科技研究所學位論文）(2019). Hung Juwei（洪如薇), *From New Teaching Methods to Implement the Idea of College Chinese Courses*（由割捨到回歸—從教學策略的調整談大學國文教學理念及其實踐之可能）, 12 (1) Journal of National United University（聯大學報）, 157-91 (2015). Wei Iting（魏翊庭), Service Desigh for Innovating Learning Activities of College Students: An Example of NTHU University（創新大學生學習活動之服務設計—以國立清華大學圖書館服務為例), Institute of Service Science master thesis, National Tsing Hua University（清華大學服務科學研究所學位論文）(2014). Guo Jincheng, Ma Xiufen（郭進成、馬琇芬), Syuesihda yu Shihsheng Dueihua: yi Syuesihda wei Waigong Satier wei Neili rang Jiaoshih Chengwei meiyou Bianjie de Wutai（學思達與師生對話：以學思達為外功、薩提爾為內力，讓教室成為沒有邊界的舞台）(2020). Lee Wenchun（李文君), The Effect of Integration Disciple's Rule into Character Education Teaching on theFilial Piety & Fraternal Love Behavior and the Caring Behavior among Second Graders（弟子規理念融入品德教育之教學對國小二年級學童的孝悌行為與關懷行為影響之研究）, Mater Pragram in Life Education master thesis, National Taipei University of Education（國立台北為育大學生命教育與健康促進研究所碩士論文）(2012).

decision? How will you apply this case in the future?

III. Research Questions

The research questions of this study include:

A. Exploring the behavioral patterns and legal elements of restrictive and unfair competition using the innovative theatrical teaching method and the ORID method. How does this innovative teaching method enhance students' understanding of the behavioral patterns and legal elements of restrictive and unfair competition in the Fair Trade Act?

B. Whether it can help students effectively understand the difference between restrictive and unfair competition behaviors and the legal elements.

C. Whether the innovative theatrical teaching method and ORID method can effectively enhance students' motivation and interest in learning the Fair Trade Act.

IV. Research Design and Methodology

A. Research subjects and ethics

The target subjects of this project is the students of the Graduate Institute of Financial and Economic Law of Feng Chia University and the venue for data collection is the theater classroom on the basement 1st floor of Chung Chin Building of Feng Chia University. Unlike traditional classrooms with desks and chairs, the theater classroom is an open wooden floor classroom with floor-to-ceiling mirrors, folding chairs, soft cushions, and Japanese chairs, which can be used freely by students and teachers. In terms of research ethics, all students sign the "Informed Consent" form before the course is conducted to understand the retention period and usage plan of the research data. The participants are free to decide to participate and withdraw from the course without affecting their grades of the course. There is no commercial benefit derived from this study.

B. Research Methodology and Research Process

The research methodology for this project adopts an action research approach to teaching and learning. Since the research problem is the awareness of the problems found in the teaching field, the researcher hopes to solve the actual educational problems through action research. This study used observations, audio-visual recordings, student feedback questionnaires, and post-lesson qualitative interviews to allow the researcher to continuously reflect and obtain more in-depth research information to feed back into the curriculum design. The action research methodology was developed from Lewin's "action training research" to assist community workers in studying problems and deciding on actions using scientific methods[13]. The action research approach is widely used in education because of Corey, the president of Columbia College of Education, who advocated for the use of action research to assist teachers in solving problems in teaching practice by continuously

[13] Cai Cingtian（蔡清田）, Jiaoyu Singdong Yanjiao Sinlun（教育行動研究新論）（2013）.

revising and evaluating their decisions and actions based on pedagogical research[14]. The advantage of the action research approach is that it breaks away from the dichotomy between theory and practice and avoids the gap between theory and practical problem-solving.[15]

The learning experience gained through role-playing and experiential learning in theatrical teaching echoes the "Learning by Doing" advocated by Dewey, an educationalist. The role-playing and experiential learning feedback in curriculum design also fits into the four steps of Kolb's Experiential Learning Cycle [16] : Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation. The application of the concept of the Experiential Learning Cycle is the "planning, acting, observing, reflecting, and planning again" process[17]. In addition, in this study with the spirit of action research, the data collected in each theatrical teaching action is reflected by the researcher and applied to the next teaching module. After the reflection on the implementation of one teaching module, possible structural adjustments and modifications are made to the next teaching module. The flow chart of the study is as follows.

Figure 1: Research flowchart

[14] *Id.*

[15] Wu Minglong（吳明隆），*Jiaoyu Singdong Yanjiou*（教育行動研究），4 (3) Gongjiao Sihsyun Jikan（公教資訊季刊）25-42（2001）。

[16] Kolb, D.A. (1984). Experiential learning. Englewood Cliffs, NJ: Prentice Hall. Chapter 2 and Chapter 3.

[17] *Id.* at *12.*

C. Evaluation Tools (Learning Effectiveness Evaluation Tools)

Learning effectiveness evaluation tools include:

1. Audio-visual recordings of the theatrical teaching class and the teacher's notes to record if the student's performance can distinguish the difference among legal concepts.

2. Pre- and post-tests including quantitative and qualitative questionnaires to understand the learning effectiveness of the theatrical teaching and the ORID method.

3. Student interviews at the end of the course.

D. Research Data Collection Tools

In addition to the audio-visual recordings of the classroom and on-site observations of the teaching, the following tools are used to collect data for this study: 1. Students are asked to perform confusing legal concepts to distinguish whether they really understand the differences between legal concepts. 2. Since this study does not compare the traditional teaching method, a quantitative and qualitative questionnaire will be developed, and the students' responses to the questions after the class will be used as the data for the analysis of the study. The questionnaires also include the students' experience and satisfaction with the implementation of the theatrical teaching and ORID methods. 3. The project also uses IBM SPSS statistical software to conduct the statistics and analysis of the questionnaire results, and analyzed the quantitative questionnaire and qualitative data by teaching action research. The quantitative questionnaires on the effectiveness of the theatrical teaching and ORID methods of the Fair Trade Act are organized and collected from the most disagreed to the most agreed level of 1~5. The qualitative questionnaires and interview records are used to describe, analyze and interpret important concepts, such as exclusive possession, oligopoly, business combination, joint behavior, collusive joint behavior, joint price increase behavior, etc., to identify and classify the relationship between the concepts to determine the context and present the analysis results.

V. Teaching and research results

A. Teaching Process and Results

The teaching method and teaching objectives of this project are: through the innovative model of theatrical teaching (theater classroom + teaching props + various cloths + psychodrama method + activity chairs) and the ORID method, students will have a clearer understanding of the legal elements of various types of behaviors that prevent fair competition in the market as regulated by the Fair Trade Act, and increase the professional knowledge related to the Fair Trade Act.

The course is divided into three teaching modules, and the selected legal cases are: Module 1 " Monopolistic Enterprise and Business Mergers and Acquisitions"; Module 2 "Concerted Action and Obstruction of Fair Competition"; and Module 3 "False Endorsement of Advertisement". The case selection criteria are based on topics that are relevant to students' daily lives. The teacher assigns textbooks and case law readings for students to pre-study and write theater scripts for uploading to the LINE group for pre-study and exchange of ideas.

(1) Teaching Module 1 " Monopolistic Enterprise, Business Mergers and Acquisitions" (2022/03/08, 2022/03/22)

Case 1, "OO Company Directly Prevented Other Businesses from Participating in Competition by Unfair Methods" Monopolistic Enterprise Theatrical Teaching. This case involves the act of "monopoly" which is a restriction of competition. The students were divided into two groups: Group A consisted of the airline company, the Complainant, Xiaojiu, and the disposed company, CPC, while Group B consisted of the Fair Trade Commission. The students were seen to nominate their director to rehearse, and deliver their lines and laws on their own, using cloth and folding chairs (20220308 video recording). Monopoly is defined in Article 7 of the Fair Trade Act: The term "**monopolistic enterprise**" as used in this Act means any enterprise that faces no competition or has a dominant position to enable it to exclude competition in the relevant market. Two or more enterprises shall be deemed monopolistic enterprises if they do not in fact engage in price competition with each other and they as a whole have the same status as the enterprise defined in the preceding paragraph. Article 7 must be judged on two legal elements. The first element is "the monopoly position of the Disposee in the domestic aviation fuel supply market". The teacher applies the ORID method and draws the students' attention to the factual aspect of the case: "It is true that the Disposee, CPC, is in a monopoly position. In terms of the regional market of CKS Airport, as of August 2000, only the Disposee was in the market, and no other oil supplier had been opened at the terminal. In addition, before the construction of the oil pipeline for other businesses was completed, there were no oil depots near the airport for oil storage (20220308 Hsiao-00 AV record).

The second element: "The Disposee obstructed other businesses from competing by means of refusal to quote." The students used different dialogues to show that the Disposee was the monopolistic enterprise in the domestic aviation fuel supply market, but on January 3, 2000, the Disposee wrote a letter to CKS Airport on the ground that all of its domestic airline fuel customers had already signed aviation fuel contracts with it for the year 2000, which was a means to exclude the Complainant from the competition by means of refusal to quote. The company said, "Xiaojiu, all of CKS Airport's domestic airline fuel customers have already signed fuel contracts with us for next year, so we will not provide quotes to your company. Xiaojiu: You have violated the Fair Trade Act and we will report you to the Fair Trade Commission! (hang up the phone angrily)" (20220308 Wang00, Tsai00 video record). There is no major obstacle to the understanding of this case, except for a slightly complicated reason for the decision of the Fair Trade Commission to the disposition. Therefore, the teacher guides the students to focus on I (Interpretive) to understand the values, rationales and beliefs of the Fair Trade Commission on the Fair Trade Act, and the investigation revealed the following reasons: Reason 1: The international and domestic routes of CKS Airport are located at different aprons and have different fueling spigots, but the other transmission, storage and filling facilities are the same. The Disposee admitted that the same group of personnel were engaged in the refueling business of international and domestic routes at CKS airport. Currently, the international routes have been calculated based on wholesale prices, and the difference between domestic and international routes is mainly due to "tax". Therefore, the Disposee's argument that it is difficult to calculate the cost is not valid because the refining and transportation costs of the international and domestic routes at CKS Airport are the same. Reason 2: The Disposee refused to quote the price for the reason that the price structure of the fuel must be considered in the place of delivery and whether the difference in price. The Complainant is currently operating at the CKS Airport and the operators are using the oil pipeline into the airport tanker site as the delivery point, which is a trading practice and convention. The Complainant only requested a quotation from CKS Airport depot B and did not involve the issue of regional differences in pricing.

The Disposee, by virtue of its exclusive oil supply status, delayed the quotation on the pretext that there was no longer any reason why the quotation could not be made after the counterpart of the competitor had been informed of the quantity of oil to be purchased and the place of delivery. However, the Disposee still delayed the quotation and took the opportunity to solicit the counterpart of the competitor to deal with itself, and even replied that there was no need to make the quotation after the transaction was completed, which involved abusing its exclusive position and using unfair

methods to solicit the possible counterpart of the competitor to deal with itself in order to prevent it from participating in the competition. Therefore, the Fair Trade Commission found that the Disposee's refusal to quote the Complainant affected the Complainant's opportunity to deal with Company A, which in turn affected the Complainant's opportunity to deal with other airlines, and even affected the opportunity of other refueling companies to enter the domestic airline business, resulting in the Disposee's continuing to maintain its dominant position in the domestic airline refueling market. As a result, the Fair Trade Commission ruled that the Disposee had violated Article 10(1) of the Fair Trade Act ［Article 9(1) of the current Act］（20220308 Hsiao-00 AV record）by denying the Complainant's request for a quotation without justification, in order to maintain CKS Airport's existing market position in the domestic airline refueling business during 1999. The legal reasoning involved in this case is a bit complicated but the teacher used the ORID method to make students organize and crawl through the facts and reasons of the case, which was quite effective and students were able to grasp the key arguments and reasoning.

In the "Business Mergers and Acquisitions" module, a case study of "Merging of Far EasTone with Asia Pacific Business" was used. First, the warm-up technique to learn about the students' pre-study status by using the case of a possible merger of Taiwan Star and Taiwan Mobile was used (the merger had not yet taken place). The teacher used the "spectrogram" technique to show the students' pro and con opinions by pulling up a long piece of cloth, and those who fully agreed with the Fair Trade Commission (including allowing the merger and additional burden) were two. Students said the advantages of the merger are that vendors can reduce costs, such as the construction of base stations, and absorb customers.The disadvantage is that consumers lose the space for low-cost options (for example Taiwan Star, Asia Pacific Telecom and other low-cost telecommunications service providers) (20220322 Chang-00 AV record). In the theatrical teaching, the teacher divided the students into two groups: "Far EasTone's merger with APT". The teacher used the ORID method to ask the students the focus of the case: O factual level, why did Far EasTone merge with APT? The case was based on the combined effect of the merger, the combined use of bandwidth and spectrum, the doubling of subscriber market share (4 million plus 5 million consumer subscribers), and the savings in base station construction costs. The teacher made the students discuss in three groups: the Fair Trade Commission, the industry, and the consumer protection group, and the students summarized the opinions of the groups. The consumer protection group asked if there will be benefits returned to consumers after the merger. (20220322 Hsu 00 video recording). The Fair Trade Commission member Yang 00: We will ensure that consumer rights are not affected (20220322 Yang 00 video recording). Business owners will definitely adjust the construction related to hardware and software in order to retain customers and consumers should wait and support (20220322 Chang 00 video recording). The teacher observed that in the merger case, students were able to grasp the different voices of different groups with different positions.

In the second act, teacher applied theatrical teaching's "role exchange" skill: three students served as members of the Fair Trade Commission. Lee 00 pointed out: the Fair Trade Commission can actually make a different disposition, such as requiring the merged company to regularly report network speed and coverage each year, and the merging did help consumers (20220322 Lee 00 AV record). Lastly, Yang thought the Fair Trade Commission can make the industry to report annually whether there is a positive promotion of the impact on the consumer before and after the business merger and whether there should be more specific protection of consumer rights rather than just big corporate mergers to the extend of too big to fail. But unfortunately, the Fair Trade Commission only says that they have to submit the meeting records regularly and there are no other specific requirements to protect the rights of consumers (20220322 Yang 00 AV record). The student also reminded that the rights of consumers are not the duty of the Fair Trade Commission which will mainly look at the impact on the market situation on a merger, especially will not intervene to resolve individual consumer disputes (20220322 Cheng 00). After the implementation of the theatrical case, the spectrogram was reset so that students could express their opinions and unexpectedly found that two students changed their original positions and opinions. Xiao said, "I support the merger and think there should be no burden disposition because from the perspective of Far EasTone, agree to common

frequency and common network and give burden disposition, agree to business merger but also limit the provision of technology, so the incentive is not really big. I agree to allow the business to combine but do not agree to further complete merger unless the two smaller companies' financial situation cannot be continued (20220322 Xiao 00 AV record) Another student said, "If we take the position of Asia Pacific, I am in favor of the merger. The advantage is that we can share the same frequency and the same network (20220322 Cai 00 audio and video recordings). Yang also said that if we take the position of the Fair Trade Commission, I am in favor of the merger (20220322 Yang 00 video recording).

Teacher's observation: The students in this class were quite active, whether it was about reading the case or their own ideas that differed from the Fair Trade Commission's decision. They were able to discuss in small groups and had different opinions from the authority. During the implementation of this teaching module, most of the students were not familiar with the techniques of theatrical teaching and the key points of the ORID method. So the teacher spent more time promoting the use of the innovative teaching method. As a result, in the next teaching module, during the group pre-study stage, the teacher first prompted the timing and questioning points of the introduction of innovative teaching method in the case so that the students could grasp the main points of the case more easily (20220322 Teacher's Notes).

（2）Teaching Module 2 "Concerted Action, Acts that Prevent Fair Competition" (2022/04/12, 2022/04/26)

In the "Four Major Convenience Stores Coffee Joint Price Increases Case," the Fair Trade Commission's decision and the Taipei High Administrative Court's ruling differed with the former concluding that it was a concerted action and the latter denying that it was merely a parallel action of companies' price increase. Therefore, the teacher first asked the students with a spectrogram whether they supported the position of the Fair Trade Commission or the Taipei High Administrative Court. Xiao 00: The students who supported the position of the Fair Trade Commission said, "It is concerted action. There are non-legal experts in the Fair Trade Commission so that they can focus on the market and economic aspects. For example, coffee beans and milk are subject to contracts, and futures are contracted for one year at a time. The four major convenience stores see the market of raw milk or coffee beans rising, so it does not make sense (20220412 Xiao 00 AV record)". The students who stand in the middle of the spectrogram think that there is no particular preference, depending on which angle is from. If it is the position of the companies, they support the increase but the position of consumers does not support it (20220412 Cai 00 AV record).

During the drama, after the students who played the role of the four bosses of the four major convenience stores explained the reasons for the coffee price increase, the teacher guided the students to think about whether Louisa Coffee (which is priced between the low price and the high price) would follow the price increase of the coffee of the four major convenience stores. The teacher divided the students into three groups and asked them about the application of Interpretive: Group A thought that if the Fair Trade Commission had already imposed a disposition, should Louisa Coffee follow suit? Should the same product market be considered when evaluating marketing strategies? Group B thought that to maintain quality, price increases should not be ruled out. The consumer group said, "Consumers have no room to make comments when prices are raised and are forced to accept them." The consumer group further criticized that the promotion behavior of convenience stores after price increases cannot be an excuse for concerted action because consumers will accept the price as long as it is good and cheap and the reasoning of the High Administrative Court is unreasonable. In addition, regarding whether there is a subjective intent to raise prices jointly under Article 14 of the Fair Trade Act, the members of the Fair Trade Commission believe that although the industry has reasonably stated that it is not a concerted action, there are many signs of price increases at the same time, which are very suspicious. Member Xiao: "Why are the consistency of the price increase of coffee items and the consistency of the time of the adjustment so perfect? The four owners could not clearly explain that the price list was changed consistently within a short period of time." Committee

member Liao concluded that 7-11 is the leading convenience store to lead the concerted action, and the disposition is based on the proportion of the turnover. (20220412 AV record)

After the theatrical teaching of the case, the teacher used the spectrogram again to find out whether the students' stance had changed. Only one student, Xiao, who originally took a middle ground, said that after the theater lesson, he changed his position to agree with the Fair Trade Commission's decision and thought that the industry was acting as a concerted price increase (some students did change their previous position after the role play). After the teacher used the "role exchange" technique (the members of the four major convenience stores and the Fair Trade Commission exchanged their positions), she observed that two students, after playing the role of convenience stores to the Fair Trade Commission, thought that the coffee price increase was reasonable and did not constitute a concerted action, and that the joint price increase of $5 was reasonable for the industry. Only one other student thought that it constituted concerted action (20220412 AV notes), indicating that the original role played may have constituted a preconceived notion (20220412 observation recording).

Due to the worsening of the pandemic, the students were forced to switch to online teaching in the "Foodpanda Fair Competition Infringement Case" on April 26, 2022. So they could only open the camera and use their voices and expressions to explain their principles and emotions. The teacher replaced the spectrogram opinion survey with a five-point scale (from most disagree to most agree) and used the ORID method to deepen students' discussion and learning whenever possible. The case involved Article 25 of the Fair Trade Act: “In addition to what is provided for in this Act, no enterprise shall otherwise have any deceptive or obviously unfair conduct that is able to affect trading order.” In factual part O of the case, the students were able to point out two suspected violations of the law by Foodpanda. First, the Foodpanda delivery platform requires the platform price to be the same as the actual price in the restaurant. Second, Foodpanda forced its partner restaurants to turn on the customer pick-up function, allowing customers to pick up their food from the restaurant and restricting restaurants from rejecting "customer pick-up" orders. The teacher used the ORID method to prompt the students to discuss the issue. In the part of R's feelings and reactions, the students would have completely different feelings depending on their positions. Restaurant owners were dissatisfied with the double exploitation as they had to pay membership fees to the Foodpanda platform and were restricted to match the prices of the platform meals to the restaurant menu. If it was the position of consumers, there was nothing wrong with being able to enjoy cheap and convenient meals (20220426 Ke00, Tsai00 video record). The two different positions result in different feelings and reactions.

Teacher Reflection and Feedback: Before the implementation of the module, the teacher used a web-based group to provide tips on the case introduction using theatrical teaching techniques and ORID method so that students could better grasp the key points of learning and improve the effectiveness of legal learning through innovative teaching techniques. However, the implementation of this teaching module was temporarily interrupted by the force majeure of the pandemic, which tested the response abilities of teachers and students. After all, the effect of online theater is not so real and effective as that of physical theatrical teaching, but the teachers and students finally gave full play to their creativity and ingenuity and switched to the online theater after the interruption of physical teaching. In addition to maintaining the writing of the case script, the computer video camera was used to match the changes in expressions and voices, and a five-point scale survey was used instead of spectrograms to achieve the effect of uninterrupted learning.

(3) Teaching Module 3 "False Endorsement for Advertisement" (2022/05/10)

The controversy in the "Bamboo Charcoal Underwear False Advertisement case" is that the effectiveness of bamboo charcoal underwear and general underwear has yet to be verified, but there are many advertisements exaggerating its therapeutic effects, claiming that wearing bamboo charcoal underwear can eliminate toxins, feces and excess fat, as well as physical therapy functions, improve scoliosis, and reduce two kilograms after wearing it for a week...etc. In addition, celebrities are also used to assist in endorsements to enhance credibility and attractiveness. The case involves Article 21 Paragraph 1 of the Fair Trade Act: “No enterprise shall make or use false or misleading representations or symbols on the matter that is relevant to goods and is sufficient to affect trading

decisions on goods or in advertisements, or in any other way make it known to the public." The teacher asked the students to think about the following: What are the controversial points of the inaccurate advertisement with asymmetrical information? After summarizing, the students said: 1. Is the underwear made of bamboo charcoal really beneficial to human health? 2. The public lacks professional knowledge and validation techniques for bamboo charcoal-related products. So they should consider the asymmetry of product information between the two sides of the transaction, which may lead to wrong purchasing behavior. 3. 3. Is it true that the manufacturer has actually made the material certification of bamboo charcoal underwear? 4. Is it true that the manufacturer claims to have obtained inspection and certification from credible institutions or companies such as the Industrial Technology Research Institute and Nanya Corporation? In theatrical teaching, the teacher guides the students in the role of the members of the Fair Trade Commission to think about the I meaning and value of the case, i.e., what are the reasons related to Article 21 of the Fair Trade Act? The students mentioned several important reasons. Regarding the part of the advertisement that is not true, whether the underwear made of bamboo charcoal is really beneficial to human health is based on clinical trials in professional fields such as physiology and medicine but the general public lacks professional knowledge and validation techniques for bamboo charcoal related products. Consumers can only know the validation and testing results claimed by the manufacturer from the advertisement, which creates a serious asymmetry in product information between the two parties. In addition, the manufacturer not only hides the fact that there is no bamboo charcoal validation, but also claims that the product has been tested and certified by the Industrial Technology Research Institute and Nanya Corporation, and emphasizes that the product has been certified to have more than ten health-promoting functions which are common false advertising features of advertisers.

As to whether the Disposee (celebrity endorser) and the advertiser have the subjective "intention" of knowing and realizing the content of the false referrals？ The teacher used slides to review the so-called "intent" in criminal law, which refers to the perpetrator has "knowledge" of all the objective constituent elements and has the "will" to achieve the constituent elements, including the "direct intent" in which the perpetrator knows that the act is a legal constituent and still urges its realization, and "not necessarily intent" in which the perpetrator subjectively foresees the realization of the constituent elements and still allows them to happen without violating his or her intent. The student, Yang 00, pointed out that the subject of the advertisement and the Disposee, in this case, had misunderstood the content of the referral certificate and caused misunderstanding among consumers. It is also clear that the subjective knowledge and intent to cause it to happen is consistent with the concept of "willfulness" (20220510 audio/video recording). The teacher asked about the reasons for penalizing the disposited celebrity. The student (in an exaggerated tone) pointed out that the Disposee's endorsement of the product as a celebrity created a link between the product in question and the Disposee's personal image, and increased consumers' trust in the product in question, which had an important link and causal relationship to the occurrence of the false advertisement. Therefore, the celebrity endorser and the advertiser have met the requirement of "Persons who act jointly and intentionally in the commission of an act in breach of duty under administrative law" as stated in Article 14 of the Administrative Penalty Act. Student further pointed out that celebrity-endorsed advertisements are favored because the public believes that celebrities have used the product and are willing to endorse it with their fame, but the Disposee has no records to prove its effectiveness during the use of the product in question. Both Nanya and Industrial Technology Research Institute have indicated that they have not provided any quality certification or guarantee for the disputed products or the textile products processed and produced by any manufacturer in other markets which is hardly justified by the claims made in the advertisement (20220510 Xiao 00 video record).

B. Teacher's Teaching Reflections

In this study, the innovative teaching method of "theatrical teaching and ORID" was introduced into the legal education of the Fair Trade Act and the teachers' teaching reflections are as follows:

1. **Spectrogram techniques and role exchange are the most commonly introduced techniques**

There are a series of elements and techniques that can be used in the "Innovative Teaching and Learning Model for Theatrical Teaching". However, there are two techniques that the researcher has found to be most commonly used and most suitable for use in legal cases: the use of spectrogram technology and role exchange techniques. The spectrogram technique, also known as social gaging, involves pulling a long strip of cloth in the middle of the classroom and asking students to stand to the left, right, center, center-left, or center-right according to their views and positions. This technique allows students to express more diverse views than just positive and negative views. However, due to ethnicity and culture, the results of the student interviews suggest that students are reluctant to be asked questions or express their opinions, and may avoid taking the leftmost and rightmost positions in order to avoid being asked questions by the teacher (20220919 Xiao 00). The teacher must encourage students to express their positions and opinions. The technique of "role exchange" can be used in almost any jurisprudence case because jurisprudence cases are only controversial when there are two opposing positions. However, role exchange allows students to "change positions and minds" within a short period of time and it can train students' reactive thinking, verbal expression, and overall concern for the problem. The student also thought that it could help them think holistically and that it was a good use of psychodrama skills (20220919 Chang 00).

2. **The ORID method helps students think about a legal case holistically**

ORID method is a questioning method that enables students to think about a legal case in four dimensions: objectivity, reactivity, value, and decisiveness which is another good questioning method that helps students to think about legal cases in a focused way. With the application of this method, teachers found the following reflections: traditional legal education makes the legal person's habitual thinking rational, cerebral, and unemotional, thinking that only such decisions are professional decisions of the law. But it ignores the fact that "human decisions are often shaped by the emotions of the moment". Therefore, the practice of Reflective allows students who participate in the ORID questioning method to try to unleash their feelings and elaborate on the reactive, emotional aspects of the facts of a legal case. This feature has made it possible to train "a legal person who takes into account emotion, reason, and law" instead of the common negative evaluation of legal people, such as the cold-hearted lawmakers and dinosaur judges. Based on the above findings and reflections, it may be possible to further examine how the emotional reactions of the adjudicators in certain highly emotional legal cases, such as sexual assault, domestic violence, sexual harassment, and homicide, affect legal decisions. This also allows traditional legal education to begin to reflect on whether the importance of human feelings and reactions in the examination of legal cases should be re-examined.

C. Student learning feedback (including: assessment of student learning outcomes, assessment of teaching experiences, and analysis and evaluation of research results)

1. Quantitative analysis (quantitative questionnaire: 1 very unaware, 2 unaware, 3 average, 4 aware, 5 very aware)

a. Teaching Module 1: Monopolistic Enterprise Business Combination

Test Statistics[a]		
	Z	Asymptotic Significance (Two-sided)
Question 1: What do you know about the monopolistic enterprise of the Fair Trade Act?	-1.218[b]	.223
Question 2: What do you know about the difference between the monopolistic enterprise of the Fair Trade Act and the exclusiveness in economics?	-1.192[b]	.233
Question 3: Do you know what the market definition of monopolistic enterprise means?	-1.469[b]	.142
Question 4: Do you know that the Fair Trade Act does not prohibit monopoly status?	-1.268[b]	.205
Question 5: What do you know about the prohibitions of the Fair Trade Act on monopolistic enterprise?	-1.005[b]	.315
Question 6: What do you know about the business combination as defined by the Fair Trade Act?	-.861[b]	.389
Question 7: Do you know what is the so-called combination type of the Fair Trade Act?	-.240[b]	.811
a. Wilcoxon Signed Rank Test b. According to negative rank		

According to the WILCOXON Signed Rank Test (hereinafter), there is no significant difference ($p<.05$) for the above 7 questions. It is not clear if there is any specific improvement in students' learning outcomes before and after the course. However, according to the student interviews, when the first and second teaching modules were conducted, students were not familiar with the teaching method and the way of filling out the questionnaire, and they did not have enough time to fill out the questionnaire, so they did not have time to think about the results of filling out the questionnaire (20220919 蕭 00 廖 00).

b. Teaching Module 2: Concerted Action and Obstruction of Fair Competition

Test Statistics[a]		
	Z	Asymptotic Significance (Two-sided)
Question 1: What do you know about concerted action in Fair Trade Act before and after this course?	-1.890[b]	.059
Question 2: Do you know the difference between concerted action and parallel behavior in Fair Trade Act?	-1.823[b]	.068
Question 3: Do you know the main reason for the occurrence of business concerted action?	-1.857[b]	.063
Q4: Do you know the legal effects of illegal concerted actions?	-1.730[b]	.084
Q5: What do you know about the main purpose of the concerted actions of enterprises?	-1.633[b]	.102

Question 6: Do you know the case of the Four Major Convenience Stores Coffee Price Increases Case	-2.000[b]	.046
Question 7: Do you know the so-called Leniency policy of the Fair Trade Act?	-1.890[b]	.059
a. Wilcoxon Signed Rank Test b. According to negative rank		

According to the WILCOXON Signed Rank Test (hereinafter), only question 6 shows a significant difference (p<.05). Students had specific learning outcomes and were very impressed with the "Four Major Convenience Stores Coffee Price Increases Case". Other questions do not show any specific improvement in students' learning outcomes before and after the course. However, according to the student interviews, when the first and second teaching modules were conducted, students were not familiar with the teaching method and the way of filling out the questionnaire, and they did not have enough time to fill out the questionnaire, so they did not have time to think about the results of filling out the questionnaire (20220919 蕭 00 廖 00).

c. Teaching Module 3: "False Endorsement for Advertisement"

Test Statistics[a]		
	Z	Asymptotic Significance (Two-sided)
Question 1: Before and after this course, do you know that false advertising as regulated by the Fair Trade Act refers to advertising that is false or misleading?	-2.460[b]	.014
Question 2: Do you know the difference between exaggerated advertisements and false advertisements?	-2.460[b]	.014
Question 3: What do you know about the dissemination of false advertisements?	-2.333[b]	.020
Question 4: Do you know the principles of judging false advertisements?	-2.807[b]	.005
a. Wilcoxon Signed Rank Test b. According to negative rank		

According to the WILCOXON Signed Rank Test (hereinafter), this teaching module has 4 questions with significant differences (p<.05). Students' learning outcomes in Module 3 have been significantly enhanced through the introduction of innovative teaching methods.

d. Pre- and Post-Test of the Fair Trade Act Teaching Action Research

Test Statistics[a]		
	Z	Asymptotic Significance (Two-sided)
Question 1: Before this course, can you master the skills of theatrical teaching?	-3.133[b]	.002

Question 2: Do you think the inclusion of an understanding of case contexts in legal education would be more helpful to the understanding of the Fair Trade Act?	-2.449[b]	.014
Question 3: Have you heard of the ORID Method before or after this course?	-2.510[b]	.012
Question 4: Before and after this course, what are your motivations and interests in learning about the Fair Trade Act?	-.828[b]	.408
e. Wilcoxon Signed Rank Test f. According to negative rank		

Four questions in this questionnaire are introduced by the innovative teaching method of "theatrical teaching and ORID methods" to observe students' learning effectiveness using pre-test and post-test.

According to the WILCOXON Signed Rank Test (hereinafter), this teaching module has 4 questions with significant differences ($p<.05$). The pre-test and post-test of students in the Fair Trade Act teaching show that there is a significant increase in learning effectiveness through the introduction of innovative teaching methods. There is also a significant difference in students' positive response to the intervention of the innovative teaching method of "Theatrical Teaching and ORID Method".

2. Qualitative Analysis

a. Two innovative teaching methods do facilitate the learning of the Fair Trade Act

The first research question of this study is to find out how theatrical teaching and ORID methods enhance the learning of the Fair Trade Act. The second research question is: Do innovative teaching methods help students understand the various normative behavioral patterns and differences in legal elements of the Fair Trade Act?

Students' post-class feedback questionnaires are mostly positive. In terms of theatrical teaching, students are able to point out that "role-playing" and "role-exchange" are helpful in understanding the issues of the Fair Trade Act. "Thinking differently" enabled them to fully understand the ideas of different positions and facilitated their learning (20220610 A, E, K). Some students are able to pinpoint that theatrical teaching is an application of psychodrama techniques "using elements and techniques of psychodrama to integrate contextual learning and understanding through the interaction of performance and role exchange experiences (20220610)".

In terms of ORID method, prior to its implementation at the beginning of the semester, students literally understand that ORID is a way to focus on a particular issue without losing focus and to explore it in a coherent manner (20220610 B, C, H, J, K, L). After one semester of practice, students mostly agree that the ORID method can be used to focus on different levels of questions in a case to understand the core of the problem (20220610 A, L), and a few students can specifically point out that the discussion aspects of the ORID Method include: O observing external objective facts, R internal feelings and reactions, I interpreting meaning, value, experience, and D is decision and action (20220610 (E, J). The selection of cases that students seem to think are closely related to their own consumer behaviors make them more impressive for learning, for example, the Four Major Convenience Stores Coffee Joint Price Increases Case (20220610 C, E), the case of Merging of Far EasTone with Asia Pacific Business (20220610 C), and the bamboo charcoal underwear false advertisement case (20220610 J).

The key to the success of innovative teaching is that both teacher and students should step out of their comfort zones, especially students should be able to take the initiative to preview the course

content, participate in discussions and perform actively in class. The teacher can provide the syllabus and all the teaching examples at the beginning of the semester so that students can have time to practice. Most of the students agree that through the process of active preview and performance, they have a deeper impression of the cases they have participated in and a better understanding of the applicable laws. They are also able to distinguish between the types of competition restriction and unfair competition, and the differences in the legal elements, which increase their long-term memory instead of forgetting them. In order to strengthen the cooperation of students, some students suggest that the teacher can first explain the specific provisions of the law, and then students will have a better impression: "It is suggested that teachers can first teach the provisions of the theatrical cases so that students have the concept of the provisions, and then demonstrate them. No matter which role is changed, it is better to reinforce the provisions and strengthen the impression first, and then demonstrate them (20220610 C)."

b. Motivation and interest in learning can be mutually reinforced

The third question of this study is to find out whether these two innovative teaching methods are effective in enhancing students' motivation and interest in learning. The first thing to clarify is motivation and interest in learning are two different concepts. Motivation is the reason for wanting to learn in the first place, while interest in learning is the drive to continue to learn actively. However, students indicate that by introducing innovative teaching methods, students' motivation and interest in learning can be mutually enhanced. Innovative teaching will stimulate students to think, which increases motivation, and vice versa, which is just rote memorization. If there is no interest, but there is motivation, it may also trigger interest. For example, if students are shown a picture book to stimulate thinking, they will be engaged and then ask, "What's next?" and interest is generated. Motivation and interest are mutually reinforcing, so that motivation can continue. For example, the first week was difficult because it was a completely unexplored teaching style. However, knowing the teacher's questions and teaching style will deepen the basic impressions, and when the legal cases are slowly demonstrated, they are afraid to write a lot at first. After seeing the first group performance, their motivation is aroused, and then they think about how they can perform, and the students' competitive spirit is aroused so that they want to pursue better performance. Seeing so many assignments, how we can induce motivation from fear and dread? (20220919Chang00) Some students reported that they found their own essay topics in this class and would actively read related news and materials after the class. Motivation and interest are mutually reinforced (20220919 Liao00).

c. Taking advantages of group discussions

Since the students this semester are very united and many students with rich practical experience are willing to share, most of them think that the group discussion is very fruitful, not only to get more diversified viewpoints but also to stimulate the viewpoints that they do not think of before. On the other hand, they also enrich their experience in the industry and learn a lot about the current situation of the industry. This is what the students mentioned: students can hear different ideas among themselves during the group discussions and they can learn different knowledge from students in different fields (20220610 H). Another point to note is that in order to avoid too much discussion, the teacher or teaching assistant can join the discussion and focus on the main points. The grouping can be managed through online communities, such as LINE or FACEBOOK groups so that students can connect with each other after class to strengthen the connection after class (20220919 H).

VI. Suggestions and Reflections

A. Teacher should encourage students to express their own opinions and facilitate

group discussions.

Due to the cultural differences between the East and the West and the national nature of the Taiwanese people, students are not accustomed to expressing their opinions in front of the public, not to mention the more extreme disagreements. For example, when using the spectrogram technique, students are shy to stand on the far left and far right of the spectrogram. There are two possibilities: students do not like to express their extreme opinions to show that they are different from others, or students are afraid that they will be questioned if they stand at the far ends of the spectrum and do not want to be questioned by the teacher and forced to express their opinions. The teacher can verbally encourage the students to speak more, use other incentives to encourage the students to speak more or ask questions randomly, so that not only the students on either side of the spectrum will be asked. The unity of the participating class is high and most of the students are enthusiastic. Many of them also have practical experience, so many interviewed students indicated that the group discussions are very effective, whether it is the pre-course discussion, the script writing, or the discussion after the play, they can facilitate the exchange of diverse opinions and may change their original views. In particular, students with practical experience can contribute their own practical experience to enrich the learning of legal cases. Many students who have practical experience in business provide valuable advice to other members of the group. However, the possible drawback of group discussions is that they are not focused but too diffuse. The teacher can arrange for the group leader or teaching assistant or teacher to listen to the discussion and intervene in a timely manner to focus on the main points of the discussion (20220919 廖 00).

B. Trying to design ORID's questions on jurisprudence cases for specific contexts

To let students focus on the key mastery of jurisprudence cases, students mostly believe that the ORID questioning method allows them to focus on the context of legal cases, especially on the R, reactive and emotional aspects of case facts, which are unfamiliar to legal educators and learners. Legal practitioners may also rarely find that their emotional responses have a significant impact on decisions about judicial practice. In response to this finding, the teacher can try and encourage students to express more of their feelings and reactive experiences, and further invite students to observe why they have such emotional reactions and how they have influenced their judicial judgments.

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Copyright Laws and Settlement of Music Copyright Infringement Case in the Court of Nepal

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Abstract

Music has been an integral part of society since medieval times. It remained within the boundaries of art and culture, but with changes in technology, creators of music and people associated with music turned themselves into professions. Hence, music as a product, music creators, singers, record labels, music publishers, recording studios, music producers, and many more associated with music became members of the music industry. The digitalization of the music industry expanded the periphery of the musical business, which raised an issue of copyright infringement as well. The Nepalese musical industry also faces problems of copyright infringement. Thus, to cope with the issue of music infringement in Nepal, the copyright laws tried to address the issues and provide legal remedies for the problems of music infringement. The paper has gone through the legal provisions related to the protection of the copyright of music in Nepal and conducted a case study analysis of the court case settlement. The paper found that in most cases related to the issue of copyright infringement, the issue is settled at the district court or the appellate court (now the high court). Since a single case related to infringement on the music sector reached the Supreme Court, the paper analysed the case and found that the court argued that the argument of the plaintiff, the Government of Nepal, was not valid as the plaintiff did not fulfil the proper legal procedure.

Keywords: Copyright, infringement, music industry, laws, Nepal.

I. Introduction

Music has been a part of life since the medieval period. It is an intangible heritage of the nation. Performing arts encompasses vocal or instrumental music, dance, and theatre, including traditional forms such as pantomime, sung verse, and certain forms of storytelling. Music is found in every society and constitutes an integral part of other performing art forms, and other forms of intangible cultural heritage such as rituals, festivals, and oral traditions. It features in profane or sacred contexts, classical or popular forms. The occasions on which performing arts are enacted are equally varied: marriages, funerals, rituals and initiations, festivities, entertainment, and other social practices. Dance (a type of performing art) can be defined as ordered bodily expression with rhythmic movements, steps, and gestures that express a sentiment or illustrate a specific event or act. Traditional theatre can combine acting, singing, dance and music, dialogue, narration, or recitation. This group also includes puppetry and pantomime. In addition, the performance may be more personal than public, as is the case with songs sung to soothe babies to sleep.[1]

For the court, managing a copyright lawsuit, including music is also a tricky task. Because of its distinctive qualities, musical expression presents difficulties for courts in resolving infringement cases. In Western music, tonality provides limited creative options that are aesthetically pleasant or gratifying. Many of those options have been explored because of the extensive collection of public-domain music that now exists. Even though independent creation disproves plagiarism, courts are left wondering whether defendant composers violated prior copyrighted works or merely discovered a similar melody, harmony, rhythm, or formal structure on their own because musical pieces in the same genre invariably resemble one another.[2]

There were few legal safeguards for artistic creations in the ancient and medieval eras. There was no such thing as intellectual property in the modern sense. Nonetheless, there have been cases where guilds or monarchs have given artists or performers exclusive rights. The dissemination of written music was significantly impacted by the printing press's development in the fifteenth century. Sheet music printing and sales started in the sixteenth century with music

[1]UNSECO, THE INTANGIBLE CULTURAL HERTIAGE OF NEPAL: FUTURE DIRECTIONS (2007).
[2]Margit Livingston & Joseph Urbinato, *Copyright infringement of music: Determining whether what sounds alike is alike*,15. VAND. J. ENT. & TECH. L. 2, 241 (2013).

publishers. However, composers had little control over how their works were reproduced because there was no official copyright protection.

Historically, music copyright was safeguarded under the reign of Queen Anne in the United Kingdom. The earliest copyright act in history is called 'The Statute of Anne' or 'The Copyright Act, 1709' or 'The Copyright Act, 1710'. The Statute of Anne, enacted in England on April 5, 1710, and went into effect on April 10, 1710, is often considered the first copyright law. It granted a 14-year monopoly on published works, with the option to renew for another 14 years if the author was still alive. This statute laid the foundation for the legal recognition of authors' rights. It was designed to safeguard writers' rights to publish their literary works and music sheet papers as well.

The evolution of copyright in the music industry is a testament to the ongoing efforts made to reconcile the needs of consumers, industry stakeholders, and creators while adjusting to new developments in technology and shifting consumer preferences. The music industry's copyright laws are continually changing and evolving.

According to Garcı´a et al.[3], the average sound recording had a very limited commercial half-life-roughly a few months, as opposed to years or decades, but there was also evidence that the amount of time during which this was economically viable was being extended by subscription streaming services. Surprisingly, however, the paper saw that even for hit songs, decay rates were steep, and the trends hold true when estimating weekly income.

According to Ganesh[4], India's music and film industries still have a way to go before they stop stealing ideas and redistributing them without giving credit or permission. However, writers in the Indian entertainment sector were gradually realizing that copyrighted works- whether they are written by them or by foreign authors, must be protected. Booth[5] concluded that, in the context of India, which has a thriving music industry and Bollywood, market dynamics, technology, and Indian interactions with the global economy are all shifting (after 1984). Between 1970 and 2010, several factors combined to cause sometimes drastic shifts in the character and market value of

[3]Kristelia Garcı´a, James Hicks & Justin McCary, *Copyright and economic viability: Evidence from the music industry*, 17 J. EMPIRICAL LEGAL STUD. 4, 715 (2020).
[4]Harini Ganesh, *The need for originality: Music infringement in India*, 11 J. MARSHALL REV. OF INTELL. PROP. L. 169, 181 (2011).
[5]Gregory Booth, *Copyright law and the changing economic value of popular music in India*, 59 ETHNOMUSICOLOGY 2, 284 (2015).

music industries in India. These developments eventually resulted in the 'Bollywood' revisions known as the Copyright (Amendment) Bill, 2012. The amendment was also popularly termed as 'Bollywood Amendments' as most of the fraternities from Bollywood had shown concern about the amended Bill.

According to Herlihy and Zhang[6], there has always been a historical interaction between the music industry, the market (which creates consumer demand and businesses that supply goods and services to meet the demand), and the law (which establishes the rules of the road) in matters about the music industry and copyright protection of the music. The paper found that a continuous improvement in the IP-related legal provisions by China had brought the anticipated growth.

In the context of the Chinese musical market, Wang[7] viewed the best approach to preserve and enhance music copyright in the Chinese music industry is to raise awareness of the issue, particularly among artists and music industry professionals, and to do so by developing innovative approaches to music education. To ensure that people have a correct understanding of copyright and to strengthen the protection of music creator's rights, public policies should be used to strengthen laws and education. Additionally, government agencies dedicated to copyright protection should be used to guide the strengthening of music copyright protection, regulation, and supervision.

The concern about legal protection among music creators, people, and industries associated with music has increased after the digital revolution. Although the quantity and quality of the music industry have enhanced due to the improvement and availability of digital platforms, settling the copyright issues related to music on digital platforms has become tricky. Erhart[8] found that copyright laws for the music industry have been taken just opposite side due to the digital era, taking advantage of stating a phrase of innovation or inspiration rather than quantifying in terms of profit from mass production. Menell[9] discovered that the copyright system has undergone

[6]David Herlihy & Yu Zhang, *Music industry and copyright protection in the United States and China*, 1 GLOB. MEDIA AND CHINA 4, 398 (2016).
[7]Ximeng Wang, *The protection and improvement of music copyright in the Chinese market from the perspective of music education and policy administration*, in Helen S. Du, Tech Sin Yin, Hongbo Li, Chew Fong Peng & Jose Prahhu eds., PROC. OF THE 2022 7TH INT'L CONFERENCE ON MODERN MGMT. AND EDUC. TECH (MMET 2022), ADVANCES IN SOC. SCI., EDUC., AND HUMAN RES., 249-256 (2022).
[8]Elise M. Erhart, *Copyright laws in the music industry*, 2 LINE BY LINE: A J. OF BEGINNING STUDENT WRITING, 2, Article 5, 6 (2016).
[9]Peter S. Menell, *Reflections on music copyright justice*, 49 PEPP. L. REV. 3, 612 (2022).

significant changes due to the digital revolution, especially about music with the wide spectrum of music copyright justice issues, including file sharing, royalty distribution, copyright infringement standards, and the production of music mashups, drawing on perspectives from the creative, legal, technological, and social sciences. Bagal[10] found that Indian courts have not addressed the issue of contributory copyright infringement when it comes to online tools and the need for stronger legislative mechanisms to cope changing techno world.

According to Sasongko's[11] findings, composers own distinct rights, necessitating proper treatment. Subject and object variables impact the legal structure of music copyrights, entangled in a network of legal obligations. The music serves as the object of the related subjects. Subjects have a mutually advantageous or symbiotic legal relationship. Conversely, music as a commodity is malleable. Thus, it is questionable whether playing music over the radio constitutes copyright infringement.

In the context of Indonesia, Ariani[12] discovered that laws like the complaint offense that impeded law enforcement had an impact on the growing and complex enforcement of digital music copyright. At the same time, Ramli et al.[13] showed concern for copyright protection of the songs and music in Indonesia due to an increase in the practice of cover music singers. The authors argued that the digital platform has increased the commercialization and growth of the Indonesian music industry but challenges in fair use and protecting the economic rights of creators have emerged due to rapid development and use of information technology. In context to China, Dai[14] found proper legal protection for cover song performance in China, where not just developing strong legal protections is not only sufficient, rather enhancing the knowledge regarding the legal consequences of infringement of cover songs should also be made aware among the public.

[10]Yash Bagal, *Contributory copyright infringement in music industry: Technological implications*, 24 J. OF INTELL. PROP. R. 1, 28 (2019).
[11]Wahyu Sasongko, *Theoretical review: The protection of music copyrights in the radio*, 13 FIAT JUSTISIA JURNAL ILMU HUKEM [FIAT JUSTISIA J. OF LEGAL STUD.] 4, 307 (2019).
[12]Nevey Varida Ariani, *Enforcement of law of copyright infringement and forgery with the rise of the digital music industry*, 21 JURNAL PENELITIAN HUKUM DE JURE [J. OF DE JURE LEGAL RES.] 2, 223 (2021).
[13]Tasya Safiranita Ramli, Sherly Ayuna Putri, Amelia Cahyadini, Maudy Andreana Lestari & Rizki Fauzi, *Digital platform responsibility on administering royalty for music creators from the perspective of copyright law*, 12 NTUT J. OF INTELL. PROP. L. & MGMT. 1, 25 (2023).
[14]Yuqi Dai, *The study of infringement determination standards for music work cover behavior: Taking music variety shows as an example*, 5 INT'L J. FRONTIERS IN SOCIO. 2, 74 (2023).

Similarly, in a study by Kjus[15]among Norwegian artists it was found that several technologically mediated challenges to one's right to ownership, acknowledgment of one's work, and compensation highlight the necessity of having an honest conversation about the moral implications of copyright in music.

Rahman et al.[16] saw the increasing use of artificial intelligence in the music industry has brought challenges among the regulators of Indonesia and reform or amendment in law related to copyright was seen as essential soon to protect the creator of the music. The legal digital music business trends and models that have emerged because of the development of new digital technologies were studied by Giri,[17] who also looked at how relevant they are to the Nepalese music industry. It also closely examined nearby music industries and compared the Nepalese music industry to their most recent market trends. The study discovered that the lack of legal services, inefficient international access, and insufficient technology resources made it difficult for the Nepalese music industry to provide lawful digital music services. The banking system placed obstacles in the way of digital financial transactions, while record companies lack the resources and expertise needed for digital financial transactions. Vaidya[18] discovered that most IP-related court matters in Nepal were resolved by district-level courts. In addition, the matter is appealed to the High Court (subsequently the Appellate Court) if the district-level court is unable to settle. There are not many IP-related court cases that have made it to Nepal's Supreme Court, where they have either been overturned on appeal, sustained lower court rulings, or even supported or defended Department of Industry or Copyright Registrar's Office decisions. Beyond the above-stated legal issues, weak enforcement of copyright laws leads to rampant piracy and unauthorized use of musical works. Inadequate legal mechanisms or enforcement agencies hindered the ability to protect musicians' rights. Weak enforcement of copyright laws leads to rampant piracy and unauthorized use of musical works. Against this backdrop, the paper tries to analyse the verdict

[15]Yngvar Kjus, *The use of copyright in digital times: A study of how artists exercise their rights in Norway*, 40 POPULAR MUSIC AND SOC'Y 3, 241(2021).
[16]Rofi Aulia Rahman, Akhmad Al-Farouqi & Tang Shu-Mei, *Should Indonesia copyright law be amended due to artificial intelligence development?: Lesson learned from Japan*, 9 NTUT J. OF INTELL. PROP. & MGMT. 1, 52 (2020).
[17]Subash Giri, *Digital technologies and music digitisation: Challenges and opportunities for the Nepalese music industry*,10. INT'L J. OF MUSIC BUS. RES. 2, 10 (2021).
[18]Rashesh Vaidya, *Intellectual property: Legal provisions and legal cases in Nepal*, 2 STUD. IN L. AND JUST. 1, 37 (2023).

forwarded by the Supreme Court of Nepal in a case related to the copyright issue in the context of the Nepalese music industry.

II. Literature Review

This section provides an overview of the fundamental principles of copyrights and related rights, as well as the legal provisions for copyrights in Nepal, specifically focusing on music copyright protection laws in Nepal.

Copyright

A copyright is distinct from patents and trademarks in that intellectual property is protected for the life of the originator plus 50 years. This protection affords an extraordinary property right and a substantial estate. Copyright extends protection to authors, composers, and artists, and it relates to the form of expression rather than the subject matter. This distinction is important because most intellectual property cannot be patented, the copyright only prevents duplicating or using the original material.[19] This prohibition does not prevent another person from using the 'subject matter' and then rewriting the material.

Visual materials used for copyright protection are photographs, paintings, sculptures, poems, articles, stories, books, music, sound recordings, motion pictures, audiovisual works, periodicals, computer punch cards, microfilm, pantomimes, and choreographic works.[20] These can be accurately differentiated from similar works. Copyright laws extend to literary and dramatic efforts so that performances and recording rights also can be protected.[21] Copyright is concerned with the rights of intellectual creators in their works. Most works, for example, books, paintings, or drawings, exist only once they are embodied in a physical object. But some of them exist without embodiment in a physical object. For example, music or poetry works even if they are not, or even before they are, written down in musical notation or words.[22]Copyrights are like patents in establishing ownership and protection for creative endeavours, but they pertain to intellectual property. Copyright extends protection to authors, composers, and artists and is related to the form

[19]Arhan Sthapit, *Intellectual property rights: Issues and solutions*, 1 PEOPLE'S MGMT. REV.1, 51 (2006).
[20] Joan Infarinato, *Copyright protection for short-lived works of art*, 51 FORDHAM L. REV. 1, 111. (2015).
[21] ARHAN STHAPIT, INTERNATIONAL BUSINESS: ENVIRONMENTS & STRATEGIES (2005).
[22] World Intellectual Property Organization (WIPO), *What is Intellectual Property?* WORLD INTELLECTUAL PROPERTY ORGANIZATION, 2 (2008).

of expression rather than the subject matter. In some instances, new copyrights can be obtained for old material, if the new use represents a new form of expression.[23] Copyright is experiencing new problems in the digital age. The way information is produced, shared, and consumed has changed dramatically because of the broad adoption and creative application of digital technologies, which have also altered the copyright landscape.[24]

The Berne Convention for the Protection of Literary and Artistic Works (1886)[25]

The Berne Convention for the Protection of Literary and Artistic Works, first adopted in 1886 and later revised, is an international treaty that aims to provide a framework for the protection of the rights of authors in their literary and artistic works. The convention has played a significant role in protecting the copyright of musical works alongside other creative works.

Here are some keyways in which the Berne Convention has protected the copyright of musical works:

Automatic Protection: The Berne Convention establishes the principle of automatic protection, meaning that copyright protection is granted to a work as soon as it is created and fixed in a tangible medium. This applies to musical works, ensuring that composers and creators of musical pieces do not need to fulfil any formalities to enjoy copyright protection.

Minimum Standards: The convention sets out minimum standards for the protection of literary and artistic works, including musical works. Member countries are required to provide a minimum level of protection for the rights of authors, ensuring that creators of musical works are granted certain exclusive rights.

Exclusive Rights: The Berne Convention grants authors exclusive rights over their works, including the right to authorize or prohibit the reproduction, distribution, public performance, and adaptation of their musical compositions. This allows composers to control how their works are used and to derive economic benefits from their creations.

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[23]DAVID H. HOLT, ENTREPRENEURSHIP: NEW VENTURE CREATION (2006).
[24]DANIEL SENG, COPYRIGHT AND RELATED CASES IN THE FIELD OF MUSIC IN THE ASIA PACIFIC REGION (2010).
[25]World Intellectual Property Organization (WIPO), *Summary of the Berne Convention for the Protection of Literary and Artistic Works, 1886,* WIPO-ADMINISTERED TREATIES (January 15, 2024, at 6:30 ET), [https://www.wipo.int/treaties/en/ip/berne/summary_berne.html]

Equal Treatment: The principle of national treatment ensures that authors from member countries are granted the same level of protection in other member countries as their nationals. This helps to create a level playing field for creators of musical works internationally.

Duration of Protection: The convention establishes a minimum duration of protection for copyright, which is the life of the author plus a certain number of years (usually 50 or 70 years). This ensures that the rights of the author or composer, or their heirs, are protected for a reasonable period.

Moral Rights: The Berne Convention recognizes the moral rights of authors, including the right to be attributed as the author of a work and the right to object to derogatory treatment of the work. These moral rights are important for protecting the reputation and integrity of composers of musical works.

In summary, the Berne Convention provides a comprehensive framework for the protection of copyright, including musical works, by establishing minimum standards, granting automatic protection, and ensuring equal treatment for authors across member countries. It has been instrumental in harmonizing international copyright law and fostering the protection of creative works on a global scale.

Legal Provisions for Copyrights in Nepal

The first Copyright Act of Nepal dated back to 1965. Through the Act was implemented the after enactment of the Copyright Rules 1989 which was brought into effect from December 4, 1989. Copyright is governed by the Copyright Act, 2002 in Nepal. An act was enacted on August 15, 2002. It repelled the earlier Copyright Act, 1965, which came into force on April 4, 1966. Even before 1966, the provision of copyright law was made under the Country Code of 1853, during seventh amendment in the year 1935. The Country Code was enacted on December 20, 1853.[26]

The act was amended on November 24, 2006. The act consists of seven chapters accommodating 43 sections. Similarly, Copyright Rules, 2004, were also enacted on August 2, 2004, by the power conferred by Sec. 42 of Copyright Act, 2002 covering 17 rules. The Copyright Rules, 2004 has made legal provisions for complaining at the government authority on the

[26] R. Vaidya, *supra* note 18, at 38.

violations of the copyright infringements in Nepal. The Copyright Rules 2002 was amended on January 10, 2013.

The Act states that obtaining the right does not require copyright registration; rather, it is voluntary. Copyright registration, documentation of copyright transfers, and other administrative facts of copyright law are managed by the Nepal Copyright Registrar's Office.

The Copyright Act has been updated and modified throughout time to consider evolving situations and global commitments. The objectives of these modifications were to guarantee adherence to international conventions and improve intellectual property protection.

Legal Provisions for Copyright Protection of Music in Nepal

Regarding the so-called related rights or neighbouring rights of performers, phonogram manufacturers, and broadcasting organizations, there were no provisions in the Copyright Act, 1965.[27] After enactment of the Copyright Act, 2002 and the Copyright Rules, 2002 addressed on the copyright protection of music in Nepal. The copyright protection for music have been addressed at various sections of Copyright Act, 2002. Some of the provisions have been pointed out below:

- Sec. 2(a) of the Act mentions music related factors under the definition of 'work' protected by the Act under No. (3) and (4) and stating:
    - *(3) Musical notation with or without words,*
    - *(4) Audio visual works,*[28]

- Sec. 2(c) mentions:

  "Audio-visual work" means a cinematographic work that can be viewed in screen, with or without sound.[29]

- Sec. 2(e) mentions:

[27]Pustun Pradhan, *An overview of copyright legislation in Nepal*, 1 S. ASIA ECON. J. 1, 155 (2015).
[28] Copyright Act §2(a) (2002)
[29] Copyright Act §2(c) (2002)

> *"Sound recording" means the act of recording of sound of any performance recorded in any manner and with any method whatsoever for the purpose of hearing, except the act of recording sound and image at the same time.*[30]

- Sec. 2(f) sub-section (1) mentions:

> *"Performance" means, - (1) In the case of work other than the audio-visual work, performance made through recitation, playing music, dancing, acting or any other manner, directly or with the help of any other device or method,*[31]

- Sec. 2(l) mentions:

> *"Performer" means any actor, singer, musician, dancer and other person who performs a literary or artistic work or folklore expression to the public through acting, singing, music and dancing.*[32]

- Sec.7(a) to Sec. 7(k) provides an economic right to the owner, where it has been made provision for music as well. The section has strictly prohibited for reproducing, translating, revising, amending, transforming, selling distributing, renting, importing, publicly exhibiting, publicly performing, broadcasting, and communicating without taking exclusive right from the creator.[33]
- Sec. 16 (2) of the Act has allowed for digital transformation of a musical work with a manner to be prejudicial to the economic rights of the copyright owner.

> *(2) Notwithstanding anything contained in Sub-section (1), no reproduction of an architectural design erected as a building and other construction related design or a significant portion of any book or of a musical work as notation of all or significant portion of a database through digital transmission shall be allowed in a*

[30] Copyright Act §2(e) (2002)
[31] Copyright Act §2(f) (2002)
[32] Copyright Act §2(l) (2002)
[33] Copyright Act §7(a) to §7(K) (2002)

> *manner to be prejudicial to the economic right of the author or the copyright owner.*[34]

Similarly, Copyright Rules, 2004[35] have address some points regarding the recording provisions, which have been pointed out below:

3. Provision concerning Registration of work, sound recording, performance or broadcasting:

> *(1) Any owner of the work, sound recording, performance or broadcasting who desires to register any work, sound recording, performance or broadcasting under Sub-section (2) of Section 5 of the Act shall have to apply to the Registrar in the format as specified in Schedule-1 along with evidence.*
>
> *(3) The registrar shall, if it deemed reasonable to register such a work, sound recording, performance or broadcasting in applicant's name on the basis of the documents asked under Rule (2), register such a work, sound recording, performance or broadcasting in the applicant's name within thirty-five days from the date on which documents were submitted, if documents were asked, and from the date on which an application was submitted, if documents were not asked, having charged one hundred rupees as application fee and shall issue a certificate of registration of such a work, sound recording, performance or broadcasting in the format as specified in Schedule-2, to the applicant.*
>
> *(4) The Registrar shall, while examining the documents ordered under Sub-rule (3), if it is deemed unreasonable to register such a work, sound recording, performance or broadcasting in applicant's name, inform the applicant specifying the reasons thereof within seven days.*
>
> *(5) The Registrar shall arrange a registered book for the purpose of rule (3),*

4. To Correct the particulars

> *(1) If anything requires correcting in the particulars under Rule (3), the author or owner of the sound recording, performance or broadcasting shall have to apply to the Registrar specifying the reason thereof.*

[34] Copyright Act §16(2) (2002)
[35] Copyright Rules Rule No. 3 and 4 (2004)

III. Method

A paper has adopted a qualitative research approach to elaborate why and how things happen in legal issues related to copyright faced by the music industry in Nepal. Therefore, the paper has followed a case study method to handle with the legal case on copyright issue under music industry in Nepal.

The paper considered all the legal cases that was brought into court of law related to Nepalese music industry as the population. Among them, only the precedent that was published by the Supreme Court of Nepal is taken as the sample of the paper. Hence, as per the record of the Supreme Court of Nepal, a single case on copyright issue under music industry has been forwarded judgement by the Supreme Court, which has been considered as a sample case study for the paper.

IV. Case Analysis

This section delas with the sampled legal case analysis related to copyright infringement.

Case

Khatiwada with Government of Nepal v. Dawadi, son of Bholanath Dawadi[36]

The contention of the First Information Report (FIR) is that let the legal proceeding be initiated pursuant to Copyright Act against Yadhav Dawadi since it was found, while his Audio Video Center operating at the house of Ramchandra Uprety, Mechinagar Municipality, Jhapa District was raided and found selling and renting the copies of cassettes of Nepali films, music and songs, without taking any permission with government institution. The charge-sheet was brought against the defendant, which says that Yadav Dawadi be punished pursuant to Sec. 27 for the offence pursuant to Sec. 25(1) (a) of the Copyright Act, 2002 and seized copies be confiscated and the compensation be recovered pursuant to Sec. 27(2) of the said Act as, it is clear, the act of copying the film and selling of it has been established.

The Jhapa District Court convicted the defendant for 10 days imprisonment as the defendant had not taken the permission from the copyright owner. Also seized 13 Compact Discs

[36] Khatiwada with Government of Nepal v. Dawadi, son of Bholanath Dawadi, Decision No. 8178, Vol.6, The Supreme Court of Nepal. (2009).

(CDs) of copied Nepali songs, four copied CDs of Nepali movies namely, *Shivashakti, Jeet, Lahana and Bishalu* be confiscated and the plea regarding the compensation could not sustain. Though the defendant argued that he brought all the respective CDs from Bengali boy from Indian origin and had no idea of facing legal action for such offense. The interest of the defendant to purchase copied CDs was to hire them to public for rent. Nevertheless, the Jhapa District Court could not give verdict on the issue of financial compensation to the copyright owners of the respective CDs as the damage amount has not been requested in the FIR.

In this case, the then Appellate Court, Ilam (Now the High Court) held that the appeal registered was beyond the time limit as prescribed by the law. Thus, the appeal was rejected as per the Sec. 11(A) of Summary Procedure Act, 1972 and No. 180 of Court Management of Country Code. The appeal of plaintiff, Nepal Government before the Supreme Court was that the appeal as repealed by the Appellate Court, without entering the fact in issue of the case. So, the judgment should be overturned.

In this case, the Supreme Court of Nepal held that where the intention of the legislature was clearly expressed it was not appropriate to interpret adversely. And the Supreme Court did not enter the fact, either. The court quashed the appeal, instead.

Similarly, to the case of infringement of music CDs of Nepal, the case of Public Prosecutor v. Tavung[37] was settled by the Supreme Court of Thailand, nonetheless revised and decreased this sentence to two months imprisonment and a fine of 30,000 Thai Baht, with a suspended imprisonment term for one year, on the basis that this was a more appropriate sentence for the defendant, contrary to the demand or long-term imprisonment and huge penalties demanded by the Central Intellectual Property and International Trade Court (CIPITC). As in Nepalese judicial decisions regarding infringement in music industry, most of the cases in context to Asia-Pacific countries are also being settled at the district level (court of first instance) or high court (magistrates appeals). An exercise of IP specialized courts found to be established in Japan (Intellectual Property High Court) and at United Kingdom (Intellectual Property Enterprise Court).

[37]Public Prosecutor v. Tavung, Decision No. 6525/2003, The Supreme Court of Thailand. (2003). In World Intellectual Property Organization-WIPO, Copyright and related cases in the field of music in the Asia-Pacific Region, p.166.

V. Conclusion and Suggestions

The judicial practices in Nepal demonstrate how an important role they play in defending rights of creators on copyright violations. The prosecution filed the case in court, and the jury found the defendants guilty and sentenced them to jail terms and penalties.

According to the Supreme Court of Nepal, all courts must adopt a standard method. In instances involving copyright, this means that the Summary Procedure Act, 1972, should be followed instead of the general procedure. The State Cases Act, 1992 (now amended as the State Cases Act, 2017) time limit cannot be regarded as a limitation for a copyright infringement case, as the court held in the Yadav Dawadi case. The court further expressed the opinion that the goal of the law is to follow specific procedures designed for special areas, such as copyright, and that those procedures should be followed for seeking remedies on those respective issues.

Other than the case studied in the paper regarding the copyright issues of Nepal music industry, they are settled at the District Court or at the High Court. The cases related to the copyright issues of the music industry in Nepal are mostly settled by the court through an order for the seizing of copied or pirated cassettes, MP3, and CDs with a payment of financial compensation to the lawful creators. There have been rare cases in which the Nepalese court has penalized the perpetrators as per the demand of the petitioner and jailed them for crimes related to copyright violation.

Despite the laws, intellectual property bootlegging, and copyright infringement do exist in one form or the other and at different magnitudes in Nepal. Intellectual property experts, creators and law-practitioners alike say the present legal provisions are inadequate, and particularly, the Copyright Act, 2002, and Copyright Rules, 2004 are almost defunct.

The Digital Millenium Copyright Act (DMCA), which was created to address copyright challenges in the digital age, served as a model for the Copyright Act, 2022 in certain ways. The purpose of the act was to establish procedures for safeguarding intellectual property rights in the context of developing technology.

The existing copyright related legal provisions are not able to capture the dynamic changes in technological advancement. The two-decade old act and rules seem to be outdated which might

create a legal vacuum, especially in music industry, where creators are working in different domains.

When addressing Nepal's many copyright protection issues, especially in context to music-related works, it is imperative to recognize the transformational potential of technological innovation. The fast expansion of digital platforms and the Internet have not only increased the dissemination of creative works but also presented new obstacles to the protection of intellectual property. Therefore, provisions that address the intricacies of digital copyright infringement and ensure that creators are protected against unauthorized reproduction, distribution, and alteration of their works online are crucial elements of any legislative overhaul.

Finally, proper documentation and registration of musical works can be challenging. Lack of clear procedures or difficulties in accessing registration services may hinder artists from fully protecting their works. Efforts to address these challenges often involve a combination of legal reforms, educational initiatives, technological solutions, and collaboration among stakeholders in the music industry. It's essential for policymakers, industry professionals, and artists to work together to create an environment that fosters creativity, protects rights, and promotes the sustainable growth of the music industry in Nepal.

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STRATEGY IN DEVELOPING A COMMUNITY MODEL AND PREPARING A SPECIFICATION BOOK OF GEOGRAPHICAL INDICATION PROTECTION FOR TROPICAL APPLE VARIETY OF BATU CITY, EAST JAVA PROVINCE

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ABSTRACT

Geographical Indication (GI) is part of Intellectual Property Rights (IPRs). Article 22 TRIPS defines GI as "*indications, which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin"*

In 2018 within the framework of the Indonesian government's agenda to achieve *Millenium Development Goals (MDGs*) and the State's National Goal in "Prospering the People", the Directorate General of Intellectual Property (DGIP) under the Ministry of Law and Human Rights (HAM) of the Republic of Indonesia created a priority program to protect Geographical Indications, especially for agricultural and food products featured as a Priority Program.

In the province of East Java, the Director General of Intellectual Property ,Ministry of Law and Human Rights is targeting Batu City Tropical Apples variety as *Pilot Project*. Batu City since the 1990s has been known as the City of Apples, but unfortunately this reputation has faded along with the decline in apple productivity. With the protection of Geographical Indications, it is hoped that Batu City will regain its reputation as the City of Apples.

Keywords: GI protection and strategy , tropical apple, City of Batu-East Java province.

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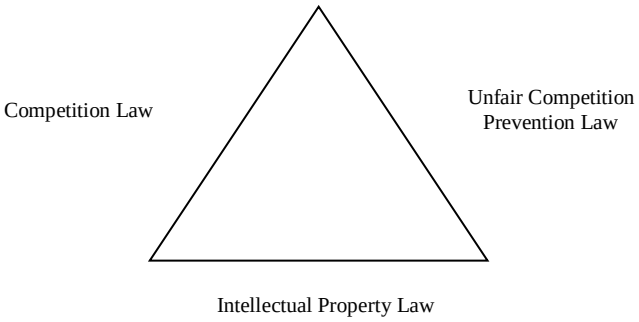
A. INTRODUCTION

Indonesia has ratified Agreement on Establishing the World Trade Organization (W*TO)* through Law N. 7/1994. The WTO aims "*Fair Competition* .[1]. "Fair Competition is defined as "*open equitable, just competition which is fair as between competitor and between of his customer*".[2] In achieving Fair Competition, there are 3 ((three) legal instruments that must be enforced as an equilateral triangle as follows:[3]

1. Anti-Monopoly Law or Competition law aims to ensure market existence as a forum for healthy competition*;*
2. Unfair Competition Prevention Law aims to ensure that in healthy competition business actors do not act contrary to honest practices in the industrial and commercial fields *;*
3. Intellectual Property Law aims to provide protection for intellectual creations against acts of piracy counterfeiting



One of the WTO Agendas related to Intellectual Property Law is listed in Annex II *Agreement on Trade Related Aspect of Intellectual Property Rights including trade in Counterfeit Goods (TRIPs).* Objective of TRIPs stipulated in Article 7 as follows:[4]

> *The protection and enforcement of Intellectual Property rights should contribute to the promotion technological innovation and to the transfer of technology, to the mutual advantage of producers and users of technological*

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[1] Jened, Rahmi ,*Penyalahgunaan Hak Eksklusif Kekayaan Intelektual (Abuse of Exclusive Intellectual Property Right),* Dissertation Doctor of Law , Post Graduate Program Airlangga University.5-8. (2006). Jened Rahmi, *Hak Kekayaan Intelektual : Penyalah gunaan Hak Eksklusif,* 15-18 (Airlangga University Press, Surabaya, 2007)

[2] Black, Henry Campbell , *Black's Law Dictionary* 596(6th ed. Centennial, (West Publishing , St. Paul Minn,1996).

[3] Jened,Rahmi , *Interface Hukum Kekayaan Inteketual dan Hukum Persaingan* , 4-5 (Rajagrafindo Rajawali Jakarta, 2013).

[4] WIPO , *Agreement Between the WIPO and the World Trade Organization*, 19 (WIPO, Geneva ,1997).

knowledge an in a manner conducive to social and economic welfare, an to a balance of rights and obligations."

In 2000 the United Nations/UN with 189 member countries has reached an agreement on global cooperation in facing developments in the millennium era which contains member countries commitment to comply Millenium Development Goals (MDGs)[5] which then transformation to Sustainable Development Goals(SDGs).The Sustainable Development Goals (SDGs) also known as the Global goals were adopted by the United Nations.[6] In 2015 as "A Universal Call To Action To End Poverty, Protect The Planet And Ensure That By 2030 All People Enjoy Peace And Prosperity" which has goals as follows :[7]

1) *Goal 1:No Poverty ;*
2) *Goal 2: Zero Hunger;*
3) *Goal 3: Good Health and Well being;*
4) *Goal 4: Quality Education;*
5) *Goal 5: gender Equality;*
6) *Goal 6: Clean Water and Sanitation;*
7) *Goal 7: Affordable and Clean Energy;*
8) *Goal 8: Decent Work and Economic Growth;*
9) *Goal 9:Industry Innovation and Infrastructure;*
10) *Goal 10: Reduced Inequalities;*
11) *Goal 11: Sustainable Cities and communities;*
12) *Goal 12: Responsible Consumption and Production;*
13) *Goal 13: climate Action;*
14) *Goal 14: Life Below Water;*
15) *Goal 15: Life on Land;*
16) *Goal 16: Peace Justice and Strong Institution;*
17) *Goal 17: Partnership for the Goals.*

The World Intellectual Property Organization (WIPO) brought clarity to the shared and individual roles and responsibilities of key parties:[8]

[5] MDGs consists of only 8 goals and 18 Targets.

[6] Global Report of Sustainable Development Goals, United Nation, 2024 https://unstats.un.org/sdgs/report/2024/

[7] Airlangga University is ranked 81st in the world and 2nd domestically in THE Impact Ranking with SDG1 ranked 1st in the world, SDG 5 ranked 4th in the world, SDG17 ranked 42nd in the world and SDG12 ranked 49th in the world. " Jened, Rahmi, " SDGs Over view " presentation prepared by Team of SDGs Center of University of Airlangga, Airlangga University New Student Acceptance Ceremony, Surabaya , August 2024.

[8] Millenium Declaration http://www.wipo.int

a. *of government to achieve or enable the achievement of goal and targets;*
b. *of the network of international organizations to marshal their resources and expertise in the most strategic and efficient way possible to support and sustain the efforts of partners at global and country levels;*
c. *of citizen , civil society organizations (CSOs) and the private sector, to engage fully in this ground breaking effort, by bringing to bear their unique strengths and motivation and action.*

In 2018 within the framework of the Indonesian government's agenda to achieve *Millenium Development Goals (MDGs*) and the state's National Goal in "Prospering the People", the Directorate General of Intellectual Property (DGIP) of the Ministry of Law and Human Rights of the Republic of Indonesia created a priority program to protect Geographical Indications, especially for agricultural and food products. [9]

World Intellectual Property Organization (WIPO) provides a definition of GI that:[10]

a sign used on goods that have a specific geographical origin and posses qualities, reputation, or characteristics that are essentially attribute able to that place of origin. Most commonly a geographical indication includes the name of the place of origin of the goods. Agricultural products typically have qualities that drive from the place of production and are influenced by specific local factors, such as climate and soil. Whether a sign is recognized as a geographical indications may used for a wide variety of products whether natural, agricultural or manufactured.

GI stipulated in Article 22 to 24 of TRIPS Agreement. Pursuant to Article *22 TRIPs* that GIs "*indications, which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin"*

Then Article 22.1 TRIPS obliged to member state to provide legal means for GI protection which stipulates that:[11]

in respect of geographical indications, Member shall provide the legal means for interested parties to prevent: a) the use of any means in the designation or presentation of a good that indicates or suggests tat the good the goods in question originates in a geographical

[9] Interview with Mr. Prof. Dr. Freddy Harris, SH., LLM Director General of Intellectual Property Rights, Ministry of Law and Human Rights-RI, Jakarta (8 November 2017).

[10] www.wipo.int.org

[11] WIPO supra note 4 ,26-27.

area other than the true place of origin in manner which misleads the public as to geographical origin of the goods; (b) any use which constitute an act of unfair competition within the meaning of article 10 bis of the Paris Convention (1967).

The provision of GI in TRIPS Agreement forementioned are the result of success European Union in entering their agenda that European Communities- Protection of Trademarks and GIs for Agricultural Products and Foodstuffs (WT/DS *174 and WT/DS 290)* in TRIPs Agreement.[12] The European Union plays a leading in the promotion of the GIs system throughout the world and trying to guarantee better protection for GIs at the international level and active World Trade Organization negotiations. This is proven by the success of the GI protection system *of its own kind*,[13] So to date there are 80 countries that have adopted registration specifically for the protection of GIs and this trend seems unstoppable because the protection of GIs will be able to have economic implications for countries based on agricultural products.[14]

In order to comply with TRIPS Agreement Indonesia regulated GI in the new Trade Marks and GI Law Number 20 of 2016 (Law No. 20/2016) stipulated in Articles 53 to 71 and Government Regulation Number 12 /2019 concerning GIs.[15] In Article 1.6 of Law No. 20/2016 stipulates that: "*GI is a sign that indicates the area of origin of a good and/or product which, due to geographical environmental factors including natural factors, human factors or a combination of both factors, gives a reputation for certain qualities and characteristics to the goods and/or products produced".*

[12] European Communities, "Protection of Trademark and Geographical Indications for Agricultural Products'' July22, 2004, p Introduction-2. Foodstuffs (WT/174 and WT/ DS 290 Second Submission of United States,)

[13] European Communities, "Protection of Trademark and Geographical Indications for Agricultural Products and Foodstuffs", Second Submission of United States, July22, 2004. Introduction-2(WT/174 and WT/ DS 290)

[14] Thual, David et. al, *Study on Geographical Indications Protection for Non-Agricultural Products in Internal Market, Sight Consulting*, Origin, REDD Consortium, Final Report, 79 (2013).

[15] in the previous Trademark Law Number 15 of 2001 in Article 56 to 60 and Government Regulation Number 56 of 2007.

According Christop Antons this new law No. 20/2016 is similarly up beat about GI protection in Indonesia . the official Government explanation accompanying the Draft of Preamble stresses the national potential for GI is to become superior commodities in national and international trade. The government explains further that the increasing relevance of GI is also visible from the fact that they share now included in the title of the law.[16]

East Java Province, with its geographical conditions, has natural resource potential, which has great potential to be protected by GIs.[17] In province of East Java, the Director General of Intellectual Property at the Ministry of Law and Human Rights is targeting Batu City Tropical Apples variety as a *Pilot Project*.[18] Batu City since the 1990s has been known as 'the City of Apples', but unfortunately this reputation has faded along with the decline in apple productivity. With the protection of GIs, it is hoped that Batu City will regain its reputation as the City of Apples.[19]

B.METHOD:

[16] Anton, Christop, " Geographical Indications, Heritage and Decentralization Policies: The Case of Indonesia" in *Geographical Indications At The Crossroads Of Trade , Development And Culture* (Calboli, Irene and Ng -Loy WeeKoon eds., 2018).

[17] East Java Province is located at 7.12th up to 8.48th South Latitude with a provincial area of 4,428km consists of 4 (four) Regional Coordinating Bodies , 29 Regencies, 9 Cities and 58 Subdistricts with 8,457 sub-districts and 1,097 Villages. [13] East Java is generally divided into mainland East Java which covers 90% of the area and 10% of the Madura archipelago. To the north it borders the Java Sea, to the south it borders the Indonesian Ocean, to the east it borders the Bali Strait and to the west it borders Central Java Province. Typographically, East Java consists of the South West-Plato zone with quite large mining potential. The central zone of the volcano is a fertile area of lowlands and highlands. North Zone- Madura as a folded area is an area that is less fertile and even barren. Profil Jawa Timur https://jatimprov.go.id

[18] Interview with Mr. Prof. Dr. Freddy Harris, SH., LLM Director General of Intellectual Property Rights, Ministry of Law and Human Rights-RI (Batu City, 19 December 2017 during the Preparation of the Declaration of the Geographical Indication Protection Society /MPIG).

[19] Kota Batu https://jatim.bpk.go.id>kota -batu

This research employs a normative and empiric legal approach. Normative legal research integrating comparative, statutory, conceptual, and case study methods. As a library-based research, it was conducted primarily at the Faculty of Law, Airlangga University.

While empirical legal research conducting by field study in apple plantation, apple farmer, seller, buyer and picking apple businessman. Interview with 'the King of Apple ' (well known apple farmer), some government officer, and Director General of IP under Ministry of Law and Human Rights of the of Republic Indonesia.

C. LITERATURE REVIEW

According Henry Sulistio Budi, in principle *Article 24 TRIPs* contains the following subjects:[20]

1. Agreement of WTO member countries to organize protection with the aim of increasing the protection of GI.
2. TRIPs Requirement *council* to evaluate the implementation of provisions on GIs and the first evaluation was carried out after the WTO came into force.
3. Prohibition for WTO member countries to reduce the effectiveness of protection for GIs that already exist in the country concerned.
4. Continuous use of GIs from other member countries which have been going on for at least 10 (ten) years or which are used in good faith.
5. Continuity of trademark registration obtained in good faith before the TRIPs Agreement comes into force or before the GI is protected, which has similarities to the registered geographical indication.
6. Exemption from the obligation to apply protection to other GIs if the GI is in everyday language that applies in that country.
7. It is possible for WTO member countries to set a time limit of 5 (five) years for the use or registration of marks for GI.
8. Confirmation that there is no prohibition on using a person's name for GIs.
9. Prohibition of requiring protection for GIs that are not protected in their country of origin.

In the protection of GIs there are two main camps, namely the *"old world* country " and "*new world country".*[21] Country *old world,* especially the European Union (*European Union*) wants the protection of GIs specifically independently. They assume that the regulation

[20] Budi, Henry Soelistio,"Wisdom for Regulating Geographical Indications in Indonesia" , Geographical Indications Training, Directorate General of Intellectual Property Rights, Jakarta, , 2-4 (19 – 24 January 1998).

[21] Correa, Carlos, *Intellectual Property Rights, the WTO and Developing Countries* 1-5 (2nd ed, TWN Books, London, 2000).

of GIs in TRIPs will provide adequate protection in capturing world markets, because history has shown that the existence of GI is part of regional policy related to improving the welfare of communities producing agricultural products, especially grape farmers. They believe that there will be an increase in people's welfare with the potential of GI products. Protection of GIs in the European Union has shown that GIs are a regime that deserves a place in the TRIPs rules as part of IPR.[22]

On the other hand, the group of countries New World, such as the United States, Canada, Chile and Japan are groups that are considered to be at odds with the Country group *Old World*. Country Group *New World* reasoned that the use of protective means with collective marks, trademark, and certification of marks deemed adequate, without providing separate protection for the GI regime.[23]

This was expressed, among others, by David Morfesi that: "*just as with a trademark or collective mark, a certification mark grants the owner the right to prevent unauthorized uses that would likely cause confusion as to the source of the goods".* [24] Furthermore David Morfesi adding that:[25]

> *this means that the certification mark owner, just like a trade mark owner, may authorize who may use the mark and how they may use it, including whether or not they are authorized to register the term as a descriptive component of another mark. This also means that the mark may not be registered by another as part of a mark without the owner's consent, even when it is used accurately to describe the product .*

Some reasons for the use of GI protection in trademark legal system as follows[26]

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[22] Correa, Carlos, *supra* note 21 See also ad Rahmi Jened *supra* note 3 at 254-255.

[23] *Id.*

[24] Morfesi, David ,*"*Key Ingredients for Geographical Indications : Collectivization and Control, How Market-Based Trademark System Encourage Collectivization and Control (without Taxpayer Revenue)", International Symposium on Geographical Indication, Beijing, 8 (June 26 to 28, 2007)

[25] *Id*.

[26] Meltzer, Eleanor, " Geographical Indications: Point of View of Government'', World Symposium On Geographical Indications, WIPO-USPTO, San Francisco, 9-11 July 2003.

a. all countries (whether members or not members of the WTO) have a trademark system;
b. the trademark system recognizes that IPR is private *rights*;
c. the brand system establishes fair and respectful treatment of brands and geographical indications, as mandated by the TRIPs Agreement;
d. The trademark system establishes a legal enforcement mechanism, including prohibiting the entry of infringing goods into a country, providing penalties both civil and criminal for violations, counterfeiting or pirated goods.

A (GI) refers to a sign, name, or symbol used on products having a specific geographical origin and possessing qualities or reputation that are due to that origin itself. A GI tag represents a geographical indication. To achieve the GI tag, both the product and its quality must depend on the geographical place of production.[27]

According to Cristopher Heath that the benefit of Geographical Indication protection are:[28]

1. protection against use by third party;
2. protection against misleading use ;
3. proprietary protection;
4. protection against unfair competition.

While according to Emmawati Junus stated that Geographical Indication protection provides benefits:[29]

1) provide legal protection for Geographical Indication products in Indonesia;
2) Geographical indications can be used as a marketing strategy for GI products in domestic and foreign trade;
3) provide added value to potential geographical indication products in the region and increase regional economic capacity;
4) increase the reputation of GI products in global trade;
5) there is equal treatment for the protection of GIs and the promotion of GIs abroad; And
6) as a tool to avoid unfair competition.

[27] *Id.* at 10.

[28] Heath,Christopher, The Protection of Geographical Indications ,IP Training for Lawyer Japan International Cooperation Agency JICA – Japan Patent Office, 26-28(2003).

[29] Junus, Emmawati, Director of Trademark Division, "*The Importance of Protecting Geographical Indications as Part of IPR and Its Implementation in Indonesia*", the National Seminar Protection of Geographical Indications in Indonesia, DGIP-RI, Jakarta,2-3 (6-7 December 2004) .

Whereas according to Chandra Manan Mangan, GI products have the potential to be commercialized. This means that a GI product has certain economic power (attractiveness, competitiveness), if it can be utilized by producers/craftsmen or industry as well as entrepreneurs to obtain added value from products/goods that have certain characteristics and qualities from their region. However, until now GIs have not been used to provide optimal results, especially in developing countries like Indonesia[30]

Apples have been known during the Roman and Greek Kingdoms as mentioned by Theophrastus in the 3rd century before Christ. Since then, apples have been distributed almost all over the world. Apple included Rosaceae or family Rose, sub family Pomoideae and genus it is Malus This genus has 27 species. Apples found in Asia are Malus Sieversii. [31]

Apple plants can also experience genetic mutations in each branch of the tree. Some mutated branches can develop into better variants than the parent stem. Some of them can even be said to be new types of apple trees. Apple planting produces stronger apples through the crossing process.. Apples have been acclimated in Ecuador at very high altitudes. Apple plants bear fruit 2 (two) times per year. Apple plants can grow in very cold climates, temperate climates, and even hot climates up to 40 degrees Celsius.[32]

Community Development model includes: (a) define ; (b) design ; (c) valuation. Define is analysis needs through survey to construct a model . Design to identify the inner substance promote and protect and the implementation stage is tested for the model used. In the valuation stage, evaluation and revision of the models and tools developed are carried out in order to obtain the right model. [33]

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[30] Mangan, Chandra, " *GI Protection*", ECAP II Colloquium organized by IPOS and EPO, Singapore, 1(2005).

[31] Hasan, Shazia et al, "*Morhological Characterization of Apple Accessions in Kashmir Region*" ,17Plant Archives 1071(2017).

[32]Hasan, Shazia et al,*Id*.

[33] Parson, Wayne et.al, *Public Policy*, 67(Oxford University Press, USA,2000).

In the concept of community development , fulfillment of the prerequisites for participation is sought for implementers of change. The community must be given the power and a conducive environment to participate. This is done through simultaneous conditioning as a series of processes community development. The most important thing is sustainability can occur due to self-sufficiency. Self-sufficiency means that society essentially depends on the community's own resources rather than external resources, so that later this will give rise to self-respect and pride.[34]

SWOT (strengths, weaknesses, opportunities, and threats) analysis is a method for identifying and analyzing internal strengths and weaknesses and external opportunities and threats that shape current and future operations and help develop strategic goals. SWOT analysis is a strategic planning and strategic management technique used to help a person or organization identify Strengths, Weaknesses, Opportunities, and Threats related to business competition or project planning.[35]

It is sometimes called situational assessment or situational analysis. This SWOT analysis is influenced by the internal and external environment, namely *external opportunities* and *external threats* which refers to economic, social, cultural, demographic, environmental, political, technological and competitive conditions that may be beneficial or even detrimental. *Internal strength* and *internal weakness* are controllable organizational activities that are shown to be particularly good or very bad.[36]

[34] Rhodes, R.A.W. et al, *Policy Networks in British Politics* (Oxford University Press, USA,2000).

[35] SWOT Analysis , definition, Examples, Process, Uses at https://www.corporatefinanceinstitute.com.

[36] *Id.*

D. RESULT AND DISCUSSION

1. An Analysis of Strengths, Weaknesses, Opportunities, and Threats of Batu-City Tropical Apple as Geographical Indication Products

The SWOT analysis identifies Strengths, Weakness, Opportunities and Threats—key factors that impact the success of an activity or initiative. These elements are defined as follows:[37]

a. *Strengths: Characteristics that add value, setting something apart from others and making it special.*
b. *Weakness: Deficiencies or lack of necessary skills. Form, or competency that hinder success.*
c. *Opportunities: Conditions or situation that are favorable for progress, providing advantages and motivating action.*
d. *Threats: Conditions or challenges that pose risks or obstacles, potentially undermining the achievement of objectives.*

Field research was conducted by four researchers, with the support of 50 students, focusing on the following key elements:

1. Elements related to local government;
2. Members of the Association of GI Protection for Tropical Apple, Batu Region.
3. Characteristics of land suitable for apple farming.
4 Traits of tropical apple fruits grown in Batu City.

Based on these observations, the SWOT analysis for Batu City's tropical apple production is as follows:[38]

SRENGTH	**WEAKNESS**
Batu's local government operates autonomously	Lack of capacity and political will
Apple plantations thrive at altitudes between 700 and	Soil conversion practices are not prioritized, and apple trees are often

[37] *supra* note 35.

[38] Jened, Rahmi, Irene Calboli and Agung Sujatmiko, *Pembentukan Masyarakat Perlindungan Indikasi Geografis Apel Tropis Kota Batu dan Penyusunan Buku Spesifikasi untuk Pendaftaran Hak Indikasi Geografis Apel Tropis Kota Batu(* , Laporan Penelitian Mandat (Research Report ' Mandatory Program, Ministry of National Education and Technology of RI, Jakarta, 2018.

1200 meters above sea level in Batu City, providing the perfect environment for apple cultivation.	planted on hilly terrains prone to erosion and landslides.
Approximately 80% of the population in Batu City is engaged in farming	Lack of comprehensive and equitable guidance available for apple farmers.
The Batu City apple, known as the Malang Apple, has been recognized by consumers, with unique characteristics that differentiate it from others.	Apple farming practices in Batu City lack innovation, and the produce is becoming less attractive.
OPPORTUNITY	**THREAT**
GI protection could enhance the reputation and marketability of Batu City's tropical apples	The liberalization of trade and market access, including the free movement of goods and services, may expose Batu City's apple industry to increased competition

A. SWOT Analysis of Batu City's Local Government

Strengths: Batu City, originally part of Malang City, became an independent administrative entity in 1983. Since 1997, with an increase in local revenue, Batu has grown into an autonomous city within East Java Province. This autonomy provides Batu City the ability to advance its own course, including promoting itself as the "Apple City." The local government has the discretion to create regional regulations that support the city's agricultural identity, such as initiatives to protect and enhance reputation of Batu's tropical apples. Notably, the city government has supported the registration of the Protection of Geographical Indications (GI) for Batu City's tropical apples (MPIG-ATKB),[39] a step that could potentially boost the city's economic and agricultural profile

Weaknesses: Despite its strengths, Batu City's local government faces significant challenges. A major weakness is the unequal distribution of government policies and support for apple farmers. Only a select group of farmers, typically those in dominant farmer groups,

[39] Interview with Bapak Sarpai, a farmer known as the "King of Apple," (November 2018).

benefit from training and government. This lack of equitable assistance has hindered the broader development of the apple farming sector. Additionally, the political climate in Batu City has been tainted by corruption, collusion, and nepotism, which have led to instances of environmental degradation. The process of registering Batu's Geographical Indication has also been cumbersome—requiring self-reliance and researcher funding, and taking six months to secure a recommendation. Furthermore, the Decree for managing the Tropical Apple GI Protection Society was delayed for six years due to the transitional leadership and bureaucratic hurdles within the local government. This lack of political will, combined with gaps in knowledge and skills within the administration, has hindered the restoration of Batu's reputation as the "City of Apples."[40]

Opportunities: Batu City has significant opportunities on the global stage, particularly through the World Trade Organization's (WTO) principle of free movement of goods, services, personnel, and capital. This framework offers Batu's tropical apple industry the chance to expand into international markets, provided that the city's local government can leverage this opportunity effectively. By promoting Batu's apples under the protection of Geographical Indication status, the local government could establish a distinct global brand, giving Batu a competitive edge in the agricultural market.

Threats: However, Batu City's local government also faces several external threats. The principle of free movement that facilitates market access could also lead to an outflow of local workers if residents shift away from farming. This could result in an influx of foreign agricultural experts, marketers, and investors, potentially undermining local control of the apple industry. If the Batu City government does not implement policies that support its apple farmers and create a conducive environment for growth, there is a risk that large international

[40] *Id.*

investors could take over agricultural lands for cultivation, processing, and export, leaving local farmers at a disadvantage..

E. SWOT Analysis of Batu City Land

Strengths: Batu City, located at an altitude of 700-1200 meters above sea level, offers an ideal environment for apple cultivation. Its unique climate and geographical conditions make it the only region in Indonesia capable of growing high-quality apples. The city is home to 24 villages across three sub-districts, each cultivating a similar number of apple trees, contributing to a robust local apple industry.[41]

Weaknesses: despite its favorable growing conditions, Batu City faces several land-related challenges. Soil conservation has received inadequate attention, and apple trees are often planted on hillsides that are prone to erosion and landslides. Additionally, apple tree planting is poorly organized, which exacerbates these environmental risks. Another significant issue is the conversion of many apple orchards into hotels, resorts, and other types of tourist accommodations, which reduces the land available for farming. Furthermore, the aging apple trees—many of which are around 30 years old and inherited from previous generations—are less productive. The excessive use of pesticides has also led to the degradation of soil quality, reducing essential nutrients and impacting long-term agricultural sustainability.[42]

Opportunities: Batu City has significant opportunities to build upon its reputation as an eco-friendly agrotourism destination. With its status as the only region in Indonesia capable of producing high-quality apples, there is potential to position the city as a nature-focused tourism hub, much like Chiang Rai in Thailand. This could attract both local and international visitors interested in eco-tourism and agricultural experiences. To preserve and enhance this reputation, Batu City's apples should be protected under Geographical Indications (GI). This would ensure

[41] Interview with Bapak Ir Mustofa, owner of Apple Picking, Batu(March 2018).
[42] *supra* note 41.

that the quality and unique characteristics of Batu's apples are maintained, preventing the reputation from being compromised by inferior products from other regions with unclear quality standards

Threats: Batu City is vulnerable to several threats that could impact its apple cultivation. Climate change and global warming are significant global concerns, and their effects could exacerbate existing environmental issues, especially if soil conservation practices are not prioritized. The continued practice of planting apple trees on hillsides prone to erosion, combined with poorly organized tree planting, could lead to further land degradation. Additionally, the degradation of soil quality due to overuse of pesticides and poor land management practices poses a long-term threat to the sustainability of the apple farming industry.

F. SWOT Analysis of Batu City Farmers

Strengths: Approximately 89% of Batu City's residents are engaged in agriculture, with over 70% of them specializing in apple farming. Most apple farmers in the region own and operate their own land, managing the entire farming process—from cultivation and planting to harvesting and selling. This direct involvement gives farmers full control over their crops, and many have expanded their businesses by offering apple-picking tours to attract tourists and customers. A key strength of Batu City farmers is their independence from money lenders. Apple farming is deeply rooted in family heritage, and many farmers consider apple trees as part of their family legacy. This self-sufficiency in managing both the farming process and home-based apple industries has allowed farmers to maintain control of their businesses without relying on external financial support.[43]

Weaknesses: Despite their strengths, Batu City's apple farmers face several challenges. One major weakness is the lack of comprehensive and equitable guidance. While there are

[43] Interview with Ibu Ir Nawang Wulan, Batu,(March 2018).

farmer groups, they often appear exclusive, leaving some farmers without the support they need to grow their businesses. Additionally, the cost of inputs, such as fertilizers and pesticides, is relatively high, which impacts the profitability of farming. Another challenge is the prevalence of diseases, pests, and weeds, which negatively affect crop yields. Furthermore, there is a lack of certified seed breeding programs, meaning that farmers often rely on their own methods for growing seedlings, which can lead to inconsistent quality. While farming is typically a family-run business, the lack of professional guidance and expertise—such as mentorship from agricultural specialists or advice from local agricultural and trade services—means that many farmers handle the entire farming and home industry process without the benefit of expert input. Access to capital, marketing resources, and necessary agricultural supplies like fertilizers and anti-pest medicines is also limited, with most farmers relying on personal resources or family networks to meet their needs.[44]

Opportunities: Agriculture, particularly apple farming, represents a significant economic opportunity for Batu City. With 89% of the population engaged in farming, and more than 70% of those specializing in apple production, the sector has the potential to significantly contribute to the city's Gross Domestic Product (GDP) and serve as a major source of Regional Original Income (ROI). With the right support and development, the apple farming industry could become a key driver of local economic growth. Additionally, there is potential to revitalize the apple farming sector by attracting younger generations to the industry. The current lack of interest among youth in continuing family apple farming businesses presents an opportunity for innovation. By incorporating modern farming techniques, technology, and new business models, the younger generation could revitalize the industry while maintaining its family-oriented roots..

[44] *Id.*

Threats: A significant external threat is the principle of free movement of goods, services, personnel, and capital, as outlined by global trade agreements. While this principle opens up new markets for Batu City's apples, it also increases the risk of capitalists and large corporations entering the apple farming industry. This could lead to the exploitation of Batu City's apple resources, as large-scale operations might undermine the traditional, family-run businesses that dominate the region. Furthermore, the influx of foreign investment and competition could discourage the younger generation from pursuing apple farming. As younger people may be less inclined to continue the family business, especially in the face of more lucrative or modern alternatives, this could lead to a decline in innovation and growth within the local apple farming sector.

D.SWOT analysis of Batu City's tropical apples

Strengths: Batu City's tropical apples, recognized as *Malang Apples* since the 1970s, have established a strong reputation for their quality. These apples are particularly well-suited for Indonesia's tropical climate, with their crunchy texture and high water content making them appealing to local consumers. Another significant strength is their extended shelf life: Batu City's apples can last up to two weeks at room temperature without the need for preservatives. This makes short-term sales easier and more cost-effective for local farmers and businesses. The potential for further growth in the apple industry is enhanced by the possibility of GI protection. With GI certification, Batu City's apples could become even more recognized for their unique characteristics, increasing their marketability both domestically and internationally. This protection could also pave the way for innovative product development, further solidifying Batu City's reputation as the "Apple City" of Indonesia.[45]

[45] Interview with Bapak Rudhi Harjanto ,a farmer, seller, and research, (March 2018). He holds Plant Variety Right Certificate No. 00243/PPVT/S/2013.

Weaknesses: Batu City's apples are often perceived as less attractive and lower-priced compared to imported apples, which can impact consumer preference. The lack of innovation in apple derivatives limits product diversification. Additionally, the alcohol ban imposed by the Indonesian Ulema Council (MUI) affects potential apple-based alcoholic products like cider, further limiting product offerings. These factors reduce the competitiveness of Batu City's apples in both the domestic and global markets.[46]

Opportunities: GI protection offers a significant opportunity for Batu City's apple industry. By securing GI status, Batu City could increase the perceived value of its apples, both in local and international markets. GI protection would also help distinguish Batu City's apples from other varieties, safeguarding the region's reputation for producing high-quality, unique apples. Additionally, GI certification could help stabilize prices and create a niche market that allows Batu City apples to stand out from the competition. Batu City has the potential to further capitalize on its apples by developing agrotourism. With the establishment of apple-picking tours, apple museums, and other attractions related to the region's apple industry, Batu City could position itself as a premier eco-tourism and agri-tourism destination, much like Champagne in France or Bavaria in Germany. These attractions could draw both local and international tourists, boosting local economies and raising the profile of Batu City's apple industry. There is also room for product innovation. Batu City could expand its apple product offerings, including apple-based beverages such as cider, fermented apple drinks, apple vinegar, and even dried apple snacks. By exploring international trends and developing new products, Batu City could further increase its export potential and meet growing global demand for health-conscious, natural food and beverage options.

[46] *Id.*

Threats: One significant threat is the potential for foreign ownership of land, which could lead to the exploitation of local resources and labor. Additionally, Batu City's apples face stiff competition from imported apples, which often outperform local products in terms of price and appearance. Larger industries with advanced technology could overtake small-scale, family-run apple farming operations. Furthermore, Batu City's apples struggle with global competitiveness due to a lack of innovation, technological advancement, and effective marketing strategies, hindering the city's ability to capture a larger share of the international market.

2. Strategy for Establishing Association and Book of Specification for GI Registration of Batu City Tropical Apples to Prevent Silent GI

The GI protection for tropical apple of Batu -city is in line with GI Implementation Strategy issued by Directorate General of IP, Ministry of Law and Human Rights and Trade Co-operation Facility of Ministry of Trade of Republic of Indonesia which focused on 8 Areas namely:[47]

1. *FA1 focuses on products that have the potential to have GI;*
2. *FA2 Improves the IG registration process;*
3. *FA3 Strengthen the IG value chain;*
4. *FA4 Supports IG Groups and IG Associations;*
5. *FA5 Building stronger inter-governmental relations;*
6. *FA6 Protects IG;*
7. *FA7 Promotes and market IG;*
8. *FA8 Builds an effective IG control system*.

According to Bob Jessop that institutionalism has 2 (two) meanings:(a) Institution as a rule of the game and (b) Institution as an organized structure.[48] While Schmid in Parson Wayne

[47] Directorate General of IP, Ministry of Law and Human Rights, *National GI Strategy Proposal: Maximizing the Economic and Social Impact of the Huge Potential of Indonesian Geographical Indications*, 9(DGIP, Jakarta,2018).

[48] Jessop, Bob, *State Theory: Putting Capitalism State in their Place*25-27,(Cambridge Politic Press, UK,2003).

states that institutions have 3 (three) main components, namely: (a) jurisdiction limit; (b) Intellectual property and (d)representation rules.[49]

Jurisdiction boundaries plays a role in managing resource allocation, namely determining who and what is included in the institution. While IPR regulates a set of rights and obligations defined by the legal rules of the relationship between members of society in their interests and resources. Whereas Rule of representation regulate who has the right to participate in decision making regarding allocation and resources.[50]

Strategy to establish A Model for Community Development for Batu city Tropical Apple Geographical Indication Protection (MPIG-ATKB) is very important as a community organization or group of people who have subjective collective right. [51]

The formation strategy as follows:[52]

1. Conducting Normative legal research carried out by Rahmi Jened , Irene Calboli and Agung Sujatmiko which was Mandatory Program funded by the Directorate General of Higher Education Ministry of National Education and Technology of Republic Indonesia (2017);
2. Conducting Socialization on the Protection of Geographical Indications which was attended by Mr. Dr. Fredy Harris, SH., LL.M as Director General of Intellectual Property Rights of the Ministry of Law and Human Rights (HAM), Mr. Fathurachman, SH., MM as Director of Brands and Mr. Saky Septiono, SH, MH as Head of the Geographical Indication Inspection Section Directorate General of Information and Technology of the Ministry of Law and Human Rights, Acting Mayor of Batu Mr. Punjul Santoso, Head of the Batu City Agriculture Service and approximately 150 farmers, traders and heads of the Batu City Farmers Group Association on Thursday, 19 December 2017, at the Meeting Hall Batu City Government;
3. Declaration on the Establishment of the Batu City Tropical Apple (ATKB) GI Protection Society (MPIG);
4. Making a Notarial Deed of Establishment and Articles of Association and By Laws (AD/ART) of the Association (MPIG-ATKB) by Notarial Deed No. 1 dated 11 March 2018 by Notary Lofiaanni Sandra Mutiara, SH., M.Kn;

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[49] Wayne Parson, *Public Policy: An Introduction to the Theory and Practice of Policy Analysis (Translation)*(Kencana Prenada Media, Jakarta, 2005).

[50] Jened, Rahmi *Hukum Merek (trademark Law) Dalam Era Global dan Integrasi Ekonomi* (Kencana Prenada Media, 2015).

[51] Wayne Parson *supra* note 33, 67(2000).

[52] Rahmi Jened et al , *supra* note 38(2018).

5. Legalization of Notarial Deed for a legal entity by Director General of General Legal Administration (Dirjen AHU) under the Minister of Law and Human Rights of Republic Indonesia No. 0006708.AH.01.07 of 2018 concerning the Establishment of the Association (MPIG-ATKB) on 16 May 2018;
6. Conducting Empirical legal research or field study by 4 researchers and assisted by 50 students from the Law Faculty Airlangga University and co-assistants from other students;
7. Interviewed Ms Nawang Wulan as a farmer and entrepreneur of "Batu Bule wine apple", interview with Bapak Sarpai known as King of Apple, interview with Bapak Mustofa ;
8. Conducting laboratory tests st BioAngler Laboratory for 4 types of apples selected that Manalagi, Ana, GreenSmith and Rome Beauty and the land soil;
9. Making confirmation to Ir. Dyah Nuswandari Ekarini, MMA Functional Supervisor of Agricultural Product Quality, Middle Expert at the East Java Agricultural Regional Office and Ir. Nawang Wulan as a farmer and entrepreneur (…);
10. Preparing Specification Book and making for GI Registration on behalf of MPIG-ATKB (…);
11. Subtantive examination by M Yuslisar, SHMH and Esti , MS and Ir.Detta;

The MPIG ATKB forum was chosen in the form of an "association "with a legal entity as stipulated in the Civil Code (BW) considering the importance of sustainability and to avoid from "*silent GI".*[53]

MPIGATKB as a legal entity association which characteristics as follows:

a) association of peoples with limited liability (Article 1653 of Code Civil);
b) the legal association to carry out civil action(Article 1654 Code Civil);
c) the management of association regulated in Deed of Notary (Article 1655 Code Civil);
d) All acts for which the manager does not have the authority to do so, are only binding on the association as long as the association really benefits from it or simply that the act is later legally approved (Article 1656 Code Civil)
e) The members of the association are not personally responsible for the alliances of the association (Article 1661 Code Civil);
f) Associations established by general authority are not abolished by the death or relinquishment of membership by all members until the association is dissolved according to law (Article 1662 Code civil).

[53] Discussion with Mr Dr. Freddy Harris, SH., LL.M. Director General of Intellectual Property under Ministry of Law and Human Rights of Republic of Indonesia, Jakarta (8 November 2017).

So the establishment of MPIGAT BK as a legal entity[54] is truly for the benefit of Batu City residents and apple farmers.[55] MPIG-ATKB is the applicant for GI registration (Article 1 Number 5 of Law No. 20/2016). In accordance with Article 53 Paragraph (3) of Law No. 20/2016)[56] The eligible party which can apply for GI registration is quite" unique" because at the Paris Convention it was stipulated "*interested industrialist, producers or merchants".*[57]Meanwhile, in TRIPs use the term "*interested parties*".[58]When compared to other party who entitled as " owner" or " holder" as regulated in TRIPs.[59] GI is clearly a collective right,[60] while other IPRs is personal individual right,

The Specification Book for Registration of GI Protection of Batu City Tropical is prerequisite in first to file system which contains 'rule of the game' with the following points:[60]

1. Applicant: Applicant's name, organizational structure, membership, card, organization logo;
2. GI Name
3. Name of the products
4. Characteristics and qualities of Tropical Stone Apple: physical characteristics, fruit characteristics, chemical properties
5. Description of the influence of the geographical environment: administrative area, topography, climate, rainfall, soil, human factors;
6. Geographical Indication Area
7. History and customs: History, tradition;

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[54] Rahmi Jened, *Teori Hukum dan Kebijakan Hukum Investasi Langsung* (*Legal Theory and Legal Policy of Direct Investment),* 33 (Kencana Prenada Media, Jakara,2016).

[55] MPIG- ATKB management simply consists of (1) chairman;(2) vice chairman ;(3) secretary;(4) treasurer Notarial Deed No1 dated March11, 2018 by Lofianni Sandra Mutiara, SH,MKn.

[56] the eligible parties that can apply for GI registration :(1)Institutions that represent communities in certain geographical areas that sell goods and/or products: Natural resources; Handicraft goods; or Industrial results;(2)Provincial or district/city regional government.

[57] Paris convention Article 1, Article 9 and Article 10. At WIPO *supra* note 4, at 71-79

[58] Articles 22, 23 and 24 TRIPS at WIPO, *supra* note 4 , at 26-29

[59] Copyright holder, Patent Owner, Trademark owner, person lawfully hold trade secret.

[60] Rahmi Jened, " *Hak Kekayaan Intelektual Kolektif'' ,* paper presented in IP Strategy, held by DGIP-RI, Bali, 2018. See also Djulaikah, *Konsep Perlindungan Hak Kekayaan Intelektual: Perspektf Kajian Filosofis HKI Kolektif Komunal,.* 76-80(Setara, Malang 2014).

[60] Specification Book of GI Protection for Batu City Tropical Apple(2018).

8. Description of the Production Process: Cultivation of plants, provision of seeds, planting, maintenance of plants (sanitation, irrigation, pruning, maintenance, thinning and organizational control of pests)
9. Method Control ;
10. GI Logo: logo and meaning, national GI logo.

Applicant Name is Society of GI Protection Society for Batu City Tropical Apples (MPIG-ATKB) which has member including farmers, seed breeders, agro-tourists, traders, observers, etc. Address/domicilied: Gerdu Hamlet, RT 001, RW 006, Tulungrejo Village/Urban Village, Bumiaji DistrictBatu City, East JavaProvince.

Name of the proposed GI product is "fresh apples" that consist Type of Apples: *Manalagi, Ana, Green Smith, Rome Beauty* which has specific/distinctive physical characters and qualities**:**[62]

The shape of the fruit is round to slightly elliptical;

a. High productivity;
b. Crispy taste and contains lots of water;
c. The skin of the fruit varies depending on the variety: green, yellow, and red;
d. The flesh is greenish white, orange with a sweet taste and some also have a slightly sour taste;
e. Fruit skin is easy to peel;
f. Has a very sharp apple aroma;
g. Normal size;
h. Can be stored for a long time at room temperature if it is not damaged or attacked by pests and diseases;
i. It is believed to be very beneficial for health. Even the skin can prevent the growth of cancer cells.

Fruit Characteristics					
No	Description	**Varietas**			
		Ana	**Manalagi**	**Rome Beuty**	**Green Smith**
1	Fruit shape	Round	Round	Round	Round
2	Fruit surface	Finely spotted	Finely spotted	Coarse thickness	Smooth

[62] Field Study by Researchers and students.

3	Fruit size: Height X diameter	5.1 – 5.4 X 4.4 – 4.8 cm	4.2 - 4.8 X 5.0 - 5.4 cm	3.9 – 4.1 X 4.5 – 4.9 cm	4.3 – 4.8 x 6.2 – 6.7 cm
4	Color of ripe fruit skin	Yellowish red	Green	Green	Green with spots
5	Color of fruit flesh	White	White	White	White
6	Fruit taste	Fresh sour	Sweet	Sweet	Sour
7	Texture of fruit flesh	Crispy	Crispy	Crispy	Crispy
8	Oxidation rate	5 minutes 10 seconds to 5 minutes 18 seconds	1 minute 32 seconds to 1 minute 44 seconds	4 minutes 16 seconds to 5 minutes 06 seconds	3 minutes 01 seconds to 3 minutes 56 seconds

Based on the results of chemical content tests on Tropical Batu Apples of the Ana, Manalagi, Rome Beuty, and Green Smith varieties conducted at the PT Angler BioChem Laboratory laboratory which has been accredited by the National Accreditation Committee (KAN) Number: LP-514-IDN ISO 17025:2005 (Accredited), as follow:[63]

Chemical Properties					
No	**Measured**	**Varieties**			
		Ana	**Manalagi**	**Rome Beuty**	**Green Smith**
1	Calsium (Ca)	67,1 mg/kg	40,5 mg/kg	40,5 mg/kg	56,63 mg/kg
2	Iron (Fe)	2,79 mg/kg	2,73 mg/kg	2,73 mg/kg	2,59 mg/kg
3	Potassium (K)	1097 mg/kg	903 mg/kg	967 mg/kg	1044 mg/kg
4	Phosphorus (P)	364 mg/kg	346 mg/kg	285 mg/kg	324 mg/kg
5	Brix	-?	12,1 ^{0}Brix	11,1 ^{0}Brix	-?
6	Vitamin C (Ascorbic Acid)	ND	ND	ND	ND
7	Carbohydrate	16,1 %	18,4 %	14,8 %	14,3 %
8	Calorie	70,6 kcal	76,1 kcal	63,7 kcal	63,2 kcal
9	Protein	0,192 %	0,137 %	0,107 %	0,146 %
10	Total Fat	0,587 %	0,233 %	0,460 %	0,620 %
11	Total Ash	0,217 %	0,180 %	0,213 %	0,132 %
12	Water Content	82,9 %	81,1 %	84,4 %	84,9 %
13	Total Sugar	10,8 %	11,2 %	10,5 %	10,2 %
14	Oxalid Acid	ND	ND	ND	ND

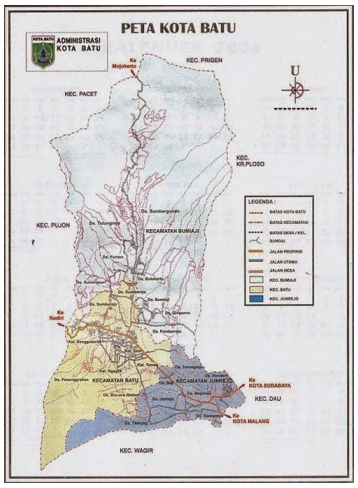
Tabel 2. S weetness Analysis (Brix) of Tropical Rock Apple Fruit

[63] bioangler Lab

Code	Maturity Level	ample Repeat (Times) Sugar Content	ample Repeat (Times) Sugar Content
N_2	Somewhat Raw	3	10,44
N_3	Somewhat Ripe	3	10,53
N_4	Ripe	3	10,78

Source : Angler BioChem Laboratorium

Batu City has suitable soil for planting Tropical Apples is Andosol and Regosol soil with a soil height of 700 to 1200 meters above sea level (asl).Batu City's Tropical Apple Plants generally bear fruit 2 (two) times per year or even more due to the temperate climate throughout the year. Batu City has 3 sub-districts, namely Batu Subdistrict, Subdistrict, Junrejo Subdistrict and Bumiaji Subdistrict which consists of 24 Villages/Villages with the following area boundaries **:** North side is Pasuruan Regency, South side is Mojokerto Regency, West side is City of Surabaya, and East side is Malang Regency[64]



Batu City is a city in East Java Province, Indonesia, formed in 2001 as a split from Malang Regency. Previously, Batu City was part of the North Malang Sub-District Development Area 1 (SSWP 1). Batu City is located 15 km west of Malang City, on the Malang-Kediri and Malang-Jombang routes. Together with Malang Regency and Malang City, Batu City is part of a unified region known as Malang Raya. Batu City is geographically located

[64] Interview with Bapak Dr. Himawan EstuBagijo, SH, MH as Head of Legal Division of Provincial Governor of East Java- Indonesia(Surabaya, October 2017).

at 7 ° 44 '– 8 ° 26 'South Latitude and 122 ° 17 '– 122 ° 57 'East Longitude with an area of 202.30 km2. The city area is at an altitude of 680-1,200 meters above sea level and is flanked by 3 well-known mountains, namely Mount Panderman (2010 meters), Mount Arjuna (3339 meters), Mount Welirang (3156 meters). The mountainous and hilly topography makes Batu City have an average air temperature of 15-19 degrees Celsius.[65]

The topography of Batu City, which is mostly hills and mountains, makes this city have beautiful natural scenery and cool air. Batu City has also developed into one of the main tourist destinations in East Java.he southern region, especially Junrejo District, tends to be flat, except for Pendem Village and Dadaprejo Village which form a valley in the Brantas River. The northern region, such as the protected forest area and Cangar, has relatively steep topographic conditions. Batu City is surrounded by several mountains, including Mount Panderman, Mount Arjuno, Mount Banyak, Mount Kawi, Mount Semeru, Mount Welirang, and Mount Wukir.Batu City has hydrological conditions influenced by the Brantas River and abundant groundwater. Most areas of Batu City have a land slope of 25–40% and a slope of more than 40%.[66]

Geographically, the Batu City area has two different characteristics, namely the north and west are areas with undulating and hilly heights, while the east and south are relatively flat areas, although they are at an altitude of ± 800 M above sea level. Batu City has a minimum temperature of 18° - 24° C, a maximum temperature between 28° - 32° C with air humidity of around 75-98% with an average rainfall volume of 298 mm per month in the range of 6 days per month. The spatial variability data on soil nutrient content is the key component in precision farming implementation. the spatial variability of soil nutrient levels in an apple orchard.[67]

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[65] www.batu.org.
[66] *Id.*
[67] *supra* note 65

Tabel 7. Physical Environmental Elements of Batu City

Relief	eight	700 – 1,700 m above sea level
	Slope	0 – 40%
Weather	Rainfall	1834 mm per year
	Temperature	12 – 23oC
Land	Relative Humidity	80%
elief	Geological Formation	Andesite and pyroclastic
	Soil Type	Typic Hapludand, Typic Durudand, Typic Dystropept, and Typic Hapludult, Red Yellow Podzolic (PMK).
	Texture	Silt loam, sandy loam, clay, clay loam.
	Solum	75 100 cm
	C-organic	Medium to high
	Cation exchange capacity	Low to medium
	Soil mass lacking wate	February – May

Source: Karim (1993, 1999)

From the table below, it can be seen that most of the land in Central Batu City is suitable for the development of Batu Tropical Apple. The dominant limiting factors in the development of Batu Tropical Apple are rainfall, altitude, slope and soil fraction. Rainfall is significantly positively correlated with altitude, and soil fraction, Na, Mg and cation exchange capacity and significantly negatively correlated with effective depth, dust fraction, pH H2O, pH KCl, available P, K and base saturation. This positive correlation shows the relationship that the higher the altitude, the higher the rainfall intensity and cation exchange capacity and conversely the negative correlation explains that the higher the rainfall intensity, the lower the effective depth, dust fraction, pH H2O, pH KCl, available P, K and base saturation.[68]

[68] *supra* note 65

Tabel 10. Order, Class, Subclass and Area of Land Suitability for Tropical Apple Commodities

Measurand	**Unit**	**Result**
Chloride (Cl)	Mg/Kg	ND
Aluminium (Al)	Mg/Kg	72041
Boron (B)	Mg/Kg	ND
Calcium (Ca)	Mg/Kg	4393
Cobalt (Co)	Mg/Kg	13,4
Copper (Cu)	Mg/Kg	66,2
Iron (Fe)	Mg/Kg	33997
Magnesium (Mg)	Mg/Kg	1212
Manganese (Mn)	Mg/Kg	789
Molybdenum (Mo)	Mg/Kg	0,599
Nickel (Ni)	Mg/Kg	10,4
PhosPhorus (P)	Mg/Kg	1766
Pottasium (K)	Mg/Kg	1200
Selenium (Se)	Mg/Kg	0,421
Sodium (Na)	Mg/Kg	365
Zinc (Zn)	Mg/Kg	113
pH (1:10)	-	6,06
Texture’;		
Sand	%	26,2
Silt	%	66,4
Clay	%	7,39
C-Organic	%	7,82
C/N Ratio	%	3,39
Carbon (C)	%	3,76
Hydrogen (H)	%	2,59
Nitrogen (N)	%	0,307
Sulfur (S)	%	1,88

Source: PT Angler BioChem Laboratory Certified Laboratory No. 183379-5

Human factor in Batu city in 2017 reached IDR 14, 351, 465,52 million with growth rates over the past 5 years was12,18%/yr. From the GDPR value, average distribution of DGRP based on employment is mostly in :

1. The wholesale and retail trade sector, car and motorcycle repair (18, 23%)
2. Other service15, 42%;
3. Agriculture, forestry, fisheries (16, 11);
4. Provision of accommodation; food and beverage (11, 86%);
5. Construction 11, 35%)

Even though 80% of Batu City residents are farmers and most of them are apple farmers in 4 sub-districts, there has been a decline in interest among the young workforce in becoming farmers, so they currently prefer to work in the engineering or hospitality services sector.[69]

In the 1930s, approximately 20 types of apple varieties have been developed, but the ones that quickly adapted and developed are 4 (four) types, namely: Fuji apples, Ana apples, Rome Beauty apples, Green Smith apples. Manalagi apples are the result of local cultivation.[70]

According to Koes Dwayati Soegondo that in 1929 a Dutchman named Gratel was developing apple plants in Malang, it turned out that many of the apple plants were attacked by disease and the farmers suffered quite large losses.. The air was cool and the contours of the land were fertile. Finally, the Dutch were serious enough to develop apple farming in Batu, so that they were able to monopolize European nations with the Batu apple commodity. Even though Indonesian people, especially Malang, are not allowed to own apple plantations, vegetable growers are still successful, because they practice it themselves, their knowledge eventually develops and they open a business. [71]

Furthermore, in 1934 there were 20 varieties of apple plants brought by the Dutch from Australia who then planted them in the Nongkojajar area (Pasuruan Regency) and in Tebo Pujon Village, Malang (now part of Batu City). The apples planted are from varieties, *Princess Noble*, *Ana*, *Rome Beauty* and *Green Smith*. Meanwhile, Manalagi apples are the result of cultivation from the Research Institute for Citrus and Subtropical Fruit Crops (Balitjestro) and currently have an apple germplasm collection of around 73 varieties.[72]

In 1953, the People's Plantation Department (now called the Horticulture Research Institute) imported several types of apples from abroad, including Rome Beauty and Princess

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[69] *supra* note 65

[70] http://balitjestro.litbang.pertanian.go.id.

[71] *Id.*

[72] http://balitjestro.litbang.pertanian.go.id/ and also on http://malangtoday.net/ Also on www.batutimes.com

Noble. Furthermore, since 1960 many apple plants have been planted in Batu City to replace orange plants that died due to disease. Since then, apple plants have continued to grow until now in the highlands of Batu City, such as Poncokusumo . Batu city became an apple production center and was called Apple City.[73]

From In 1988 it rose 4.7% to 9,047,726 trees with production increasing 17.5% to 275,065 tons per year and until the end of the 1990s, Batu City's apple production experienced a heyday. It was recorded that in 1984 there were 7,303,372 apple trees with a production of 146,690 tons per year. [74]

Batu City is known as one of the leading tourist cities in Indonesia, because of its extraordinary natural beauty potential. The Dutch people's admiration for the beauty and natural splendor of Batu made the Batu city area be compared to a country in Europe, namely Switzerland, and was nicknamed De Kleine Zwitserland or Little Switzerland on the Island of Java. For Batu City, the apple commodity plays an important role in the dynamics of welfare and economy, not only for agribusiness actors, but also for the general public. The development of apples is also driven for the development of the tourism sector because the beauty of this plant is also a magnet that attracts tourists to visit Batu City. Then in 1993 Batu City was designated as an Administrative City.[75]

Unfortunately since the monetary crisis in 1997, apple production has tended to decline, even in 2005 was lower than in the 1970s only 2,137,314 apple trees remained and only produced a productivity of 146,000 thousand tons per year.[76]

[73] http://balitjestro.litbang.pertanian.go.id/ and also interview with Mr Sarpai (Apple King), Apple Farmer, Batu City (12 May 2018).

[74] *supra* note 70

[75] From the City Agriculture Service. Batu, June 2023.

[76] *supra* note 70

On October 17, 2001 Batu City was declared as an Autonomous City fully separated from Malang Regency. The population Batu City is 190, 184 people and 80% as farmers and more than 70% of them are apple farmers.[77]

In 2006, there was Local Economic Resources Development (LERD) Program was created by bringing in new varieties of apple scions and rootstocks from the Netherlands held by the National Development Planning Agency (BAPPENAS) collaboration with the Dutch Government. Furthermore, in 2007 there was Participatory Rural Appraisal Program (PRAP) old plants were rejuvenated in several locations. [78]

Finally , after successfully completing the preparation Spesification Book for GI Protection of Batu City Tropical Apple with assisted by Mrs. Ir. Diah Nuswandari Ekarini, MMA Functional Quality Supervisor of Agricultural Products at the Regional Office of the Ministry of Agriculture, East Java, and our as Researchers , then MPIG-ATKB as applicant to apply GI registration for the Protection of Batu City Tropical Apples to the Directorate General Intellectual Property, the Ministry of Law and Human Rights, and received Filing Agenda No. . IG 00201800010 filing date 5 October 2018.The logo of the GI Protection for Batu City Tropical Apple as follows:[79]

[77] *supra* note 70

[78] Interview with Mr Sarpai (Apple King) ,Apple Farmer, Batu City (12 May 2018).Interview with Mrs. Ir. Nawang Wilan entrepreneur of apples and derivative products, such as Batu Bule, Celuo apples, etc. which have been exported abroad, Batu City(23 May 2018).

[79] Copyright of Mr Zaenal Mustofa, SH., MH.

In the Geographic Information logo of Batu Tropical Apple, there are several objects and colors that have the following meanings:

1. Apple

One of the superior agricultural products of the Batu City community, with special characteristics that are not owned by other areas, so that Batu City is nicknamed the Apple City.

2. Mount Panderman

Batu City is surrounded by several mountains, including Mount Panderman, Arjuno, Welirang, and several other mountains. These mountains used to be active mountains, so when these mountains erupted, one of them was volcanic ash, which would cause the soil in the area around the eruption to become fertile. The fertile soil around the volcanic eruption has an impact on the taste of the fruit which is more delicious.

3. Brantas River

The Brantas River has its source/spring in Sumber Brantas village, Bumiaji District and flows around Batu City to Surabaya and makes it the second longest river in Java Island. The flow of the river indicates that around the river there is life for all living things, because water is the source of life for all living things.

4. Green

The color green symbolizes coolness and tranquility. Batu City is famous for its cool climate that can calm the body and soul and is supported by its friendly people.

5. Light Green / Pupus

The color light green / pupus symbolizes life, natural, and tropical. Light green apples mean that apples are a source of life for the people of Batu City who have unique characteristics.

6. Brown

The color brown symbolizes the power of nature. This can be seen from the flow of the Brantas River which is brown as a source of life for the people of Batu Cit

3.The Role and Benefit of GI Protection for Batu City Tropical Apple

Pursuant to Article 56 (1) Law No. 20/2016 , there are absolute grounds and relative grounds for GI registration as follows:

Article 56 Paragraph(1):
An application for GI cannot be registered if:

a. contrary to state ideology, laws and regulations, morality, religion, decency and public order;
b. mislead or deceive the public regarding the reputation, quality, characteristics, origin, manufacturing process of goods, and/or their use; And
c. is a name that has been used as a plant variety and is used for similar plant varieties, unless there is the addition of an equivalent word indicating a similar geographical indication factor.

Article 56 Paragraph(2):
Geographical Indication Application is rejected if:
a. The Geographical Indication Description Document cannot be proven source, process of making goods, and/or their use;
b. has similarities in its entirety with registered Geographical Indications.

Pursuant to Article 70 and 71 of Trademark and GI Law No. 20/2016 there are supervision and coaching. Internal supervision and construction is supervision and construction carried out within MPIG5and reported at the MPIG-ATKB meeting which is held at least once every 6 (six) months. External supervision and guidance is supervision and guidance carried out by parties outside MPIG-ATKB. There are at least three types of external supervision and guidance by Regency or provincial level, Consumers are the best supervisors, Ministry of Law and Human Rights.[80]

The Paris Convention provides GI protection as unfair competition prevention law as stipulated in Article 10 bis of the Paris Convention.[81]While the Madrid Agreement for the Repression of False of Deceptive Indication of Source (1891) aims at preventing false or misleading indications regarding the origin of goods, including brands that cause misunderstanding among buyers or the general public and regulate their confiscation.[82]

Meanwhile, the meaning of Appellation of Origin stipulated in the Lisbon Agreement for the Protection of Appellation of Origin and Their International Registration (1958) means

[80] MPIG-ATKB Articles of Association and Bylaws.

[81] Jened, Rahmi, *supra* note 50, 251-254(2015). See also in Ayu, Miranda Risang, *Memperbincangkan Hak Kekayaan Intelektual: Indikasi Geografis*, 39-54 (Alumni, Bandung, 2006).

[82] *Id*, at 252-253.

the geographical name of a country, region or locality which provides a product originating from it which has qualities and characteristics which are exclusively and essential for the geographical environment, including natural and human factors.[83]

According to WIPO that :" GIs) are intellectual property (IP) rights that serve to identify a product that originates from a specific geographical area and that has a quality, reputation, or other characteristics that are essentially attributable to its geographical origin. GI enable SMEs to:[84]

a. Enhance the reputation of their goods;
b. Build consumer confidence;
c. Communicate their commitment to social responsibility;
d. Support regional economic development;
e. Prevent fraudulent uses of IP right.

As a matter of fact at the time of the trial of GIs standardization which provide only for grade A and B apples with sticker and bubble wrap on each apple, the price of Batu city tropical apples increased from IDR 10,000 per kg to IDR 45,000per kg. Then the original marketing street vendors can entrusted to large supermarket. So GI can be used as provide added value and marketing strategy. [85]

The prime purpose of registering a geographical indication is to seek protection for specific products produced in a particular geographical region, which further encourages and motivates the marketers to expand their business at a global level. [86] GI provides an appropriate

[83] see also Garvais, Daniel, "The Lisbon Agreement's Misunderstood Potentia*l*,1 WIPO Journal vol 1, 2009.

[84] https://www.wipo.int/ipoutreach/en/ipday/2022/toptips/geo_indications.html#:~:text=In%20addition%20to%20increasing%20the,of%20misappropriation%20and

[85] Emmawati Junus, *supra* note 29, at 2-3.

[86] Connor, Bernard O', *The Law of Geographical Indication*, (Cameron May, UK,2004) .

legal remedy and effectively suppress all actions as intended referred to in Articles 9, 10, and 10 bis.[87]After registering the IG for tropical apples in Bartu City, apples from other areas, especially Malang, may no longer be sold with the Batu City Tropical Apple sticker and packaging attributes. So GI provide proprietary legal protection:[87]

a) against use by third party;
b) against misleading use ;
c) against unfair competition.

Itis hoped that after being able to be marketed in the local market at a reasonable price due to the stickers and packaging, as well as the A and B quality standards, it is hoped that it will be able to enter the international or global market.

After the substantive examination /inspection in the field in Batu city by three GI experts that Ms Yuslisar Ningsih , SH., MH and Ms Deta, S. Hut (DGIP) and Ms Ir Esti Haryanti, MM (Horticulture) from Jakarta on 6-9 June 2023 gave rise to the spirit of apple farmers to manage their apple plantation well. There were some farmers who canceled their intention to sell their apple land (plantation) to outsider from other region or other country.[88]

Pursuant to Article 61 of Trademark and GI Law No. 20/2016 that the term of protection for Geographical Indication rights is as long as the Geographical factors are built from natural factors, or human factors or a combination of both factors still exist and maintained. With the GI Geographical Indication registration agenda forementioned, the GI's Label of Batu City Tropical Apple can only be used by:

a. Member of MPIG-ATKB for Batu City Tropical Apples produced in accordance with the provisions in the Batu City Tropical Apple IG Requirements Book;
b. MPIG-ATKB member for Batu City Tropical Apple derivative products produced in accordance with the provisions in the Batu City Tropical Apple IG Requirements Book.

Article 66 of Trademark and GI law No. 20/2016 stipulates that GI infringement include:

[87] https://www.kashishworld.com/blog/geographical-indication-overview-importance-and-benefits/

[87]Heath, Christopher, *supra* note 28, at 26-28.

[88] Information from Bapak Mustofa Chairman of MPIG-ATKB, Batu, 7 June 2023.

a. use of GI, either directly or indirectly, on goods and/or products that do not comply with the GI Description Document;
b. use of GI, either directly or indirectly, on protected or unprotected goods and/or products with the aim of: 1. showing that the goods and/or products are comparable in quality to goods and/or products protected by GI, 2. obtain benefits from such use; or 3. benefit from the reputation of the GI.
c. use of GI that can mislead the public regarding the GI and origin of the goods;
d. use of GI by non-registered GI users;
e. Imitation or misuse which can be misleading regarding the origin of the goods and/or products or the quality of the goods and/or products contained in: 1. wrapping or packaging; 2. information in the advertisement; 3. information in the document regarding the goods and/or products; or 4. information that can be misleading regarding its origin in a package.
f. other actions that could mislead the wider public regarding the true origin of the goods and/or products.

The Right Holder of GI right can file a lawsuit against an unauthorized user of GI in the form of:

a. requesting for compensation and termination of use and destruction of Geographical Indication labels used without authorization;
b. Preventing greater losses for the party whose rights have been violated, the judge can order the violator to stop manufacturing and reproduction activities, as well as ordering the destruction of Geographical Indication labels that are used without rights.

E.CONCLUSION

1. An Analysis of Strengths, Weaknesses, Opportunities, And Threats of Batu-City Tropical Apple As Geographical Indication Products can be seen from 4 elements, the government, the land soil and the farmer and the fresh fuit manalagi, Ana, Green smith and Rome Beauty.Because the autonomous city government has the freedom to regulate and take policies related to apple cultivation. Almost 70% of the population in 3 sub-districts and 24 sub-districts are apple farmers who inherited land from their parents. Batu City has Andosol and Regosol soil characteristics with the ideal height between 700 and 1200 meters above sea level. From captive cultivation to marketing of apples and derivative products is carried out by the apple farmer's own family, so that renters and moneylenders are almost unknown to Tropical Apple farmers in Batu City. The

weakness is that the government, including the agricultural department and group of farmers not supportive of apple farmers'. Apple farmers mostly lack of understanding of technology. The apple trees are relatively old, much of the land has been converted into villas or resorts. Planting apple trees does not pay attention to soil conservation. Excessive use of pesticides. The opportunity is the global market access. With the existence of regional autonomy , the role of the regional government is very strong which should be able to encourage and maximize GI as a tool to rebuild reputation as the City of Apple . The Batu city threats among others: Free movement of goods, services , capital and personnel . Climate change and global warming, and legal culture and mindset of the government, and community;

2. Strategy in establishing the Community development model is Association of the GI Protection for Batu City Tropical Apple (MPIG-ATKB). is a legal entity in legal entity status in the form of association with limited liability to maintain sustainability of MPIG-ATKB and to avoid silent GI. Strategy to set up the GI Specification Book for The Batu City Tropical Apple should include : Name of Applicant; Name of Geographical Indication; Name of Goods; Characteristics and Quality of Batu City Tropical Apples: Chemical properties, physical properties, quality class; Fruit Quality Testing Methods; Description of the Geographic Environment: natural factors and human factors; Regional map; History of Batu City; History of Tropical Apples in Batu City; History and Traditions of the People of Batu City; Production, Harvest and Post-Harvest Process; Sequence Code.
3. The Role and Benefit of Geographical Indication Protection for Batu-city Tropical is proven by being registered as IG tropical apple of Batu city has standardization only grade A and grade B that can be attached sticker per fresh fruit and made into a card packaging with IG logo has been able to increase its added value from the original per

kg only IDR 10 thousand to IDR 45 thousand in ranch market. thus Batu city apple that does not meet the standardization may not be attached sticker. With IG registration canceled a number of farmers who intended to sell their land to other people in other regions and even foreigners because it was proven that IG was able to restore Batu's reputation as Apple City.

However, the government does not have a strong political will to support IG registration by community self-reliance with the help of our research funds. The Directorate General of Intellectual Property does not see the facts on the ground that many governments do not really support the acquisition of IG in their regions.

Specifically for the protection of the geographical indication of tropical apples in Batu City, then The Regional Government should be pro-active in making policies related to the GI Protection for Batu City Tropical Apples . The existing Farmer Group Associations should not be exclusive, but can accommodate all apple farmers. The Department of Agriculture should provide guidance, especially regarding soil conservation in planting apple trees, technology and safe use of pesticides as well as marketing assistance.

In addition, the most difficulties is in supervising so that apple farmers who are members of MPIG is to continue implementing the standardization that we, researchers have created. so it is appropriate that the Government Decree as a requirement for the IG registration specification book should be abolished because local governments often hinder community self-reliance.Supervision and Guidance should consists: Batu City Tropical Apple Geographical Indication Label; Use of the Batu City Tropical Apple Geographical Indication Label; Captivity Statement. Supervision and guidance must be continuously carried out by the MPIG itself, by the regional government, both at the provincial level (if the government below is not correct) or the central level (if the provincial and district/city governments are not correct)

and by the Directorate General of Intellectual Property under Ministry of Law and Human Right of Republic Indonesia.

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Government Regulation Number 56 of 2007 concerning Geographical Indication.

Notarial Deed No1 dated March11, 2018 by Lofianni Sandra Mutiatra, SH,MKn.

The Application of Artificial Intelligence Technology in Analyzing Sustainable Green Energy Patent Information

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ABSTRACT

The development of green energy technology is changing with each passing day. Although the traditional power industry still works well, various innovative power generating is emerging. In addition to the traditional power industry, various technology companies and new startups have also joined the green energy industry competition, and they also use patents to protect innovative technologies. The number of patent applications related to green energy has hit a record high. It has become an important issue that how to analyze the huge amount of data from these patents.

This study uses artificial intelligence natural language processing technology to assist in analyzing the huge data of green energy patents. First, the word segmentation tool is used to help the computer understand the related vocabulary of fintech patents, each vocabulary is assembled into phrases, and then the semantic role played by each phrase is marked, and then machine learning is used to make the computer automatically process each sentence to generate appropriate structure tree, and the algorithm based on Bert model, allows the computer to read a large number of patent documents, convert vocabulary into "word vectors", and use a large number of patent document training to strengthen the computer's abstract thinking ability. When encountering related green power patent literature for new technologies or applications in the future, it will also be able to understand its content. In the current preliminary research results, artificial intelligence algorithms have been used to identify mobile platform-related technologies in green energy patents, and can target different applications, such as wind power, solar power, and geothermal energy preliminary classification and analysis of patents of different applications. This study finds that the use of artificial intelligence technology to analyze such huge amounts of data has great potential, and can provide appropriate guidance for green energy patent applicants in patent layout.

Keywords: Artificial intelligence, Patent analysis, Green energy, Word vector, Segmentation tool.

I. Introduction

Sustainable green energy technology combines the advantages of sustainable and energy technology to innovate. With the maturity of mobile network technology and the rapid growth of the number of users, as well as the digitalization of economic development, goverments and industries are scrambling to invest in research and innovation in this field. The number of related patent applications in PCT patents has grown from less than 100 in 2010 to more than 500 in 2022. Searching the global green energy patent application situation with related keywords in the middle of 2024 on the Global Patent Search System will carry out more than 5,000 patent applications.[1] To analyze such a large number of patents, it is impossible to perform the analysis work effectively by humans alone, and it is easily affected by human bias. Therefore, how to analyze the relevant patent content in a more effective way is the main research topic of this investigation.

In order to dealing with the huge amount of text data, there have been many precedents to analyze with artificial intelligence natural language processing technology, especially for the analysis of patent content, there are also preliminary studies by Abadi and Huang et al.[2] However the technical scope involved in the patent content is too wide and the content is diverse and varied, it is not easy to converge to a meaningful analysis result using artificial intelligence to process the relevant content. This research narrows the research object to fintech-related patents, and combines natural language processing technology (BERT and BiLSTM) to try to solve the problems faced by traditional analysis of fintech patents, and narrow the research object to effectively processed. The problems caused too large classes scatter.

II. Literature review:

Big data analysis of textual information using artificial intelligence machine learning models has been developed for more than 8 years in the past decade, and it is difficult to understand the actual content from textual representations. For most unstructured text to maintain semantics in a mathematical model way to capture the indirect meaning of words in the text, any given word in the text must be converted into a word vector in order to feed it to an artificial neural network. Figure 1 shows several word embedding techniques, mainly based on statistics, that can help learn word embedding corpora from text, such as word2vec, fastText, and GloVe techniques. In addition, the most common models of contextualized word embedding technology are BERT and GPT developed by Transformer-based deep learning technology.[3] these models train many deep learning-based models for various natural language processing tasks through practical applications, predicting missing words in text and bringing significant new opportunities to natural language processing tasks. Because they analyze sentences in no particular direction, they do a better job of understanding the meaning of homophones than word embedding techniques. In addition, deep learning methods are able to generate processing layers to represent data hierarchically, showing good results in many domains. However, these deep learning-based text representation techniques lack adequately labeled datasets for fintech patent terms, and the application of best-fit word embedding methods to

[1] WIPO report, https://www.wipo.int/web/patent-analytics/environment-and-sustainability

[2] H. H. N. Abadi, and M. Pecht, *Artificial Intelligence Trends Based on the Patents Granted by the United States Patent and Trademark Office.* 8 IEEE Access (2020), pp. 81633.

[3] Esfahani, Mahshad Nasr, *Content Analysis of Textbooks via Natural Language Processing*. 8(4) American Journal of Education and Practice (2024), pp. 36.

vectorising big data has not been adequately addressed by techniques. This study proposes a transformal-natural language-based text representation technique that can effectively capture the semantics of specific words.

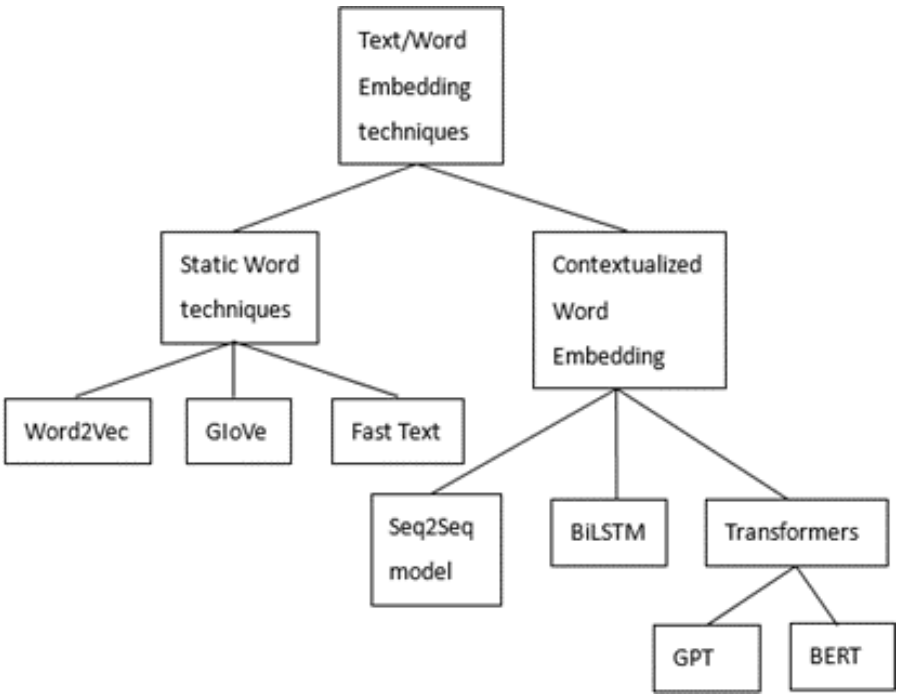

Figure 1. Various real-valued vector representation techniques for predefined large vocabularies of text corpora.

III. Research methods

The experimental architecture of this study is shown in Figure 2. Among them, the data collection part comes from the patent database of the World Intellectual Property Organization (WIPO patent database). We select appropriate international patent classification numbers and keywords, query and download the original text corpus data required for training in the WIPO patent database, and then perform data preprocessing. Then try to extract the related information from PCT application cases. Data preprocessing is a method of filtering noisy and obscure data, designed to make feature extraction easy for textual data.

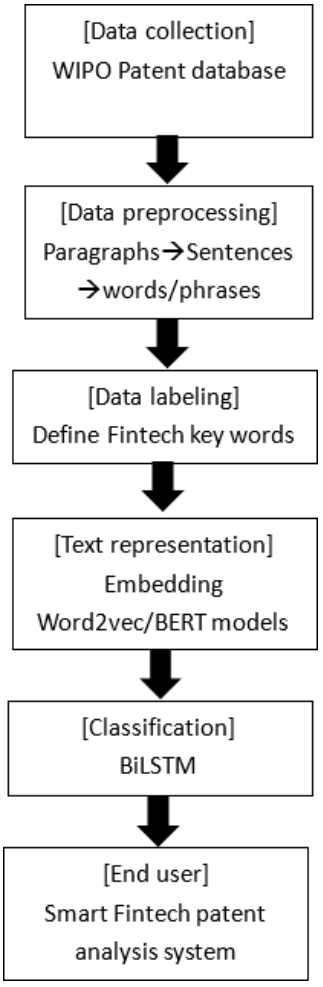

Figure 2. The experimental architecture of this study

Data preprocessing

In patent information, structured and unstructured information is included. Patent texts contain bibliographic information, special characters, and numerals representing sequences of requested terms, where machine learning and data mining concepts are often applied to extract meaningful textual content from these corpora of text before feeding them to a classification model. Then we can tokenize the content, that is, break up a large amount of text into smaller parts and tag them, and these tags can be used to find patterns and serve as the next input step in natural language processing techniques, such as stemming and part-of-speech restoration. In the system proposed in this study, this process is assisted using the Natural Language Toolkit (NLTK) to purify the tokenized words. Output sentences as decomposed words for further analysis, and then remove words that do not have fintech technical content. Often unrelated are pronouns, prepositions, symbols or numbers, conjunctions and articles (a, an and the). In order to remove stopwords from a given sentence, the text is first split into words, and the word is removed if it appears in the stopword list provided by NLTK. The next step is to classify words by part of speech and tag them accordingly, a practice called part-of-speech tagging. These tokens are nouns, verbs, adjectives, adverbs, determiners, etc., of which it is important to note that tokens identify nouns and verbs, which are most likely indicators of the sustainable technology.

Representation of textual data

Use word embedding techniques to represent real-valued vectors of words in a given text corpus, and use vectors to obtain word meanings. We experiment with many word embedding techniques and represent the collected text corpus as equivalent vectors. Here we use the traditional context-free technology embedding technology word2vec to the bidirectional context representation technology BERT[4].

Utilize word2vec to process a text corpus and generate an equivalent vector associated with a given input, the resulting vector will be of high dimensionality. Each word contained in the text will get an association vector in the vector space, the closer words in the vector space with similar contextual meaning will be. The only disadvantage of this method is that if the new vocabulary is not included in the training data set, word2vec cannot assign new vocabulary corresponding vectors. In order to make words with similar contextual content have a higher correct rate when the data is re-presented, given a sequence of words \{w1, w2, w3, . . . wn\}, for all target N words in their respective contexts The probability of occurrence p has the following relationship.

$$\frac{1}{N} = \sum_{n=1}^{N} \sum_{-c \le j \le c_j \ne 0} \log P\left(w_{n+j} | w_n\right). \quad (1)$$

This study also utilizes BERT, a bidirectional contextual representation technology developed by Google's artificial intelligence language. BERT uses a transformer architecture to discover contextual connections between words using an attention mechanism. The transformation architecture consists of two separate components: an encoder that reads the text input and a decoder that generates predictions for the task. Because the main goal of BERT is to generate language models. During training, BERT uses two ways to obtain the contextual meaning of words, one is that 15% of the words in each sequence are replaced with MASK tokens before passing the input sequence to the BERT model, and then BERT tries to provide context to infer the initial value of the tokenized word. The prediction is based on three main steps, as shown in Figure 4. The encoder is first applied to the classification layer output, the output vectors are multiplied by the embedding matrix and converted to vocabulary dimensions, and finally the probability distribution over all words in the vocabulary is calculated using softmax. Another way is that during training, the BERT model takes two sentences and finds correlations to predict whether the second sentence is a continuation of the first sentence in the original document. During the training phase, half of the input material is paired, where the second sentence is the resulting sentence from the original document, and the other half of the input is a second sentence randomly selected from the text corpus.

[4] J. Devlin, M. W. Chang, K. Lee, K. Toutanova, *BERT: pre-training of deep bidirectional transformers for language understanding.* 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (2019).

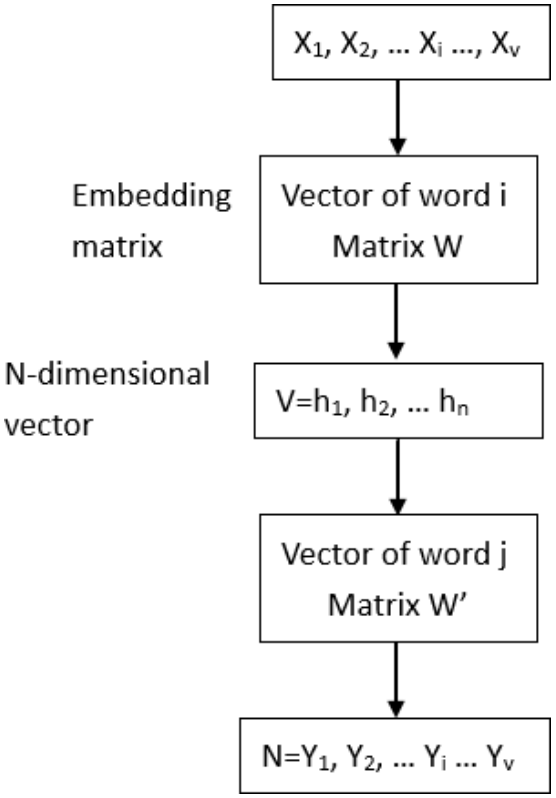

Figure 3. The word2vec word embedding architecture model used in this study, the input vector X and the output vector Y are the re-presentation of the key words, and the hidden layer represents the word embedding size N

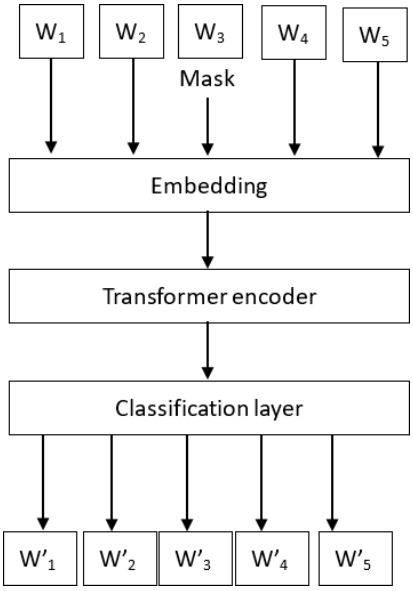

Figure 4. The text-token architecture used to train BERT, where the model uses the context surrounding the text-token to attempt to predict the text-token content

Classification model

A number of classification models are implemented in this study to establish the final fintech keyword classification on our dataset. We use deep learning techniques, words are represented as dense vectors, and we apply deep learning-based fintech keyword classification by passing the dense vectors to a classification model. Recurrent Neural Networks (RNNs), capable of extracting appropriate features from the data, have become the primary choice for acquiring the semantics of longer texts. However, RNNs are skewed models because they assign high priority to the most recent words in the sequence, potentially reducing their efficiency in capturing the semantics of the entire document. In order to overcome the shortcomings of maintaining long-term dependencies in RNN models, LSTM techniques are used. LSTM models, along with Convolutional Neural Networks (CNN) for sentence classification, provide accurate results and have been widely used in various natural language processing tasks. The CNN model can extract the most relevant features in a piece of text, while the LSTM model uses memory cells to maintain the relationship between words on the time axis. Combining these two techniques is suitable for text classification. This study develops a bidirectional LSTM consisting of two such memories to solve sequence classification problems. After experimental testing, a bidirectional LSTM (Bi-LSTM) is used here, which is composed of two LSTM units. Using combined past and future contextual information from the collected patent literature, Bi-LSTM also preserves long-term relationships between words as well as repeated contextual information, as shown in Figure 5.

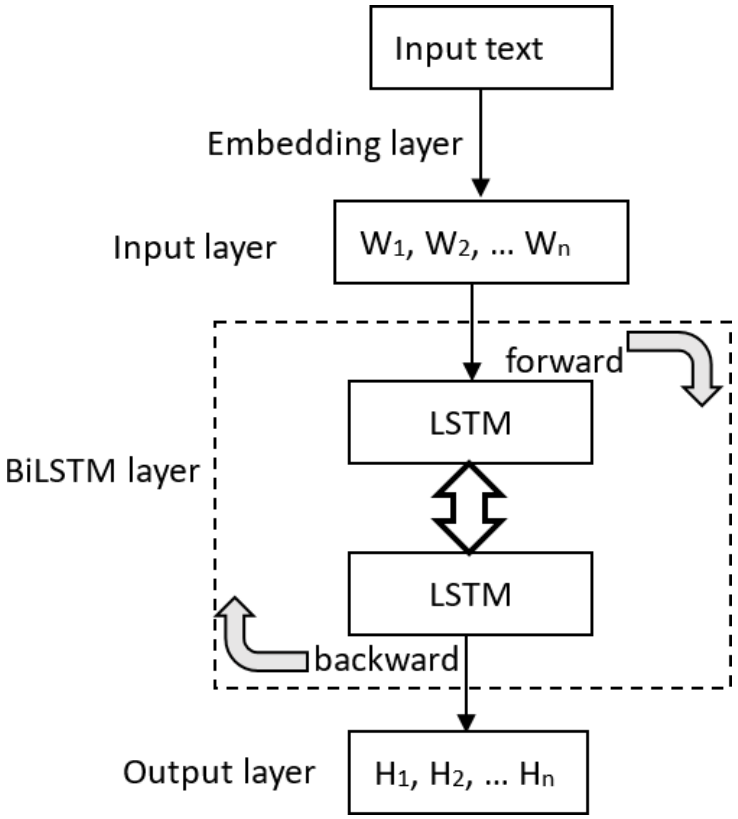

Figure 5. Bi-LSTM is used to obtain sequence features

This study also used principal element analysis (PCA) before inputting the embedding vectors to the classifier, the main purpose of which was to reduce the dimensionality-related variables that make up the dataset, while preserving the more significant and usable changes in the dataset. We conduct intensive experiments to exploit and compare the key strengths of each word embedding and classification technique, fetching data from the WIPO patent database containing patent classification numbers, using deep learning-based text analysis techniques. A bidirectional implementation method is proposed here. First, deep learning technology is implemented to identify sustainable technologies and reduce dimensionality to improve accuracy; second, fine-tuning and model optimization (by using knowledge distillation) are applied to construct detection models. Knowledge distillation builds a compressed model through accurate training, and can use pre-training with larger data to complete the BERT model. This study proposes a fintech analysis model based on knowledge distillation in Figure 6. It shows that pretrained weights from BERT are used to fine-tune the detection architecture in order to produce model tasks that are less computationally demanding.

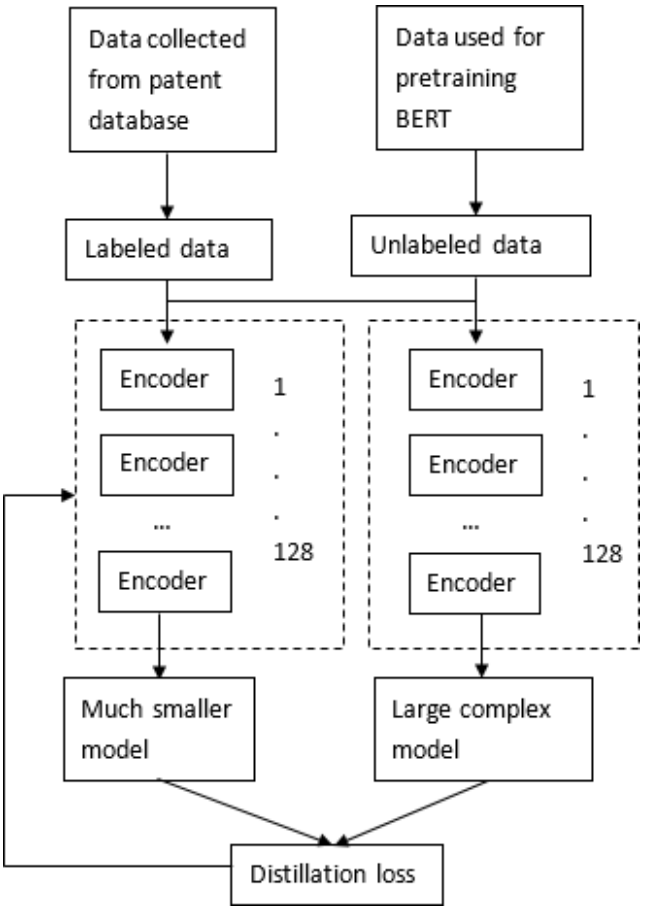

Figure 6. Fintech analytics model architecture applying knowledge distillation from pre-trained BERT

The key steps to organize this research structure are as follows:

(A) Train the initial model: Combine the initial network (using BERT) on a large general-purpose text dataset.

(B) Establish a message transmission and communication mechanism: Build a network that has been trained to generate data by itself (using distilled BERT). Between the initial network and this network, a connection channel is established, either through direct forwarding layer output or data augmentation before passing the data.

(C) Forward pass to larger model: get all immediate results via initial network forwarding, then apply data augmentation.

(D) Applying backpropagation, using the initial network and correlation for backpropagation to generate errors in the network.

Response-based knowledge was also used in this study. Utilizing the results of the last output layer of the initial network based on the response, this approach is simple and effective as compressing larger models in general natural language processing. Its distillation loss can be expressed by the following mathematical formula:

$$L_D\left(p(z_t), p(z_s)\right) = L_{\mathrm{KL}}\left(p(z_s), p(z_t)\right) \quad (2)$$

L_{KL} here refers to Kullback–Leibler divergence loss (KL divergence loss), which quantifies how different one probability distribution is from another. In this experiment, the KL divergence loss is between the probability distribution P of the initial network and the probability distribution Q of the generated network, and its value can be multiplied by the logarithm of the event probability in Q by the sum of the negative probability values of each event in P Calculated as the logarithm of the event probability in P.

IV. Results and analysis

We use the WIPO patent database to collect patent-related data, investigate text-based fintech detection methods, and use a recurrent model of impact to use keywords belonging to different technologies. A common way to define sustainable technology is to use a list of words that characterize the related green energy technology. This study uses a keyword-based approach that classifies patent textual data into sustainable technology patents and non-sustainable technology patents based on predetermined keywords. These categories are used to identify whether patents collected from patent databases are related to green energy patents. In this study, 100 sustainable technology patents that have been collected and judged manually are given to the framework designed by this research for training, and then 100 random patents are mixed in, and then these 200 patent documents are input into the system of this experiment. On output, the system selects 102 patents claiming to sustainable technology patents, which contain the original 100 training samples. Then, 90 of the 100 sustainable technology patents in the original training sample were removed, and the other 90 sustainable technology patents that had not been trained were added, and then the other 100 known non- sustainable technology patent technology documents were mixed in. After the systematic processing of this study, 100 purported fintech patents were also output.

After inspection, it was confirmed that 93 of them belonged to fintech patents, but 7 were misjudged by the system. Therefore, the correct rate of calculation of this system is 93%.

In addition, this research has also carried out practical application tests. Download more than 11 thousand patent data in F02S, F03D, F03G, F24S, F24T for IPC in the WIPO patent database, and input them into the system of this experiment. After analysis, the output determines that more than 8,000 patents belong to the target technology patented files. Further analysis of the applications of its patent families around the world shows that the keywords that appear most frequently in the summary are extracted, as shown in Figure 7. The top 10 are all related to wind energy, which aligns with our earlier analysis.

Figure 7. Abstract key word analysis

Furthermore, a more in-depth analysis was conducted to identify keywords with higher frequency and weight in the full patent texts. The results, shown in Figure 8, reveal that most of the keywords overlap with those in Figure 7. Additionally, the top 10 keywords are all related to wind energy. This clearly indicates that, among the three types of green energy—wind, solar, and geothermal energy—wind energy companies are the most proactive in patent deployment.

Figure 8. Description key word analysis

Additionally, we analyzed the filing dates of these patents. As shown in Figure 9, prior to 2006, the number of PCT patent applications related to green energy was fewer than 200 per year. However, between 2006 and 2010, there was a significant increase. This growth is likely attributed to two main factors: first, the global economy was thriving during this period, leading to a surge in energy demand and a sharp rise in oil prices. As the cost of fossil fuels approached that of green energy, companies were incentivized to invest more resources in developing alternative energy sources. Second, the issue of global warming was gaining increasing attention, prompting countries to prioritize carbon reduction strategies, with green energy development becoming a top priority.

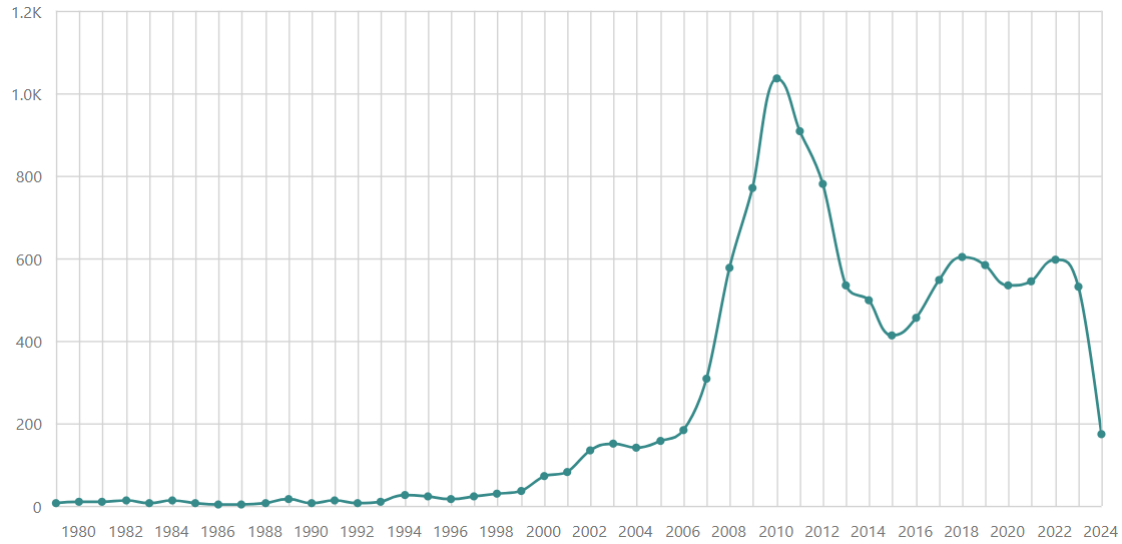

Figure 9. The relationship between patent applications and time However,

the subsequent global financial crisis negatively impacted funding for R&D and patent deployment in the industry, resulting in a decline in patent applications. Despite this, from 2010 to 2022, the number of annual applications stabilized at over 400. As for applications filed after 2023, their numbers appear lower in the figure due to some of them not yet being disclosed. Figure 10 shows the distribution of the analyzed patent numbers across different International Patent Classifications (IPC). It can be observed that the majority of the patents are related to wind energy technologies.

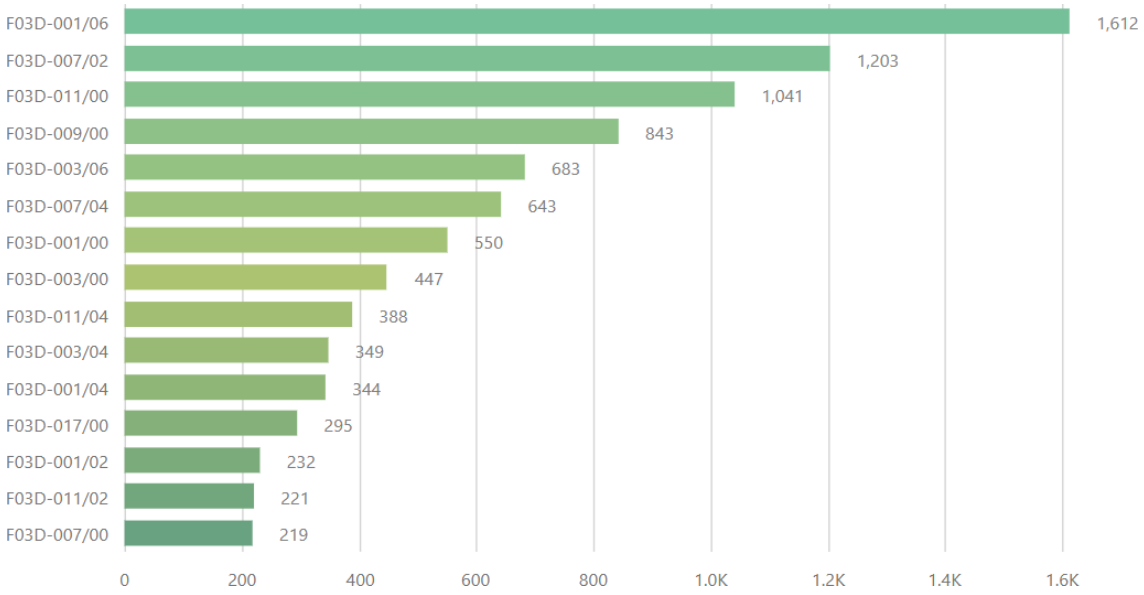

Figure 10. Top 10 Patent Applications with IPC (F03D wind power)

In addition, we also analyzed the top 10 applicants by the number of patent filings, as shown in Figure 11. The results reveal that, apart from one Chinese company and one American company, the rest are all Japanese and European firms.

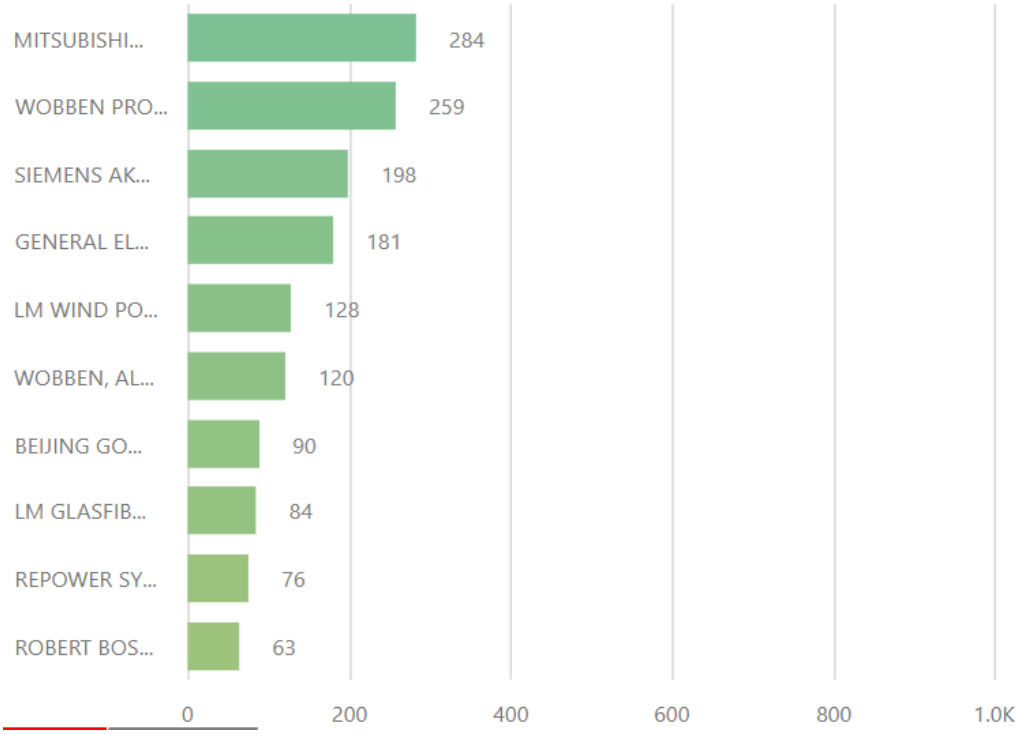

Figure 11. Top 10 applicant

Conclusion

In this study, we develop an innovative architecture to detect whether patent documents are green energy patents using deep learning. Using BERT and Bi-LSTM to judge the content of the text in the patent database, the proposed architecture improves the analysis efficiency of the text content, and is an application system for patent content data mining. Various key functions are discussed here, including how to preprocess textual data, and use various data filtering techniques to transform unstructured data into meaningful forms. A keyword and recurrent model-based text tagging technique is employed on the collected text corpus to extract useful features related to green energy technology. The latest text embedding technology based on deep learning is also applied to ensure the word semantics and contextual meaning contained in the acquired patent text. A BERT-based text representation model is proposed to convert the collected words into semantic vectors in the text corpus. The attention mechanism is used to improve the accuracy of classification tasks, and a knowledge distillation method is also proposed to construct detection and classification models that save computational resources. Finally, experiments are carried out to realize the classification and detection of fintech patents, to verify the accuracy of the proposed BERT/BiLSTM model, and to combine the advantages of the BERT and BiLSTM models to understand the syntax and context information of each word. In future work, a multi-model patent classification detection system can be developed to utilize more diverse data such as text, images, etc. to obtain effective results.

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Management Models for Achieving the Reasonable Measures Requirement of Trade Secret Protection Using Blockchain**

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Abstract

Trade secrets (TSs) are information that is critical to the competitiveness of corporations. A survey in 2021 Q3 showed that most Taiwanese companies are worried about the leakage of their confidential information. According to the Trade Secret Act[1], one defining element of a TS is that "its owner has taken reasonable measures to maintain its secrecy." However, the vague word "reasonable" can confuse companies regarding their TS protection. In this study, a blockchain based on the study of 12 judicial cases regarding "reasonable measures for trade secrets" in Taiwan since 2018 and integrating a "Hyperledger Fabric Composer and Log" is created for providing reasonable measures for TS protection that meet legal practice requirements. We propose a six-layer blockchain architecture and design smart contracts; the project includes CTO file, Javascript (JS) file, and access control list (ACL) file. In addition, we introduce the New Product Development process of the Product Development Management Association to meet the R&D requirements of high-technology companies. Finally, this study provides four practical suggestions for companies interested in using blockchain technology for implementing reasonable TS protection measures. The established six-layer blockchain enables corporations to create a clear and reasonable

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** This English article is largely rewritten and revised from the Chinese-language master's thesis of the first/corresponding author, Jin-Ching Shen. This article was presented on the topic of "Management Models for Reasonable Measures of Trade Secrets Using Blockchain" at the 8th Asia-Pacific Conference on Social Sciences & Management at Hokkaido, Japan, on January 9, 2024. Both authors appreciate the valuable comments and suggestions relayed to them by the participants of the conference. This article is finished and incorporates recent literature regarding the reasonable measure requirement for trade secret protection and blockchain applications.

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[1] Article 2, Clause 3 of the Trade Secret Act regulates that "The term 'trade secret' as used in this Act shall mean any method, technique, process, formula, program, design, or other information that may be used in the course of production, sales, or operations, and also meet the following requirements:…3.Its owner has taken reasonable measures to maintain its secrecy." *See* Laws & Regulations Database of The Republic of China (Taiwan), Trade Secrets Act, https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=J0080028 (last visited Sept. 17, 2023).

hierarchy for TS management that meets the requirements of reasonable measures established by the judiciary. Such a blockchain can help corporations submit powerful judicial evidence by ensuring sufficient information for claims.

Keywords: Trade Secret, Reasonable Measures, Blockchain, Hyperledger Fabric

1. Background: Taiwanese Enterprises Are Worried About Trade Secret Leaks

In 2009, the Taiwan Stock Exchange included an intellectual property (IP) management system in its corporate governance evaluation. Moreover, to enhance the competitiveness of Taiwanese IP, "Intellectual Property Management Practice" became part of the Code of Practice on the Governance of Listed Companies in 2020[2].

The Science and Technology Law Institute (or III[3]) has long been interested in developing a Taiwan Intellectual Property Management System (TIPS) and has published a survey of Taiwan's IP rights biennially since 2013[4]. The surveys have indicated the following. First, Taiwanese enterprises have gradually improved their awareness of IP and are willing to invest resources in IP management. Second, most enterprises' positioning regarding IP rights is limited to protecting their operations. Third, enterprises' investment in IP management has gradually improved from "reducing disputes with others" (level A in TIPS) to "combining IP and management" (level AA in TIPS) and finally "using IP to enhance competitiveness" (level AAA in TIPS). Fourth, in terms of IP risks, enterprises are more concerned about the leakage of their secrets than not infringing on the IP rights of others. Table 1 lists the outcomes of the aforementioned surveys.

Table 1: Survey outcomes on the current status of IP development in Taiwan. Enterprises are most worried about TS leakage[5]

	Status	Statements
1	Enterprise positioning regarding IP	(1) Protecting one's business (most companies value this) (2) Reducing disputes with others (74% of companies) (3) Trends: IP positioning is mostly defensive (level A in TIPS)
2	Enterprise IP layout	(1) Most enterprises: already in place (86%) (2) Layout content: holding trademarks (91%), holding patents (79%) (3) Trends: Higher capital implies a higher proportion of IP in the layout
3	Enterprises resources invested in IP	(1) Most enterprises have IP personnel (84%); (2) Most enterprises have IP funds (94%); (3) Basic IP management: Applying for and maintaining IP rights; (4) Advanced IP management: IP layout, patent map competitor monitoring, and IP evaluations; (5) Trends: Resources have shifted from applications and maintenance to "combining IP with management" and using IP to enhance

[2] Taiwan Stock Exchange, Center for Corporate Governance, https://cgc.twse.com.tw/ (last visited Jun. 16, 2023).

[3] This institute is also called the "Institute for Information Industry," and it is an important information industry promotion organization in Taiwan.

[4] The Innovation and Intelligence Center of the Science and Technology Law Institute, Institute for Information Industry, Investigation Report for Current Intellectual Property Practices of Domestic Enterprises in 2021, https://stli.iii.org.tw/publish-detail.aspx?no=58&d=7202 (last visited Jun. 16, 2023).

[5] Jin-Ching Shen, Management Model for Reasonable Protection Measures of Trade Secrets Using Blockchain Technology 2-3 (May 29, 2023; unpublished LL.M. thesis, National Taipei University of Technology; on file with National Central Library).

		competitiveness; this is an increase from level A to level AA and AAA in TIPS.
4	IP risks faced by enterprises	(1) IP infringement conducted by others (48%); (2) Employees leave or change job (40%); (3) Patent squatting (38%); (4) Confidential information leakage (35%); (5)Trends: Preventing and blocking the leakage of secrets and protecting their rights from infringement is considered more important than defending from proactive infringement litigations.

Source: 2021 Survey Report on the Status of Intellectual Property of Domestic Enterprises *by the Innovation and Intelligence Center of the Science and Technology Law Institute, Institute for Information Industry*[6].

Research and development (R&D) and innovation are the foundations of sustainable development for enterprises, and information such as R&D records and trade secrets (TSs) is often the basis for patent applications. This study argues that enterprises should adopt modern methods to protect their TSs, such as R&D records and achievements, to maintain their core competitiveness.

The conclusions of the *2021 Survey Report on the Status of Intellectual Property of Domestic Enterprises* are the research motivations for this study. These conclusions included integrating blockchain technology to establish a reasonable mechanism for preventing TS leakage and improving enterprise R&D, innovation, and sustainable development.

This study establishes "reasonable measures for TSs" on the basis of the current Taiwan jurisprudence on these measures. It focuses on using the Hyperledger Fabric Composer blockchain technology rather than discussing the protection of TSs from the legal perspective.

2. Research Methods and Applications: Blockchain Technology Applied to Trade Secret Management

The main function of a blockchain is to store credible data; any data updated or modified in a blockchain are saved as a new file. In the Hyperledger Fabric system, clicking "All Transactions" reveals the recorded history of all data modifications, showing the user, item, and manner of the modification. Each participant can see the modifications on the blockchain in real-time and can "Trace Back" to see all versions[7]. The identification management and authorization management functions leave "well-known traces," providing revised evidences if a document is tampered with. Tampering is thus ineffective and should not occur.

The storage of TSs in a private blockchain would constitute a digital transformation from written R&D records to not only electronic records but private blockchain records. Blockchain technology can also improve the communication efficiency of collaborating organizations and prevent information gaps. Each company's R&D achievements when cooperating with external manufacturers can be recorded, simplifying the provision of evidence during disputes. The proposed six-layer private blockchain management system for TSs is used by participants who are corporations (CORs) or business units (BUs), as decided by the administrator of the blockchain. An overview of the proposed

[6] *Id*., at 1.

[7] *See* Shen, *supra* note 5, at 22; Hyperledger Fabric, A Blockchain Platform for the Enterprise—hyperledger-fabricdocs main documentation, https://hyperledger-fabric.readthedocs.io/en/release-2.5/ (last visited Jun. 16, 2023).

system is provided in Fig. 2.1.

2.1 First Layer: Private TS Blockchain for Each Branch[8]

The first layer of the blockchain, named "Industry Secret Storage," is intended for TS storage and should be used for collaboration between various departments within BUs. Relevant persons can also use the blockchain to inquire about the TSs of their programs. These functions can enhance mutual trust, facilitate joint determinations with BUs, and provide guidance when adjusting R&D directions and assigning personnel to solve customer problems.

A smart contract comprises CTO file, a Javascript (JS) file, and an access control list (ACL) file. The CTO file includes the basic information on participants, resources (data stored in the blockchain), and transactions (data in the blockchain that are created, read, updated, and deleted[9]). Furthermore, all employees in each branch are participants, including but not limited to employees in production, marketing, human resources, R&D, finance, or any practice that can improve corporate performance.

The JS file defines how TSs are created, read, updated, and deleted[10], and the ACL file is a clear and reasonable data management hierarchy that constrains which data each employee is authorized to create, read, update, or delete[11].

2.2 Second Layer: Private Blockchain that Records Smart Contract Modifications (Log)[12]

The second layer, a log layer, stores records of smart contract modifications. It enables branch companies to modify the smart contracts of the first-layer private TS blockchain. Because employees know how smart contracts are modified, this could reduce employee distrust. Moreover, TSs and the log are maintained and managed by the branch companies[13], which can own TSs and determine whether their contributions to the TSs have been tampered with.

The second layer enables many branches to join the alliance blockchain for information sharing, especially when collaborating with upstream and downstream supply chain partners. For example, numerous consumer-facing retail branches could share market research information. Financial industry branch companies could synergistically share customer records and credit status. This log could improve the efficiency of administrative management for each branch within a BU.

At this level, the CTO and JS files are defined similarly, but the ACL file additionally allows authorized employees to review modifications to smart contracts in the private TS blockchain.

2.3 Third Layer, BU TS Alliance Blockchain[14]

The third blockchain layer is designed to enable project personnel in each BU have

[8] *See* Shen, *supra* note 5, at 22-23.
[9] The data stored by this blockchain are TSs, and this blockchain is "Resource." *See* Hyperledger Fabric, *supra* note 7.
[10] *See* Hyperledger Fabric, *supra* note 7.
[11] *See* Shen, *supra* note 5, at 22-23; Hyperledger Fabric, *supra* note 7.
[12] *See* Shen, *supra* note 5, at 23.
[13] *See* Shen, *supra* note 5, at 23; Hyperledger Fabric, *supra* note 7.
[14] *See* Shen, *supra* note 5, at 23-24.

"portable TSs" during a secondment, cross-division cooperation, or remote joint R&D project. The participants are those interacting with multiple BUs, such as project personnel seconded from Branch A of BU 1 to Branch B of BU 2 when Branch A and B are cooperating on a project. This layer authorizes, for example, project personnel in Branch A to create, read, update, and delete TSs after authorization by personnel in Branch B.

The third layer provides five benefits: (1) a supervisor can quickly understand the capabilities of project personnel from another division or department; (2) repeated interview assessments can be avoided; (3) efficiency is improved in the company's R&D process; (4) the circulation of data contributed by the TSs of seconded personnel in a joint BU and the promotion of the BU are facilitated; (5) BUs can quickly determine whether a leakage of TSs has occurred, helping insurance companies to evaluate claims.

The participants include all branches within a BU, and the JS file defines all TS transactions, including logs of record modifications for each branch. BUs are allowed to create, read, update, and delete only specific data in the ACL file.

2.4 Fourth Layer: Private Blockchain that Records BU Smart Contract Modifications (Log)[15]

The fourth blockchain layer, the BU log blockchain, stores the modification records of the smart contracts in the BU alliance blockchain. Each BU can modify the smart contract. This enables all BUs to know how and which smart contracts have been modified, reducing distrust among BUs by enabling them to directly detect tampering with TSs. Both the BU alliance and log blockchains are maintained and managed by the divisions.

This layer enables many divisions to join the blockchain to share information. It also optimizes the daily administrative tasks of BUs within the same division.

The CTO file defines participants as divisions, and the JS file transactions are the records of modification of the smart contracts in the BU blockchain. The ACL file only allows divisions to create, read, update, and delete specific data.

2.5 Fifth Layer: Enterprise Trade Secret Alliance Blockchain (COR)[16]

The fifth layer has two purposes: (1) the "Corporation" (COR) can join as a business unit (unit of BU), and (2) the judicial system, insurance companies, and business partners can act as participants. Including the judicial system can improve the efficiency of evidence collection in infringement disputes. However, this layer can also act as third-party evidence storage, especially for smart contract modifications. Insurance companies can access specific data in employee records to help companies identify rule-breaking employees. Moreover, the contributions of business partners to R&D achievements or TSs can be recorded in detail to better define the ownership of TSs or patents. In infringement disputes, the company can use this layer provide evidence of R&D records to prove that the company independently developed a product.

In the CTO file, the participants are defined as divisions, insurance companies, and courts at all levels. The JS file is defined as TS transactions, and divisions can log in and revise records. The ACL file allows insurance companies and courts to read specific data.

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[15] *See* Shen, *supra* note 5, at 24.
[16] *See* Shen, *supra* note 5, at 24-25.

2.6 Sixth Layer: Private Blockchain Records COR Smart Contract Modifications (Log)[17]

The sixth layer stores the records of modification of smart contracts in the COR layer. First, this layer enables headquarters to modify the COR smart contracts. Second, it informs each division regarding how and which smart contracts have been modified, reducing distrust between divisions and headquarters. Third, both COR and Log are maintained and managed by the headquarters, enabling them to monitor whether the TSs that they have contributed to have been tampered with.

The benefits of the sixth layer are that it enables many third parties to join the blockchain for information sharing and that it optimizes daily administrative tasks for divisions within the same corporation.

In this CTO file, headquarters, insurance companies, and courts at all levels are defined as participants. The JS file is defined as the transactions of TSs, and headquarters are permitted to log in revised records. The ACL file allows insurance companies and courts to read specific data, as illustrated in Fig. 2.1.

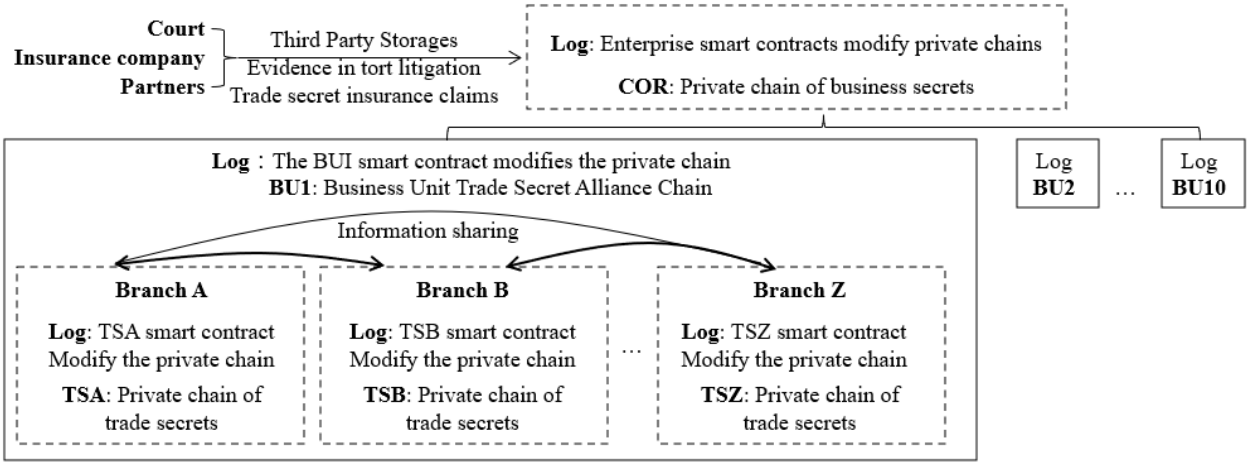

Fig. 2.1: Proposed private TS chain system[18].

2.7 Smart Contracts

The Hyperledger Fabric Composer (HLFV1) system is the most stable blockchain system at the time of writing and was therefore adopted to establish the blockchain. The steps for building a blockchain are clearly delineated in HLFV1. The key element of the blockchain is the smart contract (or chain code);[19] any modified smart contract becomes a new smart contract with different functions. The HLFV1 system's smart contract comprises three parts: CTO files, JS files, and ACL[20] files.

The New Product Development (NPD) process proposed by the Product Development Management Association (PDMA) was adopted[21]. NPD is divided into six stages (S0–S5) and five gates (G1–G5); each stage is a step in the NPD process.

[17] *See* Shen, *supra* note 5, at 25.
[18] *See* Shen, *supra* note 5, at 26.
[19] *See* Shen, *supra* note 5, at 31; Hyperledger Fabric, *supra* note 7.
[20] *See* Shen, *supra* note 5, at 31; Hyperledger Fabric, supra note 7.
[21] PDMA, https://www.pdma.org/ (last visited Jun. 16, 2023).

Gates refer to risk management evaluations of the results of each stage to decide whether a project should move to the next stage. However, this study integrates smart contracts (CTO, JS, and ACL files) and an additional gate in the NPD process, creating a TS process with six stages and six gates (Tables 2.1–2.8). In particular, Table 2.6, which presents the seven parts of the Hyperledger Fabric Composer ACL, is critical for ACL operations for smart contracts.

Table 2.1: Participants at each stage of a smart contract[22]

Participants	Proposers	Proposal Groups	Managers	S1–S5 Personnel	G1–G6 Personnel
Basic data	(1) Employee ID[23] (2) Name (3) Department (4) Post (5) Project ID (6) Participation phase (S, G, and Managers) (7) Secret permissions (Subject to change as the project progresses)	Same as for the proposers	Same as for the proposers	Same as for the proposers	Same as for the proposers

Table 2.2: Confidential permissible[24]

	Stage	Create, Read, Update, and Delete Permissions	Remarks
Proposal stage	S0	New profile for all employees	Encourages full participation, such as marketing plus R&D, to improve the efficiency of NPD administration
Case filing stage	S1–S5 G1–G6	(1) Level A = Read, update, delete (2) Level B = Read, update (3) Level C = Read	(1) Level A: The board of directors, chairman, and CEO can delete after a case is closed or following a resolution by the board of directors (2) Level B: S1 – S5, G1–G6, personnel can read and update when the project is on their stage or gate (3) Level C: S1–S5, G1–G6, personnel can only read if the project is not on their stage or gate

Table 2.3: Asset contents of each participant in a smart contract[25]

Participant	Recording Type	Proposal Group	G1–G6 Members	S1–S5 Personnel	Managers
Asset	(1) Proposal	Same as	(1) Approve or	(1) R&D records	(1) Management

[22] *See* Shen, *supra* note 5, at 32.
[23] Employee ID is also marked as identification and identified by its ID, and its confidential permissible is shown in table 2.2.
[24] *See* Shen, *supra* note 5, at 33.
[25] *See* Shen, *supra* note 5, at 34.

content	records (2) Other files	mentioned for the recording types	reject decisions (2) Reasons and suggestions (3) Other files	(2) Other files	opinions (2) Other files

Table 2.4: Transactions of the smart contract participants[26]"

Transaction	Transaction Name	Stage	Trading Staff	Transaction Content
Transaction 1	(1) Innovative proposals	S0	All employees	(1) Form filler (2) →Employees (3) Rapid prototype (4) Product Innovation Charter
Transaction 2	(2) Risk review	G1–G6	The reviewers on their gate	(1) Form filler (2) →Review Reviewers (3) →Portfolio ProjectName (4) Evaluation of the "fitness of the project for the company's future development" (5) Risks and opportunities of the project (6) Weaknesses of the project (7) Reasons and suggestions regarding approval or rejection of the project
Transaction 3	(3) Project advancement	S1–S5	The project personnel on their stage	(1) Form filler (2) →Team ProjectPersonnel (3) →Portfolio ProjectName (4) MTP analysis memorandum (Market, Technology, Product) (5) Business Case (6) R&D records (7) Reliability analysis of new products (8) Attractiveness analysis of new products (9) Mass production plan for new products (10) Improvement plan for new products
Transaction 4	(4) Management opinions	The whole process	Board of directors, chairman, and CEO	(1) Form filler (2) →Management TeamManagers (3) →Portfolio ProjectName (4) Management opinions (5) Decisions of the management group

Table 2.5: Three data update steps for four transactions[27]"

[26] Important issues regarding transactions of participants in "Smart Contracts" are focused on "Stage" and "Gate." *See* PDMA, *supra* note 21.
[27] *See* Shen, *supra* note 5, at 36.

Transaction	Generate New Data	Export Old Data	Update Data and Archive Them	Suggestions
Transaction 1: **Innovative proposals**	(1) S0 proposal: The employees receive blank proposal IDs from the system, and employees fill them in		Employee proposals are stored on the blockchain	
Transaction 2: **Risk review**	(1) G1 review team: Employees are authorized to modify their proposals (2) G2–G5 review panel: The panel reviews opinions, reasons, and suggestions for agreeing or rejecting to projects (3) G6 review panel: Market feedback suggestions are made for improving new products after launch	Reviewing panels are authorized to export their reviewed opinions	(1) The review panel adds the approved project to the company's "Portfolio" (2) Review opinions are stored on the blockchain, and the access rights of the review panel are then downgraded from B to C (can only read, not update)	"Export data" inclusion in transaction records (keep recording)
Transaction 3: **Project advancement**	(1) S1 Project Personnel: R&D record and MTP analysis memorandum (2) S2 project personnel: R&D records and plans for MTP analysis memorandum (3) S3 Project Personnel: R&D records about reliability analyses of new products (4) S4 Project Personnel: R&D records about mass production plan for new products (5) S5 Project Personnel: R&D records about yield improvement plans for new products	Project personnel are authorized to export their R&D records	(1) The project team adds the data to the corresponding file (2) Participants at every stage add their data to create a complete R&D record (3) The entry is submitted to reviewers (4) R&D records are stored on the blockchain, and the access rights of the project team are downgraded from B to C (can only read, not update)	"Exported data" inclusion in transaction records (keep recording)
Transaction 4: **Management opinions**	(1) Management opinions (2) Decisions of the management group	Management group members are authorized to export their management opinions	(1) Management opinions and decisions are submitted and stored for subsequent improvement and shareholder inquiries	"Exported data" inclusion in transaction records (keep recording)

Table 2.6: 7 Components of the Hyperledger Fabric Composer ACL[28]

	Component	ACL Name	Program
1	Rule name	Rule	ParticipantUpdateAndReadAccount

[28] *See* Shen, *supra* note 5, at 38.

2	Description	Description	“Participant Can Update And Read owned Account”
3	Person	Participant (p)	“aispim.RD2023.Enginer”
4	Read, Update, Create, Delete	Operation	READ and UPDATE
5	Data Archives	Resource (b)	“ai.spim. RD2023. Account”
6	Condition	Condition	(p.getIdentifier()==b.owner.getIdentifer())
7	Approve or not	Action	ALLOW

Table 2.7: Nineteen Access Rules of the ACL[29]

Category	Project	Accessing Rule
Company Proposer, reviewers, engineers, and managers	Read your information only	1. Participants can read their information only
		2. Reviewers can read their information only
		3. Project personnel can read their information only
		4. Managers can read their information only
	Read project data on each Stage	5. Proposers can read their proposals
		6. Participants in a project can read the data of every gate and stage about the project
		7. Managers can read the data of all projects
	Update project data on their Stage	8. Proposers can update their proposals
		9. Personnel can update the data on their gate or stage
		10. Managers can update and delete the data of all projects
	Companies change permissions to adjust Gates and Stages	11. The company grants level B permissions (read and update) to each Gate’s reviewers
		12. The company cancels level B permissions (read and update) of each Gate’s reviewers
		13. The company grants level B permissions (read and update) to each Stage’s personnel
		14. The company cancels level B permissions (read and update) of each Stage’s personnel
		15. The company grants level A permissions (read, update, and delete) to managers
		16. The company cancels level A permissions (read, update, and delete) of managers
System permissions	Blockchain system authorizes to the company	17. The blockchain system can create, read, update, and delete all data
		18. The blockchain system authorizes the manager of the TS system to create, read, update, and delete all information in their blockchain

[29] *See* Shen, *supra* note 5, at 38-39.

		19. The administrator of the TS system can create, read, update, and delete all information in their blockchain

Table 2.8: Data formats of transactions for updating records[30]

Date/Time	Authorization Type of Logining Blockchain	Participant	Updating Record
Date: hours, minutes, and seconds	(1) The company authorizes all employees to establish proposals (2) The company authorizes gate reviewers (3) The company cancels the authorization of gate reviewers (4) The company authorizes the Stage's personnel (5) The company cancels the authorization of the Stage's personnel (6) The company authorizes managers (7) The company cancels the authorization of managers when the Board of Directors are re-elected or the Chairman or CEO is replaced	(1) Employee (2) Proposer (3) Reviewers (4) Project personnel (5) Managers	(1) Complete R&D records and reviewing opinions (2) Timestamp: expressed in Greenwich mean time (accurate to 0.001 seconds) (3) Hash value: passwords related to the content of the information and the hash value of the previous information

3. Research Contributions and Conclusions: Establishing a Blockchain of Reasonable Measures for TSs

Blockchain can be used to establish a detailed permission management mechanism[31] to ensure only authorized personnel can access specific information. However, multiple authorizations are required to perform critical operations[32], such as modifying TS data or accessing specific blockchain transactions. This helps prevent illegal actions by internal or external attackers.

In addition, tamper resistance and evidence storage are key functions of the blockchain[33]. Transactions and data related to TSs are permanently recorded on the blockchain, which ensures that all modifications and visits can be traced and verified, improving the credibility of evidence regarding the TSs. Smart contracts can be used to automate the enforcement of permissions and restrictions, ensuring that only eligible transactions and operations that comply with regulations can be performed[34]. Hence, the six-layer blockchain proposed in this article is sufficient to establish a blockchain management system with reasonable measures for TS protection that would help enterprises resolve infringement disputes and legal evidence issues.

From a technical perspective, this study makes four suggestions for blockchain models:

1. Blockchain can prevent tampering and only enables the updating of data by individuals with authorization. It is therefore suitable for storing TSs such as R&D records. This study suggests that the proposed blockchain system could be used to

[30] *See* Shen, *supra* note 5, at 39.
[31] *See* Hyperledger Fabric, *supra* note 7.
[32] *See* Hyperledger Fabric, *supra* note 7.
[33] *See* Hyperledger Fabric, *supra* note 7.
[34] *See* Hyperledger Fabric, *supra* note 7.

protect TSs, to provide evidence for corporate R&D processes, and as the basis for patenting R&D results[35].

2. To prevent administrators from modifying the Smart Contract privately, another blockchain to store the log file of the original blockchain could be produced to record the modification history of the Smart Contract[36].

3. In accordance with enterprise structures, each branch should establish a private TS blockchain with Log blockchain. An alliance blockchain combining multiple private blockchains could then be developed as a TS protection mechanism for BUs[37].

4. To improve the credibility of TS private blockchains, this study suggests adding impartial third-party participants, such as judicial agencies or insurance companies underwriting TSs, in an appropriate position in private TS blockchains or alliance blockchains. This could improve the procedures for providing infringement evidence and the efficiency of claims settlements[38].

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[35] *See* Shen, *supra* note 5, at 61.
[36] *See* Shen, *supra* note 5, at 61.
[37] *See* Shen, *supra* note 5, at 61.
[38] *See* Shen, *supra* note 5, at 61-62.

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