Diversity of Reactions among Local People upon Commercialization of Traditional Knowledge under Intellectual Property Rights Systems

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Abstract-**The purpose of this study is to focus on the diversity of reactions among local people caused by the commercialization of traditional knowledge under intellectual property rights systems. While intellectual property rights systems tend to be globally unified, as in the negotiations regarding TTP (Trans-Pacific Partnership), local people having traditional knowledge react to and cope with such systems diversely; some reject such systems while others positively adopt such systems. This study specifically focuses on local people's diverse reactions and responses to the existing intellectual property rights systems. The cases from Hawaii illustrate that there are a variety of potential relationships between intellectual property rights systems and traditional knowledge. The analyses contained in this paper also show that, in cases where traditional knowledge is commercializing through intellectual property rights systems, it is advantageous for an enterprise as a rights holder to attempt to pursue a dialogue with local people, rather than simply pursue a patent right secretly in order to claim exclusive control over intellectual property rights. Through such a dialogue, risks for business development may be reduced and the values of cultural resources may be enhanced.**

I. INTRODUCTION

Until the middle of the 1980s, intellectual property rights had little relevance to traditional knowledge such as folklore and cultural knowledge. However, as of 2016, intellectual property rights and traditional knowledge have become closely related to each other in terms of the protection, ownership, and benefits derived from traditional knowledge.

One reason for this transformation in the relationship lies in the expansion of the number of subjects protected under intellectual property rights since the pro-patent policy in the U.S. began under the Reagan Administration. Under the current intellectual property rights systems, subjects such as living organisms and business methods, which had not been previously protected, have been recently protected sufficiently. In addition, geographical indication (GI) has been introduced, and cultural differences as well as traditional knowledge have been protected as copyright.

The other reason lies in the fact that, due to globalization, genetic resources and traditional knowledge which previously existed only in specific unique regions have crossed borders and thus have been deterritorialized. These deterritorialized genetic resources and traditional knowledge are frequently commercialized as sources for yielding profits. This also means that genetic resources and traditional knowledge such as folklore and cultural knowledge, which previously had been intellectual resources, now have become intellectual properties.

Recently, the collision between intellectual property rights and traditional knowledge has resulted in a number of problematic conflicts. One such conflict is that, based on the premise that traditional knowledge belongs in the public domain, a third party who acquires a position of a rights holder puts traditional knowledge to commercial use, and thus benefits. However, local people, specifically, indigenous people who claim that they are holders of traditional knowledge have never agreed with the premise that traditional knowledge belongs in the public domain [1]. For a normal invention, the individual who invents it is recognized as the inventor. However, traditional knowledge is not invented by an individual, and has been shared and maintained by a community. In this sense, there is no inventor for traditional knowledge. In addition, since traditional knowledge has been handed down for generations, it does not possess novelty, which is one of the essential requirements for obtaining a patent grant. This means that traditional knowledge cannot be protected technically under the existing intellectual property laws, which disenfranchise such local people.

Previous studies have presented various solutions to problems relating to the relationship between intellectual property rights and traditional knowledge. Such solutions were mainly presented through discussions as to how to protect traditional knowledge institutionally through legislation, for example. More specifically, previous studies have argued the matters including ensured equality, return of derived interest, and prevention of free riding, which have been discussed at World Intellectual Property Organization (WIPO) and the conferences of the parties (COPs) of Convention on Biological Diversity (CBD) [2]. However, at WIPO or CBD, the nation-states serve as a minimum unit for claiming rights and benefits, and thus it is normal to develop discussions and arguments for claiming rights and benefits in favor of their own nation-states. Therefore, local people who claim that they are holders of traditional knowledge are treated not as rights holders who represent the nation-states but as stakeholders who are equivalent to the parties concerned including enterprises, academic organizations, and non-governmental organizations (NGOs), for example [3], [4]. Therefore, such local people have been unable to influence the discussions and the arguments directly on the international stage in the past [1].

In view of this situation, it can be concluded that the previous studies have not focused sufficiently on such local people. Furthermore, these situations suggest that these studies have overlooked the ways that the existing intellectual property rights systems have been understood and interpreted from the view point of those who have suffered appropriation

or misappropriation of their traditional knowledge. Institutional protection of traditional knowledge through legislation seldom provides what the local people hope for in terms of protection.

However, various local peoples holding and maintaining traditional knowledge have coped with intellectual property rights systems practically and diversely. Among such local peoples who have not been protected institutionally, some reject such systems while others positively adopt such systems. For example, when an enterprise used traditional knowledge in an unfair manner or utilized it wrongfully for commercial use through intellectual property rights systems, values of traditional knowledge were deteriorated. In response to such a situation, the local peoples often filed a lawsuit and/or started a protest campaign via grass-root networks. In such a case, brand image of the enterprise was badly damaged and, even worse, morality of the corporate activity was called into question. As a result, the enterprise may be stigmatized as greedy and immoral. However, there are also some local peoples who pursue the protection of traditional knowledge through the existing intellectual property rights systems [25], [26].

Therefore, the purpose of this paper is to focus on the diversity of reactions among local peoples when traditional knowledge is commercialized under intellectual property rights systems. More specifically, this paper, in contrast with previous studies, reviews and compares a plurality of cases in which local peoples, including holders of traditional knowledge, make a protest in terms of the problematic conflicts in the relationship between the intellectual property rights systems and traditional knowledge. The paper specifically focuses on local peoples' diverse reactions and responses to existing intellectual property rights systems. The cases from Hawaii illustrate that there are a variety of potential relationships between intellectual property rights systems and traditional knowledge from these peoples' points of view. The cases in Hawaii and the analyses provided in this paper also show that, in cases where traditional knowledge is commercializing through intellectual property rights systems, it is advantageous for an enterprise as a rights holder to attempt to pursue a dialogue with local peoples, rather than simply pursue a patent right secretly in order to claim exclusive control over intellectual property rights. Through such a dialogue, risks for business development may be reduced and the values of cultural resources may be enhanced.

In terms of the definition of intellectual property rights in this paper, intellectual property rights mainly refer to patent, utility model, trademark, design, copyright, and trade secrets. In addition, in the speech at the WIPO roundtable on Intellectual Property and Indigenous Peoples in Geneva on July 23 and 24, 1998, Erica-Irene Daez classified intellectual properties of indigenous peoples into the following categories: (i) folklore and crafts; (ii) biodiversity; and (iii) indigenous knowledge [5]. The concept "traditional knowledge" in this paper includes (i) to (iii) in accordance with the categories defined by Daez. Moreover, since genetic resources are closely related to (ii) biodiversity, the concept "traditional knowledge" in this paper also shall include genetic resources. In addition, the term "local people" including holders of traditional knowledge mainly refers to indigenous people in this paper but is not limited to indigenous people and thus includes, for example, local peoples who migrated from another place but have lived for a long time in a specific place.

One of the authors visited Oahu several times (February 3 to 17, 2014 and January 13 to 27, 2015). During the visits, the author conducted ethnographic research including participant observation at Island Treasures Art Gallery, Native Books/Na Mea Hawai'i at Ward Village, and other locations in Oahu. The interviews conducted by the author are as follows:

- with Kim Taylor Reece, at Kim Taylor Reece Gallery, Hauula, January 20, 2015; and
- with Gail Allen, at Island Treasures Art Gallery, Kailua, January 20, 2015.

II. THE RELATIONSHIP BETWEEN INTELLECTUAL PROPERTY RIGHTS SYSTEMS AND TRADITIONAL KNOWLEDGE FROM CASES IN HAWAII

Situations often happen in which a third party acquires a position of a rights holder and puts traditional knowledge to commercial use in order to make a profit based on the premise that traditional knowledge belongs in the public domain. Regarding such situations, Michael Brown argues that the situations could be typified into the following five categories [6]:

1. the acquisition of native crop varieties for the genetic improvement of seeds;
2. the transformation of traditional herbal medicines into marketable drugs by pharmaceutical firms;
3. the incorporation of indigenous graphic designs into consumer goods without the permission of native artists;
4. the exploitation of indigenous music by record companies; and
5. the collection of DNA from isolated human populations for medical uses yet to be determined.

In the following section, the cases in Hawaii will be introduced in accordance with these five categories, each of which represents the problematic conflicts in the relationship between intellectual property rights systems and traditional knowledge.

A. The acquisition of native crop varieties for the genetic improvement of seeds—Case of Taro Patents of the University of Hawaii

In the 1990s, taro crops in Samoa were severely hit by leaf blight. In order to stop further damage from the blight, Samoan taro growers asked for help from the University of Hawaii. The University of Hawaii then developed three

crossbred taros which were shown to have increased disease resistance. The University of Hawaii filed patent applications for these three taro strains and the patents were granted in 2002. The University of Hawaii simply conducted a conventional crossbreeding technique in the development and did not conduct gene recombination [7].

However, some indigenous Hawaiians held protests demanding the university to give up the patents, insisting that since taro represents the embodiment of their sacred ancestor, taro is unique to the Hawaiian people and thus the University of Hawaii cannot have a right to own or license it through intellectual property rights systems [7]. Furthermore, some indigenous Hawaiians asked:

> *"how can the hybrid varieties be said to be "invented" by the researchers at the University of Hawaii if their production was borrowed from the Native Hawaiian development and cultivation of taro over hundreds to thousands of years?" [7].*

After the protests from indigenous Hawaiians, the University of Hawaii agreed to give up the three patents on Taro in 2006. Walter Ritte, a Hawaiian activist, who was involved in the protests, said that "UH needs to show more respect for native Hawaiian culture" [8].

B. The transformation of traditional herbal medicines into marketable drugs by pharmaceutical firms—Case of Global Pharmaceutical and Biotechnology Companies

The state of Hawaii is one of the most popular places for experimenting genetically modified organisms (GMOs). Many of the world's leading pharmaceutical and biotechnology companies such as Monsanto, Dow, Dupont/Pioneer, Syngenta, and BASD are located there and have occupied vast areas of land for experimenting the GMOs. Le`a Kanehe, a legal analyst of Indigenous Peoples Council on Biocolonialism (IPCB) argues:

> *"With 1418 field releases and 4566 field test sites, Hawai`i has had more plantings of experimental biotech crops than anywhere in the U.S. or the world. Furthermore, Hawai`i is second only to Nebraska with the most field trials of biopharmaceuticals - crops that produce dangerous drugs like vaccines, hormones, contraceptives, and other biologically active compounds. Regarding genetically modified organisms (GMOs), the biotech industry is severely under-regulated and allowed to operate in a shroud of secrecy, while in the case of bioprospecting, the industry is not regulated at all. Rather than passing laws to protect the public's safety and Native Hawaiian rights, the legislature passes laws to protect the biotech industry, such as one in 2001 that makes anyone found destroying genetically engineered crops liable for damage. Furthermore, the State facilitates GMO production through Agribusiness Corporation leases of State lands in Kekaha to GMO giants like Syngenta and Pioneer Hi-Bred International" [9].*

Fig. 1 (left) Taro plants and the Hawaiian Studies center on the University of Hawaii, Manoa Campus (Photo from the student newspaper of Honolulu Community College; http://www.thekala.net/)
Fig. 2 (right) The poster design of 20th Annual East Maui Taro Festival, April 21-22, 2012 (Artwork by Ariana F)

Fig. 3 The companies opposing California Proposition 37, a Mandatory Labeling of Genetically Engineered Food Initiative (Image from the website: http://cal-access.sos.ca.gov/Campaign/Committees/Detail.aspx?id=1344135&session=2011&view=late1)

Furthermore, the state of Hawaii is also a place where "bioprospecting" of genetic resources specific to Hawaii has been conducted based on traditional knowledge of Hawaii. For example, the University of Hawaii made a contract with Diversa Corporation (San Diego, CA) for exclusive rights to discoveries based on research on environmental samples collected from Hawaii's ocean resources [10], [11]. This does not necessarily indicate "biopiracy" in Hawaii. However, pursuing a patent right through intellectual property rights systems is carried out inevitably in a confidential manner. Only the applicant can know the progress, and the result will be disclosed after everything is settled.

For example, the biotechnology companies in Hawaii have produced GMO papayas called Rainbow. In accordance with the data from Ministry of Agriculture, Forestry and Fisheries of Japan, the GMO papayas occupy 77 % of the total planted area of papaya in Hawaii [12]. Some local peoples in Hawaii insist that producing the GMO papayas enhances employment and makes a better life for local peoples but others also insist that "biopollution" occurs and the GMO papayas pollinate wild non-GMO papayas, a result of which natural papayas in Hawaii are going to disappear [11]. However, no consultation or conference regarding the production of GMOs has ever been held between pharmaceutical or biotechnology companies and local peoples. In the state of Hawaii, protest campaigns called "eco-terrorism" were conducted in 2011 and 2013 which protested producing GMOs [13].

Fig. 4 Say No to GMOs on Hawaii Island (Photo from EcoWatch: http://ecowatch.com/2013/11/21/hawaii-bans-gmo-biotech-companies/)

Malia Nobrega, an indigenous Hawaiian, who organizes Waikiki Hawaiian Civic Club, commented that "it is not that we are against biotechnology. But it needs to be appropriate" [11]. As Peter Apo, who was re-elected as a trustee of the Office of Hawaiian Affairs (OHA), states, the problem is that the biotechnology industry often failed to consult native Hawaiians before forging ahead and "all the others occurred without consent of the community" [11].

For example, Nobrega is also a member of Native Hawaiian Intellectual Property Rights Conference (as known as Ka 'Aha Pono) and this organization drafted the manifesto called "Paoakalani Declaration" which warns about the current activities of pharmaceutical and biotechnology companies and the existing intellectual property rights systems [14]. However, Lisa Gibson, a president of the Hawaii Life Sciences Council (currently, called Hawaii Science and Technology Council) which actively supports biotechnology companies in Hawaii said that "the council was not aware of the declaration and that last month's meeting was meant simply to introduce roadmaps" [11]. However, Nobrega and Mililani Trask, who is another member of Hawaiian Intellectual Property Rights Conference, said that "the Hawaii Life Sciences Council has ignored the declaration deliberately" [11].

Gibson also insisted that activities of biotechnology companies in Hawaii not only enhance employment and make a better life for local peoples but also improve health conditions for local peoples. Gibson emphasizes the aspect of social contribution to society from biotechnology companies such as "curing cancer and diabetes and cutting the costs of health care" through science and technology [11].

In addition, some indigenous Hawaiians have an opinion opposite to those of, for example, Nobrega, Trask, and Ritte. For example, William Souza, a member of a Royal Order of Kamehameha group, insisted that rejecting science and technology also means losing an opportunity for a dialogue and said that "[r]eaching out for science and technology doesn't mean acquiescing and [i]t means working with it" [11]. In view of this, there are conflicts in opinions of local peoples in Hawaii regarding cultural matters, and science and technology.

C. The incorporation of indigenous graphic designs into consumer goods without the permission of native artists—Case of Reece v Island Treasures Trial Case

This trial case relates to copyright infringement. Plaintiff Kim Taylor Recce, who is a caucasian (called haole in Hawaii) professional photographer, has alleged copyright infringement by defendants Island Treasures Art Gallery, Inc., Gail Allen, and Marylee Leialoha Colucci, who is an indigenous Hawaiian, on the ground that Colucci's stained glass piece "Nohe" (see Fig. 6) infringed on Reece's photograph "Makanani" (see Fig. 5). As illustrated in Figs. 5 and 6, these two works show a hula dancer at the center posing an "ike" motion which means a "see" motion and is one of the traditional poses of classic hula (hula kahiko).

Mr. Reece is a professional artist living in Hawaii who has studied classic hula for more than 25 years and has published his own photo collections of hula since 1983. Ms. Colucci is an amateur part-time artist of stained glass piece and a hula dancer.

Mr. Reece continues to produce his own arts with hula as his main subject based on the premise that hula, traditional knowledge in Hawaii, belongs in the public domain. However, he insisted that, since every art created by him holds artistic quality based on his talent, his sense, and his technical skill as an artist, his own art should be protected by copyright under intellectual property rights systems (interview by the author, January 20, 2015). Under the existing intellectual property rights systems, even if a subject itself belongs in the public domain, copyright can be applied to an art work possessing artistic quality using the subject belonging in the public domain. The copyright then excludes a copy or a plagiarized work made by others from which economic loss is anticipated.

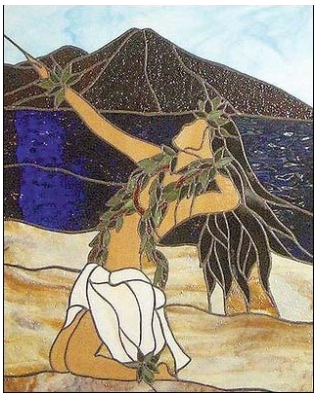

Fig. 5 (left) Kim Taylor Reece, photo "Makanani" (http://www.kimtaylorreece.com/home.htm)
Fig. 6 (right) Marylee Leialoha Colucci, stained glass piece "Nohe" (http://the.honoluluadvertiser.com/article/2006/Dec/23/ln/FP612230325.html)

However, in view of protection of traditional knowledge, this case exemplifies that a third party acquires a position of a rights holder in terms of traditional knowledge and puts the traditional knowledge to commercial use in order to make a profit, based on the premise that traditional knowledge belongs in the public domain. Moreover, this case shows a relationship in which the third party who acquired a position of a rights holder conversely sued a holder of traditional knowledge for design theft due to using her own traditional knowledge.

Vicky Holt Takamine, who was summoned to the court as a witness states:

> *"He wants exclusive rights to our hula and to our hula motions. He's taken pictures and photographs of hula dancers for the last 20 years, we have never infringed on his right to go and sell those photographs" [15].*

Furthermore, David Shapiro, a haole journalist, also states:

> *"Most Native Hawaiians and many non-Hawaiians feel it is simply wrong for a non-Hawaiian who trades on the Hawaiian culture to claim ownership rights that restrict Native Hawaiians from interpreting their own culture…There doesn't seem to be any win for Reece in a case that is only serving to antagonize generous people whose culture he borrowed to express his art" [16].*

Under the existing intellectual property rights systems, the fact that traditional knowledge belongs in the public domain can be recognized as absence of an owner of traditional knowledge, and thus the assertion of Mr. Reece is legally accepted. However, this trial case also raised anger of local peoples in Hawaii and introduced such a situation that "some Native Hawaiians see the lawsuit as an insult to the hula community" as Mapuana de Silva, a native Hawaiian hula teacher (kumu hula), states [17]. Furthermore, Gail Allen, one of the defendants, also states "after Reece filed the lawsuit in September last year, all of the artists who had hula artwork on display in Island Treasures removed them out of fear they too could be sued" (interview by the author, January 20, 2015) [18], [23].

D. The exploitation of indigenous music by record companies—Case of the Animated Movie Lilo & Stitch owned by Walt Disney

In 2002, Walt Disney released Lilo & Stitch. This animated movie relates to the story of an orphaned girl (Lilo) living in Hawaii and an alien (Stitch) set in Hawaii. This animated movie included two name chants called "mele inoa" which were performed and expressed by the character Lilo. This fact aroused a feeling of discomfort of local peoples in Hawaii, in particular, indigenous Hawaiians. This is because these two name chants are sacred chants that utilize a person's name to honor him/her, specifically, "to honor King Kalakaua and Queen Lili'uokalani, two rulers in the 19th century known for their strong national and ethnic identity and role in the Hawaiian counterrevolution" [19]. Nina Mantilla argues that:

> *"These two mele inoa, traditionally viewed as a source of Native Hawaiian pride, were performed as a single song and renamed for the orphaned character, Lilo. Disney subsequently copyrighted the song for the movie's soundtrack. The inaccurate and culturally insensitive presentation of these mele inoa in the movie misappropriated traditional Native Hawaiian culture" [19].*

(The authors deliberately replaced Fig. 8 with the image above due to the copyright regulation in accordance with the Walt Disney website: http://disneystudiolicensing.com/).

(The authors deliberately replaced Fig. 9 with the image above due to the copyright regulation in accordance with the Walt Disney website: http://disneystudiolicensing.com/).

Fig. 8 (left) CD cover image of the animated movie "Lilo & Stitch (sound recording copyright 2002 Walt Disney Records) (the picture taken from https://itunes.apple.com/us/album/lilo-stitch/id162759941)

Fig. 9 (right) Image from the animated movie "Lilo & Stitch", the scene of chanting He Mele No Lilo (copyright Walt Disney Animation) (the picture taken from http://disney.wikia.com/wiki/He_Mele_No_Lilo)

Walt Disney continues to own the copyright of these chants performed in Lilo & Stitch. However, in view of protection of traditional knowledge, this case also exemplifies that a third party acquires a position of a rights holder in terms of traditional knowledge and puts traditional knowledge to commercial use in order to make a profit based on the premise that traditional knowledge belongs in the public domain. Lindsey also argues that "[t]hese mele were never composed for Lilo the cartoon character…Disney's Hawaiian consultant has no right to sell our collective intellectual properties and traditional knowledge. These two mele belong to us as a people and cannot be sold without our consent. The misappropriation of our mele…" [10].

E. The collection of DNA from isolated human populations for medical uses yet to be determined—Case of Collecting Blood Sample without Informed Consent to Indigenous Hawaiians and Genome Project of Indigenous Hawaiians

According to Lorrie Ann Santos, indigenous Hawaiians have a long history as "subjects of research", dating back to the 1800s where Dr. Edward Arning conducted research of gene in a Hansen's disease colony [20]. Collecting blood samples continued to have been conducted in Hawaii without any informed consent [21], [22].

Indigenous Hawaiians have a specific health problem in which incidences of hypertension, diabetes, asthma, and breast cancer are considerably higher than the average in the United States [10]. Due to this, Indigenous Hawaiians practically know the importance of the genome project with indigenous Hawaiians as a research subject. Therefore, Lindsey argues that indigenous Hawaiians demanded a free, prior and informed consent (FPIC) and looked for a way of community process to engage a project like genome project [10].

As described above, we introduced the cases in Hawaii according to the five categories typified by Brown. As can be understood from these cases, Hawaii is a place where all of the cases of the five categories were shown. This indicates that Hawaii is a place where the relationship between traditional knowledge and intellectual property rights are inseparable to each other. Furthermore, all of the cases not only suggest that it is not possible to provide an easy solution for them but also there are only claims to use an exclusive right to exclude people who do not have such an exclusive right. This fact simply indicates that there is no dialogue between local peoples and enterprises regarding cultural matters and science/technology as well as the merits and demerits. In this regard, it can be recognized that Hawaii is a place that embodies the problematic conflicts in the relationship between traditional knowledge and intellectual property rights systems.

In view of these cases, it can also be recognized that a substantial number of local peoples in Hawaii have strong interest in intellectual property rights systems. For this reason, there are many organizations relating to intellectual property rights which react to and cope with intellectual property rights systems variously. Although, in these cases, there are so many people who have negative opinions concerning intellectual property rights systems, there are some people who insist on positive utilization of intellectual property rights systems. Moreover, upon review of reactions from peoples who have negative opinions, it does not necessarily mean that their attitudes are not always a full commitment to rejection. Upon review of their assertions, they never say that such situations are zero-sum games. In the following section, we introduce such discourses in Hawaii.

III. DISCOURSES OF LOCAL PEOPLES IN HAWAII REGARDING INTELLECTUAL PROPERTY RIGHTS SYSTEMS AND THE CATEGORIZATION

In this section, we review attitudes, opinions, and activities from specific persons and specific organizations concerning intellectual property rights systems and introduce various reactions from them. Specifically, we categorize how local peoples in Hawaii including indigenous Hawaiians understand, interpret, react to, and cope with intellectual property rights systems through their points of view based on their voices on mass media and the interviews conducted by the author.

A. Protection of Individual Right through Intellectual Property Rights Systems

In the cases above, Mr. Reece in the Case of Reece v Island Treasures Trial Case anticipated the protection of his own individual right through intellectual property rights systems. The reason he anticipated this is that he believes the existing intellectual property rights systems are fair, equal and democratic institutions which protect creative art work created based on an individual's effort and talent (interview by the author, January 20, 2015). Furthermore, Mr. Reece said that, without incentives on their own arts derived from the exclusive protection of right under intellectual property rights systems, artists and musicians will lose their motivation and creativity for creating art. Therefore, he warns other colleagues in Hawaii that there is a possibility that their own copyright is infringed and thus he is seeking to protect not just his own works but works of all artists (interview by the author, January 20, 2015) [18].

In addition, in May, 2015, Ms. Kapu Kinimaka-Alquiiza, who runs one of the biggest hula schools (halau hula) in Kauai, filed a lawsuit for copyright infringement to the Osaka district court. The defendant is the Kyushu Hawaiian Association (located in Kumamoto City) [24]. Ms. Kinimaka-Alquiiza had taught hula as a hula teacher (kumu hula). Although she requested the Kyushu Hawaiian Association to stop using hula motions which she created by herself, the Kyushu Hawaiian Association rejected her request.

According assertions of Ms. Kinimaka-Alquiiza, she insisted that she created her own hula motions and thus she has copyright on the hula motions. This is the reason she filed a lawsuit for copyright infringement to the Osaka District Court [24]. Such assertions of Ms. Kinimaka-Alquiiza are

similar to those of Mr. Reece. In view of the assertions of Ms. Kinimaka-Alquiiza, it is found that some indigenous Hawaiians claim an exclusive right on hula as an individual creation, not as hula as traditional knowledge. These assertions are completely different from those of indigenous Hawaiians such as Takamine and De Silva who insist that hula is collective traditional knowledge that must be protected.

B. Protection of Traditional Knowledge as Hawaiian Culture through Intellectual Property Rights Systems

People who consider this think that utilizing intellectual property rights systems leads to improving values of Hawaiian culture or makes it possible to collect royalty by copyrighting Hawaiian culture itself. This means that people who consider this take an attitude of active utilization and reinforcement of protection of intellectual property rights.

For example, in January 2015, Leina'ala Ahu Isa, who was elected as a trustee of the OHA (the Office of Hawaiian Affairs), states that "OHA should find a way to get money for use of the host culture from major corporations that use it to earn a profit" and proposed that "OHA can look into a royalty or fee paid every time a Hawaiian word is used to create somebody's condominium" [25]. Ahu Isa used to be a principal broker at the Hilton Grand Vacations Management and thus she knows the importance how the host culture, i.e. Hawaii and Hawaiian culture, influences visitors' experiences. She also states that "[i]f we don't have a culture in Hawaii, the tourists won't come" [25]. Her assertions can be summarized as copyrighting Hawaiian culture positively to collect royalty.

Furthermore, Peter Apo, who was re-elected as a trustee of the OHA, states on his own website that exerting the value owned by Hawaiian culture is an essential component for the economic strategy in the tourism industry of Hawaii, by means of which the value of Hawaiian culture as a cultural resource can improve [26].

C. Protection of Traditional Knowledge as Hawaiian Culture from Intellectual Property Rights Systems

People who consider this basically try not to depend on (i.e., refuse) intellectual property rights systems. Such people can be further divided into the following three categories in terms of their assertions:

(1) Intellectual property rights systems as globalism which supports a neoliberal economy;
(2) Intellectual property rights systems as a new form of colonialism; and
(3) Pursuing cultural trademark by indigenous Hawaiians as a sui generis approach.

People considering (1) include anti-GMO activists such as Walter Ritte and environmental protection organizations. They believe the existing intellectual property rights systems promoting GMO technologies are a realization of globalism which supports a neoliberal economy. In the cases above, the state of Hawaii is one of the most popular places for experimenting genetically modified organisms (GMOs). It is the development of new technologies, new materials, and new drugs that Global pharmaceutical and biotechnology companies have conducted in Hawaii. In this regard, all of the companies ultimately pursue a patent on them. While such corporate practices surely contribute to job creation for local peoples, GMOs and chemicals used there affect the local environment and even local peoples. However, any consultation or dialogue between enterprises and local peoples has not yet taken place. In view of this, people considering (1) believe that the existing intellectual property rights systems do not protect but rather appropriates or usurps traditional Hawaiian culture. Therefore, it becomes possible for people who consider (1) to consider protection of traditional knowledge as Hawaiian culture from intellectual property rights systems.

In addition, people considering (2) believe that intellectual property rights systems are a return of colonialism via the western law system. Therefore, they insist that colonialism is not a matter that occurred in the past but is now disguised as intellectual property rights systems intended to prevail all over the world. Therefore, people considering (2) believe that conducting "bioprospecting" at other peoples' land is "biopiracy" just as settlers or colonists believed that lands where someone else originally lived for a long time are empty places according to the logic of Terra Nullius [27]. People considering (2) include indigenous Hawaiian activists such as Vicky Holt-Takamine and Mililani Trask and the organization such as Native Hawaiian Intellectual Property Rights Conference (aka. Ka'Aha Pono). People considering (2) also believe that the existing intellectual property rights systems do not protect but rather appropriates or usurps traditional knowledge as Hawaiian culture. Therefore, people considering (2) also consider protection of traditional knowledge as Hawaiian culture from intellectual property rights systems.

People considering (3) are, for example, an organization called Native Hawaiian Cultural Trademark Study. This organization was funded by the OHA and held a conference in 2006 to discuss "cultural trademark program" for distinguishing authentic native Hawaiian cultural arts [28]. This program is similar to Toi Iho, which has been established in 2002 by Maori in New Zealand. This organization pursues a sui generis approach for protecting traditional knowledge as Hawaiian culture instead of utilizing the existing intellectual property rights systems. Peter Apo stated in the conference that "the adoption of a cultural trademark program could have a 'ripple effect' of empowering Native Hawaiians to develop the capability to exercise sovereignty over culture" [28]. It is not clear as to whether people considering (3) tend to refuse or positively utilize the existing intellectual property rights systems. However, it is at least clear that people considering (3) consider protection of traditional knowledge as Hawaiian culture.

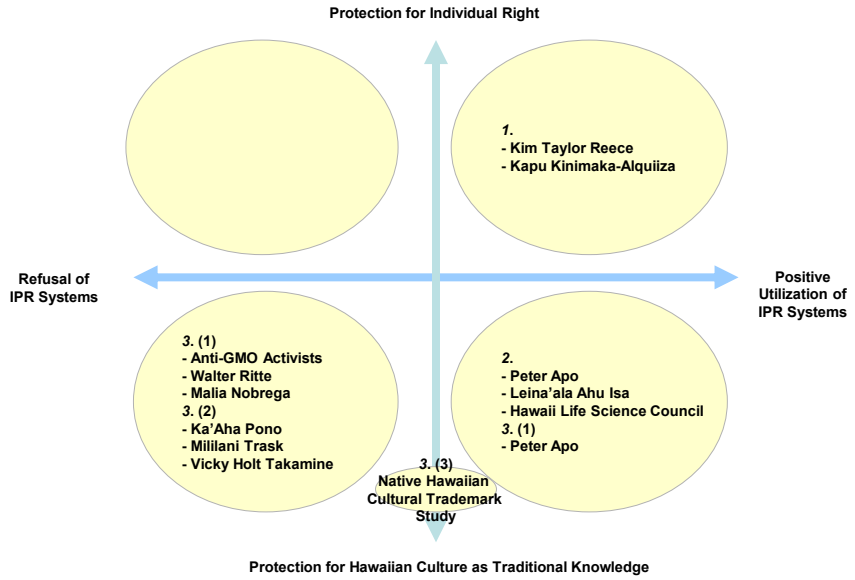

Fig. 10 Coordinate plane representing the categorization of the attitudes of local peoples in Hawaii concerning the Intellectual Property Rights Systems

IV. REVIEW AND DISCUSSION

In Section III, we analyzed and categorized how local peoples in Hawaii including indigenous Hawaiians interpreted and reacted to intellectual property rights systems through their points of view. The categorization specifically shows that there are a variety of potential relationships between traditional knowledge and intellectual property rights systems through the points of view of local peoples including indigenous Hawaiians. The results could be categorized as illustrated in Fig. 10.

As illustrated by the X-axis in Fig. 10, there are opposite opinions among local peoples in Hawaii between refusal and positive utilization of intellectual property rights systems. Furthermore, as illustrated by the Y-axis in Fig. 10, while there are people who try to protect an individual right through intellectual property rights, there are also people who try to protect traditional knowledge as Hawaiian culture through intellectual property rights. More specifically, as illustrated in Fig. 10, people in Section III, *1* mainly correspond to the first quadrant, people in Section III, *2* mainly correspond to the fourth quadrant, people in Section III, *3*, (1), (2) mainly correspond to the third quadrant, and finally, people in Section III, *3* (3) is located at the "IPR Protection for Traditional Knowledge as Hawaiian Culture" side on the Y-axis as well as at zero on the X-axis..

In addition, upon associating the cases in Section II with the categorizations in Section III, the following matter was clarified. In Case 2, Peter Apo, who is the trustee of the OHA, criticized that the biotechnology industry often failed to consult native Hawaiians before forging ahead and "all the others occurred without consent of the community" [11]. People who criticized such biotechnology industry such as Apo are people who consider intellectual property rights systems as globalism which supports a neoliberal economy and thus consider protection of traditional knowledge as Hawaiian culture from intellectual property rights systems. For this reason, such people are mainly plotted in the third quadrant in Fig. 10. Therefore, Apo is supposed to be plotted in the third quadrant as well. However, Apo is actually plotted in the fourth quadrant at which people in Section III, *2* who consider protection of traditional knowledge as Hawaiian culture through intellectual property rights are plotted.

Upon further analysis of the cases in Section II, it is found that most of the cases in Section II include or suggest the opinion similar to that of Peter Apo—demanding consultation, dialogue, prior informed consent, or at least prior notification. It should be noted that Malia Nobrega of Waikiki Hawaiian Civic Club said "it is not that we are against biotechnology. But it needs to be appropriate" [11].

In addition, the organization, Native Hawaiian Intellectual Property Rights Conference (Ka'Aha Pono) which is plotted in the fourth quadrant includes people in Section III, *2* who consider intellectual property rights systems as a new form of colonialism. Therefore, it can be recognized that this organization develops an extremely powerful argument—centrifugal tendency—as to how to protect traditional knowledge as the entire Hawaiian culture from intellectual property rights systems. Native Hawaiian Intellectual Property Rights Conference drafted a manifesto called the Paoakalani Declaration and criticized the existing intellectual property rights systems. However, as Lindsey argues that "[Paoakalani Declaration] should not be interpreted as an absolute refusal of research concerning Kanaka Maoli (native Hawaiian) traditional knowledge and biological resources. It means only that there is a community process that must be engaged" [10], local peoples do not

simply refuse traditional knowledge being put in commercial use or researching biological resources but demanding a dialogue and a collaborative activity. Local peoples in Hawaii contemplate the balance between cultural matters and science/technology and between the merits and the demerits and try to live in such a balance.

As is clear from the above, although there are a variety of local peoples' reactions and responses to intellectual property rights systems and thus there are a variety of potential relationships between traditional knowledge and intellectual property rights systems, it is found that a space for dialogue, consultation, or collaborative activity with local peoples still has been left open. Needless to say, global enterprises have freedom not to have a dialogue, consultation, or collaborative activity with local peoples. However, such enterprises are different from nation-states or state governments. This conversely means that such enterprises do have freedom to have such a dialogue, consultation, or collaborative activity with local peoples. Therefore, it is now clear that so long as local peoples demand a dialogue, consultation, or collaborative activity, such deliberate activities by such enterprises—an initial motion of an enterprise such as providing an opportunity for dialogue or consultation and proposing a collaborative activity must be highly welcomed—can lead to reducing risks for business development. Dialogue provides good quality feedback.

Moreover, it is also possible for such enterprises to enhance their own brand image through support, as sponsors, for environmental protection activity or cultural activity of minorities which are developed by local peoples in Hawaii. Development of business activity by putting traditional knowledge in commercial use via such support can enhance the values of the cultural resources in Hawaii and also can satisfy commercial purposes of such enterprises simultaneously.

V. CONCLUSION

This paper focused on the diversity of reactions among local peoples upon the commercialization of traditional knowledge under intellectual property rights systems. More specifically, this paper introduced a plurality of cases which illustrate the conflicts between intellectual property rights systems and traditional knowledge. Furthermore, we analyzed and categorized how local peoples in Hawaii, including indigenous Hawaiians, interpret and react to intellectual property rights systems through their points of view, based on their voices on mass media and the interviews conducted by the author. The analysis and the categorization show that there are a variety of potential relationships between traditional knowledge and intellectual property rights systems through their points of view of local peoples.

As can be understood through the analyses of the cases and the discourses provided in the paper, it is found that, even though local peoples criticize commercialization of traditional knowledge through intellectual property rights systems, they do not simply refuse traditional knowledge being put in commercial use or researching biological resources but demand a dialogue and collaborative activity. In view of this, a conclusion is obtained in which, in cases where traditional knowledge is commercializing through intellectual property rights systems, it is advantageous for an enterprise as a rights holder in terms of traditional knowledge to attempt to pursue a dialogue with local peoples, rather than simply pursue a patent right secretly in order to claim exclusive control over intellectual property rights. Through such a dialogue, risks for business development may be reduced and the values of cultural resources may be enhanced.

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