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Limitations and Challenges of Ergonomics Regarding Intellectual Property

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Objective: The objective of this paper is to review the interests and limitations of ergonomics regarding intellectual property.

Background: There have been less interests in intellectual property among the ergonomics professionals. However, the importance of intellectual property is increasing as competitions in industry are getting fierce.

Method: Literatures on the relations of intellectual property with ergonomics were examined, and the international patent classification system was studied.

Results: No profound studies were found in the area of the relations of intellectual property with ergonomics. Ergonomics was not considered in patent classification.

Conclusion: It is important to induce more interests regarding intellectual property to the community of ergonomics. Further studies are expected on the relations of intellectual property with ergonomics.

Application: The results from this paper would be of help to inducing ergonomists to more interests in intellectual property.

Keywords: Intellectual property, Patent classification

1. Introduction

When the words including ergonomics, intellectual property and patent are combined and searched in a search engine, various products such as a chair, pillow, monitor, keyboard and mouse are searched. Actually, when one searches the words mentioned above in English, more diverse products are searched. To such an extent, there are many products that acquired intellectual property rights by adopting the ergonomic concept surrounding us. However, discussions on the relations between ergonomics and intellectual property in the ergonomics academic field are still at low level. All developed countries recognize all intellectual properties including human's mental creations and new technology development or discovery as the core of national competitiveness, and propel a strategy to lead world markets in such a way. At this time, accepting study scope related with intellectual property cannot be a task that can be delayed furthermore in line with the demand in the industrial community. This paper examines the limitations of ergonomics and its direction in relation with intellectual property rights.

2. Literature Review

When one searches ergonomic patents and utility models through Korea's patent information search engine, KIPRIS, 16,562 cases are searched, and 22 cases of ergonomic designs are searched (KIPRIS, 2015). Meanwhile, when one searches with keywords like ergonomics and patent using international academic paper databases, "Web of Science" and "SCOPUS", small number of papers, containing the part that patents were applied for or registered by including ergonomic concept in the electronics, machinery and medical supplies developed through research, are searched. What is noticeable is a study analyzing patents on the techniques to analyze risk factors of musculoskeletal disorders (Nunes, 2015). It actually can be the only study that analyzed the patents related with ergonomics in-depth.

As for domestic study, it is judged that there is no study having direct relevance between ergonomics and intellectual property, as a result of searching the studies on relations between ergonomics and intellectual property using DPPIA.

This reveals that a systematic study on relations between intellectual property and ergonomics have hardly been conducted, although the development of ergonomic products is relatively active.

3. Limitations of Ergonomics in terms of Patent Classification

As trade of goods and technologies among countries becomes activated, the patent classification systems exclusively used in each country have emerged as a hindering factor of technology trade. To solve such a problem, the integration of each country's classification systems into one system begun, centered on the World Intellectual Property Organization (WIPO). As a result, International Patent Classification (IPC), which is globally unified patent classification, was created in 1976. Korea used its unique classification, KPC (Korean Patent Classification) that referred to Japanese classification system from 1948, and has been using IPC since June 1981 (KIPO, 2015).

IPC consists of hierarchical structure including section, class, subclass, main group and subgroup, and the section contains 8 sections from A to H (Table 1).

Table 1. Sections of IPC

IPC code classification	Details
A Section	Human necessities
B Section	Performing operations; Transporting
C Section	Chemistry; Metallurgy
D Section	Textiles; Paper
E Section	Fixed constructions
F Section	Mechanical engineering; Lighting; Heating; Weapons; Blasting
G Section	Physics
H Section	Electricity

When one searches with the keyword of ergonomics on IPC using a search program offered by the Korean Intellectual Property Office, only one case is searched. Namely, a search result, "Having features in terms of ergonomic function. For example, things

for small keyboard and things having characteristics in manipulation sensory function", is displayed from H01H13/84 electric switch subclass. This is extremely rare search result, rather than representing ergonomics, and can be the result that the ergonomic concept has not been reflected in the IPC. Therefore, there is a limitation that no search result is generated using the classification system, unless the word of ergonomics for the patent name is used.

Because ergonomics does not target a specific industrial field or product, it is difficult to be included in the section level of the IPC. However, it is desirable to establish classification in which ergonomic concept is included in the sub-classification standard.

Recently, UI (user interface) and mobile UI intellectual property rights become an important issue. The UI design as a complex digital product is difficult to be included in existing technology classification, and thus, a study on the alternative of its protection method is considered to be urgent (Jeong and Park, 2012).

4. Conclusion

Design recently emerges as an important factor in business management. Developed countries protect technologies by bolstering intellectual property strategies. In such a situation, design pursing aesthetics and ergonomics that can complement source technologies is placing itself as a key factor in business management. In the domestic and international ergonomic academia, however, profound discussions on relations between ergonomics and intellectual property have yet to be carried out. Consequently, a valuable opportunity to compile experts' opinions and experiences on relations between ergonomics and intellectual property is offered in this special issue. This special issue is expected to contribute to the development of ergonomics-related intellectual property study.

Acknowledgement

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