# INTERNATIONAL JOURNAL FOR LEGAL RESEARCH AND ANALYSIS

Open Access, Refereed Journal Multi Disciplinary
Peer Reviewed

www.ijlra.com

 ISSN: 2582-6433

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 **ISSN: 2582-6433**

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 ISSN: 2582-6433

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 ISSN: 2582-6433

# A NORDIC LEGAL VIEWPOINT ON CHANGING INTELLECTUAL PROPERTY RIGHTS TO PROMOTE CONSCIENTIOUS TECHNOLOGICAL INNOVATION

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## ABSTRACT:

This research paper explores how intellectual property rights (IPR)m frameworks in the Nordic countries can be optimized to promote responsible and inclusive technological innovation. With a comparative approach, it examines the legal structures of Sweden, Finland, Denmark, Norway, and Iceland, focusing on how their IPR regimes align with the demands of the digital era, including artificial intelligence, biotechnology, and open-source innovation. The study critically evaluates the compatibility of current IPR laws with innovation ethics, sustainable development goals, and public access to knowledge. Drawing on regional case studies and legislative analysis, this paper proposes targeted legal reforms to ensure IPR systems support ethical innovation while maintaining competitiveness.

## KEYWORDS:

Intellectual Property Rights (IPR), Nordic countries, Technological innovation, Responsible innovation, Inclusive innovation, Digital era, Sustainable development goals

## Introduction:

Modern economic expansion and social progress are based on technological innovation. Intellectual property rights (IPR) are essential to this change because they provide legal safeguards that encourage the creation, advancement, and sharing of innovative technology. However, traditional IPR frameworks face new difficulties in the digital age, which is characterized by biotechnology, software innovation, open data, and artificial intelligence (AI). Lawmakers need to reevaluate issues related to patentability, data ownership, ethical use, and knowledge availability.

The Nordic nations—Iceland, Norway, Denmark, Finland, and Sweden—are well known around the world for their socially inclusive legal systems and innovative businesses. These

 ISSN: 2582-6433

countries routinely rank first on international indices of innovation, education, and preparedness for the digital age. Transparency, fair access, environmental stewardship, and democratic government are all emphasized in their legal systems. This makes the Nordic region a crucial location for investigating how IPR regimes might change to strike a balance between ethical duty, public interest, and technological innovation.

How might Nordic IPR regimes be improved to encourage ethical and sustainable technological innovation? is the question this study attempts to answer. In addition to evaluating new conflicts in patent law, copyright, and collaborative innovation models, it looks at how national IPR laws, EU legislative requirements, and international agreements interact. Finding legislative gaps, highlighting best practices, and making policy proposals that support social responsibility and economic competitiveness are the objectives.

This idea is especially relevant in high-cost industries with lengthy innovation cycles and capital-intensive R&D, like biotechnology and pharmaceuticals. In the absence of exclusive rights, businesses may underinvest in innovation out of concern about competitors taking advantage of them.

However, incentive theory has come under fire for encouraging monopolistic practices and favouring existing players. Modern IP systems must therefore strike a compromise between inclusion, accessibility, and protection.[1]

## 1. An Overview of Nordic Intellectual Property Rights:

Copyright, design rights, and patent protection are all covered by Nordic Intellectual Property Rights, which offers creators and innovators complete protection. Laws like Norway's Intellectual Property Act, which gives authors authority over their creations, regulate copyright protection. Nordic nations defend and uphold intellectual property rights by adhering to international agreements such as the Berne Convention and EU directives. While GDPR legislation guarantee the secure management of personal data, local law companies provide IPR consulting, dispute resolution, and strategy building. All things considered, the Nordic area provides a strong foundation for intellectual property protection.

[1] The Economic Structure of Intellectual Property Law 294–96, by Richard A. Posner and William M. Landes (2003).

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**1.1 Nordic Countries' Overview of IPR:**

The Nordic region is renowned for its dedication to social welfare and innovation. The Nordic nations have strong intellectual property rights (IPR) regulations that foster technical innovation and are in line with larger public welfare objectives. Since the Nordic nations are members of the European Union (EU) or the European Economic Area (EEA), both national and EU laws apply to their IPR regimes. The EU Patent Directive (98/44/EC) and the European Patent Convention (EPC) in particular are crucial in determining the patent legal environment in the area.

Every Nordic nation has a national patent office of its own.
The Swedish Patent and Registration Office (PRV) is located in Sweden.
The Danish Patent and Trademark Office (DKPTO) is located in Denmark.
The Norwegian Industrial Property Office (NIPO) is in charge of operations in Norway.
The Finnish Patent and Registration Office (PRH) is located in Finland.

Despite these national distinctions, the nations have a similar attitude to intellectual property rights, especially when it comes to promoting sustainable breakthroughs and green technologies. In p articular, patents play a key role in Nordic IPR regimes. Novel ideas that require an innovative step and have industrial use are protected by patents. By giving them temporary, usually 20-year, exclusive rights to their creations, these patent rules incentivize inventors. But ethical and environmental concerns are not sufficiently taken into account by the current system, which is largely centred on financial incentives.

**1.2 The Nordic Region's Technological Environment:**

Many people consider the Nordic nations to be world leaders in innovation and technology. For instance, Sweden is home to businesses that are leading the way in environmental and technical innovations, including Volvo and Spotify. Finland's biotechnology, clean tech, and AI industries have also gained international prominence. Denmark is one of the world's top exporters of wind turbines, and the wind energy sector there is a significant force behind innovation.

In Nordic nations, the focus has been on using technology to promote sustainable development. Green technology, such as waste management systems, energy-efficient products, and renewable energy, are given top priority. Additionally, there has been an increase in social

 ISSN: 2582-6433

impact-focused businesses and entrepreneurial endeavours in this area. Sweden, for example, is at the forefront of cleantech developments like energy storage systems and solar panels. Notwithstanding this achievement, there is rising apprehension that the potential for encouraging conscientious innovation is not adequately captured by the current IPR structure.[2]

## 2. Careful Technological Development: Outlining the Idea

In order to develop technology with care, one must take a deliberate approach to innovation, giving ethical issues, risk analysis, and user-centered design first priority. By foreseeing possible effects on the environment, society, and privacy, developers may design solutions that maximize benefits while reducing harm. In order to ensure that the capabilities and limitations of technology are communicated clearly, transparency and accountability are also essential. Developers can enhance their products by addressing new issues and opportunities to promote responsible innovation through ongoing assessment and development.

### 2.1 Conscientious Technological Innovation: What Is It?

Conscientious technological innovation is more than just developing new technology for financial gain. It encompasses the environmental, social, and ethical aspects of technological advancement. Technologies developed with conscientious innovation give priority to:

Innovations that mitigate climate change, lessen ecological footprints, and protect natural resources are examples of environmental sustainability.

Social equity refers to initiatives that address problems like poverty, education, and health inequality while fostering inclusivity and bridging social divides.

Innovations that uphold human rights, stop exploitation, and don't hurt vulnerable groups are ethical considerations.

Essentially, thoughtful technical innovation takes into account long-term societal advantages as opposed to only short-term financial gain. It is all-encompassing, covering not only economic expansion but also the welfare of people and communities around the world. Redefining innovation to benefit current and future generations is crucial in a time when

[2] On the legal protection of biotechnological inventions, Council Directive 98/44/EC of July 6, 1998, 1998 O.J. (L 213) 13-21.

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technology advancement frequently surpasses social and ethical concerns.

**2.2 Intellectual Property Rights' Contribution to Conscientious Innovation:**

One instrument that is essential to promoting technological innovation is intellectual property rights. IPR encourages the development of innovative technologies by giving innovators exclusive rights. However, conventional IPR rules place less emphasis on the moral or societal ramifications of new technologies and more on encouraging inventions for financial benefit. Generally speaking, the patent system in particular does not assess an invention's societal benefits, environmental sustainability, or ethical responsibility.

IPR rules must be modified to support breakthroughs that achieve these larger societal objectives in order to promote conscientious technical innovation. This might entail creating new patent categories for innovations that particularly enhance social justice, public health, or the environment. Additionally, social and ethical assessments must to participate in the patenting process, guaranteeing that emerging technology do not negatively impact the environment or society.[3]

**3. Legal Difficulties in the Nordic IPR Systems Today:**

Jurisdictional obstacles, the intricacy of dispute settlement, and enforcement concerns are among the legal hurdles facing the Nordic Intellectual Property Rights (IPR) regimes. Because different jurisdictions have different rules and regulations, determining legal authority in IP cases can be difficult. Small businesses and low-income individuals may also find it difficult to understand the legal system.Emerging trends and digitization present further difficulties, emphasizing the necessity of transparent protocols and jurisdictional safeguards. All things considered, these problems highlight how crucial it is to improve the Nordic IPR frameworks in order to guarantee efficient intellectual property rights protection and enforcement.

**3.1 Patent Law's Excessive Focus on Financial Incentives:**

The existing IPR arrangements in the Nordic region are heavily criticized for placing too much focus on financial incentives. Novelty, creativity, and industrial applicability are the three traditional patent law requirements that are intended to guarantee that new ideas yield financial

[3] Annual Report 2023 of the Swedish Patent and Registration Office (PRV)

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gains. However, the emphasis on financial gains frequently results in the prioritization of short-term profitable technologies above those with long-term advantages for the environment and society. Though they might not yield the same quick financial gains as other advances, technologies like clean water solutions, renewable energy, and sustainable agriculture have the potential to have a huge impact on the well-being of the world.

For instance, when it comes to biotechnology patents, businesses tend to give preference to inventions that have the potential to generate significant financial gains (like pharmaceuticals), while giving less consideration to green chemistry or environmental biotechnology inventions that might benefit society more broadly but might not generate as much money. As a result, the current IPR system does not provide many conscientious technologies with the necessary protection and promotion.

**3.2 The patentability criteria do not take ethics into account:**

Currently, the Nordic region's patentability requirements do not take inventions' ethical consequences into account. Patents with potentially harmful outcomes, like genetic modification technologies or artificial intelligence (AI) applications that could be used to violate privacy rights, can still be patented without any evaluation of their social or ethical impact because the European Patent Convention (EPC) does not require an ethical review of patents.

For instance, the creation of genetically modified organisms (GMOs) has raised moral questions about human health and biodiversity, but these technologies are allowed to be patented in the Nordic region without undergoing a thorough ethical examination. In a similar vein, patents for AI technology that have the potential to increase prejudice or cause widespread unemployment are frequently given without considering the social repercussions.

**3.3 Diverse Legal Perspectives in the Nordic Region:**

Despite having many of the same values when it comes to innovation and sustainability, the Nordic countries differ greatly in how they use intellectual property rights. While Finland places more emphasis on ethical biotech patents, Sweden has prioritized green innovations through green patent efforts. Norway, meanwhile, has placed a strong emphasis on patents for renewable energy.

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For instance, ethical evaluations are necessary for biotechnology patents in Finland to make sure they support public health objectives. Such evaluations are less strict in other Nordic nations, though, which could result in inconsistent patent enforcement and possible ethical oversight.[4]

## 4. Nordic IPR System Reform Suggestions to Encourage Conscientious Innovation:

Nordic IPR systems need to change to take ethical, social, and environmental factors into account in order to promote responsible technological innovation. The suggested changes listed below would bring the Nordic IPR system into line with conscientious innovation's objectives.

### 4.1 Including Social and Ethical Assessments in Patent Requirements:

The idea is to incorporate social effect and ethical evaluations into the patenting procedure. Creating ethical review panels that determine if an invention has beneficial or detrimental effects on society, the environment, and human rights could be one way to achieve this.

Potential Impact: This would make sure that inventions that have negative effects on society or the environment are not protected by patents and that those that advance the common good are encouraged.

### 4.2 Implementing a "Green Patent" Framework:

The idea is to create a green patent category for inventions that significantly improve the environment. Carbon capture technology, clean water solutions, and renewable energy technologies may fall under this category.

Potential Impact: This would encourage the creation of sustainable innovations and might involve offering innovators in the green technology industry financial incentives like tax credits, reduced patenting fees, or subsidies.

### 4.3 Enhancing the Function of Safety and Public Health in Patent Law:

The idea is to establish particular patent regulations for medical devices that advance public health. Public health provisions that prioritize life-saving advancements and guarantee their

[4] Biotechnology Patents in Finland, Finnish Patent and Registration Office

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affordability and accessibility for everyone may be one way to achieve this.

Potential Impact: This will guarantee that low-income communities get priority access to technology like vaccines and medical diagnostics that are meant to solve global health issues.[5]

## CASE STUDIES:

### Nordic Nations and Mindful Innovation:

### 1. Sweden's AI Ethics Approach:

Human rights, privacy, and non-discrimination are the main focuses of ethical standards that Sweden has introduced for the development of artificial intelligence (AI). The introduction of ethical reviews in IPR systems could be modelled after Sweden's AI ethics framework. This concept highlights that AI systems must be motivated by the public interest rather than merely economic gain.

### 2. Denmark's Green Patent Leadership:

With its green patent programs, Denmark has taken the lead in promoting green innovation. For patents centred on sustainable technology, such as wind energy and carbon capture systems, the Danish Patent Office provides financial assistance and reduced fees. The Nordic region might use Denmark's strategy as a model for developing distinct patent categories for discoveries that are environmentally sensitive.

### 3. Socially Responsible Biotech Patents in Finland:

Ethics boards have been established in Finland to review biotechnology patents and make sure they comply with moral principles and public health objectives. These committees examine how biotech advancements might affect society, particularly in the areas of social justice, environmental sustainability, and human health. Other technological fields should adopt Finland's strategy to guarantee that patent awards are advantageous to society overall in addition to being profitable.

For example, by coordinating patenting procedures with ethical norms, such as the evaluation of environmental and societal effects, Finland's biotechnology sector has led advancements in healthcare and biomedicine. A more socially conscious attitude to innovation has emerged in

[5] Innovation and the Future of Patents, European Commission, 2020,

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Finland as a result of the Finnish Biotech Patent Board's evaluation of applications to make sure they don't take advantage of ecosystems or communities that are already at risk.

## SUGGESTIONS:

**1. Including Ethical Review Panels in the Procedure for Filing Patent Applications:**

Create required ethical review panels that assess patent applications using sociological, ethical, and environmental standards to make sure that technical advancements don't negatively impact society. Before awarding a patent, these panels could determine if a proposed invention has detrimental consequences on the environment, human rights, or public health.

**2. Green Patent Systems Introduction:**

Urge Nordic patent offices to create a green patent categorization, especially for technologies that are environmentally friendly. Green technology advancements that directly improve environmental sustainability would be encouraged by giving accelerated approval procedures and lower fees.

**3. The Impact of Public Interest on Patent Laws:**

Make changes to patent laws to guarantee that public interest factors are taken into account when determining patentability. For example, preferential treatment, such as lower charges or longer patent protection periods, may be given to patents that principally advance public health or the common welfare.

**4. Creation of a Nordic Biotechnology Patent Ethical Standard:**

Establish a single Nordic ethical criteria for biotechnology patents that evaluates the possible societal effects of biotechnology industry advancements. Human dignity, genetic integrity, and equitable access to biotech solutions—particularly in the areas of food security and medicine—could be the main topics of this standard.

**5. Encouragement of Joint Patents for Social Benefit:**

Promote a collaborative patent paradigm across Nordic nations so that technology that tackle significant societal issues like poverty, inequality, or climate change can be more readily shared or licensed. This would promote more inclusive technological growth by making important innovations more widely accessible.

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**6. Ethical Innovation via Public-Private Partnerships:**

Encourage public-private collaborations centered on morally sound innovation. Nordic nations might encourage technical advancements that uphold high ethical standards through government-backed grants and incentives, especially in cutting-edge industries like artificial intelligence, biotechnology, and renewable energy.

**7. Greater Openness Regarding Patent Ownership:**

By establishing a public register that lists all patent holders and their reasons for pursuing intellectual property protection, you may promote increased transparency in patent ownership. This would assist in identifying any possible conflicts of interest, such as the patenting of inventions that are intended to exploit vulnerable communities or have little public benefit.

**8. Including Social Impact Evaluations in Patents:**

Include social impact assessments in the patent application procedure, requiring inventors to demonstrate the positive or negative effects of their invention on society. The evaluation would concentrate on problems that could emerge from the widespread use of the technology, such as inequity, privacy difficulties, or job displacement.

**9. Promoting Public Goods Open-Source Patents:**

Adopt an open-source patenting paradigm for innovations that could significantly enhance public well-being, especially in fields like renewable energy, healthcare, and education. Open-source licenses would enable speedier and more widespread adoption of inventions, especially in emerging and low-income areas.

**10. Matching Technological Lifecycles with Patent Duration:**

Adjust some industries' patent protection periods to better reflect the advancements in technology. For instance, the protection term might be shortened in industries that move quickly, like software or information technology, to promote faster innovation cycles and avoid monopolistic dominance of antiquated technologies.

**11. A "Sustainable Innovation Fund" is being established:**

Create a Sustainable Innovation Fund that might offer monetary awards or incentives to businesses and researchers creating innovations that have a definite beneficial influence on sustainability. A percentage of patent application costs might be used to create this fund, which

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would guarantee that the funds are used to support inventions that have long-term positive effects on the environment or society.

**12. Enforcing Gender Equity in Funding for Innovation:**

Encourage gender parity in innovation by requiring a specific proportion of public and private innovation funding to go to initiatives and businesses run by women. By addressing the underrepresentation of women in technical innovation, this would guarantee that developments take into account a range of viewpoints and societal demands.

These recommendations seek to change the emphasis of Nordic intellectual property regimes from merely rewarding innovation to encouraging technical developments that improve sustainability and the common good. Nordic countries may become world leaders in ethical and conscientious innovation by implementing these suggestions.

## CONCLUSION:

In summary, the Nordic region's system of intellectual property rights (IPR) is at a turning point. The current IPR framework, which is mostly motivated by commercial incentives, is increasingly viewed as inadequate to handle the ethical, social, and environmental issues raised by contemporary technical breakthroughs, despite the fact that Nordic nations have traditionally been pioneers in technological innovation. The Nordic IPR systems must develop to integrate environmental sustainability, social impact assessments, and ethical evaluations into their patenting procedures in order to promote responsible technical innovation.

The incorporation of ethical review panels, the implementation of green patent systems, and the creation of patent laws with a public health focus are just a few of the significant improvements that this study has suggested.

In addition to leading the world in technical innovation, the Nordic nations have the capacity to develop a more moral, environmentally friendly, and socially conscious model for intellectual property rights. These countries may design a roadmap for a more sustainable future in which technology helps everyone, not just a chosen few, by modifying their patent regimes to reflect the larger social objectives of conscientious innovation.

Additionally, case examples from Finland, Sweden, and Denmark show how ethical, social,

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and environmental factors may be included into the IPR framework in a practical way. The Nordic area has the chance to reinterpret the role of intellectual property rights in encouraging responsible innovation that benefits society as a whole, as the rest of the world struggles with the effects of fast technological advancement.

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