

# INTELLECTUAL PROPERTY LAW IN THE CONTEXT OF OPEN ACCESS: CHALLENGES AND OPPORTUNITIES FOR UKRAINIAN UNIVERSITIES

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*This paper examines the challenges and opportunities related to intellectual property (IP) rights in the context of open access in Ukrainian universities. The importance of open access to scientific research lies in promoting sustainable development by fostering innovation and disseminating knowledge. This aligns with the European Union's Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 17 (Partnerships for the Goals). The paper analyzes how Ukrainian universities can support the development of open access while maintaining the protection of intellectual property and taking into account international legal standards and best practices.*

*The advancement of open access initiatives, exemplified by the Budapest and Berlin Declarations, underscores the global commitment to freely disseminating scientific research. Ukrainian universities actively embrace these principles, showcasing their research through conferences and establishing technoparks to foster innovation. Collaboration with industry clusters, like the Kyiv and Kharkiv IT Clusters, enhances the innovation ecosystem.*

*Leading Ukrainian universities, such as Taras Shevchenko National University and Lviv Polytechnic National University, contribute significantly to scientific progress. However, challenges persist, notably in patent maintenance due to issues like non-payment of fees.*

*Despite hurdles, these initiatives bolster the confidence of Ukrainian researchers and improve access to scientific information. By leveraging open access platforms and fostering innovation ecosystems, Ukrainian universities propel the nation's scientific and technical prowess, enhancing global competitiveness. In conclusion, the initiatives undertaken by Ukrainian universities to embrace open access principles and foster innovation demonstrate their commitment to advancing scientific research and contributing to global knowledge exchange. Despite challenges, such as patent maintenance issues, these universities play a pivotal role in enhancing Ukraine's scientific and technical capabilities.*

*Keywords: intellectual property, open access, innovation, patents*

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## Introduction

The intersection of intellectual property (IP) rights and open access represents a pivotal area of study in the modern academic landscape, particularly within higher education institutions. As the globalization of knowledge accelerates and sustainable development policies gain prominence, the role of open access in disseminating scientific research becomes increasingly critical. Open access not only democratizes information but also fosters innovation by making research findings readily

available to a global audience. This trend is underscored by numerous international initiatives and policies that advocate for greater accessibility to scholarly work while balancing the protection of intellectual property (Cornwell, Suber, 2008).

In the context of the European Union's "Europe 2030" strategy, the significance of open access is emphasized as a cornerstone for enhancing educational quality and stimulating economic innovation. The strategy explicitly links open access to the achievement of several Sustainable Development Goals (SDGs), notably SDG 4 (Quality Education) and SDG 9 (Industry, Innovation, and Infrastructure) (European Commission, 2019). By promoting open access, the EU aims to ensure that high-quality educational resources and innovative research are accessible, thereby driving inclusive and sustainable economic growth (Agusdinata, 2022).

Ukraine, striving for integration into the European research area, faces unique challenges and opportunities in harmonizing open access with robust IP protection. The country's commitment to aligning with EU standards necessitates a delicate balance between fostering open dissemination of knowledge and safeguarding the intellectual property that fuels innovation. This balance is crucial for enhancing the competitiveness of Ukrainian universities on the global stage and for attracting international collaborations, which are vital for the nation's post-war recovery and economic revitalization.

The importance of IP rights in higher education institutions cannot be overstated. They provide the necessary legal framework for protecting innovations, thereby incentivizing researchers and institutions to invest in groundbreaking research. Simultaneously, open access initiatives enable the widespread dissemination of knowledge, which is essential for collaborative advancements and addressing global challenges such as climate change, public health crises, and poverty (Anderson, 2004). In Ukraine, universities are increasingly recognizing the dual role of IP rights in protecting their intellectual assets while contributing to the global knowledge economy through open access.

Moreover, the global push towards open access has highlighted the need for robust IP management systems within universities. Effective IP management not only safeguards research outputs but also enhances the institution's reputation and attracts funding and partnerships (Creative Commons, Share your work). For Ukrainian universities, adopting best practices from neighboring countries and international bodies can facilitate the development of comprehensive IP strategies that support open access without compromising the protection of intellectual property (Louvain-la-Neuve Communiqué (2009).

The post-war recovery of Ukraine's economy hinges significantly on the acceleration of innovation and productivity. Investment in research and development, coupled with the enhancement of workforce skills and organizational knowledge, is essential for sustainable income growth and poverty reduction. Ukrainian universities play a unique and critical role in this process by acting as hubs of innovation and knowledge dissemination. By effectively balancing open access with IP protection, these institutions can drive economic growth, foster international collaborations, and contribute to the realization of the EU's Sustainable Development Goals (SDGs) (Global Innovation Index, 2023).

This paper explores the dynamic relationship between open access and intellectual property rights within Ukrainian universities. It examines how these institutions can navigate the legal and organizational challenges associated with protecting innovations while promoting open access. Additionally, the study analyzes the impact of these practices on sustainable development and Ukraine's integration into the European academic and research space. Through a comprehensive

review of existing literature and case studies, this paper aims to provide actionable insights for policymakers and academic leaders striving to enhance the role of Ukrainian universities in the global knowledge economy.

### **Materials and Methods**

To evaluate the impact of open access initiatives and innovation ecosystems in Ukrainian universities, a combination of qualitative and quantitative methods was used. Interviews were conducted with academic staff and IP professionals from 10 Ukrainian universities to assess their views on open access and IP management. Follow-up interviews provided deeper insights into challenges and opportunities. Institutional policies on open access, IP protection, and research dissemination were reviewed, focusing on collaborations with industry clusters and technoparks. The work involved a case study. Selected universities with successful open access and innovation initiatives were analyzed to understand their approaches to research dissemination and collaboration. A comparison of patent management practices between Ukrainian universities and their European counterparts was conducted, focusing on patent filings, commercialization, and maintenance. Patent data were analyzed using descriptive and inferential statistics to assess patent activity across universities. The success of technoparks and industrial collaborations was measured through metrics such as the number of startups and commercialization outcomes.

This approach provides a detailed evaluation of how Ukrainian universities balance open access with IP protection while fostering innovation.

### **Results and Discussion**

The impact of open access initiatives and innovation ecosystems in Ukrainian universities has far-reaching implications for global competitiveness and scientific advancement. By participating in these systems, Ukrainian universities can leverage their intellectual property (IP) for multiple benefits, including the generation of revenue through licensing technologies to third parties. This provides a critical source of funding for further research, infrastructure improvements, and overall university development.

One of the key advantages of open access is its ability to increase the visibility and reach of research outputs. By making research freely available to a global audience, universities not only contribute to the global pool of knowledge but also enhance their reputation in the international academic community. Open access ensures that more individuals – both within academia and beyond – can benefit from cutting-edge research, accelerating scientific progress (Khoo, 2021). This can boost the international rankings and prestige of Ukrainian institutions, making them more competitive on a global scale.

However, open access must be carefully balanced with intellectual property rights to avoid undermining the commercialization of research. If universities focus solely on open access without considering IP protection, they risk losing control over valuable innovations, which could lead to potential revenue losses. Therefore, Ukrainian universities need to develop a dual strategy that promotes open access for broader dissemination while protecting IP through patents and licenses to encourage commercialization and collaboration with industry. This balance is crucial for maintaining researcher motivation, as the fear of losing IP rights could discourage scientists from engaging in open access initiatives.

Beyond research, open access systems offer significant educational advantages. By providing free access to high-quality academic materials, Ukrainian universities can reduce barriers to education for both students and researchers. Open educational resources (OERs) can be used to supplement traditional learning materials, allowing students to benefit from up-to-date research and enhancing the overall quality of education (Anderson, 2004). These efforts align Ukrainian universities with global open access movements such as the Budapest Open Access Initiative (BOAI) and the Berlin Declaration on Open Access, which advocate for free and unrestricted access to scholarly outputs.

Participation in international initiatives like BOAI and the Berlin Declaration also enhances the international collaboration and visibility of Ukrainian universities. These initiatives emphasize the importance of infrastructure development – such as institutional repositories and open archives – which provide the framework for disseminating research more effectively. By supporting these infrastructures, universities can ensure that their research reaches a broader audience, increasing the chances of collaboration, joint projects, and further funding opportunities from international bodies (Alexander, 2020).

Intellectual property rights and open access are not mutually exclusive. In fact, when managed effectively, they can complement each other to promote scientific development while ensuring that innovations are protected. Ukrainian universities can develop IP management policies that allow certain aspects of research to be open while protecting key innovations for commercialization. This approach ensures that universities fulfill their role in promoting the free exchange of knowledge while securing financial and collaborative benefits from their intellectual property.

In conclusion, open access and intellectual property management must coexist harmoniously within Ukrainian universities. By embracing both, institutions can enhance their contribution to global scientific progress, improve access to education, and increase their global competitiveness, all while protecting valuable innovations. This dual focus on open access and IP protection is essential for Ukrainian universities to thrive in the rapidly evolving global knowledge economy.

The Budapest Open Access Initiative (BOAI) is an international declaration signed in Budapest, Hungary in 2002. BOAI reflects the commitment of the global scientific community to open access to the results of scientific research. This initiative defines open access as free internet access to scholarly articles of intellectual property, which should be available for reading, downloading, and distributing without usage restrictions. This facilitates faster knowledge dissemination and enhances the efficiency of scientific research. The results of scientific research should be freely available to anyone interested, ensuring wide access to knowledge. Open access should promote reuse, remixing, and redistribution of scientific materials to maximize societal benefit. BOAI recognizes the importance of supporting authors in providing open access to their scientific publications (Budapest open access initiative, 2002).

The initiative also supports the development of relevant infrastructure, such as open archives and repositories, to provide access to scientific research. The Budapest Open Access Initiative has been a significant step in advancing the open access movement and has contributed to changes in approaches to disseminating scientific information in the online environment.

The Berlin Declaration on Open Access, an international document signed in Berlin in 2003, defines the general principles and values of open access to the results of scientific research. The declaration calls for the dissemination of research results through open access in free online archives or publishing platforms. It emphasizes the importance of supporting authors and researchers in their desire to publish their results openly. The Berlin Declaration calls for the development and support

of open archives, repositories, and other infrastructures for storing and disseminating scientific information. The document promotes the creation and support of new models of open publication that allow researchers to publish their results without access restrictions.

Universities play a key role in developing and implementing open educational resources. Higher education institutions have significant potential in developing quality educational content that can serve as the basis for open educational resources (Agusdinata, 2022). These may include educational materials, lectures, exercises, test tasks, and more. Universities contribute to research in education, including the study of effective teaching methods and the use of technology in the educational process. This helps create innovative approaches to developing open educational resources. Universities regularly publish their research and educational materials related to education in open access. This stimulates knowledge exchange and promotes the dissemination of ideas and resources for open educational resources (West, Bogers, 2014).

Some universities have developed and have their own platforms for open educational resources, which aggregate materials from various courses and disciplines, making access to open educational resources convenient and efficient. Universities also provide training and support to teachers and students in using and creating open educational resources. This may include courses, webinars, consultations, and other forms of support. Overall, universities play a key role in creating and disseminating open educational resources, promoting accessibility, quality, and innovation in education. Ukrainian universities are increasingly involved in projects related to open access to scientific information. This is part of the global movement towards open scientific communication, which aims to provide free access to research results to serve scientific progress and innovation (Tsybulov P., Korsun V., 2014).

Ukrainian universities actively support the development of open access to scientific literature and research data, using various mechanisms such as creating their own institutional repositories, participating in international projects, and collaborating with scientific publishers supporting open access.

Open access initiatives in Ukrainian universities are increasingly focused on enhancing accessibility to scientific research while also aligning with international efforts like Open Access 2020 and Plan S. These projects often include the establishment of institutional repositories for storing and sharing research results, which ensures that scholarly work is freely available to the global scientific community. For example, many universities are now adopting their own open access policies to govern how their research outputs are made available, contributing to transparency and knowledge dissemination.

By participating in global initiatives such as Open Access 2020 – which seeks to transform subscription-based scholarly journals into open-access platforms – Ukrainian universities are further integrating into the international academic ecosystem. Likewise, Plan S, an initiative spearheaded by coalition S, mandates that publicly funded research must be openly accessible by 2021. Ukrainian universities can benefit from aligning with such frameworks, thereby boosting their visibility, citation rates, and influence in the global academic community (Plan S, 2021).

At the same time, universities are leveraging their research for commercialization through technology licensing and startup creation. The Lviv Polytechnic National University has demonstrated success in collaborating with the private sector on innovation and technology transfer. This partnership facilitates the commercialization of university research, creating additional revenue streams while driving technological advancements. Such collaboration fosters innovation hubs where

academia meets industry, accelerating the development of solutions in fields like engineering, IT, and environmental sciences.

Scientific conferences and exhibitions are key platforms where universities like Taras Shevchenko National University of Kyiv can showcase their research to potential investors and industry leaders. By doing so, they attract investment and build partnerships that translate research into marketable products and services. Furthermore, the development of technoparks and incubators – like those at Kyiv IT Cluster and Kharkiv IT Cluster – provides structural support for startups. These clusters promote innovation ecosystems that nurture new ventures, offering mentorship, funding opportunities, and a pathway to scaling businesses globally.

In summary, Ukrainian universities are integrating open access and commercialization strategies to enhance their contributions to science and technology. Their participation in international open access movements, combined with active collaboration with industries, strengthens their global competitiveness. Through initiatives like technology transfer, startup incubation, and open access policies, these institutions are becoming key players in the global knowledge economy. These efforts not only foster scientific progress but also position Ukrainian universities as hubs of innovation, driving national and international development.

Among the leading Ukrainian universities in rankings, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” (NTUU), Sumy State University, National University of Life and Environmental Sciences of Ukraine, National Aviation University, Vasyl Stefanyk Precarpathian National University, Taras Shevchenko National University of Kyiv, Kharkiv National University of Radio Electronics, National Technical University "Kharkiv Polytechnic Institute", V. N. Karazin Kharkiv National University, and Lviv Polytechnic National University are prominent. However, despite their academic and research strengths, challenges remain regarding the registration and maintenance of patents.

For instance, NTUU boasts 4048 patents, but a closer look reveals only a fraction of these are valid, including 121 invention patents, 39 utility model patents, and 1 industrial design patent. Similarly, Sumy State University holds 851 patents, of which only 69 are valid, while the remaining 671 patents are expired or 111 have been suspended. These figures highlight a broader issue of patent maintenance in Ukraine, largely due to non-payment of patent fees or the inability to manage the financial and administrative aspects of maintaining patents. This challenge is not unique to NTUU and Sumy State University but is observed across many institutions, limiting their capacity to fully capitalize on their innovations.

One of the key reasons for patent expirations is insufficient understanding and awareness of intellectual property (IP) among researchers and students. Without adequate knowledge of the importance of patenting and protecting intellectual assets, many fail to prioritize securing their inventions. As mentioned in the work of Druzhkova (2023), only a small fraction of intellectual property remains valid due to lapses in payment or administrative oversight.

Additionally, the lengthy patenting process, which can span several years, poses a significant barrier for universities seeking to commercialize their technologies. In a fast-paced, innovation-driven economy, this time lag can deter potential partnerships or investments. To overcome these hurdles, it is essential to adopt a proactive intellectual property strategy that is regularly updated and reflects the goals of the institution. Such a strategy should include educational programs on intellectual property for both students and faculty, ensuring that the next generation of researchers is well-versed in protecting their innovations (Parkhomenko N.M., 2021).

Supporting scientific research and innovation through increased access to funding, resources, and infrastructure will further enhance universities' ability to manage their IP portfolios effectively. More importantly, the development of efficient mechanisms for technology transfer and the commercialization of scientific advancements is vital. Establishing clear pathways for the commercialization of research— from patenting to licensing and startup incubation – can turn ideas into practical, marketable solutions.

For Ukrainian universities to improve their global competitiveness and harness the full potential of their innovations, addressing the challenges associated with IP management and patent maintenance is essential. By creating robust IP strategies, increasing awareness, and facilitating access to the necessary resources, these institutions can significantly enhance their ability to contribute to global scientific and technological progress.

### **Conclusions**

In conclusion, the proactive adoption of open access initiatives by Ukrainian universities, reflected in their participation in international conferences and the establishment of technoparks, signifies a strong commitment to global scientific dissemination. This shift aligns Ukrainian institutions with major international open access movements like Open Access 2020 and Plan S, which aim to make publicly funded research freely accessible. Such initiatives position Ukrainian universities as key players in the global knowledge exchange, even though challenges remain, particularly around patent maintenance.

Institutions like Taras Shevchenko National University and Lviv Polytechnic National University actively contribute to scientific advancement by adopting open access principles. These universities host conferences, collaborate with industry, and create innovative ecosystems, such as partnerships with Kyiv and Kharkiv IT Clusters, where they foster close ties with the private sector. These collaborations bridge the gap between academia and industry, ensuring that research findings are translated into practical, marketable solutions. For example, Lviv Polytechnic's close cooperation with businesses in the field of innovation and technology transfer serves as a model of how universities can contribute to regional and national development through scientific advancements.

Open access platforms not only make research more widely available but also elevate the global competitiveness of Ukrainian universities by increasing the visibility and impact of their scientific outputs. In addition, the commercialization of innovations, whether through technology licensing or the creation of startups, has become a significant part of Ukrainian universities' strategies for supporting research and development.

While the challenges of intellectual property (IP) management – specifically patent registrations – remain pressing, as seen in the discrepancy between registered and valid patents, ongoing efforts to strengthen IP strategies can alleviate these issues. Improved awareness and educational programs on intellectual property among faculty and students can further enhance the effectiveness of patent management and help protect the universities' scientific innovations. According to Parkhomenko N.M. (2021), addressing these IP challenges will require systematic institutional support and a focus on the commercialization of research through efficient technology transfer mechanisms. This will, in turn, contribute to Ukraine's scientific and technical progress.

Despite these hurdles, Ukrainian universities' efforts to overcome patent maintenance issues demonstrate resilience and adaptability. Their engagement in open access initiatives fosters greater scientific collaboration and global recognition, while the commercialization of research innovations

ensures the practical application of scientific advancements. The adoption of these initiatives instills confidence in researchers and reaffirms the role of Ukrainian universities in driving scientific progress and facilitating global knowledge exchange.

By balancing open access and intellectual property protection, Ukrainian universities not only enhance research visibility but also contribute to the global research ecosystem. Their commitment to these efforts signifies a pivotal role in shaping the future of Ukrainian science and technology on a global scale, further reinforcing the nation's competitiveness. Druzhkova (2023) highlights that, despite patent-related challenges, these initiatives offer a strong foundation for continued progress in the scientific landscape. As Ukrainian universities continue to innovate, they reaffirm their crucial role in advancing scientific knowledge and contributing to a more open, collaborative global research environment.

This proactive approach will likely result in long-term benefits for both researchers and society at large, ensuring that Ukraine's contributions to global scientific discourse are widely recognized and accessible.

### **Conflict of interest**

The author states no conflict of interest.

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