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Commercialisation of Intellectual Property: A comparative analysis of Georgia and Estonia

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Ketevan Tkeshelashvili ……

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TABLE OF CONTENTS

ABSTRACT

Commercialisation of Intellectual Property (IP) is a vital part of the state's economy and it plays a crucial role in the development and success of any innovative project. However, the commercialisation of IP is directly linked to the adopted legislation on patent rights as it regulates the protection and exploitation of IP. The lack of legislative framework in a country can lead to ineffective patent protection mechanisms and create challenges in IP commercialisation. This article aims to analyse comparison between of the IP commercialisation frameworks in Georgia and Estonia and identify the challenges in patent protection mechanisms in Georgia. Estonia and Georgia are both post-soviet countries in the Eastern European region and they share similar legal systems and the constitutions. By aligning legislative framework with EU standards and supporting universities and encouraging the culture of innovation, Estonia sets a notable example in IP commercialisation. However, Georgian legislative framework still lacks certain elements that are crucial for developing IP commercialisation. The low quantity of registered patents applications in Georgia indicates the challenges and obstacles in this field. The comparison of legal frameworks and practices in these countries can provide important insights into the challenges and solutions in IP commercialisation. The article examines how inefficient legislative framework leads to inconsistent patent protection mechanisms in Georgia that creates barriers in IP commercialisation, while underlining Estonia's success in innovation and establishment of progressing IP commercialisation landscape.

The article presents a set of recommendations aiming Georgian framework's alignment with EU standards, initiating joining European Patent Convention, strengthening IP enforcement and promoting open IP policies in universities based on Estonian example.

Keywords: Intellectual Property, IP commercialisation, Georgian and Estonian legislative frameworks in IP commercialisation.

INTRODUCTION

This graduation thesis is formatted as an article and is expected to be published in TalTech Journal of European Studies (TJES).

The main goal of any innovative project is its commercialisation. However, to enable the commercialisation of IP, it is important to implement the legislative framework and improve the patent protection mechanisms. The lack of a legislative framework in a country leads to inconsistency in patent protection mechanisms and create challenges in IP commercialisation. While Georgian IP legislation lacks certain elements that are crucial for developing IP commercialisation, Estonia progresses and sets notable example in transforming innovation into intellectual property assets and their commercialisation. The comparative analysis of these two legislative frameworks and the dynamic interplay between intellectual property, innovative ecosystems and economic growth offers novel and progressing study. Despite the closing gap in patent ownership, a significant gap in patent commercialisation remains. Enabling IP commercialisation is directly linked to adopted legislation on patent rights, despite its importance, academic literature on this topic has not been subject to a systematic review.

The research problem lies in Georgia's legislative framework leading to inconsistency of patent protection mechanisms and IP commercialisation. Estonia and Georgia are both post-soviet countries in the Eastern European region and they share similar legal systems and the constitutions. By aligning the legislative framework with EU standards and supporting universities and encouraging the culture of innovation, Estonia sets a notable example in IP commercialisation. However, Georgian legislative framework still lacks certain elements that are crucial for developing IP commercialisation. This research aims to provide comprehensive analysis of the IP commercialisation frameworks in Georgia and Estonia and identify the key differences and potential solutions for improvement.

This research addresses the following questions: (1) How does lack of legislative framework lead to inconsistency of patent protection mechanisms in Georgia? (2) What is the role of IP commercialisation in economy growth? (3) How Estonian and Georgian frameworks in terms of IP commercialisation differ?

To address these questions, mixed research methods have been applied, including qualitative analysis of IP legislation, peer-reviewed scientific literature, publications and policies of universities, and quantitative analysis of patent registration data.

This article is structured into the following chapters. Chapter 1 addresses the importance of IP commercialisation and it draws the attention to its role in economic growth. This chapter also offers a comprehensive overview of IP commercialisation frameworks in Georgia and Estonia, including quantitative and qualitative analysis of both legislations, challenges and opportunities. Chapter 2 provides interconnection between universities and IP commercialisation. The main source of research, innovation and creation of intellectual property are the universities, therefore, they play a crucial role in IP commercialisation. This chapter analyses approaches of Georgian and Estonian universities in IP commercialisation, including importance of IP policies in universities. The next chapter provides comparative analysis of the legislation and framework of IP commercialisation in Georgia and Estonia, patent granting procedures in each and their impact on the IP commercialisation landscape. Analysing the differences between two frameworks is important and could also contribute to the improvement of the overall picture, by taking the example of better legislation, policies and mechanisms that are used in the IP commercialisation. Chapter 4 introduces comparison of EU and US IP protection mechanisms and policies, underlining insights into which framework would be more beneficial for Georgia in terms of IP protection and commercialisation. The last chapter offers a set of actionable recommendations aiming at improving Georgian IP legislation, ensuring close alignment with EU's framework, taking initiative to join European Patent Convention and taking an example from Estonia, supporting university research and IP commercialisation.

1. IP Commercialisation

1.1. Importance of IP Commercialisation

In the modern global economy, the commercialisation of Intellectual Property has become increasingly important. Commercialisation is the process of turning products and services into a commercially viable value, in other words, bringing IP to the market in the view of future profits and business growth. "Empirical evidence demonstrates the value of intellectual property (IP) in creating economic growth. Especially in knowledge-based economies, IP plays a fundamental role in the decisions to invest in innovation."[1] Commercialisation is what gives the value to the IP, without commercialising it, Intellectual Property is just an invention or creation kept on the shelf. "The patent owner will not benefit from the patent unless he successfully commercializes a resulting product himself or makes it available to others for commercialization through a sale or licensing agreement." [2]

Intellectual property commercialisation also significantly contributes to companies' financial prospects[3]. The EPO (European Patent Office) and the EUIPO (European Union Intellectual Property office) published a study that confirms that ownership of IPRs is strongly associated with improved economic performance at individual firm level. The studies showed that companies that own IPR (Intellectual Property Rights) perform better than companies that do not own IPR. Companies' financial success was measured by employee's revenues and wages. "Overall, revenue per employee is approximately 55% higher for IPR owners than for firms that do not own IPRs. This relationship is particularly pronounced for SMEs. SMEs that own IPRs have 68% higher revenue per employee than SMEs that do not own any IPRs at all." [4] There are many tech-companies that are dependent on commercialisation and licensing out their IPs, that also prove the above-mentioned point.[5] Correspondingly, countries that provide accessible tools and relevant legislative framework to own IPRs and commercialise them, gain more values in economy and development. This also creates a positive affecting cycle - if a country creates supporting

[1] Atun, R., Harvey, I., & Wild, J. (2007), 'Innovation, patents and economic growth,' *International Journal of Innovation Management*, 11(2), 279–297.
[2] United Nations Publications. (2011), Intellectual property commercialization: Policy options and Practical Instruments. United Nations Publications.
[3] Greenhalgh, C., & Rogers, M. (2010), 'Innovation, Intellectual Property, and Economic Growth,' *Princeton University Press*.
[4] EPO and EUIPO. (February 2021). Intellectual property rights and firm performance in the European Union: Firm-level analysis report
[5] Lichtenthaler, U. (2010), 'Intellectual property and open innovation: An empirical analysis,' *International Journal of Technology Management*, 52(3/4), 372-391.

environment for students and employers and encourages them to succeed in innovations and commercialise intellectual property, it boomerangs into enriching country's economy. One of the great examples for this is Estonia - a country with very supporting and developing startup environment. There are many world known companies from Estonia, that created their value through IP and it's proper management. Citing one of the Estonian lawyers: "Looking at some of the most successful companies in Estonia, such as the world-renowned Taxify and Skype, it is clear that they are not traditional companies with a large fleet of vehicles, but they create value through IP and their strategy for using it."[6]

This chapter summarized the importance of IP commercialisation. The main goal of any innovative project is its commercialisation, but for this, it is important to actually enact the legislation adopted in the country to improve the patent protection mechanism and make commercialisation of IP accessible. "Safeguarding Intellectual property, promoting licensing and encouraging entrepreneurship go hand in hand." [7] Well-designed framework is also a precondition for successful market strategies, that are proven to be one of the key factors for IP commercialisation.[8] Although there might be some challenges when applying intellectual property theories in practice, it is very important to establish and maintain a well-structured framework to regulate it and make commercialisation accessible[9]. The following chapters will discuss legal frameworks on IP commercialisation in Georgia and in Estonia and will provide an overview of the comparison and existing challenges in Georgian approach.

1.2. IP commercialisation in Georgia

In recent years, Georgia has been actively pursuing economic development and technological innovation. Along with this, IP commercialization has emerged as a critical component of promoting innovation, attracting investment, and economic growth. This chapter explores the current landscape of IP commercialization in Georgia, shedding light on its challenges and opportunities.

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[6] Jurgen, L. (2018, April 30) Intellectual Property in Business: How to Increase Company Value Through Careful Strategic Planning? Retrieved August 20, 2023, from https://www.njordlaw.com/njord-estonia-intellectual-property-business-how-increase-company-value-through-careful-strategic

[7] Othman, A. (2011*), Intellectual property commercialization in the EU: Policy options and practical instruments*. United Nations Economic Commission for Europe. United Nations.

[8] Harrer, R., & Lackner, M. (2014), 'Integrated marketing communications in the commercialisation of intellectual property,' *International Journal of Intellectual Property Management,* 7(1/2), 47-56.

[9] Wilkof, N. (2014), 'Theories of Intellectual Property: Is it Worth the Effort?' *Journal of Intellectual Property Law & Practice,* 9:4, 257.

Similar to Estonia, Georgia is also a post-soviet country located in Eastern Europe. In spite of the similarities in legal systems and constitution, there are some major differences in IP related legislations that create contrast in the IP commercialisation environment. Currently, Georgian legislation faces several challenges that create barriers to IP Commercialization:

Limited Regional Coverage - Georgia has limited regional coverage in regards with IP protection, as it is not a member of the EU or EPO. This restricts the ability of Georgian inventors and businesses to obtain international patent protection. As a result, Georgian innovators may come across some challenges while trying to license and market their IP assets globally.

Cross-border enforcement - Patents are territorial rights and they have territorial scope. Unless a state is a member of a regional agreement, the patent is only valid in the country where it was registered. In this case, Georgia is member of the Patent Cooperation Treaty (PCT), [10]that allows Georgian applicants who are seeking patent protection internationally to fill the application under the PCT, which is also called an International Application. However, PCT is not a regional patent but a mere mechanism allowing to file applications in several jurisdictions and get several national patents simultaneously. If not planned carefully, filing the application under PCT may require additional resources, as it can be complex, time- consuming and expensive process. Thus, Georgian patents do face difficulties in cross-border enforcement outside of the country. This comes as an obstacle to the inventors and businesses trying to pursue patent protection outside of the country.

Start-up ecosystem development - IP commercialisation and start-up environment are inter-connected with each other. A well-developed start-up ecosystem promotes the growth of technology driven businesses and IP commercialisation of their assets[11]. While Georgia attempts to develop start-up environment, it does not provide the same level of support, network and programs as in Estonia.

Patent granting procedures: Patent grant procedures and ensuring its efficiency is one of the essentials for developing effective IP commercialisation in the country. Georgian national patent office (Sakpatenti) requires improvements in its procedures and collaboration with international and European patent offices to align its procedures with best practices.

[10] The Patent Cooperation Treaty, PCT (1970)

[11] Galiakhmetov, R., Giuri, P., & Munari, F. (2018), 'How to enhance patent commercialisation? An analysis of patent aggregators in Europe*,' International Journal of Innovation Management.*

Before making the decision about granting a patent, Sakpatenti shall conduct patent examination of an application, which comprises confirmation of application filing date, conducting examination as to form and substantive examination[12].

Application filling date shall be confirmed within 2 weeks, if the application is not lacking any required materials. (Art. 33 of Patent Law of Georgia)

Next stage is Examination as to Form, where within 2 weeks Sakpatenti shall take a decision on completion of the examination as to form. (Art. 34 of Patent Law of Georgia)

After the completion of the examination as to form Sakpatenti shall conduct substantive examination and shall make a decision of refusal or granting a patent. (Art. 35-36 of Patent Law of Georgia)

Only after this, Sakpatenti shall record the patent data in the Register and publish in the Bulletin. (Art. 40 of Patent Law of Georgia)

As for International Application, Georgia can be Receiving Office or Designated or Elected office of international applications, meaning international applications shall be accepted by Sakpatenti and Sakpatenti can act as an "elected office" or "Designated Office" with regard to international applications indicating Georgia as a place for obtaining a national patent. However, this requires additional resources, time and fees.

Procedure for appealing against decision: The appealing procedure is also very extended and complex in Georgia, it consists of several steps and involves the administrative court.

An applicant can appeal against decisions of Sakpatenti on the completion of the examination as to form or termination of proceedings, as well as a decision of substantive examination on refusal of granting a patent to the Chamber of Appeals:

"4. An appeal can be filed to the Chamber of Appeals within 3 months from the date of publication/receipt of the respective decision.

5. The Chamber of Appeals shall hear the appeal and take a decision within 3 months from its filing date. "[13]

In case of appealing decision of Chamber of Appeals, it can be appealed in court as an administrative-legal act.

As for the Patent Disputes, regarding infringement or issues with commercialisation, appeals shall be submitted to the court as a civil case. Therefore, appealing against decision is tied to court practice and extended time frames.

[12] Article 32 of Patent Law of Georgia LHG, 5(12), 24/02/1999

[13] Article 40'3 (4) and (5) of Patent Law of Georgia LHG, 5(12), 24/02/1999

Access to EU resources: Funding and grant programs, along with the research networks and technology transfer initiatives are very important in IP commercialisation. Georgia has limited access to the EU funding programs as it is not the member state of the EU. Lack of access to such programs results in ineffective IP commercialisation and it also restrict financial and collaborative support for Georgian innovators and businesses.

There are also other challenges in the Georgian IP legislation, such as education awareness or foreign investment challenges. Unlike Estonia, Georgia is not a member of the EPO (European Patent Office), that delivers high-quality patents and efficient services that foster innovation, competitiveness and economic growth among its member states. EPO operates under the framework and rules established by the European patent Convention (hereinafter "EPC", or "the Convention"), which grants European patents[14]. Patents granted under the EPC shall have the effect of and be subject to the same conditions in each of the Contracting States for which it is granted, as a national patent granted by that State, unless this Convention provides otherwise. EPC and the validation agreement will be more thoroughly discussed within the next chapters.

Challenges in Georgian IP commercialisation are also reflected in statistics regarding quantity of submitted and registered patents in Georgia. Statistics from Sakpatenti are shown below in Table 1.

Table 1. Quantities of Inventions in Georgia

Year	Quantities of Inventions					
	National Procedure				Foreign Procedure	
	Submitted applications		Registered Patents		Submitted applications	Registered Patents
	Local	Foreign	Local	Foreign		
2021	90	5	42	4	159	82
2020	81	-	45	4	134	103
2019	87	1	31	4	110	80
2018	100	6	36	-	151	97
2017	75	10	37	6	147	163

Source: National Intellectual proepty Centre of Georgia - "Sakpatenti"

According to the given data, the quantity of submitted and registered patens is very low and points out the challenges within the IP landscape in Georgia. These data also indicates of difficulties in IP commercialisation and patent application procedures. The low quantity of patent applications is not merely a statistical concern but it also reflects the ineffective procedure which is a more profound issue. These procedural challenges significantly reduce inventors motivation to apply for

[14] Article 2 (1) of the European Patent Convention, EPC 1973

patents, as the obstacles in the process blocks the potential for effective commercialisation. In consequence, economic incentives and benefits of IP lie only in its commercialisation. As a result, inventors tend to lose interest in registering intellectual property assets as they do not see the opportunity of commercialising them and gaining benefits.

1.3. IP commercialisation in Estonia

Estonia is also a post-soviet country that started to develop its Intellectual Property field in the same period as Georgia. [15]Estonia made a significant progress in this area and implemented a legal framework that supports the protection and commercialisation of IP. This chapter provides Estonian approach to IP commercialisation, shedding light on the mechanisms and strategic legal initiatives that lead to successful creation, protection, and commercialisation of IP.

Estonia has established a very comprehensive legal framework that supports the development of Intellectual Property industry. Being a member of the European Union encouraged and facilitated its IP laws to be harmonised with EU law. This alignment of the laws is efficient not only domestically but it also extends the IP protection across the EU market, facilitating legal aspects of cross-border IP commercialisation for Estonian inventors and businesses. In addition, Estonia is a member state of the European Patent Organisation (EPO), which includes membership of European patent Convention (EPC). Estonian patent owners have ability to extend protection of their assets across the member states and likewise, foreigner inventors can be granted European Patents and register their patents in Estonia - "The European patent shall, in each of the Contracting States for which it is granted, have the effect of and be subject to the same conditions as a national patent granted by that State, unless this Convention provides otherwise." (Article 2 (2) of EPC. This streamlines patent granting procedures and ensures prompt and quality protection, encouraging innovation and IP commercialisation.

The patent application procedure consists of the following stages: Filling the application form, preliminary examination, publication, substantive examination and registration in case of granting the patent. In case the patent application is rejected, the decision of the Patent Office may be appealed to the Board of Appeal. Upon disagreement with a decision of the Board of Appeal, an

[15] Pitta, L. A. (1992), 'Intellectual Property Laws in the Former Soviet Republics: A Time of Transition,' *Santa Clara High Tech. L.J.*, 8, 499.

applicant may contest the decision by filing an appeal with a county court within the term specified in subsection 1 of Article 63 of the Principles of Legal Regulation of Industrial Property Act. As for the cases regarding disputes related to patents shall be heard by the Board of Appeal or in court. However, "appeals and actions related to the legal protection of inventions, validity of patents and unlawful use of inventions protected by patent, petitions for the securing of an action and petitions for provisional legal protection, as well as other appeals, petitions and actions specified in this Act shall be heard by Harju County Court."[16]

The legal framework of Estonia also provides support for research and development, including tax incentives and funding programs. Inventions mostly are results of research done in universities, research centres and organisations funded by the government. Therefore, such support plays a significant role in the development of a strong, advanced innovation ecosystem, which by itself facilitates the commercialisation of IP.

Estonia also has a vibrant start-up environment that serves a crucial role for developing innovation field. Finantsinspektsioon (Financial Supervision Authority of Estonia) has initiated Innovation Hub, that serves as a platform for communication between the authority and innovative financial sector companies. The innovation Hub provides guidance, information and support to financial technology (FinTech) companies, companies that create innovative supervisory solutions and that provide support solutions for financial sectors. The hub simplifies market entry for innovative businesses, particularly startups.

Estonia has also established several programs and start-up accelerators, that provide support not only in funding the projects, but also offering them guidance with Intellectual Property and help them commercialise their assets. These projects by themselves contribute with IP education and awareness initiatives. Some of such programs are Prototron, Ajujaht, Tallinn Creative Incubator, Tehnopol Startup Incubator and etc. It is very important to encourage start-ups to have ability to take their IP to the commercialisation stage, which is the idea and the final goal of the Intellectual Property. This itself contributes to the economy boost, as these companies grow into so-called "unicorns" and bigger companies, and they do it with creating value through IP and commercialising their assets.

Estonian IP commercialisation landscape is supported by efficient and well-developed patent application and granting procedures, that include European Patent registration. The outcome is reflected in the number of registered patents in Estonia, which is very high comparing to the

[16] Estonian Patent Act, RT I 1994, 25, 406

Georgian example (Table 1). The data from Estonian Patent Office is given below on Table 2 and Table 3.

Table 2. Registered Patents in Estonia

Year	Register of European Patents Valid in Estonia	Inc. Patents belonging to the Estonian residents
2022	1236	4
2021	1595	3
2020	1663	5
2019	1977	9
2018	1820	6

Source: Estonian Patent Office

The data in Table 2 shows the number of registered European Patens valid in Estonia through the years 2018-2022. These numbers include the patents that belong to the Estonian residents. This table shows how efficient European Patent registration system is. As surely, inventors register European Patents, which have a bigger scope of patent protection.

Table 3. Filled applications.

Year	Filled National applications	Filled Applications under PCT	Granted Patents
2022	11	4	9
2021	25	1	8
2020	23	0	12
2019	32	0	5

2018	26	4	14

Source: Estonian Patent Office

Table 3 corresponds to the numbers of filled applications, and they are divided into national applications and applications filled under PCT. The number of national applications and PCT applications are relatively low, comparing to the European Patent registration numbers. This is also result of efficiency of European Patent, as inventors tend to apply for European Patents directly, which is more beneficial in many ways.

While Estonia has shown notably high success rate comparing to Georgia, it's important to acknowledge that there is room for further growth and improvement for Estonia as well. Comparing to other EU member states, Estonian results might not score the highest and patenting activity in Estonia comparing to those states is considered to be low. [17]There are instances, where other member states, like Finland have demonstrated even stronger performance in intellectual property and innovation. The comparison between Estonia and Finland is analysed in the article regarding the case of Estonia and Finland which suggests that "one can easily see the vast disparity between Estonia and Finland when it comes to the number of triadic patents, the population level, the education level mainly as tertiary education (as indicator for education policy and highest level of education completed by each person), the gross domestic expenditure on R&D as a percentage of GDP and the expenditure for total R&D personnel and for personnel researchers."[18] The research also provided the statistical data, according to which, Finland significantly outperforms Estonia in terms of strength in intellectual property. The authors set out the suggestions for Estonia and conclude that "to make the Estonian economy knowledge-driven and technologically intensive, the state must focus on cultural, economic, social and strategic factors. Education, collaboration, coordination and grants are the way forward."[19]

It is also suggested that there are certain support measures needed by Estonian SMEs from the public support system to acquire and commercialise their IPR, such measures could be "improved IPR education, government support in the form of tax credits, special IPR grants, loan guarantees and refund of official filing fees for IPR applications."[20]

[17] Kelli, A., Värv, A., Mets, T., Mantrov, V., Birštonas, R. & Ginter, C. (2016), 'Different regulatory models of transfer of industrial property rights in the Baltic States: A plea for harmonized approach,' *International Comparative Jurisprudence,* vol. 2, no. 1, pp. 8–17.

[18] Dutt,P., Ferraro,S., Chochia,A. & Muljar,R. (2018), 'Using Patent Development, Education Policy and Research and Development Expenditure Policy to Understand Differences between Countries: The Case of Estonia and Finland,' *TalTech Journal of European Studies*,8(1) 123-153.

[19] *Ibid.*

[20] Dutt, P. & Nyman-Metcalf, K. (2021), 'The Legal Implications of Public Support Policies Targeting Research, Development and Innovation in the European Union,' *TalTech Journal of European Studies*,11(2) 102-129.

There are also other member states, from which Estonia can take example from, one of them being Germany. “Estonia lags behind Germany in respect of several global rankings related to technology and innovativeness. To make the Estonian economy knowledge-driven and technologically intensive, the state must focus on cultural, economic, social and strategic factors. Estonia should adopt RDI policies similar to Germany and also use the new UP regime to help its SMEs to acquire foreign patents.”[21]

2. IP commercialisation in Universities

The main source of research, innovation and creation of intellectual property are the universities, therefore, they play a crucial role in IP commercialisation. Beyond their traditional mission of passing the knowledge, these academic institutions have become contributors to technological progress and economic growth by transforming academia and research into tangible assets[22]. “During the last 20 years, universities have acquired a definitive role as agents of economic development.”[23] “IP management and commercialisation are one of the main topics for European university activities, as they can be regarded as effective tool to improve the competitiveness of the interested students and innovators.” [24]

Estonia is one of the countries, known for success in technology and Estonian universities have major contribution to this outcome. one of the examples of a successful university-led commercialisation achievement is Estonia was the development of Skype. In addition to Skype, The Tallinn University of Technology (TalTech) campus is also a home to the Estonian Information Technology College and 150 high-tech companies. These companies had significant impact on Estonian innovation ecosystem and provided a strong example of commercialising intellectual property.

[21] Dutt, P. K., Wahl, M. & Kerikmäe, T. (2019), ‘Using patent development, education policy and research and development expenditure policy to understand differences between countries: The case of Estonia and Germany*,’ International and Comparative Law Review*, vol. 19, no. 1, pp. 190−233.
[22] Ricketson, S. (1996), ‘Universities and Their Exploitation of Intellectual Property,’ *Bond Law Review,* 8(1).
[23] Hearn, G., Cunningham, S., & Ordonez, D. (2004), ‘Commercialisation of Knowledge in Universities: The Case of Creative Industries,’ *Prometheus*, 22(2), 189-200.
[24] Peredy, Z., & Laki, B. (2020), *Possible ways of IP Commercialisation in the European Higher Education Ecosystem. International Journal of Engineering and Management Sciences*, 5, 99.

To ensure the proper realisation of IP commercialisation within universities, it is important that these institutions establish the accurate mechanisms for IP disposal and distribution of revenue. Taltech has established a regulation regarding the bases for disposal of intellectual property - "Principles for the acquisition, encumbrance with limited real right and transfer of assets." [25]The regulation provides the bases for transfer and grant of use of intellectual property owned by Tallinn University of technology. The university can own the results of an author's creative work based on IP legislation, a contractual agreement between the author and the university or any other means. According to the regulation, "Revenue shall be distributed based on the following principles: 1) in case of the disposal of copyright and rights related to copyright, the holder of the rights shall receive the revenue unless otherwise agreed; 2) in the case of the disposal of industrial property, the revenue shall be distributed as follows: 40% of the revenue shall be allocated to the authors, 20% to the university and 40% to the distributor."[26]

Georgian universities, on the other hand, face several challenges in IP commercialisation, including regulatory related barriers, limited funding and lack of technology transfer infrastructure. Estonian has a research and development, innovation and entrepreneurship strategy that sets out the following: "creating opportunities for research institutions and higher education institutions to expand their knowledge transfer activities, to develop knowledge transfer services, and to upgrade the knowledge and skills of staff on knowledge transfer, including the development of a model for spin-off entrepreneurship and sustainable market-based commercialisation of knowledge, and to improve the possibilities and capacities for the protection of intellectual property, including by streamlining the legal framework, supporting start-up innovation and the creation and exploitation of intellectual property in all sectors."[27] It is important for universities to keep track on analysis and contribute to the strategy plans – an example of this could be TalTech explanatory note, which includes data on commercialised IP and licensign agreements[28]. Georgian universities need to work on analysing the challenges in the research and development and need to establish such strategies, that would aim developing knowledge transfer and create more opportunities for the innovators. These challenges come as obstacles preventing realisation of the

[25] Established by Regulation No 4 of 30 October 2015 of the Board of Governors of Tallinn University of Technology Amended by Regulation No 2 of 8 November 2019 of the Council of Tallinn University of Technology (entry into force 25.11.2019)

[26] Article 4 of Established by Regulation No 4 of 30 October 2015 of the Board of Governors of Tallinn University of Technology Amended by Regulation No 2 of 8 November 2019 of the Council of Tallinn University of Technology (entry into force 25.11.2019)

[27] Estonian Ministry of Education and Research. Estonian Research and Development, Innovation and Entrepreneurship Strategy 2021—2035

[28] Tallinn University of Technology. (2021). Explanatory Note to the Key Indicators of the Strategic Plan 2021-2025 of Tallinn University of Technology.

full potential of academic research. While the students are actively engaged in IP creation, managing and protecting IP assets remain as barrier for them that impact their ability to commercialise IP. In contrast to Taltech, Georgian Technical University (STU) does not have an operational Technology Transfer Office (TTO). There is also no unified intellectual property policy document. The absence of an intellectual property policy and the absence of a technology transfer office lead to difficult problems:

a) A researcher or a team of researchers prepares a research project without calculating the estimated costs and benefits of the university. The future fate of the research results is also not analysed. For this reason, almost the overwhelming majority of research is conducted in such a way that its results have no practical application. It is often the case that an invention is created as a result of research, but it is not commercialized, nor is it used within the university. For example, in the form of spin-offs or spin-outs;

b) In most cases, patents are cancelled due to lack of interest in the 2nd to 3rd year after its creation;

c) there are cases when an invention is created in the laboratories of the university, with the resources of the university, but the researchers are registered as patent holders, so that the university knows nothing about it;

d) Researchers conduct high-budget research, reach the final result, but it turns out that the object of intellectual property is not patentable and they cannot get a patent. Accordingly, resources are spent unreasonably, which is caused by the lack of preliminary patent research;

e) The university loses revenues, as well as highly qualified researchers, because it is possible to bypass the university and conduct research with the university's resources.

Establishing a Technology Transfer Office in the university could solve the above-mentioned problems. In comparison with Estonian universities, Georgian universities are lacking support from incubators, funding programs and projects that help with IP commercialisation. The organisation that aims to encourage private businesses to commercialise innovations is Georgia's Innovation and Technology Agency - GITA. However, it does not provide enough support for the students who seek protection of IP.

While Estonian universities are active in research and development and work closely with the industry to transfer technology and knowledge, Georgian universities struggle with regulatory challenges and lack of resources. Estonia is a great example for developing the strategy for IP commercialisation and supporting universities for innovation and technology transfer. Estonia is still progressing towards this field - along with other Baltic countries, Estonian universities signed Technology Transfer Cooperation Agreement to promote knowledge and technology transfer

between research and development institutions, companies and the public sector. [29]Through Technology Transfer Offices, universities have opportunity to facilitate transformation of research findings into market-ready innovations.

3. Comparative analysis of IP commercialisation legislation in Georgia and Estonia

The intellectual property landscape has vital impact on economic growth and innovation globally. This chapter providers a comparative analysis of the legislation and framework of IP commercialisation in Georgia and Estonia. It is important to analyse the differences between these two countries to understand the challenges and opportunities that inventors, businesses and academia might face while getting to the stage of IP commercialisation. Analysing the differences between two frameworks could also contribute to the improvement of the overall picture, by taking the example of better legislation, policies and mechanisms that are used in the IP commercialisation.

Georgia and Estonia have both implemented legal frameworks for protection and commercialisation of IP. However, these frameworks and their effectiveness vary significantly. Estonian legal framework for protection and commercialisation of IP is stronger and shows more success than Georgian one. Georgian IP legislation provides foundation for IP protection and commercialisation, however there are several challenges that it faces in terms of enforcement, legal infrastructure and limited resources that impact IP commercialisation. "Carefully structured government support significantly stimulates patent commercialisation."[30] Estonian framework's close alignment with the EU standards contributes to patent granting procedures in Estonia to be much more efficient and supporting for the inventors and businesses. Developing well-structured patent granting procedure is important for establishing successful IP commercialisation landscape. The contrast between efficiency Georgian and Estonian frameworks is reflected in the number of filled applications and granted patents in both countries. The data given in previous chapters (Table 1., Table 2., and Table 3.,) show how important the granting procedures are for the general

[29] WIPO. (2022, March 29). Establishment of the Baltic Technology Transfer Offices Network. Retrieved August 25, 2023, from https://www.wipo.int/technology-transfer/en/news/2022/news_0005.html

[30] Ghafele, R., & Gibert, B. (2014), 'IP commercialization tactics in developing country contexts,' *Journal of Management and Strategy*, 5(2).

outcome of the intellectual property framework in the country. In order to demonstrate the contrast more clearly, the Table 4 is represented below, providing the number of registered patents in both countries through the years 2018- 2021:

Table 4. Registered Patents in Georgia and Estonia

Year	Registered patens in Georgia(Inc. local and foreign procedures)	Registered patents in Estonia(Inc. European Patents valid in Estonia)
2021	128	1603
2020	152	1675
2019	115	1982
2018	133	1834

author's calculations based on data from Tables 1, 2 and 3.

The data in Table 4 shows the significant difference in number of registered patents in Georgia and in Estonia. Registered patents in Estonia exceed Georgian numbers more than 10 times. It must be noted also that Georgia has bigger population than Estonia.

There are several factors that cause the outcome of these statistics and the factors, and the results are interlinked with each other. In addition to the membership of the EPO, which is the major contributor in Estonian statistics on registered patents, Georgia faces several additional challenges in the IP commercialisation framework. As there are not enough support and funding from the government that would encourage students and start-ups to commercialise their IP assets, there is no motivation to create IP. The main source of the innovative projects and research are the universities. Without the support, universities are not able to provide infrastructure for IP protection and commercialisation. One of the key differences in Georgian and Estonian IP commercialisation frameworks is countries' approaches to universities in terms of intellectual property development. A significant part of the IP commercialisation landscape in Estonia is due to universities, which play important role in the development and exploitation of innovation and technology. Universities are partnered with several programs and incubators, which offer support funding and assistance with IP management and commercialisation. Estonia is also a member of

the Technology Transfer Cooperation Agreement, which provides TTOs in universities, which facilitate IP commercialisation. As mentioned in the previous chapter, in contrast to Estonian universities, Georgian universities do not TTOs and they lack support from funding projects, that create obstacles for the students who seek patent protection and commercialisation.

There are several factors that create differences in overall picture of IP commercialisation in Estonia and Georgia. "IPRs are beneficial to all sectors of the economy, and therefore the protection of such rights, once the Intellectual Property is created in any one country or region, is often made global through a crucial patchwork of bilateral and multilateral agreements."[31] Apart from such agreements, one of the key factors is the harmonisation of the national laws – "the codification of Estonia's intellectual property law has been supported by the European Union and European Social Fund,"[32] therefore Estonian legal mechanisms are well aligned with EU standards. "While international agreements play a key role in the protection of intellectual property, it is extremely important that major aspects of the protection of intellectual property rights are harmonized globally."[33] Estonia, as a member of the European Union, has its national laws harmonised with the EU, including the Intellectual Property law and related mechanisms, which helped the country to create a well functioned framework[34]. Georgia, however, has not reached to this point yet. As it has signed the association agreement, Georgia has undertaken an obligation to incorporate European legislation into Georgian law and to harmonise the legal mechanisms. Upon signing the association agreement, Georgia has undertaken the responsibility to implement European standards and directives into national legislation, mostly set out in the decree adopted by the Parliament of Georgia on "Harmonisation of Georgian Legislation with the EU Law", [35]which provides that all laws and normative acts passed by the Georgian parliament should be harmonized with the standards and norms established by the European Union. The association agreement changes the political path of Georgia and redirects it towards Europe. This should be the main goal of Georgian politics, as "national legal mechanisms developed even at its maximum capacity are simply not effective enough since immaterial goods enjoy the legal

[31] Nyman-Metcalf, K., Dutt, P. K. and Chochia, A. (2014), 'The Freedom to Conduct Business and the Right to Property: the EU Technology Transfer Block Exemption Regulation and the Relationship Between Intellectual Property and Competition Law,' In T. Kerikmäe (ed.): Protecting Human Rights in the EU: Controversies and Challenges of the Charter of Fundamental Rights. Heidelberg: Springer Verlag.

[32] Kelli, A. (2015), 'The Conceptual Bases for Codifying Estonia's IP Law and the Main Legislative Changes: From the Comparative Approach to Embedding Drafted Law into the Socio-Economic Context,' *International Comparative Jurisprudence,* 1(1), 44-54.

[33] Taliashvili, T. (1998), 'Some aspects of patent law,' *Journal of Law*. 5–6, 37–43.

[34] Ćemalović, U. (2021), 'Intellectual property rights and digital transformation in Estonia: Aspects related to copyright and patent protection,' *Strani Pravni Zivot*, (4), 701–713.

[35] Decree adopted by the Parliament of Georgia on "Harmonisation of Georgian Legislation with the EU Law", 2.9.1997.

characteristics that cannot be found in relation to "material objects" (tangible goods)."[36] Especially when it comes to the intellectual property, which is characterized by "territoriality principle," it is important for the state to participate in international agreements and provide the global access to the innovators.

Comparison of Georgian and Estonian IP commercialisation legislations shows significant differences. Close alignment with EU standards provides a strong legal foundation for IP protection and commercialisation. With absence of this alignment, Georgia faces enforcement related challenges and limited resources. These differences in frameworks of IP commercialisation impact shaping innovation ecosystem and country's economy.

4. Comparison of EU and US IP protection mechanisms and policies

"Intellectual property is a vital and growing part of the global economy, accounting for about half of the gross domestic product in countries such as the United States." [37] IP protection has become the most important method of securing intellectual assets under the legal system. As a result of globalisation and with the rise of technology transactions, measures of international IP protection have become one of the challenging issues at the international level.

The United States has been one of the frontrunners when it comes to IP infrastructure and its protection. This chapter provides a comparative analysis of intellectual property protection mechanisms and policies in the EU and the United States (USA). This analysis can underline insights into which framework would be more beneficial for Georgia in terms of IP protection and commercialisation. The EU has the strategy that follows a harmonised approach of IP protection. In order to harmonize the IP protection across the member states, EU has established several tools, such as the European Patent Office (EPO), Unitary Patent and the EU patent system covering multiple directives. The EU's IP protection framework indeed facilitates securing IP rights across the EU. However, it faces some challenges related to navigating through the set of different

[36] Taliashvili, T. and Shamatava, I. (2020), 'Recent evolution of Intellectual Property Enforcement in Georgia,' *TalTech Journal of European Studies*, 10(2), pp. 42–56.

[37] Kieff, F. S., Paredes, T. (2015), *Perspectives on Commercializing Innovation*. Cambridge: Cambridge University Press.

jurisdictions and multiple languages, which can result in administrative obstacles. As for the USA framework, it provides a strong IP protection model, led by the US Patent and Trademark Office (USPTO) and it has established a well-structured procedure of patent litigation. As a country of a common law system, the USA's IP legislation emphasizes the significance of case law in developing IP protection. "Culture of Patenting" is dominant in the US, more than the other countries. [38]One of the strengths of US IP protection framework is streamlined and speedy patent granting procedure and the role of patents in innovation field. Conditions for patentability and novelty also differ in the EPC and USPTO laws. One of the examples for this is publicly available inventions. EPO rejects inventions, that are made available to the public before the date of filling and making publicly available include by means of a written or oral description, by use, or in any other way – Article 54: "(1) An invention shall be considered to be new if it does not form part of the state of the art. (2) The state of the art shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application."[39] However, the USPTO seems somewhat more liberal regarding publicly available inventions. According to the Article 102 of 35 U.S.C. disclosure made 1 year or less before the effective filling date, does not count against patentability and novelty – "(1) Disclosures made 1 year or less before the effective filing date of the claimed invention.—A disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) if (A) the disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or (B) the subject matter disclosed had, before such disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor."[40]

However, patent litigation process in the USA could be challenging as it could lead to increased costs and uncertainty for IP holders. The territorial scope of the IP protection mechanisms is also different within EU and the US. As for the commercialisation aspect, the EU, and the USA both promote IP commercialisation through different approaches. The EU is establishing funding mechanisms, facilitating technology transfer and supporting universities and research centres for innovation development. The USA has a strong innovation ecosystem which is supported by entrepreneurs, inventors, and USA's patent system itself.

[38] Sweet, C., & Eterovic, D. (2015), 'Do Stronger Intellectual Property Rights Increase Innovation?' *World Development*. 66. 665–677.
[39] Article 54 of the European Patent Convention, EPC 1973
[40] Article 102 of Patent Act, 35 U.S.C.

The comparative analysis underlined several differences in the IP protection and commercialisation mechanisms. Georgia could definitely benefit from some aspects from USA's IP framework in terms of commercialisation, meaning encouraging entrepreneurs and businesses to support inventors and create more patents. However, as Georgia's path is towards the EU, adopting EU's IP framework and implementing the European Patent system would bring Georgia closer to the EU. In addition to that, Georgia can benefit from facilitating trade and collaboration in the EU market by aligning its legislation to EU's framework. Also, access to the EU market has more advantages for Georgia, as "even though the US is the world's largest technology market. It can sometimes be a better choice for firms to file at the EPO for various reasons; possibly because the firm's products or technologies are expected to be marketed in Europe rather than in the USA; the size of markets adopting those technologies (along with their supply chains) is larger in Europe than in the USA; or products in technological fields close to those of the patents are mostly manufactured in Europe."[41]

In terms of commercialisation of IP, it is best for Georgia to connect to global markets and harmonise with international standards as much as possible, as it would provide more opportunities to the local inventors to create and commercialise IP globally.

5. Recommendations for Georgian IP legislation

As innovation and intellectual property play a crucial role in shaping economic growth and competitiveness, it is important for Georgia to strengthen its IP legislative framework. This chapter offers a set of actionable recommendations aiming at improving Georgian IP legislation, ensuring close alignment with EU's framework, taking initiative to join European Patent Convention and taking an example from Estonia, supporting university research and IP commercialisation.

[41] Kim, J., & Lee, S. (2015), 'Patent databases for innovation studies: A comparative analysis of USPTO, EPO, JPO and KIPO*,' Technological Forecasting and Social Change*, 92, 332–345.

5.1. Joining the European Patent Convention: The next step of Validation Agreement

Georgia is not a contracting state of the EPC, however the convention foresees European patent validation procedures. Agreement between the Government of Georgia and the European Patent Organisation on validation of European patents (Validation agreement) was signed in 2019 and it takes into account that "the Georgian Law on Patents provides for a level of protection substantially similar to that existing in the member states of the Organisation and that Georgia will provide for a system enabling the effects of European patent applications and patents to be validated on request in its territory by introducing into its national law provisions in the spirit of those attached to the Agreement ("validation system")."[42] According to the agreement, with a validated European Patent, from the date of publication of the information about its issuance by the EPO, the applicant shall be granted the same rights as would be granted based on the national patent in accordance with the patent law of Georgia. Any legal action in relation to a validated European patent, except for those procedures which are related to a third-party complaint filed with the EPO, the central annulment and the limitation shall be regulated by the legislation of Georgia, in particular, presented on amendments to the Patent Law of Georgia in accordance with the draft law.

In May 2023, Georgia made a big step forward and completed the requirements for entering into force the Validation Agreement[43]. Correspondingly, the Parliament of Georgia has adopted relevant amendments to the Patent Law of Georgia. The agreement also provides that establishment of a validation system between the Organisation and Georgia will strengthen the protection of industrial property in Georgia, and the validation system will contribute to achievement of the goals set by the Association Agreement between the European Union and Georgia and support the EU's plans to gradually integrate the Georgian economy into the EU internal market.[44]

After the entry into force, European Patent application and European Patent validated in Georgia are given the same legal force and shall be subject to the same conditions that apply to national patent applications and on the national patent according to the patent law of Georgia. On the request of the applicant , the European Patent application and European Patent issued on its basis can be validated on the territory of Georgia, which simplifies patent granting procedures for the

[42] Validation agreement between Georgia and the European Patent Organisation, CA/23/19

[43] Sakpatenti. (2023, May 17). European Patents will be Recognized in Georgia. Retrieved July 15, 2023 from https://www.sakpatenti.gov.ge/en/news_and_events/519/

[44] Validation agreement between Georgia and the European Patent Organisation, CA/23/19

foreigner applicants. In addition, as Georgia has ratified the validation agreement, the number of patents registered in Georgia will increase significantly and accordingly, revenues related to validation and maintenance fees will raise too. In particular, according to the clause 2 of the Article 6 of Validation Agreement, 75% of the fee shall be credited to the national office - Sakpatenti[45]. Adoption of presented legislative changes and the entry into force of the validation agreement with the EPO is an important tool for the further development of the patent system in Georgia, which will strengthen the protection of industrial property in Georgia and will also contribute to achieving the objectives of the Association Agreement between the European Union and Georgia. Implementation of the abovementioned legislative changes and entry into force of validation agreement will also simplify the negotiations of Georgia joining the European Patent Organisation, benefiting the country greatly in the long term. Furthermore, on the bases of the draft of amendments, a number of provisions of the Georgian patent law will be brought into line with the European Patent Convention (EPC), Patent Law Treaty (PLT) and the legislation of EU countries. With completing the provisions and ratifying the Validation Agreement, Georgia has taken a significant step towards aligning its IP framework with European standards. The next strategic move that Georgia should consider is joining the European Patent Convention. Joining the EPC would be beneficial for Georgian innovators and businesses as it would provide access to a larger market for patented inventions. Consequently, this promises increasing competitiveness and attracting foreign investments, leading to economy growth in the country. Joining the EPC also contribute to solving the challenges that universities face in Georgia, as it would provide innovation support and facilitate technology transfer. Georgia could strengthen its IP framework compatibility with international standards and establish favourable environment for foreign businesses. This would increase the potential of developing IP commercialisation landscape in Georgia.

5.2. Unitary Patent

In addition to the European Patent, Unitary Patent System is very progressive and effective tool, that aims to provide a simplified and cost-effective way to obtain patent protection across multiple European Union (EU) member states. The Unitary Patent System was established to streamline the process of patenting inventions across the EU and reduce administrative burdens and costs for

[45] Article 6, Clause 2., Validation, agreement between Georgia and the European Patent Organisation, CA/23/19

patent holders. The Unitary Patent in an additional option enhancing the European patent system. It simplifies and centralizes post-grant procedures, offering uniform protection across participating Member States while significantly reducing costs. Innovators who are seeking protection in a large number of the countries of the European Patent Convention will find the most benefit out of the Unitary Patent System.[46] It also introduces a Unified Patent Court (UPC) to streamline litigation, provides attractive renewal fees, and benefits SMEs and other small entities with reduced translation costs. [47]Most importantly, as regards the management of a Unitary Patent, transfers, licences and other rights are no longer needed to be registered country by country in the national patent offices. Instead, a single registration for unitary patent protection centrally administered by the EPO is sufficient.[48] In fact, Unitary Patent system simplifies legal mechanisms of acquiring European Patent itself, which brings the final outcome of simplified and advanced legal protection mechanisms. Although the Unitary Patent system brings major advantages, such as simplifying the process and reducing administrative costs for inventors and businesses, it's important to acknowledge that there are also some concerns raised about this system. One of the potential issues are regarding language discrimination within the UPC, which could create financial burdens to the defendants in patent litigation.[49] In addition, there are some critics regarding the scope of the UP system, as it does not include all the EU member states, and moreover, UPC tries to reduce the influence of Court of Justice. However, the major problems of the patent law in the EU are considered to be high costs of obtaining and maintaining patent protection. This creates obstacle and prevents innovators from being able to fully benefit from the value of their inventions. Unitary Patent Package (UPP) however addresses such concerns regarding patent protection in the EU. "The most obvious benefits of the new regime of unitary patent protection lie with the significant cost reductions of both obtaining and maintaining such protection. The new regime no longer requires validating patents in designated Member States. Thus, the patentees will no longer be required to incur significant validation costs, which have included costs of translations, publications and maintaining professional representatives in the designated countries. The renewal fees have also been set at an attractive, patentee-friendly level. Additionally, the new regime envisages lower fees for SMEs, natural persons, non-profit organizations, universities, and public research institutions. Special beneficial cost arrangements are also provided for those who offer to

[46]Veugelers. R., Harhoff, D. (2023), 'New options for patenting in Europe,' *Science 381,* 111-111.
[47] Plomer, A. (2020), 'The Unified Patent Court and the Transformation of the European Patent System,' *IIC - International Review of Intellectual Property and Competition Law* 51, 791–79.
[48] European Patent Office. (2022). Unitary Patent Guide: Obtaining, maintaining and managing Unitary Patents (2nd ed.).
[49] Xenos, D. (2020), 'The impact of the European patent system on SMEs and national states,' *Prometheus*, 36(1).

grant licenses of right."[50] The Unitary Patent system includes its complexities, but it still is a promising system and could be a valuable tool for innovators, including innovators from Georgia, who seek patent protection in multiple countries. Joining UP system could open up new pathway for Georgia and lead to greater access. Currently Georgian and foreigner inventors struggle with patent granting procedures in Georgia, as those procedures are time consuming, require additional resources and are not efficient. As a result, the number of registered patents in Georgia is very low. Georgia would benefit from taking the initiative to join the Unitary Patent system, which would provide a simplified and cost-effective way to obtain patent protection across multiple EU member states and reduce administrative burdens and costs for patent holders. As the UP system is currently only available for the EU member states, an important precondition for Georgia is to join the EU and become its member to fully benefit from the Unitary Patent. Alternatively, Georgia should already consider aligning its patent system so that it can join the UP in the future, if the system becomes available for non-EU member states as well.

5.3. Following Estonia's example

A well-structured IP legislative framework of Estonia, that closely follows the EU standards, provides a valuable example. Lawmakers in Georgia should look into the key factors that contribute to Estonia's successful framework in IP commercialisation as it would be beneficial to adopt the relevant mechanisms that Estonia used, including establishing Technology Transfer Offices, encouraging academic-industry partnerships and providing fundings to the universities. Estonian example showed the significance of universities' engagement in IP commercialisation. "Estonian research, development, innovation and entrepreneurship work together to increase the well-being of Estonian society and the productivity of the Estonian economy, by providing competitive and sustainable solutions for the development needs of Estonia and the world."[51] In order to increase enterprises' RDI intensity and knowledge transfer capacity, Estonia has Strategy to "develop services to foster innovation (including product, market, process, organisational, personnel innovation) and design the necessary support system for enterprises (including quality infrastructure, advice on contracting and handling intellectual property as well as support to obtain

[50] Desaunettes, L., de Visscher, F., Strowel, A., (2023), *The Unitary Patent Package & Unified Patent Court. Problems, Possible Improvements and Alternatives.* Ledizioni.
[51] Estonian Ministry of Education and Research. Estonian Research and Development, Innovation and Entrepreneurship Strategy 2021—2035

the necessary certifications for products)."[52] Increasing financial support to universities is essential when it comes to research, innovation and technology transfer. Sufficient fundings encourage academic institutions and research centres to actively engage in creation of IP and commercialisation. One of the main challenges in some developing countries is unawareness of IP[53], which could also be solved by supporting universities and other educational institutions. According to the Estonian example, this approach can nurture a culture of innovation which can further improve academia-industry partnerships. Estonian research and development, innovation and entrepreneurship strategy also includes "creating opportunities for research institutions and higher education institutions to expand their knowledge transfer activities, to develop knowledge transfer services, and to upgrade the knowledge and skills of staff on knowledge transfer, including the development of a model for spin-off entrepreneurship and sustainable market-based commercialisation of knowledge, and to improve the possibilities and capacities for the protection of intellectual property, including by streamlining the legal framework, supporting start-up innovation and the creation and exploitation of intellectual property in all sectors."[54] Peer review of the Estonian R&I system suggests that in terms of knowledge transfer and intellectual property rights, there are options for improvement. The report suggests that Estonian universities have high success rate in commercialising intellectual property, but the TTOs are small and lack providing the guidance to the students and universities in general.[55] "Innovation is widely recognised as being the key driver of economic growth alongside research and development." [56]This suggestion is well-suited not only for Estonia, but also for Georgia. There are no TTOs in Georgian universities currently, however there are great examples of why TTOs matter and how they assist universities in IP commercialisation and technology transfer.

In addition, open intellectual property policies should be promoted and adopted in Georgian universities. Open IP policies are one of the most important ways to provide guidance on IP creation and protection. In addition, information regarding the IP disposal and distribution of commercialization profit are usually set out in such policies. Taltech policy sets out the conditions and bases for IP disposal, it also mentions distribution of revenue clause[57]. Estonian example

[52] *Ibid.,* p. 16
[53] Hasanov, O. (2022), 'Role of intellectual property rights in economic growth: Theory and evidence,' *Economics & Law*, 4(2).
[54] *Ibid.,* p. 17-18
[55] European Commission. (2019). Peer review of the Estonian R&I system.
[56] Dragos, D. C. & Racolţa, B. (2017), 'Comparing legal instruments for R&D&I: State aid and public procurement,' *European Procurement & Public Private Partnership Law Review*, vol. 12, no. 4, pp. 408–421.
[57] Established by Regulation No 4 of 30 October 2015 of the Board of Governors of Tallinn University of Technology Amended by Regulation No 2 of 8 November 2019 of the Council of Tallinn University of Technology (entry into force 25.11.2019)

showed that adoption of IP policies in universities facilitated the process of IP commercialisation, as these policies allow students and universities to benefit from research findings while creation and protection of IP. This would significantly contribute to the IP creation in Georgian universities.

CONCLUSION

This article aims to provide comprehensive analysis of the IP commercialisation frameworks in Georgia and Estonia, and identify key differences and potential solutions for improvement. The main results underline Estonia's progress in establishing a strong IP commercialisation environment through legislative alignment and innovative practices, while Georgia faces challenges in enforcement, funding, and lack of support in innovation fields.

Research question 1, regarding how lack of legislative framework leads to inconsistency of patent protection in Georgia, is answered by current data statistics, which indicate a very low quantity of registered patents in Georgia. These statistics clearly reflect the impact of the lack of a legislative framework, demonstrating the inconsistency in patent protection mechanisms. The low quantity of registered patents applications in Georgia indicates the challenges and obstacles in this field. The Georgian legislative framework has been slowly progressing toward improvements; however it lacks certain elements that are crucial for developing IP commercialisation environment. Estonia on the other hand has set a notable example in IP commercialisation, by aligning legislative framework with EU standards and encouraging culture of innovation. The comparative analysis of IP commercialisation in Georgia and Estonia underlines the significant role of legal frameworks in shaping innovation and economic growth.

In regard to research question 2, the role of IP commercialisation in economic growth is expressed by its function to transform intellectual property into value-generating assets. As the Estonian case demonstrate, IP assets significantly contribute to the companies' financial prospects, that by itself benefits the country's economy.

Commercialisation of IP has become increasingly important in the modern economy, it is bringing IP to the market in the view of future profits and economy growth[58]. The intellectual property cannot achieve its final potential without commercialisation, as it gives value to IP. Hence, the main goal of any innovative project is its commercialisation, however, adopting the proper legislation and developing well-structured framework are necessary to improve IP protection in a country to unlock the commercialisation of IP. The article presented a set of recommendations

[58] Benassi, M., & Martin-Sanchez, M. (2022*), Patent intermediaries, "new" actors in the Intellectual Property Market.* Springer International Publishing.

aimed at Georgian framework's alignment with EU standards, following the after steps of Validation Agreement - joining the EPC, supporting universities and strengthening IP enforcement and promoting open IP policies based on Estonian example. Estonia created an attractive hub for IP commercialisation with aligning its framework with EU standards, while Georgia faces challenges with enforcement of legal reforms to unlock its full IP commercialisation potential. Implementing effective system of European Patent validation will give Georgia an opportunity for further improvement of patent legislation based on the EPC and the principles of national patent offices of the EU member states. The entry into force of Validation Agreement leads to the next step of signing European Patent Convention, which Georgia should take the initiative for. This step will bring Georgia closer to the EU standards and provide more opportunities for improving IP commercialisation landscape in the country.

In response to research question 3, regarding how Estonian and Georgian framework in terms of IP commercialisation differ, the research analysis revealed notable distinctions between these two frameworks. Estonia's has established a strong IP commercialisation environment through legislative alignment and innovative practices, while Georgia faces challenges in enforcement, funding, and lack of support in innovation fields.

Understanding these differences, recognising the gaps in Georgia's IP legislation and implementing the recommended improvements can create an environment where innovation and IP thrives and commercialising it benefits the economy. Georgia can position itself as a hub for innovation and intellectual property by aligning its legal framework with EU standards, taking initiative for joining the European Patent Convention, drawing inspiration from Estonia and supporting universities in research and IP commercialisation. Georgia could also benefit from USA's approach to IP commercialisation, which is supported by entrepreneurs and investors. Encouraging businesses to support inventors to create IP assets and commercialise them would also increase the quantity of registered patents in Georgia. These improvements will not only benefit to economic growth, but also encourage Georgia to actively engage in global innovative ecosystem.

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