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Good Practices of Tecnology Transfer Processes in Romania

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        - ***Context***

Technology Transfer (TT) in Romania remains in its infancy, evolving slowly and facing multiple challenges, especially within the academic environment. Few Romanian universities have implemented substantial initiatives in TT, which reflects both the lack of necessary infrastructure and the absence of efficient coordination between research institutions and the private sector. Although Romania's accession to the European Union created new opportunities and opened access to innovation funding, Romania still faces difficulties in leveraging academic research results due to a limited TT infrastructure and a fragmented ecosystem.

"Dunărea de Jos" University of Galați (UDJG) is one of the few higher education institutions in Romania that has managed to develop a significant patent portfolio, attempting to leverage research results through strategic partnerships with the private sector. A central role in these initiatives is played by the Faculty of Food Science and Engineering (FSIA), which is recognized at the national level for its expertise in food science research. FSIA makes a significant contribution to advancing research in this field and has been involved in multiple innovation projects, strengthening UDJG's ability to transform research outcomes into commercial products.

Despite these efforts, many research results remain unused due to the isolation of these initiatives and the limited TT infrastructure. The fragmented nature of the technology transfer ecosystem and the lack of efficient coordination among universities, research institutes, the private sector, and public administration restricts the economic impact of many research projects.

Another essential aspect is the European research strategy, which emphasizes applied research that addresses and provides solutions to major societal challenges, such as climate change, food security, and natural resource management. While Romania has made progress in research quality, its research sector's attractiveness remains below the EU average. The 33.8% increase in globally recognized publications (according to the European Innovation Scoreboard 2024) is a positive indicator, but Romania stands at only 37.7% of the EU average in research attractiveness. This highlights the need for a more robust TT infrastructure and effective support mechanisms for applied research.

- ***Objective***

This good practice aims to highlight an efficient approach through which a public university can leverage a patent portfolio by strategically selecting business partners with high potential and by accessing funding opportunities from private, European, or governmental sources. This model demonstrates how "Dunărea de Jos" University of Galați (UDJG) identifies and collaborates with companies interested in innovation and product development, facilitating knowledge and technology transfer in a sustainable manner.

One of the primary objectives is to bridge the gap between academic research and the private sector, encouraging companies to invest in new products and access European funds to develop these products. The patent for manufacturing gluten-free biscuits serves as a prime example of this approach, where a pastry company benefited from specialized consultancy and assistance in meeting the requirements for accessing European funds to develop a niche product. This partnership shows how the university can contribute to a company's competitiveness by leveraging an innovation from its patent portfolio to meet a niche market demand in the food sector without relinquishing intellectual property rights.

A second objective is to develop a mechanism for the transfer of intellectual property rights that allows for an economic evaluation of patent implementation and product commercialization before the full transfer of rights to a partner company at an affordable cost. The partner company can test the products on the market, generate revenue, and secure a successful commercial launch. UDJG's team provided the necessary consultancy, gaining practical insights into launching new products and adapting to the requirements of business partners.

The patent for manufacturing vegetable paste, developed through collaboration between professors and students, exemplifies a successful project where UDJG initially offered the business partner usage rights to test the product, with the option of complete transfer after commercial success was confirmed.
Through this model, UDJG establishes a strategic framework where business partner selection is based on their potential to develop and support patent commercialization. This practice supports the university in achieving economic, social, and entrepreneurial education objectives, consolidating its role as a principal actor in regional innovation and development.

- ***Current Challenges***

Romania faces numerous challenges in developing technology transfer. The fragmentation of the TT ecosystem and the lack of coordination among universities, research institutes, the private sector, and public administration limits the efficiency of knowledge and innovation transfer.

Moreover, the shortage of specialists and qualified human resources in TT activities, coupled with insufficient funding for TT infrastructure, affects the ability to fully capitalize on available patents. Many patents are created merely to meet the promotion criteria for academic staff, driven by national legislation that favored this practice. The European policy in research, development, and innovation (RDI) recommends applied research that solves societal problems.

Additional obstacles include the complex regulatory framework and the absence of coherent national policies, which hinder university-industry partnerships. In this context, UDJG's implemented model offers an innovative solution for leveraging university intellectual property and attracting potential business partners.

Despite the progress made in research and Romania's considerable scientific resources, several barriers limit the effectiveness of TT from universities and research institutes to industry:

- **Underutilization of research results**: A large portion of research outcomes remains unused due to limited TT infrastructure. This aspect prevents the transformation of academic innovations into commercially valuable products and services, depriving the economy of essential growth opportunities.
- **Fragmentation of the national TT ecosystem**: Romania's TT ecosystem is fragmented, and the lack of efficient coordination between universities, research institutes, the private sector, and public administration significantly reduces the commercial value of many research projects. An integrated structure could support economic development more effectively and address sustainable development goals.
- **Lack of entrepreneurial skills**: TT not only involves commercializing inventions but also developing students' and researchers' entrepreneurial skills. The integration of entrepreneurship education in Romanian universities is insufficient, limiting graduates' ability to capitalize on applied research in the business environment. There is not enough training programs aimed at fostering entrepreneurial spirit within the academic environment.
- **Limited TT infrastructure and resources**: The number of TT entities in universities is low, and existing structures are often underfunded, affecting their capacity to support collaborations with the industry.
- **Few spin-off development initiatives**: There are limited initiatives for developing spin-off companies through which the university can act as a partner with patent authors to directly capitalize on its portfolio patents in the business sector.
- **Insufficient human resources**: The shortage of TT specialists, along with the "brain drain" phenomenon, limits universities' capacity to manage and facilitate the commercialization of inventions.
- **Lack of a coherent national strategy and clear policies**: The absence of effective national coordination and clear regulations complicates the innovation valorization process in Romania, and bureaucratic barriers discourage academic-private sector collaboration.
- **Alignment with the European strategy**: Although Romania has improved its research quality (according to the European Innovation Scoreboard 2024), research sector attractiveness remains at 37.7% of the EU average. Romania faces challenges in aligning with European priorities, particularly in applied

research aimed at social and sustainable issues such as climate change, natural resource management, and sustainable infrastructure.

1.2. Good Practice Overview

- ***Description***

"Dunărea de Jos" University of Galați (UDJG), through the Center for Technology Transfer UGAL (CTT-UGAL), has developed a good practice model in technology transfer, based on the development and commercialization of university patents in collaboration with private sector partners.

The main activities in this model include:

- **Patent Development:** UDJG creates innovative technologies and patents them to protect intellectual property. The university has a qualified team and a consulting center that supports patent filing processes, which are submitted to the Romanian State Office for Inventions and Trademarks (OSIM).
- **Patent Promotion**: The university actively promotes its inventions through participation in national and international competitions, such as Ecotrophelia, and through media exposure, both online and on television. In addition, UDJG has launched unique initiatives like technology transfer fairs, promoting its research facilities and patent portfolio to a wider audience (www.cercetare.ugal.ro).
- **Identification of Business Partners:** CTT-UGAL seeks and selects suitable business partners to ensure optimal patent commercialization. This involves analyzing the market needs and identifying companies capable of developing and bringing innovative products to market.

After identifying a suitable business partner, the TT model follows two distinct pathways:

- **Gluten-Free Biscuit Patent:** CTT-UGAL created a partnership between UDJG and a pastry company to jointly access European funding (such as minimis projects) and develop a new production line for gluten-free biscuits. This product targets a niche market of consumers with gluten intolerance (celiac disease). UDJG provided consultancy services both for drafting the funding application and for implementing the manufacturing technology. The patent remains UDJG's property, used as support for fund access and production line development without relinquishing intellectual property rights.
- **Vegetable Paste Patent:** UDJG granted usage rights for the vegetable paste manufacturing patent to a specialized company in exchange for royalties based

on production volume. This patent, developed by a team of professors and students, was promoted intensively at national and international student competitions and through media channels. The partnership was initiated at the request of the business interested in testing the product and later, after achieving commercial success, in purchasing the full rights to the patent. Following the testing period, the business partner confirmed the patent's applicability and success, initiating the purchase of the intellectual property rights through a national procedure developed by the Ministry of Research, Development, and Innovation.

- ***Achievements:***

The TT model implemented by UDJG through CTT-UGAL has led to significant results:

- **European Funding Secured**: The partnership for the gluten-free biscuit patent allowed the pastry company to access €200,000 in European funds, supporting regional economic development and boosting competitiveness in a niche market.
- **International Awards and Recognition**: The vegetable paste patent, developed with student involvement, won prestigious awards at international competitions, such as Ecotrophelia. This recognition underscores the university's ability to generate commercially viable innovations and foster entrepreneurship among students.
- **Knowledge Transfer and Industry Collaboration**: CTT-UGAL's partnerships have set a valuable precedent in using academic patents for economic development, solidifying universities' roles as strategic industry partners.

This good practice is developed by "Dunărea de Jos" University of Galați (UDJG), a higher education institution with a tradition of collaboration in local industries, including the naval and food sectors. The Technology Transfer Center UGAL (CTT-UGAL), accredited by the Ministry of Research, Development, and Innovation, plays a crucial role in capitalizing on university patents and facilitating technology transfer to the industry.

1.3. Partnerships

- ***Stakeholders Involved***

The key stakeholders involved in UDJG's good practice model include:

- "**Dunărea de Jos**" **University of Galați (UDJG)** – represented by the Faculty of Food Science and Engineering and the Technology Transfer Center UGAL (CTT-UGAL).
- **Companies in the Food Sector** – such as a pastry company involved in the gluten-free biscuit patent project and a company specializing in plant-based products for the vegetable paste patent.

Additional complementary partners include:

- **Ministry of Research, Development, and Innovation** – providing accreditation for CTT-UGAL and assisting in the regulation of patent transfer methodology.
- **Southeast Regional Development Agency (ADR-SE)** – as a funding institution managing European and governmental funds, promoting and supporting innovative initiatives and TT through dedicated funding programs.
- **Entrepreneurial Ecosystem and Competition Platforms** – such as Ecotrophelia, which supports the recognition of patents and attracts business interest in university innovations.

- ***Role of Each Partner***

- **UDJG and CTT-UGAL:** UDJG, through the Faculty of Food Science and Engineering and CTT-UGAL, developed the patents and provided technical expertise for their implementation with business partners. CTT-UGAL managed patent promotion, identified strategic partners, and provided consultancy for accessing funds and implementing technologies.
  - In the gluten-free biscuit patent, CTT-UGAL supported the partner company in drafting and submitting the funding application for European funds. UDJG also provided ongoing consultancy through the patent authors for technical implementation and production line development.
  - For the vegetable paste patent, the university offered the necessary consultancy to implement the technology in the production line, product launch, and market testing.

- **Food Sector Companies:** The pastry company involved in the gluten-free biscuit partnership worked closely with CTT-UGAL to develop and implement the production line for this niche product, benefiting from consultancy at every stage.
  - For the vegetable paste patent, the interested company requested temporary usage rights to test the patent and paid royalties based on production volume. Later, the company purchased full property rights, consolidating the university-industry partnership.

- **Ministry of Research, Development, and Innovation:** The Ministry played a pivotal role in the patent transfer process for the vegetable paste by approving and implementing a national methodology for selling university-held patents to the private sector. This collaboration established a precedent for transferring and selling intellectual property assets from the public to the private sector.
- **ADR-SE and Funding Institutions:** European funding partners financially supported TT projects, enabling the expansion of production and commercialization of innovations. In the gluten-free biscuit patent, European funds covered necessary equipment and production costs, with minimal co-financing from the company.
- **Entrepreneurial Ecosystem and Innovation Competitions:** Student competitions like Ecotrophelia provided a promotion platform for the vegetable paste patent, increasing its international visibility and attracting business interest. This recognition

contributed to UDJG's reputation as an innovative institution and facilitated technology transfer to the private sector.

1.4. Process

Technology Transfer (TT) Process Methodology

The good practice model for technology transfer at "Dunărea de Jos" University of Galați (UDJG), implemented through the UGAL Technology Transfer Center (CTT-UGAL), follows a well-structured methodology focused on the following stages:

- **Identification of Inventions/Patents with Commercial Potential:** CTT-UGAL collaborates closely with research units, faculty, and researchers to identify patents and technologies with high potential for market applicability.
- **Intellectual Property Protection:** UDJG ensures that inventions are patented through the Romanian State Office for Inventions and Trademarks (OSIM), securing legal protection for intellectual property before initiating discussions with potential business partners.
- **Patent Promotion:** CTT-UGAL organizes promotional activities, including participation in national and international competitions such as Ecotrophelia, and media coverage via online platforms and TV channels to attract interest from industry partners.
- **Strategic Partner Selection:** CTT-UGAL identifies and selects potential business partners interested in university innovations and willing to support their commercialization.
- **Establishing Customized Partnerships:** Depending on the patent type and the business partner's needs, two distinct approaches are implemented:
    - a) Partnership for the Gluten-Free Biscuit Patent: UDJG collaborates with the company to access European funds and develop a production line, providing consultancy for the funding application and technology implementation.
    - b) Partnership for the Vegetable Paste Patent: UDJG grants temporary usage rights to the patent with proportional royalties and provides technical support for production implementation. After market success is confirmed, the business partner fully acquires the patent rights.

- ***Key Milestones***

During the implementation of the model, the following critical stages were achieved:

- **Patent Acquisition**: Securing intellectual property rights through OSIM was a fundamental step in protecting the developed technologies.
- **CTT-UGAL Accreditation**: Accreditation by the Ministry of Research, Development, and Innovation enabled CTT-UGAL to operate as a recognized entity, coordinating technology transfer activities and collaborating with the private sector.
- **European Funding Acquisition**: For the gluten-free biscuit patent, obtaining European funds was a major milestone, allowing the development of a production line and expanding the company's production capacity.

- **Sale of the Vegetable Paste Patent:** Completing the patent sale process was made possible through compliance with the national methodology for intellectual property asset transfer, developed with the Ministry of Research's support.

- ***Innovation***

The good practice model implemented by UDJG introduces several innovative elements in the Romanian technology transfer context:

- **Using Patents as Support for Accessing Funds:** The approach of using the gluten-free biscuit patent as a consultancy tool in the partnership for European funds is innovative. It enables the partner company to develop niche products without full ownership of the patent.
- **Flexible Patent Transfer Methodology:** The possibility of offering temporary usage rights for the patent, followed by full transfer after commercial success is confirmed, represents an innovative approach. This process allows companies to economically test patents' viability before investing in their acquisition.
- **National Intellectual Property Rights Transfer Methodology**: UDJG collaborated with the Ministry of Research to develop a national methodology for selling patents from university portfolios. This methodology provides a clear pathway for transferring intellectual property from academia to the private sector, setting a precedent in Romania.

This model demonstrates how strategic partnerships and flexibility in intellectual property rights transfer can transform academic inventions into viable commercial products, contributing to economic development and innovation in Romania.

1.5. Outcomes

- ***Impact on Stakeholders***

The implementation of UDJG's good practice model has generated numerous benefits for all stakeholders involved, contributing to economic development, job creation, and the improvement of entrepreneurial and technical skills:

- **Financial Gains for the University and Patent Authors:** The "Dunărea de Jos" University of Galați has obtained significant revenue by winning European funding applications and through royalties collected for the use of the vegetable paste patent during its implementation within the partner company. The authors of the patent benefited from additional financial income, receiving a percentage of the amount obtained from the sale of the patent to Sanovita.
- **Production Capacity Expansion and Results for Business Partners:**
  - **Sanovita:** The company that purchased the vegetable paste patent has strengthened and expanded its market share by producing additional quantities to meet the growing demand for healthy plant-based products.
  - **Patisimo:** The bakery company, a beneficiary of European funds accessed through collaboration with UDJG on the technology transfer project, developed a new manufacturing line dedicated to gluten-free biscuits. This

expansion enabled the company to respond to the needs of a very specific niche market—consumers with gluten intolerance (celiac disease)—and contributed to diversifying its product offerings.

- **Enhanced Technology Transfer (TT) Skills and Experience for UDJG and CTT-UGAL:** Involvement in these projects has provided UDJG and CTT-UGAL with extensive experience in collaborating with the business sector and managing TT processes.

This accumulated experience has been leveraged to establish new partnerships with other companies, solidifying UDJG's reputation as a reliable partner for the private sector and supporting the university's growing capacity to facilitate innovation across various domains.

- ***Innovation Diffusion***

The adoption of the good practice model has had a significant impact on the stakeholders involved, creating a precedent for other collaborations between universities and the private sector:

- Within UDJG, the TT methodology developed by CTT-UGAL has become a reference point for other departments and research centers. The success of TT projects has demonstrated the value of collaborations with the business sector and has encouraged other faculties to explore the commercial potential of their research.
- Encouraged by the positive results, partner companies have integrated a continuous innovation process and have started to collaborate more closely with the university to develop and implement new technologies. This model has thus become a source of inspiration for other companies interested in utilizing academic inventions, creating a broader network of collaborations between the university and the private sector.

- ***Ecosystem Implications***

The implementation of this TT model has had significant implications for both the regional and national ecosystems, promoting inter-institutional collaboration and addressing key economic and social challenges:

- **Stimulating Collaboration between Universities and Industry:** Through these partnerships, UDJG and CTT-UGAL have demonstrated the benefits of cooperation between academia and the business sector. Business partners had the opportunity to collaborate with a reputable public university, benefiting from academic expertise and contributing to the practical application of innovations. This model encourages other companies to explore the potential of academic partnerships, supporting the development of new product solutions.
- **Increasing Innovation Capacity:** The model has contributed to strengthening the innovation capacity of partner companies by giving them access to advanced technologies and specialized consultancy for implementation. This has enabled companies to remain competitive in their niche markets and to expand their product portfolios to meet consumer demands.

- **Addressing Societal and Public Health Challenges:** UDJG-promoted innovations address significant public health and nutrition challenges. Projects such as gluten-free biscuits have contributed to diversifying food options for gluten-intolerant consumers, while the vegetable paste has provided a healthy alternative in the plant-based product market. In this way, the UDJG model supports public health and promotes a balanced lifestyle, contributing to sustainable development through innovative food alternatives.

A Replicable Good Practice Model

The achievements of UDJG and the accumulated experience in business collaboration represent an example of good practices that can inspire and guide other universities and research institutes in Romania.

This model demonstrates how strategic partnerships, flexible intellectual property rights transfer, and advisory support can transform academic inventions into viable commercial products.
UDJG has paved the way for an applicable methodology throughout Romania's research ecosystem, providing a concrete solution for capitalizing on research results and fostering national innovation.

1.6. Challenges Overcome

- ***Key Barriers***

Implementing UDJG's good practice model in technology transfer (TT) involved overcoming significant challenges, including:

- **Regulatory Gaps in National Patent Assignment Policies:** At the beginning of the project, Romania lacked a national methodology for assigning patents held by universities to the private sector. This absence of regulation created difficulties in the legal transfer of patents to companies, particularly concerning intellectual property created in public institutions.
- **Limited Resources for TT Infrastructure:** Although CTT-UGAL was accredited, insufficient funding for developing TT infrastructure restricted the center's capacity to offer full support and carry out extensive promotional activities, including identifying potential business partners.
- **Shortage of Specialized Skills:** The TT process and interactions with the business sector required interdisciplinary expertise, including legal, commercial, and technical knowledge. UDJG and CTT-UGAL faced a shortage of personnel with these specific competencies, which initially complicated the negotiation and partnership implementation processes.
- **Lack of Experience in Accessing European Funding for TT Projects:** The university had limited prior experience using European funds for TT, and partner companies required substantial support for preparing funding applications and meeting the criteria required by funding organizations.

- **Challenges in Promoting Innovations to the Business Sector:** The absence of a national strategy for promoting academic patents complicated the process of informing and attracting business partners. Additionally, companies lacked access to a centralized database of university patents, which reduced the visibility of UDJG's innovations.
- **Absence of Effective Research Marketing on a National Level:** UDJG and CTT-UGAL identified a major challenge in the lack of a coherent research marketing system to help promote patents to the business sector. Without a solid marketing strategy, academic inventions risked remaining unexploited and were challenging to present to potential commercial partners.

- ***Solutions Implemented***

To address these challenges, UDJG and CTT-UGAL implemented innovative and flexible solutions, enabling the development and success of this good practice model:

- **Development of a National Patent Assignment Methodology**: In collaboration with the Ministry of Research, Innovation, and Digitization, UDJG contributed to creating a national methodology for assigning patents owned by public institutions to private companies. This methodology included clear procedures for publicly announcing patent sales, evaluating offers, and selecting the most advantageous economic offer, facilitating the legal sale of the vegetable paste patent in a well-defined regulatory framework.
- **Securing External Funding and Partnerships for TT Infrastructure**: To compensate for the lack of internal resources, UDJG accessed European funds that supported the development of TT infrastructure. Additionally, the involvement of partner companies in securing funding helped expand available resources, and the funds obtained supported promotional activities and the implementation of patented technologies.
- **Establishing a Continuous Training Program for CTT-UGAL Personnel**: UDJG invested in training its staff in essential TT fields such as commercial negotiations, legal aspects of intellectual property, and project management. This training program enabled CTT-UGAL personnel to improve the skills needed to work effectively with the business sector.
- **Extensive Consultancy for Accessing European Funds**: CTT-UGAL provided specialized support for preparing funding applications, specifically for the gluten-free biscuit production line TT project. The university worked closely with business partners, facilitating access to necessary development funds by meeting the administrative and technical requirements of the funders.
- **Strategic Promotion and Media Campaigns**: To overcome the absence of an organized research marketing strategy, UDJG launched patent promotion campaigns, participating in innovation competitions such as Ecotrophelia and using traditional and online media channels to increase patent visibility. This strategy included presenting inventions at dedicated events, attracting business interest, and generating partnership opportunities.
- **Establishing Strategic Partnerships**: To enhance patent visibility and stimulate corporate interest, UDJG collaborated with regional and national organizations

supporting innovation and TT, such as regional development agencies and entrepreneurship networks. These partnerships allowed access to a broader contact network and facilitated meetings with potential business partners.

By implementing these solutions, UDJG has demonstrated that challenges in technology transfer can be effectively addressed through adaptability, strategic partnerships, and innovation.

1.7. Lessons Learned / Adoption Guidelines

- ***Best Practices***

The good practice model developed by "Dunărea de Jos" University of Galați (UDJG) generated several key strategies that proved essential for successful technology transfer:

- **Establishing a Clear Methodological Framework:** Implementing a clear legal and methodological framework for patent assignment was fundamental to fostering collaborations between the university and the private sector. UDJG's collaboration with the Ministry of Research to develop a national methodology for intellectual property rights assignment ensured transparency and legal security in patent transactions, facilitating smoother public-private partnerships.
- **Flexibility in Public-Private Partnerships**: UDJG's flexibility in negotiations allowed it to adapt partnerships based on each company's specific needs, ensuring that collaborations were both efficient and mutually beneficial. This adaptability was crucial for attracting companies from various sectors interested in working with the university's innovations.
- **Continuous Support and Consultancy**: UDJG provided consultancy in preparing funding applications and implementing patented technologies. This included support for documentation preparation and assistance with the technological implementation process, which helped partner companies overcome initial integration challenges for patents into their production processes.
- **Promoting Innovation Through International Competitions:** Participating in competitions like Ecotrophelia increased the visibility of university patents, attracting the attention of potential business partners and validating the innovations developed at UDJG on an international stage.
- **Engaging Students and Researchers:** The active involvement of students in patent development reinforced the university's educational role and offered practical experience, which boosted the appeal of academic research as a source of industry-applicable innovation.

- ***Recommendations for Similar Projects***

Based on the lessons learned, UDJG offers the following recommendations for other academic institutions or research institutes interested in implementing similar technology transfer practices:

- **Develop and Implement Clear Technology Transfer Policies:** Institutions should establish clear procedures for patent commercialization and create transparent rules for benefit-sharing. Consistent and adaptable policies can facilitate solid partnerships and encourage researchers to transfer their knowledge to the private sector.

- **Access and Utilize External Funding**: Academic institutions and TTOs should enhance their skills in accessing external funds, including European funds, to support the necessary TT infrastructure. These funds not only provide critical financial resources but also help expand partner networks.
- **Create Contact Points for IP and TT**: Building a system of regional technology transfer centers, whether in partnership with other universities or as self-administered centers, can reduce costs, improve access to TT services, and facilitate inter-university collaboration.
- **Develop Training Programs for Intellectual Property Awareness**: Universities and TTOs should provide educational programs for staff and researchers, focusing on the importance of IP protection, legal requirements, and the benefits of technology transfer. This approach could help reduce conflicts of interest and motivate researchers to develop inventions through university channels.
- **Diversify and Adapt Consultancy Services:** Offering consulting services beyond just technical aspects to include commercial and marketing support enables universities to provide more comprehensive assistance to partner companies. This could include market analysis, feasibility studies, and cost-benefit evaluations for patenting, helping companies make informed decisions in the TT process.

By incorporating these best practices and guidelines, other institutions can enhance their TT activities, improve research commercialization, and establish successful collaborations with industry. The lessons from UDJG's experience provide a roadmap for maximizing the impact of academic research on the broader economy and society.

1.8. Outlook

- ***Next Steps***

UDJG has planned several actions to further develop and expand this good practice model, aiming to increase the impact of technology transfer (TT) and strengthen the connection between academia and the private sector:

- **Expanding the Patent Portfolio and Increasing Commercialization Rates:** The university intends to identify and patent new inventions with market potential across various fields. This initiative includes identifying new niche markets and attracting business partners from diverse economic sectors to maximize the economic and social impact of university patents.
- **Building a Network of National and International Collaborations:** UDJG seeks to expand partnerships with other universities and research institutes in Romania and abroad to facilitate the exchange of best practices in technology transfer. These international collaborations will involve sharing expertise and resources, participating in joint research initiatives, and building a global reputation for the university.
- **Enhancing Consulting Services through CTT-UGAL:** The university plans to diversify the consulting services offered through CTT-UGAL, including specialized

support in market analysis, marketing, and commercialization strategies. Through this expanded program, CTT-UGAL will provide companies with a full range of services to help them effectively capitalize on university-developed technologies.

- **Developing a Skilled Workforce in TT:** UDJG will continue investing in staff training and educational programs aimed at students and researchers. Plans include establishing specialized courses in TT and entrepreneurship to cultivate the necessary skills for future technology transfer specialists, ensuring the university's capacity to meet the evolving needs of the TT ecosystem.
- **Implementing a Comprehensive Research and Innovation Marketing Strategy:** UDJG will create an integrated marketing strategy to promote its patents and inventions to potential commercial partners. This strategy will include participating in international innovation fairs, organizing networking events, and creating an online platform to showcase the university's patents.

- ***Potential Long-Term Impact***

In a broader context, UDJG's developed practices and strategies have the potential to profoundly influence Romania's technology transfer ecosystem and serve as a model for other institutions:

- **Strengthening Romania's Innovation Ecosystem:** UDJG's good practice model can serve as an inspiration for other universities and research institutes, contributing to an increase in the number of commercially successful patents in Romania. Over time, this model could foster a strong TT community with a wider network of collaborations between the academic, private, and public sectors.
- **Stimulating Regional Economic Development:** By expanding partnerships with local and national companies, UDJG will help create new jobs and diversify the regional economy. This economic impact is further amplified by developing niche products, attracting new investments, and supporting knowledge-based industries in Romania's Southeast Region.
- **Promoting Entrepreneurship and Innovation among Students**: Actively involving students in technology transfer projects will foster a stronger entrepreneurial mindset among young researchers who can see the applicability of research in industry. This long-term impact will encourage more students to develop their own innovation-driven projects and businesses, supporting the emergence of a future generation of entrepreneurs.
- **Establishing a More Integrated TT Infrastructure:** As more research institutions adopt similar practices and collaborate to develop a national TT infrastructure, Romania will become more competitive internationally in applied research and innovation. A well-connected TT infrastructure can accelerate the transformation of academic research into commercial products and solutions.
- **Attracting International Investment and Partnerships:** By creating a successful framework for technology transfer, UDJG will become more attractive to investors and international partners interested in university innovations. In the long term, this could generate a steady flow of partnerships and collaborative projects, helping integrate the university into international research and innovation networks.

Through these actions and the impact generated, UDJG's model has the potential to become a key driver for building a strong national TT ecosystem, positioning Romania as a regional hub for innovation and applied research.

1.9. Contact Information

For additional information or to discuss potential partnerships, please contact:

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These contact details provide access to the coordination team for technology transfer projects and strategic partnerships managed by UDJG, facilitating new collaborations in the field of innovation and applied research.

2. 2nd of Good Practice of TT Process

2.1. Introduction

- ***Context***

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Another essential aspect is the European research strategy, which emphasizes applied research that addresses and provides solutions to major societal challenges, such as climate change, food security, and natural resource management. While Romania has made progress in research quality, its research sector's attractiveness remains below the EU average. The 33.8% increase in globally recognized publications (according to the European Innovation Scoreboard 2024) is a positive indicator, but Romania stands at only 37.7% of the EU average in research attractiveness. This highlights the need for a more robust TT infrastructure and effective support mechanisms for applied research.

- ***Objective***

This good practice aims to highlight an efficient approach through which a public university can leverage a patent portfolio by strategically selecting business partners with high potential and by accessing funding opportunities from private, European, or governmental sources. This model demonstrates how "Dunărea de Jos" University of Galați (UDJG) identifies and collaborates with companies interested in innovation and product development, facilitating knowledge and technology transfer in a sustainable manner.
One of the primary objectives is to bridge the gap between academic research and the private sector, encouraging companies to invest in new products and access European funds to develop these products. The patent for manufacturing gluten-free biscuits serves as a prime example of this approach, where a pastry company benefited from specialized consultancy and assistance in meeting the requirements for accessing European funds to develop a niche product. This partnership shows how the university can contribute to a company's competitiveness by leveraging an innovation from its patent portfolio to meet a niche market demand in the food sector without relinquishing intellectual property rights.
A second objective is to develop a mechanism for the transfer of intellectual property rights that allows for an economic evaluation of patent implementation and product commercialization before the full transfer of rights to a partner company at an affordable cost. The partner company can test the products on the market, generate revenue, and secure a successful commercial launch. UDJG's team provided the necessary consultancy, gaining practical insights into launching new products and adapting to the requirements of business partners.
The patent for manufacturing vegetable paste, developed through collaboration between professors and students, exemplifies a successful project where UDJG initially offered the business partner usage rights to test the product, with the option of complete transfer after commercial success was confirmed.

Through this model, UDJG establishes a strategic framework where business partner selection is based on their potential to develop and support patent commercialization. This practice supports the university in achieving economic, social, and entrepreneurial education objectives, consolidating its role as a principal actor in regional innovation and development.

- ***Current Challenges***

Romania faces numerous challenges in developing technology transfer. The fragmentation of the TT ecosystem and the lack of coordination among universities, research institutes, the private sector, and public administration limits the efficiency of knowledge and innovation transfer.

Moreover, the shortage of specialists and qualified human resources in TT activities, coupled with insufficient funding for TT infrastructure, affects the ability to fully capitalize on available patents. Many patents are created merely to meet the promotion criteria for academic staff, driven by national legislation that favored this practice. The European policy in research, development, and innovation (RDI) recommends applied research that solves societal problems.

Additional obstacles include the complex regulatory framework and the absence of coherent national policies, which hinder university-industry partnerships. In this context, UDJG's implemented model offers an innovative solution for leveraging university intellectual property and attracting potential business partners.

Despite the progress made in research and Romania's considerable scientific resources, several barriers limit the effectiveness of TT from universities and research institutes to industry:

- **Underutilization of research results**: A large portion of research outcomes remains unused due to limited TT infrastructure. This aspect prevents the transformation of academic innovations into commercially valuable products and services, depriving the economy of essential growth opportunities.
- **Fragmentation of the national TT ecosystem**: Romania's TT ecosystem is fragmented, and the lack of efficient coordination between universities, research institutes, the private sector, and public administration significantly reduces the commercial value of many research projects. An integrated structure could support economic development more effectively and address sustainable development goals.
- **Lack of entrepreneurial skills**: TT not only involves commercializing inventions but also developing students' and researchers' entrepreneurial skills. The integration of entrepreneurship education in Romanian universities is insufficient, limiting graduates' ability to capitalize on applied research in the business environment. There is not enough training programs aimed at fostering entrepreneurial spirit within the academic environment.
- **Limited TT infrastructure and resources**: The number of TT entities in universities is low, and existing structures are often underfunded, affecting their capacity to support collaborations with the industry.

- **Few spin-off development initiatives**: There are limited initiatives for developing spin-off companies through which the university can act as a partner with patent authors to directly capitalize on its portfolio patents in the business sector.
- **Insufficient human resources**: The shortage of TT specialists, along with the "brain drain" phenomenon, limits universities' capacity to manage and facilitate the commercialization of inventions.
- **Lack of a coherent national strategy and clear policies**: The absence of effective national coordination and clear regulations complicates the innovation valorization process in Romania, and bureaucratic barriers discourage academic-private sector collaboration.
- **Alignment with the European strategy**: Although Romania has improved its research quality (according to the European Innovation Scoreboard 2024), research sector attractiveness remains at 37.7% of the EU average. Romania faces challenges in aligning with European priorities, particularly in applied research aimed at social and sustainable issues such as climate change, natural resource management, and sustainable infrastructure.

2.2. Good Practice Overview

- ***Description***

"Dunărea de Jos" University of Galați (UDJG), through the Center for Technology Transfer UGAL (CTT-UGAL), has developed a good practice model in technology transfer, based on the development and commercialization of university patents in collaboration with private sector partners.
The main activities in this model include:

- **Patent Development:** UDJG creates innovative technologies and patents them to protect intellectual property. The university has a qualified team and a consulting center that supports patent filing processes, which are submitted to the Romanian State Office for Inventions and Trademarks (OSIM).
- **Patent Promotion**: The university actively promotes its inventions through participation in national and international competitions, such as Ecotrophelia, and through media exposure, both online and on television. In addition, UDJG has launched unique initiatives like technology transfer fairs, promoting its research facilities and patent portfolio to a wider audience (www.cercetare.ugal.ro).
- **Identification of Business Partners:** CTT-UGAL seeks and selects suitable business partners to ensure optimal patent commercialization. This involves analyzing the market needs and identifying companies capable of developing and bringing innovative products to market.
- After identifying a suitable business partner, the TT model follows two distinct pathways:
- **Gluten-Free Biscuit Patent:** CTT-UGAL created a partnership between UDJG and a pastry company to jointly access European funding (such as minimis projects) and develop a new production line for gluten-free biscuits. This product targets a niche market of consumers with gluten intolerance (celiac disease). UDJG provided consultancy services both for drafting the funding application and for implementing the manufacturing technology. The patent remains UDJG's property,

used as support for fund access and production line development without relinquishing intellectual property rights.

- **Vegetable Paste Patent:** UDJG granted usage rights for the vegetable paste manufacturing patent to a specialized company in exchange for royalties based on production volume. This patent, developed by a team of professors and students, was promoted intensively at national and international student competitions and through media channels. The partnership was initiated at the request of the business interested in testing the product and later, after achieving commercial success, in purchasing the full rights to the patent. Following the testing period, the business partner confirmed the patent's applicability and success, initiating the purchase of the intellectual property rights through a national procedure developed by the Ministry of Research, Development, and Innovation.

- ***Achievements:***

The TT model implemented by UDJG through CTT-UGAL has led to significant results:

- **European Funding Secured**: The partnership for the gluten-free biscuit patent allowed the pastry company to access €200,000 in European funds, supporting regional economic development and boosting competitiveness in a niche market.
- **International Awards and Recognition**: The vegetable paste patent, developed with student involvement, won prestigious awards at international competitions, such as Ecotrophelia. This recognition underscores the university's ability to generate commercially viable innovations and foster entrepreneurship among students.
- **Knowledge Transfer and Industry Collaboration**: CTT-UGAL's partnerships have set a valuable precedent in using academic patents for economic development, solidifying universities' roles as strategic industry partners.

This good practice is developed by "Dunărea de Jos" University of Galați (UDJG), a higher education institution with a tradition of collaboration in local industries, including the naval and food sectors. The Technology Transfer Center UGAL (CTT-UGAL), accredited by the Ministry of Research, Development, and Innovation, plays a crucial role in capitalizing on university patents and facilitating technology transfer to the industry.

2.3. Partnerships

- ***Stakeholders Involved***

The key stakeholders involved in UDJG's good practice model include:

- **Dunărea de Jos University of Galați (UDJG)** – represented by the Faculty of Food Science and Engineering and the Technology Transfer Center UGAL (CTT-UGAL).
- **Companies in the Food Sector** – such as a pastry company involved in the gluten-free biscuit patent project and a company specializing in plant-based products for the vegetable paste patent.

- ***Additional complementary partners include:***

- **Ministry of Research, Development, and Innovation** – providing accreditation for CTT-UGAL and assisting in the regulation of patent transfer methodology.

- **Southeast Regional Development Agency (ADR-SE)** – as a funding institution managing European and governmental funds, promoting and supporting innovative initiatives and TT through dedicated funding programs.
- **Entrepreneurial Ecosystem and Competition Platforms** – such as Ecotrophelia, which supports the recognition of patents and attracts business interest in university innovations.

  - ***Role of Each Partner***

- **UDJG and CTT-UGAL:** UDJG, through the Faculty of Food Science and Engineering and CTT-UGAL, developed the patents and provided technical expertise for their implementation with business partners. CTT-UGAL managed patent promotion, identified strategic partners, and provided consultancy for accessing funds and implementing technologies.
  - In the gluten-free biscuit patent, CTT-UGAL supported the partner company in drafting and submitting the funding application for European funds. UDJG also provided ongoing consultancy through the patent authors for technical implementation and production line development.
  - For the vegetable paste patent, the university offered the necessary consultancy to implement the technology in the production line, product launch, and market testing.
- **Food Sector Companies:** The pastry company involved in the gluten-free biscuit partnership worked closely with CTT-UGAL to develop and implement the production line for this niche product, benefiting from consultancy at every stage.
  - For the vegetable paste patent, the interested company requested temporary usage rights to test the patent and paid royalties based on production volume. Later, the company purchased full property rights, consolidating the university-industry partnership.
- **Ministry of Research, Development, and Innovation:** The Ministry played a pivotal role in the patent transfer process for the vegetable paste by approving and implementing a national methodology for selling university-held patents to the private sector. This collaboration established a precedent for transferring and selling intellectual property assets from the public to the private sector.
- **ADR-SE and Funding Institutions:** European funding partners financially supported TT projects, enabling the expansion of production and commercialization of innovations. In the gluten-free biscuit patent, European funds covered necessary equipment and production costs, with minimal co-financing from the company.
- **Entrepreneurial Ecosystem and Innovation Competitions:** Student competitions like Ecotrophelia provided a promotion platform for the vegetable paste patent, increasing its international visibility and attracting business interest. This recognition contributed to UDJG's reputation as an innovative institution and facilitated technology transfer to the private sector.

2.4. Process

- ***Technology Transfer (TT) Process Methodology***

The good practice model for technology transfer at "Dunărea de Jos" University of Galați (UDJG), implemented through the UGAL Technology Transfer Center (CTT-UGAL), follows a well-structured methodology focused on the following stages:

- **Identification of Inventions/Patents with Commercial Potential:** CTT-UGAL collaborates closely with research units, faculty, and researchers to identify patents and technologies with high potential for market applicability.
- **Intellectual Property Protection:** UDJG ensures that inventions are patented through the Romanian State Office for Inventions and Trademarks (OSIM), securing legal protection for intellectual property before initiating discussions with potential business partners.
- **Patent Promotion:** CTT-UGAL organizes promotional activities, including participation in national and international competitions such as Ecotrophelia, and media coverage via online platforms and TV channels to attract interest from industry partners.
- **Strategic Partner Selection:** CTT-UGAL identifies and selects potential business partners interested in university innovations and willing to support their commercialization.
- **Establishing Customized Partnerships:** Depending on the patent type and the business partner's needs, two distinct approaches are implemented:
  - a) Partnership for the Gluten-Free Biscuit Patent: UDJG collaborates with the company to access European funds and develop a production line, providing consultancy for the funding application and technology implementation.
  - b) Partnership for the Vegetable Paste Patent: UDJG grants temporary usage rights to the patent with proportional royalties and provides technical support for production implementation. After market success is confirmed, the business partner fully acquires the patent rights.

- ***Key Milestones***

During the implementation of the model, the following critical stages were achieved:

- **Patent Acquisition**: Securing intellectual property rights through OSIM was a fundamental step in protecting the developed technologies.
- **CTT-UGAL Accreditation**: Accreditation by the Ministry of Research, Development, and Innovation enabled CTT-UGAL to operate as a recognized entity, coordinating technology transfer activities and collaborating with the private sector.
- **European Funding Acquisition**: For the gluten-free biscuit patent, obtaining European funds was a major milestone, allowing the development of a production line and expanding the company's production capacity.
- **Sale of the Vegetable Paste Patent:** Completing the patent sale process was made possible through compliance with the national methodology for intellectual property asset transfer, developed with the Ministry of Research's support.

- ***Innovation***

The good practice model implemented by UDJG introduces several innovative elements in the Romanian technology transfer context:

- **Using Patents as Support for Accessing Funds:** The approach of using the gluten-free biscuit patent as a consultancy tool in the partnership for European funds is innovative. It enables the partner company to develop niche products without full ownership of the patent.
- **Flexible Patent Transfer Methodology:** The possibility of offering temporary usage rights for the patent, followed by full transfer after commercial success is confirmed, represents an innovative approach. This process allows companies to economically test patents' viability before investing in their acquisition.
- **National Intellectual Property Rights Transfer Methodology**: UDJG collaborated with the Ministry of Research to develop a national methodology for selling patents from university portfolios. This methodology provides a clear pathway for transferring intellectual property from academia to the private sector, setting a precedent in Romania.

This model demonstrates how strategic partnerships and flexibility in intellectual property rights transfer can transform academic inventions into viable commercial products, contributing to economic development and innovation in Romania.

2.5. Results/Outcomes

- ***Impact on Stakeholders***

The implementation of UDJG's good practice model has generated numerous benefits for all stakeholders involved, contributing to economic development, job creation, and the improvement of entrepreneurial and technical skills:

- **Financial Gains for the University and Patent Authors:** The "Dunărea de Jos" University of Galați has obtained significant revenue by winning European funding applications and through royalties collected for the use of the vegetable paste patent during its implementation within the partner company. The authors of the patent benefited from additional financial income, receiving a percentage of the amount obtained from the sale of the patent to Sanovita.
- **Production Capacity Expansion and Results for Business Partners:**
  - **Sanovita:** The company that purchased the vegetable paste patent has strengthened and expanded its market share by producing additional quantities to meet the growing demand for healthy plant-based products.
  - **Patisimo:** The bakery company, a beneficiary of European funds accessed through collaboration with UDJG on the technology transfer project, developed a new manufacturing line dedicated to gluten-free biscuits. This expansion enabled the company to respond to the needs of a very specific niche market—consumers with gluten intolerance (celiac disease)—and contributed to diversifying its product offerings.
- **Enhanced Technology Transfer (TT) Skills and Experience for UDJG and CTT-UGAL:** Involvement in these projects has provided UDJG and CTT-UGAL with extensive experience in collaborating with the business sector and managing TT processes.

This accumulated experience has been leveraged to establish new partnerships with other companies, solidifying UDJG's reputation as a reliable partner for the private sector and supporting the university's growing capacity to facilitate innovation across various domains.

- ***Innovation Diffusion***

The adoption of the good practice model has had a significant impact on the stakeholders involved, creating a precedent for other collaborations between universities and the private sector:

  - Within UDJG, the TT methodology developed by CTT-UGAL has become a reference point for other departments and research centers. The success of TT projects has demonstrated the value of collaborations with the business sector and has encouraged other faculties to explore the commercial potential of their research.
  - Encouraged by the positive results, partner companies have integrated a continuous innovation process and have started to collaborate more closely with the university to develop and implement new technologies. This model has thus become a source of inspiration for other companies interested in utilizing academic inventions, creating a broader network of collaborations between the university and the private sector.

- ***Ecosystem Implications***

The implementation of this TT model has had significant implications for both the regional and national ecosystems, promoting inter-institutional collaboration and addressing key economic and social challenges:

  - **Stimulating Collaboration between Universities and Industry:** Through these partnerships, UDJG and CTT-UGAL have demonstrated the benefits of cooperation between academia and the business sector. Business partners had the opportunity to collaborate with a reputable public university, benefiting from academic expertise and contributing to the practical application of innovations. This model encourages other companies to explore the potential of academic partnerships, supporting the development of new product solutions.
  - **Increasing Innovation Capacity:** The model has contributed to strengthening the innovation capacity of partner companies by giving them access to advanced technologies and specialized consultancy for implementation. This has enabled companies to remain competitive in their niche markets and to expand their product portfolios to meet consumer demands.
  - **Addressing Societal and Public Health Challenges:** UDJG-promoted innovations address significant public health and nutrition challenges. Projects such as gluten-free biscuits have contributed to diversifying food options for gluten-intolerant consumers, while the vegetable paste has provided a healthy alternative in the plant-based product market. In this way, the UDJG model supports public health and promotes a balanced lifestyle, contributing to sustainable development through innovative food alternatives.

- ***A Replicable Good Practice Model***

The achievements of UDJG and the accumulated experience in business collaboration represent an example of good practices that can inspire and guide other universities and research institutes in Romania.
This model demonstrates how strategic partnerships, flexible intellectual property rights transfer, and advisory support can transform academic inventions into viable commercial products.
UDJG has paved the way for an applicable methodology throughout Romania's research ecosystem, providing a concrete solution for capitalizing on research results and fostering national innovation.

2.6. Challenges Overcome

- ***Key Barriers***

Implementing UDJG's good practice model in technology transfer (TT) involved overcoming significant challenges, including:

- **Regulatory Gaps in National Patent Assignment Policies:** At the beginning of the project, Romania lacked a national methodology for assigning patents held by universities to the private sector. This absence of regulation created difficulties in the legal transfer of patents to companies, particularly concerning intellectual property created in public institutions.
- **Limited Resources for TT Infrastructure:** Although CTT-UGAL was accredited, insufficient funding for developing TT infrastructure restricted the center's capacity to offer full support and carry out extensive promotional activities, including identifying potential business partners.
- **Shortage of Specialized Skills:** The TT process and interactions with the business sector required interdisciplinary expertise, including legal, commercial, and technical knowledge. UDJG and CTT-UGAL faced a shortage of personnel with these specific competencies, which initially complicated the negotiation and partnership implementation processes.
- **Lack of Experience in Accessing European Funding for TT Projects:** The university had limited prior experience using European funds for TT, and partner companies required substantial support for preparing funding applications and meeting the criteria required by funding organizations.
- **Challenges in Promoting Innovations to the Business Sector:** The absence of a national strategy for promoting academic patents complicated the process of informing and attracting business partners. Additionally, companies lacked access to a centralized database of university patents, which reduced the visibility of UDJG's innovations.
- **Absence of Effective Research Marketing on a National Level:** UDJG and CTT-UGAL identified a major challenge in the lack of a coherent research marketing system to help promote patents to the business sector. Without a solid marketing strategy, academic inventions risked remaining unexploited and were challenging to present to potential commercial partners..

- ***Solutions Implemented***

To address these challenges, UDJG and CTT-UGAL implemented innovative and flexible solutions, enabling the development and success of this good practice model:

- **Development of a National Patent Assignment Methodology**: In collaboration with the Ministry of Research, Innovation, and Digitization, UDJG contributed to creating a national methodology for assigning patents owned by public institutions to private companies. This methodology included clear procedures for publicly announcing patent sales, evaluating offers, and selecting the most advantageous economic offer, facilitating the legal sale of the vegetable paste patent in a well-defined regulatory framework.
- **Securing External Funding and Partnerships for TT Infrastructure**: To compensate for the lack of internal resources, UDJG accessed European funds that supported the development of TT infrastructure. Additionally, the involvement of partner companies in securing funding helped expand available resources, and the funds obtained supported promotional activities and the implementation of patented technologies.
- **Establishing a Continuous Training Program for CTT-UGAL Personnel**: UDJG invested in training its staff in essential TT fields such as commercial negotiations, legal aspects of intellectual property, and project management. This training program enabled CTT-UGAL personnel to improve the skills needed to work effectively with the business sector.
- **Extensive Consultancy for Accessing European Funds**: CTT-UGAL provided specialized support for preparing funding applications, specifically for the gluten-free biscuit production line TT project. The university worked closely with business partners, facilitating access to necessary development funds by meeting the administrative and technical requirements of the funders.
- **Strategic Promotion and Media Campaigns**: To overcome the absence of an organized research marketing strategy, UDJG launched patent promotion campaigns, participating in innovation competitions such as Ecotrophelia and using traditional and online media channels to increase patent visibility. This strategy included presenting inventions at dedicated events, attracting business interest, and generating partnership opportunities.
- **Establishing Strategic Partnerships**: To enhance patent visibility and stimulate corporate interest, UDJG collaborated with regional and national organizations supporting innovation and TT, such as regional development agencies and entrepreneurship networks. These partnerships allowed access to a broader contact network and facilitated meetings with potential business partners.

By implementing these solutions, UDJG has demonstrated that challenges in technology transfer can be effectively addressed through adaptability, strategic partnerships, and innovation.

2.7. Lessons Learned / Adoption Guidelines

- ***Best Practices***

The good practice model developed by "Dunărea de Jos" University of Galați (UDJG) generated several key strategies that proved essential for successful technology transfer:

- **Establishing a Clear Methodological Framework:** Implementing a clear legal and methodological framework for patent assignment was fundamental to fostering collaborations between the university and the private sector. UDJG's collaboration with the Ministry of Research to develop a national methodology for intellectual property rights assignment ensured transparency and legal security in patent transactions, facilitating smoother public-private partnerships.
- **Flexibility in Public-Private Partnerships**: UDJG's flexibility in negotiations allowed it to adapt partnerships based on each company's specific needs, ensuring that collaborations were both efficient and mutually beneficial. This adaptability was crucial for attracting companies from various sectors interested in working with the university's innovations.
- **Continuous Support and Consultancy**: UDJG provided consultancy in preparing funding applications and implementing patented technologies. This included support for documentation preparation and assistance with the technological implementation process, which helped partner companies overcome initial integration challenges for patents into their production processes.
- **Promoting Innovation Through International Competitions:** Participating in competitions like Ecotrophelia increased the visibility of university patents, attracting the attention of potential business partners and validating the innovations developed at UDJG on an international stage.
- **Engaging Students and Researchers:** The active involvement of students in patent development reinforced the university's educational role and offered practical experience, which boosted the appeal of academic research as a source of industry-applicable innovation.

- ***Recommendations for Similar Projects***

Based on the lessons learned, UDJG offers the following recommendations for other academic institutions or research institutes interested in implementing similar technology transfer practices:

- **Develop and Implement Clear Technology Transfer Policies:** Institutions should establish clear procedures for patent commercialization and create transparent rules for benefit-sharing. Consistent and adaptable policies can facilitate solid partnerships and encourage researchers to transfer their knowledge to the private sector.
- **Access and Utilize External Funding**: Academic institutions and TTOs should enhance their skills in accessing external funds, including European funds, to support the necessary TT infrastructure. These funds not only provide critical financial resources but also help expand partner networks.
- **Create Contact Points for IP and TT**: Building a system of regional technology transfer centers, whether in partnership with other universities or as self-administered centers, can reduce costs, improve access to TT services, and facilitate inter-university collaboration.
- **Develop Training Programs for Intellectual Property Awareness**: Universities and TTOs should provide educational programs for staff and researchers, focusing

on the importance of IP protection, legal requirements, and the benefits of technology transfer. This approach could help reduce conflicts of interest and motivate researchers to develop inventions through university channels.

- **Diversify and Adapt Consultancy Services:** Offering consulting services beyond just technical aspects to include commercial and marketing support enables universities to provide more comprehensive assistance to partner companies. This could include market analysis, feasibility studies, and cost-benefit evaluations for patenting, helping companies make informed decisions in the TT process.

By incorporating these best practices and guidelines, other institutions can enhance their TT activities, improve research commercialization, and establish successful collaborations with industry. The lessons from UDJG's experience provide a roadmap for maximizing the impact of academic research on the broader economy and society.

2.8. Future Outlook

- ***Next Steps***

UDJG has planned several actions to further develop and expand this good practice model, aiming to increase the impact of technology transfer (TT) and strengthen the connection between academia and the private sector:

- **Expanding the Patent Portfolio and Increasing Commercialization Rates:** The university intends to identify and patent new inventions with market potential across various fields. This initiative includes identifying new niche markets and attracting business partners from diverse economic sectors to maximize the economic and social impact of university patents.
- **Building a Network of National and International Collaborations:** UDJG seeks to expand partnerships with other universities and research institutes in Romania and abroad to facilitate the exchange of best practices in technology transfer. These international collaborations will involve sharing expertise and resources, participating in joint research initiatives, and building a global reputation for the university.
- **Enhancing Consulting Services through CTT-UGAL:** The university plans to diversify the consulting services offered through CTT-UGAL, including specialized support in market analysis, marketing, and commercialization strategies. Through this expanded program, CTT-UGAL will provide companies with a full range of services to help them effectively capitalize on university-developed technologies.
- **Developing a Skilled Workforce in TT:** UDJG will continue investing in staff training and educational programs aimed at students and researchers. Plans include establishing specialized courses in TT and entrepreneurship to cultivate the necessary skills for future technology transfer specialists, ensuring the university's capacity to meet the evolving needs of the TT ecosystem.
- **Implementing a Comprehensive Research and Innovation Marketing Strategy:** UDJG will create an integrated marketing strategy to promote its patents and inventions to potential commercial partners. This strategy will include participating in international innovation fairs, organizing networking events, and creating an online platform to showcase the university's patents.

- ***Potential Long-Term Impact***

In a broader context, UDJG's developed practices and strategies have the potential to profoundly influence Romania's technology transfer ecosystem and serve as a model for other institutions:

- **Strengthening Romania's Innovation Ecosystem:** UDJG's good practice model can serve as an inspiration for other universities and research institutes, contributing to an increase in the number of commercially successful patents in Romania. Over time, this model could foster a strong TT community with a wider network of collaborations between the academic, private, and public sectors.
- **Stimulating Regional Economic Development:** By expanding partnerships with local and national companies, UDJG will help create new jobs and diversify the regional economy. This economic impact is further amplified by developing niche products, attracting new investments, and supporting knowledge-based industries in Romania's Southeast Region.
- **Promoting Entrepreneurship and Innovation among Students**: Actively involving students in technology transfer projects will foster a stronger entrepreneurial mindset among young researchers who can see the applicability of research in industry. This long-term impact will encourage more students to develop their own innovation-driven projects and businesses, supporting the emergence of a future generation of entrepreneurs.
- **Establishing a More Integrated TT Infrastructure:** As more research institutions adopt similar practices and collaborate to develop a national TT infrastructure, Romania will become more competitive internationally in applied research and innovation. A well-connected TT infrastructure can accelerate the transformation of academic research into commercial products and solutions.
- **Attracting International Investment and Partnerships:** By creating a successful framework for technology transfer, UDJG will become more attractive to investors and international partners interested in university innovations. In the long term, this could generate a steady flow of partnerships and collaborative projects, helping integrate the university into international research and innovation networks.

Through these actions and the impact generated, UDJG's model has the potential to become a key driver for building a strong national TT ecosystem, positioning Romania as a regional hub for innovation and applied research.

2.9. Contact information

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2.10. Thanks

We would like to thank the CTT UGAL Technology Transfer Center, the Department of Continuing Education and Technology Transfer and the "Dunărea de Jos" University in Galati.

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These contact details provide access to the coordination team for technology transfer projects and strategic partnerships managed by UDJG, facilitating new collaborations in the field of innovation and applied research.