

e-mentor

DWUMIESIĘCZNIK SZKOŁY GŁÓWNEJ HANDLOWEJ W WARSZAWIE
WSPÓŁWYDAWCA: FUNDACJA PROMOCJI I AKREDYTACJ KIERUNKÓW EKONOMICZNYCH

2025, nr 2 (109)



Skala-Gosk, A. (2025). The surrogate student entrepreneurship model – can the Swedish commercialisation model work in Poland? *e-mentor*, 2(109), 13–21. <https://www.doi.org/10.15219/em109.1706>

The Surrogate Student Entrepreneurship Model – Can the Swedish Commercialisation Model Work in Poland?

Abstract

Over the past twenty years, a surrogate student entrepreneurship model has been developed and practiced at the Chalmers University of Technology in Gothenburg, confirming that involving suitably prepared students in managing technological spin-offs can overcome key barriers to cooperation between universities and businesses. This paper discusses the Swedish model of surrogate student entrepreneurship in the context of its potential adaptation in Poland. The concept of the entrepreneurial university is explored, and a model-based framework for entrepreneurial university activities is proposed, depending on the level of benefits from commercialization and the degree of stakeholder engagement. The Swedish experiment may represent a promising alternative in light of the unsatisfactory indicators of knowledge and technology commercialization achieved by Polish universities.

Keywords: commercialisation, surrogate entrepreneurship, spin-off, entrepreneurial university, technology transfer

Introduction

The ‘entrepreneurial university’ concept is attractive from a research perspective. However, its body of knowledge remains fragmented (Cerver Romero et al., 2021; Guerrero et al., 2024). Entrepreneurial universities commercialize innovative solutions by transferring them to enterprises, which stimulates economic resilience both at the regional and national levels (Bristow & Healy, 2018; Celebioglu & Brenner, 2024), with cooperation between academia and business supporting the development of an economy-resilient to risks and shocks (Allard et al., 2012), and effective commercialization models at universities constituting a starting point for such processes. For four decades, there has been a debate over whether an ideal entrepreneurial university model exists or whether a variety of solutions should be adopted depending on local conditions (Philpott et al., 2011). Typical university activities within the scope of their entrepreneurial mission include patenting, licensing, incubation and acceleration, and in other cases, seed investments and the establishment of so-called spin-off firms¹.

Sweden is testing pioneering innovation commercialization models at its universities, which involve academics as ‘providers’ of new solutions and leverage students’ potential to manage spin-offs operationally. In this model, referred to as the student surrogate entrepreneurship model, appropriately educated and trained students – so-called surrogate entrepreneurs – work in teams on real business projects assigned to them by researchers as part of their master’s studies in management. The researchers are unwilling to become operationally involved in developing businesses based on their ideas and work, with the students taking full responsibility for making decisions to transform the best ideas into fast-growing enterprises (Lundqvist, 2014).

The starting point for the work discussed in this paper is the research question: Can the student surrogate entrepreneurship model developed at Chalmers University of Technology be effectively adapted to the conditions of Polish universities, particularly technical ones? The scientific aim of this paper is to present a case study of a unique commercialization model based on student surrogate entrepreneurship, developed and implemented by Chalmers University of Technology in Gothenburg, with the utilitarian aim of analyzing this case being to assess the potential for adapting the Swedish model to the conditions of Polish technical universities (or other research institutions).

The paper outlines typical activities undertaken by entrepreneurial universities, identifying the main barriers and success factors before presenting the student surrogate entrepreneurship model implemented by the Chalmers School of Entrepreneurship and its outcomes. The paper concludes with reflections on the possibilities of adapting the Swedish model to the Polish context.

Activities Undertaken by Entrepreneurial Universities

The idea of the entrepreneurial university has evolved towards viewing it as a ‘natural’ incubator supporting entrepreneurship, innovation, and sustainable development within the university community (e.g., students, alumni, staff, and academic teachers) and beyond through civic engagement (Guerrero et al., 2024). A holistic understanding of entrepreneurial universities highlights not only formal entrepreneurial

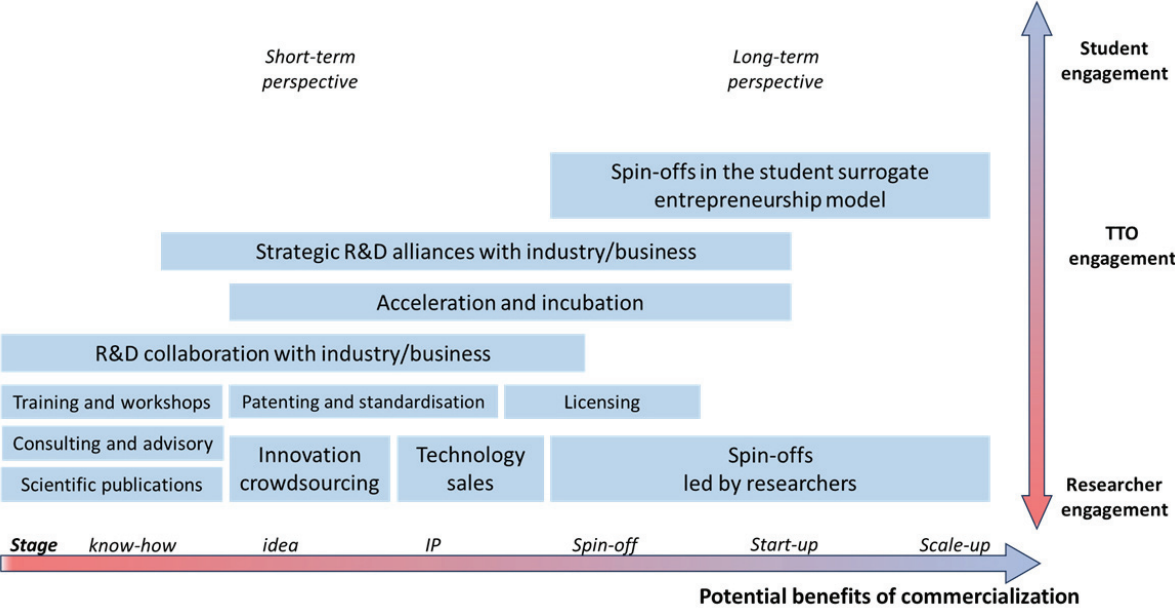
activities such as technology transfer, incubation, or acceleration but also informal factors, including the attitudes of lecturers and students, entrepreneurial culture, and motivational systems (Kirby et al., 2011; Klofsten et al., 2019). These formal and informal elements can be regarded as academic intrapreneurial capabilities (Klofsten et al., 2021).

A substantial body of research has been devoted to various commercialization activities: technology transfer (Good et al., 2019), incubation (McAdam et al., 2016), academic entrepreneurship (Hayter et al., 2018), and entrepreneurship education (Hägg & Kurczewska, 2021), although these discussions rarely consider the possibility of synergy among these activities—for example, when technology transfer could simultaneously serve as entrepreneurship education (Lundqvist, 2014; Rasmussen & Sørheim, 2006), or when entrepreneurial education contributes to research and scholarship (Kyrö, 2018). Nevertheless, such combinations are particularly valuable for universities.

Figure 1 presents a model-based perspective on various entrepreneurial activities undertaken in pursuit of a university’s entrepreneurial mission, which is considered about three main variables: the scale of potential commercialization benefits, the level of academic staff involvement, and the degree of student and/or technology transfer office (TTO) engagement. The following types of activities are included:

- academic publications, which disseminate scientific know-how (Walsh & Huang, 2014),
- consulting and advisory services, where academics offer business services that enable the implementation of new technologies or process improvements (Perkmann et al., 2021),

Figure 1
A Model-Based Perspective on Third Mission Activities Depending on the Scale of Commercialization Benefits and the Degree of Stakeholder Involvement



Source: author’s own work.

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- training and educational workshops that facilitate the transfer of know-how to industry (Borman et al., 2024; Politis et al., 2024),
- innovation crowdsourcing, where both universities and enterprises use crowdsourcing platforms to address research and development problems (Lenart-Gansiniec, 2022),
- technology sales (Kim et al., 2019),
- patenting and standardization (Ashari et al., 2023; Walsh & Huang, 2014),
- licensing (Shen et al., 2022; Wu et al., 2015),
- research and development (R&D) collaboration, where research institutions work with businesses on joint projects (Perkmann et al., 2021),
- acceleration and incubation, where universities support venture development through technical, advisory, educational and financial assistance (Clayton et al., 2018; M'chirgui et al., 2018),
- strategic R&D alliances, in which academic units and businesses form partnerships to develop intellectual property (Bercovitz & Feldman, 2007; George et al., 2002),
- 'classic' spin-offs run by academic staff (Wennerg et al., 2011), as well as those based on non-academic teams (Boh et al., 2016), including the model discussed in this paper (Lundqvist & Williams-Middleton, 2017; Lundqvist & Williams-Middleton, 2024).

Particular attention should be placed on the creation of spin-offs within the student surrogate entrepreneurship model, with research into academic entrepreneurship in Sweden and the United States showing that student surrogate entrepreneurs can help to overcome tensions between academic research activity and entrepreneurial involvement (Lundqvist & Williams-Middleton, 2013). In the cases studied, involving students as surrogate entrepreneurs enabled a greater number of business experiments and reduced the risk of conflict between academic and business cultures (Clarysse & Moray, 2004), with students testing the role of entrepreneur alongside their studies perceived as benefitting from support in learning to manage multiple identities (Raible & Williams-Middleton, 2021). Studies have indicated that too little attention is devoted to the role entrepreneurship can play in the educational mission of universities—and vice versa (Lackéus et al., 2016; Schmitz et al., 2017).

Main Barriers to Academic Commercialisation

The commercialization models used by universities, particularly technical institutions, are influenced by several key factors, the two most important being the approach to intellectual property (IP) management (Kenney & Patton, 2011) and the overall quality of services provided by technology transfer offices (TTOs). Faccin et al. (2022) described a typical conflict between TTOs and researchers, where TTOs prioritize IP protection through patenting (a standard measure of

their performance), while researchers achieve career success through publications that may disclose the same IP. Guerrero et al. (2024) call for stronger mechanisms to support entrepreneurial mindsets across the university community, including students, academic teachers, researchers, and administrative staff. Kirby et al. (2011) highlighted the 'classic' conflict between entrepreneurial activities and universities' educational and research goals and promotion systems that are often unsupportive of commercialization.

Another barrier to effective university commercialization is limited access to private funding sources (Munari et al., 2018). Meek and Gianiodis (2023) examined key determinants for the activation of financial instruments by universities, among which the quality of acceleration and educational programs provided by universities (and hence by TTOs) emerged as a significant factor in ensuring credible validation of business concepts, proving a significant conclusion in the context of the surrogate commercialization model discussed in this paper.

In summary, the success of commercialization models at European universities is primarily shaped by the varying benefits for different stakeholders, the level of engagement of the academic community, the availability of funding sources, the legal framework for intellectual property protection, and the activity and capacity of technology transfer offices. The diversity of these challenges and opportunities and additional differences between commercialization models at technical and non-technical universities highlight the complex landscape of knowledge and technology commercialization in the European academic context.

Methodology

This paper adopts a cognitive-analytical approach based on a case study of the model implemented at the Chalmers School of Entrepreneurship. The choice of the method comes from the need for an in-depth understanding and representation of the complex phenomenon of student surrogate entrepreneurship, both in its organizational and institutional dimensions. At the same time, the case study enables a portrayal of how specific educational practices and knowledge commercialization mechanisms operate within one of the most advanced academic entrepreneurship ecosystems in Europe.

The model description is based on a review of the academic literature and internal materials from the Chalmers School of Entrepreneurship and repeated direct observation, including participant observation conducted by the author during a research stay at the institution in 2025. Additionally, in June 2023, an in-depth interview was conducted with Professor Karen Williams-Middleton, a leading scholar and coordinator of the entrepreneurial track at the Chalmers School of Entrepreneurship, serving as a key source of insight into the internal workings of the model under discussion.

The analysis aims to assess the model's potential for adaptation to Polish conditions, considering factors such as the legal framework (including intellectual property), institutional readiness of universities, resource availability, and the attitudes of key stakeholders – students and researchers.

The Student Surrogate Entrepreneurship Model at Chalmers²

Chalmers University of Technology (hereafter referred to as 'Chalmers') is Sweden's second oldest and second largest technical university³, located in Gothenburg. As the country's second-largest city, Gothenburg has a strong tradition of commerce and industry. It is home to major corporations such as Volvo, Stena Line and SKF⁴, each of which Chalmers maintains strategic partnerships.

In 1994, Chalmers was transformed from a state university into a foundation-based institution, with the operational flexibility enabled by this transformation allowing for the creation of new structures and mechanisms to support entrepreneurship, including the co-founding of Sweden's first university-based venture capital firm (1994), the establishment of its seed fund (1998), an incubator (1999), and the School of Entrepreneurship (1997).

The latter – Chalmers School of Entrepreneurship (hereafter referred to as 'the School') – was founded on the premise that entrepreneurial competencies are the primary 'bottleneck' in successfully developing university-originated ventures. The School brings together entrepreneurial master's students and promising ideas that lack managerial driving force, aiming to create competitive and sustainable ventures and educate capable entrepreneurs and entrepreneurial employees. Over the years, many iterations of its proprietary educational program have been tested, with the Chalmers School of Entrepreneurship today recognized as the leading startup environment in Sweden.

Educational Programme at the Chalmers School of Entrepreneurship

The key to Chalmers' commercialization success lies in using surrogate entrepreneurs recruited from among the School's students, combined with openness to ideas from various environments, including corporations. The School offers a two-year master's

program leading to a Master of Science (MSc) in Entrepreneurship and Business Design.

Students can choose from three available paths within the program: Corporate Entrepreneurship, Intellectual Capital Management, and Technology Venture Creation. Spin-offs are developed at Chalmers within the latter based on the student surrogate entrepreneurship model.

Applicants

Applicants must hold a bachelor's degree. Around 30 students are admitted each year. There is no ideal candidate profile, as the goal is to create three-person project teams with diverse skill sets, with the first six months of the program serving as a period for students to get to know each other, followed by a matching process conducted by the School to form the teams.

On the other hand, researchers express interest in transferring intellectual property they have developed into future enterprises, as they are not interested in becoming entrepreneurs themselves, having committed to academic careers, but want to give their work a chance to reach the commercial market, which is their motivation. The belief that researchers prefer to remain researchers rather than engage in business is one of the fundamental premises of this model.

Curriculum

The introductory semester includes three integrated compulsory courses⁵ for all participants: *Intellectual Property Strategies*, *Designing Technology Innovations and Markets*, and *Technology-Based Entrepreneurship*, with lectures taught. In the second semester, exercises and group tasks are introduced based on case studies, although they do not yet involve real-life projects. During this period, student teams are formed, familiarising themselves with the ideas submitted by researchers and ranking them according to their interest in working on them. Forming student teams and their 'pairing' with researchers' ideas is a lengthy, multi-week process.

The second year of study is dedicated to incubation⁶, during which students learn through participation in venture creation, with the School providing additional skills and offering tools that support the validation of the business idea. In this way, the program increases the likelihood of terminating non-viable projects early—before the venture

² The model description draws on a review of the literature and internal materials from the Chalmers School of Entrepreneurship, as well as repeated direct observation, including participant observation by the author and an in-depth interview with the head of the ChSoE, Prof. Karen Williams-Middleton, held in June 2023.

³ The oldest and largest technical university, the Royal Institute of Technology in Stockholm (KTH), was established in 1827, just two years before Chalmers.

⁴ SKF is a Swedish enterprise and the world's largest manufacturer of rolling bearings.

⁵ This means the student has no other coursework.

⁶ According to Przybył and Grudzień (2011): 'Incubation is a service supporting the survival of a business during its initial phase—from its establishment to its third year. The service involves renting office space by the incubator on preferential terms compared to market rates.' The rental often includes accompanying services (e.g., accounting, etc.) (pp. 189–190).

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capital investment stage (for example, from Chalmers Ventures)—focusing its efforts on promising, well-founded concepts that are more likely to attract venture capital funding. Students must terminate a venture and take on a new assignment if it proves unfeasible or unprofitable.

The entire second year is dedicated to a real-life venture project and the master's thesis, which is intellectually integrated and aligned. From the student's perspective, the program is an opportunity to gain practical experience in running a technology venture and to develop entrepreneurial competencies in a setting characterized by real market risk.

Ideas

Ideas originate from researchers or external partners—such as researchers from other universities or institutions and private individuals. The School and the incubator recruit ideas that must meet the program's educational requirements, which are:

- a strong technological component (i.e. deep-tech),
- potential for a scalable business model⁷,
- international commercial potential,
- clear investment potential,
- sufficient maturity for students to identify its market potential within one year,
- backing from the originators, who hold the intellectual property and are willing to transfer it to a newly established company.

Intellectual Property Protection and the 'Professor's Privilege'

In Sweden, so-called 'professor's privilege'⁸ applies, meaning researchers retain ownership of all intellectual property (IP) resulting from their research. In other words, the researcher's rights to an invention belong to the researcher, even if the invention was developed within the university under an employment contract. This concept simplifies commercialization, eliminating the initial researcher–university conflict over IP ownership. Partly for this reason, Sweden's approach to commercialization generally emphasizes stimulating academic entrepreneurship through incubating new ventures (spin-offs) rather than developing technology transfer offices.

The dialogue regarding intellectual property with the idea originator is conducted through a separate unit at Chalmers: the Innovation Office, which is, in some respects, the equivalent of a technology transfer office and supports the identification and acquisition of innovations across the university. Researchers are then directed either to the incubation process—if they are willing to be actively involved in commercialization—or to the School of Entrepreneurship—if not.

Commercialisation Process

The School of Entrepreneurship oversees two processes: team building and venture building. Operational teams consist of three students, and are connected with the scientific team—for instance, a researcher who provided the idea.

In the first phase, all parties involved define their roles in the emerging venture, with the idea providers initially signing a letter of intent, the students signing a non-disclosure agreement (NDA⁹), and finally, both parties agreeing and signing a cooperation agreement. During this phase, Chalmers' incubator provides financial support and assists in the further development of the projects. The incorporation of the venture can occur due to various events—for example, a paying customer, a significant investment, or the acquisition of a patent. The cooperation agreement is structured so that if either party decides to terminate it, the intellectual property returns to the original rights holder (e.g., the researcher).

The structure of the student surrogate entrepreneurship model developed at Chalmers is presented in Figure 2.

The model is designed to eliminate unpromising projects as quickly and decisively as possible, based on three main reasons:

- researchers incorrectly declare their willingness to collaborate, but, in reality, are not committed,
- the technology, although initially promising, turns out to have limited potential—for example, a researcher develops a technology for personal use, but the resulting product proves too niche to scale commercially,
- the level of competition is too high, as many people worldwide are working on the same problem, and someone else already reached the market earlier.

Commercialisation Outcomes in the Student Surrogate Entrepreneurship Model

It is estimated that ventures launched within the Chalmers innovation ecosystem account for around 15% of all startups in Sweden and generate over 40% of total revenues from university-incubated enterprises—giving Chalmers a leading position in the country.

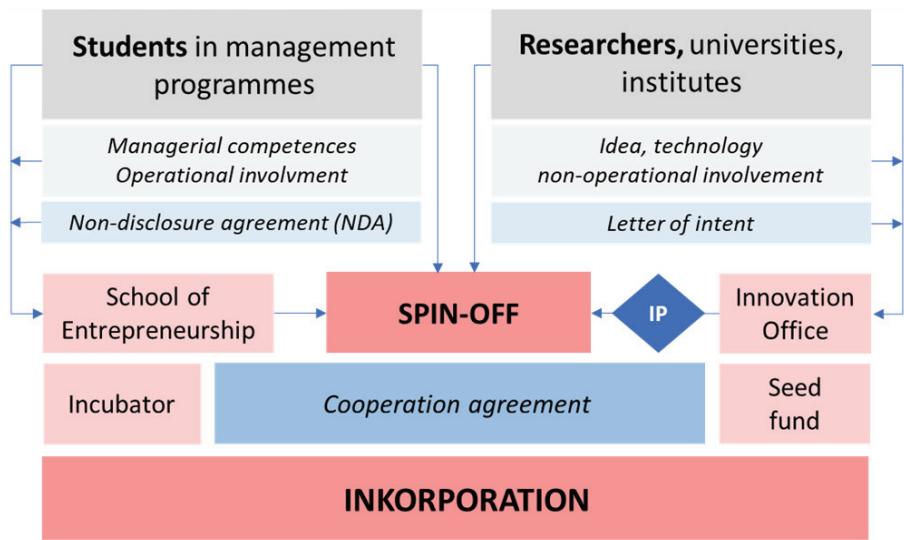
Over the past 20 years, the program has created approximately 140 companies—3–4 per semester on average. The survival rate of these startups is high: around 70% of the companies established through the program are still active, which is a significant figure considering the inherent risk of the startup environment. These ventures span various high-tech sectors, with many attracting venture capital investment.

⁷ According to Osterwalder, a business model is the rationale for how an organization creates and delivers value to the customer and monetizes it (Osterwalder & Pigneur, 2010).

⁸ For more, see e.g., Trzmielak et al., 2016, pp. 24–26.

⁹ A non-disclosure agreement (NDA) is a contract to maintain confidentiality (Bądek, 2019).

Figure 2
Diagram of the Student Surrogate Entrepreneurship Model Developed at Chalmers School of Entrepreneurship



Source: author's own work.

The program contributes to Chalmers University's reputation as a leading academic and technological entrepreneurship institution in Europe, its impact going beyond company formation, fostering a broader entrepreneurial culture, and strengthening its educational and research mission.

Conclusion

It is widely known that commercialization processes at Polish universities are prolonged and hindered by numerous factors, including the absence of a top-down, prioritized national strategy for technology transfer, unclear legal regulations, and a science evaluation system that does generally not support commercialization efforts, resulting in a system that is not functioning effectively (Geodecki & Hausner, 2023). Both the number of companies created at universities¹⁰ and other commercialization indicators remain significantly lower in Poland compared to countries leading in this area¹¹. However, it is also important to acknowledge that commercialization processes in Poland were initiated relatively recently, and their institutionalization and outcomes are developing gradually, with the commercialization ecosystem still emerging. At the same time, the capital resources

necessary for its growth are limited, originating mainly from public sources.

In response to whether the Swedish model can be adapted to the conditions of Polish technical universities (or other research institutions), the answer is affirmative, as none of the model's key components or implementation conditions discussed in this paper are inherently incompatible with the Polish context. First and foremost, the legal framework shared within the European Union ensures consistency in applied solutions, with the only notable difference lying in the legal ownership of intellectual property (IP), which in Sweden is governed by the so-called 'professor's privilege.' Nonetheless, alternative IP arrangements do not preclude the application of Swedish practices in a modified form.

Particular attention should also be paid to integrating commercialization with university teaching. The Swedish model provides students with a portfolio of knowledge, skills, competencies, and practical experience that enables them to act entrepreneurially in their future careers—whether as founders, contributors to entrepreneurship-supporting ecosystems, or leaders of innovation projects within corporations. Table 1 summarises the key differences and similarities affecting the adaptability of the Swedish student

¹⁰ According to data obtained from Porozumienie Spółek Celowych, 241 spin-offs—defined as companies with equity participation from a university—were established in Poland between 2017 and 2023. Among the leading institutions are Nicolaus Copernicus University in Toruń (34 companies), Warsaw University of Technology (33 companies), the University of Warsaw (32 companies), and the AGH University of Science and Technology (29 companies). This does not mean that all these companies are operating successfully, and official data on their market and financial performances are not publicly available. Based on personal observations and informal expert interviews, it can be reasonably assumed that approximately 10–15% of these spin-offs are functioning well and actively developing.

¹¹ For comparison, the average number of spin-offs created annually by a single university is 1 in Poland, over 4 in the United Kingdom, and almost 6 in the United States (based on data from Porozumienie Spółek Celowych, Higher Education Statistics Agency, AUTM).

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Table 1

Preliminary Analysis of the Adaptability of the Student Surrogate Entrepreneurship Model to Polish Conditions

Factor	Sweden (Chalmers)	Poland	Adaptability Potential
Legal framework (IP)	'Professor's privilege' – IP rights belong to the researcher.	No professor's privilege – the university typically owns IP.	High – viable legal solutions can be developed within the existing system.
Institutional readiness	The model has been developed for over 20 years; systemic integration of teaching and commercialization.	Commercialization processes are still immature; low commercialisation indicators.	Moderate – requires a shift in organizational approach.
Resource availability	Own seed fund, incubator, strong cooperation with business partners.	Mostly public capital, limited private resources, underdeveloped ecosystem.	Moderate – requires institutional and financial support.
Students (attitudes)	Carefully selected; deliberately choose a venture creation path as part of the programme.	No equivalent programme, but potentially strong interest in practical, hands-on education.	High – requires the creation of an educational track.
Researchers (attitudes)	Consciously refrain from becoming entrepreneurs; delegate their ideas to students.	Often reluctant to lose control despite declared openness to commercialization.	Limited – requires attitude changes and improved collaboration mechanisms.

Source: author's own work.

surrogate entrepreneurship model to the Polish condition.

Potential barriers to implementing this model in Poland arise from differences in IP regulations and the degree to which universities are ready to integrate teaching with commercialization systematically. A key condition also appears to be the presence of active stakeholders: researchers willing to collaborate, students prepared to take on the role of surrogate entrepreneurs, and competent and stable teams responsible for coordinating the processes discussed.

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RELATION FROM THE EVENT



The 6th BPM Symposium,
April 24–26 2025,
Sopot (Poland)

The 6th BPM Symposium took place in Sopot from April 24 to 26, 2025, organized as part of the collaboration between the Daniel Fahrenheit Universities – Gdansk University of Technology and the University of Gdansk (Poland). This was the second meeting held under the patronage of FarU.

The BPM Symposium brought together over 50 participants representing more than 15 universities and 2 institutes of the Polish Academy of Sciences. The event was officially opened by: the Director of the Fahrenheit Universities, Prof. Adriana Zaleska-Medynska, Vice-Dean for Cooperation and Development at the Faculty of Management and Economics of Gdansk University of Technology, Prof. Michał Tomczak, and Vice-Dean for Internationalization and Development at the Faculty of Management of the University of Gdansk, Prof. Anna Dziadkiewicz.

The three-day event focused on issues related to business process management, with particular emphasis on modern ICT technologies. The symposium also served as a platform for the exchange of experiences between the academic community and management practitioners. For the first time, this year's edition included workshops dedicated to PhD students.

The next, 7th BPM Symposium will be held in 2026 at the Wrocław University of Economics and Business (Poland). "E-mentor" is one of the event supporting journals.