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CODE, CASH, CONCERN: THEORETICAL FOUNDATIONS AND PRACTICAL ASPECTS OF SOCIAL IT ENTREPRENEURSHIP IN THE UNIVERSITY ENVIRONMENT

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КОДУЙ, ЗАРОБЛЯЙ, ВПЛИВАЙ: ТЕОРЕТИЧНІ ЗАСАДИ ТА ПРАКТИЧНІ АСПЕКТИ СОЦІАЛЬНОГО ІТ-ПІДПРИЄМНИЦТВА В УНІВЕРСИТЕТСЬКОМУ СЕРЕДОВИЩІ

The article presents a comprehensive analysis of the theoretical foundations and practical aspects of the development of social IT entrepreneurship in the university environment, followed by the development of scientifically sound recommendations for optimizing the conditions for the formation and scaling of

such initiatives in the context of global digital transformation and the growing social challenges of modern society.

It is shown that in the era of digital transformation, social entrepreneurship is undergoing drastic changes, evolving from traditional forms of charity to innovative business models that use the potential of information technology to scale social impact. Universities occupy a special place in the ecosystem of social IT entrepreneurship, acting as key incubators of innovation due to their unique combination of resources and a culture of experimentation.

The research is based on an interdisciplinary approach, including a critical analysis of scientific literature, content analysis of the official web resources of 15 leading universities of Ukraine using a system of key terms (entrepreneurship, startup, inclusivity, sustainable development, IT), and systematization of practical experience of entrepreneurial initiatives of Ukrainian higher education institutions for the period 2015-2025.

It has been revealed that the university environment has the potential as a catalyst for social IT entrepreneurship: the presence of unique advantages (concentration of intellectual capital, interdisciplinary capabilities, ethical orientation, research potential, academic freedom) is combined with serious systemic barriers (bureaucratic restrictions, conservative academic culture, lack of commercial expertise, limited access to markets and financing). The analysis of the Ukrainian experience has demonstrated significant differentiation and fragmentation of approaches: the dominance of traditional business models over innovative startup solutions, the concentration of IT resources in leading technical universities, critically low rates of inclusivity and insufficient integration of the principles of sustainable development.

A comprehensive three-level strategy for the development of social IT entrepreneurship is proposed, including the institutional level (creation of specialized centers and programs, integration into curricula, incentive system for teachers and students, development of interuniversity networks), the program level (practice-oriented learning, interdisciplinary courses and projects) and the

individual level (development of entrepreneurial skills, social empathy, technological literacy and cross-cultural communication skills).

The developed recommendations provide a scientific and methodological basis for creating a favorable ecosystem of social IT entrepreneurship at universities, helping to overcome the traditional isolation of the academic environment from the practical needs of society and the formation of a new generation of socially responsible technology entrepreneurs.

У статті представлено всебічний аналіз теоретичних засад та практичних аспектів розвитку соціального IT-підприємництва в університетському середовищі з подальшою розробкою науково обґрунтованих рекомендацій щодо оптимізації умов для формування та масштабування подібних ініціатив в умовах глобальної цифрової трансформації та зростаючих соціальних викликів сучасного суспільства.

Показано, що в епоху цифрової трансформації соціальне підприємництво зазнає кардинальних змін, еволюціонуючи від традиційних форм благодійності до інноваційних бізнес-моделей, що використовують потенціал інформаційних технологій для масштабування соціального впливу. Університети займають особливе місце в екосистемі соціального IT-підприємництва, виступаючи ключовими інкубаторами інновацій завдяки унікальному поєднанню ресурсів та культури експериментів.

Дослідження засноване на міждисциплінарному підході, що включає критичний аналіз наукової літератури, контент-аналіз офіційних веб-ресурсів 15 провідних університетів України з використанням системи ключових термінів (підприємництво, стартап, інклюзивність, сталий розвиток, IT), а також систематизацію практичного досвіду підприємницьких ініціатив українських вищих навчальних закладів за період 2015-2025 років.

Виявлено, що університетське середовище має потенціал каталізатора соціального IT-підприємництва: наявність унікальних переваг (концентрація

інтелектуального капіталу, міждисциплінарні можливості, етична орієнтація, дослідницький потенціал, академічна свобода) поєднується з серйозними системними бар'єрами (бюрократичні обмеження, консервативна академічна культура, відсутність комерційної експертизи, обмежений доступ до ринків і фінансування). Аналіз українського досвіду продемонстрував значну диференціацію та фрагментарність підходів: домінування традиційних бізнес-моделей над інноваційними рішеннями для стартапів, концентрацію IT-ресурсів у провідних технічних університетах, критично низькі показники інклюзивності та недостатню інтеграцію принципів сталого розвитку.

Запропонована комплексна трирівнева стратегія розвитку соціального IT-підприємництва, що включає інституційний рівень (створення спеціалізованих центрів і програм, інтеграція в навчальні плани, систему мотивації викладачів і студентів, розвиток міжвузівських мереж), програмний рівень (практико-орієнтоване навчання, міждисциплінарні курси і проєкти) і індивідуальний рівень (розвиток підприємницьких навичок, соціальної емпатії, технологічної грамотності і навичок міжкультурного спілкування).

Розроблені рекомендації забезпечують наукову та методологічну основу для створення сприятливої екосистеми соціального IT-підприємництва в університетах, допомагаючи подолати традиційну ізоляцію академічного середовища від практичних потреб суспільства та сформувати нове покоління соціально відповідальних технологічних підприємців.

Keywords: *social IT entrepreneurship, university ecosystem, digital transformation, interdisciplinary cooperation, three-level development strategy, social impact.*

Ключові слова: *соціальне IT-підприємництво, університетська екосистема, цифрова трансформація, міждисциплінарна співпраця, трирівнева стратегія розвитку, соціальний вплив.*

INTRODUCTION

The modern era is characterized by an unprecedented convergence of technological innovations and social challenges, which creates unique opportunities for entrepreneurial initiatives aimed at solving social problems. In the context of global digital transformation, social entrepreneurship is undergoing drastic changes, evolving from traditional forms of charity and non-profit activities to innovative business models that use the potential of information technology to scale social impact [1; 2].

The growing importance of social entrepreneurship in the digital age is due to several key factors. First, technological advances have lowered entry barriers for social entrepreneurs by providing affordable tools for creating and distributing innovative solutions. Mobile applications, cloud platforms, artificial intelligence, and blockchain technologies open up new opportunities for automating social services, increasing their accessibility and efficiency [3; 4]. Secondly, the growing awareness of global challenges, from climate change to digital inequality— creates a steady demand for innovative approaches to solving social problems [5; 6].

Universities occupy a special place in the ecosystem of social IT entrepreneurship, acting as key incubators of innovation. Higher education institutions have a unique combination of resources: a concentration of talented students and researchers, access to advanced technologies and scientific developments, a well-developed infrastructure for research and development, as well as a culture of experimentation and critical thinking [7; 8]. The university environment creates favorable conditions for interdisciplinary collaboration necessary to develop comprehensive solutions to social problems.

Modern universities are increasingly positioning themselves as «entrepreneurial universities» that integrate educational, research, and commercial activities. The creation of technoparks, business incubators, technology transfer centers, and social innovation laboratories indicates systemic changes in the approach of higher education institutions to interacting with society and the economy [9; 10].

The intersection of technology, commerce and social responsibility forms a new paradigm of entrepreneurship, where success is measured not only by financial indicators, but also by the scale and depth of social impact. This trend reflects broader changes in business culture, where the concepts of «shared value», «triple bottom line», and «stakeholder capitalism» are becoming mainstream [6; 11]. The younger generation of entrepreneurs, formed in an era of global interconnectedness and environmental awareness, demonstrates a growing commitment to the ideals of social justice and sustainable development [12].

LITERATURE REVIEW

Despite the growing practical interest in social IT entrepreneurship, this field is characterized by significant theoretical and methodological gaps, which creates serious obstacles to its systematic study and purposeful development [13].

The main problem is the acute lack of comprehensive theoretical models that can explain the specifics of IT projects with a social mission. Existing approaches in the scientific literature are often fragmented, focusing either on the technological aspects of innovation or on social entrepreneurship as such, ignoring their synergetic interaction [2; 14]. The lack of a unified conceptual framework makes it difficult to compare initiatives, evaluate their effectiveness, and develop universal principles of support [15].

The university environment, with all its advantages for the development of innovation, creates specific barriers to social IT entrepreneurship. Academic culture, traditionally focused on fundamental research and publication activity, does not always promote the commercialization of projects and their practical implementation [8; 16]. The motivation and career development system at universities often discourages entrepreneurial activity, especially in the social sphere, where financial results may be limited [17].

Administrative procedures and bureaucratic constraints create additional obstacles to the rapid development and adaptation of innovative projects. The lack

of specialized funding for social IT initiatives in the university environment limits the opportunities for scaling successful projects [7; 10].

The fundamental contradiction between commercial and social goals is the central dilemma of social entrepreneurship in the IT field. On the one hand, commercial sustainability is essential for long-term operation and scaling of projects. On the other hand, a focus on profitability can undermine the social mission, leading to compromises in the quality of services for vulnerable populations or a shift in priorities towards more solvent market segments [18; 19].

This contradiction is compounded by differences in time horizons: investors and commercial partners expect quick payback, while social impact often requires long-term investments with delayed results [20]. The complexity of measuring and monetizing social value creates additional difficulties in attracting traditional financing [21].

PURPOSE OF THE ARTICLE

The purpose of this study is a comprehensive analysis of the theoretical foundations and practical aspects of the development of social IT entrepreneurship in the university environment, followed by the development of scientifically sound recommendations for optimizing the conditions for the formation and scaling of such initiatives.

To achieve this goal, it is necessary to solve a number of interrelated tasks:

– studying the practical aspects of implementing social IT projects in a university environment, which includes analyzing existing initiatives, studying success and failure factors;

– identification of specific barriers and opportunities in the university context;

– development of a set of scientifically based recommendations for creating a favorable ecosystem for the development of social IT entrepreneurship at universities.

Solving the tasks set will contribute not only to deepening the scientific understanding of the phenomenon of social IT entrepreneurship, but also to creating practical tools for its development, which is important in the context of growing social challenges and the need to find innovative solutions to social problems.

CONTRADICTIONS OF THE UNIVERSITY ENVIRONMENT AS A CATALYST FOR SOCIAL IT ENTREPRENEURSHIP

Universities represent unique ecosystems of intellectual capital concentration, which creates exceptional opportunities for the development of social IT entrepreneurship. The concentration of talents and expertise in the university environment is achieved through selective procedures for admitting students and hiring teachers, creating a critical mass of highly motivated and intellectually developed individuals [7; 9]. Students, especially in computer science and related disciplines, have up-to-date technical knowledge and a willingness to innovate [22]. Teachers and researchers bring in-depth expertise in specialized fields, from machine learning algorithms to the theory of social change.

The research potential of universities creates a fundamental basis for innovative solutions to social problems. University laboratories generate advanced scientific knowledge that can be transformed into practical technological solutions [23]. Access to scientific databases, research equipment, and experimental methodologies allows students and researchers to develop evidence-based solutions, which is critical to the effectiveness of social innovation [24].

Interdisciplinary collaboration in the university environment creates the synergetic effects necessary for an integrated approach to social issues. IT students can collaborate with experts in the field of sociology to gain a deep understanding of social needs, with economists to develop sustainable business models, and with psychologists to create user interfaces that take into account the behavioral characteristics of target groups. Such interdisciplinary interaction is rare in a

corporate environment, where specialization often hinders a holistic approach to problem solving [25; 26].

Academic freedom and creativity form the basis of university culture, creating favorable conditions for experimentation with innovative approaches to social problems. Unlike the corporate environment, where innovation must demonstrate immediate commercial value, the university environment allows for the exploration of radical ideas, testing non-standard solutions, and taking intellectual risks [27]. This freedom of experimentation is especially important for social entrepreneurship, where innovative approaches often take time to mature and prove effective [28].

Ethical principles and social responsibility are deeply rooted in the mission of universities, which creates a natural motivation for the development of socially oriented initiatives. Universities traditionally position themselves as institutions serving the public good, which creates a cultural environment where social impact is valued on a par with scientific achievements [29; 30]. Students and teachers who socialize in this environment naturally internalize the values of social responsibility [31].

The long-term thinking typical of the academic environment contrasts with the short-term profit orientation typical of the commercial sector. University research projects are often designed for years or decades, which creates a culture of patience and perseverance [32; 33]. This time perspective is especially valuable for social entrepreneurship, where social impact often manifests itself over long periods of time and requires sustained investment of resources [34].

Modern universities are actively developing specialized infrastructure to support innovation activities. Technoparks and business incubators at universities provide startups with access to office space, technical equipment, consulting services, and seed funding. These structures create a secure environment for experimenting with new ideas, reducing risks and costs at an early stage of project development. University incubators often specialize in supporting socially oriented projects by providing specific services for this segment.

Social entrepreneurship courses are becoming more common in university programs, providing students with the theoretical knowledge and practical skills to launch socially oriented projects. These courses often include case studies of successful social entrepreneurs, methodologies for measuring social impact, approaches to attracting financing and managing hybrid organizations [27].

Interdisciplinary programs combining IT, business, social sciences and other fields create unique opportunities for training specialists capable of working at the intersection of technology and social change. These programs often include hands-on projects with real-life social organizations, providing students with the experience of applying technical skills to solve specific social problems [33].

At the same time, bureaucratic procedures at universities can create significant obstacles to the rapid development of entrepreneurial initiatives. Complex procedures for approving projects, purchasing equipment, hiring staff, and using university resources often do not match the dynamic nature of startups. Long decision-making cycles can lead to a loss of market opportunities and demotivation of entrepreneurial teams.

The conservatism of the academic environment is manifested in a preference for traditional forms of scientific activity (research, publications, teaching) on entrepreneurial initiatives. The teacher evaluation and promotion system often does not take into account entrepreneurial achievements, which creates a demotivation for participation in commercial projects. The cultural distance between academic and entrepreneurial values can lead to skepticism about the commercialization of research.

The conflict between research and commercialization arises from differences in goals, time horizons, and methods of evaluating success. Academic research focuses on creating new knowledge and publishing it, while commercialization requires creating practical solutions and generating revenue. This conflict is particularly acute in social entrepreneurship, where commercial goals must be balanced with social missions.

Lack of funding is a critical barrier to the development of social IT entrepreneurship at universities. Traditional sources of university funding (government grants, research funds) are often not intended for commercial projects. Venture capital financing may not be available for early-stage social projects that demonstrate limited commercial potential. Specialized social investment funds remain relatively rare and often unavailable for university projects [35].

Limited access to markets creates additional difficulties for university social entrepreneurs. The academic environment is often isolated from real users and customers, making it difficult to validate products and find a market niche. The lack of developed links with the business community and social organizations limits opportunities for partnership and sales [35].

The lack of practical experience among students and teachers in business management, marketing, sales and other aspects of commercial activity creates significant gaps in the skills necessary for successful entrepreneurship. Academic training rarely includes practical aspects of creating and managing organizations, which requires additional training or the involvement of external expertise.

MODELS OF SOCIAL IT ENTREPRENEURSHIP DEVELOPMENT AT UNIVERSITIES

In line with the opportunities and limitations of the university environment, we will consider the main models for implementing the ideas of social IT entrepreneurship:

1) Student startups. Bottom-up initiatives represent the most organic form of social IT entrepreneurship development in the university environment. These projects arise from students' personal motivation to solve specific social problems that they face in their environment or that they deeply care about. A characteristic feature of such initiatives is a high degree of authenticity and understanding of the target audience, since students often belong to the groups for which solutions are being developed. Mentoring and support from faculty, alumni, and external experts

are critical to transform initial ideas into viable projects [10; 36; 37]. Effective mentoring programs provide not only technical guidance, but also assistance in understanding business processes, developing leadership skills, and building professional networks. Mentors from the industry bring practical experience in technology commercialization, while academic mentors provide in-depth expertise in specialized fields.

2) Research projects with social impact. The transformation of scientific research into social innovation is a strategically important model for using university intellectual capital to solve social problems. This process requires a conscious reorientation of research projects from purely academic goals to practical applications with social impact. Successful transformation involves integrating the methodologies of the participating design that ensure the involvement of end users in the technology development process. Cooperation with non-profit organizations and government agencies creates powerful synergies between university expertise and the practical needs of the social sector. NGOs provide in-depth understanding of social issues, access to target groups, and distribution channels for solutions, while government partners provide scale of impact and institutional support [38; 39; 40]. Grant funding from foundations focusing on social innovation, government programs supporting social entrepreneurship, and international development organizations provides resources to implement ambitious research projects with social impact.

3) Corporate partnerships. Joint projects with IT companies create unique opportunities for combining university innovation with corporate resources and expertise. These partnerships can take various forms, from sponsorship of student projects to the creation of joint research laboratories [41; 42]. Corporate Social Responsibility (CSR) initiatives represent a growing source of support for social IT entrepreneurship at universities. Companies are increasingly recognizing the strategic value of investing in social innovation, which not only creates a positive impact on society, but also promotes talent development, corporate reputation, and the creation of new market opportunities. CSR programs may include project

financing, provision of technical resources, mentoring, and creation of channels for commercialization of developments.

4) Educational programs. Hackathons and competitions with a social focus have become a popular tool for stimulating innovation and attracting talent to solve social problems. These events create an intense environment for creativity and collaboration, where participants work in teams to create technological prototypes in a limited time.

EXPERIENCE OF ENTREPRENEURIAL INITIATIVES OF UKRAINIAN UNIVERSITIES

Modern Ukrainian universities are actively transforming from traditional educational institutions to multifunctional centers of innovation and entrepreneurship. This evolution reflects global trends in the development of Higher Education, where educational institutions are becoming catalysts for economic growth and social change in their regions.

As part of the study, information on key entrepreneurial and innovative initiatives of leading Ukrainian universities for the period 2015-2025 was collected and systematized. The materials presented in Table 1 cover six significant projects that demonstrate different approaches to integrating entrepreneurial education and practice into the university environment. Table 1 is based on official university information, reports from international organizations, and open sources. The classification of initiatives is carried out according to the functional principle, taking into account the specifics of the Ukrainian educational context.

Table 1. Entrepreneurial initiatives of Ukrainian universities

University	Name of the initiative	Implementation form	Permanent or not	Source of funding	Direction of activity	Model of existence	Social impact
Taras Shevchenko KNU	Startup School at the Science Park	Business incubator	Permanent	University, external partners	Startup development, training	Structural division of the University	Training of entrepreneurs, innovation
Lviv Polytechnic	Tech StartUp School	Startup School, incubator	Permanent	University	Technology startups, innovations	Structural division of the University	Development of IT Entrepreneurship
Lviv Polytechnic	Startup Batyary 4.0/5.0	Curriculum + competition	Permanent (annual)	University, Lviv regional state administration	Youth entrepreneurship	Project activities	Engaging young people in innovation
Lviv Polytechnic	StartEra Platform	Crowdfunding platform	Permanent	University	Crowdfunding projects	Online platform	Support for creative projects
Ihor Sikorsky KPI	Sikorsky Challenge	Startup School	Permanent	University	Tech startups	Structural division of the University	Creating innovative products
NTU «KhPI»	Innovative business incubator	Business incubator	Permanent	USAID	Support for startups and SMEs	International project	Economic development of the region

Source: developed by the author based on official websites of universities

All the presented initiatives are permanent, which indicates the strategic positioning of universities as centers of innovative development. Especially revealing is the experience of Lviv Polytechnic with three different-format initiatives, which demonstrates an integrated approach to the development of the business ecosystem. There is a gradual transition from exclusively university funding to attracting external partners, regional authorities (Lviv regional state administration) and international donors (USAID). This indicates an increase in confidence in university initiatives and their social significance. The dominance of tech startups (83% of initiatives) highlights the role of it as a driver of social change. At the same time, the social impact of initiatives evolves from highly professional training of entrepreneurs to broad social goals: attracting young people, supporting creativity, and regional economic development.

For an in-depth study of the development of social IT entrepreneurship within national universities, a content analysis of official web resources, publications and documents of 15 leading universities in Ukraine was conducted. The research is

aimed at quantifying the intensity of use of key terms that characterize the entrepreneurial, innovative and socially responsible activities of higher education institutions. The system of analyzed terms is based on modern concepts of university entrepreneurship and social responsibility development:

Entrepreneurial block – «entrepreneurship», «startup», «business»;

Socially responsible block – «inclusivity», «sustainable development», «social»;

Technology indicator – «IT».

The study covers a representative sample of Ukrainian universities of various profiles and regional locations. The numerical values in the table reflect the frequency of mention of the corresponding terms on the official websites of universities.

Table 2. Content analysis of the development of social IT entrepreneurship in Ukrainian universities

№	University	Entrepreneurship	Startup	Business	Inclusivity	Sustainable development	Social	IT
1	Taras Shevchenko Kyiv National University	35	15	40	3	5	10	25
2	Ivan Franko Lviv National University	50	30	60	4	8	20	40
3	National University "Lviv Polytechnic"	70	50	80	5	10	20	40
4	Ihor Sikorsky Kyiv Polytechnic Institute	60	50	80	7	15	30	60
5	V. N. Karazin Kharkiv National University	50	30	60	5	7	20	30
6	Vasyl Stefanyk Carpathian National University	6	3	4	3	3	5	6
7	Yurii Fedkovych Chernivtsi National University	10	6	8	4	5	6	5
8	National University "Kyiv-Mohyla Academy"	15	7	10	5	6	6	7
9	Ilya Mechnikov Odessa National University	8	0	15	1	2	20	3
10	National University of Bioresources and nature management	25	20	30	3	15	10	8
11	Uzhhorod National University	15	10	20	5	25	15	8
12	Oles Gonchar Dnipro National University	1	2	4	0	3	1	0
13	Sumy State University	7	8	6	0	0	1	0
14	West Ukrainian National University	8	0	6	1	10	1	0
15	Lesya Ukrainka Volyn National University	0	0	0	0	0	0	2

Source: developed by the author based on official websites of universities

The study revealed a significant differentiation in the level of development of entrepreneurial and socially responsible activities among Ukrainian universities. There is a polarization between leading technical universities and regional educational institutions. The term «business» has the highest frequency of mentions (total: 383), which indicates the predominance of traditional commercial approaches over innovative startup models (total for «startup»: 231). This indicates a certain conservatism of entrepreneurial thinking in Ukrainian universities. Low indicators for the term «entrepreneurship» (total amount: 360) compared to «business» indicate a lack of consistency in the introduction of entrepreneurial education as a separate academic direction. The total number of mentions of the term «IT» is 279, which is a relatively low figure for the digitalization era. The situation is particularly critical in regional universities, where the IT component is practically absent. More than 60% of all IT mentions occur at 4 universities, which indicates an excessive concentration of technological resources.

The term «inclusivity» has the lowest rates among all categories (total: 46). This indicates the insufficient development of inclusive practices in higher education in Ukraine. Despite the global importance of the Sustainable Development Goals, their integration into the activities of Ukrainian universities remains formal (total number of mentions: 107). The high values of the term «social» (total: 135) do not correlate with specific indicators of inclusivity and sustainability, which indicates a traditional, rather than innovative, understanding of social responsibility.

In general, none of the universities demonstrates a balanced development of all three blocks (entrepreneurial, social, technological), which indicates the fragmentation of the approaches used.

STRATEGIES FOR THE DEVELOPMENT OF SOCIAL IT ENTREPRENEURSHIP IN THE UNIVERSITY ENVIRONMENT

Effective development of social IT entrepreneurship in a university environment requires a systematic approach that encompasses institutional change, program innovation, and individual competence development. The successful implementation of these strategies depends on coordinated efforts at all levels of the educational ecosystem and active interaction with external partners at the institutional, program and individual levels.

1. At the institutional level:

1.1. The creation of specialized centers and programs is a fundamental step towards the institutionalization of social entrepreneurship in the university environment. Specialized centers for social entrepreneurship should function as integrating platforms that combine research, educational, and practical activities [43]. These centers should provide incubation services for student projects, including access to office space, technical equipment, legal and accounting support. It is critically important to have permanent funding for the centers through diversified sources - the university budget, government grants, private donations, and income from successful projects.

1.2. The integration of social entrepreneurship into curricula requires systemic changes in academic programs of various specialties. For technical specialties, it is necessary to introduce mandatory courses on social responsibility in IT, ethics of artificial intelligence and technologies for social benefit. Economic programs should include courses in social entrepreneurship, impact investing, and social impact measurement. Humanities majors need courses on digital literacy and understanding the possibilities of technology to solve social problems [44]. It is especially important to create interdisciplinary programs that bring together students of various specialties in project teams. These programs should model the actual practice of social entrepreneurship, where success depends on the integration of technical, business and social competencies. Evaluation in such

programs should be based not only on academic achievements, but also on the real social impact of the projects.

1.3. The incentive system for teachers and students should recognize and reward participation in social entrepreneurship. For teachers, this may include crediting socially oriented projects when evaluating research activities, opportunities to receive additional funding for social research, and recognition of mentoring student social projects in the career advancement system [44]. For students, the incentive system should include scholarships for participants in social projects, academic credit opportunities for work in social startups, and special awards for achievements in the field of social impact. Universities should create mechanisms for converting student projects into official spin-offs while maintaining links with their alma mater.

1.4. Networking between universities should facilitate the exchange of best practices, joint research, and mobility of students and faculty in the field of social entrepreneurship [45]. The creation of national and international university consortia specializing in social entrepreneurship will help coordinate efforts and avoid duplication. Such networks should develop common standards of education in the field of social entrepreneurship, create joint online courses and platforms for the exchange of student projects.

1.5. Alliances with businesses and NGOs should create mutually beneficial relationships where all parties receive value from cooperation. Corporate partners can provide not only financing, but also access to technology, expertise, and markets. Corporate volunteering programs can involve company employees in mentoring student projects, transferring practical skills and industry knowledge [46]. NGOs should act as sources of problematic statements and channels for implementing solutions. Partnerships with social organizations should be structured as long-term relationships rather than one-off projects. This requires the creation of formal agreements that define mutual obligations, intellectual property, and conflict resolution mechanisms.

2. At the program level:

2.1. Practice-oriented learning should become the basis of educational programs in the field of social entrepreneurship. The traditional lecture model is not suitable for developing entrepreneurial skills that require practical application and iterative learning [47]. Challenge-based learning approaches should put students in front of real social problems and require the development of workable solutions.

2.2. Interdisciplinary courses and projects should overcome the traditional boundaries between faculties and specialties. Social problems are complex in nature and require the integration of knowledge from various fields. The courses should bring together students of technical, economic, social and humanitarian specialties in project teams. The structure of such courses should model the actual practice of social entrepreneurship [48]. Software engineering students should understand the social context of their developments, sociology students should understand the possibilities and limitations of technology, and economics students should understand the specifics of social investment and impact measurement.

3. On an individual level:

3.1. Development of entrepreneurial skills for specific adaptation of the social context. Traditional business education focuses on maximizing profits and growth, while social entrepreneurship requires a balance between social impact and financial sustainability [33]. Students should study specific business models for social enterprises, including B-corp structures, social franchising, and blended financing.

3.2. Social empathy and understanding of problems are fundamental for effective social entrepreneurship. Students should develop a deep understanding of social issues that goes beyond surface-level symptoms [49]. This requires direct exposure to target communities through fieldwork, volunteering, and participatory research. Systems thinking skills should help students understand the complex interrelationships between various social problems and avoid solutions that solve one problem but create others.

3.3. Technological literacy for social entrepreneurship should go beyond traditional programming skills and include an understanding of the social consequences of technological solutions [50]. Students should understand the principles of inclusive design, accessibility, and universal design, which ensure that technologies are accessible to users with different abilities and limitations.

3.4. Teamwork and communication skills are especially important in social entrepreneurship due to the need for coordination between different stakeholders with different backgrounds and interests [51]. Cross-cultural communication skills are required to work in the global social entrepreneurship ecosystem. Students should be able to adapt their communication to a variety of audiences, including technical teams, social workers, government officials, investors, and end users.

CONCLUSIONS

The conducted research revealed the paradoxical nature of the university environment as a catalyst for social IT entrepreneurship. Higher education institutions have unique advantages – concentration of intellectual capital, interdisciplinary capabilities, ethical orientation and research potential, but at the same time they face serious barriers in the form of bureaucratic restrictions, conservative academic culture and lack of commercial expertise.

The analysis of the Ukrainian experience has demonstrated the fragmented nature of approaches to the development of social entrepreneurship: the dominance of traditional business models over innovative startup solutions, the concentration of IT resources in leading universities, and insufficient integration of the principles of inclusivity and sustainable development. This indicates the need for systemic changes in university entrepreneurship development strategies.

The proposed three-level development strategy provides for the creation of an institutional support infrastructure, the introduction of interdisciplinary educational programs and the formation of specialized competencies. Successful implementation requires coordinated efforts at all levels of the educational

ecosystem and active interaction with external partners to overcome the traditional isolation of the academic environment from the practical needs of society.

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