Non-profit Joint-stack Company
Abylkas Saginov Karaganda Technical University

Report on the Current Status of the Center of Sustainable Development Regarding Risk Management for 2025

Karaganda 2026

Contents

1. Analysis of changing the macroenvironment factors

In assessing macroenvironment factors, the PEST-analysis has been expanded to the PESTEL-analysis, incorporating stakeholder identification and engaging representatives of the key stakeholders to determine the impact of macroenvironment factors on the realization of potential risks within the Company. In this context, the Company has identified the following groups of factors that exert a potential impact on its operations.

1. Political and legal factors

- Government regulation of the higher education system (Ministry of Science and Higher Education of the Republic of Kazakhstan, government acts, Presidential Decrees, and resolutions).
- Changes to the regulatory framework, including: standards for educational programs; mechanisms for transformation into research universities; integration of ESG principles into higher education institutions; and requirements for digitalization of core university processes.
- Licensing and accreditation policy: institutional and specialized accreditation; requirements regarding academic integrity and quality management.
- Visa policy and international academic mobility: access for foreign faculty and students; support for dual-degree initiatives and international internships.
- State and grant-based funding: grants for tuition, research projects, and startups; funding policies for applied research and R&D.
- Government regulation of competition within the sphere of higher and postgraduate education.

2. Economic factors

- The purchasing power of potential consumers of higher and postgraduate education services.
- Inflationary processes affecting the cost of educational services and purchasing power.
- Development dynamics within industrial sectors and the need to cultivate new competencies.
- Labor market conditions and transition to the digital and "green" economy.
- Competition from the other universities in Kazakhstan and the CIS, as well as from online platforms.
- Currency fluctuations and dependence on imports for equipment and scientific instrumentation.
- Availability of grants, venture capital, and private funding for university-based startups.

3. Social and demographic factors

- A decline in the number of school graduates in several regions (impact on admissions).
- Educational migration of young people to major metropolitan areas and abroad.
- The teaching staff outflow and the aging of the professoriate.
- The social status of educators, salary levels, and support programs for high-potential (HiPo) employees.
- Value shifts among Generations Z and Alpha: expectations regarding flexibility, career trajectories, and social impact.
- The influence of media, digital platforms, and social networks on the perception of the university brand.
- The role of parents and families in the choice of a higher education institution and educational trajectory.

4. Scientific and technological factors

- Accelerated technological transformation under Industry 4.0: requirements for digital and engineering competencies.
- Integration of higher education institutions into R&D value chains with industrial partners.
- Commercialization of research through startups, technology parks, and technology transfer.
- International scientific cooperation: Horizon Europe, Erasmus+, PRIMA, and the other programs.
- Digitalization of the educational process: LMS, AI in education, and AR/VR technologies.
- Institutional capacity for generating scientific output (citation indices, publications in Scopus/WoS).

5. Ecological factors

- Sustainability (ESG) expectations: building energy efficiency, waste management, and green campuses.
- The regional industry transition to a low-carbon economy: shifting the profile of specialist training.
- The impact of the regional environmental situation on the university image and student health.

6. Cultural and ethical factors

- Intercultural communication and the internationalization of education.
- The growing importance of academic and scientific ethics.
- Traditional cultural norms and their influence on teaching content and methodology.
- Anti-corruption culture.

1.1 Newly identified macroenvironment factors

Group of the macroenvironment factors	Risk factor	Risk type	Risk description
Political and legal factors			
Risk of reducing the University income	Decreasing the contingent Decreasing the effectiveness of research and development and business contractual activities	financial	Reducing the income can be caused by a reduction in government funding, a decrease in the number of students, low levels of grants and paid educational services, a reduction in income from scientific, innovative and commercial projects, and insufficient activity in fundraising and external partnerships.
Economic factors			
Risk of decreasing the number of students enrolled in additional education programs	Increasing the tuition fees. Competitors' underpricing of courses. Low purchasing power. Competition in the provision of informal educational services.	academic	Decreasing the number of students enrolled in supplementary education programs due to changes in the pricing policy for the provision of services
Social and demographic factors			
Risk of declining the number of students graduating from vocational education	Academic conditions do not fully meet students' expectations	strategic	Declining the number of students who completed studies in the programs of all the levels

and training programs, bachelor's, master's and doctoral programs			
Scientific and technological factors			
Risk of declining the quality of students' practical skills	Weak partnerships with enterprises	academic	Declining students' practical skills
Risk of declining the focus of scientific research on the needs of industry and business	Lack of sustainable cooperation between specialized departments and industrial enterprises	academic	Lack of demand for scientific results from industry and business
Risk of declining the international collaborations and publication activity of the university's faculty	Weak partnerships with foreign universities	academic	Declining the number of international collaborations and joint publications between the University faculty and international scientists
Risk of obsolescence of the material and technical base and its inadequacy for conducting research focused on the needs of modern industries	Reduction in funding and sponsorship of departments by enterprises	financial	Lack of modern digital equipment for scientific research; the scientific infrastructure does not meet modern research requirements.
Ecological factors			
-	-	-	-
Cultural and ethical factors			
Risk of decreased student engagement in social and educational activities	Forced involvement of students in social and educational activities (for quantitative purposes)	strategic	Lack of motivation among students to engage in social and educational activities due to a lack of confidence in the goals and effectiveness of such activities.
Risk of administrative, corruption, and criminal violations by students and staff	Low level of anti-corruption and legal awareness among students and staff	legal	Potential misconduct by students and staff

1.2 PESTEL-analysis of the macroenvironment factors on the risk occurrence

Groups of factors	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	**Total value of the factor impact Ri=I*L/2**
Total stakeholder importance (D = X(support) + Y(impact)):	10	8	8	6	6	6	5	5	6	5	6	5	9		10	8	8	6	6	6	5	5	6	5	6	5	9		
	Factor impact														**Probability of the factor changing**														
1. Political and legal factors														4.3														3.4	3.90
Government regulation of the higher education system (Ministry of Higher Education of the Republic of Kazakhstan, government regulations, presidential decrees, and resolutions).	5	5	5	5	5	4	4	4	4	4	5	5	5	4.6	5	4	5	4	1	3	3	4	4	2	5	3	3	3.5	4.08
Changes in the regulatory framework, including: standards for educational programs; mechanisms for transformation into research universities; implementation of ESG principles in higher education institutions; requirements for digitalization of the core University processes.	5	5	5	5	5	4	4	4	5	4	5	5	5	4.7	3	3	5	4	2	4	3	4	4	3	5	4	3	3.6	4.15

Groups of factors	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	**Total value of the factor impact Ri=I*L/2**
Total stakeholder importance (D = X(support) + Y(impact)):	10	8	8	6	6	6	5	5	6	5	6	5	9		10	8	8	6	6	6	5	5	6	5	6	5	9		
	Factor impact														**Probability of the factor changing**														
Licensing and accreditation policy: institutional and specialized accreditation; requirements for academic integrity and quality management.	5	5	3	5	5	4	4	4	4	4	4	5	4	4.3	3	3	3	4	2	3	3	4	3	3	3	4	4	3.2	3.77
Visa policy and international academic mobility: access for international faculty and students; support for dual degree initiatives and international internships.	4	4	3	4	4	4	4	4	5	3	5	5	4	4.1	3	4	4	4	2	3	3	4	3	3	4	4	3	3.4	3.73
Government and grant funding: grants for training, research projects, and startups; funding policy for applied research and R&D.	4	4	3	4	5	4	4	4	5	4	5	5	4	4.2	3	3	3	4	3	4	3	4	4	4	5	4	3	3.6	3.92

Groups of factors	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	**Total value of the factor impact Ri=I*L/2**
Total stakeholder importance (D = X(support) + Y(impact)):	10	8	8	6	6	6	5	5	6	5	6	5	9		10	8	8	6	6	6	5	5	6	5	6	5	9		
	Factor impact														**Probability of the factor changing**														
Government regulation of competition in higher and postgraduate education.	4	4	3	4	5	4	4	4	5	3	5	5	4	4.2	3	3	3	4	3	3	3	4	4	2	4	4	3	3.3	3.73
2. Economic factors														4.0														4.0	3.98
Purchasing power of potential consumers of higher and postgraduate education services.	4	4	5	4	4	4	4	4	5	4	4	4	4	4.2	4	4	5	4	4	4	4	4	4	5	5	4	4	4.2	4.19
Inflationary processes affecting the cost of educational services and purchasing power.	4	4	5	4	4	4	4	4	3	5	5	5	5	4.3	3	4	5	5	5	4	4	4	3	5	5	5	4	4.3	4.31
Industrial development dynamics and the need to develop new competencies.	4	3	5	4	5	4	4	4	4	2	5	5	4	4.1	3	3	5	4	5	4	4	4	4	2	4	5	5	4.0	4.04
Labor market conditions and the transition to a digital and green economy.	3	3	4	4	5	4	4	4	4	2	2	5	4	3.7	3	3	5	4	5	4	4	4	4	2	1	4	4	3.6	3.65
Competition from other universities in	3	4	5	4	5	4	4	4	4	3	5	4	5	4.2	3	4	5	4	4	4	4	4	4	4	3	5	4	4.0	4.08

Groups of factors	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	**Total value of the factor impact Ri=I*L/2**
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	Factor impact														**Probability of the factor changing**														
Kazakhstan, the CIS, and online platforms.																													
Currency fluctuations and dependence on imports for equipment and scientific technology.	3	4	2	4	4	4	4	4	2	4	4	4	5	3.7	3	4	4	4	5	4	4	4	3	5	5	4	4	4.1	3.88
Availability of grants, venture capital, and private funding for the University startups.	4	4	3	4	5	4	4	4	2	2	5	4	5	3.8	3	4	4	4	4	4	4	4	2	2	5	4	3	3.6	3.73
3. Social and demographic factors														4.1														3.8	3.95
Declining numbers of high school graduates in some regions (impact on admissions).	5	4	5	4	4	4	4	4	5	2	5	5	4	4.2	5	4	5	4	5	4	3	4	4	1	5	5	5	4.2	4.19
Educational migration of young people to large cities and abroad.	4	4	5	4	4	4	4	4	5	4	5	5	5	4.4	4	4	5	4	5	3	3	4	5	2	5	5	5	4.2	4.27
Faculty attrition and aging of the faculty.	4	5	4	4	4	4	4	4	5	5	5	5	3	4.3	3	5	5	4	4	4	4	4	4	2	5	5	3	4.0	4.15

Groups of factors	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	**Total value of the factor impact Ri=I*L/2**
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	Factor impact														**Probability of the factor changing**														
Faculty social status, salary levels, and support programs for HIPO employees.	4	5	5	4	4	4	4	4	4	2	5	5	4	4.2	3	5	5	4	5	4	3	4	3	1	2	5	5	3.8	3.96
Value shifts in Generations Z and Alpha: expectations of flexibility, career trajectory, and social contribution.	3	3	3	4	5	4	4	4	4	4	2	4	3	3.6	3	3	4	4	4	4	3	4	3	3	3	5	4	3.6	3.62
The impact of media, digital platforms, and social media on the University brand perception.	3	4	5	4	5	4	3	4	4	3	3	5	4	3.9	3	4	5	4	5	4	4	4	3	2	2	5	3	3.7	3.81
The role of parents and families in choosing a university and educational trajectory.	3	3	5	4	4	4	4	4	5	4	5	4	4	4.1	3	3	5	3	5	4	3	4	3	2	1	3	3	3.2	3.65
4. Scientific and technological factors														4.2														3.8	4.01
Accelerated technological transformation of	5	4	5	4	5	4	4	4	5	3	5	5	4	4.4	5	4	5	4	5	4	3	4	3	2	5	5	5	4.2	4.27

Groups of factors	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	**Total value of the factor impact Ri=I*L/2**
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	Factor impact														**Probability of the factor changing**														
Industry 4.0 – requirements for digital and engineering competencies.																													
Integration of the University into R&D chains with industrial partners.	5	4	5	4	5	4	4	4	4	3	5	4	5	4.3	4	4	5	4	5	4	3	4	3	1	5	5	5	4.0	4.15
Research capitalization through startups, technology parks, and technology transfer.	5	4	5	4	5	4	4	4	4	2	4	4	4	4.1	3	4	5	4	5	4	3	4	4	1	3	5	5	3.8	3.96
International scientific cooperation, Horizon Europe, Erasmus+, PRIMA, and other programs.	5	3	4	4	5	4	4	4	5	3	5	4	4	4.2	3	3	5	4	5	4	3	4	4	2	2	4	4	3.6	3.88
Digitalization of the educational process: LMS, AI in learning, AR/VR technologies.	4	3	5	4	5	4	4	4	5	4	2	4	4	4.0	3	3	5	4	5	4	3	4	4	2	4	5	4	3.8	3.92
Institutional capacity to generate scientific output (citation indices,	5	3	3	4	5	4	4	4	5	3	5	5	3	4.1	3	3	3	4	5	4	3	4	4	1	3	5	5	3.6	3.85

Groups of factors	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	**Total value of the factor impact Ri=I*L/2**
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	Factor impact														**Probability of the factor changing**														
publications in Scopus/WoS).																													
5. Ecological factors														3.7														3.9	3.81
Expectations from achieving Sustainable Development Goals (ESG): energy efficiency of buildings; waste management; green campuses.	3	5	5	4	5	4	3	4	5	2	2	5	4	3.9	4	5	5	4	5	4	3	4	5	2	3	5	4	4.1	4.00
The transition of the region industry to a low-carbon economy is changing the profile of specialist training.	3	5	4	3	5	4	3	4	4	1	1	5	3	3.5	4	5	5	4	5	4	3	4	5	2	3	4	3	3.9	3.69
The impact of the region environmental situation on the university's image and student health.	3	5	4	4	5	4	3	4	4	2	2	4	3	3.6	4	5	4	4	5	4	3	4	4	2	2	5	4	3.8	3.73
6. Cultural and ethical factors														4.0														3.7	3.85

Groups of factors	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	RK MSHE	CU enterprises and the other employers	Teaching staff	AMP, EAP and other employees	Trade union of the staff and employees of the University	Students (bachelor's degree)	Master's students	Doctoral students	Consumer of services in the field of R&D	Governmental bodies that conduct scheduled inspections of activities	Potential investors	Local executive bodies	Government, state bodies, Parliament, Maslihats	**Average value of the factor impact**	**Total value of the factor impact Ri=I*L/2**
Total stakeholder importance (D = X(support) + Y(impact)):	10	8	8	6	6	6	5	5	6	5	6	5	9		10	8	8	6	6	6	5	5	6	5	6	5	9		
	Factor impact														**Probability of the factor changing**														
Intercultural communication and internationalization of education.	3	5	5	4	4	4	4	4	3	4	5	4	5	4.2	3	4	5	4	5	3	3	4	5	2	4	3	4	3.8	3.96
The growing importance of academic and scientific ethics.	4	5	5	4	5	4	3	4	4	4	5	5	5	4.4	3	3	5	4	5	3	3	4	5	1	4	4	4	3.7	4.04
Traditional cultural norms and their impact on teaching content and methods.	3	5	3	4	4	4	3	4	4	2	1	4	5	3.5	3	2	4	4	5	3	3	4	5	2	3	5	3	3.5	3.54
Anti-corruption culture	4	2	5	4	5	4	4	4	4	4	5	5	5	4.2	3	4	5	4	5	3	3	4	3	2	2	5	3	3.5	3.88

Based on the results of an expert survey, the degree of each factor impact on the Company operations was determined using the following scales:

1. The impact of each factor on a scale of 1 to 5 (where 1 represents minimal influence, and 5 represents maximal influence).

2. The likelihood of change for each factor on a three-point scale (where 0 indicates the factor will cease to exist in the future; 1 indicates the factor will remain unchanged in the near term; and 2 indicates the factor will intensify in the near term).

Fourteen experts who represent stakeholder groups with a high significance rating ($D \geq 5$) were engaged to conduct this assessment. Additionally, for stakeholders classified as students, the average values derived from survey responses were utilized (based on aggregate data from 19 undergraduate students, 72 master's students, and 55 doctoral students).

Based on the weighted average value ($N_{avg} \geq 3.8$) calculated for each factor and taking into account the projected changes, the Final PESTEL Analysis Matrix was compiled, featuring a ranked list of factors within the macroeconomic environment.

Political and legal		Economic	
Changes to the regulatory framework, including: standards for educational programs; mechanisms for transformation into research universities; implementation of ESG principles in higher education institutions; requirements for the digitalization of key university processes.	4,15	Inflationary processes affecting the cost of educational services and purchasing power	4,31
State regulation of the higher education system (Ministry of Higher Education of the Republic of Kazakhstan, government regulations, presidential decrees, and resolutions).	4,08	Purchasing power of potential consumers of higher and postgraduate education services	4,19
State and grant funding: grants for training, research projects, and startups; funding policy for applied research and R&D.	3,92	Competition from other universities in Kazakhstan, the CIS, and online platforms	4,08
		Industrial development dynamics and the need to develop new competencies	4,04
		Currency fluctuations and import dependence on equipment and scientific technology	3,88
Social and demographic		**Scientific and technological**	
Educational migration of young people to large cities and abroad	4,27	Accelerated technological transformation of Industry 4.0 – requirements for digital and engineering competencies	4,27
Declining numbers of high school graduates in some regions (impact on admissions)	4,19	Integration of universities into R&D chains with industrial partners.	4,15
Faculty attrition and aging faculty	4,15	Research capitalization through startups, technology parks, and technology transfer	3,96
Faculty status, salary levels, and support programs for HIPO employees	3,96	Digitalization of the educational process: LMS, AI in learning, AR/VR technologies	3,92
The influence of media, digital platforms, and social media on university brand perception	3,81	Institutional capacity to generate scientific output (citation indices, publications in Scopus/WoS)	3,85
		International scientific cooperation, Horizon Europe, Erasmus+, PRIMA, and other programs	3,88
Ecological		**Cultural and ethical**	
Expectations for Sustainable Development (ESG): energy efficiency of buildings; waste management; green campuses	4,0	Growing importance of academic and scientific ethics	4,04
		Intercultural communication and the internationalization of education	3,96
		Anti-corruption culture	3,88

Based on the results of the analysis, scientific and technological factors were identified as the most significant risk-generating factors within the macro-environment (average rank: 4.01); the correlation between macroenvironment factors and specific potential risks was established, and the risk taxonomy was updated to define specific risk factor groups for subsequent engagement with risk owners.

2. Analysis of changing the Stakeholder Map

2.1 Amendments to the Stakeholder Map, including the reasons for amending

In identifying and engaging with stakeholders, the University adheres to international standards for stakeholder identification and engagement: specifically, the AA1000 series (including the Accountability Principles Standard 2008 and the AA1000 Stakeholder Engagement Standard 2011), ISO 26000 (Guidance on Social Responsibility), and the GRI (Global Reporting Initiative).

The Stakeholder Map approved as part of the Risk Portfolio (Board of Directors Resolution dated September 10, 2025, Minutes No. 7) accurately reflects the most pertinent relationships with stakeholders and aligns with the aforementioned principles; consequently, no amendments have been made to it.2.2.

2.2 Stakeholder Map

Stakeholders	Contribution, impact	Expectations, interest	Interaction level	Interaction methods
Direct stakeholders				
Sole Stakeholder (RK Ministry of Science and Higher Education)	Implementation of the Sole Shareholder's powers as provided for in the laws of the Republic of Kazakhstan and the Company's Charter	Ensuring the quality of services in higher and postgraduate education, promoting university science, and strengthening the university brand Increasing the tertiary education level of the population Improving the quality of scientific research Commercialization of the Russian Scientific and Technical Development Fund Increasing revenue from scientific research	Delegation of authority Coordination of activities Bilateral cooperation; joint development of experience and knowledge, decision-making and action Grant funding PCF	Multi-stakeholder forums; Consultation panels Integration of stakeholder engagement into governance, strategy, and operations. Reporting information
Enterprises of Corporate University and the other employers	Upgrading the university's facilities, organizing internships for faculty, engaging leading specialists in the design and evaluation of educational programs, and conducting classes	Specialists possessing competencies in demand by a specific enterprise Obtaining relevant research results for their subsequent commercialization and/or practical implementation Participation in professional events and recognition of the role of stakeholders	Negotiations and cooperation in the field of educational program design; Implementation of joint educational and research activities. Human resource development activities	Collective bargaining based on social partnership principles
Teaching staff	Human resources, high-quality teaching, loyalty, and a strong corporate culture	High wages, good working conditions, social stability, professional development, and	Multifaceted collaboration; building experience and	Shared decision-making process; focus groups; feedback schemes

Stakeholders	Contribution, impact	Expectations, interest	Interaction level	Interaction methods
		recognition of professional qualifications	knowledge across all stakeholders. Operational collaboration	
Administrative and managerial staff, educational support staff and other university employees	Ensuring the University operations through the availability of relevant competencies, support, and implementation of management decisions	High wages, good working conditions, social stability, professional development, and recognition of professional qualifications, and incentives	Multifaceted collaboration; building experience and knowledge across all stakeholders. Operational collaboration Talent management HIPO employee support	Shared decision-making process; focus groups; feedback schemes
Trade Union of the teaching staff and employees	Promoting social stability, regulating labor relations, and resolving conflicts. Promoting the development of scientific schools, conducting research, and commercializing R&D results..	Respect for workers' rights, good working conditions Social recognition, professional development programs for employees	Multilateral cooperation on issues of ensuring workers' rights and social guarantees	Collaborative decision-making process Collective bargaining
Consumers of educational services STUDENTS (bachelor's degree)	Financial resources: - government grants; - self-funding for tuition; Support for the development of the university after graduation, including donations to the endowment fund.	Obtaining a high-quality education, guaranteed employment, postgraduate support Opportunity to build social connections for the future Opportunity to gain organizational experience Opportunity to launch a startup	Multilateral cooperation; building experience and knowledge on all sides. Operational cooperation	The learning process Social programs Consultations Feedback schemes
Consumers of educational services MASTER STUDENTS	- government grants; - self-funding for tuition; Support for the development of the university after graduation, including donations to the endowment fund. Potential employees.	Obtaining a high-quality postgraduate education, guaranteed employment, and career advancement	Multilateral cooperation; building experience and knowledge on all sides. Operational cooperation	The learning process Consultations Organization of research Management Publication activity Feedback schemes
Consumers of educational services DOCTORAL STUDENTS	- ποvernment grants; - euition reimbursement; Assistance in the development of the university after graduation, including donations to the endowment fund. Potential employees. Assistance in the development of scientific schools, research, and the commercialization of R&D results.	Obtaining a high-quality postgraduate education Implementation and funding of scientific initiatives Guaranteed employment Carrier advancement	Multilateral cooperation; building experience and knowledge on all sides. Operational cooperation	The learning process Consultations Organization of research Management and funding Publication activity Feedback schemes

Stakeholders	Contribution, impact	Expectations, interest	Interaction level	Interaction methods
Applicants and their families	– Formation of a first-year student body – Increasing the University income – Attracting potential students through existing social connections	Obtaining a high-quality education In-demand in the labor market Prestige of the diploma Social support	Multilateral cooperation; building experience and knowledge on all sides. Operational cooperation	Carrier guidance Regular meetings Feedback schemes
Consumers of additional education services	– Increasing the University income – Creating a positive image of the university – Attracting new consumers of continuing education services	Development of new skills and competencies Certified courses Development of long-term cooperation Development of long-term cooperation Recognition of the skills acquired	Multilateral cooperation Operational cooperation	The learning process Consultations Development of long-term continuing education programs within the framework of continuous education
Consumers of services in the sphere of research, expertise and consulting	Financial resources, material and technical resources, and finding new ideas and avenues for collaboration	Obtaining relevant research results for subsequent commercialization and/or practical implementation	Bilateral or multilateral interaction; joint development of experience and knowledge, decision-making and action	Joint projects, joint ventures; partnership; joint initiatives of stakeholders
Editorial boards and editorial offices of scientific journals	Reviewing and publishing scientific articles	Developing a pool of authors with a high citation index High-quality publications	Bilateral or multilateral interaction	Preparation of articles for publication Publication of scientific articles
Government agencies carrying out scheduled inspections of activities, accreditation, rating, and audit agencies	Verification of compliance of activities with current regulations and standards	Improving the quality of the OHPE functioning and implementing recommendations	Bilateral or multilateral interaction; joint development of experience and knowledge, decision-making and action	Planned and unscheduled audits, self-reporting
Indirect stakeholders				
Potential investors	Financial resources (equity), including the formation of an endowment fund Investments in the creation of student and faculty start-ups Co-financing of scientific research	Return on investment Development of a talent pool for enterprise employees Modernization of production facilities through the implementation of R&D	Bilateral or multilateral interaction; joint development of experience and knowledge, decision-making and action	Joint projects and partnership
Local executive bodies	Support at the location of operations; loyalty and support of local	Providing additional working places, development of the region	Bilateral or multilateral interaction; joint development	Joint projects, joint ventures; partnership; joint initiatives of stakeholders

Stakeholders	Contribution, impact	Expectations, interest	Interaction level	Interaction methods
	authorities; favorable attitude; cooperation Financial resources Tuition grants Scholarships for talented students		of experience and knowledge, decision-making, and action.	
Local communities, population in the areas where activities are carried out, NSOs	Building a positive image and supporting initiatives	Social welfare Working places Quality education	Implementation of the University Third mission	Support and implementation of social-economic initiative in the region
Suppliers of potential student population[6]	Attracting applicants focused on studying at the university	Implementing the Lifelong learning, developing human resources	Bilateral or multilateral interaction	Career guidance Strengthening human resources
Suppliers of material-technical resources and services	Supplying resources (goods, works, and services) for the university's logistical support Providing discounts and samples Sponsorship and marketing recognition	A reliable sales market, a regular, solvent customer	Bilateral or multilateral cooperation	Concluding contracts Purchasing resources
Government, government bodies, Parliament, Maslihats	Government regulation Involving students in paid events	Taxes, addressing social issues Ensuring socio-political stability Training personnel in various areas of Kazakhstan development	Granting authority Bilateral cooperation University participation in CGS events without payment	Integrating stakeholder engagement into management, strategy, and operations Participation in government procurement (directly and indirectly for event organization)

3. Results of reassessment of the key risks based on the monitoring outcomes

3.1. Documenting Risks

Based on the results of the analysis of realized risks for 2025, the following risks of the Company have been documented. According to the reassessment conducted, the realization of key risks resulted in a one-level increase in the probability of occurrence for each risk (+1 relative to the previously established rating). Consequently, the Risk Register and the Risk Map have been revised.

Risk identification				Risk assessment			Risk minimization	
Risk name	**Risk description**	**Risk factor (reason)**	**Consequences of risk realization**	**Damage from risk**	**Risk probability**	**Risk assessment**	**Measures to minimize risks**	**Responsibility and deadlines**
Risk of decreasing the number of the teaching recognized professionalsов *Consolidated non-key risk*	Decreasing the number of highly qualified and authoritative teachers	Insufficient number of awards, academic degrees, and titles received Low motivation to participate in industry competitions, scientific research, and acceleration programs	Underachievement of KPI by Chairman of the Management Board, Rector and Member of the Management Board, Vice Rector for Academic Affairs in Q1 2025 by 20% (80% of the planned awards were achieved; 8 of the 10 planned awards were received) The risk was mitigated by the end of 2025: the number of awards, academic degrees, and titles received was exceeded.	insufficient	medium	low	1. Monitoring the achievements of the University faculty: 1) Strengthening the oversight of providing information of received awards, certificates, and other achievements of the faculty. 2) Monitoring the expiration dates of faculty awards received. • Determining the list of faculty members who have not received an award in the last 5 years. • Reviewing achievements for applications for awards and commendations. 3) Consulting and supporting faculty on participation in industry competitions and support programs. 2. Strengthening oversight of the deadlines for defending doctoral fellows who are university employees: 1) Strengthened oversight of the implementation of individual plans. • Regular monitoring of doctoral fellows' progress. • Maintaining interim reports (sixfold).	Vice-Rector for Academic Affairs, monitoring quarterly.

							2) Monitoring the timely fulfillment of doctoral fellows' publication plans. • Monitoring deadlines for preparing and submitting articles. • Providing methodological and editorial support for academic writing. 3) Consulting and support.	
Risk of downgrading in the QS international rankings *Consolidated, key risk*	The University ranking in the QS World University Rankings has declined due to a deterioration in key indicators: academic reputation, scientific publications, citations, international activity, etc.	Changes to the QS ranking methodology (adding new indicators), increasing the number of international participants in the ranking	**Consequences:** 1. Failure to achieve the Rector and Vice-Rector's KPI for the SRC: "Ensuring strengthening of position in the international QS ranking to 651+ by 2029" (quarterly plan: 801+, quarterly actual: 951+). **Possible consequences:** 1. Weakening of the University international visibility. 2. Decreased interest from certain categories of international students and partners. Limited visibility of educational programs.	medium	medium-high	high	1. Analysis of the university's competitive position in QS 2. Inclusion of QS-related KPIs in the performance assessment system for deans and department heads 3. Development of a matrix of the University strategic initiatives alignment with the key QS indicators	Vice Rector for Strategic Development and Internationalization Terms: full-time, with annual performance evaluation.
Risk of lacking the growth in additional income for faculty from various types of academic activities *Consolidated non-key risk*	Lack of or insufficient growth in the income of faculty members through participation in research projects, grants, publication activity, paid educational services, and the other academic activities.	Low motivation of the teaching staff to participate in advanced training programs, language courses, and development of digital educational resources	**Consequences:** 1. Underachievement of the KPI of the Member of the Management Board - Vice-Rector for Academic Affairs in Q2 2025 by 12.5% (the volume was fulfilled - 87.5%): "Increase the income of the teaching staff (CORE, advanced training, personal protective equipment, language courses, IELTS, personal scholarships) from 3,200 thousand tenge/person in 2024 to 6,000 thousand	medium	medium	medium-high	Improving the motivation program and KPI accounting 1. Strengthening differentiated incentive packages, including for rewarding high-performing employees (adoption of the Regulation on the Comprehensive Development Program, revision of the criteria for differentiated pay for faculty). 2. Compiling a list of continuing education courses for the upcoming academic period. 3. Increasing the hourly rate for faculty work as part of the hourly	Vice-Rector for Academic Affairs, monitoring quarterly

			tenge/person by 2026" (planned quarter: 1,500 thousand tenge/person, actual quarter: 1,311 thousand tenge/person). 2. Underachievement of the KPI of the Member of the Management Board - Vice-Rector for Academic Affairs in Q3. 2025 by 87.02% (volume completed - 12.98%) "Increase the income of the teaching staff (CORE, advanced training, personal protective equipment, language courses, IELTS, personal scholarships) from 3,200 thousand tenge/person in 2024 to 6,000 thousand tenge/person by 2026" (planned quarter: 200 thousand tenge/person, actual quarter: 25.96 thousand tenge/person) **Possible consequences:** Reduced motivation among faculty to participate in research, methodological, project, and grant work. Rejection of additional workload or activities beyond their core responsibilities.				pay for advanced training courses.	
Risk of decreasing the productivity of workers	The University loss of income in the reporting period from partners (including students on a fee-paying basis), as well as the SF, the PTF, and EC.	Failure to achieve the required level of university income	**Consequences:** Underachievement of the Chairman of the Management Board, Rector's KPI in Q2 2025 by 12.2% (87.8% of the target was met): "Increase employee productivity from 8,200,000 tenge/person in 2024 to 12,200,000 tenge/person by 2029	medium	medium	medium-high	1. Intensifying work with enterprises and organizations on letters of guarantee for training 2. Implementing measures to increase income from educational, scientific, and social activities: • Expanding the list of continuing education programs and involving CU enterprises in participating in courses	Chairman of the Board, Rector, monitoring quarterly

			(quarterly planned: 2,175,000 tenge/person; quarterly actual: 1,910,000 tenge/person)". **Probable consequences:** Overall failure to achieve the established Company labor productivity indicator. Delay in fulfilling current and project obligations				• Submission of applications for the SF, PTF	

3.2 List of the key risks

Risk assessment ranking was conducted using the Probability and Impact Matrix; input data were defined, and scales for consequences and probabilities were established. The proposed scale encompasses the full spectrum of consequence types under investigation, taking into account both their potential for occurrence and their potential impact, ranging from the most severe possible outcomes to the least probable events.

Risk **F2**, "Risk of reduced employee productivity" was materialized over the course of two quarters; however, by year-end, this risk had been effectively mitigated (according to data from the Department of Economics, Finance, and Accounting, the actual performance against the planned target stood at 103.8%). Nevertheless, given the observed trend toward the realization of this risk, an additional point (+1) was added to its probability score, shifting the risk into the "orange zone."

Additionally, the risk level for **S4**, "Risk of declining position in the QS International Ranking," was elevated due to a drop in the institution ranking position. As part of the risk response strategy, intensified monitoring of employer participation in surveys, as well as an expansion of the geographic scope of the survey outreach is now required. The measures currently being implemented as part of the reactive response plan are designed to mitigate the negative impact associated with employer engagement levels during the survey process. At the same time, initiatives aimed at intensifying work on international agreements and attracting new partners from outside the immediate region are inherently long-term in nature. Consequently, no significant reduction in the probability of this risk recurring is anticipated for the upcoming calendar year.

Risk **F4**, "Risk of lacking the growth in supplementary income for faculty members derived from various academic activities," materialized as of the end of 2025 (the deviation from the planned target amounted to -45%). Consequently, the probability level of this risk has been elevated (increased by +1 point), and the risk has shifted into the "orange zone".

At the same time, as a result of implementing measures aimed at mitigating key risks and within the framework of executing the Development Program, high performance levels were achieved across a number of indicators. Accordingly, the probability of the occurrence of related risks has been reduced (decreased by -1 point) for the following:

S1: "Risk of declining the quality of the faculty composition": a high level of achievement was recorded regarding the acquisition of academic degrees and titles, awards of various levels, as well as improvements in faculty competence in the areas of pedagogical mastery and foreign languages;

O3: "Risk of employee digital competencies failing to meet current demands": training was conducted for faculty and university staff focused on developing digital skills and interactive teaching technologies, as well as within the framework of the "AI Sana" program;

S2: "Risk of declining student engagement in socio-educational activities": high student participation was observed in socio-educational events, including creative and sporting activities, debate tournaments, volunteer initiatives, and others;

S3: "Risk of the internal quality assurance system failing to meet international standards": in 2025, the University successfully underwent international accreditation by the "Independent Agency for Accreditation and Rating" (IAAR), receiving Certificate No. AA0315 dated December 25, 2025, valid for the period of seven years.

Furthermore, due to the inability to measure the wages of university graduates (as of 2025, data provided by the NCE "Atameken" is available only by type of economic activity or region, and is not measured at the level of individual universities), as well as the impact of unregulated macro-environment factors, it is proposed to exclude Risk S8: "Risk of a Decline in Average Graduate Wages" from the list of consolidated risks included in the Risk Register.

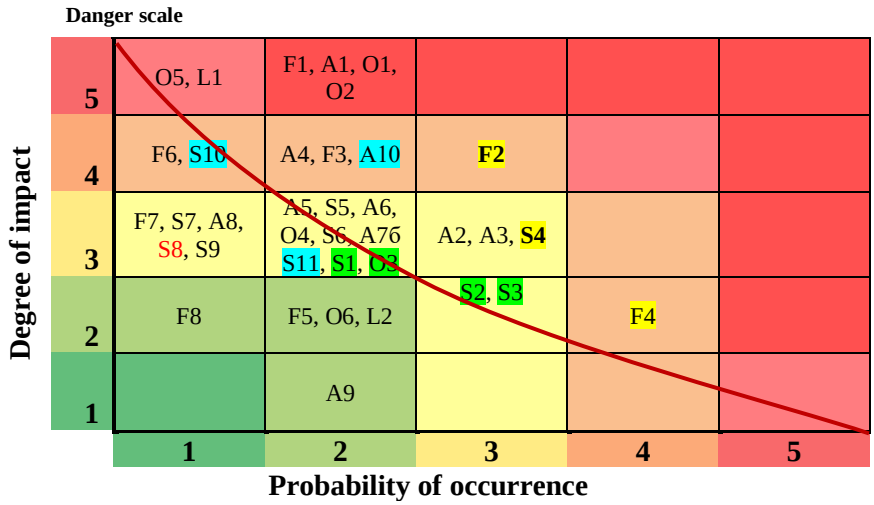
Furthermore, in light of the increasing pressure on the digitalization of science and higher education, as well as the growing imperative to integrate AI into business processes and educational programs, including those within the framework of the *AI Sana* program, it is proposed that the following risks pertaining to digitalization and AI be added to the Risk Register:

1. **The risk that developed AI agents fail to align with actual managerial and educational objectives** (impact level: 4; probability: 1; risk level: 2); assigned code: S10.

2. **The risk of merely formal AI implementation that yields no tangible managerial or educational impact** (impact level: 3; probability: 2; risk level: 3); assigned code: S11.

3. **The risk of uncontrolled AI usage by students and faculty members** (impact level: 4; probability: 2; risk level: 4); assigned code: A10.

Risk Map



Based on the completed Risk Map, the key risks have been identified that are situated in the zone lying above the Danger Scale, or within the zones intersected by it.

Key risks of the Company

No.	Risk name	Risk code	Impact	Probability
1.	Risk of reducing the University income	F1	5	2
2.	Risk of decreasing the quality of students' practical skills	A1	5	2
3.	Risk of non-compliance with information security requirements	O1	5	2
4.	Risk of providing false information to external information systems and databases	O2	5	2
5.	Risk of declining the quality of the faculty	S1	3	2
6.	Risk of declining the focus of scientific research on the needs of industry and business	A2	3	3
7.	Risk of declining the international collaborations and publication activity of the university's faculty	A3	3	3
8.	Risk of mismatching between the digital competencies of staff and the demands of the times	O3	3	2
9.	Risk of declining the quality of teaching	A4	4	2
10.	Risk of declining the employee productivity	F2	4	3
11.	Risk of obsolescence of the material and technical resources and their inadequacy for conducting research focused on the needs of modern industries	F3	4	2
12.	Risk of declining the student engagement in social and educational activities	S2	2	3
13.	Risk of non-compliance of the internal quality assurance system with international standards	S3	2	3
14.	Risk of lacking the growth in additional income for the faculty from various types of academic activities	F4	2	4

No.	Risk name	Risk code	Impact	Probability
15.	Risk of declining the number of sold research and development materials of TRL 7-9 levels	A5	3	2
16.	Risk of declining positions in the international QS ranking	S4	3	3
17.	Risk of declining positions in the national institutional ranking among technical universities	S5	3	2
18.	Risk of declining the number of graduates in technical and vocational education programs, bachelor's, master's, and doctoral programs	A6	3	2
19.	Risk of non-compliance with internal regulations and work discipline by faculty and staff	O4	3	2
20.	Risk of insufficient centralized management of innovation projects	S6	3	2
21.	Risk of decreasing the number of students in continuing education programs	A7	3	2
22.	Risk of violating the qualification requirements	O5	5	1
23.	Risk of administrative, corrupt, and criminal violations by students and staff	L1	5	1
24.	Risk of decreasing the profitability of the University research activities	F6	4	1
25.	Risk of inconsistency between developed AI agents and actual management and educational tasks*	S10	4	1
26.	Risk of formal AI implementing without managerial and educational impact*	S11	2	3
27.	Risk of uncontrolled use of AI by students and faculty*	A10	4	2

** - risks added to the Risk Register*

4. Amendments to update the Risk Portfolio

Based on the results for 2025, overall shifts occurred within the list of key risks, alongside changes in the allocation of risks among Board Members resulting from changes to the University's organizational structure. Therefore, corresponding amendments have been made to the:

- Risk Register;
- Risk Map;
- Risk Appetite;
- Risk Response Action Plan.

RISK REGISTER
Anylkas Saginov Karaganda Technical University

No.	Risk distribution among the Board members	Strategic goal	Risk name	Macroenvironment factor	Risk factor	Risk type	Risk code	Risk level
1.	Chairman of the Board, Rector	Increasing the financial and economic stability and development of the University material and technical base	Risk of decreased productivity of workers	Social status of teachers, salary levels, and support programs for HIPO employees	Decreasing the University incomea	financial	F2	6
2.	Chairman of the Board, Rector	Increasing the financial and economic stability and development of the University material and technical base	Risk of decreased income of the University	Purchasing power of potential consumers of higher and postgraduate education services Institutional capacity to generate scientific output (citation indices, publications in Scopus/WoS) Government and grant funding: grants for training, research projects, start-ups; funding policy for applied research and R&D	Decrease in contingent Decrease in the effectiveness of research and development and business contractual activities	financial	F1	5

No.	Risk distribution among the Board members	Strategic goal	Risk name	Macroenvironment factor	Risk factor	Risk type	Risk code	Risk level
3.	Vice-Rector for Academic Affairs	Consumer focus (employers, students, society)	Risk of decreased the quality of student practical skills	The dynamics of industrial development and the need for new competencies Accelerated technological transformation of industry 4.0 — requirements for digital and engineering competencies	Weak partner ties with enterprises	academic	A1	
4.	Vice-Rector for Digitalization	Ensuring effective management	Risk of non-compliance with information security requirements	Digitalization of the educational process: LMS, AI in learning, AR/VR technologies	Deficiencies in the information security system, failure to comply with information security requirements; loss or access of documents intended for official use.	operational	O1	5
5.	Vice-Rector for Digitalization	Ensuring effective management	Risk of providing false information to external information systems and databases	Digitalization of the educational process: LMS, AI in learning, AR/VR technologies	Failure to complete information in the university's LMS.	operational	O2	5
6.	Vice-Rector for Research	Consumer focus (employers, students, society)	Risk of a decrease in the focus of scientific research on the needs of industry and business	Integrating universities into R&D chains with industrial partners	Lack of sustainable collaboration between specialized departments and industrial enterprises	academic	A2	4,5
7.	Vice-Rector for Strategic Development and Internationalization	Ensuring effective management	Risk of a decrease in international collaborations and publication activity of the university's faculty	International scientific cooperation, Horizon Europe, Erasmus+, PRIMA, and other programs	Weak partnerships with foreign universities	academic	A3	4,5
8.	Vice-Rector for Digitalization	Ensuring effective management	Risk of a decline in the QS international ranking	Visa policy and international academic mobility: access for international faculty and students; support for dual degree initiatives and international internships	Changes in the QS ranking methodology	strategic	S4	**4,5**
9.	Vice-Rector for AA	Consumer focus (employers, students, society)	Risk of a decline in the quality of teaching	The dynamics of industrial development and the need for new competencies Accelerated technological transformation of industry	Changes in the composition of the teaching staff due to various reasons (including the addition of individuals without teaching experience or	academic	A4	4

No.	Risk distribution among the Board members	Strategic goal	Risk name	Macroenvironment factor	Risk factor	Risk type	Risk code	Risk level
				4.0 — requirements for digital and engineering competencies	advanced training certificates in pedagogy)			
10.	Vice-Rector for Research	Focus on consumers (employers, students, society)	Risk of obsolescence of material and technical resources, and their inadequacy for conducting research aligned with the needs of modern industries	Currency fluctuations and import dependence in equipment and scientific instrumentation	Reduction in funding and sponsorship support for departments from enterprises	financial	F3	4
11.	Vice-Rector for AA	Highly Qualified Human Resources	Risk of a lack of growth in supplementary income for faculty members derived from various academic activities	The social status of faculty, salary levels, and support programs for high-potential (HiPo) employees	Low motivation among faculty members to participate in professional development programs, language courses, and the development of digital educational resources.	financial	F4	4
12.	Vice-Rector for Digitalization	Highly qualified human resources	Risk of uncontrolled use of artificial intelligence by students and faculty members	Digitalization of the educational process: LMS, AI in instruction, and AR/VR technologies	Unregulated use of AI by students and faculty (for generating coursework, grading, and creating methodological materials), leading to a decline in academic integrity and actual competencies.	academic	A10	4
13.	Vice-Rector for Research	Highly qualified human resources	Risk of decline in the quality of the teaching staff	Institutional capacity for generating scientific output (citation indices, publications in Scopus/WoS)	Lack of continuity across scientific schools, and diminished quality of support for early-career researchers—particularly regarding the preparation for thesis defense.	strategic	S1	3
14.	Vice-Rector for SEW	Focus on consumers (employers, students, society)	Risk of reduced student engagement in social and educational activities	Value shifts among Generations Z and Alpha: expectations regarding flexibility, career trajectories, and social impact	Coercive involvement of students in socio-educational activities (solely to meet quantitative quotas).	strategic	S2	3
15.	Vice-Rector for SDIh	Highly qualified human resources	Risk of non-compliance of the internal quality assurance system with international standards	The social status of faculty, salary levels, and support programs for high-potential (HiPo) employees	Absence of specialized professional development programs tailored to the specific fields of departmental staff.	strategic	S3	3
16.	Vice-Rector for Digitalization	Highly qualified human resources	Risk of staff digital competencies failing to meet current requirements	Digitalization of the educational process: LMS,	Lack of accessible learning resources.	operational	O3	3

No.	Risk distribution among the Board members	Strategic goal	Risk name	Macroenvironment factor	Risk factor	Risk type	Risk code	Risk level
				AI in instruction, and AR/VR technologies				
17.	Vice-Rector for Research	Highly qualified human resources	Risk of a decline in the volume of marketable R&D outcomes at TRL levels 7–9	Commercialization of research through startups, technology parks, and technology transfer	Low quality and/or absence of significant results from scientific and R&D activities with potential for commercialization	academic	A5	3
18.	Vice-Rector for SDI	Ensuring effective management	Risk of a decline in standing within the national institutional ranking among technical universities	Competition from other universities in Kazakhstan and the CIS, as well as online platforms	Weakened competitive standing relative to peer universities	strategic	S5	3
19.	Vice-Rector for SEW	Focus on consumers (employers, students, society)	Risk of a decline in the number of graduates across TVET, Bachelor's, Master's, and Doctoral programs	Competition from other universities in Kazakhstan and the CIS, as well as online platforms	Failure of academic conditions to fully meet student expectations	strategic	A6	3
20.	Chairman of the Board, Rector	Ensuring effective management	Risk of non-compliance with internal regulations and labor discipline by faculty and staff	Social status of faculty, salary levels, and support programs for high-potential (HiPo) employees	Reduced level of awareness among faculty regarding internal regulations, as well as a lack of time-management skills among faculty and staff members	operational	O4	3
21.	Vice-Rector for Research	Focus on consumers (employers, students, society)	Risk of insufficient centralized management of innovation projects	Integration of universities into R&D value chains with industrial partners	Lack of centralized management for innovation projects.	strategic	S6	3
22.	Vice-Rector for AA	Focus on consumers (employers, students, society)	Risk of a decline in the number of students enrolled in supplementary education programs	Commercialization of research through startups, technology parks, and technology transfer	Rising tuition costs; competitors offering courses at rock-bottom prices; low purchasing power among the general public; and intense competition in the provision of non-formal educational services.	academic	A7	3
23.	Vice-Rector for Digitalization	Ensuring effective management	Risk of formal implementation of ai lacking managerial or educational impact	Competition from other universities in Kazakhstan and the CIS, as well as online platforms	AI is utilized for reporting purposes (tracking the number of agents, courses, and startups) but exerts no tangible influence on the quality of management, instruction, or research.	strategic	S11	3
24.	Vice-Rector for SDI	Ensuring effective management	Risk of violation of qualification requirements	State Regulation of the Higher Education System (MNVO RK, Government	Insufficient provision of material assets that comply with the sanitary rules and norms approved by the authorized body	operational	O5	2,5

No.	Risk distribution among the Board members	Strategic goal	Risk name	Macroenvironment factor	Risk factor	Risk type	Risk code	Risk level
				Acts, Presidential Decrees, and Resolutions)	in the spheres of healthcare and fire safety.			
25.	Vice-Rector for SEW	Ensuring effective management	Risk of administrative, corruption-related, and criminal misconduct by students and staff	Licensing and Accreditation Policy: Institutional and Specialized Accreditation; Requirements for Academic Integrity and Quality Management	A low level of anti-corruption and legal culture among students and staff	legal	L1	2,5
26.	Vice-Rector for AA	Highly Qualified Human Resources	Risk of reduced staff motivation due to unmet salary expectations	Anti-Corruption Culture	Lack of growth in university revenue compared to the previous financial period	financial	F5	2
27.	Vice-Rector for Research	Enhancing the financial and economic stability and developing the material and technical base of the university	Risk of declining revenue from the university's research and development activities	The Growing Importance of Academic and Scientific Ethics	An absence of successful applications for grant and targeted program funding, as well as contracts with industrial enterprises for the execution of research and other work	financial	F6	2
28.	Vice-Rector for SEW	Focus on consumers (employers, students, society)	Low motivation among students to participate in scientific, educational, creative, athletic, and other activities	The social status of faculty, salary levels, and support programs for high-potential (HIPO) staff	The risk of a decline in the number of competitive students (those who have received awards at a level no lower than the top three) and/or those possessing commercially viable developments	operational	O6	2
29.	Vice-Rector for AA	Ensuring effective management	Risk of non-compliance with regulations governing the awarding, disbursement, and amounts of state scholarships for students	Digitalization of the Educational Process: LMS, AI in Education, and AR/VR Technologies	Timely entry of final grades for students by instructors in the electronic gradebook.	legal	L2	2
30.	Vice-Rector for Digitalization	Ensuring effective management	Risk that developed AI agents fail to align with actual administrative and educational objectives	Digitalization of the Educational Process: LMS, AI in Education, and AR/VR Technologies	Development and implementation of AI solutions (agents, courses, startups) without clear alignment with the university's strategy and the priorities of its educational and research activities.	strategic	S10	2
31.	Vice-Rector for AA	Enhancing the financial and economic stability and developing the material and technical base of the university	Risk of reduced labor productivity within the educational process	The social status of faculty, salary levels, and support programs for high-potential (HiPo) employees	Decline of the University revenue, expansion of staff in academic structures.	financial	F7	1,5

No.	Risk distribution among the Board members	Strategic goal	Risk name	Macroenvironment factor	Risk factor	Risk type	Risk code	Risk level
32.	Vice-Rector for AA	Highly qualified human resources	Risk of a decline in the number of recognized professionals serving as instructors	The social status of faculty, salary levels, and support programs for high-potential (HiPo) employees	Low motivation to participate in industry competitions, scientific research, and acceleration programs	strategic	S7	1,5
33.	Vice-Rector for Research	Highly qualified human resources	Risk of a decline in the number of potential R&D outcomes protected by intellectual property titles	Institutional capacity for generating scientific output (citation indices, publications in Scopus/WoS)	Low quality and/or absence of significant results in scientific and R&D activities	academic	A8	1,5
34.	Vice-Rector for AA	Focus on consumers (employers, students, society)	Risk of a decline in the average starting salary of graduates	The accelerated technological transformation of Industry 4.0: requirements for digital and engineering competencies	Incomplete alignment of graduates' competencies with employer expectations	strategic	S8	1,5
35.	Vice-Rector for Digitalization	Ensuring effective management	Risk of failing to achieve the requisite level of digital maturity in accordance with the methodology of the Ministry of Education and Science of the Republic of Kazakhstan	Digitalization of the educational process: LMS, AI in education, and AR/VR technologies	University infrastructure lagging behind the current level of IT technology development	strategic	S9	1,5
36.	Vice-Rector for SEW	Enhancing the financial and economic stability and developing the material and technical base of the university	Risk of declining revenue generated from fundraising and socio-educational activities	The influence of media, digital platforms, and social networks on the perception of a university's brand	Passivity of stakeholders in the implementation of socially significant projects for the university	financial	F8	1
37.	Vice-Rector for AA	Ensuring effective management	Risk of non-compliance with requirements for the annual updating of the educational literature collection, broken down by the disciplines of the educational programs	Value shifts among Generations Z and Alpha: expectations regarding flexibility, career trajectories, and social impact	Absence of requests from academic departments for the acquisition of literature for educational programs	academic	A9	1

RISK APPERIRE MATRIX

The Risk Appetite Matrix constitutes a statement of risk appetite for each risk category.

Searching for innovative ideas and choosing options that offer potentially higher returns, despite the high risks inherent in this process	Unfavorable *Preventing risks and uncertainty*	Causious *Preference is given to safe options that have a low degree of risk and may have limited potential for profit.*	Moderate *Readiness to consider all possible options and select the one that is most likely to lead to successful implementation at an acceptable level of remuneration and value for money*	Low *Searching for innovative ideas and choosing options that offer potentially higher returns, despite the high risks inherent in this process*
Searching for innovative ideas and choosing options that offer potentially higher returns, despite the high risks inherent in this process	**L1, O5, O2, O1**	**F1, S4, S5, S3, S10*, S11***		
Searching for innovative ideas and choosing options that offer potentially higher returns, despite the high risks inherent in this process	**O4**	**F2, F4, S1, O3**		
Searching for innovative ideas and choosing options that offer potentially higher returns, despite the high risks inherent in this process				**F3**
Searching for innovative ideas and choosing options that offer potentially higher returns, despite the high risks inherent in this process			**S2**	
Searching for innovative ideas and choosing options that offer potentially higher returns, despite the high risks inherent in this process	**A1**	**A4, A6, A10***	**A7**	
Searching for innovative ideas and choosing options that offer potentially higher returns, despite the high risks inherent in this process		**A3, A5**	**A2, F6**	**S6**

** - risks added to the Risk Register*

The Risk Appetite Matrix involves categorizing the management of the University core processes and entails defining a specific stance toward risk (risk appetite):

- **Unfavorable**: Entailing the complete prevention of risk events or the elimination of their underlying causes—specifically within the domains of personnel management and educational activities, with regard to the potential for corrupt practices;
- **Cautious**: Entailing the pursuit of safe options for achieving strategic objectives within the domains of general management, human resources, and the management of social-educational, academic, and research activities;
- **Moderate:** Allowing for the consideration of options that yield an optimal balance between costs and results across all management domains, with the exception of certain general administrative matters;
- **Low**: Entailing the pursuit of innovative ideas—which may entail substantial costs—but which hold the potential to yield maximally effective results within the domains of infrastructure development and research management.Матрица риск аппетита включает в себя разделение на категории менеджмента основных процессов университета и предполагает обозначение выраженного отношения к риску (риск аппетит):

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Company tolerance to the key risks

Company has established the maximum level of the key risks: 10 (according to the Risk Map)

Despite Risk **F2, "Risk of Declining the Employee Productivity,"** reaching the maximum tolerance level (rising from 5 to 6, with the maximum of 7.5) established for this risk in 2025, reactive measures have demonstrated high effectiveness, which allows the University to exceed its productivity indicator for the reporting period. Therefore, monitoring the quarterly distribution of planned indicators is required to prevent risk occurrence within quarters.

Risk **S4, "Risk of Declining the Position in the QS International Ranking,"** has also reached the maximum tolerance level established for 2025 (reaching level 4.5, with the previous level of 3). Due to the current trend toward implementation, increased risk monitoring within reactive measures is required.

Realization of Risk **F4 "Risk of lacking the growth in additional income for the faculty from various types of academic activities"** (tolerance level of 4, with the maximum of 4 (previously 3)) under a cautious risk appetite, which envisages limited profit potential, requires, in addition to the implementation of reactive measures, a downward adjustment of planned indicators when planning the KPIs of the Board Member, Vice-Rector for Academic Affairs.

At the same time, in order to further reduce the likelihood of a number of risks, the tolerance for them has also been lowered:

- Risk of a decrease in the quality of the faculty – to 4.5 (previously 6);
- Risk of decreased student engagement in social and educational activities – to 4 (previously 5);
- Risk of the internal quality assurance system not meeting international standards – to 4 (previously 5);
- Risk of employees' digital competencies not meeting current requirements – to 4 (previously 6).

No.	Risk name	Risk code	Risk factor	Risk level	Risk tolerance	Strategic goal	KPI of the Board member[1]	Risk distribution among the Board members
1.	Risk of reduced employee productivity	F2	Decline in university revenue	6	↑ 7,5	Enhancing the financial and economic stability and developing the material and technical base of the university	To increase employee labor productivity from 8,200 thousand KZT per person in 2024 to 9,500 thousand KZT per person by 2026. [Rector's KPI]	Chairman of the Board, Rector
2.	Risk of reduced university revenue	F1	Decrease in student enrollment	5	7,5	Enhancing the financial and economic stability and developing the material and technical base of the university	To increase university revenue from 10,531,899 in 2024 to 11,048,839 in 2026. [Rector's KPI]	Chairman of the Board, Rector
3.	Risk of reduced quality of students' practical skills	A1	Decline in the effectiveness of research and contract-based activities	5	7.5	Customer orientation (employers. students. society)	To increase the average monthly base salary from 175 thousand KZT in 2023 to 245 thousand KZT in 2026 (12% per annum). [KPI for Rector and Vice-Rector for Administrative Affairs]	Vice-Rector for AA

[1] In case of approving a new KPI formulation, this section will be changed

4.	Risk of non-compliance with information security requirements	O1	Weak partnerships with enterprises	5	7.5	Ensuring effective management	To increase the level of digital maturity from 1.5 in 2024 to 2 by 2026. [KPI for Vice-Rector for Digitalization]	Vice-Rector for Digitalization
5.	Risk of providing inaccurate information to external information systems and databases	O2	Deficiencies in the information security system; non-compliance with information security requirements; loss of or unauthorized access to documents designated for internal use	5	7.5	Ensuring effective management	To increase the level of digital maturity from 1.5 in 2024 to 2 by 2026. [KPI for Vice-Rector for Digitalization]	Vice-Rector for Digitalization
6.	Risk of reduced alignment of scientific research with the needs of industry and business	A2	Failure to ensure the population of information within the university's LMS	4,5	6	Customer orientation (employers. students. society)	To ensure the creation of at least 50 potential R&D outcomes (RSSTD) involving Intellectual Property Objects (R&D works) at TRL 5–6 (rising from 30 in 2024 to 50 by 2026). [KPI for Vice-Rector for Research]	Vice-Rector for Research
7.	Risk of a decline in international collaborations and publication activity among university faculty	A3	Weak partnership ties with foreign universities	4,5	6	Ensuring effective management	To ensure the internationalization of the university’s faculty and staff through academic mobility. internships. the engagement of foreign experts. and language courses. increasing the number of participants from 40 in 2023 to 101 by 2026. [KPI: Vice-Rector for SDI]	Vice-Rector for SDI
8.	Risk of a decline in standing within the QS World University Rankings	S4	Changes in the QS ranking methodology	4,5	4,5	Ensuring effective management	To ensure the strengthening of the university’s position in the QS World University Rankings. reaching the 801+ band by 2026. [KPI: Rector and Vice-Rector for Strategic Development]	Vice-Rector for SDI
9.	Risk of a decline in the quality of instruction	A4	Changes in the composition of the faculty staff due to various reasons (including the hiring of individuals lacking pedagogical experience or	4	6	Customer orientation (employers. students. society)	To increase the average monthly salary of faculty and staff from 175.000 KZT in 2023 to 245.000 KZT in 2026 (a 12% annual increase). [KPI:	Vice-Rector for AA

			professional development certificates in pedagogy)				Rector and Vice-Rector for Academic Affairs]	
10.	Risk of obsolescence of material and technical infrastructure, and its inadequacy for conducting research aligned with the needs of modern industry	F3	Reduction in financial funding and corporate sponsorship provided to academic departments by enterprises	4	6	Customer orientation (employers. students. society)	to ensure revenue generation from sponsorship support and R&D projects commissioned by industrial enterprises. business partners. and Corporate University organizations. increasing from 300 million KZT in 2024 to 515 million KZT in 2026. [KPI: Vice-Rector for Research]	Vice-Rector for Research
11.	Risk of stagnation in supplementary income for faculty derived from various academic activities	F4	Low motivation among faculty members to participate in professional development programs, language courses, or the development of digital educational resources	4	4	Highly qualified human resources	To increase the supplementary income of faculty members (derived from digital educational resources. professional development courses. paid academic services. language courses. IELTS training. and named scholarships) from 3.2 million KZT per person in 2024 to 6.0 million KZT per person by 2026. [KPI: Vice-Rector for Academic Affairs]	Vice-Rector for AA
12.	Risk of uncontrolled use of AI by students and faculty	A10	Absence of approved internal regulations and guidelines regarding the use of AI in the educational process	4	6	Highly qualified human resources	To increase the percentage of faculty and staff who have undergone digital retraining—including training in AI skills—under the AI-Sana program (reaching at least 80% by 2026); and ensure that all students complete AI courses under the AI-Sana program (reaching 100% by 2026). [KPI: Vice-Rector for Digitalization]	Vice-Rector for Digitalization
13.	Risk of decline in the quality of the teaching staff	S1	Lack of continuity across scientific schools; substandard support for early-career researchers, particularly regarding the defense of their dissertations	3	4,5	Highly qualified human resources	To ensure the creation of 50 R&D results at TRL levels 3–4 (Number of articles in Q1–Q2 journals indexed in Web of Science (Clarivate Analytics) and Scopus (Elsevier) — up to	Vice-Rector for Research

							50 by 2026) [KPI for Vice-Rector for Research]	
14.	Risk of reduced student engagement in socio-educational activities	S2	Coercive involvement of students in socio-educational activities (solely for the sake of meeting quotas)	3	4,5	Customer orientation (employers. students. society)	To increase student engagement in club and extracurricular activities from 50% to 65% by 2026. [KPI: Vice-Rector for SEW]	Vice-Rector for SEW
15.	Risk of non-compliance of the internal quality assurance system with international standards	S3	Absence of professional development programs in specialized fields for departmental staff	3	4	Highly qualified human resources	To strengthen the University position in the QS World University Rankings to the 801+ band by 2026. [KPI: Rector and Vice-Rector for SDI]	Vice-Rector for SDI
16.	Risk of staff digital competencies failing to meet current demands	O3	Lack of accessible learning resources	3	4	Highly qualified human resources	To raise the level of digital maturity from 1.5 in 2024 to 2.0 by 2026. [KPI: Vice-Rector for Digitalization]	Vice-Rector for Digitalization
17.	Risk of a decline in the number of marketable R&D outcomes at TRL levels 7–9	A5	Low quality and/or absence of significant results from scientific and R&D activities with potential for commercialization	3	4.5	Highly qualified human resources	To facilitate the creation of 15 commercially viable R&D outcomes (TRL 7–9); specifically. increase the number of Scopus-indexed publications generated via the Intellectual Property Office (OIS) from 2 in 2024 to 15 by 2026. [KPI: Vice-Rector for Research]	Vice-Rector for Research
18.	Risk of a decline in rankings within the national institutional rating among technical universities	S5	Weakened competitive standing relative to rival universities	3	4.5	Ensuring effective management	To strengthen the position in the national institutional ranking of technical universities from 5th in 2024 to 3rd place in 2026. [KPI of Vice-Rector for SDI]	Vice-Rector for SDI
19.	Risk of a decline in the number of graduates across TVET, Bachelor's, Master's, and Doctoral programs	A6	A lack of full alignment between academic conditions and student expectations	3	4.5	Focus on consumers (employers. students. society)	To ensure a reduction in the share of dismissed students relative to the total student body from 6% in 2024 to 5% in 2026. [KPI for the Vice-Rector for SEW]	Vice-Rector for SEW

20.	Risk of non-compliance with internal regulations and labor discipline by faculty and staff	O4	A reduced level of awareness among faculty regarding internal regulations, as well as a lack of time-management skills among faculty and staff	3	4.5	Ensuring effective management	To maintain a "zero tolerance" level for administrative. corruption-related. and criminal violations by students and staff. [KPI for Rector and Vice-Rector for SEW]	Chairman of the Board, Rector
21.	Risk of insufficient centralized management of innovative projects	S6	Insufficient centralized management of innovative projects	3	4.5	Focus on consumers (employers. students. society)	To ensure the creation of at least 50 potential R&D projects involving Intellectual Property Objects (or Experimental Design Work) at TRL levels 5–6 (increasing from 30 in 2024 to 50 by 2026). [KPI for Vice-Rector for Research]	Vice-Rector for Research
22.	Risk of a decline in the number of students enrolled in continuing education programs	A7	Rising tuition costs; competitors offering courses at dumping prices; low purchasing power among the general population; and competition in the provision of non-formal educational services	3	4.5	Focus on consumers (employers. students. society)	To increase faculty income (derived from digital educational resources. professional development courses. paid educational services. language courses. IELTS preparation. and named scholarships) from 3.200 thousand KZT per person in 2024 to 6.000 thousand KZT per person by 2026. [KPI for Vice-Rector for Administrative Affairs]	Vice-Rector for AA
23.	Risk of merely formal implementation of AI, lacking tangible managerial or educational impact	S11	The absence of approved internal regulations and guidelines for the use of AI in business processes	3	4,5	Ensuring effective management	To ensure the development and implementation of AI agents (10 agents by 2026).	Vice-rector for Digitalization
24.	Risk of non-compliance with qualification requirements	O5	Insufficient provision of material assets that comply with sanitary rules and standards approved by the competent authorities in the fields of healthcare and fire safety	2,5	2.5	Ensuring effective management	To ensure the successful completion of external quality assessment procedures (share of accredited educational programs operating for more than 4 years: 100%) [KPI of the Vice-Rector for Strategic Development and Internationalization]	Vice-Rector for SDI

25.	Risk of administrative, corruption-related, or criminal offenses committed by students and staff	L1	A low level of anti-corruption and legal culture among students and staff	2,5	2.5	Ensuring effective management	Maintain a "zero tolerance" level regarding administrative. corruption-related. and criminal violations by students and staff [KPI: Vice-Rector for SEW]	Vice-Rector for SEW
26.	Risk of diminished returns from the university's research and development activities	F6	An absence of successful applications for grant and targeted program funding, as well as contracts with industrial enterprises for conducting research and other work	2	2	Enhancing financial and economic stability and developing the university's material and technical base	To increase revenue generated from the university's research and development activities—through securing grants from the General Fund and Priority Sector Funds. commercialization grants. executing contract-based research projects. and engaging in other forms of scientific activity—from 1.228.858.69 thousand KZT in 2024 to 1.404.503.40 thousand KZT in 2026 [KPI of the Vice-Rector for Research]	Vice-Rector for Research
27.	Risk of AI agents failing to align with real-world managerial and educational tasks	S10	An orientation toward quantitative metrics of AI implementation, without an assessment of the results and impacts achieved	2	4	Ensuring effective management	To ensure the development and implementation of AI agents (10 agents by 2026).	Vice-rector for Digitalization

Conclusion

The Company's risk management system is integrated into its strategic and operational management. The approach adopted for risk management is based on an extended PESTEL analysis, consideration of stakeholder influence, and the application of a "probability–consequence" matrix: an approach consistent with generally accepted international practices in corporate risk management.

1. Dynamics of the risk profile

As of the end of 2025, no fundamentally new critical threats were identified; however, shifts were observed within the established Risk Portfolio. The primary changes stem from adjustments to probability levels for a number of materialized risks, as well as a redistribution of responsibilities among Board Members following changes to the organizational structure. Thus, the Risk Management and Internal Control System is undergoing a gradual transition from the formal implementation phase to the mode of regular monitoring and managed adaptation.

2. Materialized and intensified risks

During the reporting period, risks directly related to financial and economic stability, as well as the effectiveness of human capital, materialized.

Specifically, the materialization of Risk F2—"Risk of declining employee labor productivity", highlights the University systemic sensitivity to revenue fluctuations relative to its planned development targets. The materialization of Risk F4—"Risk of failure to increase supplementary income for faculty and teaching staff", carries implications that are not only financial in nature but also pertain to staff motivation and human resources. Nevertheless, this risk could be mitigated through the implementation of reactive measures and by adjusting either the planned income targets for faculty and teaching staff or the methodology used to calculate the relevant indicator.

Conversely, Risk S4—"Risk of declining standing in the QS World University Rankings", shows a tendency toward further materialization; this is because the associated mitigation measures are predominantly long-term in nature, thereby limiting the potential for a rapid reduction in the probability of this risk occurring.

Notably, the Risk Register now includes three key risks associated with the integration of artificial intelligence into the Company's processes.

Concurrently, as a result of achieving strong performance across a range of indicators within the Development Program, as well as the implementation of preventive measures, the likelihood of occurrence has been reduced for four key risks; consequently, both the risk levels and the risk tolerance levels have been revised.

Taken together, these factors constitute the core of the institution strategic vulnerabilities, including a reliance on external sources of revenue, competitive pressures within the rankings landscape, and the need to enhance the academic performance of the faculty.

3. *Specifics of Risk Appetite and Tolerance*

The established threshold for key risks (set at 10) and the comparison of actual risk levels against tolerance limits confirm that the University adheres to a moderately cautious operational model: while permitting operations within the "orange zone," such operations are contingent upon the existence of specific management measures and clearly defined KPIs assigned to members of the Management Board.

The proposal to remove Risk S8—"Risk of a Decline in Average Graduate Salaries", is justified by the inability to obtain valid measurements at the institutional level, as well as by the significant influence of uncontrollable factors within the macro-environment.

The analysis conducted reveals a persisting heightened sensitivity to risks related to the revenue, international competitiveness, and commercialization of academic activities; this sensitivity dictates the priorities for management attention during the upcoming cycle.

Thus, despite the stability of the Risk and Internal Control Management System and the presence of a managed adaptive capacity to environmental changes, the strategic risk profile remains under strain within the financial and academic spheres, thereby necessitating the further strengthening of preventive mechanisms.