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# The Report on Tashkent State Transport University preparedness for future challenges



Tashkent State Transport University  
Uzbekistan



Triggering innovative approaches and entrepreneurial skills for students through creating conditions  
for graduate's employability in Central Asia

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## Introduction

This Report on HEI preparedness for future challenges at Tashkent State Transport University serves as a basic document for further work on the project “Triggering innovative approaches, entrepreneurial skills and attitudes in HEI learners through creating the favorable conditions for graduates’ employability in Central Asia” (TRIGGER) outputs preparation. The assessment is based on the HEInnovate tool - a free self-assessment tool for all types of HEIs, which is an initiative of the European Commission, DG Education and Culture and the OECD LEED Forum. Generally, it is intended for HEIs which are interested in assessing themselves against a number of statements related to the entrepreneurial and innovative nature of their higher education environment. The Report provides the first practical inside to eight areas:

1. Leadership and Governance
2. Organizational Capacity: Funding, People and Incentives
3. Entrepreneurial Teaching and Learning
4. Preparing and Supporting Entrepreneurs
5. Digital Transformation and Capability
6. Knowledge Exchange and Collaboration
7. The Internationalized Institution
8. Measuring Impact

The strength and weaknesses of HEI have been identified and suggestions to support strength and to overcome weakness have been prepared.

The self-assessment of HEI was carried out from 30<sup>th</sup> of April to the 10<sup>th</sup> of May 2021. The respondents included top management of the university, teachers, researchers, professional and support staff. Altogether **89 respondents** used HEInnovate tool.

## 1. Tashkent State Transport University in a glance

Tashkent State Transport University (TSTU) was founded in 1931, and since 2020 it has integrated all regional transport sectors (Aviation, Railway and Automobile transport) and today it is the unique university in Central Asia with rich historical values and traditions, which determines the strategy of development of the transport sector of the Republic of Uzbekistan.

By 2020, TSTU includes 8 faculties, over the 14000 students overall. More than 700 academic staff and 750 technical staff are working at the university. More than 60,000 graduates have graduated from the university since 1931, and most of them are successfully working in various sectors of Uzbekistan's economy. Since the university is located in the capital of Uzbekistan and is the only university in the country specializing in transportation, students come from all over Uzbekistan, and graduates work in transportation, logistics, including rail, air, and road transportation throughout the region. Thus, university graduates contribute to the development of the economy of the whole country.

In recent years, Uzbekistan has given priority to the development of international transport corridors, digitalization of the logistics chain, including the processes of cargo promotion and vehicles through border crossings, reducing physical and non-physical barriers to the movement of international goods, optimizing transport and other costs in the contract value of export products, increasing the speed of delivery of goods.

Concrete measures are being taken to increase the throughput capacity of the main transport routes, modernize the rolling and carrying stock of the country's railway transport which accounts for the lion's share of the transportation of goods. Also, the priority is given to the development of road freight transport. According to the Association of International Freight Forwarders of Uzbekistan, as of July 1, 2021, the number of vehicles involved in international freight transport has increased by 3.1 times compared with 2017. the volume of international freight transport has increased by 1.5 times due to the customs benefits granted in 2017. Although Uzbekistan's air transport has also suffered significantly from the pandemic. At the same time, thanks to the support of the state, aircraft fleet is being modernized, the geography of flights is expanding, the number of foreign companies that have received the right to carry out regular and charter flights to major cities of Uzbekistan.

For the transport sectors of the economy, personnel are trained in the following eight faculties of the university: Faculty of Railway transport engineering, Faculty of Electrical Engineering and computer engineering, Faculty of Economics, Faculty of construction engineering, Faculty of aviation transport engineering, Faculty of Transportation Systems Management, Faculty of Automotive engineering, Faculty of highway engineering.

## 2. University organization and management

The human **resources** at University:

The activities of TSTU are provided by 1550 employees, of which: teaching staff - 707 people; Non-Academic Staff - 771 people; scientists and researchers - 72 people. In recent years, the quantitative and qualitative composition of the teaching staff has strengthened. The share of the teaching staff with academic degrees (PhD

and DSc) and titles is 28.5%: 53 - doctors of sciences, 122 - candidates of sciences, PhD - 26. The teaching staff includes 1 academician, teachers under the age of 39 account for 36%. More than 80 foreign professors are attracted annually to deliver lectures, to guide the scientific work of doctoral students. Most of them represent the world's leading universities in the top 500 at the World universities ranking.

Total budget of Tashkent State Transport university for 2021 is 17 776 013 euro. The big part of this amount comes from Private Sector (student tuition fee) - 12 573 879 euro and from Public Sector - 4 027 133 euro, from Research Activities—935 000 euro, from International Operations—240 000 euro.

The University is a public institution. The university is part of the organizational structure of the Ministry of transport of the Republic of Uzbekistan and is considered a higher educational institution under it, and it is engaged in educational activities on the implementation of basic and additional state educational programs of higher education, as well as in accordance with the legislation of the Republic of Uzbekistan, carries out other educational services.

According to the approved schedule of the TSTU management, training is conducted to upgrade the skills of service providers and technical personnel in the relevant companies.

In order to train qualified specialists serving the development of bilateral and multilateral political, economic and cultural relations of Uzbekistan with foreign countries, to meet the need for personnel with analytical thinking, able to correctly interpret ongoing processes, the teaching staff annually undergoes international training. In particular, over the past two years, more than 40 (6%) professors and teachers have upgraded their qualifications in leading higher education institutions of Russian Federation, Kazakhstan and Belarus.

TSTU has unique logo, since the university was transformed in 2020 a new logo has also been designed. The logo is a symbol of the university with the inscription “Tashkent state transport university” (<https://tsu.uz/language/en/>).

The University developed and approved a “Marketing and Students’ internship plan of Tashkent state transport university” on the basis of the model plan of Marketing and Students’ internship department of higher educational institutions of the Republic of Uzbekistan, in accordance with the order of the Minister of Higher and Secondary Special Education of the Republic of Uzbekistan, October 11, 2021 № 431. TSTU has a Marketing and students’ internship department. The department develops and implements specific strategies for the university in the market of educational services, the direction of the process of training and distribution of bachelors and masters



to meet the requirements of consumers (employers) to the future specialist, and also manages the process, advertising, promotion planning and promotion information, implementation of distribution and distribution of graduates and timely preparation for the provision of educational services. The department responsible for the external communication too. At TSTU, internal communication is handled by the Office of the Chancery. The university has the Department of international cooperation which is responsible for expansion and strengthening of international relations of the University.

The TSTU website is the main and accessible source of information on the activities of the university. Three areas of the university website work: information (dissemination of information about the university and its services), communication (establishing feedback with target audiences), and image (providing a certain image in the eyes of target audiences). The official website of the TSTU is <http://www.tstu.uz> functions in 3 languages - Uzbek, Russian and English. The hallmark of the official website of TSTU – is the news orientation. Every week, 15-20 news items about university events are published on the home page of the website. The greatest interest in the TSTU website is shown by potential applicants and undergraduate, postgraduate, and doctoral students. The structure and design of the web resource has been updated, the design is attractive, the information is well structured, the information is clear and objective.

The University has some social media accounts to develop Public relations and promotion: Facebook (<https://www.facebook.com/profile.php?id=100070499257541>), Instagram (<https://www.instagram.com/?hl=ru>) and the telegram ([https://t.me/tstu\\_official](https://t.me/tstu_official)). The total number of followers on all accounts is more than 17 thousand people.

Detailed information about the university is also disseminated through image information booklets in Uzbek, Russian and English languages in electronic and printed format. They are available on the official website at faculties as a handout. Their content is updated periodically.

According to our observations, the following activities have been implemented over the past few years and have had a corresponding **marketing and communication impact**.

- the university participates in international exhibitions aimed at employment of university graduates;
- every year, graduates are selected for industrial enterprises in the industry based on an interview;
- during the last 2 years the amount of the tuition fee remains unchanged on national level;
- accounts of vice-rectors and deans in social networks have been created, where students can directly contact the university administration with questions of interest to them;
- It is possible to pay for tuition by months.



### 3. Education

**The total number of students** in TSTU is about 14 thousand students, including 11 foreign citizens, bachelors, masters and PhD doctors, who study at TSTU and are trained in 148 educational programs –88 bachelor's programs, 38 master's specialties, 22 post-higher education specialties and 11 double-degree program. Teaching is conducted in 2 languages (Uzbek and Russian), by leading professors, teachers and specialists in their fields. In line with the national legislation on training of the PhD students, co-direction of all PhD thesis at TSTU is done jointly by local professors at TSTU . Accreditation of educational programs is carried out by the State Inspectorate for Quality Supervision of Education under the Cabinet of Ministers of the Republic of Uzbekistan.

The State Inspectorate is a specially authorized body of state administration, which implements state policy in the field of quality control of the educational process, teaching staff, training and professional development in the education system, certification and state accreditation of educational institutions regardless of their departmental subordination and organizational and legal form. Since TSTU was established in 2020, all curricula have been accredited by the State Inspectorate.

#### Mobility indicators (all mobility programs)

	Incoming	Outgoing
Number of students	11	-
Number of teachers/professors	25	5
Number of non-academic staff	-	-
Number of international student traineeships	5	6

Offer of **free online courses/ MOOCs**. - The university uses two academic platforms: MOODLE (<http://moodle.tstu.uz> ) and HEMIS (<http://hemis.tstu.uz> ) The HEMIS information system provides electronic education services to administrative staff, professors, and students due to the automation of the main activities of higher education institutions. The information system acts as an information bridge between higher education institutions and the Ministry of Higher and Secondary Special Education, and serves to drastically reduce the amount of various information received from higher education institutions, avoid their paper form, and digitize the management system.

Offer of **new pedagogical models** (ICT/E-learning/Distance Learning) for students - TSTU has organized distance learning for students.

Career center at the stage of creation, which will assist the university in fulfilling its mission by bringing together employers and alumni on the same platform.

Enterprises and organizations under the Ministry of Transport of the Republic of Uzbekistan (“Uzbekistan Railways”, “Uzbekistan airways” “Uzautoyul” etc.), Almalyk mining and metallurgical company, Navoi mining and metallurgical company, "Artel Engineering and Management" LLC, "Enter Engineering" LLC etc.

## 4. Research and Innovation

In 2021, researchers published more than 231 scientific publications in Web of Science and Scopus, and TSTU publishes 3 scientific journals where researchers and professors, doctoral and master's students can publish their research results. The ratio of joint publications with international partners is 5%.

International projects have been carried out in the framework of joint scientific research with foreign universities. Income from scientific and (or) scientific and technical activities of TSTU in 2021 amounted to 935 000 euro with 9 projects. One of nine projects is National projects with international collaboration (60 000 euro) and two are EU projects and others with international collaboration (150 000 euro).

The total number of **foreign specialists** attracted to the university in 2021 is 9, 6 of them are for the short-time period and researchers employed at the University – 3.

**Research funding** (from 2016 to 2020) in millions of euros is as follows:

State budget – **928 000 euro**

Private sector – **229 000 euro**

EU and international funds – **265 000 euro**

**Research fellowships** (average number for the whole period)

- a) Incoming mobilities (Marie Currie, Humboldt, Fulbright, etc.)-1
- d) MSc, PhD and postdoc research mobility (outgoing)- 30

### **Innovation indicators**

In 2021, the total number of new patent applications was 8, and 5 of them-national 5 patents and 3 of them-international.

## **5. International cooperation and internationalization**

TSTU has signed about 50 signed agreements with foreign partners since 2020, including a Memorandum of Understanding, Agreements of Cooperation, and Joint Degree Agreements. The university has not offered any grants for international students.

The Managing Board of TSTU on International affairs includes the Vice-Rector of International Cooperation and the Head of International Relations Office. They are in charge of shaping the international image of the university and establishing international relations with partner organizations. International activities management model at TSTU is centralized. All decisions concerning international relations are decided centrally by the university administration

Transport University has a huge campus (19 hectares) with stacked infrastructure. All public areas have either a sign or signage in English. Since the area is large, it is possible to walk to important facilities for applicants during the admission process via the guided arrows that have been installed. It is not acceptable to speak English between employees. But many faculty and students speak English at a fairly high level. If professors are incentivized with a salary increment for teaching special subjects in English, students cannot enter graduate programs without a certificate of language proficiency. The university publishes scientific journals with abstracts in three languages including English (<https://transportjournals.com>). The Merchandise Shop is the next step in the internationalization of our university.

The transparent grading system at universities and for the whole republic is regulated by the Charter by the Ministry of Higher and Secondary Special Education on the system of monitoring and evaluating students' knowledge in higher education institutions. (<https://lex.uz/uz/docs/3916793?otherlang=1>)

According to the charter, the Comparative table of student learning assessment in higher education is as follows:

UZBEKISTAN GRADE CONVERSION SYSTEM							
Grades in all Uzbek HEIs	Russian Grade System	ECTS — European Credit Transfer System	USA Grade system (A- F)	GB grade system (%)	Japan grade system (%)	Korean grade system (%)	Uzbek grades in Percentage (%)
«5»	«5»	«A»	«A+»	70 — 100	80 — 100	90 — 100	90 — 100
			«A»				
			«A-»	65 — 69			
«4»	«4»	«B»	«B+»	60 — 64	70 — 79	80 — 89	70 — 89,9
		«C»	«B»	50 — 59			
			«B-»				
«3»	«3»	«D»	«C+»	45 — 49	60 — 69	70 — 79	60 — 69,9
		«E»	«C»	40 — 44			
			«C-»				
			«D+»				
			«D»				
			«D-»				
«2»	«2»	«FX»	«F»	0 — 39	0 — 59	0 — 59	0 — 59,9
		«F»					

## 6. Informatization

The most important computer assisted system is the university's digital library (<http://lib.tstu.uz/>), which we pay a lot of attention to. TSTU's library collection has more than 600,000 books. Year after year, the number of students is increasing, and the use of electronic devices as textbooks is easy. Every day a group of people are digitizing the most in-demand books in the library.

The main information platform for students and staff is HEMIS (<https://hemis.tstu.uz>), a learning management system that has been implemented for all public universities in Uzbekistan. Also university has a MOODLE platform ([modle.tstu.uz](http://modle.tstu.uz)) for distance education. HEMIS is also an HR platform, because all the necessary personal data of students and employees is entered there. For internal communication, employees use the Telegram application, the interuniversity information network, and the university also has its own telephone exchange and each department has its own short internal phone number. All important issues, including international strategy and annual goals, are discussed and voted on by the University Council at the beginning of each academic year.

The Decree of the President of the Republic of Uzbekistan "Adoption of the concept for development of higher education system of the republic of Uzbekistan to 2030" from October 8, 2019 № UP-5847 (<https://lex.uz/docs/4545887>) established several positions on work on internationalization of universities, which guides the university in its activities and the construction of strategic plans. This is the internationalization formally acknowledged in University Strategic Plan.

There are no minimum English requirements, but there is a system of incentives for English language skills by encouraging up to a 100 percent salary increment.

A plan for the restructuring of the university is being prepared by the superiors, aimed at optimizing and expanding the range of activities of the international relations sector. Restructuring is expected by 2023. Recommendations on criteria for international relations are developed by the Ministry of Higher and Secondary Specialized Education of the Republic of Uzbekistan. Based on these recommendations and criteria, the staff cooperate with foreign partners.

Official documents at the university are drawn up mainly in the Uzbek language. Transcripts of diplomas and diploma supplements are issued in English and Uzbek languages. University strategic plan and internationalization plan are issued only in the state language. The most frequently asked questions are published only in Russian and Uzbek.

The university has allocated some funding for international operations, stimulated staff and student mobility, and participated in international projects. As the university strategy has been developed recently all the funding for international operations will be done in agreement with the internationalization strategy only beginning from September 2022. In our opinion, the most important change to our internationalization model would be to provide grants for international students and implement programs in English.

The internationalization activities that University focuses at: Bilateral or multilateral cooperation, international traineeship, strategic partnerships, study programs in English, international capacity building projects, Joint/double degree study programs with international partners and internationalization of curricula.

The university website is available in three languages (Uzbek, Russian and English) The Vice Rector of International Cooperation and the International Relations Office are mainly responsible for the international promotion of the university.

Since 2016, the university staff has participated in more than 10 international fairs, 7 staff weeks and 5 international days organized by the university partners mostly in Russia, Turkey, Kazakhstan, Japan. The university does not participate in twinning programs. The university has a brochure in three languages including English.

## 7. Self- assessment of dimensions based on HEINNOVATE

The HE Innovative questionnaire was filled out by 89 employees of the university, including 16 senior management positions, 33 professors, teachers and researchers in academic positions, and 29 teachers involved in entrepreneurship education, and 11 professional and support staff.

	Name of the position	Respondents	%
1.	Senior Management Position (Rector / Chancellor, Vice Rector / Vice Rector, Dean, Deputy Dean)	16	18,0
2.	Academic position (professor / teacher, researcher)	33	37,1
3.	Teachers involved in entrepreneurial education	29	32,6
4.	Professional and support staff (e.g. career Advisors/Technology Transfer Office/Administrative offices) on University or faculty level	11	12,4
	<b>Total</b>	<b>89</b>	<b>100</b>

Respondents were asked to rate the statements for each of the eight measures on a scale from 1 to 5, with 1 being the lowest score and 5 being the highest.

### DIMENSION: Leadership and Governance

The main results of self-assessment for this parameter:

Although the majority of respondents gave good marks in this section, the total number of the lowest (1) mark is 20, 10 of which were given by 2 people from Professional and support staff, and 5 by Teachers involved in entrepreneurial education. The total number of ratings that gave 2 is 40, and most of them are given by professional and support staff. 3 was given by 234 individuals, and the number of 4 grades is 909, and the remaining 755 grades are 5 grades.

To develop this direction, the university should strengthen the following measures:

1. Develop a strategy for teaching entrepreneurship in cultural, social, and economic terms;
2. Develop a roadmap for the development of entrepreneurship at the university;
3. Ensure accountability and assign responsibility for the development of new activities and initiatives that stimulate entrepreneurial potential;
4. To form a special unit, which will be engaged in the development of entrepreneurial skills;



5. Be actively involved in the development and implementation of the local, regional and / or national innovation and entrepreneurship strategies.

**DIMENSION: Organizational Capacity: Funding, People and Incentives**

The main results of self-assessment for this parameter:

The rating result is 4.2

Group 1 – average rating result 4.2

Group 2 - average rating result 4.2

Group 3 - average rating result 4.2

Group 4 – average rating result 4.2

Only two people's answers were less than 3 points (2.8 and 2.9) and these belong to Professional and support staff, which gives 2.2% of the total of 89 people who participated in the vote. The highest score (5) is given Continuously engage with funders and investors to secure financial resources to deliver on its objectives, Reinvest revenues generated from leveraging their own research, teaching and third mission activities (self-funding), Give status and recognition to those who contribute to the institution's entrepreneurial agenda, Recruit individuals with strong entrepreneurial backgrounds from the private, public or voluntary sectors and outside of academia and Instigate systems for rewards beyond traditional research, publications and teaching criteria.

To develop this direction, the university should strengthen the following measures:

1. It is necessary to promote the joint use of premises in the faculties of the University for the Development of entrepreneurial activity;
2. Continually engage with sponsors and investors to provide financial resources to achieve our goals
3. It is recommended to widely use the experience of entrepreneurs because of master classes and field events;
4. Motivation of start-up projects and innovative ideas of students and teachers to attract additional funds to the university;
5. Provide sabbaticals for employees who seek to enhance their entrepreneurial potential
6. Organization of the implementation of our own scientific and innovative research and start-ups in production.

## **DIMENSION: Entrepreneurial Teaching and Learning**

The rating result is 4,2:

Group 1 – average rating result 4,2

Group 2 - average rating result 4,2

Group 3 - average rating result 4,2

Group 4 – average rating result 4,2

In this block, we can see that other areas and staff are relatively Professional and support staff put the lowest prices within them Provide support and training to staff in creating new curriculum related to entrepreneurship; Codify the expected entrepreneurial learning outcomes in relation to knowledge, skills and competences in all degree programs 3.7 and 3.8 points. Formally recognize extracurricular activities and Entourage staff and educators to view the latest research in entrepreneurship education with a high score of 4 categories of employees. For this reason, to develop this direction, the university should strengthen the following measures:

1. Make changes to curricula to develop entrepreneurial thinking and skills through the use of case studies;
2. To promote innovation, support access to student entrepreneurial clubs, awards;
3. Codify the expected entrepreneurial learning outcomes in relation to knowledge, skills and competences in all degree programs;
4. Systematically analyze and evaluate the participation of external stakeholders in the design and implementation of entrepreneurial courses;
5. Support a diversity of collaborative partnerships with local communities and organizations, local and regional governments, chambers of commerce, industry and HEI alumni.
6. Organization of field training at the leading enterprises of the industry.

## **DIMENSION: Preparing and Supporting Entrepreneurs**

The main results of self-assessment for this parameter:

The rating result is 4,3

Group 1 – average rating result 4,3

Group 2 - average rating result 4,3

Group 3 - average rating result 4,3

Group 4 – average rating result 4,2

From the result in the Preparing and Supporting Entrepreneurs section, we can see that the overall result there is 4 output, which is lower than in other blocks, which indicates that the university is inferior in this direction than in any other direction, or that there are some obstacles to develop this direction. We can also find out from the price given by Senior Management Position that they Offer entrepreneurial team building support and conflict management, Offer tailored entrepreneurship courses across all subject areas and levels of study, Offer financial education to entrepreneurs and potential entrepreneurs to better understand financial concepts and how to apply them links 1 score, host their own incubators or facilitate easy access to external incubators and others by 2 points.

To develop this direction, the university should strengthen the following measures:

1. Provide intellectual property assistance for potential start-ups;
2. Regularly organize cross-disciplinary idea generation events (e.g., startup weekends);
3. Provide opportunities for students to participate in research projects that offer entrepreneurial opportunities, and to intern for internships with entrepreneurs;
4. Facilitate the search for partners and mentors;
5. Build incubation facilities into the research and educational HIE infrastructure to enhance synergies

### **DIMENSION: Digital Transformation and Capability**

The main results of self-assessment for this parameter:

The rating result is 4,3

Group 1 – average rating result 4,3

Group 2 - average rating result 4,3

Group 3 - average rating result 4,3

Group 4 – average rating result 4,3

Today, for the development of education, universities are introducing a wide range of digital technologies. Now through these technologies, new types of education are emerging, if 10-15 years ago the application of digital technologies in education has brought much less results. From them, the form of distance education began to be used by us at the moment. This brings much more support to the population in the remote area. But universities have not yet managed to combine entrepreneurship with digital technology. Therefore, Teachers involved in entrepreneurial education and Professional and support staff have set a maximum 4.1 - 4.2 points on this, not higher.

To develop this direction, the university should strengthen the following measures:

1. Include digital competencies and skills in the section of the academic discipline and its intended learning outcomes;
2. Monitor and demonstrate how student and staff experience can be enhanced through the deployment of digital tools and practices;
3. Promote an enabling environment which supports open science and innovation across different disciplines, faculties and with external stakeholders;
4. Invest in and incentivize human resources to foster innovation through digital communication, collaboration and networking
5. Develop a clear set of performance metrics (Key Performance Indicators – KPIs) to drive the implementation of the strategies

### **DIMENSION: Knowledge Exchange and Collaboration**

The main results of self-assessment for this parameter:

The rating result is 4,3

Group 1 – average rating result 4,3

Group 2 - average rating result 4,3

Group 3 - average rating result 4,3

Group 4 – average rating result 4,3

Although the majority of respondents gave good marks in this section, the total number of the lowest 1 mark is 6, 6 of which were given by 1 people from Teacher involved in entrepreneurial education. 2 The total number of ratings is 29, and most of them are given by two respondents one of this Teacher involved in entrepreneurial education and second Professional and support staff. The number of 3 grades is 183, and the number of 4 grades is 904, and the remaining 678 grades are 5. In this block, university must develop three directions (Ensure that the flow of people is incentivized in both directions, have clear mechanisms for exploiting entrepreneurial opportunities with commercial and industrial partners and Provide monitoring and feedback of the mutual value developed through stakeholder relationships).

To develop this direction, the university should strengthen the following measures:

1. The HEI should provide guidance on the development and implementation of all types of relationships with the public and private sector;

2. Engaging external stakeholders to support student activities through governance, teaching, and research;
3. Ensure that all stakeholders are incentivized;
4. Monitoring of research activities at the regional, national, and international levels;
5. Have clear mechanisms for exploiting entrepreneurial opportunities with commercial and industrial partners.

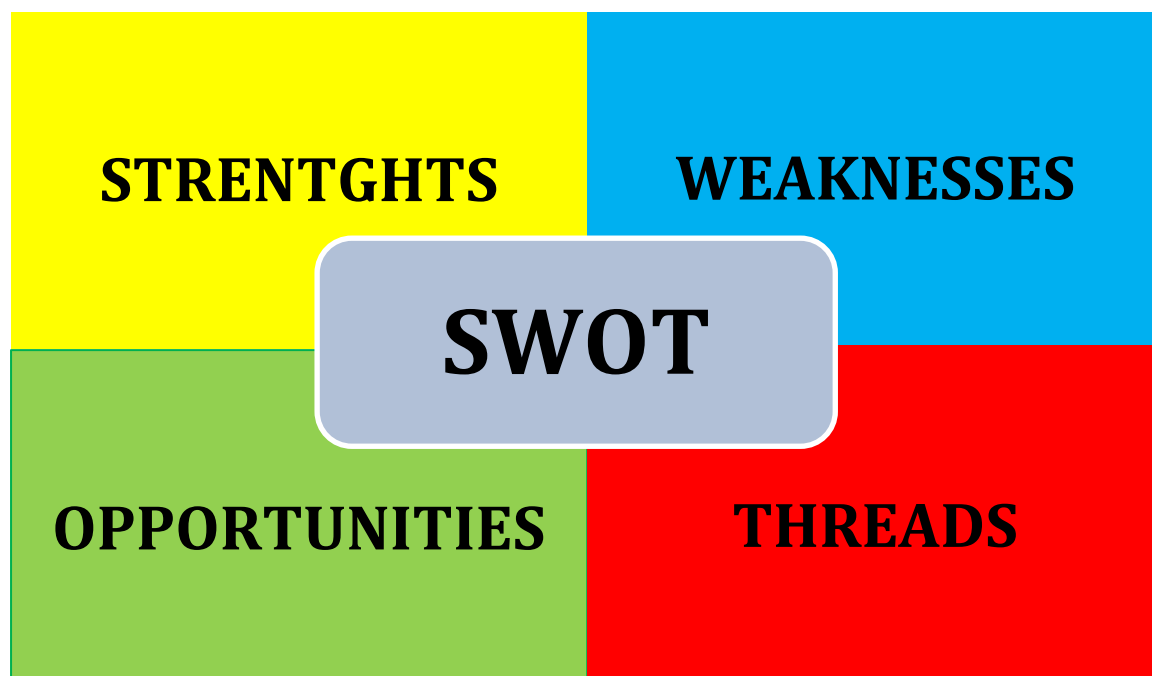
### **DIMENSION: The Internationalized Institution**

In this block, 2 support staff voted the lowest score with 2 and 3. One person from Senior Management Position voted 3 in 16 questions. In all questions, we have 32 or 1,7% of 2 score, 192 (10,2%) of 3, 942 (49,8%) of 4 and 718 (38%) of 5 scores. University must develop 2 directions: firstly, Ensure the internationalization strategy reflects its entrepreneurial agenda and secondly, Ensure the curriculum is set up to prepare students for performing professionally and socially in an international and multicultural context.

To develop this direction, the university should strengthen the following measures:

1. To create common goals and interaction between internationalization and the entrepreneurial program;
2. Promote international mobility through exchange programs, fellowships, grants and internships;
3. Encourage, recognize and encourage international mobility;
4. Increase the number of joint / double degrees which include entrepreneurship and innovation in their curriculum;
5. Have internal support structures in place to manage and grow international relationships

## 8.SWOT analyses based on self-assessment



Strengths	Weaknesses
<ul style="list-style-type: none"> <li>- readiness for development;</li> <li>- high level of corporate culture;</li> <li>- high level of development of international educational cooperation, partnership with foreign universities;</li> <li>- developed infrastructure;</li> <li>- industry specificity, uniqueness of knowledge within the industry, close connection between different types of transport;</li> <li>- presence of a strong scientific school with rich traditions;</li> <li>-availability of the university development strategy in priority directions;</li> </ul>	<ul style="list-style-type: none"> <li>- Insufficient relations with sectoral universities in other countries in terms of attracting highly qualified teachers;</li> <li>- weak development of international scientific relations, as well as scientific exchange with foreign partners due to the language barrier;</li> <li>- Low participation in foreign competitions, Olympiads, international grants and scholarships for teachers and students of the university;</li> <li>- Insufficient number of publications for scientific and PR activities;</li> </ul>

<ul style="list-style-type: none"> <li>- possibility of free distribution of financial resources (partial self-financing);</li> <li>- regular attraction of highly qualified personnel from private, state and non-academic circles;</li> <li>- presence of cooperation strategy with the leading companies of the industry in terms of organizing internships and practices of students and teachers using digital tools;</li> <li>-- availability of dissertation councils for awarding academic degrees;</li> </ul>	<ul style="list-style-type: none"> <li>- Insufficient effectiveness of R&amp;D and effectiveness of mechanisms for commercialization of research results;</li> <li>- Lack of effective strategies and plans with a focus on entrepreneurial education</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>- availability of state and international grants for academic mobility for teachers and students;</li> <li>- State staffing policy and modern labor market necessitates the improvement of curricula;</li> <li>- Support from employers in all aspects of cooperation;</li> <li>- Implementation of modern digital technologies in the educational process in accordance with the State Program of the Republic of Uzbekistan "Digital Uzbekistan - 2030";</li> <li>- diversification of funding sources (external funding) in particular permission to increase the student admission quota by increasing the amount of the training contract</li> </ul>	<ul style="list-style-type: none"> <li>- high level of prices for contract education for foreign students;</li> <li>- transition of highly qualified personnel to other universities (staff drain);</li> <li>- due to the large number of university graduates at the expense of additional admission to students, a surplus of personnel in the labor market is created;</li> <li>- Financial crises, the introduction of quarantine regime, the reduction in the number of enterprises</li> </ul>



## 9. The main areas for further intervention on Tashkent State Transport University preparedness for future challenges

Activity	Dimension	Who	When
Formation of research centers for conducting entrepreneurial activities by university teachers:  - railway transport;  - logistics and management of transport systems;  - neo-innovator-engineering;  - traction rolling stock	4 research centers	Vice Rector for Academic Affairs	2021-2023
Make changes to curricula to develop entrepreneurial thinking and skills through the use of case studies;	deans of faculties and academic department	Vice Rector for Academic Affairs	2022 y.
Encouragement of initiatives that stimulate entrepreneurial potential;	depending on the number of initiatives	Vice-Rector for Research and Innovation	2021-2023
Organize events that encourage interaction with external stakeholders, such as conferences, lectures, joint workshops and other networking events and opportunities;	depending on the number of events	Vice-Rector for Research and Innovation	2022-2023
Increase the number of joint / double degrees that include entrepreneurship and innovation in their programs.	5 programs	Vice-Rector for International Cooperation	2021-2022
Development of organizational capacity (human resource)	Organizational Capacity: Funding, People and Incentives	deans of faculties	2021-2023
Elaboration of strategy for entrepreneurial education in converting the university strategy into the shared vision of the future and strategy for organizational and individual development	Leadership and Governance	Department of Education	2021-2023

