



# OVERVIEW

**Rising innovation and emerging talents from The East**

White Paper on startup ecosystems, innovation and talents focusing on EASA\* countries by MeOut Group (\*EurAsian Startup Awards)

# Background and the community

## About MeOut Group

[MeOut Group](#) has been focusing on [education](#) and [innovation](#) in the past decade. From the operational headquarter (Budapest, Hungary) through the many activities, MeOut has a wide reach of regions including: The Visegrad 4 Countries (Hungary, Poland, Slovakia, Czech Republic), Western-Balkan (North Macedonia, Montenegro, Serbia, Albania, Kosovo, Bosnia and Herzegovina), The Caucasus (Armenia, Azerbaijan, Georgia), The Turkic Council States – in which Hungary is being present as an observer state, and Central Asia (Azerbaijan, Turkey, Kazakhstan, Uzbekistan, Kyrgyzstan).

MeOut Group's main activities involve organising hackathons (HackMeOut), ideathons (ChallengeMeOut) and other events focusing on youth, innovation and startup ecosystem. MeOut is also the founding body of the EuroAsian Startup Awards ([EASA](#)). The desirable goal of these activities is to foster regional and local ecosystem development.

This research was conducted with the involvement of local startups, incubators, accelerators, hubs, investors, venture capitals and other ecosystem players.

# Approach and methodology

Startup ecosystems can be analyzed from a wide variety of perspectives. It is very similar to examination fractals, the more we focus, the more detail we can learn, but the full-scale mapping is almost impossible. In the case of ecosystems difficulties are exacerbated by changes in their structures over time and the lack of quality, relevant information. In our first White Paper we would like to lay only the foundation for our future work in helping startup ecosystems in their development.

Our approach can be derived from the digital transformation's needs and challenges for intelligent responses in connection with these processes.

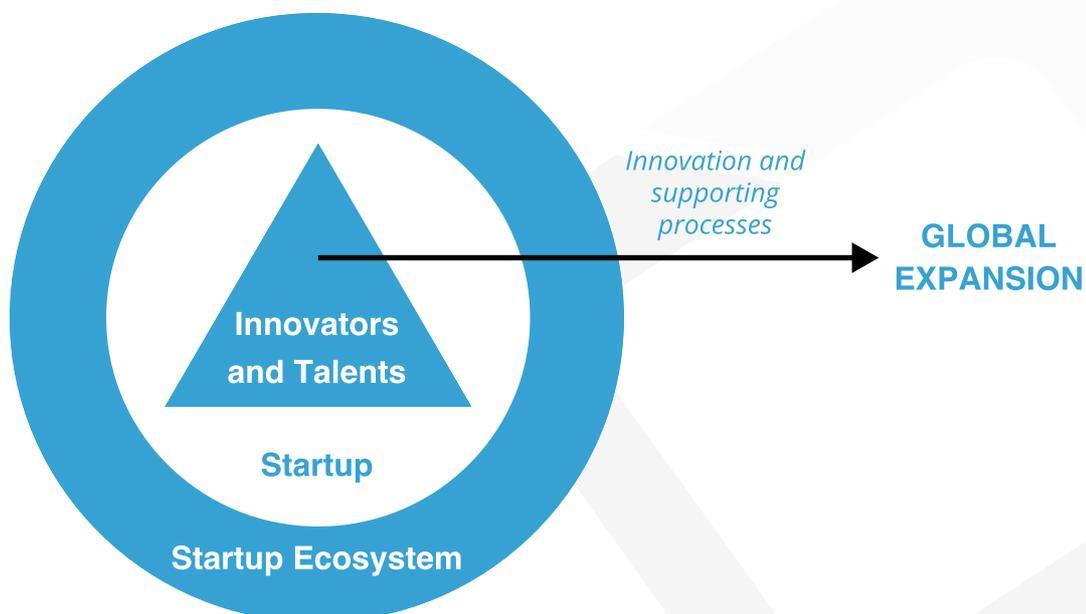
Our research is based on the following logic:

Startup value creation processes start from the ideas, knowledge and motivations of the innovators (founders) and the brilliant workforce (talents). The value creation – due to the nature of startups – is innovative and tries to promote the success of the company and in parallel the global expansion.

We follow this line of thought, we want to examine the basic characteristics of ecosystems, startups, the supporting factors, the opinions of several ecosystem members and the challenges emerging regarding digital transformation. The next figure (Figure 1.) depicts our analytical approach.

**Figure 1.** Research approach and the most relevant factors analyzed by the survey.  
Source: own elaboration

## DIGITAL TRANSFORMATION CHALLENGES AND OTHER MARKET TRENDS



In order to get the information needed we used an online questionnaire and conducted guided interviews with accelerators, investors and other relevant ecosystem actors in the Eurasian Startup Awards (EASA) region. This region covers nine countries: *Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Moldova, Russia, Turkey, Ukraine* and two additional promising countries, *Kyrgyzstan and Uzbekistan*. Hereinafter, we refer to them as EASA+2 countries. We received back almost 200 responses. As inputs we had 56 different variables and 7348 data were listed. We managed the outliers by using box-plot & 1.5 IQR method and all the necessary codings were done.

The following section covers some basic features of our focus area. *E.g.* location and origin of the startup, development phase, number of team members etc.

**Table 1.** Distribution of responding startups according to their location. All listed startups have EASA region origins and the locations of branch offices are also indicated (n=167)

Source: own research

		Frequency
Valid	Armenia	11
	Armenia, USA	1
	Azerbaijan	11
	Belarus	6
	China	2
	Cyprus	1
	Estonia	3
	Turkey, Estonia	1
	Georgia	9
	Iran	1
	Kazakhstan	10
	Moldova	2
	Netherlands	2
	Russia, Poland	1
	Russia	17
	Singapore	4
	Switzerland	1
	Turkey	33
	Ukraine	44
	Ukraine, Germany	1
Ukraine, USA	1	
USA	5	
Total	167	

**Table 2.** Distribution of responding startups according to their development phase. Only available datas are included (n=102)

Source: own research

development phase		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	formation	20	12,0	19,6	19,6
	validation	20	12,0	19,6	39,2
	growth	62	37,1	60,8	100,0
	Total	102	61,1	100,0	
Missing	999	65	38,9		
Total		167	100,0		

**Table 3.** Descriptive statistics on startups. Only available datas are included

Source: own research

		age of company	number of team members	number of countries, market presence	sum of raised funds (USD)
N	Valid	154	140	143	134
	Missing	13	27	24	33
Median		3,00	7,50	2	50000
Mode		2	5	1	50000
Std. Deviation		2,06	5,30	1,66	94767,94

**Table 4.** Age distribution of the companies – outliers are removed

Source: own research

age of company		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	,6	,6	,6
	1	23	13,8	14,9	15,6
	2	40	24,0	26,0	41,6
	3	38	22,8	24,7	66,2
	4	18	10,8	11,7	77,9
	5	9	5,4	5,8	83,8
	6	7	4,2	4,5	88,3
	7	7	4,2	4,5	92,9
	8	9	5,4	5,8	98,7
	9	2	1,2	1,3	100,0
<b>Total</b>		<b>154</b>	<b>92,2</b>	<b>100,0</b>	

As you can observe, most startups are very young, they were founded two or three years ago. The median value of team members is 7,5 and the market presence – in most cases – limited to the local markets. The next chapter, *Regional outlook* reveals all the most important factors which could affect the birth of startups, their development and the talents who are able to create new innovation and have the proper skill sets to adapt to the digital transformation.

# Regional outlook

We outline the most important differences focusing on innovation performance, the supporting environment and the human resource aspects (talents) regarding the digital transformation. Such indicators appear here which seem to be relevant to our subsequent analysis: Global Innovation Index, Global Talent Competitiveness Index (GTCI) main and sub-indicators, and StartupBlink's main ranking indicators.

Besides our focus countries (EASA+2 including Kyrgyzstan and Uzbekistan), we present some performance indicators of the most developed ecosystems as well. In this regard, according to Startupblink, the top 10 countries are: USA, United Kingdom, Israel, Canada, Germany, Netherlands, Australia, Switzerland, Spain, Sweden. China and Singapore serve as an additional reference point to our dataset (StartupBlink, 2020).

In line with the Global Innovation Index scores we can state that there is a quite huge possibility for improvements. Regarding the talent indices which are spotlighted to Artificial Intelligence, digital properties of a country and talents who will drive or manage the digital transformation, the situation is much better. Based on the score values, the relative disadvantage is already smaller here, so digital specialization can induce an extremely fruitful future for the region. The only question is how this can be realized.

**Table 6.** Main differences between top performers and the analysed ecosystems focusing on the Global Talent Competitiveness Index sub-indicators: Ease of doing business, R&D expenditures, ICT infrastructure, Technology utilisation and Investment in emerging technologies. Score values are valid for the year 2020

*Source:* Lanvin – Monteiro (2020)

It is clear that there is a lack of funding for research & development in the countries of the region. As we will see later, this is one of the most important bottlenecks. The availability of ICT infrastructure, however, is quite good compared with the top performers. Focusing on technology utilization and emerging technologies we can observe significant imbalances among EASA countries.

To be aware of these circumstances and taking these characteristics into consideration will be helpful and particularly important later in formulating development and specialization strategies.

**Table 7.** Main differences between top performers and the analysed ecosystems focusing on the Global Talent Competitiveness Index sub-indicators: Brain gain, Lifelong learning, Vocational enrolment, Tertiary education expenditure and University ranking.

Score values are valid for the year 2020

*Source:* Lanvin – Monteiro (2020)

In connection with tertiary education expenditures and university ranking the picture is even more heterogeneous and diverse: incomplete statistics and extreme discrepancies in values.

As universities play a crucial role in development processes and in creating/sharing knowledge, so this kind of disregard for universities can also be a serious constraint on the prosperity of startup ecosystems. A remarkable fact is that Azerbaijan in the field of brain gain (*and in brain retention too, an acceptable value can be seen*) is ahead of some top performers from Europe or other parts of the World.

**Table 8.** Main differences between top performers and the analysed ecosystems focusing on the Global Talent Competitiveness Index sub-indicators: Quality of management schools, Use of virtual professional networks, Collaboration within organizations, Collaboration across organizations and Brain retention. Score values are valid for the year 2020

*Source:* Lanvin – Monteiro (2020)

**Table 5.** Main differences between top performer and the analysed ecosystems focusing on the Global Innovation Index and the Global Talent Competitiveness Index. Scores and ranks are highlighted parallely for the year 2020

Sources: Dutta et al. (2020) and Lanvin – Monteiro (2020)

Country	Global Innovation Index score (0-100) median 30,94	Global Innovation Index rank (from 131)	GTCI score (INSEAD) 2020	GTCI rank (INSEAD) 2020 (from 132 countries)
Armenia (ARM)	32,64	61	43,52	60
Azerbaijan (AZE)	27,23	82	48,57	45
Belarus (BLR)	31,27	64	n.a.	n.a.
Georgia (GEO)	31,78	63	41,11	68
Kazakhstan (KAZ)	28,56	77	46,02	54
Kyrgyzstan (KGZ)	24,51	94	35,72	91
Moldova (MDA)	32,98	59	36,64	86
Russia (RUS)	35,63	47	47,07	48
Turkey (TUR)	34,9	51	38,37	78
Ukraine (UKR)	36,32	45	41,47	66
Uzbekistan (UZB)	24,54	93	n.a.	n.a.
USA	60,56	3	79,09	2
United Kingdom (UK)	59,68	4	72,27	12
Israel (ISR)	53,55	13	65,66	20
Canada (CAN)	52,26	17	71,26	13
Germany (GER)	56,55	9	72,34	11
Netherlands (NED)	58,76	5	74,99	6
Australia (AUS)	48,35	23	72,53	10
Switzerland (SUI)	66,08	1	81,26	1
Spain (ESP)	45,6	30	55,7	32
Sweden (SWE)	62,47	2	75,82	4
China (CHN)	53,28	14	49,64	42
Singapore (SGP)	56,61	8	78,48	3

The next tables (*Table 6-10.*) also provide us useful information on the EASA+2 region. The status – which serves as a starting and reference point for the further development activities – and the possible lags can be captured here as well.

**Table 6.** Main differences between top performers and the analysed ecosystems focusing on the Global Talent Competitiveness Index sub-indicators: Ease of doing business, R&D expenditures, ICT infrastructure, Technology utilisation and Investment in emerging technologies. Score values are valid for the year 2020

Source: Lanvin – Monteiro (2020)

Country	Ease of doing business score	R&D expenditure score	ICT infrastructure score	Technology utilisation score	Investment in emerging technologies score
Armenia (ARM)	79,96	4,67	61,58	48,58	46,26
Azerbaijan (AZE)	85,8	3,74	62,85	64,06	67,18
Belarus (BLR)	n.a.	n.a.	n.a.	n.a.	n.a.
Georgia (GEO)	94,09	6,03	58,27	36,65	29,9
Kazakhstan (KAZ)	84,46	2,59	74,68	43,48	37,04
Kyrgyzstan (KGZ)	67,38	2,07	36,39	16,39	19,32
Moldova (MDA)	76,69	6,3	74,81	38,4	19,51
Russia (RUS)	83,53	23,96	70,61	52,97	48,9
Turkey (TUR)	78,1	20,76	58,78	51,73	27,62
Ukraine (UKR)	67,24	9,51	62,6	42,28	40,56
Uzbekistan (UZB)	n.a.	n.a.	n.a.	n.a.	n.a.
USA	93,14	61,1	83,84	100	100
United Kingdom (UK)	92,96	36,37	95,04	84,12	82,43
Israel (ISR)	76,13	100	82,57	95,65	96,21
Canada (CAN)	86,91	34,43	79,52	76,74	68,25
Germany (GER)	86,26	66,22	92,24	86,41	86,85
Netherlands (NED)	81,15	43,56	88,68	92,4	87,95
Australia (AUS)	88,46	41,84	80,41	75,91	65,76
Switzerland (SUI)	80,53	73,65	91,22	96,15	89,43
Spain (ESP)	84,08	26,15	80,15	62,27	43,01
Sweden (SWE)	90,5	72,29	87,4	98,63	91,97
China (CHN)	76,87	46,34	49,62	54,03	59,71
Singapore (SGP)	97,59	48,45	88,17	85,04	78,6

It is clear that there is a lack of funding for research & development in the countries of the region. As we will see later, this is one of the most important bottlenecks. The availability of ICT infrastructure, however, is quite good compared with the top performers. Focusing on technology utilization and emerging technologies we can observe significant imbalances among EASA countries.

To be aware of these circumstances and taking these characteristics into consideration will be helpful and particularly important later in formulating development and specialization strategies.

**Table 7.** Main differences between top performers and the analysed ecosystems focusing on the Global Talent Competitiveness Index sub-indicators: Brain gain, Lifelong learning, Vocational enrolment, Tertiary education expenditure and University ranking.

Score values are valid for the year 2020

Source: Lanvin – Monteiro (2020)

Country	Brain gain score	Lifelong Learning score	Vocational enrolment score	Tertiary education expenditure score	University ranking score
Armenia (ARM)	36,19	27,98	16,22	6,16	n.a.
Azerbaijan (AZE)	70,78	38,76	n.a.	9,58	11,71
Belarus (BLR)	n.a.	n.a.	n.a.	n.a.	n.a.
Georgia (GEO)	37,01	23,95	6,58	6,74	n.a.
Kazakhstan (KAZ)	46,62	35,71	16,66	4,62	32,08
Kyrgyzstan (KGZ)	23,51	38,92	12,37	1,91	n.a.
Moldova (MDA)	13,67	30,43	22,32	22,2	n.a.
Russia (RUS)	43,43	46,02	24,46	17,62	48,21
Turkey (TUR)	23,57	28,42	38,71	35,08	24,37
Ukraine (UKR)	29,84	36,78	11,8	36,2	21,53
Uzbekistan (UZB)	n.a.	n.a.	n.a.	n.a.	n.a.
US A	94,77	92,68	n.a.	32,23	100
United Kingdom (UK)	93,19	78,42	70,64	31,37	97,03
Israel (ISR)	58,67	54,91	30,46	21,42	42,83
Canada (CAN)	82,74	77,88	7,27	38,84	79,99
Germany (GER)	78,76	75,73	29,52	29,02	71,1
Netherlands (NED)	80,82	87,06	56,09	38,76	68,32
Australia (AUS)	74,64	74,93	56,63	36,41	80,93
Switzerland (SUI)	100	100	57,92	31,17	84,21
Spain (ESP)	38,93	58,42	28,49	21,46	46,55
Sweden (SWE)	67,97	83,11	33,43	45,34	60,11
China (CHN)	66,5	70,74	29,62	n.a.	85,02
Singapore (SGP)	94,47	87,35	17,84	22,63	70,49

In connection with tertiary education expenditures and university ranking the picture is even more heterogeneous and diverse: incomplete statistics and extreme discrepancies in values.

As universities play a crucial role in development processes and in creating/sharing knowledge, so this kind of disregard for universities can also be a serious constraint on the prosperity of startup ecosystems. A remarkable fact is that Azerbaijan in the field of brain gain (*and in brain retention too, an acceptable value can be seen*) is ahead of some top performers from Europe or other parts of the World.

**Table 8.** Main differences between top performers and the analysed ecosystems focusing on the Global Talent Competitiveness Index sub-indicators: Quality of management schools, Use of virtual professional networks, Collaboration within organizations, Collaboration across organizations and Brain retention. Score values are valid for the year 2020

Source: Lanvin – Monteiro (2020)

Country	Quality of management schools score	Use of virtual professional networks score	Collaboration within organizations score	Collaboration across organizations score	Brain retention score
Armenia (ARM)	36,47	4,62	50,26	39,29	32,85
Azerbaijan (AZE)	47,07	2,08	64,09	65,25	67,52
Belarus (BLR)	n.a.	n.a.	n.a.	n.a.	n.a.
Georgia (GEO)	36,58	5,13	47,82	29,99	35,86
Kazakhstan (KAZ)	38,55	3,55	49,84	44,29	36,05
Kyrgyzstan (KGZ)	18,75	1,11	44,27	25,87	20,57
Moldova (MDA)	28,96	n.a.	41,95	19,58	6,29
Russia (RUS)	41,59	5,22	58,47	47,77	44,26
Turkey (TUR)	25,41	15,94	39,13	38,71	27,67
Ukraine (UKR)	48,94	4,57	53,22	41,62	19,14
Uzbekistan (UZB)	n.a.	n.a.	n.a.	n.a.	n.a.
US A	88,31	79,2	96,93	100	97,76
United Kingdom (UK)	89,46	63,95	76,41	75,6	84,95
Israel (ISR)	77,19	22,91	93,92	83,58	71,8
Canada (CAN)	85,39	60,59	76,73	57,06	77,29
Germany (GER)	72,09	7,8	91,54	89,94	82,68
Netherlands (NED)	89,66	66,47	89,86	81,64	84,98
Australia (AUS)	75,39	62,25	73,32	48,33	72,3
Switzerland (SUI)	100	27,53	100	80,32	100
Spain (ESP)	79,79	37,29	36,11	31,72	38,14
Sweden (SWE)	77,73	47,34	93,72	81,08	78,8
China (CHN)	54,44	0,41	61,09	66,29	62,71
Singapore (SGP)	90,48	76,35	77,59	66,2	89,29

In general, the score values of the quality of management schools are not so bad. We can conclude that the dissemination of a desirable entrepreneurial culture is well-founded – at least in this respect.

When we observe the collaborations within and across different organizations the picture is not disappointing at all. Later, we examine the relevance of these kinds of collaborations among ecosystem players. Regarding *brain retention* Azerbaijan, Russia, Kazakhstan and Georgia are in the most advantageous position.

**Table 9.** Main differences between top performers and the analysed ecosystems focusing on the Global Talent Competitiveness Index sub-indicators: Relevance of education system to the economy, Workforce with tertiary education, Availability of scientists and engineers, Innovation output, High-value exports and New business density. Score values are valid for the year 2020

Source: Lanvin – Monteiro (2020)

Country	Relevance of education system to the economy	Workforce with tertiary education score	Availability of scientists and engineers score	Innovation output score	High-value exports score	New business density score
Armenia (ARM)	50,8	44,49	58,18	38,88	19,27	8,32
Azerbaijan (AZE)	61,19	40,01	70,43	21,72	5,81	4,92
Belarus (BLR)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Georgia (GEO)	31,33	51,42	22,69	33,98	8,84	40,29
Kazakhstan (KAZ)	41,96	52,78	41,94	20,84	67,6	10,77
Kyrgyzstan (KGZ)	32,56	26,91	30,41	15,59	25,92	6,08
Moldova (MDA)	36,01	36,16	23,41	41,86	15,32	8,41
Russia (RUS)	46,32	77,72	60,14	34,5	34,31	20,88
Turkey (TUR)	28,22	35,41	39,66	38,88	7,53	5,63
Ukraine (UKR)	47,98	80,84	61,54	48,51	14,82	7,39
Uzbekistan (UZB)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
USA	96,93	72,02	100	80,91	41,15	n.a.
United Kingdom (UK)	68,53	64,85	76,74	84,06	61,67	75,81
Israel (ISR)	64,76	51,98	83,2	79,16	41,22	16,51
Canada (CAN)	78,62	100	85,84	61,3	38,27	0,26
Germany (GER)	81,05	43,51	80,5	78,28	41,4	6,23
Netherlands (NED)	83,99	55,25	71,22	89,49	55,32	29,22
Australia (AUS)	70,24	57,48	73,19	52,36	38,09	74,69
Switzerland (SUI)	100	61,86	81,44	100	32,72	20,71
Spain (ESP)	40,25	60,2	63,13	56,04	20,97	15,51
Sweden (SWE)	73,21	61,91	75,38	88,44	37,16	38,95
China (CHN)	63,76	n.a.	68,58	81,26	70,91	n.a.
Singapore (SGP)	91,96	82,7	80,63	66,9	100	41,51

Let's see the high-quality inputs, the high-quality outputs of innovation and the vibrancy of the business sector. There are well performing countries in our focus region regarding workforce with tertiary education. Ukraine, Russia are on the top, while the others significantly lag behind. The two, previously mentioned countries are also outstanding globally. They are ahead of the most countries listed among top ecosystems. In addition to the contributing effects of other factors, thanks to the good brain gain & brain retention positions in Azerbaijan the availability of scientists and engineers is outstanding. Ukraine, Moldova, Turkey, Armenia and Russia are the innovation leaders in our region regarding the on output side (innovation output and high-value export). The most vibrant business environment can be found in Georgia with nearly twice as much value as the country in second place.

**Table 10.** Main differences between top performers and the analysed ecosystems focusing on the StartupBlink national scores and the global rank and score of the largest ecosystem in the given country. Values are valid for the year 2020

Source: StartupBlink (2020)

Country & largest startup ecosystem	StartupBlink total score (2020) national (highest score 123,167)	StartupBlink largest ecosystem (2020) global rank (from 1000 cities)	StartupBlink total score (2020) largest ecosystem
Armenia (ARM) Yerevan	1,829	209	1,131
Azerbaijan (AZE) Baku	0,539	323	0,536
Belarus (BLR) Minsk	1,038	197	1,258
Georgia (GEO) Tbilisi	0,408	396	0,384
Kazakhstan (KAZ) Almaty	0,233	520	0,229
Kyrgyzstan (KGZ)	n.a.	n.a.	n.a.
Moldova (MDA) Chisinau	0,906	284	0,653
Russia (RUS) Moscow	8,524	9	22,055
Turkey (TUR) Istanbul	3,166	80	4,877
Ukraine (UKR) Kiev	5,057	32	9,712
Uzbekistan (UZB) Tashkent	n.a.	966	0,066
USA San Francisco	123,167	1	225,31
United Kingdom London	24,406	3	48,39
Israel Tel-Aviv	19,408	7	23,789
Canada Toronto	17,72	24	12,082
Germany Berlin	13,77	8	22,345
Netherlands Amsterdam	13,053	20	14,223
Australia Sydney	11,98	31	10,84
Switzerland Zurich	11,323	65	5,349
Spain Barcelona	10,822	27	11,752
Sweden Stockholm	10,77	29	11,338
China Beijing	8,972	6	25,519
Singapore	8,569	26	11,966

When we examine the general performance and success of different startup ecosystems we can identify the supremacy of Russia, Ukraine and Turkey.

# Key results & takeaways

This chapter contains the most important result of our survey. The full, more detailed version of the White Paper can be downloaded from our webpage very soon. The presentation of the outputs follow the research logic of this paper.

## Talents

The subsequent tables (*Table 11-16.*) summarize the opinions of our respondents on the importance and contribution of the talented workforce to the innovation performance of their own startups.

**Table 11.** Distribution of responding startups' evaluations on the importance of different „talent” factors influencing the innovation performance of the specific organization (n=102). Results are based on Likert-scale values (1-5)

Source: own research

		innovation number of workforce		innovation digital skills		innovation digital technologies at hand	
		Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent
Valid	not at all important	4,6	4,6	1,5	1,5	3,1	3,1
	slightly important	12,3	16,9	4,6	6,2	7,7	10,8
	moderately important	30,8	47,7	21,5	27,7	29,2	40,0
	very important	29,2	76,9	27,7	55,4	24,6	64,6
	extremely important	23,1	100,0	44,6	100,0	35,4	100,0
	Total	100,0		100,0		100,0	

**Table 12.** Distribution of responding startups' evaluations on the importance of different „talent” factors influencing the innovation performance of the specific organization (n=102). Results are based on Likert-scale values (1-5)

Source: own research

		innovation team competencies		innovation creativity of workforce		workforce lexical knowledge by universities	
		Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent
Valid	not at all important	1,5	1,5	1,5	1,5	9,2	9,2
	slightly important	3,1	4,6	6,2	7,7	7,7	16,9
	moderately important	13,8	18,5	16,9	24,6	35,4	52,3
	very important	33,8	52,3	33,8	58,5	23,1	75,4
	extremely important	47,7	100,0	41,5	100,0	24,6	100,0
	Total	100,0		100,0		100,0	

**Table 13.** Distribution of responding startups' evaluations on the importance of different „talent” factors influencing the innovation performance of the specific organization (n=102). Results are based on Likert-scale values (1-5)

Source: own research

		workforce practical experience by universities		workforce international experience		workforce real english language skills	
		Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent
Valid	not at all important	4,6	4,6	3,1	3,1	0,0	0,0
	slightly important	6,2	10,8	3,1	6,2	1,5	1,5
	moderately important	20,0	30,8	12,3	18,5	9,2	10,8
	very important	33,8	64,6	29,2	47,7	26,2	36,9
	extremely important	35,4	100,0	52,3	100,0	63,1	100,0
	Total	100,0		100,0		100,0	

**Table 14.** Distribution of responding startups' evaluations on the importance of different „talent” factors influencing the innovation performance of the specific organization (n=102). Results are based on Likert-scale values (1-5)

Source: own research

		workforce other language skills		workforce creativity		workforce learning and adaptive skills	
		Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent
Valid	not at all important	1,5	1,5	0,0	0,0	0,0	0,0
	slightly important	12,3	13,8	0,0	0,0	0,0	0,0
	moderately important	32,3	46,2	16,9	16,9	7,7	7,7
	very important	29,2	75,4	27,7	44,6	16,9	24,6
	extremely important	24,6	100,0	55,4	100,0	75,4	100,0
	Total	100,0		100,0		100,0	

**Table 15.** Distribution of responding startups' evaluations on the importance of different „talent” factors influencing the innovation performance of the specific organization (n=102). Results are based on Likert-scale values (1-5)

Source: own research

		workforce precise work		workforce team competencies		workforce proactive attitudes	
		Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent
Valid	not at all important	0,0	0,0	0,0	0,0	0,0	0,0
	slightly important	1,5	1,5	1,5	1,5	0,0	0,0
	moderately important	12,3	13,8	10,8	12,3	3,1	3,1
	very important	36,9	50,8	26,2	38,5	32,3	35,4
	extremely important	49,2	100,0	61,5	100,0	64,6	100,0
	Total	100,0		100,0		100,0	

**Table 16.** Distribution of responding startups' evaluations on the importance of different „talent” factors influencing the innovation performance of the specific organization (n=102). Results are based on Likert-scale values (1-5)

Source: own research

		workforce loyalty		workforce cultural fit	
		Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent
Valid	not at all important	0,0	0,0	0,0	0,0
	slightly important	1,5	1,5	6,2	6,2
	moderately important	10,8	12,3	13,8	20,0
	very important	35,4	47,7	30,8	50,8
	extremely important	52,3	100,0	49,2	100,0
	Total	100,0		100,0	

After reviewing the data, it can be stated that the general expectations on the workforce are in line with the latest approach to human resource management that focuses on the special nature of nonlinear organizations.

We can set up a rank order to see and understand the cumulative opinions about the importance of workforce (talents) (see Table 17.).

**Table 17.** Rank orders of the cumulated opinions about the importance of workforce in the innovation processes of a given startup. Values are in ascending order and expressed in percentages (n=102)

Source: own research

evaluation factors	extremely important (5)(%)	evaluation factors	extremely important (5) & very important (4) together (%)
number of workforce	23,1	lexical knowledge provided by universities for the workforce	47,7
lexical knowledge provided by universities for the workforce	24,6	number of workforce	52,3
other language skills	24,6	other language skills	53,8
practical experience provided by universities for the workforce	35,4	practical experience provided by universities for the workforce	69,2
creativity of workforce	41,5	digital skills	72,3
digital skills	44,6	creativity of workforce	75,3
team competencies	47,7	cultural fit	80
precise work	49,2	team competencies	81,5
cultural fit	49,2	international experience	81,5
international experience	52,3	workforce creativity	83,1
workforce loyalty	52,3	precise work	86,1
workforce creativity	55,4	workforce loyalty	87,7
real english language skills	63,1	real english language skills	89,3
proactive attitudes	64,6	learning and adaptive skills	92,3
learning and adaptive skills	75,4	proactive attitudes	96,9

Reading through the content of the table the following findings can be made:

If we look only at only the extremely important evaluation, the top three factors are: (1st) learning and adaptive skills, (2nd) proactive attitudes and (3rd) real english language skills. When we add the extremely important and very important together (Likert scale 4 & 5) the situation changes somewhat: First is the proactive attitudes, second is the learning and adaptive skills and in the third place is the real english language skills.

The least important factors are – according to the logic described above:

(15th) number of workforce, (14th) lexical knowledge provided by universities and (13th) other language skills.

The extended version (Likert scale 4&5 together) presents us the following results:

(15th) lexical knowledge provided by universities, (14th) number of workforce and (13th) other language skills.

## Ecosystem

In this chapter we explore the most important opinions and verdicts on the supportive startup ecosystems.

The next tables (Table 18-19.) point out the evaluations on startup ecosystem contributions to internal, organizational innovation.

**Table 18.** Distribution of responding startups' evaluations on the importance of different ecosystem factors influencing the innovation performance of the specific organization.

Results are based on Likert-scale values (1-5) (n=102)

Source: own research

		innovation - supportive culture		innovation - local market conditions		innovation - global market conditions	
		Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent
Valid	not at all important	1,5	1,5	6,2	6,2	1,5	1,5
	slightly important	4,6	6,2	16,9	23,1	10,8	12,3
	moderately important	30,8	36,9	20,0	43,1	20,0	32,3
	very important	27,7	64,6	33,8	76,9	35,4	67,7
	extremely important	35,4	100,0	23,1	100,0	32,3	100,0
	Total	100,0		100,0		100,0	

Interesting is that the supportive culture, the local market and global market conditions, the support from the local ecosystem (in general) and the governmental support are not rated so important as we have seen in the case of some talent indicators (see Table 17. above).

**Table 19.** Distribution of responding startups' evaluations on the importance of different ecosystem factors influencing the innovation performance of the specific organization. Results are based on Likert-scale values (1-5) (n=102)

Source: own research

		innovation - support from local ecosystem (in general)		innovation - governmental support (ecosystem actor)	
		Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent
Valid	not at all important	12,3	12,3	21,5	21,5
	slightly important	15,4	27,7	20,0	41,5
	moderately important	30,8	58,5	32,3	73,8
	very important	21,5	80,0	16,9	90,8
	extremely important	20,0	100,0	9,2	100,0
	Total	100,0		100,0	

The following tables (Table 20-21.) show the distribution of the respondents' evaluation on different attributes of their ecosystem.

**Table 20.** Distribution of responding startups' evaluations on the supportive ecosystem.

Results are based on Likert-scale values (1-5) (n=102)

Source: own research

		ecosystem - networking opportunities		ecosystem - support from other players		ecosystem events	
		Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent
Valid	very poor	6,2	6,2	12,3	12,3	4,6	4,6
	below average	10,8	16,9	20,0	32,3	10,8	15,4
	average	20,0	36,9	20,0	52,3	30,8	46,2
	above average	27,7	64,6	24,6	76,9	29,2	75,4
	excellent	35,4	100,0	23,1	100,0	24,6	100,0
	Total	100,0		100,0		100,0	

**Table 21.** Distribution of responding startups' evaluations on the supportive ecosystem.

Results are based on Likert-scale values (1-5) (n=102)

Source: own research

		ecosystem - fundraising possibilities		ecosystem - special advantages		ecosystem flow of information and knowledge	
		Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent	Valid Percent	Cumulative Percent
Valid	very poor	21,5	21,5	13,8	13,8	3,1	3,1
	below average	16,9	38,5	13,8	27,7	10,8	13,8
	average	36,9	75,4	30,8	58,5	27,7	41,5
	above average	12,3	87,7	18,5	76,9	32,3	73,8
	excellent	12,3	100,0	23,1	100,0	26,2	100,0
	Total	100,0		100,0		100,0	

The networking opportunities factor is top rated, while the fundraising possibilities offered by the ecosystem is the most undervalued.

## Market presence and the global expansion

Expanding market presence is one of the most important adventures in the life of a startup. In most cases the development processes induce increasing market potential. During the analysis we not only focused on the whole region as a monolithic block, but also we tried to form more heterogeneous groups as well. We found that a geopolitical categorization could be a proper solution. In this regard three groups of countries were delineated: Turkic Council member states, Commonwealth of Independent States (CIS countries) and South Caucasus countries.

The following section will discuss the market presence and the issues of global expansion in accordance with this classification. Turkic Council states in our study: Azerbaijan, Kazakhstan, Kyrgyzstan, Turkey and Uzbekistan; CIS countries: Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia and Uzbekistan; South Caucasus countries: Armenia, Azerbaijan and Georgia.

The subsequent tables (Table 22-24.) summarize for us the market presence of the above introduced three groups of countries. Three larger regions were selected to see the market penetration processes: USA and Canada, Asia, Europe.

**Table 22.** Market presence of the Turkic Council member states, the CIS members and the South Caucasus countries in USA & Canada (n=165, 166)

		USA, CAN presence		Total
		no	yes	
Turkic Council member	non	77	34	111
	yes	37	17	54
Total		114	51	165

		USA, CAN presence		Total
		no	yes	
CIS member	non	71	37	108
	yes	43	15	58
Total		114	52	166

		USA, CAN presence		Total
		no	yes	
South Caucasus	no	89	45	134
	yes	25	7	32
Total		114	52	166

In terms of percentage shares the Turkic Council member states have the largest market penetration rate (31,48%). So, nearly one third of the startups surveyed are already present in the region (USA and Canada). CIS countries have 25,86%, and South Caucasus countries' similar value is 21,87%.

**Table 23.** Market presence of the Turkic Council member states, the CIS members and the South Caucasus countries in Asia (n=164, 165)

		Asia presence		Total
		no	yes	
Turkic Council member	non	82	28	110
	yes	39	15	54
Total		121	43	164

		Asia presence		Total
		no	yes	
CIS member	non	82	25	107
	yes	40	18	58
Total		122	43	165

		Asia presence		Total
		no	yes	
South Caucasus	no	94	39	133
	yes	28	4	32
Total		122	43	165

Here, the percentages of the market penetration rates are as follows:

Turkic Council members: 27,77%;

CIS countries: 31,03%;

South Caucasus countries: 12,5%.

**Table 24.** Market presence of the Turkic Council member states, the CIS members and the South Caucasus countries in Europe (n=165, 166)

Source: own research

		Europe presence		Total
		no	yes	
Turkic Council member	non	70	41	111
	yes	30	24	54
Total		100	65	165

		Europe presence		Total
		no	yes	
CIS member	non	55	53	108
	yes	45	13	58
Total		100	66	166

		Europe presence		Total
		no	yes	
South Caucasus	no	71	63	134
	yes	29	3	32
Total		100	66	166

Regarding the *Table 24.*, the percentages of the market penetration rates are as follows:

Turkic Council members: 44,44%;

CIS countries: 22,41%;

South Caucasus countries: 9,37%.

It seems that the South Caucasus countries have the most difficulties or not so successful in market expansion.

The table below (*Table 25.*) show us the planned, desired market expansion destinations of the three groups of countries.

**Table 25.** Desired market expansion destinations of Turkic Council member states, CIS countries and South Caucasus countries (n=102)

Source: own research

		Geographical expansion									Total
		no plan for expansion	Eurasia	Europe	North Africa	United Kingdom	Asia	Global expansion	USA, Canada	Latin America	
Turkic Council member	non	0	10	25	1	7	11	2	11	1	68
	yes	1	7	20	0	1	5	0	2	0	36
Total		1	17	45	1	8	16	2	13	1	102

		Geographical expansion									Total
		no plan for expansion	Eurasia	Europe	North Africa	United Kingdom	Asia	Global expansion	USA, Canada	Latin America	
CIS member	non	1	7	27	1	8	10	0	8	0	62
	yes	0	10	16	0	0	6	2	5	1	40
Total		1	17	43	1	8	16	2	13	1	102

		Geographical expansion									Total
		no plan for expansion	Eurasia	Europe	North Africa	United Kingdom	Asia	Global expansion	USA, Canada	Latin America	
South Caucasus	no	1	11	32	1	8	16	2	9	1	81
	yes	0	6	11	0	0	0	0	4	0	21
Total		1	17	43	1	8	16	2	13	1	102

According to *Table 25*, Europe is the most wanted target market. As we have already mentioned, the appearance on the European market is a challenge for the most startups in our focus region. The next section refers to challenges including the former one as well.

# Challenges

Here, we present only the firstly mentioned challenges which were indicated by our respondents. Other related topics and approaches is also discussed in the full version, containing the concentrated, synthesized interview results. The following tables (*Table 26-28.*) demonstrate the structure, distribution of the firstly mentioned (considered most important by startups) challenges affecting the startups' growth and development focusing on Turkic Council member states, CIS countries and South Caucasus countries. All the answers were provided by startups.

**Table 26.** Distribution of the firstly mentioned (most important) startup challenges in connection with growth and development in Turkic Council member states (n=158)

Source: own research

		Firstly mentioned challenge						Total
		investment	market conditions, structure of demand	revenue	human capital, talent	technology	knowledge	
Turkic Council member	non	48	31	9	8	5	6	107
	yes	23	13	8	5	1	1	51
Total		71	44	17	13	6	7	158

**Table 27.** Distribution of the firstly mentioned (most important) startup challenges in connection with growth and development in CIS member states (n=159)

Source: own research

		Firstly mentioned challenge						Total
		investment	market conditions, structure of demand	revenue	human capital, talent	technology	knowledge	
CIS member	non	45	31	9	8	5	5	103
	yes	26	14	8	5	1	2	56
Total		71	45	17	13	6	7	159

**Table 28.** Distribution of the firstly mentioned (most important) startup challenges in connection with growth and development in South Caucasus states (n=159)

Source: own research

		Firstly mentioned challenge						Total
		investment	market conditions, structure of demand	revenue	human capital, talent	technology	knowledge	
South Caucasus	no	54	40	16	9	4	5	128
	yes	17	5	1	4	2	2	31
Total		71	45	17	13	6	7	159

As we can observe in all countries (groups of countries), the most important challenge is to find proper sources of investment and funding. In the second place is the market conditions & demand structure, including market penetration problems too. The revenue is in the third place in the case of Turkic Council member states and CIS member states, while regarding South Caucasus countries the human capital & talent factor can be mentioned.

## Summary

We see huge potential in the region analyzed. The preconditions for development and progress of startups and their ecosystems are partially at hand, and a modern entrepreneurial culture which can contribute to the success of the whole system is also available. Of course, there are lots of challenges to be solved, but an intelligent, considered digital specialization can be very promising, profitable and fruitful. For detailed findings please read the full version of our White Paper.

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Hereby, we would like to thank all the contributors and startups!

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