



MONTENEGRO

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Montenegro is a young state in the Western Balkans with a population of appr. 622.000. According to the National Statistics Office, the ICT sector in Montenegro accounts for 4,2 % of GDP. Nevertheless, Montenegro still has a long and challenging way to go to fully tap its ICT potential. Due to efforts of the Government in the previous years strong and sustainable preconditions for the accelerated development of the digital society and economy were created (see for example: The Smart Specialization Strategy (2019-2024), the Program for Encouraging Innovative Startups in Montenegro (2019-2021), as well as the Center for Excellence Encouragement Program).

Montenegro has recognized the potential of entrepreneurship and innovation, especially in the ICT sector, as providing strong potential for smart growth. One of the most important tools for this is the development of startup ecosystems (ITU Innovation, 2020a, b).

According to our extensive literature review the top 3 challenges of the ecosystem are the following:

1. Policy and regulation
2. Capital and resources (including available information, flow of special knowledge/technology transfer and ecosystem support)
3. Talents, ideas and champions (human resources) & Culture and communities

The following table (*Table 10.*) summarizes the frequencies of mentions on challenges and the relevance of these challenges according to their appearance regarding the pillars of ecosystem assessment canvas.

Table 10. Relevance and distribution of startup ecosystem challenges in Montenegro

Startup ecosystem assessment canvas	Frequency of mentions	Relevance of the challenge according to frequencies
Vision and strategy	2	6th
Policy and regulation	16	1st
Capital and resources (including available information, flow of special knowledge/technology transfer and ecosystem support)	15	2nd
Talents, ideas and champions (human resources)	13	3rd
Infrastructure, education, universities, local/available knowledge and programmes	6	5th
Market and networks	11	4th
Culture and communities	13	3rd

Source: ITU Innovation (2020a, b); Montenegro Ministry of Science (2019); Tataj et al. (2019)

1. Policy and regulation

Some notable detailed challenges mentioned by experts:

- *Montenegro remains governed in silos with no current programmes stimulating collaboration, integration. Furthermore, the country would benefit from better integration of the existing agents of the Montenegro ecosystem with other ecosystems in the neighbouring countries and Europe;*
- *Digital transformation of public sector and a strategic focus on the e-government strategy could help create a more transparent business environment, shorten and simplify administrative procedures and possibly create a demand for IT services in the private sector and thus helping growth entrepreneurial innovation ecosystem;*
- *Lack of inter-ministerial and vertical coordination;*
- *Disintegration from the Balkans, Europe and global markets;*
- *ICT companies work mainly for the government – but government procurement is not conducive to innovation;*
- *There is no clear responsibility within government for some aspects of the ecosystem;*

- *Policy and regulation related to innovation needs to be improved in several areas;*
- *There is a need to embed the innovation principle in policy-making;*
- *Public-private consultation and statistics are necessary to better design policy and regulation;*
- *Only a handful of high-tech companies – mainly suppliers to telecommunications and banking industry – are present on the market. Businesses are not taking full advantage of advanced technologies (cloud, big data, blockchain, AI, IoT, 3D printing, machine learning, robots/drones and so on), while government is slow in designing policies;*
- *Regulation lacks consistency, dynamism, and flexibility, which creates a barrier for entrepreneurs and investors.*

2. Capital and resources (including available information, flow of special knowledge/technology transfer and ecosystem support)

Some notable detailed challenges mentioned by experts:

- *Poor access to capital is chasing startup innovation out of Montenegro, impeding scale-ups and digital transformation for SMEs;*
- *Lack of serial entrepreneurs and business angels;*
- *Low credit ratings and high transaction fees (financing);*
- *Poor access to capital and resources is not encouraging innovation in Montenegro, especially startups and entrepreneurs are looking elsewhere for support;*
- *Despite the importance of low-level and seed funding, risk capital is difficult to secure – venture capital, equity, and mezzanine and business angels are scarce;*
- *Non-financial resources are limited in size and scope;*
- *Generally insufficient transfer of knowledge and technology from European knowledge centres.*

3. Talents, ideas and champions (human resources) & Culture and communities

Some notable detailed challenges mentioned by experts:

- *Innovation policy is necessary to fully integrate the entrepreneurial policies, introduce mechanisms that will slow down the outflow of talent in the field of innovation and entrepreneurship and accelerate the pace of creating innovation ecosystems;*
- *The main threat for the Montenegro innovation ecosystem is brain drain. The Ministry for Science has reached out to the scientific diaspora inviting researchers of Montenegrin origin to build ties with the country;*
- *Lack of entrepreneurial culture and role models to startup;*
- *Lack of initiative in companies for digital transformation process;*
- *Lack of critical mass of talent, knowledge and funding;*
- *Dialogue, collaboration, and consensus among stakeholder groups is absent;*
- *Stakeholder groups are unable to form a big picture of the overall innovation ecosystem;*
- *There is a significant level of frustration among innovation actors both in the private and public sectors, and dissatisfaction that not much can be changed, that procedures are not transparent;*
- *Businesses simply do not recognize the potential of digital transformation to improve competitiveness;*
- *Lack of strategic management in companies with regard to ICT (a reactive approach);*
- *Businesses tend to stay in their 'comfort zones' even if struggling financially;*
- *The ICT industry is not well represented in business associations;*
- *Private sector needs to invest more in the soft infrastructure;*
- *The absorption of human potential by the ICT industry is low;*
- *The education system should be revised to develop future talent;*
- *Low investment in education and R&D encourages a brain drain and deters home-grown innovation;*

Some notable detailed challenges mentioned by experts:

- *Champions, role models, and success stories need to be better promoted to inspire innovation;*
- *Risk aversion is impacting innovation and entrepreneurship;*
- *The entrepreneurial community is small – but open and inclusive;*
- *There is a lack of skills necessary to exploit digital technology, compounded by a failure on the part of public and private sectors to recognize digital technology as an opportunity for growth;*
- *Outflow of highly qualified research and innovative human resources.*

Other remarkable challenges:

- *In particular, the lack of IP framework in practice prevents academia-industry collaboration;*
- *Lack of collaboration between universities and businesses;*
- *The limited size of the domestic market and industry affects innovation negatively;*
- *Universities need to be strengthened in specialized industry relevant skills and in holistic entrepreneurial skills;*
- *There is a lack of leadership and a lack of ownership within the ecosystem;*
- *Lack of statistical data on innovation and development that are aligned with those of the European Union;*
- *Weak connections between R&D institutions and the business sector;*
- *A large number of startups register companies' headquarters abroad.*

The sources of the above listed opinions and challenges: ITU Innovation (2020a, b); Montenegro Ministry of Science (2019); Tataj et al. (2019).