

## Synopsis on the Romanian Healthtech Startup Ecosystem

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### Abstract

In the practice of medicine, change is inevitable. New techniques are created, procedures are updated, and levels of expertise are increased. Innovation is everything and nothing remains the same for long. Healthcare professionals either adapt to change or get left behind. But healthcare professionals are not machines. They are human beings and humans are risk-averse, preferring the safety of what is known over the thrill of innovation. Patient care needs protocols and evidence-based medicine to ensure that the right care is provided at the right time and place. Change requires an incontrovertible proof, which is not always easy to obtain. It has been theorized that the practice of medicine as we know it today is an era that will pass. But that's a long way away. And in the meantime, there are eras within eras. New science is discovered, and new theories are proven. And then, we try to convince ourselves to change our practices in line with what we know.

**Keywords:** Information Science, Entrepreneurship

### Startups and innovation

The Organization for Economic Cooperation and Development (OECD) defines innovation as the implementation of a new or significantly improved product, or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations [1]. The innovation activities represent all the steps (scientific, technological, organizational, financial, and commercial) that lead to the implementation of innovations. Some of these activities can themselves be innovative, while others are not novel but are required to have a successful implementation of innovations. Innovation activities also cover the research and development activities that are not directly related to the development of a specific innovation. Last but not least, an innovative firm is one that has implemented an innovation.

In 2001, Stanford University established the multidisciplinary program 'Biodesign'— to promote education and mentoring in the area of biomedical technology innovation [2]. The core basis of the program lies in recruiting fellows from diverse backgrounds including, but not exclusively, clinical, pharmaceutical, engineering, business development, industrial design and project management. Each team has four members with a minimum of one clinician on every team to provide clinical insights and guide members of the team without prior clinical knowledge in understanding disease states and clinical pathways. Throughout the process, the focus is on identifying unmet clinical needs that have the potential to be solved with the use of an innovative medical technology solution [2]. The process follows three phases: identification of needs, invention of concepts surrounding that need and, implementation and translation of a solution in practice [2]. During the process, the focus is on creating meaningful content by continuously scrutinizing the value proposition and the unique selling

points within the market. Based on the success of this program, Ireland, Israel, India, Singapore, Japan, Taiwan, and Australia adopted the methodology and created similar fellowships [3].

Within the European Union, the European Institute of Innovation and Technology (EIT) established various knowledge and innovation communities focused on different sectors of innovation [3]. The health branch was established to focus on health and aging [5]. These communities' belief is that innovation blooms when the right people are brought together to share expertise. Based on the "knowledge triangle" principle, an optimal environment for innovation is created when business, research, and education experts work together as one. Working across borders with more than 130 partners and thousands of startups and entrepreneurs, EIT Health brings together a vibrant community, harnessing their combined knowledge to nurture the brightest ideas, businesses and people.

According to the Cambridge Dictionary, a startup is a new company, a small business that has been recently created [6]. However, for the last years, business schools around the world have come up with a different academic definition. The definition commonly encountered in this field is the one provided by Steve Blank: a startup is a temporary organization searching for a scalable, repeatable, profitable business model [7].

A startup ecosystem is formed of people, startups in various stages and various types of organizations in a location, interacting as a system to create new startup companies. These organizations can be further divided into categories like universities, funding organizations, support organizations (like incubators, accelerators, coworking, spaces etc.), research organizations, service providers (like legal, financial services etc.), and large corporations. Different organizations typically focus on specific parts of the ecosystem function and/or startups at their specific development stages [8].

## **Romanian Ecosystem**

In 2022, Romania was ranked among the top 40 countries globally in the Startup Ecosystem Report, being the 2<sup>nd</sup> highest ranked country in the Balkans region [9]. According to the European Innovation Scoreboard of 2022 [10], Romania is an Emerging Innovator with the lowest performance and the slowest pace in the EU. The leading Romanian research-performing sector is the private sector with the Romanian public system lagging behind [11].

The annual report "The Romanian HealthTech Startups Overview Report" [12] shines the light on the Romanian healthtech ecosystem. The 2023 report is the second of its kind brought to us by Activize [13] and Freshblood [14]. It provides an overview of 75 initiatives divided into 5 categories: 1) tools for patients and families, 2) tools for healthcare professionals, 3) tools for institutions, 4) telemedicine tools, and 5) tools for concerned individuals. Compared with the previous edition, of 2022 [15], despite the total number of logos not varying, a third of the logos got replaced across all categories (Figure 1). One startup has been classified differently from a telemedicine tool to a tool for institutions. The succeeding part, called "Foreign Startups with Romanian Founders" has one new brand name. The 2022 edition identifies in a separate slide the innovative projects produced by not-for-profit organizations and the ones produced by for profit organizations and universities. Last but not least, there is a dedicated category for the supporters of healthcare innovators.

From a funding perspective, the delta between the new edition and the previous one depicts a decrease in the number of funding rounds coming from venture capital and angel investments. Lower figures are reported on amount of capital invested in the Romania-based startups comparing to the capital attracted by foreign startups with Romanian founders (Figure 2)

A full overview of the startups covered is provided in the report [12].

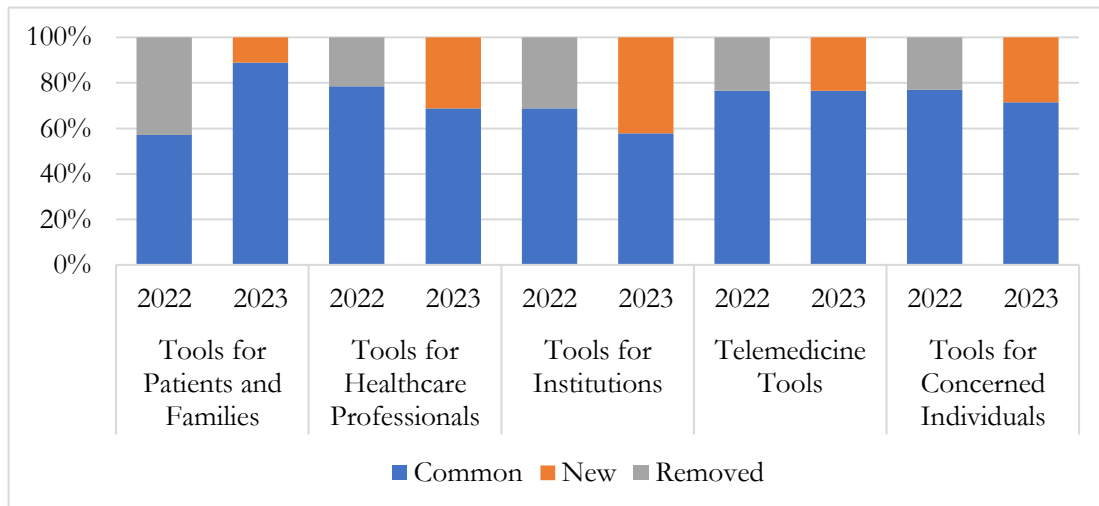


Figure 1. Startups variation between edition 1 and 2 of the Romanian HealthTech Startups Map

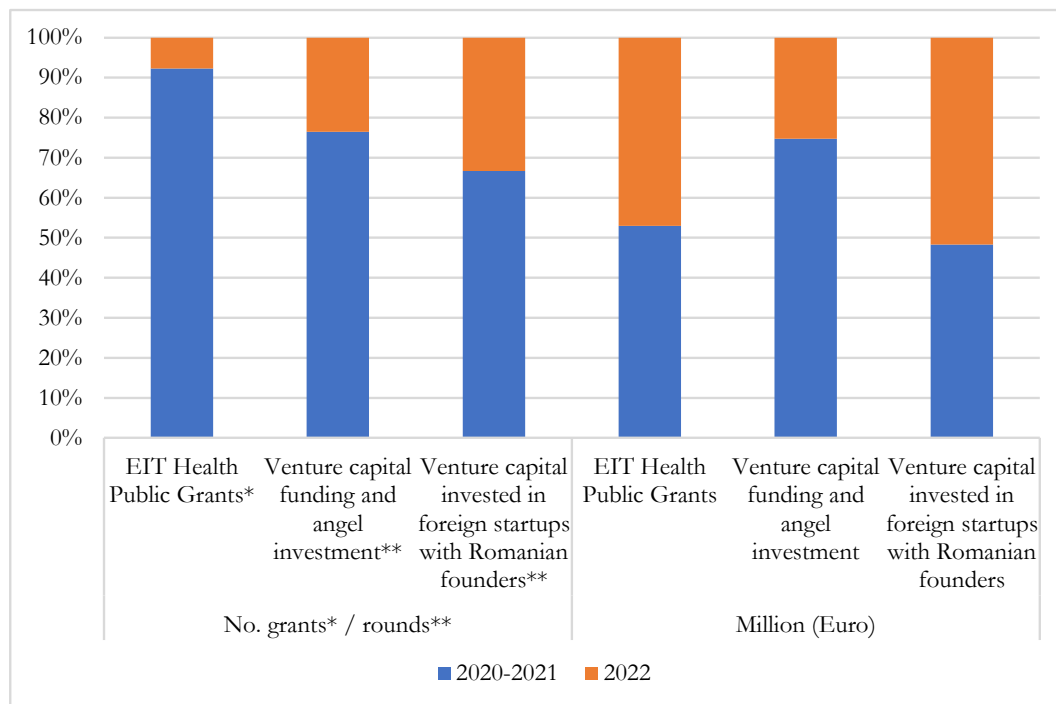


Figure 2. Romanian startups fundraising between 2020 and 2022

The Romanian healthtech startup ecosystem is still relatively young, but it is rapidly growing and developing [11]. Despite that Romania can easily leverage the European market access, and a growing pool of affordable, talented and highly skilled professionals, particularly in the fields of engineering, computer science, electrical and electronics, material science, chemistry and medicine, [9, 11] the country still struggling to find an effective way to market its startup ecosystems to foreign entrepreneurs. One of the biggest challenges for healthtech startups in Romania is the access to funding. In general, venture capital funding for startups is still relatively scarce in Romania. Many investors may be hesitant to invest in healthtech startups due to the long development cycles and regulatory hurdles associated with the healthcare industry.

Additionally, the country is mostly focused on IT and outsourcing and has some noticeable hubs: Bucharest, Cluj, Timișoara, and Iași. More than 220,000 Romanians are already part of the IT industry, mainly as employees, freelancers, and remote workers for foreign companies capitalizing on the local talent pool [9], but with little employment in innovative enterprises and poor job-to-job mobility of the human resource in science and technology [10]. With sparse collaborative initiatives among innovative small and medium companies [10], Romania has a lower share of in-house product innovators with market novelties and a higher share of non-innovators with potential to innovate.

More than other EU member states, Romania struggles with a low percentage of the population with tertiary education [10] and retaining that talent in the country [9]. Ease of starting a business, entrepreneurial training and government procurement are below the EU average [10]. To create a narrative of entrepreneurship in Romania, the public and private sectors will need a more unified approach [9]. Much more can be done regarding public sector involvement in creating an infrastructure for startup growth and bridging together strong communities of entrepreneurs and medical institutions (both public and private) to gain trust, research and test together new piloting solutions [16]. The Romanian startup ecosystem would benefit from government policies that support startups and an increase in entrepreneurial education via secondary schools and entrepreneurship programs [9].

### Conflict of Interest

Despite that the author is part of the team that created the “Romanian HealthTech Startups Overview Report” no conflict of interest is to be declared.

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