A Cross-Border Acceleration Program: The Case of Slovenia and Italy

TINA BRATKOVIČ KREGAR
University of Primorska, Slovenia
tina.bratkovic.kregar@fm-kp.si

MITJA RUZZIER
University of Primorska, Slovenia
mitja.ruzzier@fm-kp.si

Startups and SMES are considered to be key players in the economic development of nations. That means it is necessary to establish an ecosystem that will allow these firms to develop and grow. Our paper deals with the role of regional innovation ecosystems in the process of developing and nurturing these companies. In particular, we investigate the role of a cross-border collaboration in establishing a regional innovation ecosystem that goes beyond borders, and provide evidence of a successful cross-border collaboration between Italy and Slovenia. Based on primary and secondary data collection, an integrated model of a cross-border acceleration program was developed. Our findings have important implications for cross-border collaboration in the area of establishing cross-border accelerator programs, and represent an example of best practice in this filed. In the future consideration of support and encouragement of innovation ecosystems, cross-border collaboration should be seen fundamental for efficient technology and knowledge transfer from research institutions to companies.

Key words: entrepreneurship, innovation ecosystem, startup, accelerator, cross-border collaboration

Introduction

Successful startups and small and medium enterprises (SMES) have the ability to create new jobs and contribute to the economic welfare. Especially startups are considered to be a key player in the economic development. In order to support the development and growth of startups and SMES, a suitable ecosystem needs to be developed to provide external support and appropriate environmental conditions for their survival and growth (Ojaghi, Mohammadi, and

Yazdani, 2019, Tripathi et al. 2019b). Among the various actors and types of support, accelerator programs have been identified as an important part of the entrepreneurial ecosystem (Cohen et al. 2019).

The region's business ecosystem may determine the success of firm development. A worldwide example for a region that is best known for its successful startup creation is the Silicon Valley in North California (usa) (Tripathi et al. 2019b). It is acknowledged that the main reason for the success of the Silicon Valley is the spirit of cooperation. The relationships established among its network members facilitate the exchange of resources and enable innovative companies to grow and become highly profitable (Amadeo 2020).

Based on the awareness about the importance of proximity to suppliers, customers and technology to achieve a competitive advantage, the idea of developing a suitable innovation ecosystem in the Italian-Slovenian cross-border region was born. It was called the Cross-border Acceleration Bridge for entrepreneurs – cab. The purpose of this program was to empower local resources, become a facilitator in the startup phase, support smes in the process of internationalization and encourage the exchange between industry and researchers. The main questions investigated during the project were related to the needs of companies in the Italian-Slovenian cross-border region, like what do new firms actually need to survive and grow and what do smes need in order to go international. Around these two key questions the integrated model of a cross-border acceleration program was jointly design by Italian and Slovenian partners.

The aim of the program was to provide a new cross-border service that will become a fundamental part of the innovation ecosystem of Alpe-Adria. By establishing relationships among research institutions, universities, companies and organizations for entrepreneurship support from three regions (Friuli Venezia Giulia (Italy), Veneto (Italy) and Slovenia), one of the main outputs would be a consolidated cross-border network that will provide innovative services to foster entrepreneurship in the cross-border area and also beyond it. In fact, past research has shown that language and legislative issues might be barriers for practical cross-border cooperation, but on the other hand differences in culture and technology may facilitate the cross-border knowledge transfer (Makkonen et al. 2018).

The main objectives of our study are to present the role and importance of innovation ecosystems and accelerators in the process of firm development and technology transfer from research centres to business, and to present the case study of the cross-border collaboration between Slovenia and Italy in co-establishing a cross-border

acceleration program. In order to achieve our goals, we developed two research questions:

1. How do accelerators contribute to the development and growth of startups and SMES?
2. What are the key elements of a cross-border acceleration program based on the specific needs of Slovenian and Italian companies?

To answer these two questions, a structured literature review on startups and acceleration programs was conducted, an analysis of the Smart Specialization Strategy (S3) of Friuli Venezia Giulia, Veneto and Slovenia was performed to identify the best opportunity areas of cross-border collaboration between the two countries, and a comparative analysis of entrepreneurship support systems in the Italian-Slovenian cross-border region was conducted.

Theoretical Background

The economic growth of a country heavily depends on the ability of its companies to develop innovative products and services (Fritsch and Noseleit 2013, Tripathi et al. 2019b). In developing innovative products, startups have a key role, since their primary cause of birth is their innovation capability (Ojaghi, Mohammadi, and Yazdani 2019). They have the ability to disrupt an existing market and scale themselves into unicorns (Tripathi et al. 2019a). Today, due to the increased openness in innovation and technology, the entry barriers for new startups are lower than in past (Ojaghi, Mohammadi, and Yazdani 2019).

Startups can be defined as temporary organizations in search for the right, repeatable and scalable business model or as organizations with the aim of creating new products under uncertain circumstances with limited experiences and inadequate resources. They cannot be treated just as smaller versions of big companies (Blank and Dorf 2012; Clarysse and Bruneel 2007; Ojaghi, Mohammadi, and Yazdani 2019, Ries 2011; Tripathi et al. 2019b). Startups are seen as major source of innovation, since they constantly seek for new technologies to develop new products and redesign new business models (Kohler 2016). They represent an effective mechanism for creating new jobs in developing countries (Humala 2015). Statistical data show that annually startups create an average of 3 million new jobs only in the United States.

Therefore, the policy makers responsible for the employment growth should definitely give a special emphasis to this type of com-

panies and develop measures that contribute to their development (Kane 2010).

Startups might be seen as the key drivers of innovativeness and growth in the nowadays society, but at the same time they are extremely vulnerable, and therefore require special external support. Startups are new-born companies that are exposed to numerous challenges, like for example the shortage of resources (Ojaghi, Mohammadi, and Yazdani 2019). They are foreigners on the market and therefore they lack reputation and market knowledge (Lichtenthaler and Ernst 2008). Research shows that most early-stage startups fail within two years from their establishment, mainly because they fail to achieve a good problem-solution fit and because they fail to learn during the process of customer and product development. Hence, in order to increase the survival rate of startups, a suitable innovation ecosystem that provides them with adequate support from product idea development until market entrance is needed (Tripathi et al. 2019a). The aim of every startup is to become a steady and independent company.

INNOVATION ECOSYSTEM

Past research has confirmed that in order to foster the development of startups, an adequate ecosystem must be developed around these firms (Tripathi et al. 2019a). During the literature review on this topic, we came across different naming of ecosystems, like for example startup ecosystem, business ecosystem, innovation ecosystem and entrepreneurial/business ecosystem. The differences are mainly due to different points of view from which an ecosystem is considered. For example, the innovation ecosystem is focused on innovation, while the business ecosystem is usually focused on a product, customer or an industry (Ojaghi, Mohammadi, and Yazdani 2019). The innovation ecosystem is often understood as a synonymous with the business ecosystem, since both are focused on creating a collaborative network that aims at innovation by adopting a systematic approach (Fenga et al. 2019). Some authors believe that there should be a distinction between an entrepreneurial ecosystem and startup ecosystem, since promoting entrepreneurship and startups are two different things. Though, they are inter-reliant (Tripathi et al. 2019b).

Cohen (2006) describes the entrepreneurial ecosystem as a geographic region, in which interdependent actors mutually interact to create new ventures over time (like startups, but not only). These interdependent actors may have impact on the formation and growth

of the entire group as well as on the whole economy. Cukier, Kon, and Thomas (2016) defined a startup ecosystem also as limited region within 'one-hour travel' range that consists of people, their startups, and support organizations that aim at creating new startup companies and contribute to the evolvement of the already established ones.

The innovation ecosystem similarly as the startup ecosystem represents the infrastructure that enables the development of new companies and supports the existing ones. Since it is focused on a region, it also contributes to the creation of jobs in a particular region or country, employs local resources, and contributes to the growth of domestic products (Tripathi et al. 2019b). Further, it consists of a network of different stakeholders who are embedded in this ecosystem (e.g. entrepreneurs, universities, research centres, investors, funding institutions, local authorities, etc.). The network provides its members the access to resources, information and other type of support and encourages the establishment of new companies and their growth (Tripathi et al. 2019b). Startups have a fundamental part in the ecosystem since they represent the drivers of innovation, but on the other hand their survival and success mainly depend on the resources from other actors embedded in the ecosystem (Ojaghi, Mohammadi, and Yazdani, 2019). Therefore, both startups and existing companies can benefit from each other. Startups may benefit from large networks and diverse resources of the already established companies, while big companies can benefit from the innovative capabilities of nascent startups (Alberti and Pizzurno 2017).

Entrepreneurs, demography, finance, market, education, human capital, technology and support were recognized as the eight factors of a startup ecosystem. On the other hand, the key players in providing support in startup ecosystem are the government, legal framework, media, mentors, events, incubators, and also accelerators (Tripathi et al. 2019b). In the next section, the focus is on accelerators, since the main objective of the project CAB was to develop an accelerator program that will promote the development of innovative companies and technology transfer in the Italian-Slovenian cross-border region.

ACCELERATORS

In the early stage of firm development, entrepreneurs need the support of incubators to transform product ideas into real business, but in later stages of firm development they need the advanced support of accelerators to make their companies grow and further de-

velop. In fact, intensive mentorship and further funding are necessary to accelerate the business (Tripathi et al. 2019b). Although both accelerators and incubators offer similar services like networking and business consultancy, there are substantial differences in their objectives. In contrast to incubators, the purpose of accelerators is not to provide long-term assistance in terms of physical and administrative services. They have a more active role with the focus on nurturing rather than just supporting. Besides, they are more profit-oriented than incubators. On the contrary, incubators hold a more passive role with the predominant focus on support. Further, accelerators often provide financial packages before the startups are even formed (Ojaghi, Mohammadi, and Yazdani 2019). In comparison to incubators, accelerators offer more services to early-stage businesses. Apart from coaching and educational services, accelerated companies get also access to the accelerator's alumni and their networks (Mansoori, Karlsson, and Lundqvist 2019).

The defining features of accelerators are fixed-term and cohort-based educational and mentorship programs for startups founders (Cohen et al. 2019). By joining an accelerator program, startup founders are exposed to various mentors like accomplished entrepreneurs, venture capitalists, business angels, corporate executives etc. At the end of the program, there is a public event organized ('Demo day'), during which all participating startups present (pitch) their business ideas to potential investors. Y Combinator is known as the first accelerator program in the world, established in 2005 in Silicon Valley. In 2016, there were already more than 2000 accelerator programs all over the world (Fehder and Hochberg 2017). The data show an increased interest in this type of startup support in recent years.

The main purpose of accelerator programs is to seed startup companies. They aim at supporting startup founders to develop their business ideas and make them investment-ready. Accelerators provide a supportive environment with numerous possibilities of peer learning, opportunity identification, networking and referrals (Mansoori, Karlsson, and Lundqvist 2019). They are often established by its founders and local governments with the aim to transform their local economies through the development of startup technological clusters in their regions. Accelerators do not affect only the accelerated companies, but they have also a great impact on the entire region (Fehder and Hochberg 2017). The latter finding is definitely in favour of the development of the cross-border acceleration program CAB and the multiplying effects that such a program could have on

the entire Italian-Slovenian cross-border region. In the next section, the methodology used to reach the research goals is presented.

Research Methodology

In this paper, the case study methodology is applied. Case study is a form of qualitative research approach that facilitates exploration of a phenomenon within its context using a variety of data sources (Baxter and Jack 2008). This approach is largely used in social sciences, especially in practice-oriented fields, like for example management and education. In order to achieve a thorough understanding of the problem, both qualitative and quantitative approaches should be used in the case study (Biba Starman 2013). Therefore, the case study approach can be seen as a frame that incorporates various research methods. The latter enables the researcher to thoroughly understand multiple facets of the explored complexed phenomenon (Baxter and Jack 2008; Simmons 2009).

Whenever a case cannot be considered without its context, the case study approach should be chosen (Baxter and Jack 2008). The latter applies also in our case, where the context in which the cross-border accelerator was developed is fundamental and has key implications for the development of its program. The contextual conditions related to specific needs of startups and SMEs are relevant for understanding the elements that a cross-border accelerator should have to best address these needs. Qualitative case study methodology was also recognized as being very valuable for evaluating programs (Baxter and Jack 2008), which also confirms our decision of adopting the case study methodology to evaluate the development and implementation of the cross-border acceleration program CAB.

In this research, the case under analysis is the development of the cross-border acceleration program CAB. The current research was conducted within the project Interreg Italy – Slovenia (2014–2020) Cross-border acceleration bridge – CAB, and represents a key step in increasing the understanding of the role of accelerators in promoting entrepreneurship and innovation among startups and SMEs. With this research we shed light on the needs and specifics of local companies in the cross-border area of Italy and Slovenia. Therefore, it represents the basis for the successful pilot implementation of the CAB acceleration program.

In order to reach the aims of the study, various research methods were adopted. First, the analysis of recent literature on startups and accelerator programs was performed in order to identify key accelerator features, key success factors of business accelerators, key

performance indicators and other important elements related to our research problem. Second, a comparative analysis of the Smart Specialization Strategy (s3) of Veneto, Friuli Venezia Giulia and Slovenia was conducted. The latter was a key step in identifying areas with most potential for a cross-border cooperation. Third, based on the research results the business model of the cross-border acceleration program was designed (adapted from Osterwalder and Pigneuer 2010), and finally the integrated model of the cross-border business acceleration – cab was developed. Below, a more detailed description of the research process is provided.

A structured literature review on startups and accelerators was conducted in order to obtain an in-depth understanding of startups, their characteristics, needs and the role of acceleration in their development. The structured literature review was conducted by using the qualitative data analysis software nvivo. There were three sources of data used in the structured literature review. The first source represented journal articles in Scopus and ebsco database. The keyword search was performed within titles, abstracts and keywords of the articles and enabled us to find relevant articles and generate the data being sought ('accelerator' and 'startup', 'accelerator' and 'SME', 'business accelerator', 'business acceleration'). The second sources of data were internet search on the most important consultancy companies and their publications and research reports on the topic of business acceleration. The third source of data represented the specific research on national and international institutions (local and national governments, European Union, United nations), and their publications. When collecting data, time period from 2011 to 2017 was covered. From initial few hundred abstracts, 42 documents were later on in-depth analysed. By type, the analysed sources were formed by journal articles (60%), consulting reports (33%) and institutional reports (7%). Most sources were from 2017 (38%) and 2016 (29%). The analytical framework for the structured literature review included 312 nodes in 16 categories of analysis. The topics covered in the literature review were the following: accelerator features, accelerator business model, type of accelerator, selection process, key performance indicator, key success and risk factors and most promising industries for acceleration.

In order to better understand what type of support services are currently provided by support institutions to companies in the Italian-Slovenian cross-border region, a comparative analysis of cross-border startup supporting systems were performed. The latter was achieved by collecting primary data with a questionnaire that was

developed and distributed online among support institutions in the cross-border area. In total, 25 incubators and accelerators were included in the survey. The results of these researches were helpful for designing the key elements of the program of the cross-border acceleration program.

In addition, two multidisciplinary research workshops were performed in order to exchange knowledge and best practices among key stakeholders in the cross-border innovation ecosystem in the area of firm acceleration. The first workshop was conducted in Koper at the University of Primorska (Koper, 30. 5. 2018), while the second one in Trieste at the University of Trieste (Trieste, 29. 11. 2018). The participants of both workshops were the stakeholders of the cross-border innovation ecosystem (like academics, entrepreneurship support organizations, companies, research centres etc.). Besides exchanging best practices in the area of acceleration, the participants also brainstormed on what should be the value proposition of the new cross-border service for business acceleration.

In the next section, the main research results are presented.

RESEARCH RESULTS

On the basis of the analysis of recent literature on startups and accelerator programs, the main features of accelerators were identified. The main mission of accelerators is to foster the entrepreneurial ecosystem and generate opportunities. They can be either industry focused (diversification/specialization) or geographic focused (regional/global). In terms of funding structure, accelerators can be private, public or both (hybrid). Further, they can be established for-profit or non-for-profit. Most often the acceleration program is from three to six months long, and run by a management team with extensive managerial skills and experiences. Usually, there are classes of startups joining the program rather than individual companies. The investment in startups can be of various types (equity, equity-free grant, convertible loan or no investment at all). The key features are summarized in table 1.

Among the *support services* that an accelerator's program package should include, the following services were identified in the existent literature (Bagnoli, Massaro, and Bravin 2019):

- Structured mentoring
- Training programs (local mentor and international support system)
- Knowledge sharing workshops

TABLE 1 The Key Features of Accelerators

Mission	Foster the entrepreneurial ecosystem and opportunity generation
Specialism	Industry focus: diversification, specialization
	Geographic focus: regional (local/cross-border), global
Funding structure	Private
	Public
	Hybrid
Investments	Equity
	Equity-free grant
	Convertible loan
	Loan
	No investment
Management team	Manager profile and experience
Duration	Generally, from 3 to 6 months
Cohort	Cohorts or classes of startups rather than individual companies
Legal form	For profit
	Non profit

- Networking opportunities
- Co-working space
- Interaction with management team
- Demo days (pitch in front of qualified investors)
- Funding opportunities
- Customer development initiatives
- Identification of partners
- Market intelligence
- Support in business model design

Based on the online survey conducted among the accelerators and incubators in the cross-border area of Italy and Slovenia, we found that most organizations included in the study are focused on specific sectors or groups of them. They most often focus on technology sector, followed by accelerators operating in the field of finance, health and biological sciences (Bagnoli et al. 2019). Based on the number of sources in the analysed literature that considered a specific industry as a promising industry for acceleration, we developed a list of *most promising industries* for acceleration:

- Technology, media and telecommunications (9 of 42 sources)
- Financial services (7 of 42 sources)

- Health and healthcare (7 of 42 sources)
- Consumer goods (4 of 42 sources)
- Education (4 of 42 sources)
- Agriculture and food production (3 of 42 sources)
- Entertainment (2 of 42 sources)
- E-business (2 of 42 sources)
- Cloud Services (2 of 42 sources)
- Biotechnology (2 of 42 sources)
- Drones (2 of 42 sources)
- Real estate (2 of 42 sources)
- Publishing (1 of 42 sources)
- Biological sciences (1 of 42 sources)
- Energy (1 of 42 sources)
- Water and hygiene (1 of 42 sources)
- Environment (1 of 42 sources)
- Business and productivity (1 of 42 sources)
- Marketing and advertising (1 of 42 sources)
- Creative industries (1 of 42 sources)

When taking into consideration also the results of the analysis of the Smart Specialization Strategy (s3) of Veneto, Friuli Venezia Giulia and Slovenia, the following most promising industries for cross-border acceleration were selected (Bagnoli et al. 2019):

- Healthcare/Life-science
- ICT
- Financial and business service
- Consumer good/Retail
- Agriculture & Food
- Education
- Energy
- Biotech
- Logistic & Distribution
- Media & Entertainment
- Hospitality/Travel/Tourism

The identification of synergies and complementary areas in the cross-border regions of Italy and Slovenia enables policy-makers of both countries to develop instruments and measures that best meet the needs of the cross-border innovation eco-system and its

stakeholders. The latter leads to an increased efficiency of all investments, a more efficient knowledge and technology transfer from research centres to industry and a higher competitiveness of the entire area. For these reasons, the Regional Smart Specialization Strategies (RIS3) in question represent an essential element in developing the cross-border accelerator CAB. A combination of characteristics of both Italian and Slovenian market is key for the development and promotion of innovativeness of startups and SMES in the area. Slovenia with its specifics (like small size, diverse market needs etc.) can represent the perfect laboratory in the initial stages of firm development and product validation, while Italy with its 60 million population is an ideal environment for expansion and preparation for internationalization.

When developing the CAB acceleration program, therefore a special emphasis should be given to the above listed industries. The most promising industries should be thus included among the selection criteria during the selection process of firms that will participate in the acceleration program. The selection process of startups for acceleration usually includes several stages and is based on different *selection criteria*. Based on the structured literature review, we identified 13 selection criteria:

- Business idea (4 of 42 sources)
- Industry (2 of 42 sources)
- Job creation potential (2 of 42 sources)
- Technical knowledge (2 of 42 sources)
- Portfolio logic (1 of 42 sources)
- Level of innovation (1 of 42 sources)
- Potential for global growth (1 of 42 sources)
- Internal resources and motivation (1 of 42 sources)
- Leadership qualities of the founders (1 of 42 sources)
- Accelerator's ability to increase the value of start-ups in the program (1 of 42 sources)
- Developed prototypes (1 of 42 sources)
- Idea potential in solving real problems (1 of 42 sources)
- Already obtained funding (1 of 42 sources)

One of the biggest challenges facing accelerators is how to measure their effect. Since not all accelerators purse the same goal, it is difficult to determine what the *key performance indicators* are. The results of the structured literature review on the key performance indicators show that the three most cited key performance indicators

in the literature are: (1) Impact on the ecosystem (8 of 42 sources), (2) Survival rate of startups (7 of 42 sources) and (3) Subsequent investments (5 of 42 sources). The list of the most cited key performance indicators includes also the following indicators:

- Number of applications to join the program (4 of 42 sources)
- Funds obtained by the startups (4 of 42 sources)
- Partnerships created by startups (3 of 42 sources)
- Percentage of acquisitions (3 of 42 sources)
- Distribution of performance (3of 42 sources)
- Number of accelerated activities (3 of 42 sources)
- Number of exits executed (2 of 42 sources)
- Number of employees in the firms (2 of 42 sources)
- Acceptance rate (2 of 42 sources)
- Financial support obtained from startups (2 of 42 sources)
- Market capitalization of startups (2 of 42 sources)
- Profits of the accelerated startups (2 of 42 sources)
- Startups admitted in top accelerators (2 of 42 sources)
- Alumni satisfaction (2 of 42 sources)
- Class size (2 of 42 sources)
- Number of investors at Demo days (2 of 42 sources)
- Failure rate (2 of 42 sources)
- Sources of financing (2 of 42 sources)
- Rate of return on the investment – ROI (2 of 42 sources)
- Number of new created jobs (2 of 42 sources)
- Financial sustainability (2 of 42 sources)
- Success rate (2 of 42 sources)
- Reputation (2 of 42 sources)
- Years of experience (1 of 42 sources)
- International partners and mentors (1 of 42 sources)
- Innovation goals achieved (1 of 42 sources)
- Acquired knowledge (1 of 42 sources)

Accelerators face similar challenges when it comes to indicate the *key success factors,* since not all accelerators have the same goals. Therefore, it is particularly hard to define the metrics for success. In the existent literature, there are many success factors indicated for business accelerators. Based on the structured literature review,

we developed a list of specific elements that were most often considered as a key success factor for accelerators. The list includes the following factors:

- Mentorship (26 of 42 sources)
- Network of partners (20 of 42 sources)
- Events as networking opportunities (11 of 42 sources)
- Alumni network (9 of 42 sources)
- Brand (8 of 42 sources)
- Definition of clear long-term goals (7 of 42 sources)
- Quality of the program (7 of 42 sources)
- Startups financial support (7 of 42 sources)
- Accelerator team (6 of 42 sources)
- Dialogue (5 of 42 sources)
- Strong backing (5 of 42 sources)
- Links with sources of financing (5 of 42 sources)
- Strategic alignment (4 of 42 sources)
- Clear definition of the process and selection criteria (4 of 42 sources)
- Product expertise (4 of 42 sources)
- Business skills (4 of 42 sources)
- Quality of experts involved (4of 42 sources)
- Set transparent and aligned objectives (3 of 42 sources)
- Extracurricular programs (3 of 42 sources)
- Efficient organization (3 of 42 sources)
- Right startup portfolio size (3 of 42 sources)
- Definition of a clear value proposition (3 of 42 sources)
- Well-defined metrics for monitoring the success of startup (3 of 42 sources)
- Action orientation (3 of 42 sources)
- Urgency created by time-limited program (3 of 42 sources)
- Location (3 of 42 sources)
- Quality of applications (3 of 42 sources)
- Education offered (2 of 42 sources)
- Independent team of startup advocates (1 of 42 sources)
- Performance indicator (1 of 42 sources)
- Time limited support (1 of 42 sources)

TABLE 2 Key Success Factors of Business Accelerators

Strategy	Definition of clear long-term objective
	Set transparent and aligned goals
	Strategic alignment
	Definition of a clear value proposition
Program	Quality of the program
	Extra-curricular program
	Startup financial support
	Action orientation
	Urgency created by time-limited program
Network	Network of partners
	Alumni network
	Events as network opportunities
	Links to sources of funding
Resources	Brand
	Location
Procedure	Effective organization design
	Clear definition of selection process and criteria
	Right startup portfolio size
	Definition of metrics to trach startup success
	Quality of applications
Team and capabilities	Accelerator team
	Mentorship
	Dialogue
	Strong backing
	Product and business expertise
	Quality of experts involved

We have further clustered the above listed key success factors of business accelerators into six groups: (1) Strategy, (2) Program, (3) Network, (4) Resources, (5) Procedure, and (6) Team and capabilities. The latter is represented in table 2. Each group represents a key element of the accelerator's business model.

On the other hand, in the existent literature there is little discussion on the main *key risk factors* of business accelerators. We have identified the following ones: (1) Financial risk, (2) Risk of market saturation, (3) Risk of disconnection from the community of local investment, and (4) Risks related to emerging markets.

Based on the above presented research results, the business model of the CAB acceleration program was designed. The key elements of the business mode are presented in table 3.

TABLE 3   CAB Accelerator Business Model

Customers	Startups
	SMES
	Investors
Value proposition	Fast validation
Program	Structured mentoring
	Regular counselling
	Training program
	Business and product advice
	Networking
	Funding
	Shared open space
	Alumni services
Process	Technical assistance
	Mentoring
	Monitoring
	Education
	Financial assistance
	Communication
	Events
	Demo days
Society	Development of the ecosystem
	Regional development
	Regional collaboration

Continued on the next page

Customers represent the heart of any business model (Oster-walder and Pigneuer 2010). In the case of the CAB acceleration program, startups, SMES and investors are the main customer segments. The value proposition of the cross-border accelerator for its customer segments is the opportunity to validate their product and service ideas. Besides validation, the program of the cross-border accelerator will offer also the following services: structured mentoring, regular counselling, training program, business and product advice, networking, funding, shared open space and alumni service. The most important resources required to make the business model of CAB work are a skilled management team, substantial financial resources and the CAB brand. The main processes that will need to be regularly conducted in order to run the business model are technical assistance, monitoring, mentoring, education, financial assistance, communication, organization of different events and Demo days.

TABLE 3 *Continued from the previous page*

Resources	Brand
	Management team
	Financial resources
Partners	Mentors
	Venture capitalists
	Angel investors
	Alumni network
Revenue stream	Shares
	Fees
	Rentals
	Events
	Sponsorship
Cost structure	Equity
	Salaries
	Rentals

NOTES   Adapted from Bagnoli, Massaro, and Bravin (2019).

The main strategic partners that will support the business model of CAB are mentors, venture capitalists, angel investors and the Alumni network. Through regional collaboration and development of the ecosystem also other stakeholders of the cross-border region ('society') will participate in the new cross-border acceleration service. CAB will generate revenues through shares, fees, rentals, events and sponsorship. Among the most important costs that will occur while running the CAB business model are salaries, rentals and equity.

Integrated Model of the Cross-Border Business Acceleration CAB

The main result of this research is the integrated model of the cross-border accelerator program. This model will allow to test and implement the cross-border service of business acceleration for startups and SMES. When developing the model of the cross-border accelerator, the differences between the needs and characteristics of startups and SMES were also considered (Ojaghi, Mohammadi, and Yazdani 2019).

The model was developed by integrating the research findings from the structured literature review, the comparative analysis of support services in the Italian-Slovenian cross-border region and by considering the findings of two multidisciplinary research workshops, during which best practices among the cross-border innovation ecosystem stakeholders were exchanged. The final model of the cross-border accelerator program CAB is presented in table 4. It in-

TABLE 4 The Integrated Model of the Cross-Border Business Acceleration – CAB

Mission	Foster the cross-border entrepreneurial ecosystem and opportunity generation for startups and SMEs in the program area	Resources	*Funding.* CAB Project Interreg Italia-Slovenia; Funding from private investors (business angels, venture capital funds …); Funding from corporations; Funding from local, national, and international institutions *Network.* 8 project partners; 20 beneficiaries; 100 mentors (country mentors, lead mentors); 100 consultants
Identified needs	Startups and SMEs need more effective technological transfer from research institutions	Program	*Investing.* No equity *Support.* Mentoring (accessing local mentors, establishing an international support team); Training programs; Office space; Workshops; CAB points; Network opportunities; Integration with management team; Funding opportunities; Customer development initiatives; Identification of partners; Review of business models/strategies; Pilot test and case studies; Market intelligence; Pitching opportunities; Epitches; Knowledge sharing workshops/webinars *Post-program.* Alumni services; Follow-on funding

cludes all the elements necessary to implement a cross-border accelerator with the aim to increase the efficiency of technology transfer from research to business and to promote the innovation ecosystem. The model has been already successfully implemented and tested on a group of 20 startups and SMEs.

Pilot Implementation of the Cross-Border Business Acceleration CAB

Throughout the entire duration of the acceleration program (6 months), the cross-border accelerator CAB provided to its beneficiaries formal and informal learning. The latter was achieved through three CAB points (Friuli Innovazione, Cà Foscari University and ABC Accelerator) that were developed during the project. Through intensive mentorship and the organization of numerous workshops it substantially improved the knowledge and skills of the accelerated startups,

TABLE 4 *Continued from the previous page*

Aims and purpose	Improvement of the program area's innovation capacity; Creation of an Italian & Slovenian network to test and implement in the long run a new cross-border service for business acceleration, able to promote investments in the R&D of innovative products/services and to transfer technologies from R&D centers to firms	Selection	*Criteria for startups.* Legal entity at the end in the program area; Business idea; Working prototype (product/service with global, innovative and technologically advanced potentiality, ready for market tests); Coachability (technical expertise, strong lead founder, innovativeness, idea solves a real problem, potential for job creation) *Criteria for* SMES. (1) Eligibility: Legal or operational offices in the program area; At least 5 years; Number of employees more than 20 or turnover more than EUR 5 mio; (2) Quality: Business idea; Coachability (technical expertise, strong lead founder, innovativeness, idea solves a real problem, potential for job creation)
Specialism	(1) Geographic focus: cross-border; (2) No sector focus: diversification	Key performance indicators	No. of innovative services, products and tools transferred to firms; No. of research institutes participating in crossborder, transnational, interregional projects; No. of companies that cooperate with research institutes; No. of investors at CAB Demo days; No. of applications, percentage of ventures receiving next-stage funding; percentage of ventures acquired

NOTES   Adapted from Bagnoli et al. (2019).

SMES and project partners as well. The topics discussed during these practical workshops included business model design, unique value proposition design, making business in different cultures, rapid prototyping and modern ICT in entrepreneurship (e.g. 3D printing, virtual reality). By adopting different approaches of diffusing knowledge and innovative practices among companies and project partners, an environment of mutual learning was established.

The model adopted within the CAB project enabled all project partners and other actors of the cross-border innovation ecosystem to collaborate together on the development and growth of companies with high potential in terms of added value. The ability of companies to conduct business in two languages, in two different cultures

and on two different markets will definitely represent a competitive advantage for all the involved companies. Besides the increased co-operation among the actors of the innovation ecosystem, also new opportunities for match-making between young entrepreneurs and potential investors within the Italian-Slovenian cross-border region will arise. The CAB program with its support of mentors gives to young, promising entrepreneurs the opportunity to transform their innovative business ideas into a real-life business, and become a fundamental part of the innovation cross-border ecosystem.

Discussion and Conclusions

We must be aware that startups are not just smaller versions of big companies, therefore they face different challenges, which calls for an appropriate environment, in which these firms can survive and grow. The primary goal of startups is to survive and find the right problem-market fit for the new idea they are introducing on the market, which usually is not an issue for already established companies. The external support to startups must be provided by various actors that together form the innovation ecosystem that operates in a specific region. Among the most important actors of an ecosystem there are entrepreneurs, universities, research centres, financial institutions, investors and entrepreneurship support organizations.

In our opinion, encouraging cross-border collaboration brings many advantages to the region's innovation ecosystem. First, it empowers local resources and provides a stimulating environment, in which the transfer of knowledge between industry and researchers in the cross-border area is fostered and supported by appropriate services. Second, cross-border collaboration may lead to the development of a network that will provide both startups and SMES with the access to market, new opportunities, infrastructure and knowledge. The latter will result in higher competitiveness of all sectors in the region. Startups and SMES by co-existing in an ecosystem can both benefit from each other. Startups can fasten their commercialization process by making partnerships with already established companies, while SMES can get access to the innovation capabilities.

In the Italian-Slovenian cross-border region there are three universities, namely University of Primorska (Koper, Slovenia), University of Trieste (Trieste, Italy) and Cà Foscari University of Venice (Venice, Italy), which by our opinion represents a significant competitive advantage for the regional innovation ecosystem and may support the development of CAB. First, universities through vast entrepreneurial education contribute to the development of entrepre-

neurship among youth. Second, they help to develop new knowledge that drives innovation. Our findings suggest that this model of cross-border acceleration can successfully be developed only where there is substantial support of organizations like universities, research centres and potential investors in the ecosystem.

CAB is currently similar to a startup. First, it is in its early stage of growth. Second, it has limited resources, since it is funded by an Interreg program. Hence, the most important thing is to find a sustainable business model and an appropriate accelerator program that will allow CAB to function also after the project and its funding will be completed. We are aware that there is still plenty room for further improvements that will be done after a careful follow-up and evaluation of the project activities.

The current study is limited to a case study, where the case under analysis was the cross-border collaboration between Italy and Slovenia in co-developing a cross-border accelerator program. For this reason, it cannot be representative. Given the diversity of every country, each cross-border collaboration depends on the specifics of the involved countries (like economic structure, most promising sectors, characteristics of the entrepreneurial ecosystem, firms' needs, smart specialization strategy etc.). In future research, a multiple case study approach involving diverse forms of cross-border cooperation might be used to shed new light on the research problem. However, we believe that by analysing the case of CAB, we could provide an insight in the many benefits that might arise from a cross-border collaboration (like more efficient employment of local resources, better access to market, new opportunities, infrastructure and knowledge, more efficient technology transfer from research to business and an overall increase in the innovation capabilities of firms). The ability of companies to conduct business in two languages, in two different cultures and on two different markets represents a key competitive advantage of companies and might bring them many opportunities for further internationalization.

Hence, by addressing the case study on the cross-border collaboration between Italy and Slovenia in co-developing an acceleration program, we aim to direct the attention of policy makers to the many benefits that such program might have for regional innovation ecosystems of EU member states. Based on our research, we argue that cross-border collaboration should be seen fundamental for efficient technology and knowledge transfer from research institutions to companies. Most important, the current case study underlines the importance of EU-funding in facilitating cross-border col-

laboration and innovation transfer between EU countries. We believe policy makers should undertake cross-border initiatives that will support the development of innovation ecosystems, through which the innovation capacity and productivity of regions will be increased in the long run. By identifying synergies and complementary areas in cross-border regions, policy-makers can develop instruments and measures that can better address the needs of the cross-border innovation ecosystem and its stakeholders.

The program CAB represents an example of good practice in this area, and should be taken as such when developing cooperation programs and other initiatives to exploit the untapped growth potential in border areas of EU member states. It is especially important to foster sustainable trust between neighbouring countries, in order to establish mature and integrated cooperation approaches and prevent brain drain from border areas to national centres.

Notes

The cross-border acceleration program CAB was developed within the project Interreg Italy – Slovenia (2014–2020) Cross-border acceleration bridge – CAB. Operation co-funded by the European Regional Development Fund. The project CAB deals with a common challenge of the Italian-Slovenian cross-border region, which concerns how to increase the effectiveness of technology transfer from research to business with the goal of improving the region's innovation capacity. The main goal of CAB was to create a network of Italian and Slovenians actors who would develop, test and implement a new cross-border service for business acceleration, capable of promoting investments in the development of innovative products, services and fostering technology transfer from research centers to companies. The lead partner (Friuli Innovazione Research and Technology Transfer Centre) and other project partners (ABC Accelerator, Cà Foscari University of Venice, University of Triste, University of Primorska, Chamber of Commerce and Industry of Slovenia, Gruppo Euris Srl, Start com d.o.o.) aimed at increasing the opportunities of startups and SMEs in the cross-border area to collaborate with R&D institutions and to get access to international markets.

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