MAPPING BUSINESS SUPPORT FOR THE IT ENTREPRENEURIAL ECOSYSTEM IN ROMANIA

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Abstract *Despite the emergent and fragile entrepreneurial ecosystem, lack of entrepreneurial culture in Romania, there are Romanian IT entrepreneurs that found their way and developed competitive innovative international businesses. This research examines how, whether, and to what extent the IT entrepreneurs in Iasi County are supported by the entrepreneurial ecosystem attributes and categories of actors of the ecosystem domains and quadruple helix of innovation ecosystem. We consider the strengths and weaknesses of specific business support, how they are aligned to build an ecosystem supporting competitive and innovative entrepreneurship of IT firms. By applying the concept of entrepreneurial ecosystem and quadruple helix, the business support for IT entrepreneurs is analysed (university- industry-government-public-environment). The entrepreneurial ecosystems major factors (finance, policy, support, human capital, culture, markets) have aspects that are aligned and ones that still need further reconsideration in order to support the entrepreneurial system.*
Keywords: *entrepreneurial ecosystem, mapping business support, ecosystem domains*

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INTRODUCTION

Isenberg's Entrepreneurial Ecosystem (EE) concept sets out a number of institutional factors such as governmental policy, financial resources, culture, markets and markets human resources that contribute to supporting the entrepreneurs in becoming innovative and competitive. EE is a metaphor that emphasize the self-sustain attributes of the system when there are appropriate support domains and entrepreneurial nurturing environments. According to Isenberg (2010) changing a culture to one more supportive of entrepreneurship is difficult and "there is no single formula for creating an entrepreneurial economy and the use of a roadmap is an imperfect practical way". In Romania, the dynamics of change towards a more innovative economy are poor although there are islands of excellence and there is *access to a well-educated talent pool, one of Romania's greatest assets* (REPORT: Specific Support to Romania– Starts-ups, Scale-ups and Entrepreneurship in Romania, page 12 https://rio.jrc.ec.europa.eu/sites/default/files/report/KI-AX-18-008-EN-N.pdf) .

In the context of the weaker formal institutions that characterise emerging economies such as Romania, entrepreneurs find support in the entrepreneurial ecosystem. Small firm are typically resource light, therefore more dependent on external resources. The IT sector in Romania is very dynamic, especially software development companies. The case studies are from Iași, North East of Romania in Europe, an emergent smart city Iași (Georgescu et al, 2015), a city that ranked number two as the fastest-growing community overall in the Top 20 fastest-growing tech hubs by year-on-year growth to tech-related Meetup events (source: https://2019.stateofeuropeantech.com/chart/137-612). By applying, the concept of quadruple helix and using Isenberg's framework of entrepreneurship ecosystems the business support is analysed. Using empirical evidence from 5 case studies of organisations that work in supporting the entrepreneurial system, we identify the aspects that are aligned and supportive for innovation and value creation. The business support is described as forms of financial and especially intellectual capital, mainly social capital in all the 3 dimensions (structural, cognitive and relational). The ecosystems actors have aspects that are aligned and ones that still need further reconsiderations.

Despite the emergent and fragile entrepreneurial ecosystem state, the Romanian entrepreneurial and more specifically start-up ecosystem has already gained some international recognition (https://rio.jrc.ec.europa.eu/sites/default/files/report/KI-AX-18-008-EN-N.pdf, p.30). The main findings are that the IT companies are part of ecosystems that promote interactions between entities, capitalizing on opportunities and resources that can facilitate more effective action strategies. IT companies are examples of opening and producing resources from synergized actions. The ITC entrepreneurial ecosystem in Iași has started to obtain international recognition and authorities should further reconsider concrete measures so to also address support to Romanian entrepreneurs, in IT industries as well as in other sectors.

The paper structure is the following: first introduction with a presentation of the focus of the study, than the theoretical background, explaining the context- the entrepreneurial IT ecosystem, research context, design and data collection, the findings, discuss the limitations and specific implications in the reflection sections and consider a follow up-another more detailed study.

THEORETICAL BACKGROUND

There are numerous definitions of what the entrepreneurial ecosystem is and how it functions. The entrepreneurial ecosystem is a well-defined and yet versatile metaphor that highlights the interdependencies between organizations that enable specialization, co-evolution and co-creation of value across the whole of interconnected organizations (Singer, 2006; Adner and Kapoor, 2010, Isenberg, 2010; Mazzarol, 2016). Adner (2016), “the ecosystem is defined by the alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialize”(p. 2) where actors collaboratively create, deliver and capture value. To evaluate an EE Spigel (2017) considers three fundamental attributes : cultural, social and material. Innovation ecosystems, in *Quadruple Helix’* focuses on civil society, academia (education), public administration and industry (Högluind and Linton, 2018). Efficiency of public administration and the quality of regulation (based on the effectiveness of government)

reflect the quality of institutions' services, which are associated with innovation activities (Kawabata and Junior, 2020).

Experts realise that the interaction between components within the entrepreneurial ecosystem will improve entrepreneurial performance in an area (Borissenko and Boschma, 2016). Unfortunately, few studies examine entrepreneurship from a systemic perspective (Borissenko and Boschma, 2016). One of the most frequently used models was developed by Daniel Isenberg. According to him, the entrepreneurial ecosystem consists of six domains: appropriate finance, a proper culture, policies and leadership, quality human capital, markets expertise for selling the software products, institutional and infrastructural supports.

The networks as communities of practice learning is facilitated and entrepreneurs comply with the social norms in their environment in order to be considered legitimate economic actors (Lefebvre et al, 2015). Social networks are supporting mechanism for acquiring entrepreneurial resources (Anderson et al., 2010).

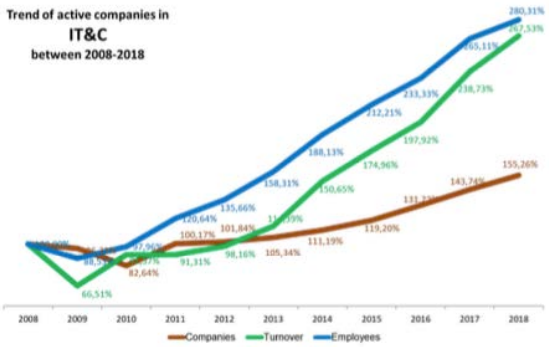
METHODOLOGY

Context and data collection

A multiple case study was chosen (5 case studies), designed to be both reliable and valid (Goffin et al., 2019). Such case studies and mapping were not previously researched. We triangulated data from official data and interviews(10 interviews with active entrepreneurs from these organisations and with a consultant/manager from each of the case studies, that in some cases was also entrepreneur). We selected the first 3 case studies from the Chamber of Commerce Iași events(the Chamber of commerce is one of the case studies), the main actors and organisers of IT entrepreneurship supporting events(Fablab and RubikHub). In this 6 interviews we ask for more organisations and selected 2 more, only one is informal (Made in Iasi-the association initiated by several IT entrepreneurs and JCI-Junior Chamber International). We consider that these respondents are representative as they were chosen according to their active involvement in creating an ecosystem for IT entrepreneurs and being actively involved in the 5 case studies selected. The case studies were selected according to their presence in the entrepreneurial community. The 5 case studies are autonomous, non-governmental, public utility, apolitical, non-profit organization, with legal personality. were created to represent, defend and support the interests of its members and the business community in relation to public authorities and bodies in the country and abroad.

The IT companies continuous create novelty, being able to generate, adopt and apply new knowledge that can power innovative output (Teece and Leih, 2016).

Figure 1. Trend of active IT&C companies



Source: Economic Facts and Figures of IAŞI County, 2019, pp 16, author Iasi Chamber of Commerce and Industry having as sources of information the data from the Ministry of Public Finance, The National Trade Register Office, the County Statistics Department of Iasi, other public sources and its own database

Table 1. Details of the case studies

Case	Status	Age	Core services/ Mission	Data
Chamber of commerce http://www.cciasi.ro/EN/index.htm	non for profit organization	13 years since 2007	IASI Chamber of Commerce and Industry was created to represent, defend and support the interests of its members and the business community in relation to public authorities and bodies in the country and abroad.	Focus group: 5 attendees 2 Interviews: one consultant and one entrepreneur, Documents: 3
Fab Lab http://www.fablabiasi.ro/en	non for profit organization	3 years Since 2017	Fab Lab Iasi is in affiliation process with the international network of Fab Lab laboratories, having the purpose to facilitate innovation and digital fabrication, programs with the purpose to stimulate innovation, digital fabrication and entrepreneurial spirit among the technical students of Iasi.	2 Interviews: one consultant and one entrepreneur, Documents: 2
Rubikhub https://rubikhub.ro	non-profit initiative	3 years Since 2017	Develop the entrepreneurial ecosystem of NE Romania by connecting, educating and empowering people to create successful global businesses. Considered one of the most active entities in the Romanian startup ecosystem.	2 Interviews: two entrepreneurs, Documents: 4
JCI Iasi https://www.jciiasi.ro	non for profit organization	18 years Since 2002 in Romania	Junior Chamber International is a non-for profit organization encourages young people to become active citizens and to participate in efforts towards social and economic development, and international cooperation, good-will and understanding.	2 Interviews: one consultant and one entrepreneur, Documents: 3

Made in Iași	Informal network	3 years	Supporting software development entrepreneurs	2 interviews with 2 of the founding members

Data analysis and findings

We explored how entrepreneurs perceive support: availability of appropriate finance for tech entrepreneurs, a proper culture, enabling policies and leadership, quality human capital, markets expertise for selling the software products, and a range of institutional and infrastructural supports (following Isenberg 2011 domains). In Iasi, the IT ecosystem is made of affiliated organisations- ecosystem as affiliation (Adner, 2016). This is supported by numerous networks and from the perspective of the representatives of these networks who have assumed to support the entrepreneurs. Understanding the 'landscape' or the ecosystem is also critical to the success of actors.

In the present study we mapped the perceptions of alignment of the dimensions of an supportive ecosystem for entrepreneurs. We gathered data until we reached saturation and interviewed entrepreneurs and active consultants in 5 case studies whose mission are to support the entrepreneurs and the ecosystem. In order to asses these aspects we used the traffic sign metaphor. In his work Adner, 2012, in order to show the alignment of each actor, he uses a simple metaphor: a continuous traffic sign represented by green, yellow, or red lights. The risk levels in Adner's blueprint follow a green, yellow and red "traffic light" for the co-innovation risks, green means the associated members are ready and in place; yellow means that they are not yet in place, but that they have a plan for this; and red means that these parties are not in place and there is no clear plan set for them.

The value proposition we considered was building an IT ecosystem supporting innovation and value creation for IT companies. We considered Eisenberg domains: human capital, finance, culture, markets, support, policy. Adner(2012) argues that it is not very frequent for an innovative value proposition to start with all the actors and domains aligned, supporting the value propositions so the lights to be all green. That is not mandatory, either. Yellow lights are acceptable, as long as they are followed by a plan to make them turn into green. Red lights, though, are challenging. Any red light, either by lack of capacity of a collaborator to deliver or by lack of will to cooperate, or due to a problem of its own, must be addressed, for instance by creating incentives to find a way to overcome problematic connections in the project (Fernandes et al, 2015).

Selected research findings of the relevant data:

1. ***Policy*** is mainly red and yellow (not yet aligned). There is not enough support for smaller IT companies, there is lack of predictability-the laws are changing frequently, low level of trust in public support pillars. At a firms level the entrepreneurs are activating *leadership- identifying an opportunity and taking the chance or the risk to try to extract value from that opportunity in international environment(interview no 4).*
2. ***Financing*** is yellow and red (there is not an alignment in terms of financial supporting the it entrepreneurs of the ecosystem): *it's no Romanian fund who really invest in tech start-up and understand the needs(in interview no 1,3,4,5,7,9),* there are barriers to access finance capital- the costs of debt and other costs , the reduced tax for an employee is for bigger companies that afford paying big salaries per one employee, but there are also some few positive aspects such as: *Romania does have*

an awesome taxing system for startups and the advantages of lower costs compared to other ecosystems. In other words, it's easier to start with lower capital. But if you target to "conquer" only the Romanian market, you will remain an "Eastern European" or "nationwide" company which won't be appealing for international VC's (entrepreneur Sebastian Gabor, Rubikhub).

3. ***Support*** is mainly yellow and red for supporting sustainable and competitive entrepreneurship through the 3 sub pillars for supporting innovation: political environment (lack of political stability), regulatory environment (the political situation not supporting the rule of law) and business environment (the difficulty of starting and running a business) and green for the support networks, also for the internet infrastructure(high speed connectivity) and the airport and the fact that we have a lot of connections with more countries that helped a lot.
4. ***Human capital*** is green for technical specialists- very good- *community is growing graduates from the technical and computer science, economics.. we have something that is … no longer really present in the rest of Europe and most of the western world people that are engaged and IT dedicated* and so *the value that we can bring to our customers, the fact that we have really mastered execution*, but more human resources are needed: *there is about 5 times more demand than there is supply for people working in this industry in Iași (interview no 1 and all the other interviews mention the need of even more specialists).*
5. ***Research and academia*** – is mainly green, but also yellow in some asspects. Entrepreneurs consider that they *have access to a lot of innovative, potential people because of the Universities in Iași* and not yet aligned is the lack of business expertise: *we have brilliant IT people who have brilliant ideas but no business expertise*, the specialists should be involved in the university curricula
6. ***Markets*** is mainly yellow and red (not aligned) due to the fact that for a real IT start-up ecosystem that sells globally, entrepreneurs said: *we need to learn how to sell, at scale (said the majority of interviewed entrepreneurs), we are in a company working for big companies.. and we do projects in Sillicon Valley and what we build here in Iași does not diferent from what comes out of Palo Alto, the challenge here in Iasi is to move from a city of outsourcing and multinational companies to a city where an intellectual property is build here but we do not know how to sale, marketing and focus on growing (interview no. 7, idea that is present also in other interviews).*

CONCLUSIONS

The main findings are that the IT companies are examples of opening actions and producing resources from synergized actions part of ecosystems that promote interactions between entities, capitalizing on opportunities and resources that can facilitate more effective action strategies. The ecosystems major actors still need further reconsideration so to be aligned in order to offer business support to the in the innovation entrepreneurial IT systems: university- industry actors are aligned so to support innovative projects but the formal institutions register institutional voids. One major concern of the entrepreneurs and consultants is lack of predictability. According to Global Innovation Index, 2020, for a sustainable and competitive entrepreneurship, there are 3 sub pillars for supporting

innovation: political environment (political stability), regulatory environment(rule of law) and business environment (the ease of starting and running a business, business support mechanism).

The employees in the IT industry are a source of competitive advantage for innovation. It is a knowledge intensive business sector and government should further reconsider concrete measures so to also address support to Romanian entrepreneurs also for smaller, entrepreneurial firms.

The limitations of the present study is the inductive approach and whilst conceptually generalizable, it may work differently in other contexts.

The implications of this study are that it resulted the need of at least another study that explores how Romanian IT entrepreneurs foster innovation through networking, drawing on social network analysis and institutional theory.

References

1. Adler, R. 2012 . *The Wide Lens: A New Strategy for Innovation.* New York: Portfolio/Penguin.
2. Adner, R., Kapoor, R., 2010. *Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations*. Strategic Management Journal, 31: 306-333.
3. Adner, R., 2016. *Ecosystem as Structure. Journal of Management, 43(1), 39–58*
4. Anderson, A. R., Dodd, S. D. and Jack, S., 2010. Network practices and entrepreneurial growth. Available from *OpenAIR@RGU*. [online]. Available from: http://openair.rgu.ac.uk
5. Borissenko, Y., & Boschma, R. , 2016. *A critical review of entrepreneurial ecosystems: towards a future research agenda, No 1630*. Section of Economic Geography: Utrecht University.
6. Fernandes, M.J, Machado, J.R. Wnuk, K. 2015, *Software Business: 6th International Conference, ICSOB 2015*, Braga, Portugal, June 10-12, 2015, Proceedings.
7. Georgescu, M., Pavaloaia, V.D., Popescul, D., Tugui, A. , 2015. *"The Race for Making up the List of Emergent Smart Cities. An Eastern European Country's Approach"*, Transformations in Business & Economics, Vol. 14, No 2A (35A), pp.42-59.
8. Goffin, K., Åhlström, P., Bianchi, M., & Richtnér, A., 2019. *State-of-the-art: The quality of case study research in innovation management. Journal of Product Innovation Management.* doi:10.1111/jpim.12492
9. Höglund, L.; Linton, G. 2018. *"Smart specialization in regional innovation systems: a quadruple helix perspective"*. R&D Management. 48 (1): 60-72.
10. Isenberg, D. J. 2010. *How to start an entrepreneurial revolution. Harvard Business Review*, 88(6), 40-50.
11. Kawabata, M. K., & Junior, A. S. 2020. *Innovation and institutions' quality: A comparative study between countries. International Journal of Innovation Science*, 12(2), 169-185.
12. Lefebvre, V., Radu Lefebvre, M., & Simon, E., 2015. *Formal entrepreneurial networks as communities of practice: a longitudinal case study. Entrepreneurship & Regional Development, 27(7-8), 500–525*
13. Mazzarol, T., Battisti, M., Clark, D., 2016. *The Role of Universities as Catalysts within Entrepreneurial Ecosystems.* In D. Clark, T. McKeown, & M. Battisti (Eds.), *Rhetoric and reality: Building vibrant and sustainable entrepreneurial ecosystems*
14. Singer, J. G., 2006. *Systems marketing for the information age. MIT Sloan Management Review*, 48: 95. Small Business Economics, 10(3), 213–225.
15. Teece, D., & Leih, S. 2016. *Uncertainty, innovation, and dynamic capabilities. California Management Review*, 58(4), 5-12.

16. Reports: *Growing Romania's entrepreneurship scene into a start-up ecosystem* Specific Support to Romania: Background Report-The Romanian Entrepreneurial Ecosystem, 2018, https://rio.jrc.ec.europa.eu/en/policy-support-facility/specific-support-romania
17. https://2019.stateofeuropeantech.com/chart/137-612