

Speed dating: an effective tool for technology transfer in a fragmented regional innovation system?

Vojtěch Kadlec*

Charles University, Faculty of Science, Department of Social Geography and Regional Development, Czechia

* Corresponding author: vojtech.kadlec@natur.cuni.cz

ABSTRACT

The main goal of this paper is to demonstrate the impacts of speed dating on the enhancement of university-business collaboration. With the example of the metropolitan region of Prague and its largest university (Charles University), the case study on a speed dating event was organized by this University in the field of life science and medical devices. The results show, that speed dating itself has limited direct impact on real technology transfer. Only 1 of the 44 newly gained contacts was transformed into real cooperation in the form of consultancy. On the other hand, speed dating has several indirect impacts, which can moderate fragmentation of the regional innovation system, i.e. community and trust building, learning of common “language” and exchange of information. Direct impact can be enhanced by the follow-up activities of dedicated people (e.g. technology scouts or business development managers), who can encourage and support creation of more new technology partnerships.

KEYWORDS

speed dating; technology transfer; community building; follow-up activities

Received: 31 January 2019

Accepted: 18 April 2019

Published online: 20 May 2019

Kadlec, V. (2019): Speed dating: an effective tool for technology transfer in a fragmented regional innovation system?
AUC Geographica 54(1), 57–66
<https://doi.org/10.14712/23361980.2019.6>

© 2019 The Authors. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>).

1. Introduction

The role of universities in the economic development of regions and states has become an integral part of the focus of researchers in regional development in recent years (Breznitz 2011; Czarnitzki et al. 2012; Goddard et al. 2013; Guerrero et al. 2014; Sotarauta and Suvinen 2018), as well as one of the priorities for support from the European Union Structural Funds and national finance for applied research. The cooperation between universities and the business sector has thus become widely considered as an important component of development strategies of regions and engagement strategies of universities. Nevertheless, there are still many barriers that limit the effective transfer of technology and knowledge from universities via channels such as contractual and collaborative research, intellectual property sales, active student engagement or corporate university professorships.

In general, cooperation between firms and universities or research organizations is most often seen in the context of promoting innovation and knowledge-based competitiveness that would enhance overall social and economic development (Nonaka and Takeuchi 1995; Kadlec and Blažek 2015; Coenen et al. 2017).¹ However, expectations of the benefits of closer links between universities and firms, both in terms of research and human resources, are based on positive examples from advanced countries, especially from Western Europe or the United States of America, which differ substantially from post-communist countries in terms of institutional frameworks and highly developed business sectors.

Prague, as one of the most developed regions in post-communist countries, is characterized by the so-called fragmented regional innovation system (Tödtling and Trippl 2005; Blažek and Žížalová 2010), with a high density of actors; however, the subsystems of knowledge generation and knowledge exploitation are only poorly interconnected. Charles University is undoubtedly one of the key stakeholders in the Prague innovation ecosystem. Its active participation in the systematic building of research cooperation with companies through appropriate tools might represent a significant step towards higher socio-economic benefits from the transfer of knowledge and technology in Prague.

One of the tools for effectively overcoming the fragmentation of the whole system – and for building or enhancing both formal and informal relationships – is speed dating (Maxwell 2005; Tödtling and Trippl 2005). Speed dating can facilitate an effective increase in mutual cooperation among stakeholders, both in close and relatively remote fields, and promote technology transfer among research organizations, universities, and companies. This transfer can lead to

innovations that will strengthen a region's development (Cooke and Leydesdorff 2006; Breznitz 2011; Czarnitzki et al. 2012; Franco and Gussoni 2014). Article aims to demonstrate the impacts of speed dating event on technology transfer at Charler University, the biggest university in a fragmented regional innovation system of Prague. Thus, this article contributes to the literature by linking practical tool with theoretical background.

The article is structured as follows. The second chapter discusses the extant literature and theoretical concepts and it is followed by the third chapter, which explains the methodology approach and data. The fourth chapter presents the main empirical results and their discussion, and the paper is closed by the conclusions.

2. Role of speed dating in regional innovation systems

Most of the current conceptual approaches in the sphere of regional development deal with the collaboration between companies and research organizations (including universities). Such conceptual approaches include, for example, the concept of 'differentiated knowledge bases' (Asheim and Getler 2005; Asheim et al. 2007; Boschma 2017; Květoň and Kadlec 2018; Grillitsch et al. 2019b), local buzz and global pipelines (Bathelt et al. 2004; Bathelt 2007; Huggins et al. 2019; Grillitsch et al. 2019a), or Triple Helix (Etzkowitz and Leydesdorff 2000; Leydesdorff 2018). However, the regional innovation systems approach (Cooke et al. 1997; Cooke 2007; Coenen et al. 2017; Isaksen et al. 2018) seems particularly useful in terms of research and practice, as this approach to a large extent represents the synthesis of the above-mentioned approaches. The main advantage of the regional innovation systems approach is its more comprehensive character compared to other conceptualizations. It seeks to understand the functioning of the entire innovation system of the region and not just of partial areas, as is the case with other approaches. Another advantage of this approach is the fact that it provides not only an analytical tool for system research, but also a sound basis for the effective support of regional development (Tödtling and Trippl 2005; Moodysson et al. 2010; Flanagan and Uyarra 2016).

The regional innovation systems basically consist of two main subsystems: the subsystem of knowledge generation (primarily representing research organizations) and the subsystem of knowledge exploitation (which is mainly made up of companies). For the efficient functioning of the regional innovation system, it is important not only to achieve a sufficient size of

¹ See also, for example, the National Research and Innovation Strategy for Smart Specialization of the Czech Republic (National RIS3 Strategy).

both subsystems, but also a proper interface between them (Blažek and Kadlec 2019; Asheim and Gertler 2005; Nonaka and Takeuchi 1995). From the point of view of the creation of innovation, which is the desired effect of knowledge and technology transfer, tacit (non-codified) knowledge is crucial; and personal contact is essential for the transmission or exchange of tacit knowledge (Bathelt et al. 2004; Polanyi 1967). This is confirmed by the experience of managers in companies, who receive about two-thirds of their useful information from personal contacts and only one-third via formal documents (Davenport and Prusak 2000). Speed dating or other structured networking initiatives generally take on importance in this context. On the other hand, it is important to emphasize that the innovation process is a complex phenomenon and has many forms. Therefore, it would be unrealistic to expect that a single measure could be efficient in all cases.

However, in contrast to findings in the relevant literature, which are based mainly on research into highly developed world regions, there is only limited interaction in Czechia between the business sphere and the research organizations. In the Czech context, some authors even talk about the 'Berlin Wall' between the academic and business spheres (Blažek and Uhlíř 2007). The foundations of this 'wall' were laid during the decades of state-socialism, when on the one hand private entrepreneurial activity was illegal, which led to the suppression of entrepreneurial spirit and artificial and top-down-orchestrated cooperation among businesses.

On the other hand, basic research was confined within institutes of the Academy of Sciences, which were not expected to come up with any kind of innovation, and research at universities was relatively marginal. This specific heritage, which is common in the former state-socialism economies (Jasinski 2010; Grimm and Jaenicke 2012; World Bank 2018), has created institutional practice that is unsuitable under the conditions of the market economy. Nevertheless, despite the existence of the 'wall' between the academic community and the business sector, there are several interesting examples of cooperation that were able to overcome this barrier (Kadlec and Blažek 2015; Stejskal et al. 2016; World Bank 2018). Their common denominator is personal contact between representatives of both parties based upon trust and mutual respect. This confirms the key role of 'soft' factors in regional development, such as mutual trust, reputation and skills of key personalities or the role of tacit knowledge that contains strategic information. In some instances, strategic information is even more important than technical information (know-how) (Amin and Hausner 1997). In essence, acquiring tacit knowledge is a key part of knowledge and technology transfer. This also underlines the importance of local buzz both on the regional level and on the organisational level (Bathelt 2007; Grillitsch et al. 2019a).

Structural networking such as a speed dating can act as a condensing core for initiating new local buzz.

Speed dating can be considered as a sort of a more formalized local buzz (Bathelt et al. 2004), because it creates a space for formal and subsequently less formal discussions with both professional and informal content. This is related to the fact that speed dating events are designed to make participants feel comfortable or even free. At the same time, speed dating is a very effective tool in terms of time and money. For example, each participant can meet more than twenty new people during less than two hours. Such efficiency is crucial for busy people from both academia and business. These two "worlds" differ in the language they use, approach to their jobs and also in their value systems. Speed dating can help them build mutual empathy and also awareness about what they do and what they can offer to each other. Ideally, such networking events can lead towards a more connected system, i.e. the fragmentation of regional innovation system is gradually moderated.

In this context, it is useful to recall three basic types of imperfect regional innovation systems, as defined by Tödtling and Trippl (2005). They comprise: (i) organizationally thin, where key knowledge institutions are missing – this type is especially characteristic of peripheral regions; (ii) internally locked-in, where long-term specialization led to the inbreeding and emergence of the 'not invented here' syndrome, typical of old industrial regions; and (iii) fragmented, where the key players are not properly connected, as often occurs in metropolitan regions. From this perspective, Prague represents a typical example of a fragmented regional innovation system.

Accordingly, speed dating can be an appropriate tool in the case of such fragmented regional innovation systems, as it helps to build mutual trust based on personal reputation and tacit knowledge. During speed dating events, the participants share their professional backgrounds and goals (Chaston 1996; Lev 2003; Zimmerman and Forlizzi 2017). Speed dating as a networking tool for businesses and their representatives began to be used around the beginning of the new millennium in Western Europe and the USA, where it gained relatively high popularity (Maxwell 2005). In Czechia, speed dating as a form of quick acquaintance with business partners has become popular over the last ten years thanks to the activities of the South Moravian Innovation Center (JIC). Activities such as '120 seconds for innovation' have also gradually begun to be developed in other Czech regions, even though these regions do not have a strong metropolitan core with a high concentration of R&D activities, such as Brno and Prague.

Although according to author's knowledge the targeted use of speed dating as a tool for linking the academic and private spheres has not been studied systematically so far. Existing studies agree that speed dating has a positive impact on the level of actors'

engagement and business relationships (Chaston 1996; Lev 2003; Zimmerman and Forlizzi 2017; van de Laar 2019), indicating that structured and managed interconnection supports the emergence of new partnerships. Similar conclusions are made in a report by the Australian Government (2013), which highlights the contribution to competitiveness of mobilising local resources, e.g. university and business. Connecting relevant partners on a local level is a key element for overcoming the fragmentation of regional innovation system and for fostering competitiveness through efficient connection between existing or future demand and supply. Well-prepared speed dating initiatives can enhance the interconnectedness of stakeholders in both close and relatively remote fields, and, therefore, they can facilitate technology transfer between research organizations (including universities) and companies. This transfer can lead to significant innovations that will strengthen the region's overall development.

Furthermore, the need to search for new partners is becoming an essential requirement in the context of current innovation and knowledge-based economies. The extant literature denotes this mode of collaboration as hyper-collaboration (Radjou and Prabhu 2015). Cooperation based on the principle of open innovation (Chesbrough 2006) shifts away from the paradigm that knowledge is power, to the paradigm that sharing knowledge is power (Radjou and Prabhu 2015).

3. Regional innovation context for technology transfer at Charles University

Technology and knowledge transfer are characterized by several specific features in the region of Prague. These features mainly relate to the relatively developed infrastructure needed for dynamic economic development and the high density of actors with high potential for technological or knowledge transfer. With these features is connected the imperfect regional innovation system typical for metropolitan regions, fragmented regional innovation system (Tödtling and Trippel 2005). A high concentration of actors can be documented by the fact that Prague's metropolitan region represents one-third of Czech R&D employment, of which three-quarters represent jobs in the business sector, 11% in the government sector, and less than 10% in the university sector (Czech Statistical Office 2017a). Accordingly, 52% of all companies in Czechia are registered in Prague (Czech Statistical Office 2017b). High concentration of these actors also translates in relatively strong volume of R&D activities. High development of Prague's innovation system is proved by Blažek and Žižalová (2010), Blažek and Kadlec (2019) and Květoň and Kadlec (2018).

Charles University, with nearly 5,000 R&D and academic employees, represents 3% of Czech Science and Technology (S&T) employment, resp. 14% of (S&T) employment in Prague. Thus, three faculties which participated in the speed dating event represent about 1% of total Czech S&T employment and 4% of total Prague S&T employment. Employment in Science and Technology shows the dominant role of Prague in the national innovation system. Nevertheless, small and medium sized companies (SMEs) in Prague collaborate on innovation with other partners almost 20% less than the SMEs in metropolitan regions in highly developed countries (European Commission 2016). This reflects the fragmented nature of Prague's innovation system (Květoň and Kadlec 2018).

Tab. 1 Employment in Science and Technology.

	Specialist in Science and Technology		Academic employees	R&D employees
	FTE	%	FTE	FTE
Czechia	144 508	100.0%		
Prague	34 974	24.2%		
Charles University	4 724	3.3%	3 839	885
3 selected faculties	1 473	1.0%	996	477
Faculty of Science	642	0.4%	349	292
Faculty of Mathematics and Physics	580	0.4%	408	172
3rd Medicine Faculty	252	0.2%	239	13

Source: Czech Statistical Office 2018 and Annual Report of Charles University, 2017

Charles University is one of the leading universities in Central Europe. In some fields, such as some specialisations in Life Sciences including medical chemistry, analytical chemistry and parasitology, the university ranks among the world's best (Jurajda et al. 2015). Yet, the third role of Charles University – supporting economic and social development through knowledge spillovers and targeted knowledge transfer (Leydesdorff and Etzkowitz 1998; Goddard and Chatterton 1999; Holland 2001; Trippel et al. 2015) – is still largely underdeveloped. The transfer of technologies and knowledge has been carried out on an individual basis (by researchers themselves without any professional support) and with varying intensity over the last decades. Fragmentation of R&D activities and the limited inter-faculty or inter-university co-operation in this area were and still are one of the causes and consequences of the disintegrated Prague innovation system (Blažek et al. 2011). Shown in Table 2, Charles University has only less than 2% of ROI (Return on investment) in R&D as technology transfer revenues. This contrasts with the situation in the USA, where the best universities

in technology transfer has the ROI around 9%² (Farrell 2008). Thus, so far, Charles University has not fulfilled its potential to be one of the leaders in research cooperation.

Tab. 2 Technology transfer revenues as a return on investments (ROI) in R&D, 2017–2015.

	2017	2016	2015
R&D expenditures (mio. CZK)	1535.80	1483.38	1470.46
TT revenues (mio. CZK)	27.72	31.27	23.72
ROI	1.80%	2.11%	1.61%

Source: Annual Reports 2015–17 of Charles University

Note: R&D expenditures = purpose money + another national sources (Ministries, Technology Agency of Czech Republic, Grant Agency of Czech Republic etc.) + international resources (H2020, Frame Programmes, EU support, Non-EU support)

4. Methodology

This paper explores a case study focused on identifying the impacts of speed dating on technology and knowledge transfer in the context of a fragmented regional innovation system. The research was not intended to be representative but to give deep insights into one concrete case study. Therefore, the methodology is based on questionnaires containing both closed and open questions and participatory observation in combination with quantitative analysis based on data from questionnaires. Questionnaires were performed a few weeks after the speed dating event and two years later to observe a long-term impact of speed dating. The questionnaires were complemented by a participatory observation in order to add specific insights from the “backstage culture”, which enables author to describe “behaviours, intentions situations,

and events as understood by one’s informants” (as defined by DeMunck and Sobo 1998, p. 43).

This paper is based on data from one speed dating event, which was, according to the author’s best knowledge, the first speed-dating event for connecting academia and business in Prague. This event inspired Prague’s municipality to organize another speed dating events, but the organizers didn’t collect any data relevant for this study. Therefore, this paper is based solely on this one event and thus cannot uncover more general patterns. On the other side, this approach allows author to observe both the direct and indirect long-term impact of speed dating. The following indicators were used:

- number of new contacts,
- number of appointments agreed during the event,
- number of transformed new contacts into research collaboration,
- perception of added value of speed dating on university-business collaboration,
- main barriers of university-business collaboration,
- perception of third role of university.

The first speed dating event ever held in Prague took place on 25 May 2016 and was organized by the Centre for the Transfer of Knowledge and Technology (CTKT) of Charles University, under the title ‘Science meets Business’. The theme was ‘Life Sciences and Medical Devices’, and the event was attended by 9 representatives of companies and 12 representatives of Charles University research teams from three faculties, namely the 3rd Faculty of Medicine (3. FM), the Faculty of Mathematics and Physics (MFF), and the Faculty of Sciences (FS) (see Table 3). The event spanned over two hours, during which the individual representatives of research teams and companies alternated in a round-table fashion. The event started with a keynote speech about the current trends

Tab. 3 Overview of participants in the speed dating event ‘Science meets Business’.

CU Research teams	Companies
Computer Graphics Group, MFF	Contipro Group, s.r.o.
Coordination Group of Bioorganic Chemistry, FS	Contipro Pharma, a.s.
Group of Biomolecular Physics, MFF	Dyntec spol. s r.o.
Laboratory of Yeast Colony Biology, FS	ELLA-CS, s.r.o.
Laboratory of Electrophoretic Separation Methods, 3. FM	Interpharma, a.s.
Laboratory of Immunoregulation, FS	LINET Holding, s.r.o.
Laboratory of Tumor Cell Invasiveness, FS	Medicem Institute, s.r.o.
Laboratory of Structure and Function of Biomolecules, FS	SciTech Visual s.r.o.
Laboratory of Molecular Carcinogenesis and Drug Development, FS	SOTIO a.s.
UNESCO Laboratory of Environmental Electrochemistry, FS	
Photochemistry and Supramolecular Chemistry of Porphyrinoids, FS	
Specialized Experimental Imaging Laboratory, 3. FM	

Source: FS CU – <https://www.natur.cuni.cz/fakulta/veda-a-vyzkum/prenos-poznatku-a-technologie/vedci-potkavaji-firmy-aneb-navazujeme-nova-partnerstvi?searchterm=vědci+potk>

2 Excluding top 2 universities because of extreme values.

in corporate R&D, which opened the first theme for discussion, and continued with two minutes presentations, where each participant introduced himself/herself with his/her offer and demand. At each table sat 5 or 6 participants. The event had 5 rounds of these roundtables with a coffee break and dinner for subsequent informal networking.

The collection of primary data was performed through two online questionnaires (including open and closed questions). The first questionnaire had a return rate of 86% (17 from 21); the second done two years later was still relatively high with 43% (9 from 21). The first questionnaire was completed a few weeks after the event (25. 5. – 10. 6. 2016) with the goal to identify the number of new contacts including the names of the most relevant contact, to map the character of considered cooperation and to get feedback on the meaningfulness of the event itself. The second questionnaire, organized two years later (30. 11. – 16. 12. 2018), aimed at analysing the real impact on university-business collaboration, i.e. newly established collaboration and its nature, reasons why collaboration was or was not established, alternative tools how to promote technology and knowledge transfer and perception of the “third role” of the university.³

These data and methods should help to answer the main research question: “What are the impacts of speed dating on technology and knowledge at Charles University?”

5. Impact of Speed Dating on Technology Transfer

The CTKT at Charles University in Prague decided to set-up the joint action of the Faculty of Science, the Faculty of Mathematics and Physics and the 3rd Faculty of Medicine in the form of the speed dating event to promote university-business collaboration. Within this networking session, vivid discussions at the end of each of the 15-minute blocks provided evidence of the sincere search of all participants to find new partners for cooperation across the disciplinary boundary. Moreover, participants continued their discussions about possible cooperation during the informal dinner and even after the official end of the event. The fact that almost every participant recommended that his colleague or business partner should attend a similar meeting was interpreted as a very positive perception of the usefulness of the action.⁴ In terms of positive effects and overcoming the fragmentation of the regional innovation system, this is an important

indicator, as personal recommendations are among the most effective references. At the same time, the participants themselves stated that they would take part in similar events again.⁵ Therefore, such form of an intensive networking is clearly capable to promote the empathy of actors both from academia and companies as well as to increase the awareness about both the supply and demand in technology and knowledge transfer. Empathy is a crucial component of various speed dating events, which in turn helps to create effective local buzz, which then helps to connect yet non-connected actors. Sillanpää (2016) supports this finding on the example of young scientists in Finland entering into academic community and in collaboration with companies. Therefore, the fragmented regional innovation system can gradually become more interconnected. Moreover, as van de Laar (2019) states, speed dating can help to overcome formal hierarchal structures.

This statement can be supported by the fact that participants were able to obtain 2.6 new contacts on average, even among seemingly unrelated industries, which again contributes towards mitigation of the fragmentation of the regional innovation system in Prague’s metropolitan region. This finding is important, as one of the key risks of networking is the limited absorption capacity of the key players. When players have too many contacts, which they cannot manage, it can lead to the rejection of new contacts or to radical selectivity. This finding shows the relevance of concept of hyper-collaboration (Radjou and Prabhu 2015) and also shows how systematic support can address the issue of lacking possibilities to find right partners. One example would be mutual interest between the representative of a hospital bed manufacturer and a scientist focused on separation methods. This is in line with cognitive proximity where similar knowledge bases can bridge on first view different fields (Boshma 2005; Garcia et al. 200; Strambach and Klement 2012).

The total number of participants was relatively high, illustrating, among other things, that despite the absence of systematic support for the development of Prague’s innovation environment there is a relatively strong demand for new partners, both from companies and from researchers. This is neatly illustrated by the following quotes obtained from the participants:

- “The event was well managed on the organizational side, and the meeting was conducted in a friendly spirit. I made some interesting contacts and at least one lead for deeper cooperation. I can recommend it.” (company representative)
- “I perceived it as time used meaningfully.” (company representative)

3 Universities consciously and strategically respond to societal and economic challenges. (Zomer and Benneworth 2011)

4 On a scale of 1 (not recommended at all) to 7 (certainly recommended), the median was 6, respectively 7 in the case of recommendations to business partners.

5 18 out of 18 respondents said yes.

- “The event was perfectly prepared, and it is very good that such actions are starting to take place.” (research team representative)

These quotes are supported by findings of van de Laar (2019, p.1) who stated, that speed dating bring the “meta value” in: “Creativity, exploring various angles to look at your research topic, and allowing yourself to think outside the box ...”

Nevertheless, our survey performed two years later indicated that the potential established during the evening wasn't fully exploited. Only 1 of the 44 newly gained contact was transformed into real cooperation in the form of consultancy. Another participant answered, that both sides had sincere will to meet in the future but were unable to arrange the appointment and the meeting had lost priority over time. The rest of participants said, that they didn't find a common theme for future cooperation. As declared one of the participants, follow-up activities by technology scouts or business development managers are missing:

“In addition, there is a lack of professionals fully committed to mediation between the university and the firms. Neither companies nor university have such employee, and thus cooperation depends on who can find a place for co-operation” (research team representative).

On the other hand, all participants who answered this second survey performed after a two-year lag, still see the event as beneficial for building closer university-business cooperation. Participants mostly appreciated that the event offers a pleasant and inspiring environment for establishing new relationships while participants can get an idea of what new projects are being done on both sides (i.e. academia and industry). This is also supported by Zimmerman and Forlizzi (2017) who developed speed dating for user experience design new products. Generally, participants mentioned the importance of building the community of experts in specific fields. Moreover, one of the researchers saw the benefit in communication with companies, respectively in learning how to communicate with the business sector. Another participant emphasised:

“I can see the benefit of the event in that it happened at all. It was the first swallow that could give a chance for a new collaboration.” (research team representative)

Participants see the biggest barriers for a deeper cooperation between universities and companies primarily in two spheres. The first sphere is represented by a limited time of researchers to cooperate with companies along with their teaching duties and university research projects. The limited time roots mainly in high bureaucratic burdens and limited human resources. On the side of companies, the biggest barrier perceived is represented by a limited innovation aspiration, which partially reflect the character of national economy. In other words, the type

of demand from businesses is frequently unattractive for the researchers. In the context of concentration of company R&D in Prague we can view this barrier also through the view of the regional innovation system concept. The fragmented regional innovation system in Prague's region lead to insufficient exchange of information and unawareness of the right partners. From this perspective, the benefit of speed dating events in the form of community building gains in its meaning.

The participants were also asked about their perception of the third role of the university. All participants, who answered this question see the third role of the university as an important and integral part of university activities. On the other hand, university researchers perceive that Charles University has not yet made sufficient use of its potential. Moreover, one of the researchers emphasized:

“The idea is right, but the actual realization is important.” (research team representative)

This is a very important idea and actually it is also the hardest part. At the same time, this view illustrates more than ten years of discussion on the third role of Charles University and the actual fulfilment of the visions declared in the University's strategy. From the point of view of companies, universities should refrain from the ambition to build academic start-ups on their own. Instead, representatives of companies see the strongest competence of universities in an principal research, not in the business. According to them, the drivers for setting-up new start-ups should be experienced experts from industry. However, there are only a few such experts in Czechia, because of 40-year ban on private entrepreneurial initiative during the communist era. Despite these opinions of our respondents, foreign experience shows that academic start-up companies can represent one of the tools which can – at least in a long-term perspective – eliminate the fragmentation of regional innovation system, because academic spin-offs can establish long-term relations between universities and business sectors.

6. Conclusions

The main goal of this paper was to demonstrate the impacts of speed dating on technology transfer. Using the example of the Prague region and its biggest university was elaborated in this case study of a speed dating event organized by Charles University in the field of life science and medical devices.

Despite the fact that after the end of the speed dating event, it seemed that a number of new partnerships and cooperation could be established, our survey performed two years later showed that this has not actually happened. Overall, only a single new contact was transformed into real cooperation in the form of consultancy services. Therefore, we can

conclude that the direct impact of this first speed dating event ever undertaken in Prague is low. This is mostly attributable to missing follow-up activities. In particular, follow-up activities, such as assistance from the technology scouts or from business development managers in establishing further appointments and moderating the following discussion could increase the success rate of future speed dating events.

On the other hand, the speed dating event had several indirect impacts, which can contribute to a gradual improvement of the regional innovation system. First of all, participants acknowledged the positive effect on a sense of community building in their specific field. Moreover, already the first speed dating event enabled an exchange of information about the needs of companies as well as about current research projects at the university. This knowledge can also serve as inspiration for both sides in designing new research projects. Moreover, speed dating helped to exchange information not only between universities and companies, but also between companies or research teams itself.

Another impact is in the learning process, when both sides, universities and company representatives, learn how to communicate with each other. Building common language is crucial for good understanding of the needs of both sides. Very often, the university-business partnership fails, because both companies and researchers have different expectations. It is similar to traveling to foreign country without knowledge of a foreign language. Therefore, building of a common language is crucial in eliminating the fragmentation of the innovation system.

This study is obviously limited by its pioneer character, because speed dating events with the primary focus on supporting university-industry collaboration are still rare. Therefore, much more empirical research is needed in the future. However, the results of this speed-dating event underline the need for a more proactive approach, which can overcome the fragmentation of regional innovation systems and a need to gradually enrich the local buzz for an effective technology transfer via properly designed follow-up activities.

Nevertheless, it has to be acknowledged that speed dating events and networking in general are likely to make the greatest contribution to knowledge transfer in metropolitan regions where a wide range of actors operates. This is in line with the current trend of 'hyper-cooperation', which encourages the more frequent use of such actions, as sharing knowledge is a key factor in the current innovation process. Lastly, it should be emphasized that speed dating is not self-sustaining, and for effective and dynamic technology transfer it is necessary to use a wide spectrum of tools to enhance the broader acceptance of the need for effective cooperation between the academic community and companies.

Acknowledgements

This work has been supported by Charles University [grant number UNCE/HUM/018].

References

- Amin, A., Hausner, J. (1997): *Beyond Market and Hierarchy: Interactive Governance and Social Complexity*. Cheltenham: Edward Elgar.
- Asheim, B. T., Getler, M. S. (2005): The geography of innovation: Regional innovation systems. In: Fagerberg, J., Mowery, D. C., Nelson, R. R. (eds.): *The Oxford Handbook of Innovation*, 291–317, Oxford: Oxford University Press.
- Asheim, B. T., Coenen, L., Vang, J. (2007): Face-to-face, buzz and knowledge bases: Sociospatial implications for learning, innovation, and innovation policy, *Environment and Planning C: Government and Policy* 25, 655–670, <https://doi.org/10.1068/c0648>.
- Australian Government (2013): *Speed Dating for a Perfect Business Match*. Central Highlands Digital Enterprise. Accessed at: <http://www.digibiz.net.au/resources/Speed%20Dating%20for%20a%20Perfect%20Business%20Match.pdf>.
- Bathelt, H., Malberg, A., Maskell, P. (2004): Clusters and knowledge: Local buzz, global pipelines and the process of knowledge creation. *Progress in Human Geography* 28, 31–56, <https://doi.org/10.1191/0309132504ph469oa>.
- Bathelt, H. (2007): Buzz-and-Pipeline Dynamics: Towards a Knowledge-Based Multiplier Model of Clusters. In: *Geography Compass* 1/6, 1282–1298, <https://doi.org/10.1111/j.1749-8198.2007.00070.x>.
- Blažek, J., Kadlec, V. (2019): Knowledge bases, R&D structure and socio-economic and innovation performance of European regions. *Innovation: The European Journal of Social Science Research* 32(1), 26–47, <https://doi.org/10.1080/13511610.2018.1491000>.
- Blažek, J., Uhlíř, D. (2007): Regional innovation policies in the Czech Republic and the case of Prague: An emerging role of a regional level? *European Planning Studies* 15, 871–888, <https://doi.org/10.1080/09654310701356175>.
- Blažek, J., Žižalová, P. (2010): The biotechnology industry in the Prague metropolitan region: A cluster within a fragmented innovation system? *Environment and Planning C: Government and Policy* 28, 887–904, <https://doi.org/10.1068/c09113>.
- Blažek, J., Žižalová, P., Rumpel, P., Skokan, K. (2011): Where Does the Knowledge for Knowledge-intensive Industries Come From? The Case of Biotech in Prague and ICT in Ostrava. *European Planning Studies* 19(7), 1277–1303, <https://doi.org/10.1080/09654313.2011.573136>.
- Boschma, R. (2005): Proximity and Innovation: A Critical Assessment. *Regional Studies* 39(1), 61–74, <https://doi.org/10.1080/0034340052000320887>.
- Boschma, R. (2017). A concise history of the knowledge base literature: Challenging questions for future research. *Papers in Evolutionary Economic Geography (PEEG)* 1721, Utrecht University, Department of Human

- Geography and Spatial Planning, Group Economic Geography.
- Breznitz, S. M. (2011): Improving or impairing? Following technology transfer changes at the University of Cambridge. *Regional Studies* 45, 463–478, <https://doi.org/10.1080/00343401003601909>.
- Charles University (2018): Annual Report 2017. Accessed 27. 8. 2017 at: https://www.cuni.cz/UK-8533-version1-vzc_2017_web.pdf
- Chaston, I. (1996): Critical events and process gaps in the Danish Technological Institute SME structured networking model. *International Small Business Journal* 14, 71–84, <https://doi.org/10.1177/0266242696143004>.
- Chesbrough, H. (2006): *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Boston: Harvard Business School Publishing.
- Coenen, L., Asheim, B. T., Bugge, M. M., Herstad, S. (2017): Advancing Regional Innovations Systems: What Does Evolutionary Economic Geography Bring to the Policy Table? *Environment and Planning C: Government and Policy* 35(4), 600–620, <https://doi.org/10.1177/0263774X16646583>.
- Cooke, P. (2007): Regional innovation systems, asymmetric knowledge and the legacies of learning. In: Rutten, R., Boekema, F. (eds.): *The Learning Region*. Foundations, State of the Art, Future, 184–206. Cheltenham.
- Cooke, P., Leydesdorff, L. (2006): Regional development in the knowledge-based economy: The construction of regional advantage. *Journal of Technology Transfer* 31, 5–15, <https://doi.org/10.1007/s10961-005-5009-3>.
- Cooke, P., Uranga, M. G., Etxebarria, G. (1997): Regional innovation systems: Institutional and organisational dimensions. *Research Policy* 26, 475–491, [https://doi.org/10.1016/S0048-7333\(97\)00025-5](https://doi.org/10.1016/S0048-7333(97)00025-5).
- Czarnitzki, D., Hussinger, K., Schneider, C. (2012): The nexus between science and industry: Evidence from faculty inventions. *Journal of Technology Transfer* 37, 755–776, <https://doi.org/10.1007/s10961-011-9214-y>.
- Czech Statistical Office (2017a): Data on Research and Development (R&D) in the regions of the Czech Republic for the years 2005–2015. Accessed 27.8.2017 at: https://www.czso.cz/csu/czso/statistika_vyzkumu_a_vvyvoje
- Czech Statistical Office (2017b): Economic entities according to selected legal forms – territorial comparison. Accessed 27. 8. 2017 at: https://vdb.czso.cz/vdbvo2/faces/index.jsf?page=vystup-objekt&pvo=ORG02&katalog=30831&z=T&f=TABULKA&str=v7&evo=v460!_VUZEMI97-100_1&c=v4~2_RP2015MP12DP31
- Czech Statistical Office (2018): Economic entities according to selected legal forms – territorial comparison. Accessed 29. 12. 2018 at: <https://www.czso.cz/csu/czso/specialiste-v-oblasti-vedy-a-techniky-a-jejich-mzdy>
- Davenport, T. H., Prusak, L. (2000): *Working Knowledge: How Organisations Manage What They Know*. Boston: Harvard Business Press, <https://doi.org/10.1145/347634.348775>.
- deMunck, V. C., Sobo, E. J. (1998): *Using methods in the field: a practical introduction and casebook*. Walnut Creek: AltaMira Press.
- Etzkowitz, H., Leydesdorff, L. (2000): The dynamics of innovation: From national system and ‘mode 2’ to a triple helix of university-industry-government relations. *Research Policy* 29, 109–123, [https://doi.org/10.1016/S0048-7333\(99\)00055-4](https://doi.org/10.1016/S0048-7333(99)00055-4).
- European Commission (2016): *Regional Innovation Scoreboard*, <https://doi.org/10.2873/84730>.
- Farrell, M. (2008): *Universities That Turn Research Into Revenue*. Forbes. Accessed 18. 1. 2019 at: https://www.forbes.com/2008/09/12/google-general-electric-ent-tech-cx_mf_0912universitypatent.html#3be2c8c66a3a
- Flanagan, K., Uyarra, E. (2016): Four Dangers in Innovation Policy Studies—and how to Avoid Them. *Industry and Innovation* 23 (2), 177–88, <https://doi.org/10.1080/13662716.2016.1146126>.
- Franco, C., Gussoni, M. (2014): The role of firm and national level factors in fostering R&D cooperation: A cross country comparison. *Journal of Technology Transfer* 39, 945–976, <https://doi.org/10.1007/s10961-013-9306-y>.
- Garcia, R., Araújo, V., Mascarini, S., Gomes Dos Santos, E., Costa, A. R. (2018): An Analysis of the Relation Between Geographical and Cognitive Proximity in University-Industry Linkages, *Anais do XLIV Encontro Nacional de Economia*. Proceedings of the 44th Brazilian Economics Meeting, 132, ANPEC.
- Goddard, J., Chatterton, P. (1999): Regional development agencies and the knowledge economy: Harnessing the potential of universities. *Environment and Planning C: Government and Policy* 17, 685–699, <https://doi.org/10.1068/c170685>.
- Goddard, J., Kempton, L., Vallance, P. (2013): Universities and smart specialisation: Challenges, tensions and opportunities for the innovation strategies of European regions. *Ekonomiaz: Revista Vasca de Economi*, 83, 83–102, <https://doi.org/10.1068/c170685>.
- Grillitsch, M., Rekers, J. V., Tödtling, F. (2019a): When drivers of clusters shift scale from local towards global: What remains for regional innovation policy? *Geoforum*, 102, 57–68, <https://doi.org/10.1016/j.geoforum.2019.03.010>.
- Grillitsch, M., Schubert, T., Srholec, M. (2019b): Knowledge base combinations and firm growth. *Research Policy*, 48(1), 234–247, <https://doi.org/10.1016/j.respol.2018.08.009>.
- Grimm, H., Jaenicke J. (2012): What drives patenting and commercialisation activity at East German universities? The role of new public policy, institutional environment and individual prior knowledge. *The Journal of Technology Transfer*, 37(4), 454–477, <https://doi.org/10.1007/s10961-010-9195-2>.
- Guerrero, M., Urbano, D., Cunningham, J., Organ, D. (2014): Entrepreneurial universities in two European regions: A case study comparison. *Journal of Technology Transfer*, 39, 415–434, <https://doi.org/10.1007/s10961-012-9287-2>.
- Holland, B.A. (2001): Toward a definition and characterization of the engaged university. In: *Metropolitan Universities*, 2, 20–29.
- Huggins, R., Izushi, H., Prokop, D. (2019): Regional advantage and the geography of networks: Explaining global–local knowledge sourcing patterns. *Papers in Regional Science*, 1–18, <https://doi.org/10.1111/pirs.12423>.
- Isaksen, A., Martin, R., Trippl, M. (2018): *New Avenues for Regional Innovation Systems – Theoretical Advances, Empirical Cases and Policy Lessons*. Cham: Springer Nature, <https://doi.org/10.1007/978-3-319-71661-9>.

- Jasinski, A.H. (2010): Technology transfer in Poland: A poor state of affairs and a wavering policy. *Science and Public Policy*, 27(4), 235–240, <https://doi.org/10.3152/147154300781781904>.
- Jurajda, Š., Kouzoubek, S., Munich, D., Škoda, S. (2015): Mezinárodní srovnání kvality publikačního výkonu vědních oborů v České republice. *IDEA – CERGE-EI* 12/2015, 1–264.
- Kadlec, V., Blažek, J. (2015): University-business collaboration as perceived by leading academics: Comparing and contrasting the two most innovative Czech regions. *Erdkunde* 69, 327–339, <https://doi.org/10.3112/erdkunde.2015.03.03>.
- Květoň, V., Kadlec, V. (2018): Evolution of knowledge bases in European regions: searching for spatial regularities and links with innovation performance. *European Planning Studies* 26(7), 1366–1388, <https://doi.org/10.1080/09654313.2018.1464128>.
- Leydesdorff, L. (2018): Synergy in Knowledge-Based Innovation Systems at National and Regional Levels: The Triple-Helix Model and the Fourth Industrial Revolution. *Journal of Open Innovation: Technology, Market, and Complexity* 4(2), 1–16, <https://doi.org/10.3390/joitmc4020016>.
- Leydesdorff, L., Etzkowitz, H. (1998): The triple helix as a model for innovation studies. *Science and Public Policy* 25, 195–203.
- Lev, L. (2003): Using speed dating techniques to enliven and improve conferences and workshops. *Journal of Extension* 41(2), 2TOT4.
- Maxwell, K. (2005): Speed networking. Accessed 26. 10. 2016 at: <http://www.macmillandictionary.com/buzzword/entries/speed-networking.html>
- Moodysson, J., Coenen, L., Asheim, B. (2010): Two sides of the same coin? Local and global knowledge flows in Medicon Valley. In: Belussi, F., Sammarra, A. (eds.): *Business Networks in Clusters and Industrial Districts: The Governance of the Global Value Chain*, 356–376.
- Nonaka, I., Takeuchi, H. (1995): *The Knowledge-Creating Company*. Oxford and New York: Oxford University Press.
- Polanyi, M. (1967): *The Tacit Dimension*. London: Routledge & Kegan Paul.
- Radjou, N., Prabhu, J. (2015): *Frugal Innovation: How to do More with Less*. London: Profile Books.
- Sillanpää, V. (2016): Research speed dating, connectedness and comradeship. Alto University. Available from: <https://www.aallonhuitut.fi/research-speed-dating-connectedness-and-companionship/>
- Sotarauta, M., Suvinen, N. (2018): Institutional Agency and Path Creation: Institutional Path from Industrial to Knowledge City. In Isaksen, A., Martin, R., Trippel, M. (eds) *New Avenues for Regional Innovation Systems – Theoretical Advances, Empirical Cases and Policy Lessons*. Cham: Springer Nature, https://doi.org/10.1007/978-3-319-71661-9_5.
- Stejskal, J., Meríčková B., Prokop, V. (2016): The cooperation between enterprises: Significant part of the innovation process. A case study of the Czech machinery industry. *Ekonomie a Management* 19, 110–122, <https://doi.org/10.15240/tul/001/2016-3-008>.
- Strambach, S., Klement, B. (2012): Cumulative and Combinatorial Micro-dynamics of Knowledge: The Role of Space and Place in Knowledge Integration. *European Planning Studies* 20(11), 1843–1866, <https://doi.org/10.1080/09654313.2012.723424>.
- Tödting, F., Trippel, M. (2005): One size fits all? Towards a differentiated regional innovation policy approach. *Research Policy* 34, 1203–1219, <https://doi.org/10.1016/j.respol.2005.01.018>.
- Trippel, M., Sinozic, T., Smith, H. L. (2015): The Role of Universities in Regional Development: Conceptual Models and Policy Institutions in the UK, Sweden and Austria. *European Planning Studies* 23(9), 1722–1740, <https://doi.org/10.1080/09654313.2015.1052782>.
- van de Laar, M. (2019): Research speed dating: Breaking the ice to build capacity and networks, United Nation University: Maastricht University. Accessed 6. 4. 2019 at: <https://www.merit.unu.edu/research-speed-dating-breaking-the-ice-to-build-capacity-networks/>
- World Bank (2018): *Poland Catching-up Regions: Overview report*, Washington: World Bank Publications.
- Zimmerman, J., Forlizzi, J. (2017): Speed Dating: Providing a Menu of Possible Futures. *The Journal of Design, Economics, and Innovation* 3(1), 30–50, <https://doi.org/10.1016/j.sheji.2017.08.003>.
- Zomer, A., Bennenworth, P. (2011): The rise of the university's Third Mission. In: J. Enders, H. F. de Boer, D. Westerheijden (eds.) *Reform of higher education in Europe*, Rotterdam: Sense Publishers, https://doi.org/10.1007/978-94-6091-555-0_6.