Strategic research and innovation partnerships as enablers of technology transfer

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ABSTRACT
Paper address the question of knowledge -transfer activities in the case of two (business and research-led) SRIP. SRIP- Strategic research and innovation partnerships is the form of collaboration between business sector, public research organizations (PROs) and other stakeholders introduced by Slovenian Smart Specialization Strategy. In the paper, we try to find similarities and differences in their positions, perceptions and approaches toward technology transfer, as well as challenges of this process on the level of SRIP as an instrument and on the level of Slovenian innovation system.

Keywords
Technology transfer, Smart Specialization Strategy of Slovenia, SRIP Strateško razvojna inovacijska partnerstva- Strategic development innovation partnership.

1. INTRODUCTION
With adoption of Smart Specialization Strategy of Slovenia (S4) in the end of 2015 (GODC, 2015a), a new form of collaboration between business sector, public research organizations (PROs) and other stakeholders was introduced. So-called Strategic research and innovation partnerships (known as SRIPs, GODC, 2015b) were established in all nine priority areas of S4, following a public call, issued by the Ministry of Economic Development and Technology in December 2016 (MEDT, 2016).

The 3 priority pillars of the Smart Specialisation (a) Digital, b) Circular and c. (S)Industry 4.0 have nine areas of application:

(i.) Smart cities and communities;
(ii.) Smart buildings and homes, including wood chain;
(iii.) Networks for transition into circular economy;
(iv.) Sustainable food production;
(v.) Sustainable tourism;
(vi.) Factories of the future;
(vii.) Health-medicine;
(viii.) Mobility;
(ix.) Development of materials as products.

The idea of the policy makers was to support the formation of a platform, similar to clusters, in each of the priority areas, based as a long-term public –private partnership. The members of SRIPs are to identify value chains within selected priorities (deepen the relatively general priorities) through providing fora for continuous entrepreneurial discovery process (EDP). SRIPs should provide an environment for cooperation in joint R&D projects of various type and enable innovation activity eventually leading to market penetration in S4 priority areas. The objective is to focus and coordinate both private and public investment in R&D and innovation, share capacities, both human and material, with the objective to raise competitiveness and value added in selected sector.

One of the tasks of SRIPs, as specified in documentation explaining the S4, is exchange of knowledge and experience as well as knowledge transfer (SVRK, 2015b). SRIPs should enable flow of knowledge among the members, from the PROs to business sector as well as among the business partners themselves (for example, from large to small and medium size enterprises). They should also enable the transfer of knowledge among the same stakeholders.

The implementation of this expectation of the policy makers, which was spelled out in the public call for the establishment of SRIPs, is the subject matter of our short paper. SRIPs were established in the fall of 2017 and their first mid- term evaluation/ monitoring was performed in 2019 (FDV, 2019).

The monitoring looked at the issues, specified in the public call:

- Implementation of the objectives in Action plans
- Progress in promotion of joint development and services, especially in cooperation and development of joint RRI initiatives to develop and market higher value-added integrated products and services;
- Introduction of horizontal enabling technologies within vertical value-added chains
- Implemented market manifestations, resulting from joint activities.

Mid-term monitoring of the SRIPs resulted in the report to the funders, where the successes as well as some of the problems in functioning of the SRIPs were identified. The main conclusion of the monitoring phase was that the SRIPs are a good instrument to support RIS3 implementation and that most of them have achieved an impressive level of cooperation among their members from different spheres (large and small companies, public research institutions and in some cases, also communities/ municipalities).

Since transfer of knowledge was not considered the primary task in the initial phase of working of SRIPs, the mid-term monitoring had not focused on this issue. Still, we believe it is important to examine how they approach this topic, if at all. To learn more about the position of SRIPs with regard to technology transfer, we designed a small questionnaire for two very different SRIPs: one is primarily business- dominated and the other with more pronounced impact of the public research organizations. Their views on the role of SRIPs as agents for technology transfer are presented in the next segment.

2. INDUSTRY-LED SRIP AND TECHNOLOGY TRANSFER

First, we wished to learn if the SRIP coordination office deals with the questions, relating to technology transfer, especially in view of relatively limited human resources. The answer revealed that the technology issues are mostly addressed at the level of Council of Experts, where new developments in their priority field are discussed, especially in the areas of interest to their members. The office itself has no capability to assist in the actual technology transfer deals; they do however monitor technology developments at global level and pass relevant information to the members. They see their role mostly in establishment of initial contacts between different members, where the office identifies potential for cooperation. Beyond this phase, they currently do not act.

The issue of transfer of technology is in the opinion of the office an important one for their members, but the SRIP can only help in raising the awareness and the promotion of the protection of intellectual property rights, sharing information on cases of successful transfer of knowledge to the market, but not with the actual process of transfer.

Explicitly, the members have not requested services or assistance with transfer of knowledge. They do take part in the events, organized by the Office, where experience and knowledge on the topic of various members is presented. The Office has also organized a set of workshops with one of the leading Slovenian expert on intellectual property rights protection. The workshops had sufficient attendance, but not exceptional, suggesting that the topic is not the most problematic in their industry.

The Office of SRIP sees itself primarily as an intermediary: their role is to monitor the trends in global industry, be well informed of the development plans and needs of their members and act as a matchmaker for the exchange of ideas and formation of joint R&D projects. Up to now, they have not identified specific barriers to transfer of knowledge or technology. They do, however, observe inactivity among PROs, especially research institutes in searching the contacts with industry. Here, researchers from the universities, especially younger ones, are more eager to cooperate with business. On the other hand, the research institutes wait to be approached by the industry and, often reluctantly, respond.

3. RESEARCH-LED SRIP AND TECHNOLOGY TRANSFER

The same set of questions as for industry- led SRIP, were directed to research-led SRIP. Regarding the question, related to technology transfer, we received an answer that coordinating office of SRIP is not dealing with knowledge transfer activities. They don't have sufficient human and financial resources for this sort of services. However, PRO hosting the research-led SRIP has its own Technology transfer office (TTO), providing the services connected with knowledge transfer for their researchers. Yet, these services are available only for the PRO researchers and their customers.

From the side of research-led SRIP members, technology transfer is currently not recognized as a very important topic. Currently main cooperation form between SRIP business members and research organization are joint R&D projects, where intellectual property rights (foreground, background and side-ground) are agreed in advance and they are part of cooperation agreement signed before the project starts. In these projects, in most cases, industrial property rights become property of business partners. This is often the standard condition for cooperation between PRO and business entities in such projects, explained by the fact that the business partners contribute most of the co-financing. So far, research-led SRIP had no case of direct technology transfer, where the coordinating office would be directly involved.

As technology transfer is not recognized as a crucial topic/activity of the SRIP, SRIP coordination office does not detect special needs or requests from the side of SRIP members. Therefore, activities of SRIP coordination office are oriented mainly toward awareness raising and trainings of members through special events and thematic workshops. Research-led SRIP coordination office sees the opportunity for a more active role of SRIP in the technology transfer only if the main stakeholders would request such service, as SRIP itself at the moment has no planned resources for technology transfer.

Research-led SRIP coordination office also detects some obstacles, which prevent transfer of knowledge and technology. In the first place, they point to a relatively complicated and long lasting procedures for knowledge transfer, which demand specific and high professional knowledge in different areas. Secondly, as procedures are mainly focused on financial part of transfer (i.e. licenses or patents costs), this is not found as highly stimulating, especially for Spin-out companies. Third: legally very complicated procedures for knowledge transfer in most PRO, especially universities, requiring a long list of approvals, discourages the process. The SRIP sees solution in changing the current, very restrictive legislation. In order to simplify and standardize these procedures, SRIP suggests preparing Toolbox for SME members in order to help and support them in such procedures.

4. DISCUSSION AND CONCLUSION

With both types of SRIPs, we can find some similarities and common issues: to the first question on the engagement of the SRIP coordination offices in transfer of technology, both pointed out the lack of human resources with specific knowledge and competencies in the field of technology transfer. This is the main reason why they cannot play the role of technology broker. However, this issue does not seem to represent significant problem as this role is also not expected from their members. From the side of SRIP members, the role of SRIP office is not seen in the field of TTO.

Secondly, policy maker, at the time of establishing SRIPs, listed a long range of tasks for the SRIP offices, obviously with the expectations that the SRIP member will be prepared to finance all these tasks. Common rule of 50% public co-financing of the SRIP office activities does not allow them to strengthen the technology transfer activities. On the other side, there is no specific need expressed by the members for SRIP offices to enter the field of technology transfer, which requires a very specific and high professional knowledge. Often, this knowledge and resources already exists at the PRO and universities in the form of existing Technology transfer offices. Most business enterprises, with experience in joint R&D projects, have their in-house capabilities to address the issues of intellectual property rights. The question arises as to what is the situation in SMEs and whether in the case of their more active involvement in joint projects they would benefit from the assistance of the coordination office of SRIP. Here, we see the opportunity for strengthening technology transfer service from the side of SRIP members, coming from the public research community. They should invest more energy into informing SRIP business partners regarding their own R&D work and potentials, of course if they are motivated to more actively transfer their knowledge and technologies. Also, the services in

the area of technology transfer, which were developed with public money within PROs, could be offered to SMEs as well.

As we see, the issues identified in the previous studies (Bučar and Rojec, 2019) on knowledge/ technology transfer have not been addressed by SRIPs either. These issues are actually long-term challenge for Slovenian innovation system, which cannot be solved by one, single, time-limited action. The issue requires several systemic changes in different areas, from bridging the gap in understanding the objectives of R&D for PRO and those of business entities. One of the solutions is a permanent long-term, sufficient and clear support of the government to the instruments like SRIP and TTO's.

5. REFERENCES

[1] Bučar et al. 2019. Vmesno spremljanje in vrednotenje delovanja SRIP- ov v obdobju 2017-2019. FDV, IER, UP FM. https://www.fdv.uni-lj.si/obremenitve/projektdokument.aspx?idp=251&id=167

[2] Bučar, M. and Rojec, M. 2019. Determinants of Success in Science – Industry Cooperation: Case of Slovenia; University-Industry Engagement Conference, Sydney.

[3] Bučar M, Jaklič A and Gonzalez Verdesoto, E, RIO Country Report 2017: Slovenia, EUR 29163 EN, Publications Office of the European Union, Luxembourg, 2018, ISBN 978-92-79-81226-2, doi:10.2760/684842, JRC111274.

[4] GODC Government Office of development and Cohesion Policy- Služba Vlade Republike Slovenije za razvoj in evropsko kohezijsko politiko. 2015a. Slovenian Strategy of Smart Specialisation. *Slovenska Strategija Pametne Specializacije S4*. https://www.gov.si/assets/vladne-sluzbe/SVRK/S4-Slovenska-strategija-pametne-specializacije/Slovenska-strategija-pametne-specializacije.pdf

[5] GODC Government Office of development and Cohesion Policy- Služba Vlade Republike Slovenije za razvoj in evropsko kohezijsko politiko. 2015b. Strateška razvojna inovacijska partnerstva (Strategic development innovation partnerships). https://www.gov.si/assets/vladne-sluzbe/SVRK/S4-Slovenska-strategija-pametne-specializacije/Podporni-dokumenti.pdf