Potentials and Obstacles for Establishing Firmer Collaboration between Social Science and Humanities Research Institutes and Private Sector Companies in Serbia

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1. Introduction

Social science and humanities research sector (SSHRS)/private sector (PSC) collaboration has been a subject of academic debates for several years. One of the key issues was how to improve regional and national economic development and competitiveness in the global economy\(^1\). The debate gained further importance in the situation of recent financial and economic crisis that has affected European economies. At the same time, the role of universities and other academic and research institutions in the society underwent the process of reassessment in European countries. Besides the two-core mission - teaching and research - there has been an increasing interest in ensuring that scientific research has impact on economic growth, wealth creation and business innovations\(^2\). The underlying idea is that European science and research institutions and universities need to be more engaged with businesses to help create innovative products and services through high-quality research activities\(^3\). This need has been recognised by the European Commission, formulating Lisbon Strategy, as an action and development plan aiming to ensure competitive and dynamic knowledge-based economy\(^4\). Knowledge-generating institutions, like universities and research laboratories, industrial research laboratories and more recently government agencies, are key actors in stimulating and influencing the innovative potential of society\(^5\). This renewed interest resulted in new insights into university-industry interactions during the 1990s, based on the concept of the ‘Triple Helix’ model\(^6\).

Similarly, the concept of ‘entrepreneurial universities’ has been used to describe changes that had taken place in academia: stronger "involvement in socio-economic development, greater emphasis on exploiting research results, correlated with (1) an increase in patent and licensing activities, (2) the institutionalisation of spin off activities and (3) managerial and attitudinal changes among academics with respect to collaborative projects with industry"\(^7\). These changes went simultaneously with the shifts occurred in public funding mechanisms, encouraging collaboration between academic institutions and industrial sector.

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\(^7\) Van Looy, Bart, Julie Callaert, and Koenraad Debackere, 2006: 2.
Rising pressure towards stronger university-industry collaboration and developing entrepreneurial capabilities of academic institutions opened the doors towards new opportunities, but also gave rise to some concerns related to the role of academia within society. The issue that arose immediately was related to the impact of university-industry collaboration on the research agendas as well as on the conflicts of commitment and interests that happens when faculty or researcher’s full time duties are affected by activities stemming from involvement in external collaborations. Other concerns were related to the different rewards and incentive systems of academic research and research that was conducted in collaboration with private sector. Finally, the relationship between disclosure versus secrecy (the need for open discussions within academic communities opposing the interests of private companies to protect the value of their investments) and the complementarities and substitution effects between public and private R&D expenditures also raised concerns (for example, both individual researchers and research institutions can develop financial interests in the specific research outcomes, leading to a possible bias towards certain fields and activities and to ‘contamination’ of the science by the application-oriented needs of industrial corporations - the ‘corporate manipulation thesis’).

Although there is a lack of systemic empirical evidences on the extent, forms, potentials and mechanisms of private sector and social science/humanities research collaboration in European countries, several research projects had the aim to fill this gap and make an assessment of the extent and diversity of collaborative based researches, institutional mechanisms, sustainability of institutional funds, available institutional and personal resources and obstacles towards firmer collaboration. In Serbia, such researches have not been done yet, and this one represents the first step in assessment of potentials and obstacles for social science and humanities/business sector collaborations.

Ministry of Education, Science and Technological Development of Republic of Serbia accredited 17 research institutes in the field of social science and humanities (11 social science research institutions and 7 humanities research institutions) as separate legal entities. Besides these institutes, there are numerous organisational units (research institutes and research centres) within faculties whose main activities are related to conducting academic research in the fields of social sciences and humanities.

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8 Martin, Ben, 2001: The changing social contract for science and the evolution of the university, in: Geuna, Aldo et al. (eds.), Science and Innovation: Rethinking the Rationales for Funding and Governance, Edward Elgar Publishers
but do not represent separate legal entities. All of them are being primarily financed by the Ministry of Education, Science and Technological Development, based on the projects that are accepted and granted at the calls, which are cyclically being repeated every 3 years. Besides that, institutes may apply for the academic and social policy project calls financed by other government bodies, non-government and international organisations and funders (such as European Commission, for example), but also can engage in collaborative projects with public or private enterprises.

The main activities of the institutes encompass conducting basic, applied and development based scientific researches. The Law on Scientific Research of the Republic of Serbia\(^\text{14}\) recognises that scientific research, together with education, represents the basis for economic and overall social development. Furthermore, the Law recognises the following objectives of the scientific research activities:

1) Development of science, technology and education to encourage economic development, increase domestic product and raise the standard of living and quality of life;

2) Preservation and development of the general fund of knowledge as a condition for inclusion in the world integration processes;

3) Preservation and development of the overall scientific resources (scientific and educational institutions, scientific staff and scientific and research infrastructure);

4) Raising the general level of technology in the economy and the provision of the competitiveness of goods and services in domestic and international markets;

5) Establishment of international scientific collaboration for faster integration into the world scientific, economic, social and cultural trends, and inclusion in the European Research Area;

6) Directing of the societal development towards innovation, creation of cultural environment and creative education, with the aim of preserving the national heritage and civilisation.

Therefore, it is clear that, at the policy level, research institutes’ activities are directed toward growth of economic and overall social development capacities of the society, which is in tune with the similar policies adopted by European Commission and with the Lisbon Strategy. However, it seems that in terms of implementing this policy, Serbia is still lagging. Namely, the Government of Serbia has formed an Innovation Fund in 2005, activities of which are related to "promoting innovation in priority areas of science and technology and supporting commercialisation of technology transfer thus enabling new technologies to reach the market"\(^\text{15}\). However, only recently (in 2016), in cooperation with the European Union, the Fund has designed a Collaborative Grant Scheme for Research and Development Organisations and Private Sector Enterprises, in order to "incentivise private-sector companies and public-sector R&D organisations to engage in joint scientific research and development projects with the goal of creating new commercially viable products and services, as well as innovative precompetitive technologies with significant future impact and market potential"\(^\text{16}\). Since the grant

\(^{14}\) [http://www.paragraf.rs/propisi/zakon_o_naucnoistrazivackoj_delatnosti.html](http://www.paragraf.rs/propisi/zakon_o_naucnoistrazivackoj_delatnosti.html)

\(^{15}\) [http://www.innovationfund.rs/about-if/](http://www.innovationfund.rs/about-if/)

\(^{16}\) [http://www.innovationfund.rs/program-cgs/](http://www.innovationfund.rs/program-cgs/)
scheme (co-financing of the joint collaborative projects amounting EUR 300 000) was not specifically targeting R&D institutions in social sciences and humanities, none of the projects granted at the Call came from those disciplinary areas\textsuperscript{17}.

The lack of policies and funding schemes that are specifically targeting involvement of social sciences and humanities R&D institutions in collaborative projects with private sector has at least two consequences:

1. The lack of encouragement of SSHRI to make initiatives towards involvement in collaborative research (which is accompanied by widespread opinion within social science and humanities research sector that their expertise and fields of activity are of no interest to the private sector companies), and

2. Relatively low level of visibility and recognition of institutes operating in SSHRS.

\textsuperscript{17} More information on the Call, at: http://www.innovationfund.rs/program-cgs/. Information on awarded projects are provided at: http://www.innovationfund.rs/cgs-awardees/.
2. Opinions of the Representatives of Social Science and Humanities Research Institutes (SSHRI)

The first part of our research on possibilities and obstacles for establishing firmer collaboration between social science research institutes and private sector companies included standardised structured interviews with representatives of the social science research institutes (mainly directors, if available; otherwise, leading researchers familiar with the work of institution). The call for participation in the research was submitted to 36 institutes (out of which some were institutions and organisational units of faculties of the University of Belgrade), whose main activity was related to conducting research in social sciences and humanities. The call has been repeated several times during May and June 2016. Positive response was submitted by ten representatives of contacted institutions. Out of those that responded to our call, six came from social sciences and four from humanities. Since the total number of respondents was rather small, the analysis must remain descriptive. Also, due to small and non-representative sample, conclusions resulting from the obtained data cannot be taken as reliable for all research institutions coming from social sciences and humanities, but only for those that entered the sample.

The main goal of the research was to establish what were the capacities and potentials for engagement of those institutions in collaborative and applicable projects with private sector companies. Also, we were interested to see whether there was a willingness of those institutions to enter the market and offer their services to private sector companies. Therefore, the aim of the research was to establish: 1) what are the organisational/technical capacities of the institutes for entering such collaborations, 2) in which academic fields and areas of expertise they operate and are able to provide their services to private sector enterprises, 3) which mechanisms of collaboration they would prefer, 4) how do they perceive the role of mediatory institutions/organisational units and other third parties, and, finally, 5) how do they perceive the role of the state in enhancing such collaborations.

18 The structure of the sample was the following: 3 institutes/centres represent organisational units within Faculty of Philosophy, 2 institutes operate as organisational units within Serbian Academy of Sciences and Arts, while 5 of them represent separate legal entities. Only 4 out of 10 institutes encompassed by this survey operate within University of Belgrade (either as separate legal entities or organisational units within academic institution).
2.1 Professional, Organisational and Administrative Capacities of SSHRI

In the first part of our research, we wanted to assess organisational and administrative capacities of SSHR institutions to engage in collaborative projects with business sector. Therefore, the first battery of questions was related to general information on the number and structure of the employees, as well as on administrative capacities of institutions. The results show that the total number of staff within institutes encompassed by our research varies between 10 and 50, mostly comprising permanent employees. Most employees represent research staff members. However, interesting finding is that as the total number of research staff employed in the institution rises, the absolute and relative numbers of administrative and technical staff also tend to rise, suggesting that administrative capacities of larger institutions tend to be higher, in absolute but also in relative terms.

In terms of organisational capacities of the institutions encompassed by the research, we were interested to determine if there are separate administrative units within institution dealing with the coordination of the projects that are not financed by the Ministry of Education, Science and Technological Development. Interestingly, only three institutes/centres, operating within the Faculty of Philosophy, stated that such organisational unit exists (at the level of the faculty)\(^{19}\). Furthermore, representatives of three other institutes recognised the need for establishing such an organisational unit within their institutions. Other representatives of institutes did not recognise the need for establishing such units, indicating that in the future they do not plan to take initiatives in engaging the projects that are not financed by the Ministry of Education, Science and Technological Development. These results are also suggesting that some of SSHRS institutes’ representatives recognised the changing context of the development of research sector in Serbia (and the growing need for producing applicable, innovative and development oriented knowledge), but also the exigency for strategic organisational changes within institutions with the aim of raising their capacities to apply for grants and projects that are not related exclusively to the Government and its agencies.

Another aspect of institutional capacities for engagement in collaborative projects is related to self-assessment of the dominant types of research the institution is conducting and its relevance for external, commercial and non-commercial use. The results indicate that majority of respondents (7) highlight basic research as dominant within activities of their institutes, 1 institution is mostly dealing with applied research, while 2 stated that both basic and applied research represent their domain of activity. In other words, the results indicate that less than one third of institutes covered by this survey are strategically oriented toward development of applicable (commercial or non-commercial) projects, testifying on rather shy recognition of the need for changes in strategic development.

Although results indicate that the main source of providing financial assets to SSHR institutes remains Ministry of Education, Science and Technological Development - MESTD (through three-year projects

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\(^{19}\) It needs to be said that University of Belgrade also provides technical and administrative support to its members regarding international and inter-university research and education projects and cooperation (such as Horizon 2020, Tempus, Erasmus plus, CEEPUS, etc.).
granted at the calls), we were interested to see whether these institutions were also engaged in the projects that were not directly supported by the MESTD and, consequently, whether other sources of project financing were employed. Four out of ten institutes covered by the survey were engaged only in the projects financed by MESTD, while six remaining institutes were engaged (in the last five years) in the projects supported by different government and non-government, domestic and international organisations and agencies (the number of these projects varied in the last five years from 1 to 7 per institution). They were mostly engaged in the projects financed by the European Commission (FP 7, Horizon 2020, Tempus, etc.), GIZ and UNICEF, but also on the projects funded by agencies of the Government of Serbia or by local government bodies. In addition to that, 8 out of 10 institutes’ representatives stated that their institutions competed for the grants/financial assets at the calls announced by the Government of Serbia.

In other words, it is clear that SSHR institutes have recognised the need for engagement in the projects that are not a part of their “regular” research activities. This finding indicates that not only SSHR institutes have capacities to expand the scope of their research activities (regardless of the assessment of external relevance of their research), but also that they recognise the need of finding new sources of funding, increasing their public visibility and strengthening their areas of expertise and competences. In other words, the threat of growing insecurity of public funding (which became realistic after the introduction of austerity measures) forces research institutes and their management to develop entrepreneurial strategies to sustain their main activities.

Another finding also testify in favour of the thesis that institutes are starting to develop new strategies: namely, six out of ten representatives of the institutes reported that their institutions were engaged in the last five years in the policy oriented projects. In other words, although most institutes reported that their main orientation is related to basic research, externally imposed needs for applied and policy oriented knowledge (coming either from government bodies and agencies or from NGO sector) forces them to respond to them by expanding their capacities and research activities to applied and policy projects.

However, the results of our research indicate that SSHRI are more interested in cooperation with government bodies and agencies than with international funders that are granting research projects (such as FP7, Tempus, Horizon2020, IPA, RRPP). Namely, only four out of ten respondents stated that their institutions have applied for such projects. Besides the slowly developing “entrepreneurial strategies”, it seems that SSHRI still perceive the state as their main partner and the source of financial provisions. One of the reasons for that might be the fact that large international projects (especially cooperation) usually involve complex organisational and administrative activities, while research institutes are faced with relatively limited organisational and technical capacities for their implementation.

Finally, we were interested to see whether SSHRI have professional capacities to engage in multidisciplinary research projects that would involve cooperation with scientists and researchers coming from other disciplinary areas, such as natural and technical sciences, regarding the growing need for production of integrative knowledge (especially in the context of collaboration with the private sector enterprises). The results show that the majority of the representatives of encompassed institutes (nine out of ten) expressed their readiness to engage into such projects, assessing that their institutions have professional capacities for multidisciplinary collaborations. Representative of the
institute that expressed his doubt on the possibilities for such cooperation explained that it is related to differences in scientific and professional direction of social science and natural/technical science research.

2.2 Experiences in Collaborative Projects with Private Sector Enterprises

Beside the willingness and capacities of SSHRI to engage in applicable projects financed by non-government and international organisations, we were interested to see whether there is a similar tendency when it comes to cooperation with private sector enterprises. However, it must be said that there is a significant difference between participating in the academic research projects, funded with the aim of contributing to the process of knowledge production, policy projects that are designed to make direct social impact, and applicable collaborative projects with private sector enterprises, where the aim is to produce and make transfer of innovative knowledge and commercialise it in accordance with specific demands of private sector receivers. The latter form of activity represents significant step out of the comfort zone for most of the SSHRI.

First, we were interested to see whether SSHRI have had any contacts or attempts to make collaborations with the private sector enterprises. Results of the survey reveal that initiatives for making collaborative projects were undertaken by only two institutions (one coming from disciplinary area of economics and the other from philosophy). However, only in the case of the institution coming from the economics, several collaborations with business sector were implemented. These collaborations included: market research projects, education of the employees in the private sector enterprise and evaluation of the capital of private company.

Since only two institutions had contacts with private sector enterprises, we do not have enough information to make reliable conclusions on the ways the contacts were established. However, based on our limited data, it seems that informal initiatives, based on personal networks, informal contacts or acquaintances (regardless of the fact who initiated the collaboration – private sector actors or academic researchers), represent far more efficient mechanism of initiation and establishment of partnerships than formal contacts. Of course, we must bear in mind the fact that in the case of institutes covered by this survey, successful collaboration occurred between private sector enterprises and research institutes which represents their "natural" partner (coming from disciplinary area of economics), providing services that are directly related to the financial and marketing aspects of the business, and in cases of which informal networks were thicker and functional.

Although most of the SSHRI included in the survey did not have any contacts with the private sector enterprises, we were interested to see whether there is a willingness for establishing such collaborations in the future. Majority of the respondents stated that they are interested in making firmer connections with business sector, indicating that there is a solid ground for deepening the ideas on how these collaborations could be established. Although social science and humanities academic and research institutions in general have shown inertia when it comes to making initiatives towards
changing scope of their activities and expertise as well as towards commercialisation of the knowledge they produce, potential reduction of financial assets coming from the Government is making them more interested in changing this situation. At this moment, however, it seems that such interest remains at the conceptual level, without concrete plans and actions.

Finally, the majority of the respondents assessed that their colleagues – employees in the institutes would be interested to participate in collaborative projects with private sector enterprises as well as in development of applicative and multidisciplinary projects.

2.3 Research Themes and Fields of Expertise

When it comes to the thematic areas and fields of expertise in which SSHRI could offer their services to private sector companies, some of the respondents listed general fields of expertise, while others had more concrete and elaborated ideas. The following fields of expertise were listed:

- General research in the field of culture
- Tourism (conceptualisation of the tours with regard to historical, ethnographic or archaeological specific characteristics of the regions and tourist destinations)
- Finance and accounting
- Conceptualisation and quality evaluation of textbooks and other educational materials
- Research in the field of work relations; consultancies on improvements of the functioning of organisations in terms of social relations and human resources
- Demographic research
- Research in the field of consumption, lifestyles and culturally induced needs of various parts of the population
- Public opinion research
- Research in the field of urban phenomena (for example, designing of participation of the private sector in urban development policies)
- Research in the field of family relations and youth
- Research and consultancies in different areas covered by public policies
- Research, consultancies and education in the field of communication (development and improvement of communication skills, bridging communication gaps between people of different cultural backgrounds)
- Consultancies on designing socially responsible business
• Consultancies on improvements of the business models (especially referring to organisational culture)
• Consultancy services in the field of social pathology
• Creation and maintenance of different databases.

Furthermore, the respondents (representatives of research institutions) also recognised the sectors of economy that might be interested in the services they offer. The most commonly listed sectors are the following:

- Business consulting
- Trade
- Tourism (specifically ethno-cultural tourism)
- Food production (especially production of traditional food)
- Traffic
- Publishing sector (specialised in children literature and educational materials)
- Media
- Marketing (product branding)
- Industry of culture and entertainment

### 2.4. Preferable Forms of Collaboration

When it comes to the preferable forms of collaboration, the representatives of the SSHRI have listed the following (the order is determined by the number of respondents that chose those options, starting from the most to the least common):

- Consultancies
- Joint research projects
- Internship programmes, development and exchange of the employees
- Joint publications and conference presentations
- Education of the employees in private sector companies
- Contracted research
2.5. Views on the Role of Mediatory Institutions/Organisational Units

Another aspect that we wanted to explore was the perception of the role of mediatory institutions / organisational units or other third parties in establishing collaboration between SSHRI and business sector. As we have already mentioned, in accordance with the Lisbon Strategy and global orientation on knowledge driven economic and overall social development, the Law on Scientific Research recognises the need for production of innovative knowledge as one of the main goals of scientific research activity in Serbia. However, infrastructural support for collaborative projects and production of applicable knowledge is still in its early stages.

For example, to substantially contribute to the development of a national innovation system and the creation of an economy and society based on knowledge, the University of Belgrade has founded the Centre for Technology Transfer in 2010, primarily for the purpose of identification, protection and commercialisation of research and development results of the University of Belgrade. However, it must be noted that CTT operates as mediatory organisational unit only for those institutions/faculties that are members of the University of Belgrade. Eleven research institutes operate within the University of Belgrade as separate legal entities (not counting those that operate as organisational units within faculties), and among them only one is coming from social sciences and humanities. Therefore, CTT’s formal scope is rather limited when it comes to institutions in this disciplinary and research area.

In our survey, we were interested to see whether representatives of SSHRI (that were operating as separate units or entities within larger organisational units, members of University of Belgrade) have used the services of CTT.

The results show that none of the four institutions operating within the University of Belgrade covered by the survey (one institute and three research units within Faculty of Philosophy) have had contacts with CTT. Furthermore, University of Belgrade has established Science 2 Business web database, with an aim to bridge academia and business closer and enhance collaboration opportunities in research and development with domestic and foreign partners coming from the two sectors. Database is conceived as a portal on which information on the research institutions, projects, expertise, available equipment, research techniques, as well as services offered by faculties and institutes are available to interested private sector enterprises. The call for providing data on capacities and services they offer to private sector companies has been open to all research institutions and faculties within the University of Belgrade, although listing in the base was not compulsory. The database at this point contains information on 38 out of 42 different faculties and institutes operating within the University of Belgrade. However, although a fair number of departments coming from SSH faculties have provided their data, none of the social science and humanities research institutes or research organisational units operating within the University of Belgrade were listed in the base. This finding is in tune with our
general conclusion on inertia and lack of initiative characterising SSHRI regarding their involvement in finding partners in private sector and offering them their services\(^{20}\).

### 2.6. Potentials and Obstacles for Establishing Firmer Collaboration with Private Sector Companies

Representatives of SSHRI included in the survey have recognised numerous potentials in engagement in collaborative projects with private sector enterprises, despite of their relative inertia when it comes to making initiatives in that respect. Interestingly enough, the potentials of collaborative projects have been recognised even by the representatives of those institutes who stated they were not interested in this type of cooperation. The most frequently mentioned benefit from collaborative projects with industry is related to additional sources of funding. The fact that this potential is being recognised by all representatives of the included institutes suggest that reduced Government funding and changing and non-transparent criteria for the projects granted by the MESTD raises awareness on the necessity of taking initiatives towards finding new sources of financial assets and securing additional funding.

Other potentials being recognised are the following:

- The possibility of getting new data;
- Possibilities for expanding human capacities of the institution by employing new staff members;
- Establishing the institute as a referent authority in certain areas of expertise;
- Increasing institutions’ public visibility;
- Possibility for establishing academic, research and professional networks that will serve as the basis for further networking and collaborations;
- Getting references for the future projects.

On the other hand, representatives of SSHRI also recognised potential obstacles for establishing (firmer) collaboration with private sector enterprises. However, unlike benefits on which there was a relatively high degree of agreement between representatives of SSHRI, when it comes to obstacles, the answers were relatively diverse. The most frequently mentioned obstacle is the one that stems from different logic of functioning in two sectors. For example, in academia it is common practice that results of scientific research are being publicly presented and are the object of scientific and academic debates. The respondents expressed concerns that private enterprises would demand that results of

\(^{20}\) It has to be noted that this conclusion is based only on the data provided by the members of the University of Belgrade. Since the majority of SSHRI are not members of the University, they were not included in the Science to Business web base.
joint researches remain confidential. Another question that was raised was the one related to the issues of intellectual property rights; and finally, respondents were concerned that interest of science to contribute to the common good would come into collision with particularistic interests of private companies, raising the ethical issue of the commercialisation of scientific knowledge). Other obstacles mentioned by our respondents were the following:

- SSHRI are conducting basic and very often purely theoretical research, which is assessed to be of no interest to the private sector enterprises;
- The lack of institutional support for conducting collaborative projects (for example, established funds that would grant such projects);
- Difficulties in detecting partners in private sector;
- Low level of recognisability and visibility of their institution in the public.

Interestingly enough, respondents did not detect a lack of institutional resources (human, material, and administrative/technical) or a lack of professional competences within their institutions as obstacles for potential collaboration with private sector enterprises.

When asked on potential mechanisms through which stronger collaboration could be achieved, SSHRI representatives suggested the following measures:

- Establishment of research funds targeting collaborative projects between SSHRI and private sector enterprises;
- Establishment and affirmation of mediatory institutions, the aim of which has to be encouragement and facilitation of the collaboration between SSHRI and PSC;
- Changes in the mechanisms of financing of the R&D institutions;
- Strengthening of administrative and organisational resources of the institutes;
- Changes at the level of public policies that would enhance collaboration between PSC and SSHRI.

**Summary**

Based on the results of the survey, we can conclude the following:

Relatively weak turnout of the SSHR institutes to participate in the survey already suggests a lack of interest and initiative among their representatives to engage in collaborative projects with private sector. Although Ministry of Education, Science and Technological Development (at the time the research has been conducted) have announced stricter criteria and reduced funding to be awarded to the institutes at the future project call (that could potentially endanger the very existence of certain research institutes), their representatives still were not recognising enough the need for finding new
funding opportunities through commercialisation of their research activities at the market and by developing new research strategies.

Argument that supports this conclusion is the one that is related to the fact that a small number of SSHRI included in the survey had tried to establish contacts with representatives of private sector enterprises in order to engage in joint collaborative projects.

However, this conclusion is not unambiguous: namely, our research also shows that despite inertia, SSHRI recognise potential of the cooperation with private sector enterprises. They also recognise that this potential is not solely material benefits, but involve other professional, academic and social benefits.

The results also show that when thinking about potential modes of collaboration, thematic areas and services they can offer to private sector companies, some of the institutes have already had elaborated ideas, while others expressed only principled willingness to participate in such projects, but without clear ideas on services they are able to provide, research topics or preferred mechanisms of collaboration.

Among those who had a clear idea on what the preferable modes of collaboration are, dominant mechanisms were consultancy or education services, although they recognise the potential of joint research projects, commercial projects or personnel training and staff exchange.

Thematic areas recognised as potentially interesting to private sector are different, ranging from tourism, media, marketing to organisation management.

Most of the institute representatives recognised potential benefits from involvement in multidisciplinary and applied projects, suggesting that in such projects the future collaboration with private sector should be developed.

In terms of obstacles for involvement in collaborative projects with private sector enterprises, the representatives of SSHRI recognised the lack of mediatory institutions and third parties that would facilitate collaboration. In rare cases, they recognise these obstacles in the lack of professional or administrative capacities within their own institutions.

The results suggest that continuous work on establishing direct contacts between two sectors is necessary, as well as public advocacy on potentials of collaborative projects.

In addition, it is necessary to create new or to strengthen already existing platforms that will contribute to enhancing public visibility of SSHRI.

Finally, certain government policy measures that could enhance such collaborations are required, as well as creation of research funds (targeted at SSHRI) that will serve as incentive for engagement of both parties into such projects.
3. Opinions of the Representatives of Private Sector Enterprises

The other part of our research involved semi-structured in-depth interviews with representatives of private sector enterprises that could potentially be interested in engagement in collaborative projects with SSHRI. Private sector in Serbia does not have a long tradition, and it has been functionally operating only in the last 25 years. Knowledge transfers from science to business are rare and mostly involve either innovations coming from natural and technical sciences\(^\text{21}\) or collaborations that are related to human resources, marketing research, legal and financial consultancies. The latter forms of knowledge transfers are happening mostly between private sector companies and specialised agencies or individuals working either as external or internal consultants (within specialised organisational units of the companies). Innovative knowledge transfer from social sciences and humanities to private sector is in its early stages and is expected to be strongly recognised as necessary for gaining market advancements in the future, as competition and specialised markets in Serbia grow and further develop.

In our research, we have selected three companies coming from different sectors of economy, based on the answers on potential thematic areas and ideas for potential collaboration that were provided by the representatives of the SSHRI, but also based on our assessment of the potentially interested industries for such collaborations:

- International company operating in Serbia in the field of publishing (specialised in publishing school textbooks);
- Local tourist agency specialised in receptive tourism; and
- Local, fast growing, IT company.

All three companies represent mid-sized enterprises from Belgrade, employing from 10 to 35 employees. The research conducted with private sector companies is explorative in its nature and represents the first step in defining topics and problems on which a more comprehensive research should be done. Since the number of interviewed respondents is quite small and the sample is far from being representative in any respect, the obtained results should not be treated as reliable for making grand conclusions.

\(^\text{21}\) More on the incentives for innovative knowledge transfers and technological advancements, see at the website of Serbian Chamber of Commerce (http://www.pks.rs/PrivredaSrbije.aspx?id=22&p=0\&).
3.1. Recognition of the Importance of Knowledge Transfer from Social Sciences and Humanities

When interviewing representatives of private sector companies, we have asked them whether they have personally encountered problems in their business plans and strategies on which social sciences or humanities could potentially provide solutions. Representatives of publishing company and tourist agency readily responded that they were constantly faced with such problems in their businesses.

“Very often we have to do market research and we use the services of public opinion research agencies, (...), and when they create questions in the surveys, (...), they use knowledge generated by sociology, psychology, etc. Also, when we do our PR and marketing, we apply different psychological techniques and knowledge. For us, it is too expensive to pay always for the services of marketing agencies, since we are not a big industry like pharmacy or beer industry, and prices of their services are adjusted to the high profit industries, which we are not. We need knowledge from different disciplines of social sciences when making market analysis, analysis of the needs of the buyers, analysis of how buyers make their decision to buy or not to buy certain textbooks, analysis of what is offered at the markets (...). We also need knowledge on how to do advocacy on the importance of learning and the importance of books. This is where we need the help of different institutions coming from social sciences (...). On the other hand, we need social science to help us in creating education policies and laws. At this moment, we are alone in dealing with these issues, but it would be helpful if we could have professional help from the people coming from economics, political sciences, sociology, etc. We have a problem here because educational policies are not being formulated based on exact information (...). If the government does not recognise the need for such data, we need them to have an argument when educational policies are being formulated”. (Representative of a publishing company)

“We wanted to do receptive tourism and we needed to make a study on tourist potentials, and we were at the verge of conducting such a study, but we gave up because of some other problems. We also need aggregated data that Statistical Office of the Republic of Serbia is collecting.” (Owner of a tourist agency)

However, the representative of IT company could not immediately recognise problems solvable by social sciences, except for those that represent standard supportive activities, such as HR, marketing, etc. Nevertheless, he shared with us experiences of other IT companies that had encountered problems that SSH could solve.

“In our company, we employ a person who is doing our marketing, and he has business educational background, but someone who is educated in psychology could do this job as well. Also, we have the person who is a sort of HR manager. There is a growing need for HR experts in IT sector, since programmers now become more and more spoiled, they demand special work conditions. These are the most obvious fields for engaging someone from social sciences. However, I am interested more in how we can contribute to society, how we can bring benefits to the community. For example, I have a friend who has a company in San Francisco, and he is developing an application that could enable local communities to organise polls at any time on any issue. Practically an automation of the voting system that could enable the local community to make referendums on different issues and that could contribute to the benefit of the community. It is a kind of civic-metric, but not only that, since it represents a panel for discussion, a platform on which political
programmes could be presented. In developing this application he engaged someone from political sciences who gave him advice on how to design a discussion platform which will allow opposite opinions to be equally represented. Making a vote counter is not a technical problem anymore, it is very easy to make, but the point is how to make an application that would help engage as many as possible people living in a local community in the processes of decision making and discussion about the things that should matter to them”. (Owner of an IT company)

Alongside their professional experiences with the need for knowledge generated by social sciences and humanities in solving particular business problems, we were interested to see how they generally assess the need for this kind of knowledge in the sectors of economy they are operating in, and how they estimate the possibilities of gaining an advantage over competition by employing expertise and knowledge coming from SSH. Since the respondents were coming from quite different industries, their answers also differed due to specific characteristics of the sectors they were operating in and problems they were faced with.

"In IT sector, it is fairly easy today to solve technically some design or development problem. In the future, successful projects are going to rely on ideas and on designing applications that would be interesting to the users. Their contribution and added value could not be measured always and solely by material, economic criteria (...). Marketing and HR are already covering (some aspects of the knowledge transfer from social sciences - CASR). For example, Nordeus has a whole department in which professionals are dealing with satisfaction of the staff, so-called 'happiness management team'." (Owner of an IT company)

"We are the largest private publisher in Serbia and whenever we encountered problems and talked with other publishers in our association, they rarely recognised this need for independent experts’ analyses, but I think that it will change when institutes and social sciences offer them concrete solutions for their problems. In our sector, there are a lot of interest groups and politics is involved, and we need independent analysis of the school textbooks, their compliance with the learning process and objective needs of the students”.

(Representative of a publishing company)

"When we were conceiving school textbooks, we contacted people who we perceived as experts in their fields. For example, state publishing company is working with people who have monopoly over authorship of certain textbooks, but we wanted to draft those that are the best. When we started to work, we made focus groups with teachers and other professionals to see which textbook concept is the best and to see how to communicate with kids through textbooks. We were functioning as a small research centre. That was our initial advantage over competition. Now we need good evaluation of our textbooks, and we recognise the Institute for Psychology and Institute for Pedagogy and their researchers as those that could be of help in keeping our competitive advantage. We are faced with the need to improve our products". (Representative of a publishing company)

"People that are working in the tourist industry usually do not have proper education in history or art history in order to make specialised and attractive tours for clients in the country, but also for the clients from abroad. (...) If we were to conceptualise specific tours then we could offer something new to our clients, especially to foreign clients, that other tour operators do not offer. (...) That would be added value (...) and new approach in creating tourist offer here”. (Owner of a tourist agency)
3.2. Experience in Collaborative Projects

In terms of their own experience with collaborative projects with experts coming from social sciences and humanities, only representatives of the publishing company stated that they were already involved in such a cooperation. However, the collaboration was not made with public R&D institutions but with research and academic organisations operating in the private and NGO sectors.

"We have contracted ‘X’ (public opinion agency - the name known to CASR) to do a public opinion research for us. (...) Also, when we had a problem that was related to the minimal costs of textbooks and the maximum number of pages, I have contacted dean of the private faculty ‘Y’ (the name known to CASR) and asked him to do an economic analysis of the maximum price of textbooks. We needed somebody who knew local laws and economy. We suspected that school textbook market and competition in Serbia were disturbed, but we needed someone who could do an independent economic and legal analysis. So, we paid for one such study in which this segment of the market was analysed. We need research and studies from independent professionals and relevant institutions. (...) We have several NGO’s (for example, Centre for Educational Policies or Educational Forum) that are doing concrete projects, and it should be something that research institutes also do. NGO sector took over these jobs from them". (Representative of the publishing company)

3.3. Research Topics, Academic Fields and Forms of Collaboration

Opinions on research topics in which collaborative projects between PPC’s and SSHRI’s could be established also varied, depending on the sectors of industry from which companies were coming.

Representatives of the publishing company pointed out several topics in which collaboration could be established:

1. Research projects that would produce exact data on the number of families with schoolchildren, the age structure of the children, the number of extra classes that schoolchildren are taking in order to pass their exams;
2. Studies in the field of analysis and evaluation of the current textbooks and their compliance with the needs of children and parents, but also with requirements of the learning process;
3. Studies of the specific segments of the market (legal and economic analyses);
4. Education and training of teachers and parents on the learning processes;
5. Policy analyses based on empirical data that will help in shaping adequate educational policies and laws;
6. Advocacy projects that will sensitise public opinion on the importance of learning and book reading;
7. Analysis of the social, economic and other effects of implementation of certain laws or policies.

The representative of the tourist agency also had ideas in which topics collaborative projects could be established:

1. Conceptualisation of specific and certified tours in collaboration with museums or other research and cultural institutions with regards to historical, archaeological, ethnological and art historical sites specific to the regions or tour destinations;
2. Public opinion surveys on the cultural and tourist consumption;
3. Education of tour guides;
4. Direct involvement of historians, ethnographers, art historians or archaeologists, as professional support on specialised tours.

The owner of the IT company offered some general ideas, but also brought some concrete proposals for collaborative projects:

HR services;

Education and training in communication with people of different cultural background and organisational cultures, since representatives of this sector are communicating on a daily basis with clients and partners coming from all over the world (“I do not have a problem when communicating with American or European partners, but there are a lot of misunderstandings in communication with partners from China, India or Bangladesh”);

Consulting on developing socially responsible business;

Consulting on developing different applications and platforms with regards to historical or socially important facts (for example, virtual tour guide or virtual guide through architecture of a city with interesting information on different buildings; virtual museum tours; design of video games with historical and fantastic literature references; etc.);

Consulting on developing applications for real estate market (knowledge on gamification is very common in IT sector);

Consulting on developing and maintaining social network platforms and applications (for example, around different games on the internet people tend to build community networks and gaming companies do find their interest in keeping those virtual communities alive; that is why they need a sort of social engineering; for example, Second Life).

Although the needs for knowledge transferred from different social sciences and humanities differ across various sectors of economy, we could notice that some of SSH disciplines are recognised more often than others as potentially interesting to our respondents. The following
The table represents the list of SSH disciplines based on recognised needs for knowledge transfers provided by our respondents:

<table>
<thead>
<tr>
<th>Sector of economy</th>
<th>IT sector</th>
<th>Tourism</th>
<th>Publishing sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discipline</td>
<td></td>
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</tr>
<tr>
<td>Psychology</td>
<td>✔</td>
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<td>✔</td>
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<tr>
<td>Sociology</td>
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<td>✔</td>
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</tr>
<tr>
<td>Economics</td>
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<tr>
<td>Law</td>
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<tr>
<td>Pedagogy</td>
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<tr>
<td>History</td>
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<td>✔</td>
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<tr>
<td>Archaeology</td>
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</tr>
<tr>
<td>Ethnology</td>
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<td>✔</td>
</tr>
<tr>
<td>Art history</td>
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<td>✔</td>
</tr>
<tr>
<td>Museology</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Political sciences</td>
<td>✔</td>
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</tbody>
</table>
Interviewees also recognised different forms of collaboration that could potentially work:

<table>
<thead>
<tr>
<th>Sector of economy</th>
<th>IT sector</th>
<th>Tourism</th>
<th>Publishing sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forms of collaboration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consulting</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Contracted researches</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Education and training</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Internships and staff exchange</td>
<td></td>
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<td>✔</td>
</tr>
</tbody>
</table>

Preferable forms of collaboration that our interviewees singled out were pretty much in tune with the ones chosen by representatives of SSHRI. The exception represents collaborations involving joint publications or conference presentations with researchers or academics that no one from the private sector recognised as preferable. This finding indicates possible disparities in the way of thinking in two sectors: while private sector is mostly oriented towards practical problem-solving issues, academics and researchers are more interested in public presentation and discussion on their results.

3.4. Mediators and Third Parties. Collaboration with Institutions VS Individual Researchers

Another aspect of potential collaboration between PSC and SSH was related to the preferable modes of collaboration. We talked with the interviewees on the following topics:

Do they prefer collaboration with individual researchers or formal arrangements with institutions?

Who must initiate those contacts – private sector or research institutes/individual researchers?

How do they assess the level of visibility and recognisability of SSHRI?

What should be the role of mediatory bodies and other third parties in establishing contacts with SSHRI?
Whether future collaborations could become more successful if special investment funds targeting collaborative research in social sciences and humanities are established?

Answers to all these questions varied.

For the representative of the tour agency formal collaboration with an institution would represent preferable mode of certain forms of collaboration (for example, in designing and conceptualising certified tours or in making public opinion research on consumption habits), since she assessed this kind of collaboration would bring a certain reputation of independent expertise to the projects. However, for other forms of collaborative projects, such as education and training or providing professional support on tours, individual researchers are a preferable option. Representatives of the publishing company stated that they already had collaborations both with institutions (independent study of the segment of the market they are operating in and a public opinion research study) and individual researchers (consultations with researchers in the process of evaluation of textbooks). Although they chose to cooperate with private sector academic and public opinion organisations in the past, they recognise that public institutions are still more renowned than the private ones since they do not operate based on profit. Finally, the IT sector representative had a strong opinion that collaboration with formal public institutions includes a lot of bureaucracy and usually tends to be very slow, which is unacceptable in dynamic industries such as IT. That is why he opted for individual collaboration and making (informal) contacts with individual experts based on recommendations as preferable forms.

They do not always agree on the issue of who must be the initiator of the collaboration. IT sector representative thought that it depends on the type of project. If researchers from SSHRI have ideas and innovative concepts on making new technological and web applications, then he expects that the initiative should come from them (for example, to form a team and to seek funds for such a project). He suggests that the best way to realise these initiatives is through establishing start-up businesses, crowdfunded or spin-off companies. In certain projects, he would be interested to invest himself, and they even need not necessarily be quickly profitable, if they are innovative, creative or offer learning opportunities in making new technologies (which is something he assesses as important for staff recruitment). In addition, socially responsible and business initiatives contributing to the wellbeing of a community are being recognised as a good opportunity for IT sector, which is employing highly educated and well-paid professionals that are expecting not only material but also non-material gratification from their job. Apart from those situations in which the initiative should come from SSH researchers and institutions, private sector companies may initiate contact as well, mainly when they are faced with practical problems in their businesses, which are solvable by exploiting knowledge generated in those disciplinary areas.

The representatives of the publishing company also agreed that the initiator of collaborative projects could both be private sector enterprises or research institutions, depending on the project. Private sector companies are mainly initiating collaboration (with individual researchers) when they are faced with problems and need solutions. Similar to the IT sector representative, they also feel that attempts to make formal contacts with public R&D institutions often lead to unnecessary waste of time (“… they will not respond fast enough, and we would be in risk if the person they choose to cooperate with us is somebody that we really need”), but they do recognise that cooperation with such public institutions is
regarded as more valuable and professional by other stakeholders. They find that initiatives coming from SSH research sector should be more agile, suggesting the following ways:

By enhancing their public visibility and by active engagement in the process of public hearings and discussions and creation of public policies;

By developing applicable projects that would refer to urgent social issues and problems ("Institutes are involved in basic research and maybe they forgot what the society really needs. They are autistic, other academics are maybe able to read their texts, but we do not understand them anymore, we feel that there is no communication between social sciences and society").

All of interviewees agreed that visibility and public recognisability of SSHRI is rather weak. The owner of the tourist agency and representatives of the publishing company had some vague ideas on which institutions they could contact in the case they want to initiate a collaboration, while the representative of the IT company had no clear idea which SSHR institutes even existed and what were their fields of expertise. They all agreed that some sort of a web platform on which all available information on research institutes, their professional and technical capacities, references and areas of expertise should be established to enhance their visibility and facilitate potential collaboration.

The need for mediatory institutions and public funds aiming to incentivise collaboration between private sector companies and social sciences and humanities is also recognised, although opinions on the effectiveness of such funds differ. For the representative of the IT company public funds and mediatory institutions are not necessarily the best solutions since they usually involve slow procedures and a lot of bureaucracy.

On the other hand, the representative of the tourist agency feels that such public funds would be helpful since they operate in low profit industry and have weak investment potential. She also assesses that for companies operating in the sector of tourism such collaborative projects would have to involve establishment of consortia and in this respect, she recognises the important mediatory role of the Tourist Organisation of Serbia (TOS).

Finally, publishing company representatives felt that the Serbian Chamber of Commerce with its associations could represent one such mediatory body that would facilitate collaboration between PSC and SSHRS.

Interestingly enough, none of our respondents knew about the existence of the Investment Fund of the Government of Serbia, nor heard about Collaborative Grant Scheme for Research and Development Organisations and Private Sector Enterprises that this fund offered. These findings suggest that not only SSHRI are invisible and unrecognisable to the wider public outside narrow academic circles, but also that shy attempts of the government and other public institutions to incentivise knowledge transfers from science to private sector remains unrecognised by important stakeholders (private sector companies, but social science and humanities research institutions as well).
Summary

Based on the interviews conducted with the representatives of private sector companies, we can draw the following conclusion:

Private sector companies do recognise the importance of knowledge transfers from social sciences to private sector as one of the dynamic factors that could provide market advantages over competition and lead to faster business development.

However, despite this recognition, collaboration with social science institutions or individual researchers has been implemented only in the case of one company.

The representatives of private sector companies we interviewed listed a number of research topics around which collaborations could be established (the list of topics is determined by the specific characteristics of the sector in which they operate). These include: a survey of the general population or specific segments of population on their habits regarding cultural consumption; analyses of educational needs and problems; exact research on different structural characteristics of population; studies in the field of analysis and evaluation of the school textbooks; legal and economic analyses of characteristics of specific segments of the market; different kinds of education and training (education and training of teachers and parents on the learning processes; education of tour guides; education of employees who are facing communication problems with the people coming from different cultural backgrounds, etc.); policy analyses in the sector of education; advocacy projects in the sector of education; analysis of the social, economic and other effects of implementation of certain laws or policies; conceptualisation of specific and certified tourist arrangements with regards to historical, archaeological, ethnological and art characteristics of the regions or tour destinations; HR and marketing services; consultancies on developing socially responsible business projects; consultancies on developing different web applications and platforms; consultancies in developing applications for real estate market; consultancies in developing and maintaining social network platforms and applications, etc.

The PS representatives recognised the following SSH disciplines as potentially interesting in terms of knowledge transfer: psychology, sociology, history, ethnology, archaeology, pedagogy, art history, political sciences, law and economics.

Preferable modes of collaboration include consultancies, contracted research projects, education and training and internships or staff exchange.

Although business sector representatives recognise the importance of establishing collaborative projects with institutions, due to the slowness and bureaucracy of those institutions, they still prefer collaboration with individual researchers and academics.

In establishing contacts with such institutions or researchers, they prefer to use personal and professional networks over a formal approach.
They all agreed that public visibility of SSHRI is relatively weak and recognised the need for establishing web platforms where all available information on potential partners from SSH would be provided.

They also recognised the need for establishing mediatory institutions that would enhance collaborative projects, although there was no agreement on the effectiveness of such institutions.

Since some of the problems private sector companies are facing are common to a larger number of enterprises or to the whole sectors of economy, they assess that mediatory institutions should be also established within agencies and bodies that are servicing the needs of private companies (for example, within Chambers of Commerce or different sectoral organisations and associations).

Government incentives for the collaboration of PSC and SSHRI should be more publicly visible, less bureaucratic and should be designed to target projects that are related to knowledge transfers from social sciences and humanities.
4. Opinions of the Representatives of Mediatory Organisational Unit within the University of Belgrade - Centre for Technology Transfer

Finally, in our research we have interviewed representatives of mediatory organisational unit formed within the University of Belgrade – Centre for Technology Transfer - on the possibilities of establishing firmer contacts and successful collaborative projects between private sector companies and SSH research sector.

Centre for Technology Transfer was formed in 2010, with the aim of identifying, protecting and commercialising the results of scientific and research work. The Centre employs four staff members and was established as a part of IPA project, financed by the European Commission. The Centre has established a fund\(^2\), which enables the progression of the most exciting innovations from all faculties and institutes within the University. The Centre is specifically targeting management of technology transfers from academia to industry, but is also providing certain mechanisms of support to other forms of knowledge transfers (including trainings, networking events, academia-industry matchmaking for contractual research, collaborative research, etc.).

As the Centre’s officers assessed, systemic management of knowledge and technology transfers from academia to business represent a relative novelty in Serbia, and one of their tasks encompasses raising awareness among both the scientists and the private sector on the importance of producing and using applicable knowledge. However, since the University of Belgrade still does not have an integrated database on all different projects and collaborations (including those with private sector companies) its members participated in, the CTT officers are unable to give reliable assessment on the extent of technology and knowledge transfers between the academia and private sector companies. However, they are emphasising that potentials for knowledge transfer and commercialisation of the technology and/or research are still not fully met.

Commercialisation of SSH research is still rare in Serbia; however, CTT officers assess that this is not much different from the situation in other European countries. In line with this assessment is the fact that CTT has never been contacted by private or public sector companies to find adequate partners in

\(^2\) [http://www.ctt.bg.ac.rs/fond](http://www.ctt.bg.ac.rs/fond)
social sciences and humanities. Reasons for such lack of initiative coming from the business sector are various, ranging from low visibility and recognisability of SSH institutes and departments to unawareness of the possibilities for commercialisation and exploitation of knowledge generated by social sciences and humanities within the industry sector. On the other hand, it seems that representatives of SSH are also showing lack of interest for such collaborations. Although University of Belgrade has established Science 2 Business web database with the aim of providing adequate information on all research capacities and services in the field of knowledge transfer, only few social science and humanities departments provided such information and expressed their willingness to be active in this process, while none of the social science and humanities research institutes/research organisational units operating within University provided their data. However, it needs to be said that institutional inertia in terms of collaboration with industry does not imply complete absence of initiative. For example, unlike the lack of initiative we recorded at the organisational level of SSH departments and research units, CTT officers assessed that individual researchers and academics show more willingness to engage in collaborative projects, expressing their needs for identifying adequate partners in the business sector.

Data obtained through our research does not allow drawing reliable conclusions on the visibility and recognisability of CTT by wider stakeholders. However, it must be noted that CTT officers initiated numerous promotional projects and events to inform and educate academics and researchers on the possibilities of knowledge and technology transfer and commercialisation of their research\(^{23}\). Together with SEE ICT, ICT Net and NiCAT, and supported by GIZ, CTT have launched Open Innovation Lab project, with the aim of establishing continuous projects and platform for innovative teams that will develop products and services based on the real demands of the industry and business sector\(^{24}\). CTT’s representatives assess that this project platform opens space for innovative projects coming from social sciences and humanities. Based on their experience, they believe that researchers and institutions coming from disciplinary areas of economics and law are already collaborating with the business sector, since these collaborations are “natural”. However, other social sciences or humanities must be more active in initiating collaborations and developing applicable projects.

They recognise certain research topics that could be of interest to the business sector actors, among which are education and training in development of soft skills, lifetime learning, negotiation skills, but also development of social enterprises, incubation labs, start-up and crowdfunded businesses and multidisciplinary projects in which researchers from different disciplines could cooperate and produce ideas interesting to the business sector. However, they recognise the lack of multidisciplinary projects, collaborations or even university programmes that would enhance tighter links between social and technical or natural sciences and production of integrative knowledge. They also recognise the need for radical changes in higher education that would lead to the establishment of curricula oriented toward problem-solving, orientation on team work and multidisciplinary study programmes to educate students and future experts that would be able to respond to market demands.

\(^{23}\) We will mention some of them: Open doors project, which enables representatives of research and academic sector to get advice on how to initiate collaborative projects or establish start-up company; or Project advisory centre that helps researchers and research institution to find additional project funding and make good project proposal and applications.

\(^{24}\) http://razvojideja.org.rs/open-inovation-lab/
In terms of the obstacles for establishing firmer collaboration between PSE and SSHRI, the CCT representatives recognise the lack of funds and grant schemes coming from the Government, but also the lack of initiatives coming from social sciences and humanities. This lack of initiative could be overcome by changes in the education process, but also by raising awareness among social scientists and institutions on their competences and abilities to produce applicable knowledge and provide services that are interesting to the private sector. They also suggest that social scientists and researchers need to be educated on how to develop applicable projects and commercialise their ideas.

Summary

Based on the interview with representatives of the Centre for Technology Transfer, we could draw the following conclusions:

Collaborative projects between SSH research sector and industry are still rare. The Centre for Technology Transfer mainly has experiences with transfers of knowledge and technology coming from natural, technical and medical sciences.

The CTT officers assess that, when it comes to the University of Belgrade, full potentials in knowledge and technology transfers from academia to business sector and commercialisation of research in general are not being yet met.

Therefore, they recognise the need for further education of academics on how to focus their research towards the needs of the industry.

Although they find that social sciences and humanities are lagging behind when it comes to technology transfer, the assessment is that, when it comes to the University of Belgrade and activities of CTT, there is no need for special initiatives focused only on the collaboration between SSH & industry, because already existing initiatives are applicable to this matter.

CCT’s representatives recognise research topics and thematic areas around which collaborative projects between SSHRI and PSE could be established, but they also point out the need for innovative study programmes that would provide applicable knowledge and orientation on problem-solving and multidisciplinary projects.

They also pointed to innovative mechanisms for establishing collaborative projects between PSC and SSHR within universities and its organisational units: by establishing social enterprises and innovative idea labs that would provide commercial services to the business, but will also serve as training centres for students and researchers.