CONTROLLING DATA IN NETWORKED RESEARCH

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Keywords: ***database protection, open research data, networked research, sui generis database rights***

Abstract: *Without considering other issues related to research (processing of personal data, security issues) this paper discusses intellectual property questions related to joint ownership of data and databases that are created as a result of research cooperation or re-utilization of previous research results in networked international research teams. In particular who is actually entitled to control such data and databases, claim provenance and reap profits from their use. We discuss these issues in three modes of networked international cooperation of researchers.*

Supported by the Czech Science Foundation – project Legal Framework for Collecting, Processing, Storing and Utilizing of Research Data – reg. no. GA15-20763S.

1. Introduction

Science is driven by data or, as aptly put by Hanson, Sugden and Alberts, we must all acknowledge that «*science is data and that data are science*» (Hanson, Sugden, Alberts 2011, p. 649). The developments in information and communication technology revolutionized the way scientists collect, process, store, utilize and share research data. This age of data deluge (Borgman 2012, p. 1059) and internationally networked research raises the question who is actually entitled to control the research databases that are created as a result of research cooperation or re-utilization of previous research results in networked international research teams. In particular, who is actually entitled to control such data and databases, claim provenance and reap profits from their use.

Without considering other issues related to research (processing of personal data, security issues) this paper thus offers a discussion of the following general intellectual property issues: protection of collections of research data (Part 1) and multiplicity of rightholders (Part 2). The theoretical analysis is complemented by three case studies (Part 3).

2. Protecting research data collections

The two analysed regimes for protection of collections of research data include copyright and sui generis rights of the maker of the database. Upon complying with the criteria of eligibility for protection, the collection may even enjoy protection by both of those protective regimes. These conditions have already been harmonized on the EU level by the Directive 96/9/EC on the legal protection of databases (further referred to as the «DD»). However, the further analysis deals only with specific collections of research data that fulfil the definition of

a database pursuant to the Art. 3 DD, namely collections of data[1] that «*are systematically or methodically arranged and individually accessible by electronic or other means*.»

2.1. Copyright protection

In order to qualify as protectable subject matter the database must be original, i.e. it has to be the «author's» own intellectual creation. As stated by the CJEU the «*author expresses his creative ability in an original manner by making free and creative choices*»[2] regarding the selection or arrangement (i.e. the «structure») of the data.[3] Scientific databases shall rarely enjoy the copyright protection because of the limited possibility of the «author» to select or arrange the data (Dietrich et al. 2013, p. 21). These constraints are imposed by the «*technical factors or imperatives of accuracy and exhaustiveness*» (ibid).[4] However, the courts have awarded copyright protection to certain scientific databases in the past – most notably in the *Directmedia* case, where the copyright protection was awarded to the collection of poems chosen by a university professor.[5] The *Directmedia* case also demonstrates, that the copyright protection awarded to the selection and arrangement of the database has to be distinguished from the copyright protection of individual elements of the database which could be protected independently (poems, photographs, images) or not be protected at all (raw data consisting of numbers and letters).[6]

The authorship/entitlement to exercise economic rights in the case of works of employment is an issue that is left to the discretion of the Member States. Recital 29 DD only suggests one of the possible solutions, i.e. the employer as the entitled person.[7] Such solution was adopted in e.g. Czech Republic (Sec. 58 Czech Copyright Act).[8] Pursuant to Art. 3 DD the author has the exclusive rights to authorise any reproduction, translation, distribution of the database.

2.2. Sui generis rights protection

The second tier of protection of collections of research data is provided by the Art. 7 DD. The *sui generis* rights are granted to the maker of the database, who «*shows that there has been qualitatively and/or quantitatively a substantial investment in either the obtaining, verification or presentation of the contents*.»[9] According to the CJEU substantial investment linked to creation of the elements is not relevant for acquiring the protection.[10] The rejection of the so called «spin-off» theory[11] by CJEU left the doctrine to discuss whether scientific

1 The definition of the database is broad and so «*the contents of a database can comprise just about anything*.» (Madhavan 2006, p. 53). The recital 17 DD states that databases include any «*literary, artistic, musical or other collections of works or collections of other material such as texts, sounds, images, numbers, facts, and data*» both in digital or analogue form.

2 CJEU, 16 July 2009, C-5/08, *Infopaq International*, para. 45; 22 December 2010, C-393/09, *Bezpečnostní softwarová asociace*, para. 50 and 1 December 2011, C-145/10, *Painer*, para. 89 by analogy.

3 The author shall thus stamp his «personal touch» on the database. CJEU, 1 December 2011, C-145/10, *Painer*, para. 89.

4 The CJEU also clarified, that the criterion of originality is not satisfied «*when the setting up of the database is dictated by technical considerations, rules or constraints which leave no room for creative freedom*»; 1 March 2012, C-604/10, *Football Dataco,* para. 39 (Referring to: CJEU, 22 December 2010, C-393/09. *Bezpečnostní softwarová asociace*, para. 48 and 49, and 4 October 2011, C-403/08, *Football Association Premier League and Others*, para. 98).

5 BGH, Teilurteil, 24 May 2007, I ZR 130/04.

6 As is stipulated in the Art. 13 DD and explained in Recital 46 DD.

7 For discussion of problematic issues in Germany see Rieger (2010, p. 123–128).

8 Act 121/2000 Sb., Copyright Act. Unofficial and not up-to-date English translation available online: http://www.mkcr.cz/assets/autorske-pravo/Act_no_121_2000.doc.

9 Recital 41 DD.

10 CJEU, 9 November 2004, C-203/02, *BHB,* para. 31, 32; 9 November 2004, C-444/02, *Fixtures Marketing,* para. 41; 19 December 2012, C-46/02, *Fixtures Marketing*, para. 41 and 9 November 2004, C-338/02, *Svenska Spelbod* 24, 25. See also Davison/Hugenholtz (2005).

11 For details about the «spin-off» theory see Derclaye (2008, p. 94).

databases can actually obtain the sui generis rights protection, as the investment is usually linked to creation (i.e. measurement) of the data (Dietrich et al. 2013, p. 26). The evaluation of this criterion must be thus considered on a case-by-case basis. However, the national courts tend to regard almost any collection of data as protectable database (e.g. collection of news articles and headlines, medical lexicons or collections of webpages).[12]

Contrary to the copyright protection, the first owner of the sui generis rights, i.e. the maker of the database, may be also a legal person. According to the recital 41 DD the entitled person is the one who undertakes the initiative and bears the risk of investing, i.e. person who participates on profits and losses of such undertaking. The German jurisprudence (Wandtke/Bullinger 2014, marg. nr. 131) further interprets the investor as a subject who concluded all relevant finance, works and employment agreements. The DD does not regulate the issues of employee's databases, i.e. this issue is again left for the national laws to regulate.[13] However, the employee will barely be the subject taking the initiative or bearing the risk of investment and thus the rights will be vested in the employer. Even though only a subcontractor is explicitly excluded from the definition of a maker (Recital 41 DD), any other commissioned subject only following orders of the initiator shall not qualify for protection. The maker is protected against acts that will harm the database maker's investment[14] – namely extraction and re-utilisation by any means and in any form.[15]

2.3. Overlap of sui generis rights and copyright protection

The abovementioned protection regimes for databases may overlap (Art. 7(4) DD). Quaedvlieg regards them as complementary (Quaedvlieg 2009, p. 483) and suggests that they were meant to cumulate. Derclaye even called the database a «*multi-layered animal*» (Derclaye 2014, p. 330). Consequently, different legal subjects may be holders of different exclusive rights. An author may design the structure of the database and thus by the holder of the copyright, however another person may initiate the creation of such database and bear the related risk and be the maker of the database. Without any contractual arrangements and given the territoriality of protection by copyright and sui generis rights, the parties creating/making the database would have to rely on the respective national provisions.

3. Multiplicity of rightholders

The DD contains relatively clear rules how to determine the person entitled to exercise the abovementioned IP rights: the author is the subject that creates the database (Art. 4 DD), the maker of the database is the subject that takes the initiative and the risk of investing. As Quaedvlieg notes «*there may be two different right owners of two different IP rights in one and the same database, which obviously may create practical conflicts*» (Quaedvlieg 2009, p. 515). Taking this problem even further there may be even more different owners of the same IP in the same database, i.e. co-authors and/or co-makers of the database. The DD however leaves a lot of room for the national regulation implementation and also interpretation as to when the criteria of eligibility for protection are fulfilled by more than single subject.

[12] For an exhaustive list of national decisions on protectable subject matter see (Derclaye 2008, p. 69–72).

[13] For example the British implementing legislation (Copyright and Rights in Databases Regulations 1997, Art. 14(2)) stipulates that the employer shall be regarded as the maker of the database made by an employee in the course of his employment. On the other hand e.g. the Czech law leaves this question completely unanswered.

[14] CJEU, 9 November 2004, C-203/02, *BHB*, para. 45.

[15] These two rights resemble very closely the rights of reproduction and communication to the public, however are not the same (Derclaye 2014, p. 326).

3.1. Copyright

The basic regulation of database authorship in the DD follows the traditional principle of Continental European copyright Law, according to which only a natural person can be an author (Lewinski 2010, p. 710). Art. 4 DD merely stipulates that in the case of joint ownership of natural persons the rights shall be owned jointly. The DD does not specify further requirements of joint authorship,[16] however does not preclude the Member states to do so (Lewinski 2010, p. 711).[17] Consequently, when disposing with such jointly owned database the entitled persons should respect the national imperative norms – e.g. that the rules of joint authorship apply and the joint authors have to decide jointly unanimously, not based upon their extent of involvement in the creation of the work («creative shares»).[18] The DD also reflects and respects the existing specific national regulations on collective works.[19] The economic rights in collective work are vested in the person (natural or legal) that has initiated and coordinated its creation and under its name it has been published.[20]

3.2. Sui generis rights

The DD does not explicitly regulate the ownership of sui generis rights – that is the situation where more than one party together undertake substantial investment in obtaining, verification or presentation of the database (Beunen 2007, p. 155; Hugenholtz 2006, p. 328). The opinions in the jurisprudence differ,[21] however the prevailing opinion is that the database coproduction and thus joint ownership is possible (Lewinski 2010, p. 750; Derclaye 2014, p. 325). To support this claim, Lewinski argues that the term person in Art. 7 DD «*may even be understood as covering entities beyond legal persons, such as partnerships or companies*» (Lewinski 2010, p. 750). The criterion of risk-bearing is decisive and thus employees or subcontractors cannot be regarded as the first joint owners of sui generis rights (Recital 41 DD). On the other hand a collaborating maker of the database, who is not performing a contract-based service, but bears his own direct (immediate) investment risk, is also considered to be an investor.[22] The DD thus leaves the issues of joint ownership regarding sui generis rights to the Member states.[23] For example in the UK the implementing regulation stipulates that a database is made jointly if «*two or more persons acting together in collaboration take the initiative in obtaining, verifying or presenting the contents of the database and assume the risk of investing in that obtaining, verification or presentation.*»[24] However, even this relatively clear provision is not interpreted unanimously in the situation where the two parties do not each fulfil both conditions (Beunen, p. 155). Therefore a contractual arrangement is advisable.[25]

In the absence of legal regulation the rules on co-ownership of the applicable law (lex loci protectionis) should

[16] E.g. the lack of possibility to separately exploit the creative contributions of the joint authors (indivisibility of contributions) – Sec. 8 Czech Copyright Act, Sec. 8 German Copyright Act).

[17] Rieger even claims that the questions of authorship should not be harmonized by the DD at all (Rieger 2010, p. 119).

[18] E.g. Sec. 8 Czech Copyright Act, Sec. 8 German Copyright Act, UK Art. 173 Copyright, Designs and Patents Act 1988.

[19] The Sec. 59 Czech Copyright Act is an example of such a regulation. However, for qualifying the work as collective the creative contributions of the individual author's must not be capable of independent use.

[20] The DD however does not address the issues of moral rights (Recital 28 DD).

[21] See the discussion and sources cited in Beunen 2007, p. 155.

[22] However Wandtke and Bullinger (2010, marg. nr. 132) suggest that the investment risk has to be without intermediary. Hence, the financial institution that lends money to the maker of the database is not considered to be investor within the meaning of the Sec. 87a(2) German Copyright Act.

[23] Lewinski 2010, p. 750; Derclaye 2014, p. 325; Hugenholtz 2006, p. 328.

[24] Copyright and Rights in Databases Regulations 1997, Art. 14(2).

[25] The German jurisprudence suggests (Wandtke/Bullinger 2010, marg. nr. 139) dealing with joint ownership contractually before the database is created and the use of institute of partnership agreement («Gesellschaftsvertrag») according to the Sec. 705 German Civil Code is recommended. Such database would be in the so-called «Gesamthandsvermögen» – joint property assets. In the Czech Republic the exercise of such co-owned database rights based on a contractual partnership would require the unanimous decision of all the involved parties (Art. 1238 Czech Civil Code).

be applied analogically. Here the solution would be therefore dependent on the national approach to co-ownership. For example in Germany, the doctrine suggests that the relationship between the co-makers of the database will be considered to be an co-ownership by defined shares («*Bruchteilsgemeinschaft*») in accordance with Sec. 741 German Civil Code (Wandtke/Bullinger, marg. nr. 140).[26]

4. Case studies

As was presented above, the DD presumes the top-bottom approach when considering the eligibility of a database for protection by *sui generis rights*: an enlightened investor (maker) sits on the «top of the pyramid», takes the initiative, commits the time or money and organizes the data suppliers in order to create a protectable database.

The DD does not give any precise answers who should «sit on the top of the pyramid» (i.e. exercise the sui generis database rights), if the database is built from the bottom by a network of research teams. The research teams could find out that there is no pyramid to sit on at all. An objection could be raised, that the database, which was not produced by one substantial investment but rather by several minor investments does not meet the criteria for protection. It can be questioned, who is the investor in publicly subsidized research and whether there is an investor bearing the risk at all.

We claim that no subject matter should have lower standard of protection merely because it was created by joint investment of several parties. The cooperation of several research teams however has its legal consequences in joint exercise of copyright and sui generis database rights as will be demonstrated on the following case studies.

4.1. The first scenario – Cooperation from the beginning

In this scenario, two researchers from two separate universities in Brno and Salzburg formulate and follow a common research goal from the beginning of the research. Each of the two researchers collects data independently and then shares the data with the other researcher in accordance with a previously agreed data management plan. After one year of intensive work, the database is extensive enough to support their research objective, but the database also gained commercial value.

The first step of the analysis should deal with potential copyright protection of the database. We hold the opinion that in case of scientific research, most databases would not acquire copyright protection, especially in cases where they are created on the basis of template data management plans and organized in accordance with standards of the research field. In those cases where the databases would qualify for copyright protection it has to be evaluated, whether both authors had creative inputs into the original structure of the database. It has to be noted that the mere uploading of data, hosting of data or setting up the software to fill the database is not considered as a creative input. In most cases, the exercise of copyright to the database would be exercised by employers of the authors (if not contractually specified otherwise) whilst respecting moral authorship rights of the researchers.

In the absence of previous agreement, the database created by long-term effort of two researchers from two separate universities would have two «joint» makers and two holders of sui generis rights.[27] Hence the sui generis rights would be jointly exercised by both universities. The concept of ownership and co-ownership is not harmonized in Europe and there are not any applicable rules on choice of law in such situation. As

[26] The Czech Civil Code regulates the general co-ownership (Sec. 1115–1157) similarly, i.e. a mere majority of votes is needed to decide on how to dispose with the database.

[27] As theoretically explained above in part 2.

stated above in part 2.2, each jurisdiction has its specific legal instruments to deal with co-ownership (joint ownership, ideal shares, defined shares). The joint utilization of database work would be source of largest legal uncertainty. This uncertainty would probably lead to solutions where one institution would waive its rights in favour of another or they would define territories where each institution would exercise rights independently.

4.2. The second scenario – Merging databases

In this scenario the two researchers from Brno and Salzburg conduct research independently without being aware of the other party's research. Each of them had already acquired data into their own database. After meeting in person, they agree to merge their results to a larger database based on the data collected in two previous databases.

The fundamental legal question is, whether it is possible to make a protected database by merging data from two independent databases. Depending on the circumstances the question may have:

– «**1 + 1 = 0 solution».** It might be concluded that the mere process of merging two databases does not constitute a substantial investment. Bearing this potential consequence in mind, by merging two databases together, parties risk losing enforcement claims against an unauthorized user of the joint database. Such an unauthorized user might raise the argument that he is extracting or re-utilizing content from the unprotected database.

– «**1 + 1 = 1 solution».** It might be concluded, that the resources necessary to make such database are a qualitatively substantial investment especially with regards to verification and new presentation of data. As a result, the new database would be eligible for protection. The question however arises, whether the makers of the original databases maintain their rights to these two databases. We hold the opinion, that without further contractual agreement there is no reason why the already existing sui generis rights for original databases rights should cease. Hence, the law would protect all three databases (two databases that are being merged and the one database which is created as a result). If we accept such argument, we reach the conclusion, that in the database law sometimes «1 + 1 = 3». This however brings further complications. It is hard to imagine that the rights to any of these databases could be transferred or exclusively licensed without transferring or licensing other databases.

– «**0 + 0 = 1 solution».** The question arises, whether it is possible to make a protected database by merging several databases that do not qualify for protection. Merging data from two or more databases does not bring much improvement in quantitative terms, but could often contain substantial qualitative investment. Therefore it is possible to make protected database by merging or extracting several non-protected databases.

4.3. The third scenario

In the third, in our opinion the most challenging scenario, the researcher from third institution gets hold of the two databases from Brno and Salzburg and merges them together with his own data. In order to perform this task, he undertakes substantive qualitative and quantitative investment. It has been concluded above, that the protection can be awarded to the database that was created by merging multiple databases into a single database.

The makers of non-protected databases have little statutory protection and are not entitled to be credit or share from the database maker's profits. The possible solution for creators of non-protected databases is to share them under contractual terms.

5. Summary and further work

The conclusions of this paper demonstrate how important it is to sort out the legal issues in the preparatory phase of the multicentric research project. Legal regulation gives answers to the question, whether the database gets copyright or sui-generis protection, but does not give us much guidance when it comes to exercising these rights jointly or when the rights are overlapping. It can be concluded, that the answer to the question who is actually entitled to control the data in networked multicentric research depends on the factual conclusion on who has provided creative input or undertaken substantial investment. Therefore the importance of detailed management plans and records on the actual course of research (designing of the database, amount of resources invested) cannot be underestimated.

Also, the brief findings of this short paper are well usable for databases that have fulfilled the needed requirements for protection – originality and/or substantial investment. However the CJEU has recently opened a third possible tier of protection for «simple unprotected» databases in the *Ryanair* case.[28]

According to the CJEU the term «database» could be used also for unprotected databases and absence of protection does not mean that an alleged «author» or «maker» of a database without any rights is prohibited to regulate the access to the database contractually. Furthermore, the foreseen limitations on the exclusive rights do not apply, as there are any rights that could be limited. The question to be answered in further research is, whether such «simple» contractual «protection» would be applicable given the fact that the national courts tend to set the threshold for acquiring protection very low. Further work should thus include a thorough analysis of the consequences of the *Ryanair* decision on the status and dealing with such simple unprotected collections of raw data and possible disposition with such databases.

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