# A liberal infrastructure in a neoliberal world: the Italian case of GARR

by **Roberto Caso and Maria Chiara Pievatolo** *

**Abstract:** This paper aims to outline some issues concerning the interaction, in European Union law, between data policy, university regulation, open science, intellectual property and infrastructure policy. On the one hand, such issues primarily regard intellectual property: exclusive rights deriving from copyright and related rights, patents, trademarks, and trade secrets. On the other hand, they also concern forms of exclusive control on data that are not strictly related to intellectual property but enhanced by the control on technology and infrastructure. This exclusive control can accompany or be independent from the protection of intellectual property conferred by law.

To make science open and to limit the market power of intellectual monopolies and oligopolies, restricting and reshaping intellectual property rights on data is not enough. It is also necessary to create or to revive public infrastructures and to implement open standards for texts, data, and code. An example of a public infrastructure for a university is the Italian consortium GARR, which during the COVID-19 pandemic contributed to anchor the local debate about academic and teaching freedom to an actual and viable alternative, protecting independent and public knowledge not just de jure but de facto as well.

Keywords: university, intellectual property and data regulation, open science, GARR, Italy



Recommended citation: Roberto Caso and Maria Chiara Pievatolo, A liberal infrastructure in a neoliberal world: the Italian case of GARR, 14 (2023) JIPITEC 351 para 1.

## A. Introduction

1 The COVID-19 pandemic forced Italian universities to move their teaching and learning activities online. The majority of them preferred proprietary platforms like Microsoft Teams, Google Meet and Zoom, in spite of the likelihood of their unlawful processing of personal data and regardless of the recent CJEU judgment C-311/18 (Schrems II). Such a sudden shift away from the classrooms ignited a lively debate about remote teaching. On the one hand, intellectuals like Giorgio Agamben rejected the digitization of teaching as technological barbarity undermining the very possibility of a community of knowledge; on the other hand, enthusiastic neophytes identified Microsoft Teams and Google Meets as the most recent instance of an information and communications technology ("ICT") advancement that is both unavoidable and praiseworthy. Both approaches, however, failed to take into account the proclivity of Google and Microsoft to accumulate personal and research data and to shape our activities according to commercial purposes and interests other than our own.

2 A minority of institutions (e.g., the Politecnico di Torino) and some professors discovered that there was a free and public alternative: the remote teaching platforms provided by the GARR Consortium.[1] The GARR Consortium is a public and

* Roberto Caso is Associate Professor of Comparative Private Law, University of Trento, Faculty of Law. Roberto Caso is the author of Sections 1 to 3; Maria Chiara Pievatolo is Professor of Political Philosophy, University of Pisa, Department of Political Sciences. Maria Chiara Pievatolo is the author of Sections 4 to 6.

1 GARR is the acronym of Gruppo per l'Armonizzazione delle

non-profit association federating Italian universities and research institutions; its mission is to design and manage the ultra-broadband network dedicated to the Italian research and education community. Although understaffed and underfunded, it succeeded both in offering free, open, and privacy-friendly remote learning platform to schools, universities and even to individual teachers refusing to give their data to Big Tech. It also gave a major contribution to the network Iorestoacasa.work,[2] built from scratch by a group of free software activists, which enabled teachers, students and even workers to use decentralized and non-proprietary platforms.

**3** The very existence of the GARR helped to make the debate more articulate than a partisan clash. Even where, like in Italy, universities are too small and poor to face Big Tech without being swallowed up by them, the legacy of conceiving each university as a part of a national system helped to show that an alternative can be imagined and carried out.

**4** The idea of a federated participatory service available to the community of Italian scholars and students as a whole may sound revolutionary like the project suggested by Kathleen Fitzpatrick's *Generous Thinking*,[3] if compared to the neoliberal universities, which view themselves as firms engaged in a relentless market competition rather than as parts of a single research and teaching network. It is, indeed, revolutionary, but in an astronomical meaning, since it belongs to a model of higher education that the Italian government has tried to dismantle from the beginning of the Bologna process.[4] Unsurprisingly, its almost forgotten legacy did help university teachers and students to create a free space that is small but could become larger if Italian professors and university administrators dare to come to terms with it.

## B. The future of university and democracy in a neoliberal world

**5** Recently, Karen Maex, during her speech on 8 January 2021 for the 389th Dies Natalis of the University of Amsterdam, announced that the future of universities and democracy is at risk. In particular, Maex brought to attention the fact that large private companies (in particular, giant Internet platforms) play an increasingly important role in the life of universities by decreasing their degree of autonomy and freedom:

**6** "Since the 1980s, the pre-eminent role libraries held during the era of paper has gradually been eroded, initially by the development of advanced knowledge systems in commercial publishing. Instead of owning works in their collection, as in the days of printed editions, now university libraries only have licences granting rights of use. Publications on university research in effect have to be 'bought back' through subscriptions to expensive journals in order to make them available through university libraries. That means publishers get to decide who has access to knowledge. This has enabled commercial academic publishers to gain the upper hand. What makes this especially worrisome is that their role is limiting that of libraries as free and open arenas for research.

**7** Open access is bringing about yet another shift. Publishers are responding by seeking alternative ways to retain their power and profit margins, such as by charging for open access publications in renowned journals or for impact analyses. [...]

**8** In addition to supplying data storage and search functionalities and information gathering, those same companies also play a considerable role in steering wider public discussions. In doing so, they draw no distinction between scientific information and, for instance, political or other interests. And, just as in other sectors, their consolidation of functions and buying up of other businesses is leading to a concentration within the market.

**9** This concentration of power among tech companies can also impinge on the autonomy of university research in other ways. An important European Commission report warns that by interlinking information services, research publishers may indirectly come to wield tremendous influence on universities' strategic policies. For instance, on decisions around staffing policy – through the systems used to recognise and reward scientific research – and even on choices about what is researched. Compared to the big tech firms, publishers are of course relatively small players. Many researchers now use Google Scholar to find their h-index, Google Docs to collaborate with colleagues, Google Dataset Search to track down research data and Amazon cloud services to do calculations and store data. [...]

**10** What applies to the future of democracy applies equally to the future of universities and of independent education and research as vital building blocks for the organisation of knowledge. We cannot simply leave the future of knowledge to the corporate boardrooms."[5]

Reti della Ricerca (in English: Group for the Harmonization of Research Networks).

2 <https://iorestoacasa.work>.

3 <https://generousthinking.hcommons.org/>.

4 <https://www.ehea.info/index.php>.

5 Karen Maex, *Protect independent and public knowledge*, University of Amsterdam, 8 January 2021 <https://www.uva.nl/binaries/content/assets/uva/nl/over-de-uva/speech-karen-maex---dies-2021.pdf>.

**11** Maex's speech is informed by some criticisms of the current neoliberal world and it refers, in particular, to Shoshana Zuboff's work on surveillance capitalism.[6] But another source mentioned in the speech is the analysis of Claudio Aspesi et al. for SPARC on the application of surveillance capitalism to the world of university and research.[7] Maex's speech ends with the hope for the creation at the European Union level, of a new law called the Digital University Act:

**12** What we need is a 'Digital University Act', aimed at:

**13** "1. Public storage and access to research data organised by universities and public infrastructure

**14** 2. Freely accessible university research publications. Open access must not give rise to high publication fees or, worse, to a private company lock-in, whereby universities find themselves trapped in a growing commercial data-analysis industry.

**15** 3. Control over digital learning and research tools (productivity tools, learning environments, video conferencing, etc.). These tools should be supplied partly as public infrastructure and partly through collaboration with platform companies, with universities retaining control over the gathering and processing of user data as well as influence on the development of such tools.

**16** 4. Access to platform data. The EU should require that researchers and teachers also are given access to platform data for teaching and research purposes. This is crucial for moderating the public space and monitoring public communication."[8]

**17** The analysis of the weaknesses of the EU data strategy and the proposals made by Maex have been developed in a document from the League of European Research Universities ("LERU") that is from December 2021.[9] This document advances some proposals on data policy declined and detailed on 16 principles addressed to various stakeholders starting from the risk that EU data strategy frames universities as companies: 1) legislators, 2) digital providers, 3) individuals in universities, 4) universities, and 5) industry.

6 Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (1st edn Public Affairs 15 January 2019).

7 Claudio Aspesi et al., *SPARC Landscape Analysis* (2019) <https://doi.org/10.31229/osf.io/58yhb>. See also Jeffrey Pooley, 'Surveillance Publishing', (2022) 25(1) The Journal of Electronic Publishing, 39, doi: <https://doi.org/10.3998/jep.1874>.

8 Maex, *Protect independent and public knowledge* (n.3).

9 *LERU Data Statement*, LERU, December 2021 <https://www.leru.org/publications/is-university-autonomy-threatened-by-eu-data-policy-and-law>.

**18** The University of Amsterdam is also the institution of prominent intellectual property scholars. Some of these scholars are the authors of independent recent studies carried out on behalf of the European Commission. These studies suggest that EU copyright law and data strategy should be rethought and reformed in several aspects to encourage the development of Open Science. At the same time the existing rules could be better interpreted to promote Open Science.[10]

## C. European contradictions between open science, data strategy and intellectual property

**19** During the last decade, the European Union has developed a large open-science policy concerning:

- research framework programs (FP7, H2020, Horizon Europe);
- research infrastructures (OpenAire, Zenodo, European Open Science Cloud, Open Research Europe);
- research assessment (new metrics, prizes, incentives and awards to researchers who practice Open Science);[11]
- research integrity;
- training and skills on open science;
- citizen science.

**20** However, this policy minorly addressed the harmonization of laws across Member States. Two significant interventions in this regard are: i) the Commission Recommendation (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information C/2018/2375 that builds on and replaces Recommendation 2012/417/EU; and

10 European Commission, Directorate-General for Research and Innovation, Senftleben, M., *Study on EU copyright and related rights and access to and reuse of data*, Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2777/78973>; European Commission, Directorate-General for Research and Innovation, Eechoud, M., *Study on the Open Data Directive, Data Governance and Data Act and their possible impact on research*, Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2777/71619>.

11 Cf. Council of the European Union, Conclusions on research assessment and implementation of open science, Brussels, 10 June 2022 (OR. en) 10126/22 <https://www.consilium.europa.eu/media/56958/st10126-en22.pdf>.

ii) Article 10 of the Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information that obliges Member States to adopt national open-access policies.[12]

**21** With regards to the subject matter of intellectual property, the EU has opted for an increasing strengthening of exclusive rights, including during the COVID-19 pandemic.[13] This is not only a question of expansion of existing exclusive rights, but also of the creation of new exclusive rights, e.g., new copyright related rights.[14] Moreover, this alluvial legislation does not even share common definitions of fundamental concepts, e.g., information and data. In short, the legislative framework has become more unbalanced, fragmented, and inconsistent. Overall, a contradiction emerges: on the one hand, Open Science is promoted, on the other hand, intellectual property is strengthened.[15]

**22** Copyright in principle does not give to the copyright holder an exclusive right on data but only some exclusive rights on works of authorship. Ideas, facts, information, and data of the work of authorship can be freely reproduced. Instead, the expression of the work cannot be reproduced. The principle is known with the formula of the idea/expression dichotomy. Despite controversial interpretations, for a long time this principle constituted has protected of some fundamental freedoms and rights: in particular, the freedom of expression and information and academic freedom. However, a series of regulatory changes have reduced the relevance of the idea/expression dichotomy. For example, the Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases (database directive) has established a *sui generis* right (distinct from copyright) for the maker of a database. The definition of "database" is the following (Article 1.2):

**23** "For the purposes of this Directive, 'database' shall mean a collection of independent works, data or other materials arranged in a systematic or methodical way and individually accessible by electronic or other means."

**24** Articles 7.1 and 7.4 of the Database Directive state:

**25** "1. Member States shall provide for a right for the maker of a database which shows that there has been qualitatively and/or quantitatively a substantial investment in either the obtaining, verification or presentation of the contents to prevent extraction and/or re-utilization of the whole or of a substantial part, evaluated qualitatively and/or quantitatively, of the contents of that database. [...]

**26** 4. The right provided for in paragraph 1 shall apply irrespective of the eligibility of that database for protection by copyright or by other rights. Moreover, it shall apply irrespective of eligibility of the contents of that database for protection by copyright or by other rights. Protection of databases under the right provided for in paragraph 1 shall be without prejudice to rights existing in respect of their contents."

**27** The goal of the database directive was to encourage the creation of a flourishing market of databases, thanks to the establishment of a new exclusive right.[16] The equation behind the regulatory intervention was that more intellectual property equals more innovation and more competitiveness. In short, the new exclusive right should have helped European companies in a global competition, especially with USA. The equation was wrong. The United States, despite the lack of an exclusive right equivalent to the European *sui generis* right, have won the competition. In evaluating the impact of

12 Heiko Richter, 'Open Science and Public Sector Information – Reconsidering the exemption for educational and research establishments under the Directive on re-use of public sector information', (2018) 9(19 JIPITEC, 51; European Commission, Directorate-General for Research and Innovation, Senftleben, M., *Study on EU copyright and related rights and access to and reuse of data*, (n. 8); European Commission, Directorate-General for Research and Innovation, Eechoud, M., *Study on the Open Data Directive, Data Governance and Data Act and their possible impact on research*, (n. 8); Marta Arisi, 'Open Knowledge. Access and Re-use of Research Data in the European Union Open Data Directive and the Implementation in Italy', forthcoming (2022) The Italian Law Journal <https://www.theitalianlawjournal.it/>.

13 European Commission, 'Making the most of the EU's innovative potential. An intellectual property action plan to support the EU's recovery and resilience', COM/2020/760 final <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0760>.

14 Caterina Sganga, 'The Many Metamorphoses of Related Rights in EU Copyright Law: Unintended Consequences or Inevitable Developments?', (2021) 70(9) GRUR International, 821 <https://doi.org/10.1093/grurint/ikab071>.

15 The contradiction is old and not only European. See, *e.g.*, Paul A. David, 'Can 'Open Science' be Protected from the Evolving Regime of IPR Protections?', (2003) Stanford SIEPR Discussion Papers <https://siepr.stanford.edu/publications/working-paper/can-open-science-be-protected-evolving-regime-ipr-protections-revised>; Jerome H. Reichman, Ruth Okediji, 'When Copyright Law and Science Collide: Empowering Digitally Integrated Research Methods on a Global Scale', (2012) 96(4) Minnesota Law Review, 1362 <https://scholarship.law.duke.edu/faculty_scholarship/2675/>.

16 Cf. recital n. 12 of the Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases.

the directive—once in 2005 and again in 2018[17]—the European Commission admited that there is no evidence on the impact of a *sui generis* right in the production of databases. Nonetheless, the EU has decided to leave the directive unchanged. At present, the wind apparently seems to be changing (at least with reference to the database directive). In the European data strategy, the watchword has become "sharing".[18]

**28** For example, Article 1.6 of the recently introduced Directive (EU) 2019/1024 (Open Data Directive) states:

**29** "The right for the maker of a database provided for in Article 7(1) of Directive 96/9/EC shall not be exercised by public sector bodies in order to prevent the re-use of documents or to restrict re-use beyond the limits set by this Directive."

**30** The push towards sharing data is also to be acknowledged in Data Governance Act and in the proposal of Data Act.[19] However, the progressive strengthening of intellectual property contrasts the development of Open Science. An additional example of this issue comes from the controversial Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC. Article 3 of Dir. 2019/790/EU is the exception to the copyright and database *sui generis* right that, amongst the provisions of the directive, affects the issue of data sharing in the scientific and academic fields more closely.[20] Without further details, it may suffice here to explain that the exception is guarded by a series of restrictions, placed to protect the interests of the copyright holders. The result is that the room for the application of the provisions is largely reduced. This example deserves to be mentioned because it offers an idea of the current EU legislative policy on copyright and related rights. Exclusive rights should be counterbalanced by specific exceptions and limitations. But currently the system of exceptions and limitations has turned into a tangle of complex and scarcely useful rules scattered in several different and poorly coordinated directives.

**31** The problem of the endless expansion of copyright also pertains to specific political and constitutional choices. The European Union decided to insert intellectual property (including copyright) in the Article 17.2 of the Charter of Fundamental Rights of the European Union,[21] without any reference to the limits of the exclusive rights (e.g., to the social function).[22] As of today, a spark of hope for (re)balancing intellectual property remains in the work of international and national courts, with all its risks[23] and opportunities.[24] In short, even if the world of university and scientific research would succeed to obtain the so-called Digital University Act, this

17 European Commission, 'First evaluation of Directive 96/9/EC on the legal protection of databases', Brussels, 12 December 2005 <https://ec.europa.eu/info/sites/default/files/evaluation_report_legal_protection_databases_december_2005_en.pd>; European Commission, 'Evaluation of Directive 96/9/EC on the legal protection of databases', Brussels', 25 April 2018, SWD(2018) 146 final <https://digital-strategy.ec.europa.eu/en/library/staff-working-document-and-executive-summary-evaluation-directive-969ec-legal-protection-databases>.

18 Mireille van Eechoud, 'Please share nicely — From Database directive to Data (governance) acts' (*Kluwer Copyright Blog*, 18 August 2021) <http://copyrightblog.kluweriplaw.com/2021/08/18/please-share-nicely-from-database-directive-to-data-governance-acts/> accessed 8 September 2022.

19 European Commission, Directorate-General for Research and Innovation, Senftleben, M., *Study on EU copyright and related rights and access to and reuse of data*, (n. 8); European Commission, Directorate-General for Research and Innovation, Eechoud, M., *Study on the Open Data Directive, Data Governance and Data Act and their possible impact on research*, (n.8); Marta Arisi, 'Open Knowledge. Access and Re-use of Research Data in the European Union Open Data Directive and the Implementation in Italy', forthcoming (2022) The Italian Law Journal <https://www.theitalianlawjournal.it/>.

20 See, *e.g.*, Rossana Ducato, Alain M. Strowel, 'Ensuring Text and Data Mining: Remaining Issues With the EU Copyright Exceptions and Possible Ways Out', (2021) 43(5) E.I.P.R., 322, preprint available at <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3829858>; Thomas Margoni, Martin Kretschmer, 'A deeper look into the EU text and data mining exceptions: harmonisation, data ownership, and the future of technology' (2022) 71(8) GRUR International, 685 <https://doi.org/10.1093/grurint/ikac054>.

21 Caterina Sganga, *Propertizing European Copyright. History, Challenges and Opportunities* (1st edn Edward Elgar, 2018, 88 ff.

22 Christophe Geiger, 'Intellectual Property Shall be Protected? – Article 17(2) of the Charter of Fundamental Rights of the European Union: a Mysterious Provision with an Unclear Scope', (2009) 31(3) E.I.P.R, 115.

23 Cesare Salvi, *L'invenzione della proprietà. La destinazione universale dei beni e i suoi nemici* (1st edn Marsilio 2021) 128.

24 See, *e.g.*, Federica Giovanella, *Copyright and Information Privacy. Conflicting Rights in Balance* (1st edn Edward Elgar), 6-44; Caterina Sganga, 'A Decade of Fair Balance Doctrine, and How to Fix It: Copyright Versus Fundamental Rights Before the CJEU from Promusicae to Funke Medien, Pelham and Spiegel Online' (2019) 41(11) E.I.P.R., 672; Christophe Geiger, Elena Izyumenko, 'From Internal to External Balancing, and Back? Copyright Limitations and Fundamental Rights in the Digital Environment' (December 2, 2021), forthcoming in: Conception Saiz Garcia and Julian Lopez (eds.), *Digitalización, acceso a contenidos y propiedad intelectual* (Madrid, Dykinson, 2022), available at SSRN: <https://ssrn.com/abstract=3976407> or <http://dx.doi.org/10.2139/ssrn.3976407>.

island of freedom would still not solve fundamental problems of the legal framework, which pertain to the constitutional structure of the EU and its general policy on intellectual property and data. In other terms, without rethinking the legal framework of intellectual property and copyright at international and European level it seems impossible to imagine a transition to a full Open Science system.[25]

## D. University, data, and infrastructures

**32** As mentioned, the scenario described is not only informed by intellectual property and data policy issues, but also by issues regarding universities' infrastructures. The large commercial platforms dominate the Internet through intellectual property, but also by means of factual control of data and computational power. It is no coincidence that the most advanced studies on the development of Open Science and the privatization of research data end up focusing on infrastructures.[26] These studies converge in advancing solutions that aim to regain control of the essential infrastructures or, at least, to support infrastructures that are independent from the Big Tech. In this paper, we focus on three of these proposals: SPARC road map (Claudio Aspesi et al.), Plan I (Biorn Brembs et al.), and Digital Europa (Massimo Florio).

**33** In the updated version of the report of Claudio Aspesi et al. for SPARC, there is a road map for an open data infrastructure.[27] One of the proposed actions is to invest in community-controlled infrastructure:

**34** Corporations move fast - often much faster than academic institutions. Since the November SPARC 2019 Roadmap for Action, the pandemic has understandably set back plans for community investment in infrastructure. However, commercial players have continued to advance their plans for leveraging data analytics and further entrenching themselves in critical academic processes. Senior leaders of academic institutions still have an opportunity to mobilize the financial resources and talent necessary to develop community-owned infrastructures that both support open and equitable dissemination and preservation of research communications and the attached metadata, and that also allow analyzing those metadata to help senior decision makers manage their institutions by their own priorities.

**35** Considering the benefit to the community, the resources required to fund such a project may be a wise investment. Building a fully functioning research dissemination and data analytics company may require an investment of less than $40–50 million, but this money must be raised, and that leads to questions of whether this is best accomplished by partnerships between the academic community and the private sector, between the academic community and NGOs, or between the academic community and governments. In turn, this requires understanding if there is an opportunity to build and operate a sustainable community-owned infrastructure, how it should be funded, and whether the intellectual and knowledge output of academic institutions should generate financial resources to fund this infrastructure. The launch of Invest in Open Infrastructure (IOI) provides appropriate coordination for the academic community to develop a full community-controlled infrastructure. Alternatively, leaders from research institutions around the world should commit to building this infrastructure, with the support of funding bodies, if necessary. This leadership group would commit to designing the infrastructure to further the interests of the global academic community, and not just those of wealthy countries or institutions.

**36** The choice between open and closed data and knowledge has implications along a spectrum of issues extending beyond funding academic knowledge infrastructure. For example, open data raises national security and economic competitiveness issues, as well as questions about academic freedom, academic priorities, and even the fundamental goals of academic institutions. Launching a structured process to analyze these implications appears a critical step that leaders of academic institutions need to take sooner rather than later.

**37** Plan I—where the "I" stands for infrastructure—

25 There is a growing number of initiatives that are proposing intellectual property and copyright reforms finalized to a more balanced and flexible system. See *e.g.* Creative Commons <https://creativecommons.org/about/program-areas/policy-advocacy-copyright-reform/>; Communia Association <https://communia-association.org/>, ReCreating Europe <https://www.recreating.eu/the-project/>; Right to Research in International Copyright Law <https://www.wcl.american.edu/impact/initiatives-programs/pijip/impact/right-to-research-in-international-copyright/>.

26 One of the last relevant documents comes from LERU. See LERU, *Developing a strong, politically and societally relevant research infrastructure ecosystem in Europe*, September 2022 <https://www.leru.org/publications/research-infrastructures>.

27 Claudio Aspesi et al., *SPARC Landscape Analysis and Roadmap for Action* (September 2021), 38-39 <https://sparcopen.org/wp-content/uploads/2021/10/2021-Landscape-Analysis-101421.pdf>.

is a proposal advanced by Björn Brembs et al.[28] Brembs and his colleagues start from an analysis of the current status. For thirty years scientists and university researchers have abandoned the field of innovation of research infrastructures. That field was occupied by large commercial publishers now data analysis companies, such as Elsevier, and by Big Tech as Microsoft. Plan I is composed by two mail actions.

**38** 1) Opening the standards of texts, data and code in order to trigger the competition of publishing services. In other words, opening the standards would help to decrease the market power of the big oligopolies and destroy the "vendor lock-in" (economic dependence on the oligopolist supplier).

**39** 2) Incentivizing the use of open standards and reforming the research assessment. In particular, according to the principles of DORA declaration,[29] evaluation criteria that reward the publication venue instead of the content of the publication should be abolished.

**40** Research and scholarship are crucially dependent on an information infrastructure that treats all scholarly output, text, data and code, equally and that is based on open standards and open markets. With concerted action it is possible to realize such an infrastructure without additional costs to the scientific community. The benefit to society, due to the increase in efficiency and reliability of science, would be enormous. Researchers, decision-makers and civic society must work cooperatively and quickly towards such a solution[30].

**41** The final goal is to dismantle the oligopolistic scientific publishing system and build a competitive market of editorial services in which texts, data and codes are freely accessible and reproducible. According to Brembs and colleagues, in a competitive market of publishing services, research institutions would save 90% of current costs for the subscriptions to oligopolistic databases.

**42** The Digital Europa proposal comes from the economist Massimo Florio.[31] The alternative to intellectual oligopolies—it is argued—can be a large European public research infrastructure.

**43** It would be necessary to imagine a European supranational subject who does not only have coordination functions, but also managerial autonomy, budget, tangible and intangible capital and dedicated staff with the mission of creating a public platform alternative to the Tech Giants.[32]

**44** These three proposals show that there is great and widespread awareness of the problems afflicting current academic and research data ecosystem. However, all these proposals leave the legislative framework of intellectual property rights unchanged, and this is a limitation. Next to the changes of the infrastructures, there is a need to limit and reorder intellectual property rights that insist on data.

## E. Is there no alternative? An Italian debate about remote learning

**45** Yet, the invention and the success of bottom-up initiatives like Richard Stallman GPL license and Lawrence Lessig's Creative Commons licenses might suggest that people of good will could pursue the public use of reason even *rebus sic stantibus*, both by playing intellectual property against itself and by applying the funders' leverage, as suggested by Brembs' plan I. Such initiatives, however, are located in a proprietary environment so pervasive to be taken for granted even by the most critical intellectuals: are they actually able to change the system by themselves without being swallowed by it? An Italian example might help us to find an empirical answer.

**46** The COVID-19 pandemic forced Italian universities to shift their teaching and learning activities online. Most of them preferred proprietary platforms like Microsoft Teams, Google Meet and Zoom, even though their choice exposed them to the risk of unlawful processing of personal data, as the CJEU ruling C-311/18 (Schrems II) confirmed.[33] Such a

28 Björn Brembs, Konrad Förstner, Michael Goedicke, Uwe Konrad, Klaus Wannemacher, Jürgen Kett,'Plan I - Towards a sustainable research information infrastructure' (2021) Zenodo <https://doi.org/10.5281/zenodo.4454640> accessed 8 September 2022.

29 See The Declaration on Research Assessment (DORA) <https://sfdora.org/>.

30 Björn Brembs, Konrad Förstner, Michael Goedicke, Uwe Konrad, Klaus Wannemacher, Jürgen Kett,'Plan I - Towards a sustainable research information infrastructure' (2021) Zenodo <https://doi.org/10.5281/zenodo.4454640> accessed 8 September 2022.

31 Massimo Florio, *La privatizzazione della conoscenza* (1st edn Laterza October 2021), 178.

32 Ibid., 209-210 (translation from Italian to English by Roberto Caso).

33 Rossana Ducato, Giulia Priora, Chiara Angiolini, Alexandra Giannopoulou, Bernd Justin Jütte, Guido Noto La Diega, Leo Pascault. Giulia Schneider 'Didattica di emergenza o Emergency Remote Teaching: un'analisi empirica in tema di privacy e diritto d'autore dei termini e condizioni dei servizi online più diffusi', *Law and Media Working Paper Series*, 2 (2020). <https://www.medialaws.eu/wp- content/uploads/2020/06/Law-and-Media-WPS-2-2020.pdf>.

sudden shift away from classrooms sparked a lively debate on remote teaching. For example, a renowned philosopher like Giorgio Agamben suggested that the digitization of teaching itself was a technological barbarity that threatened the very possibility of a community of knowledge.[34] More enthusiastic newcomers, on the other hand, saw Microsoft Teams and Google Meets as the frontier of an ICT evolution that was both ineluctable and desirable.[35]

**47** Umberto Eco would probably have viewed the Italian debate about remote teaching just as another instance of the clash between apocalyptic and integrated intellectuals.[36] In 1964, Eco could still afford to take an intermediate position between the radical yet ineffective critique of the former and the conformism of the latter, by asking "in what circumstances man's relationship with the production cycle made him a slave to the system, and what was required in order to elaborate a new image of man in relation to the objective conditions; a man not free *from* the machine, but *free in relation to the machine*."[37] Nowadays, however, we have to consider the possibility that "the machine" has become so powerful that no third way, between apocalyptic refusal and integrated complacency, could be actually taken.

**48** First of all, Italian universities do not fear being customers of companies whose business model is so-called surveillance capitalism.[38] E-mail, for instance, is a critical infrastructure both for public administration in general and for universities and research institutions in particular: yet, the CINECA, the Minister of Education and the bulk of Italian universities outsourced it to US-based cloud providers like Microsoft and Google,[39] giving them the opportunity to capture a lot of data and metadata about their activities.

**49** Furthermore, the monopolists of surveillance capitalism are not only able to directly manipulate the experience of all their "users",[40] but their very financial power can influence research itself, by selectively funding scholars whose beliefs are aligned with their interests.[41]

**50** Finally, the surveillance capitalism model is being embraced by commercial scientific publishers as well, by "expanding beyond journals and textbooks to include research assessment systems, productivity tools, online learning management systems – complex infrastructure that is critical to conducting the end-to-end business of the university. Through the seamless provision of these services, these companies can invisibly and strategically influence, and perhaps exert control, over key university decisions – ranging from student assessment to research integrity to financial planning".[42]

**51** The only way not to be worried about such a deep entanglements between universities and Big Tech monopolies is conceiving information science as a kind of computer science literally taken, whose task is designing systems for storing, assembling, and moving data. Indeed, if computer science were just about neutral "pipes" transporting data without shaping and influencing the environment in which teachers teach and researchers search, it would be irrelevant whether software and clouds are free or proprietary, closed, or open-source, centralized in the hands of a very few oligopolists, or decentralized among the organizations that are using and developing them. The difference, if any, would be calculated by the institutional decision-makers in the usual terms of cost and efficiency, as befits universities understanding themselves as hierarchically structured enterprises.

**52** However, viewing ICT as a science about "pipes" misses, at least, one major point. The automation made possible by information technology is based on formal systems and procedures executable by machines that can be implemented without the intervention of human interpreters.[43] Therefore, it applies rules that are stronger than laws, because the enforcement of the latter still depends on

34 Giorgio Agamben, 'A che punto siamo? L'epidemia come politica', Macerata, Quodlibet, 2001, Also available at <https://gliasinirivista,org/requiem-per-gli-studenti>.

35 Christian, Fuschetto, 'Agamben e le insensatezze sulla dittatura telematica', Scienza in rete, 2020. <https://www.scienzainrete.it/articolo/agamben-e-le-insensatezze-sulla-dittatura-telematica/cristian-fuschetto/2020-06-06>.

36 Umberto Eco, *Apocalyptic and Integrated Intellectuals: Mass Communications and Theories of Mass Culture* (1964), now in U.Eco, R. Lumley (ed) *Apocalypse Postponed,* Bloomington and London, Indiana University Press, 1994, pp. 17-35.

37 *Ibid*., p. 23.

38 Shoshana Zuboff,. 'Big Other: Surveillance Capitalism and the Prospects of an Information Civilization', *Journal of Information Technology* 30, n. 1 (March 2015), pp. 75–89 <https://doi.org/10.1057/jit.2015.5>.

39 Damiano Verzulli, *La posta elettronica negli Atenei Italiani*, 2021 <https://dvblog.soabit.com /la-posta-elettronica-negli-atenei-italiani>

40 Richard Stallman, *Reasons not to be used by Facebook* <https://stallman.org/facebook.html>.

41 Laurie Clarke, Oscar Williams, Katharine Swindells, 'How Google Quietly Funds Europe's Leading Tech Policy Institutes', The New Statesman, July 30 2021, https : / / www . newstatesman . com / business / sectors / 2021 / 07 / how - google - quietly - funds - europe - s - leading - tech - policy -institutes

42 Claudio Aspesi et al., *SPARC Landscape Analysis* (2019) (n.5).

43 Edsger W. Dijkstra, *On a cultural gap* (EWD 924). E.W.Dijkstra Archive, 1986. <https://www.cs.utexas.edu/users/EWD/transcriptions/EWD09xx/EWD924.html>.

the mediation of humans.[44] Even remote learning platforms collect and select data, and implement relations and patterns in an automatic way; therefore, the environment they shape cannot avoid being stiff, non-negotiable, and not open to interpretations. "While engineers have to come to terms with the material world, programmers (and their employers) are legislators of the universes they create."[45] Hence, choosing free software, whose code is known and modifiable, and preferring community platforms is not a luxury, but a necessity. Shifting classes and libraries to virtual environments subject to surveillance and non-negotiable uses implies alienating the control over our teaching, our texts, and our research to foreign commercial monopolies whose concerns are not necessarily aligned with the purposes of research and teaching.[46]

## F. The GARR: the living legacy of a public infrastructure

**53** Both the enthusiastic neophytes and the university administrators advocating the use of Microsoft and Google's proprietary platforms used to believe, or, at least, to state that there was no alternative. However, during the COVID-19 pandemic, a minority of institutions (e.g., the Politecnico di Torino) and professors demonstrated that such a belief was baseless. Indeed, in Italy, there was a free and public alternative to proprietary platforms and clouds: the remote teaching platforms provided by the GARR Consortium.[47]

**54** The GARR Consortium is a public and non-profit association federating Italian universities and research institutions; its task is designing and managing the ultra-broadband network dedicated to the Italian research and education community. Although understaffed and underfunded, it succeeded and succeeds both in offering free, open, and privacy-friendly remote learning platform to schools, universities and to even individual teachers that refuse to give their data to Big Tech. Furthermore, it offered a major contribution to the network iorestoacasa.work,[48] built from scratch by a group of free software activists.

**55** The debate could have been nothing more than an unarticulated partisan fight between apocalyptic and integrated intellectuals, with both sides tacitly agreeing that distance education cannot escape the grip of Big Tech, especially where, as in Italy, universities are too small and poor to confront Big Tech without being swallowed up by it. The very existence of the GARR, however, offered a realistic, non-utopian alternative, which depended on the legacy of conceiving universities, teachers and even students as parts of a national system.

**56** The neoliberal university has become more similar to a corporate enterprise than to a republic of scholars: in particular, their "decision making takes place within more hierarchical structures designed to provide leaders with authority and managerial resources to make and enforce strategic decisions within the organization."[49] The philosophy of GARR, however, is very different:

**57** "GARR network is unique and differs from commercial providers not only in its institutional nature, but also for its extremely high transmission capacity (up to 200 Gbps) in both download and upload. GARR governance model promotes inclusiveness and *involves users in decision-making on the future evolution of the network and digital infrastructures*. Unlike with commercial providers, *users on GARR network aren't just consumers of data, content and services; they can also share their own resources for the benefit of the scientific community*, thus becoming active contributors."[50]

**58** Furthermore, the first paragraph of the Article 33 of the Italian constitution guarantees both the freedom of arts and sciences, and of the *teaching* of them. Therefore, the professors that dared to criticize the administration of their own universities and refused to use the proprietary platforms that the bulk of university administrators had chosen for them were able to appeal to a constitutional-grade principle without losing the possibility to teach by taking part in the experimentation of GARR's platforms. Although the dissenters were a minority, no university administrator could compel them to use Google or Microsoft platforms: on what basis, indeed, could they have coerced them to abstain from using the services provided by an organization to which the universities themselves belonged?

44 Joseph Weizenbaum, *Computer power and human reason.* San Francisco: W. H. Freeman and Company, 1976, p. 12; Alain Supiot, *La gouvernance par les nombres.* (Fayard, Paris, 2015), 'Introduction'.

45 Weizenbaum, *Computer power and human reason,* p. 115 (n36).

46 The conference *Fra diritto e informatica: esperienze di teledidattica a confronto*, <https://cisp.unipi.it/fra-diritto-e-informatica-esperienze-di-teledidattica-a-confronto/>, 2021 hosted a lively debate between two computer scientists, Antonio Cisternino and Giuseppe Attardi, about the University of Pisa's choice to adopt Microsoft Teamd as the preferred remote teaching platform, which displayed these two conflicting approaches very clearly.

47 See <https://garr.it/en/garr-en>.

48 <https://iorestoacasa.work>.

49 Ivar Bleiklie. 'New Public Management or Neoliberalism, Higher Education', In *Encyclopedia of International Higher Education Systems and Institutions*. Dordrecht: Springer, 2018. Doi: 10.1007/978-94-017-9553-1_308-1.

50 GARR, Who we are <https://www.garr.it/en/garr-en>.

## G. Conclusion: Siding with power or being a power in its own right?

**59** According to Wilhelm von Humboldt, it was "a peculiarity of the higher scientific institutions that they always treat science as a problem that has still not been fully resolved and therefore remain constantly engaged in research".[51] Hence, a Humboldtian university could not have reduced teaching to a kind of automated delivery of notions,[52] because its purpose was involving students in an unfinished quest. Students and teachers, however, do not need to embrace Humboldt's philosophy to ask themselves not only what they teach or are taught, but also how and why they teach or are taught: how is it possible to learn in environments in which students and teachers are surveilled, conditioned and sometimes censored?[53]

**60** The tools we use also have a pedagogical function, because they convey and apply the ways of relating to the world according to which they were designed.[54]And even Microsoft's or Google's remote teaching platforms have their own pedagogy: the pedagogy of digital minority. They are designed to make administrators, technicians, teachers, and students, each in their own way, passive, disengaged, dependent, ignorant, addicted.[55] In other words, they accustom people to consider the platforms as an unchangeable environment which cannot be chosen or rejected, so that only duly marginalized apocalyptic intellectuals or "Luddites" dare to challenge it. But does such a disempowering pedagogy suit a university wishing to attract students by providing something so specific that it cannot be replaced by digital platforms and their data analytic? Generally speaking, a university outsourcing its primary activity, i.e., teaching, to commercial platforms and their algorithms not only deprives itself of the opportunity to conceive of and experiment with new methods and remote learning environments, but it also exposes itself to the risk of becoming first submissive and eventually redundant.[56]

**61** Yet, Karen Maex[57] and LERU did ask the EU legislators for a Digital University Act to protect independent and public knowledge, as if universities were unable to keep themselves free from the grip of the influence of surveillance capitalism. Indeed, if such an influence depends on a growing and pervasive intellectual property regulation and on legal and *de facto* monopolies producing huge private collection of data, convoluted privacy rules regulating data collection and consent are not enough.[58] Accordingly, the Digital University Act aims to both reduce private collections of data and to make data Findable, Accessible, Interoperable, Reusable (FAIR), by entrusting their custody to research institutions whose independence from commercial purposes is guaranteed by the law.

**62** It is worth noticing that the GARR is already able to comply with Karen Maex's requests, both because it is a public infrastructure aimed to be independent of any commercial cloud and because of its inclusive and federal structure that provides an environment for research built by and for researchers. Its example shows that even without a law, a Humboldtian legacy institution was and would be able to provide, among other things, remote learning platforms for the public use of a technologically civilized reason. The choice between siding with power, as replaceable peddlers of training and subjugation, and being a power in its own right, as actors with active critical thinking skills and technology, would be up to Italian universities themselves.

**63** Why, then, was the GARR infrastructure chosen just by a minority of institutional and individual users?

51 Wilhelm von Humboldt, «Über die innere und äussere Organisation der höheren wissenschastlichen Anstalten in Berlin», ed. Christoph Markschies, 229–241. Humboldt-Universität zu Berlin, Humboldt-Universität, Leitung und Verwaltung, 2010. <https://doi.org/10.18452/4653>, transl. in <http://germanhistorydocs.ghi-dc.org/sub_document.cfm?document_id=3642&language=english>.

52 Google claims to provide adaptive learning technologies that customize teaching and educational resource according to the needs of each individual student, by having the data it gathered about us processed by an AI (Ben Williamson. 'Google Magic'. *Code Acts in Educatio*n, 2022 <https://codeactsineducation.wordpress.com/2022/03/17/google-magic >. The rhetoric claiming that automatic educational technologies can personalize teaching, although they indeed normalize it, is not a novelty (Paulo Blikstein and Izidoro Blikstein. «Do Educational Technologies Have Politics? A Semiotic Analysis of the Discourse of Educational Technologies and Artificial Intelligence in Education». *Algorithmic Rights and Protections for Children*, 29 giugno 2021. https://wip.mitpress.mit.edu/pub/do-educational-technologies-have-politics/release/1).

53 Chris Hedges, 'On Being Disappeared', in: T*he Chris Hedges Report* (2022). <https://chrishedges.substack.com/p/ on-being-disappeared>.

54 Weizenbaum, *Computer Power*, p. 18 (n36).

55 Brett Frischmann, Evan Salinger. *Reengineering Humanity* (Cambridge U.P.), 2018, I.2.1.

56 See for instance Amanda Meade, 'Anger after News Corp and Google Australia set up journalism academy at university business school, *The Guardian*, 2022. <https://purl.archive.org/purl/mcpievatolocit/anger>

57 Maex, *Protect independent and public knowledge* (n 3).

58 Ari Ezra Waldman, 'How Big Tech Turns Privacy Laws Into Privacy Theater', *Slate*, 2021. <https://slate.com/technology/2021/12/facebook-twitter-big-tech-privacy-sham.html>.

The reason is the same as why Karen Maex calls for a special law for something that universities still capable of "generous thinking" should be able to do by themselves.

**64** Universities do not live in a Humboldtian world any longer and are affected by the concentration of power and influence among tech companies that was made possible by the pervasiveness of intellectual property rules and of the monopolies promoted by them. Hence, even where there would be alternatives, they are embraced just by a minority of insulated dissenters. More radically, we might also ask whether protecting universities as institutional dissenters without rethinking and limiting the meaning and the scope of intellectual property could really bring them out of insulation. Could knowledge actually be independent and public if the public use of reason becomes a privilege only cultivated within the walled gardens of a handful of institutions?

JIPITEC

Journal of
Intellectual Property,
Information Technology,
and Electronic Commerce
Law

www.jipitec.eu