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Report:
From the Cloud to the Edge: New Ways for Data Appropriation
Professor Alain Strowel (Saint-Louis University, UCLouvain)
19 October 2018

"Data is the new oil. It must be collected, refined, and transmitted – preferably without being leaked." With this analogy, Professor Alain Strowel set the stage for his talk "From the Cloud to the Edge: New Ways for Data Appropriation" on 19 October 2018 at the University of Natural Resources and Life Sciences, Vienna.

Whereas oil resources are shrinking, the amount of data in our world is enormous and growing larger every minute. One autonomous car, for example, generates up to 4,000 gigabytes of data per day.[1] How should we regulate the control of and the access to this valuable resource? Who should own it? How should it be saved? And should the legislator regulate it by law or leave it to private autonomy?

Big Data, from the cloud to the edge

Strowel started his lecture by briefly introducing the concept of Big Data as large amounts of data that are interpreted by data analysis tools designed to "cope with data abundance as opposed to data scarcity".[2]

(Big) data can be stored "in the cloud" or "on the edge". Whereas data storage in the cloud stores data in a centralized way (e.g., on so-called "server-farms"), computing on the edge decentralises data, bringing processing power closer to the source of data. Strowel explained the tension between the two storage concepts by the examples of smart metering and autonomous cars. Efficient smart metering (e.g., for tracking household energy consumption) relies on a centralised treatment of data and on simple end-devices. Autonomous cars, however, require high *local* processing power, because a short response time is crucial for the passenger's safety. From a data protection perspective, diverging data storage designs (here: centralised cloud storage versus decentralised edge computing) can have far-reaching legal consequences. For example, data breaches are more severe if they happen in centralised data silos. In contrast, the more complex the data collecting device on the edge is, the more privacy concerns arise for its user.

Data property and data appropriation

Among other data-related conflicts, the tension between the cloud and the edge can be described using Strowel's "data appropriation triangle". The three "corner-questions" of the data appropriation are: How much data regulation should be contractually modifiable? What needs to be laid down as binding law? And where are the limits of legal regulation – where is privacy by technological design necessary?

In other words, the triangle comprises three perspectives on data protection: property rights, contractual means, and technological or practical measures.

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[1] For further information on data collection by autonomous cars see the report of a previous LTS lecture held by Professor Winner: *Weinmann*, Veranstaltungsbericht: Autonomes Fahren - Eine technische Einführung <http://short.boku.ac.at/reports> accessed 8 November 2018.

[2] *Kitchin*, The Data Revolution: Big Data, Open Data, Data Infrastructures & their consequences (2014) xv.

Strowel subsequently focussed on the "property rights"- corner. According to Strowel, the data subject's rights, such as the right to data portability under Article 20 of the General Data Protection Regulation (GDPR),[3] are part of a property-characterised understanding of data. In this context, the audience also discussed ways of categorising data. According to Strowel, the current EU legislation landscape mostly distinguishes between confidential data and public data as well as personal data and non-personal data. However, Strowel is convinced that these categories are too broad and that we should be more precise with data distinction.

Types of data and data regulation in the EU

As an example of current developments in EU data legislation, Strowel picked the case of text and data mining (TDM) in light of the Draft Directive on copyright in the Digital Single Market.[4] TDM is the process of extracting data and patterns from large datasets. If applied to image recognition, this tool brings data "from the eye to the machine".

Strowel argued that TDM should not be covered by copyright. For example, autonomous cars in London will usually create visual representations of the well-known red double-decker buses. Some images with that motive are protected by copyright.[5] However, the car does not care whether it encounters a suitable motive for works of London-cliché photography. It merely recognises the bus as an object that is best not to be driven into.

Copyright law pursues the objective of protecting the exploitation of work *in its capacity as a work*. TDM, on the contrary, does not reproduce work "as a work" but only extracts selected data sets (size and position of the obstacle). Hence, TDM does not qualify as an exploitation of protected works.

Relevance of data regulation in today's world

The subsequent group discussion covered a broad spectrum of topics, including the categorisation of data, the problems of overly complicated privacy guidelines, and the possibilities and limitations of models such as the data appropriation triangle. The lively discussion illustrated once more how relevant and how pressing the questions of data protection law are in today's world.

Thomas Buocz/Katja Schirmer, October 2018

[3] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) OJ L119/1.

[4] Proposal for a Directive of the European Parliament and of the Council on copyright in the Digital Single Market, COM(2016) 593 final.

[5] For example: *Temple Island v New English Teas* [2012] EWPCC 1.