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Abstract

This study provides an investigation of the phenomenon of mutual shaping between technologies and law, its conceptual ontological explanation of the interconnected abstractions design work, memory, attractor and shaping channel formulated in the transdisciplinarity of complex systems in order to address the gaps in the knowledge of the socio-technical systems’ area and the fields of Information Systems and Legal Informatics. The dissertation also provides a computational systems approach, generated bottom up from qualitative data in application of the abstractions, to improve them.

The corresponding approach to the conceptual explanation of the phenomenon of mutual shaping between technologies and law extensively exploits the qualities of the narrative form of qualitative data for its parallel tagging, time-relevant visualization and meaning-based clustering. This approach consists of nine categories of conditional rules with an open ending for its replication to N number of datasets for enhanced learning bottom up from real-world decisions and practices. The approach may subsequently be designed into an Intelligent Decision Support System by use of Natural Language Processing technologies for exploring ongoing and existing design works within the shared legislative environment, where the legal uncertainties shape, and are shaped by, the responsiveness to the technological implications in their diversity and uniqueness, and indicate ex ante effects across ICT design situations. The diversity of expert knowledge, professional affiliation and perspectives is respected.

Further research would imply testing other hypotheses and sequences gained from findings on the implementation of the conditional rules of the approach to the datasets, which would improve its inseparable theoretical basis of the interrelated conceptualizations and enrich the patterned process of co-evolution between technologies and law mutually shaping each other.