Network Analysis Formalism and the Construction of a Traceability System for Payments. A Sketch of Its Legal and Sociological Aspects

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INTRODUCTION

This paper is two-folded: in the first part, I will approach the theoretical problem of the relationships between law and computational social sciences, putting forward a framework that I call network analysis formalism (NAF); in the second part, I will discuss an applied problem concerning the technical and legal aspects of developing a full traceability system (TS) for payments and investigate this problem backward and forward on the temporal axis.

The second part can be seen as an example of the NAF framework presented in the first part that shows how the theoretical proposal of the sociologically aware weak formalism – NAF – can be used to solve some real life legal problems, in the present case, the ones related with structuring a system to track all the economical transactions.

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PART I: PHILOSOPHICAL MOTIVATIONS: LAW & INFORMATICS TOWARDS A NETWORK ANALYSIS FORMALISM (NAF)

1. METHOD AND ORGANIZATION OF PART I

In this part of my paper I will present (Section 2.) how the NAF framework relates to the case of developing a traceability system (TS) that is going to be discussed in the second part. Then, after solving this methodological issue, I will sketch my NAF framework (Section 3.) and reply to a possible objection according to which NAF has nothing to do with legal science (Section 3.1.). Before moving on to part two, in Section 4., I will draw the conclusions on NAF.


In the second part of the paper I will investigate the possibility of developing a traceability system (TS) for payments. Besides the problem of the TS in itself – i.e., how to organize the TS and how to investigate what are its legal and social upshots – the issue is interesting because we can see the TS problem as the applied counterpart of more philosophical questions, namely: what are the relationships between informatics and the new resources of technological progress and the law? What can we gain in terms of “legal welfare” from the increasing computability power of our computers as well as from the spreading of mobile devices that can always connect us to a network?

I will first address these broad questions outlining the framework of network analysis formalism, then I will move to its application considering the TS problem.

3. THE THEORETICAL FRAMEWORK OF NETWORK ANALYSIS FORMALISM (NAF)

My thesis is that entering technological devices, procedures of acquisition of relevant legal data and tech-aware legal agents\(^1\) can help us to reconcile two approaches to the law that, from a theoretical point of view, are

\(^1\) I.e., agents that are active part of the legal system, that can easily achieve an average use of technologies such as credit cards, Internet banking and smartphones.

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