Technology beats the law?

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ABSTRACT

Several examples show that computer programs in critical legal areas ignore or even disregard fundamental legal rules, like those of the Civil Code or even of the Constitution. Under the pressure of computerised transactions, most users are forced to consent to such distorted and erroneous application of law and even to accept *contra legem* consequences. It is beyond doubt that Information Technology presents advantages and benefits for lawyers, but have we reached a point where technology has beaten the law? The paper argues that any IT application having legal effects must, in the first place, abide by the substantive, procedural and methodological rules of the particular legal system. This is not merely a purely theoretical view, but a direct expression of the "rule of law" doctrine: citizens anticipate that computerised applications comply with the law. It follows that the theoretical description and the analysis of any IT application in law must be guided by and obey the law, not the technology. In that sense, such analysis should be carefully designed and directed by persons holding legal qualifications; not by computer technicians.

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1. Empirical Input

Example I

As per article 1176 par. 1. sec. 1 and article 1244 par. 1 of the Greek Civil Code, shares may be charged with a pledge and / or usufruct; the same rules apply for dematerialised securities traded in the Greek Stock Exchange as specified under articles 48 par. 2 (*Registration of Pledge on Securities*) and 49 par. 2 (*Registration of Usufruct on Securities*) of the Regulation on the Operation of Dematerialised Securities System (DSS, Decision 3/304/10-6-2004 of the Board of the Greek Capital Markets Committee, Official Gazette B' 901/16-6-2004, as in force). However, until recently, if someone tried to charge securities, already under usufruct (considered as a 1st charge), with a pledge (considered as a 2nd charge), the system was not able to register the second charge, simply because there was no field provided for; DSS had not been designed to accommodate simultaneously two of the most common charges of the Greek Civil Code, functioning in (materialised) legal practice for over sixty years.

Example II

In July 2010 academics and the judiciary in Greece were upset; the judiciary even threatened to cease performing their duties. The Greek state had organised a nation-wide census in order to register electronically in a database and identify all personnel (public servants) paid under the state payroll (as per Law 3845/2010 and Ministerial Decision 2/37345/0004/4-6-2010). The relevant field in the database had been designated "public servants". However, according to Article 16 par. 6 of the Greek Constitution "Professors of universities shall be public *functionaries*"; moreover art. 88 par. 1 designates judges as "*functionaries*" not "servants". The protesters (judges and professors) have claimed that the design of the user interface of the database had ignored critical legal parameters and, as a consequence, it had diminished their status, which is defined by law.

Example III

As per art. 1 par. 1 of Greek law 5638/1932 two or more persons may open a joint account at a bank operating in Greece; the law does not distinguish between natural or legal persons. However, if someone tries to open, at a bank, such joint account for two legal persons this is not possible; the computer system, of several major banks operating in Greece, does not provide adequate "space" for the legal representatives of two legal persons.

2. What System Analysis is required

As per basics of computer science, a system analysis is a traditional *sine qua non condition* before any attempt to computerise a manual procedure. . The effort to analyse a certain domain, normally takes the form of a comprehensive description, writing down and sketching parts of the system's functioning and basic characteristics as a precondition to the analysis (LoPUCKI, 1997). In the same vein, if we want to create legal applications i.e. computer applications that transform "manual" legal procedures into automated ones, such analysis must pave the way for any attempt to write down the source code of any software. The concept of "systems analysis" described in this paper is an empirical cumbersome procedure, since the legal phenomenon must be seen and examined under the eyes of a technically oriented analyst, who will gather the necessary

knowledge. The analyst normally creates the input material to be processed at the next stage by the computer programmer, who will then write the lines of the source code i.e. the set instructions (the software) to instruct the machine. It is evident that such an analysis has also been followed in all of the above examples: all three applications seem to work properly - in terms of computer programming - but they produce erroneous results, not acceptable by lawyers, or at least upsetting them. The empirical investigation reveals that in the three examples, not only a legal analysis is missing, but critical aspects of law are simply ignored, just because there is not enough space on the monitor screen. Computer programmers, in seeking technical perfection had not realised the importance of the legal rules. As a consequence, the end product does not obey the law and hence, the technical qualifications of the systems' analyst fall short of their endeavours: *"the system is doing things and producing results that participants in the system did not intend or anticipate"* (LOPUCKI, 1997).

The contradiction is being exaggerated to the eyes of an average practitioner, because, in his / her view, even law undergraduates would be able to foresee and point out the necessary fields in designing the databases and the user interface of the applications in the three examples:

(i)   Following the doctrine of liens and charges of the Greek Civil Code, two or more fields should be added for *usufruct* and *pledge* or any other charge over securities,

(ii)   Following the distinction of the Greek Constitution, a specific field should be added for "*functionaries*", apart from the general description for "*public servants*" and

(iii) Following the Greek Law for joint accounts, additional fields and space should be provided for the *representatives* of two or more legal persons.

For a person having formal legal background, these should be the first parameters to examine, before attempting any analysis and subsequent programming.

To make things worse, apart from the above examples, in numerous cases users are forced, under the time pressure of everyday computerised transactions, to consent to such distorted and erroneous application of law and even to accept *contra legem* consequences. It is a common belief that if the computerised system and / or the software dictates so, no other alternative may be followed: "…*Sorry, you cannot have a*

pledge over shares already charged with usufruct…”. A stage has been reached at which computer dictators (a.k.a. programmers) supersede established legal doctrines, and impose their own rules. Their effort is being led by the assumption that the features of the technology in question appear intuitively coherent and valid because they are supported by a paradigm of "technological determinism" (PANTALONI, 1994). The result coincides with LESSIG'S words that programmers (coders) "…constrain some behaviour by making other behaviour possible or impossible. The code embeds certain values or makes certain values impossible…" (LESSIG, 2006). The examples already exposed amount to an understated proof that technology (the code) is a regulatory modality affecting human behaviour. Under that regime, software regulates online behaviour and programmers act like deities, defining the rules of nature online, altering and shaping things that might seem unalterable, maybe even natural" (OHM, 2009). Such application of scientific methods and analyses leads to a distorted interpretation of the legal phenomenon, which contradicts existing laws and procedures. Systems analysts and computer programmers make inferences on the basis of generalisations about the law and their compartmentalised research obstructs the development of a complete picture of how computerised applications may can change the nature and functions of the process of law in a society (KATSH, 1984).

In this erroneous model, the social, political or cultural institutions, are underestimated; only the technology counts. Under the analysis firstly introduced by MARSHALL MCLUHAN, it would be acceptable for a new technology that comes into a social milieu to permeate that milieu until every institution is saturated (quoted by KATSH, 1984, footnote 4 and PANTALONI, 1994, footnotes 13, 14). However, would it be acceptable for an institution, such as law, to be shaped and controlled by the medium? Are we obliged to conduct a proper analysis, leading to (legally) acceptable results? In that case, what would then be the determining factor, within the dynamics of the legal system,?

The answer is straightforward: When designing and implementing legal applications, the defining factor should be the law and the associated legal system. Jurisprudence must be the guiding force; not computer science. It is beyond doubt that Information Technology presents advantages and benefits for lawyers. However, while in other disciplines it would be unacceptable to consult an outsider, in the case of law the *quasi* "dictatorship" of computer programmers is nearly instituted. Computerised applications

in law, designed to produce legal implications often ignore fundamental aspects of the legal process and treat law as if it were a guinea-pig without taking into consideration the current state of the law.

The proposed solution is that system analysis must be adjusted to the legal framework and any IT application having legal effects must, in the first place, abide by the substantive, procedural and methodological rules of the particular legal system. The first intuitive move of the analyst would be to consult an expert lawyer i.e. a lawyer with deep knowledge of the substantive and procedural rules of law in a particular area. Under that condition, analysts should possess or try to acquire basic legal knowledge, if not full scale formal legal education. The degree of the knowledge required depends on the difficulty of the task under consideration. To overrule the dictatorship of system analysts and computer programmers, we need computer software that will respect recognised legal procedures and will be based on sound knowledge of legal functions. Such software should be able to create a legal paradigm and should be able to guide and convince even laymen in their everyday practices. The end result, where systems analysis builds upon traditional methods of analysing the law, should lead to technology serving the law not *vice versa*.

3. Why? - "The rule of law"

As early as 1977 the "rule of law" has been proposed (BING & HARVOLD, 1977) as the basis for the improvement of any legal information system. The "rule of law" is not only the widely accepted cornerstone of modern jurisprudence but also sets the quality standards for the treatment of legal information (WAHLGREN, 1999). Two fundamental principles have been postulated (DWORKIN, 1986) as the basis inherent to this concept: the *principle of legality* and the *principle of equality* before the law. The first principle reflects the demand for *predictability*, i.e. the necessity within a legal system to predict in advance certain results to respective actions. This is directly connected to the general principle of "*knowing the law*" depicted by the Latin motto *ignorantia juris non excusat* and in that sense (legal) information must be updated and validated from authoritative sources. The second principle entails that cases, similar from the legal point of view should be decided in the same manner. Official legal decision-making from courts or other authorities should lead to equal treatment of equal cases. . This is not merely a

purely theoretical view, but a direct expression of the above "rule of law" doctrine: As long as citizens have the right and obligation to "know the law" they also anticipate that computerised applications, having legal implications, comply with the law (WAHLGREN, 1999). Furthermore, under that principle, it would be unacceptable to face different "legal" behaviour when a citizen uses a computerised system that a manual one, as it has happened in the three examples under scrutiny

Any legal informational system that does not meet these requirements endangers to lose its authority. Lawyers, in performing their functions in their *law-consulting* or *law-awarding* roles (e.g. judges) are not free to go beyond what is stated explicitly in the law. Under that rule, computerised applications in law must demonstrate an internal consistency with the legal system that they support (YANNOPOULOS, 1998) and analysts, playing the role of lawyers, are not allowed to supersede the law and go beyond established legal doctrine. Infringing this rule produces technically correct but legally erroneous results and, apart from the legal consequences, results to lawyers and laymen mistrusting modern technology. Apart from the three initial examples, several sound practical computerised applications in the core area of the legal environment have fallen short of the specifications envisaged by their designers and people are simply not using them.

It follows that the theoretical description and the analysis of any IT application in law must be guided by and obey the law, not the technology. In that sense, such computer applications should be carefully tested by persons having legal training, able to verify that the end-results show sound legal consistency with the surrounding legal order.

4. Which legal content to acquire

The task of finding *what* to include in a legal application has already been emphasised (YANNOPOULOS, 1998) by our positivist tradition, which has determined a system of clearly defined rules, with a known hierarchy amongst them. This set of objective and identifiable rules is known to legal practitioners well in advance, varying from the scope of macro-level of general norms and principles to the lower micro-level of the particular article or paragraph that regulates a real situation. This jurisprudential notion is being labelled as the *doctrine of valid legal sources* (WAHLGREN, 1999). As explained, to produce a useful legal analysis, the analyst should define the content of a law-related

system, having as a guideline the hierarchy of legal sources prescribed by the legal order and, then must empirically test whether the system is achieving to yield practical legal results. The analyst must also include some elements from the surrounding environment and should be cautious because some of the recommended changes may lead to disruption of the basic functions of the system.

Average practitioners are skilful enough to adopt a number of basic standards and to identify the rules that are valid and should be applied at a certain point in time; these rules should be the starting point of research for the lawyer-analyst of computerised legal applications. By order of priority, the lawyer-analyst will:

First, look into the sources of substantive law: the constitution, international treaties, statutes, decrees etc. or case law i.e. various types of court judgements related to the field of law under computerisation.

Secondly, will take into consideration procedural law and methodological rules, especially those procedural rules disqualifying vast amounts of information.

Thirdly, if needed, will identify other sources such as precedents, parliamentary preparatory works, jurisprudence, legal writings etc.

That strategy takes into consideration the traditional approach to law, as a conceptual system, in order to identify rules, which would drive or prevent a lawyer from taking particular matters into account (*supra*: pledge and usufruct, two legal persons in joint accounts) or providing certain kinds of criteria (*supra*: academics are not public servants). Because lawyers, as decision makers, are not free to decide, but their opinion should be guided by law. A clever strategist would place *law-cognoscenti* in such a position who will be skilful enough to choose the complete legal content required, over the existing alternatives. In the words of LOPUCKI "…legal scholars are the persons in our society best situated to analyze these systems and document them" (LOPUCKI, 1997).

5. Legal Informatics and Future IT Applications in Law

Starting from the empirical input of the three flawed examples, the main objective for this paper has been to revive the jurisprudential debate about how IT Applications in

Law should be treated. It has been submitted (SUSSKIND, 1996) that legal practice transformation, due to technology, may not simply be a matter of change of business strategy or personal attitudes, but an immense enterprise involving institutional changes in the whole legal system i.e. *a shift in paradigm*. Before, the vast institutional changes are reached, I would call for a *"return to basics"* strategy: IT applications in law must be guided by and obey the law, not the technology.

Under that strategy, the next objective would be to issue a word of advice about some of the most annoying fallacies one can encounter when dealing with information technology applications in the legal domain. Following the findings of this paper two main suggestions can be put forward:

1. Any IT application, having legal consequences, must in the first place, abide by the substantive, procedural and methodological rules of the particular legal system.

2. Following that suggestion, system analysis must be conducted by persons holding a minimum of legal skills.

Prediction has been a hard task for Pythia in the Oracle of Delphi. It is clear that, currently, there is a need to focus on accurately designed practical applications, which will facilitate the full introduction of modern IT techniques into the legal field (YANNOPOULOS, 1998) and can prepare the path for the envisaged institutional changes. For the future, I had speculated that computer programmers should not take the responsibility of legislators and that each discipline should not be enslaved to the other (YANNOPOULOS, 2002). It is in our hands the undertaking to produce law graduates equipped with computer skills and to enforce Legal Informatics as a discipline charged to set the boundaries and the subject matter belonging to the intersection between the two rivals, Law and IT. A comprehensive discipline should be able to impose, theoretically and practically, the necessary weight to the legal analysis preceding any design, analysis and programming of IT applications in law. If we follow a different path we run the risk of technology "beating" the law.

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