



# Online Dispute Resolution and Regulatory Models: a Table of Ethical Principles

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**Abstract.** *Regulatory systems* constitute a set of coordinated complex behavior (individual and collective) which can be grasped through rules, values and principles that constitute the social framework of the law. *Relational law*, *relational justice* and the design of *regulatory models* can be linked to emergent agreement technologies and new versions of Online Dispute Resolution (ODR) and Negotiation Support Systems (NSS). We define the notions of *public space* and *information principles*, extending the concept of ‘second order validity’ to the fields of ODR and NSS.

**Keywords:** regulatory systems · Semantic Web (SW) · Ethics · Normative Multiagent Systems (nMAS) · ODR systems · Negotiation Support Systems · Fifth Party

## 1 Introduction

The relational perspective to law emerged from the interplay between lawyering practices, contract studies, and socio-legal scholarship, alike. It stresses a view of contracts as relations rather than discrete transactions looking at the evolving dynamics of the different players and stakeholders within their living constructed shared contexts. The term “relational” emphasizes the complex patterns of human interaction and exchange. It means that relational regulatory models are complex, and that their strength certainly stems from sources other than just the normative power of positive law. We will call this set of coordinated individual and collective complex behavior which can be grasped through rules, values and principles that constitute the social framework of the law, *regulatory systems*.

How can relational law, relational justice and regulatory systems be linked to the newer versions of Online Dispute Resolution? And how Web 2.0 (the social web) and Web 3.0 (Web of Data) are related to this sociolegal approach?

In the Web 3.0 law turns out to be interactive, relational, deploying thorough multilayered governance regulatory systems. A *hybrid perspective* takes into account phenomena that are different in nature —e.g. linked open data; the conceptual

structure of legal data, metadata and rules; the conceptual structure of networked governance; the so-called “fifth party” in Online Dispute Resolution (ODR) and Negotiation Support Systems (NSS) developments.

This paper contributes to the ongoing discussion by contending that ethical principles can bring the required perspective to draw and interpret the general design for such regulatory models. Ethics play a major role in this relational approach. Following some recent work on Data Protection and Privacy by Design, and some recent attempts to integrate fairness and transparency to frame ODR and NSS (dispute resolution technologies, negotiation support systems), we will show how regulatory models can integrate moral, political and legal principles to avoid the drawbacks that may come from a purely normative approach.

## 2 Relational Justice, ODR and Ethical Principles

The CAPER<sup>1</sup> regulatory model (CRM) stems from the area of Freedom, Security and Justice (FSJ) to manage police interoperability and to protect citizens’ rights in the European space [5]. This appears to be a quite specific and overregulated domain, deserving much attention by legal drafters and actors in the political arena. Snowden revelations and the recent Bowden Report to EU Parliament in September 2013 have contributed to a greater awareness of the need for privacy protection, balancing safety and security [7].

It is our contention that, stemming from a relational approach to law and justice, distance from security to liberty can be shortened. There is a dynamic and ongoing relationship between both dimensions of human freedom. Properties such as validity can be applied to test the legal outcome of agreements; but issues of ethics and trust which are essential in mediation, ODR and SSN can be applied as well to regulatory designs of FSJ domain.

Accountability, asymmetrical network governance and responsible data protection are some of the aspects to be pointed out. The CAPER regulatory model encompasses legal boundaries and empowerment capabilities alike. The evolutionary context created by criminal threats to the open society must be taken into account here, because it sets a bottom-up permanent and dynamic landscape of changing scenarios. The common resilience of governments, companies and citizens is essential when dealing with such a landscape, and therefore, the suggested standards assume that citizens, and not only governments, are entitled to cooperate with police organizations and with the justice to fight organized crime. But do-it-yourself-justice situations must be bounded and ruled through democratic means of governance and legal controls: this is why it is so important to define a global public space in which cooperation and collaborative ways of citizens’ participation can find a legal place to develop safely. Crisis mapping and new forms of crowdsourced constitutional law are among the successful forms of what it has been already called *digital neighborhood*. Examples such as those of the Vancouver riots, warn against the unintended

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<sup>1</sup> CAPER stands for “Collaborative information, Acquisition, Processing, Exploitation and Reporting for the prevention of organised crime”, see <http://www.fp7-caper.eu/>.

consequences of mob behavior that may follow from the indiscriminate use of social media to help local authorities to identify rioters [47].

*Relational justice* is a bottom-up justice produced through cooperative behavior, agreement, negotiation or dialogue [12, 13]. The standard typology of ODR systems lists automated negotiation, computer assisted negotiation, online mediation and online arbitration [50]. Such systems are conceived to operate in a transnational and global space, and usually designed to reach agreements independently of any specific legal domain (family law, private international law, e-commerce, consumer law...). ODR systems incorporate (and actually operate) through argumentative means, between both persuasion and deception [23].

However, in spite of many attempts to implement them into the market and as a private or e-government regular service, ODR tools have not been *so widely used and developed* as it was expected only five years ago [55].

The reasons for such a slow development as Web Services are manifold. As it happened in the early times of ADR developments, big companies have already developed dispute solving devices as a normal service being offered at their website. E-Bay and Wikipedia systems are among the well-known examples. It is currently referred as example Colin Rule's assertion about the 60 million cases solved by e-Bay in a single year. However, there is another important aspect to be taken into account. Colin Rule also asserts that "costs have an impact on not only access to but also perceptions of distributive justice. If ODR is less expensive than other alternatives, it enhances access. Outside big marketplaces, however, there are few business models for sustainable ODR systems" [39]. The acceptance of ODR is dependent on a country's legal culture and its institutional acceptance (in national commerce courts for example): not all countries have had an equal degree of reception of ODR [1].

Moreover, ODR entails more complex procedures than ADR: the so-called "fourth party" refers to the technology component, but the notion of "fifth party", the provider of technology, is most needed to understand practical and legal consequences [lodder]. Accordingly, Carneiro, Novais and Neves [23] are suggesting technical reasons for the slowness in constructing ODR technology: a lack of multi-domain tools that can address more than one legal field leads to currently available tools only being available for only a single domain, drastically diminishing its application. The "fifth-party" is still under development. "Template-based" Negotiation Systems, in which no solution is proposed by the system, might be complemented with the aid of more proactive technologies, i.e. systems based on game and bargaining theory [36] [37, 38].

We would like to advance two arguments to foster ODR and legally valid negotiated agreements.

First, the idea of open social intelligence (OSI) can help to constitute a new framework [14][42]. Castelfranchi [32] asserts that the social mind cannot be conceived as a mere aggregate of individual abilities, but a set of social affordances. Therefore, social interactions organize, coordinate, and specialize as artifacts, tools, to achieve some outcomes for a collective work. OSI elements and Artificial Intelligence (AI) components should be enhanced and combined into ODR toolkits (web services, platforms, mobile applications...) to facilitate citizens' and consumers' participation, and an open use and reuse of the accumulated knowledge. Achieving this, it does not

necessarily means Crowdsourced Online Dispute Resolution (CODR), as advanced in [28].

Second, ethical components deserve a closer attention, and once incorporated into ODR, they turn out to be essential for its broader implementation and acceptance because the notion of *validity* or *legality* is transformed as well through networked regulatory models in ODR scenarios.

AI-oriented ODR can help, indeed, to overcome some of the traditional barriers pointed out by inner and external criticisms. A few of them rely on the limitations over the communication process. It is true that compared to face-to-face settings, nonverbal cues (facial gestures, voice inflection, intonation, facial reddening...) are usually absent in ODR settings. But at the same time the flexibility, mobility and fastness of proactive technologies can be enhanced through Multi-agent systems (MAS) and emotion-sensitive sensors. Virtual institutions developing agreement technologies, and face-recognition imaging, e.g., are already mature enough to be used in real settings [43]. COGNICOR, the automated conflict resolution company that won the 2012 European start-up award, constitutes an example of such a successful innovative ODR strategy.<sup>2</sup> In addition, this approach contributes to uncovering new conflicts and legal issues, e.g. disputes about reputation rights in social networks and across the web [57]. MODRIA is another example of an innovative company dealing with reputation conflicts.<sup>3</sup>

Standards and regulations provide another side of the problem. Empirical studies on consumers' behavior, strongly show that most e-buyers ignore national consumer laws. E.g. The findings by Ha and Coghill [26] in an Australian survey on online shoppers suggest that most respondents are not aware of the following issues: (i) which organizations are involved in e-consumer protection; (ii) government regulations and guidelines; (iii) industry codes of conduct; (iv) self-regulatory approaches adopted by business; and (v) the activities of consumer associations to protect consumers in the online marketplace. After harvesting all available P3P Policies (Platforms for Privacy Preferences Protocol) —the 100,000 most popular Web sites (over 3,000 full policies, and another 3,000 compact policies) — Reay, Dick and Miller [46] concluded that privacy provisions are largely ignored by consumer web sites. New strategies, such as providing structured legal information directly on mobile applications, seem to be appropriate for using ODR systems more efficiently and bringing mediation to consumers and citizens.<sup>4</sup>

There are several proposals for drafting legal standards for mandatory ODR in Europe [20]. Quite recently the United Nations Commission on International Trade Law (UNCITRAL) set up a Working Group to develop: (i) procedural rules, (ii) operational guidelines for providers and neutrals, (iii) minimum requirements for providers and neutrals, including accreditation and quality control, (iv) creation of equitable principles for the resolution of disputes, (v) and enforcement mechanisms.<sup>5</sup>

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<sup>2</sup> <http://www.cognicor.com/>, <http://thenextweb.com/eu/2012/06/22/smart-complaint-resolution-service-cognicor-wins-the-european-commissions-new-grand-startup-prize/>

<sup>3</sup> <https://www.modria.com/>

<sup>4</sup> Cf. See GEOCONSUM, a mobile application to provide consumer legal information <https://play.google.com/store/apps/details?id=com.idt.ontomedia.geoconsum&hl=en>

<sup>5</sup> See [29] for a comparison between EU ADR/ODR regime and UNCITRAL's Draft Rules. "The UNCITRAL draft Procedural Rules envisage a three-stage procedure: (1)

Rule and Rogers [49] observe that a cross-border resolution system requires “all participating entities to exchange information around the world, in real time, in multiple languages”. Therefore, the challenge is constituted by data standards application and “a public, comprehensive set of rules to govern the inter-operation of all of the organizations participating in the global system”.

All of this has a strong flavor of *déjà vu*: it is similar to the Uniform Domain Name Dispute Resolution Procedure (UDRP) adopted by International Corporation for Assigned Names and Numbers (ICANN) [29]. Such problems are also similar to the experiences in the Freedom, Security and Justice Area (FSJ), where the patchwork of local, national, international, European and international norms might be reorganized through interoperable regulatory models.

At the kernel of these trends is applying XML standard, LOD, and Data Protection policies to the management, classification, communication and organization of ODR global knowledge. It implies a change in the understanding of ODR *valid* outcomes.

Again, what is meant by a “legal” or “valid” agreement cannot be only conceptualized stemming from the field of international private law.<sup>6</sup> As it will be shown in the next section, agreements and negotiations through ODR and NSS can be better understood as *legal components of a global public space* which has to be *anchored* in some notion of what global law is or should be. This is properly the field of computational and informational ethics.

### 3 ODR, Ethical Principles and the Redefinition of the Global Public Space

Negotiation, conflict and dispute resolution studies have been always focused on political and ethical grounds. In these approaches, justice is at the center of discussions. Sometimes, when dealing with ethical issues, *trust*, over other possible moral issues, has been considered as the main ODR procedural value. Therefore, computer models applying argumentation schemes theory are trust-centered schemes [letia], and *building trust* is also the focus of other studies on predictors of disputants’ intentions to use ODR services [57] or on intermediation and consumer market inefficiencies [21]. Rule and Friedberg [48] consider ODR as just one tool in a broader toolbox (amongst techniques coming from marketing, education, trust seals and transparency). From this point of view, trust is not analyzed as a moral value, but as carrying on social and economic values in the market, depending upon *reputation*. This is why trust is so time-consuming and hard to build.

Focusing on trust is a result of applying to the Internet the traditional ADR perspective in which interests and private gains and losses prevailed over other public

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automated/assisted negotiation between the parties without a human neutral, which may include blind-bidding techniques; (2) mediation/conciliation; and (3) arbitration leading to a decision which can be enforced”.

<sup>6</sup> After analyzing UNCITRAL’s draft Rules for ODR, Cortés and Esteban de la Rosa contend [19]: “low-value e-commerce cross-border transactions, the most effective consumer protection policy cannot be based on national laws and domestic courts, but on effective and monitored ODR processes with swift out-of-court enforceable decisions”.

aspects [2]. Thus, trust and confidence, meant efficiency as well. The role of lawyers, arbitrators and mediators in balancing attitudes (neutrality, impartiality) are supposed to induce confidence and to bring efficiency to the system.

Nevertheless, under the “fifth party” perspective, the structural framework comes to play. *Fairness*, and not only trust, matter.

“Is it a violation of neutrality if eBay runs the overall dispute resolution system while also deciding individual case outcomes? The company strives to build fair and open dispute resolution processes, but the fact remains that eBay will not offer a system it believes operates contrary to the overall objectives of the marketplace. Should the standard for process impartiality be changed in ODR? Perhaps we should worry more about the overall appearance of partiality (the “kangaroo court” phenomenon) than obsessively trying to wring every last drop of bias that might exist at every stage in the process. In one possible solution, ODR systems could substitute a mediator requirement to “serve in a balanced capacity” rather than an impartial capacity. Rather than just protecting one party, this protects everyone, including the system, *thus upholding the notion of fairness.*” [39].

However, marketplaces take place in an open society that is becoming global very fast. This is not only an economic issue, but a social and political one. ODR procedures and outcomes call for democratic legal forms. The three-step model for ODR systems proposed by Lodder and Zeleznikow [37] [38]<sup>7</sup> can be harmonized within a legal framework encompassing *fairness and transparency*. But as some reviewers point out sharply, “it is not clear however, in the ODR context, how to achieve transparency, in what areas and how to cope with its implications” [31].

Answering this criticism is far from simple, because the intersection between both values reflects the tension between the public and the private that is transforming the national version of the rule of law into a global set of *legitimated* governance mechanisms (in absence of some version of a global state).

“*Transnationalism* – law beyond the state – may be the key to predictability, and thus to the sort of justice, or fairness, that is central to the rule of law” [52] [51]. *Systemic fairness*, “developing and applying a set of predictable transnational rules” (ibid.), or *meta-justice*, developed by Alex Mills intending “the justice of the principles governing the global ordering of legal systems that private law embodies” (ibid.), are some of the notions that have been proposed to grasp this shifting turn of the law becoming global. What meta-justice principles are, and what do consist of? How could they be applied to computer systems?

Philosophers, legal theorists and computer scientists have been cooperating to give a reasonable answer to the questions raised by global justice.<sup>8</sup> It is our contention that

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<sup>7</sup> The first step involves finding out the BATNA (best alternatives to the negotiated agreement), i.e. what happens if the negotiation were to fail. Next stage would involve facilitating conflict resolution by means of argumentation. In case not all of the issues are resolved, the third step would employ analytical techniques to complete the resolution process.

<sup>8</sup> “Nowadays, a system designer must have a deep understanding not only of the social and legal implications of what he is designing but also of the ethical nature of the systems he is conceptualising. These artefacts not only behave autonomously in their environments,

bringing together *fairness and transparency* requires a more complex conceptualization of the tensions produced within the hybrid field of transnational regulations. i.e., adopting a relational justice perspective and working out the notions of complex regulatory systems and complex regulatory models can shed some light to this changing legal world. Table 1 summarizes the *Principles of fair information practices* (FIPs) following the tradition of Alan F. Westin (1967) [56]:

**Table 1.** FIPs. Source: [33]

1. <i>Openness and transparency</i>	There should be no secret record keeping. This includes both the publication of the existence of such collections, as well as their contents.
2. <i>Individual participation</i>	The subject of a record should be able to see and correct the record.
3. <i>Collection limitation</i>	Data collection should be proportional and not excessive compared to the purpose of the collection.
4. <i>Data quality</i>	Data should be relevant to the purposes for which they are collected and should be kept up to date.
5. <i>Use limitation</i>	Data should only be used for their specific purpose by authorized personnel.
6. <i>Reasonable security</i>	Adequate security safeguards should be put in place, according to the sensitivity of the data collected.
7. <i>Accountability</i>	Record keepers must be accountable for compliance with the other principles.

These foundational principles have been embedded into EU Directives and regulations, and have fostered academic, theoretical and practical discussions during the last twenty years.

Leaning on the first comparative tables by Cavoukian [18] on Privacy by Design Principles, we have completed them with the Principles of the Semantic Web Linked Open Data, Legal Information Institutes Principles, ODR, Crowdsourcing and Crisis Mapping (Table 2).

**Table 2.** Comparison between Fair Informational Practices (FIPs), Privacy by Design (PbD), Linked Open Data principles (LOD), Principles of Legal Information Institutes (LIIP), and ODR Crowdsourcing, and Crisis Mapping Principles

Privacy by Design Foundational Principles [10] [18]	Fair Information Practice Principles (GPS) [33]	Cavoukian Extended Principles [18]	Semantic Web LOD Principles [3]	Legal Information Institutes Principles [8][25]	ODR Principles [2] [58] [59]	Crowdsourcing Principles [4] [6] [27] [40]	Crisis Mapping Principles [41][44] [45]
1. Proactive not reactive; Preventative not Remedial		Established methods to <b>recognize</b> poor privacy designs, to <b>anticipate</b>	URIs to denote things, HTTP <b>Dereference</b> Serialization formats	Technological investment, information, free access to law and legal information	Willingness to enter into a negotiation and be fair	Participation Collaborative work, governance and decision making	Informing <b>Reporting</b> Proactive participation Conflict prevention

embedding themselves into the functional tissue of our society but also ‘re-ontologise’ part of our social environment, shaping new spaces in which people operate.” [54]

		poor privacy practices and outcomes, and to correct the negative impacts	Proactive modeling: XML, RDF, SPARQL, OWL Interconnectiveness				and crisis management
2. Privacy as the Default Setting	3.Purpose Specification 4.Collection limitation, Data minimization 5.User Retention, Disclosure Limitation	Privacy becomes the prevailing condition - without the data subject ever having to ask for it - no action required.	Dereferencing Accessibility, Secure data exchange, protection, Storage, Metadata, Ontologies, Alarm Systems, Trust	<b>Republication</b> Anonymization	<b>Fairness-</b> Enabling Discovery (Disclosure Limitation)	<b>Trust:</b> disclosure limitation	Harmless Digital neighborhood <b>Causing no harm</b>
3. Privacy Embedded into Design		Systemic program or methodology in place to ensure that privacy is thoroughly <b>integrated</b> into operations standard-based and validable).	Dereferencing Looking up data, structured data, Data protection, Storage, Metadata, Enrichment, Core Ontologies, Domain Ontologies, Rules, Principles, Trust, Validation	<b>Republication</b> Reusing Authentication (Authoritative versions) Integrity	<b>Fairness-</b> Bargaining in the shadow of the law and the use of BATNAs	<b>Trust:</b> Empowering people	GIS monitoring Implementing Digital Neighborhood
4. Full Functionality Positive-Sum, Not Zero-Sum		Multifunctional solutions: legitimate non-privacy interests and objectives, early, desired functions articulated, agreed metrics applied.	Web Science, Universality, Linked Data, Human Giant Graph, Accessibility, Data protection, Metadata, Core Ontologies, Domain Ontologies, Rules, Principles, Trust, Validation,	Balanced interests (publisher/ state/ user)	<b>Fairness-</b> Enabling Discovery (Privacy Limitation)	<b>Trust:</b> self-interest; monitorization, metrics applied	Trust: aggregated interests and values; monitored processes; metrics applied
5. End-to-End Security, Full Lifecycle Protection	7. Security		Secure user participation, Ontology sustainability, folksonomies,	Integrity, Security, Maintenance	Secure environment	Integrity: secure environment and participation	Volunteers' <b>Security</b>
6. Visibility, Transparency Keep It Open	2.Accountability 8. Openness 10.Compliance		<b>Transparency</b> <b>Accountability</b> Content value, tagging and semantic enrichment	Accountability Distributed Authority of republished materials	<b>Developing transparency</b>	<b>Trust:</b> Transparency, work quality	Validation Transparency
7. <b>Respect</b> for User Privacy Keep it User-Centric	1. <b>Consent</b> 6. Accuracy 9. Access		End user-centered systems, personalization,	<b>Personalization.</b> End user-centered systems	Accuracy	Aggregated value	<b>Truthful and accurate information</b>



There is a coincidence on objectives, structure and number of principles. What is worthwhile highlighting is that the main focus of their discourse lies in a deeper level, disclosing the ethical ground on which principles are based. Privacy by Design (and Privacy by Default) principles tend to stress the respect for user privacy and informed *consent*. Linked Open Data principles highlight the *accountability* of the protocols settled on data use and reuse by companies, administrations and governments. The principles laid down by Legal Information Institutes to rule the free reproduction and dissemination of legal content are focused on the *republication* of targeted legal materials.

Principles for crowdsourcing are less centered, as they are depending upon the field in which they apply and they are intertwined with remuneration for work — labor micro-tasks (Mechanical Turk e.g.) or research challenges. *Trust* seems to be crucial for self-interested participation. But when the task to be carried out is entirely voluntary and people do not seek economic compensation, the situation changes. In the domains of crisis mapping (emergencies, natural disasters, humanitarian crisis...) and election monitoring what is sought is reliable information on local events. *Truth* constitutes the main focus.

These focal points have their counterpart —consent/ publicity; accountability/ public security; reputation/ intellectual property, compensation/ quality, validation/ causing no harm— in a non-homogeneous *continuum* of rights and duties. PbD are *user-centered*, LOD are *data/protocol-centered*, LIIP are platform or *service-centered*, crowdsourcing principles are *task-centered*, crisis mapping principles are *reporting/centered*. It is noteworthy that from PbD to crisis mapping monitoring the focus shifts from private to more public concerns.

This leads to a different definition of the private-public space *continuum*, in which rights and duties to be complied with are almost the same (as showed by the similarity of principles) but have different *weights*. Therefore, *public consciousness*, *public space*, *public domain*, *public community* can be distinguished, stemming from the different models of relational law that principles allow, and the different kinds of citizens' rights than can be put in place (*civil rights*, *global rights*, *added-value rights*, *common rights*).

We think that ODR principles fit into this broad landscape in a particular way. As shown in table 3. On the one side fairness must be protected as a general condition of dispute settlement. On the other hand transparency is a condition for enabling discovery in order to not to alter the outcome of the negotiation. Thus, ODR principles are *process-centered*. They can be enacted and applied in a *public global space*, in which what has to be protected is not only the specific outcome of a negotiation, but the system as a whole: it is important that trust can be enhanced through fairness and the *legality* of the final outcome.

**Table 3.** Fairness ODR Principles. Source: [59]

<i>Fairness Principle 1</i> – developing transparency	For a negotiation to be fair, it is essential to be able to understand and if necessary replicate the process in which decisions are made. In this way unfair negotiated decisions can be examined, and if necessary, be altered.
<i>Fairness Principle 2</i> – enabling discovery	Even when the negotiation process is transparent, it can still be flawed if there is a failure to disclose vital information. Such

	knowledge might greatly alter the outcome of a negotiation.
<i>Fairness Principle 3 – bargaining in the shadow of the law and the use of BATNAs<sup>9</sup></i>	Most negotiations in law are conducted in the shadow of the law. These probable outcomes of litigation provide beacons or norms for the commencement of any negotiations (in effect BATNAs). Bargaining in the shadow of the law thus provides standards for adhering to <i>legally just and fair norms</i> . Providing disputants with advice about BATNAs and bargaining in the shadow of the law and incorporating such advice in negotiation support systems can help support fairness in such systems.

But to understand what “legally just and fair norms” mean in the application of the third Fairness Principle, that is to say, calculating BATNA while negotiating at the same time “in the shadow of the law”, the evaluative test of the CRM can be performed in each specific mediation process, or can be embedded within the Negotiation Support Systems (NSS).<sup>10</sup>

Doing so, *the validity of the system triggers the legality of the negotiation process and possible upcoming agreements that might follow. Therefore, legality is a by-product of the enforceability, effectiveness, efficiency and justice of the normative system.* The ODR principles are *anchored* into complex regulatory models that grasp the real values and properties of the functioning of the whole system (the 4<sup>th</sup> and 5<sup>th</sup> Parties pointed out by Lodder and Zeleznikow). Fig. 1 plots this dynamic process, in which justice plays a major role as inner component of the model.

<sup>9</sup> BATNA stands for “Best Alternative to a Negotiated Agreement”.

<sup>10</sup> “For example, in the AssetDivider system, interest-based negotiation is constrained by incorporating the paramount interests of the child. By using bargaining in the shadow of the law, one can use evaluative mediation (as in a family mediator) to ensure that the process is fair. The Split-Up system models how Australian family court judges make decisions about the distribution of Australian marital property following divorce. By providing BATNAs it gives suitable advice for commencing fair negotiations. The BEST-project (BATNA establishment using semantic web technology), based at the Free University of Amsterdam, aims to explore the intelligent disclosure of Dutch case law using semantic web technology. It uses ontology-based search and navigation. The goal is to support negotiation by developing each party’s BATNA” [59].

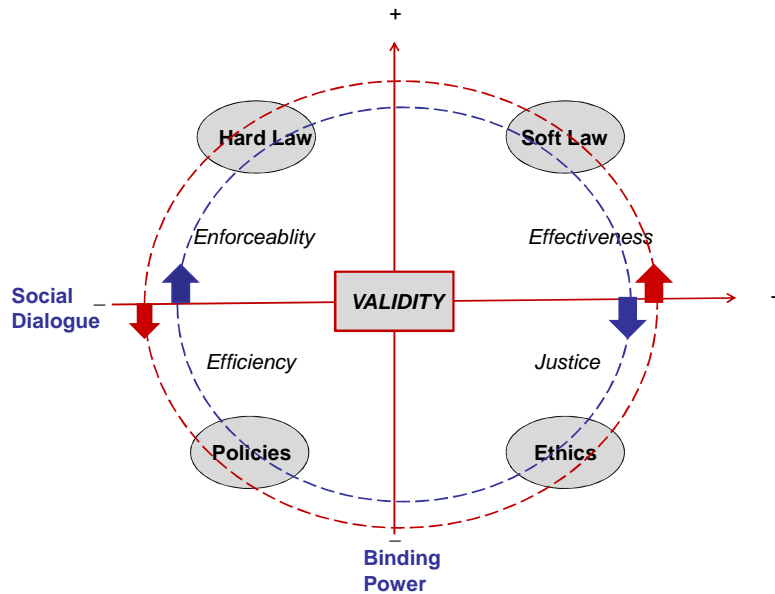


Fig. 1. Three axes, four first order properties, and one second order property to model regulatory systems. Source: [26]

## 5 Conclusions: Models of Relational Law

In this paper we have outlined a way to conceptually model from a descriptive and empirical approach some elements that refine and slightly modify the normative notion of law, stemming from its implementation in SWRM and complex regulatory systems. We have contended that the validity of norms, rules and principles cannot be directly applied as an identification property to single out their legality. The design of regulatory systems, either in nMAS or embedded into Web Services, ODR platforms and NSS devices, entails a complex framework. Ethical principles are more important than ever in this global space in which the power of nation-states is not the only source of law. Contexts and fields of application are shaping the final scope of regulatory outcomes.

We have compared broadly some of these principles, adding Semantic Web LOD, LII, ODR, CR and Crisis Mapping to the originally tables plotted by Ann Cavoukian. Technology is being used to the extent that fits the users' needs, and not the other way around. This is still an unfinished and ongoing work. As more fields are added, privacy and data protection analysis becomes a problem of aggregation, and the idea of privacy becomes situated within a global space in which latent and explicit conflicts can be classified into stable structural frameworks.

PbD principles are equally important, then, but ethics and technology can play other kinds of roles, centered on individual rights too, but having a collective dimension able of being organized into structured and coordinated political actions.

Disclosing government information, denouncing corruption, managing emergencies in natural disasters, and monitoring elections means organizing *crowd, collective intelligence*. This implies a new challenge for democratization, fostering the construction of relational law models adapted to different problems, frameworks and coordinated tasks to design regulatory programs for specific, emerging transnational fields and actions.

We have shown that Semantic Web technologies and SWRM open up new ways for implementing, handling and performing legal rights and duties in these fields. But it is our contention that they must be built up and anchored in the perspective of what relational law means. Law is becoming at the same time more and less dependent on legal texts. More dependent because Legal Open Data will allow a fast and cheap accessibility to a great bulk of accumulated, stored texts in connected repositories. Less dependent because people will be using its content in many ways, not only interpreting it canonically, seeking from authoritative opinions. Law is being linked, dereferenced, crowdsourced, reinterpreted in a way that intertwines legal norms with ethical and political issues and principles.

Using Floridi's metaphor of third-order technologies, SW and LOD are certainly situated in a kind of autonomous and self-consuming contained "in-betweenness" [43]. But conflicts and law have always had a high degree of open *heteronomy*. Humanity-in-the-loop [58] very likely will lead to a situation in which agents (whether artificial or humans) interact through regulations and conflicts. Applying national constitutional norms, or even private or public international law only, to harness SWRM *hybrid* models of regulation it is not realistic. It does not close the gap between legal theory and the new developments of the Web.

**Acknowledgements.** CAPER, EU Grant Agreement 261712; Crowdsourcing DER DER2012-39492-C02-0; SINTELNET FP7-ICT-2009-C-286380; Consumedia IPT-2011-1015-430000; Crowdcrisiscontrol IPT-2012-0968-390000.

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