Introduction: Bringing a New Vision to Online Dispute Resolution

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Abstract. This article offers a brief overview of the state-of-the-art ODR domain by presenting the contributions to the field made by the participants in this volume. It also examines some of the challenges that ODR face at present with regard to interoperability and the new evolutions of the Web 2.0. Finally, it also considers the need for a new vision of ODR that, while keeping pace with the technological developments of the Web, situates the users the center of the paradigm.

Keywords. Online Dispute Resolution, ODR, Decision Support Systems, Negotiation Support Systems, Web 2.0, Semantic Web, relational justice

1. ODR in Brief

For some years now, Online Dispute Resolution (ODR) developments have been the object of close attention in a number of research domains: negotiation studies, law, economics, computer sciences, artificial intelligence, information systems, etc. Broadly defined, ODR encompasses those services, processes, methods, and techniques using ICT technologies to facilitate the resolution of disputes erupted both in online and off-line environments. While ODR is often seen as the online equivalent of alternative dispute resolution methods (ADR) that fall outside the judicial domain, there are some reasons to refrain from an exact correspondence between the two. On the one hand, ODR procedures might not necessarily satisfy the "alternative" aspect of ADR, since they may form part of the judicial process (i.e. online mediation to assist divorcing couples in drafting divorce agreements). On the other hand, the technical aspects of ODR pave the way to specific procedures that vary from those applicable in ADR (namely, automated, blind-bidding negotiation). Thus, a basic typology of ODR processes may be summarized as follows:

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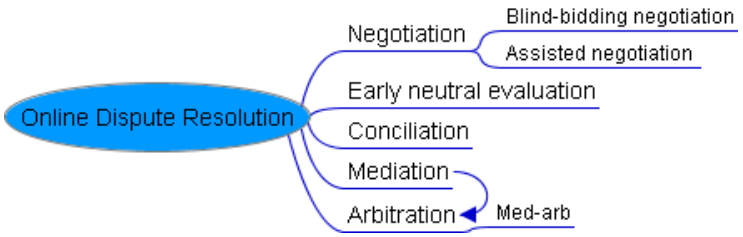

Figure 1. ODR basic typology

The experimental projects started by the mid nineties (the Virtual Magistrate at the Villanova University and the Online Ombuds Office at the University of Massachusetts) already bore the promise of making the resolution of online disputes more efficient, speedier and inexpensive, especially if compared to judicial procedures. By 2001, commercial sites offering ODR services had reached its peak in the US (SquareTrade, Cybersettle, SmartSettle, etc.) while experimental initiatives started to walk in Europe (ECODIR, Médiateur du Net, etc.). The commercial development of ODR services, nevertheless, was early impacted by the collapse of the dot.com bubble that lead to a decline in service providers and the subsequent restructuring of the incipient ODR market.

Notwithstanding these temporary backwards, a decade after the inception of ODR commercial services through the Internet the largest online trading platform eBay handles more than 40 million disputes a year, in more than 16 different languages [1]. Albeit this is by far the most impressive figure by a single ODR service provider, the types of disputes dealt by ODR services cover an ever-growing spectrum, ranging from early domain name disputes to intellectual property, insurance, personal injury, or privacy cases [2].

Nevertheless, and despite its successful results in the e-commerce, insurance or domain name disputes, the social impact of ODR remains limited. Orna Rabinovich-Einy mindfully reflects in this volume on the present situation of ODR by analyzing the Israeli example. These circumscribed impingements of ODR may obey to different reasons: (i) lack of sufficient advertisement and/or public awareness about the advantages of ODR; (ii) existence of multiple, heterogeneous procedures displayed by public and private ODR initiatives and services that may create confusion among potential users; (iii) lack of basic standards at the European and international level (iv) issues such as trust, confidentiality, privacy, or security that may deter people and organizations from using ODR services.

How daunting these challenges can be for ODR to reach full maturity? What is needed to make ODR the default for Internet disputes and, whenever suitable, for offline disputes? To some extent, most of these issues have already been addressed at multiple levels. At the legislative level, the European Parliament and the Council of the EU have recently adopted the Directive 2008/52/EC of 21 May 2008 on certain aspects of mediation in civil and commercial matters, which prompts the establishment of basic principles as “an essential step towards enabling the appropriate development and operation of extrajudicial procedures for the settlement of disputes in civil and commercial matters so as to simplify and improve access to justice.” Furthermore, the

Directive encourages the Member States "by any means which they consider appropriate, the availability to the general public, in particular on the Internet, of information on how to contact mediators and organizations providing mediation services." [3]

Among the contributions to this volume, Arno R. Lodder presents the tasks done so far by the CEN/ISSS Workshop on Standardization of Online Dispute Resolution Tools (WS/Stand-ODR), set in October 2007 with the goal to specify the guidelines to facilitate a clearer and easier use of ODR resources to the potential users. Jelle van Veenen and Roberta Regazzoni offer an overview of Rechwijzer and RisolviOnline, two newly started ODR tools from the Dutch Council for Legal Aid and the Milan Chamber of Commerce, respectively. What these tools have in common, precisely, is to make already existing services for dealing with disputes available online by means of friendly, easily accessible user interfaces. From another point of view, John Zeleznikow also suggests principles for the development of Negotiation Support Systems that encourage fairness, transparency, and efficient bargaining. No doubt, these are significant steps towards the gradual adoption of robust, reliable, and user-centered ODR systems able to satisfy the needs of individuals and organizations as regards the management and resolution of their conflicts.

2. Decision and Negotiation Support Systems in ODR

Since the late 1970s, Decision and Negotiation Support Systems (DSS, NSS) have been developed to aid decision makers and also support complex negotiation tasks. In a comprehensive historical overview, Kersten and Lai examine the field of negotiation and e-negotiation systems through the discussion of their types, architectures, and software applications [4]. Kersten and Lai propose to distinguish between two generations of negotiation systems: (1) NSSs designed for a stand-alone computer or a local-area network (typically before mid 1990s); and (2) ENSs systems which use Internet technologies and are deployed on the Web [4]. The long-standing use of NSS has also resulted in well-grounded empirical research on typologies of bargaining steps [5], models of scenarios of human negotiations [6], users' assessment of NSS [7], or attitudes towards online mediation [8].

The contribution of both DSS and NSS to the development of ODR is unquestionable but, conversely, the principles, requirements and goals of ODR services also provide the development of new DSS and NSS with a practical, use-centered agenda. This is clear for business issues and e-commerce [9] but also a reality in other domains such as family law and insurance. In this volume, Abrahams and Zeleznikow offer an overview of recent work on development of multi-agent architectures to improve both DSS and NSS as part of integrated ODR environments dealing with Australian family law. Muecke, Stranieri and Miller present Re-Consider, an Australian family law ODR system that models judicial decisions with Bayesian belief networks to provide disputants with decision support in their disputes.

Ultimately, among the major challenges for DSS and NSS are how to address the needs of ever-growing Internet communities using the Web as default environment to negotiate, manage and resolve their conflicting issues. To quote Kersten and Lai:

> In order to have a more systematic and productive progress of ENS usage, which can result in positive impacts on negotiation activities in the Internet age, it is

necessary to build a research framework which can serve as a foundation for studying and comparing various ENSs, comparing different experimental results and conducting comparative studies in market mechanisms and the use of negotiation models in conflict management [4].

3. ODR and the Web 2.0

As Hendler *et al*. have recently put it "the Web is part of a wider system of human interaction; it has profoundly affected society, with each emerging wave creating new challenges and opportunities in making information more available to wider sectors of the population than ever before." [10]. At present, Web 2.0 is riding the crest of the wave. According to Tim O'Reilly, who first coined the notion, one of the chief rules of Web 2.0 is to "build applications that harness network effects to get better the more people use them" [11].

As regards ODR applications, there is still an enormous territory to explore. Yet, some experts have warned either that "too many ODR providers rely on outdated platforms and technology because they are reluctant to make the investments in time and resources needed to bring their platforms up to Web 2.0 standards" [12] or that Web 2.0 may face unwanted consequences,

> [T]he most obvious being that ODR itself may cease to exist. With the ubiquity of broadband wired and wireless connectivity, the ability to roll-out dispute resolution service online is possibly going to be seen as a normal service provision of ADR service providers, just like automated online tech support is now part and parcel of customer support mechanisms of many large software companies. [13]

Nevertheless, the same experts warning about ODR lagging behind the curve of Web 2.0 technological development already suggest possible paths to follow. In this line, Rule also predicts that "ODR will be one of the biggest beneficiaries of these new technologies, because they are squarely aimed at ODR's core functionality areas: communication, collaboration, and interactivity" [12]. Hattotuwa, having used maps to plot election violence and the existence of high security zones that contravene international law in Sri Lanka, considers "the use of free, web based map mash-ups for ODR, particularly for land/territorial disputes and those that are based on natural resources, demography and ethnic composition" [13].

But Web 2.0 is also known as "the social Web" insofar it breeds an ever-growing number of online communities that share all types of contents (documents, images, videos, music, etc.). And, in addition to contents, the social Web already offers examples of communities that share knowledge and expertise in a number of areas: business (InnoCentive), science (Rosetta@home) journalism (Spot.Us), politics (MoveOn), education (WikiEducator), health (CureTogether), etc. Similarly, forums and social networks store numerous records of "How-Tos" and "question-answer" pairs that may be conceptualized and interpreted as problems linked to proposed solutions. How ODR can benefit from collective, distributed, bottom-up knowledge on how to manage and resolve different types of disputes? Most likely, to answer this question we

will need to go a step further an consider the technological developments of the new Web generation, the Semantic Web.

4. ODR and the Semantic Web

In a visionary article, Berners Lee *et al*. envisaged an extension of the Web "in which information is given well-defined meaning, better enabling computers and people to work in cooperation" [14]. While we are still some way from achieving this vision, in the last recent years Semantic Web technologies have come to the fore bringing an extended research agenda. As the World Wide Web Consortium (W3C) puts it:

> Semantic Web technologies can be used in a variety of application areas; for example: in data integration, whereby data in various locations and various formats can be integrated in one, seamless application; in resource discovery and classification to provide better, domain specific search engine capabilities; in cataloging for describing the content and content relationships available at a particular Web site, page, or digital library; by intelligent software agents to facilitate knowledge sharing and exchange; in content rating; in describing collections of pages that represent a single logical "document"; for describing intellectual property rights of Web pages (see, e.g., the Creative Commons), and in many others [15].

The variety of applications makes the current Semantic Web "a set of semantic islands" that will only be bridged if people share ontologies and facilitates scalable mappings between them [16]. Ontologies and ontology mappings, nevertheless, are not the only ways to achieve the objectives of the Semantic Web. Recent trends in Semantic Web research propose that the top-down approach based on formal ontologies can be enriched with a bottom-up, semantic structuring of Web contents based on folksonomies [17, 18]. As it is well-known, folksonomies arise when different communities of users assign keywords or tags to webs, blogs, wikis, articles, stories, pictures, videos or other ever-growing information sources. To borrow Tom Gruber's words, "tags introduce distributed human intelligence into the system" [17]. Folksonomies can therefore be seen as metadata applied to unstructured people's experiences scattered in the Web. To some extent, they can also be approached as lightweight shallow ontologies emerging in specific communities of practice where users "tag" some content objects [18]. In this line, the analysis of folksonomies by using different Web mining processes over Web communities (ranging from open forums to specialized services such as Questions-Answers websites) can be applied to harvest and organize knowledge from a bottom-up perspective.

Again, ODR may unlock its full potential by adopting state-of-the art Semantic Web technologies. On the one hand, top-down ontologies would allow ODR service providers to create broader infrastructures and platforms to enable the ODR field to interoperate in an ecosystem of information and data sources, services and agents (individuals, communities, organizations, institutions, etc.). In this volume, Stolarski *et al*. use ontology alignment formalisms to come up with a formal description of legal interpretations in the domain of risk management.

On the other hand, the analysis of folksonomies by using different Web mining methodologies targeting different Web communities (which may range from open forums to blogs, wikis, or specialized services such as Questions-Answers or How-Tos websites) can be applied to harvest and organize both information and knowledge on different typologies of conflicts and disputes from a complementary, bottom-up perspective.

Eventually, in what this new vision of ODR may consist of? Much empirical research is needed to provide an accurate, more detailed account. Nevertheless, it seems reasonable at this point to state that keeping pace with the technological innovations that are so utterly transforming the Web will also bring to a new ODR paradigm in which the center will be neither the online component nor the disputes to be resolved, but the individual people, communities, organizations, and institutions that have to deal with disputes and conflicts and will use the Web to manage and get them resolved in a more effective, efficient, and inexpensive way. This will bring to a new vision on how disputes may be managed and resolved in the information society. This is a vision that not only transforms the field of ODR, but also the very essence of justice and law by making them more horizontal. In sum, a paradigm of relational justice and law [19, 20].

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