

Mobile Technology and Consumer Empowerment: An Application for Online Consumer Mediation in Catalonia (Geoconsum)

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Abstract

Today, courts proceedings remain complex and expensive for consumers. Alternative Dispute Resolution (ADR) and Online Dispute Resolution (ODR) are means of consumer redress. Nevertheless, they have not achieved its full potential, partly due to the lack of consumer awareness. Currently, there are different legislative initiatives at the EU level devoted to improving consumer empowerment as well as, more particularly, ADR and ODR. Moreover, Information technology (IT) devices such as smartphones are improving consumers' access to information and they may contribute to empowering consumers and giving them better access to justice. Further to this contextual framework, this article presents Geoconsum, an open source mobile application that contains a database on consumer mediation entities and a compendium of consumer legislation applicable in Catalonia. In the near future, this application may be integrated with an online mediation platform. This article shows the databases' methodology and implementing process. Furthermore, it shows the mobile application functionalities and the search and retrieval capabilities, based on parameterised searches as well as on geolocation technology. The device also works as a mapping service application since it offers a route planner to access the nearest consumer mediation entity.

Keywords: consumers, mediation, online mediation, Alternative Dispute Resolution (ADR), Online Dispute Resolution (ODR), legal databases, Consumer Law, mobile applications

1. Introduction: Online Mediation and consumer empowerment

More than one out of five European consumers encountered a problem with a good or service in the internal market in the last year. ^[2] However, when that happens, consumers do not usually access to courts. It is well known that court proceedings entail some complexities and costs that make this sort of access to justice unbearable for consumers. ^[3] In this scenario, Alternative Dispute Resolution (ADR) such as mediation and arbitration and Online Dispute Resolution (ODR) remain as sources of consumer redress. In Catalonia, the White Book on Mediation in Catalonia (WBMC) has shown that mediation, as a consensual method of dispute resolution, appears to be particularly suitable to manage and solve consumer disputes. ^[4] A mediation process is a structured process characterised by the intervention of an impartial third person, who does not impose a solution, but puts his efforts in assisting the parties so that they solve the conflict by themselves. ^[5]

In Spain, the Consumer Arbitration Scheme sets up a mediation procedure as the first and previous phase that parties may try before the dispute escalates into an institutional consumer arbitration process. ^[6] The WBMC has also shown that mediation in the consumer domain has gained a conceptual and practical autonomy from arbitration over the past years. ^[7] Specifically in Catalonia, there are several public entities

offering consumer mediation services, considered as consumer public services by the Consumer Code. [8] These entities include the Catalan Consumer Agency (*Agència Catalana del Consum* (ACC)), the Arbitration Consumer Boards, the local (OMICs) and supra local (OCICs) consumer information offices, the European Unit at the Catalan Consumer Agency and the local Arbitration Consumer Boards. [9][10][11] [12] In addition, private bodies such as consumer organisations also provide mediation services to their members. [13] Only in 2008, those bodies undertook more than thirty thousand consumer mediation services in the field. [14] Moreover, in 2011 the Catalan Consumer Agency handled almost 14,000 consumer complaints. Yet, more than a quarter of those complaints were satisfactorily solved by a consumer mediation process. [15]

In Catalonia, the vast majority of institutional consumer mediations are undertaken by distance communication means, even if by basic means such as emails and telephones. [16] Yet, those bodies do not fully benefit from Information Technologies (IT). [17] Further to basic emails or SMS, other communication means may be employed such as electronic boards or videoconferences. Empirical research has shown that consumer mediation bodies do not employ any Web 2.0 tools such as blogs or wikis, either Web 3.0 or semantic devices. [18] An online mediation is a structured process which is mainly assisted by the Internet and other IT devices. When a consumer mediation process is automated in some degree, IT may implement diverse functionalities. Typically, in an online mediation platform, IT may monitor the sequences of the process and organise the participation of the parties in a standardised workflow, or it may automatically generate communication messages to the parties. Moreover, it may present documents to the parties in structured forms and it may help register the cases and allow the storage and retrieval of information. [19]

Even if consumer mediation is widely used, it is far from achieving its full potential. According to European surveys, only 3% of Europeans whose complaint with the seller or provider was resolved unsatisfactorily brings the matter to an arbitration, mediation or conciliation body. [20] Consumer awareness of ADR methods is very limited; consumers neither have an easy access to detailed information on ADR procedures, nor have information about the use, the number of cases and the past performance of the ADR scheme. [21] In fact, the European Parliament has recognised that 'only a small percentage of citizens know (...) how to file a complaint with an ADR entity'. [22] Moreover, in Spain, consumers are almost at the bottom of Europe as regards knowledge of consumer associations and public agencies: more than 50% of Spanish consumers do not know any public authority or consumer organisations. [23] Consequently, the lack of consumer awareness of mediation and other means of redress is still a barrier that needs to be overcome.

From a legislative point of view, the European institutions are tackling some of these challenges by strengthening and empowering consumers in Europe in the internal market, either by defining common rules for ADR entities and procedures or by providing rules on consumer empowerment. Thus, the proposal of a Directive on ADR for consumer disputes aims at developing a well-functioning ADR system within the Union. [24] Therefore, online and offline consumer mediation mechanisms will be required to comply with the principles and rules enshrined by the future Directive. [25] Moreover, the Proposal of a Regulation on consumer ODR aims at establishing an EU-wide ODR platform for cross-border e-commerce transactions, which will offer a single point of entry to consumers and traders who seek to resolve out-of-court a dispute that has arisen from a cross-border e-commerce transaction. [26]

More generally, the European institutions have linked the empowerment of consumers to the provision of information to consumers as well as to their capability to seek redress when necessary. In this regard, the EU Consumer Policy Strategy 2007-2013 believes that with the empowerment, 'consumers make optimal decisions, by understanding their own preferences and the choices available to them. They know their rights, recognise when these have been breached and if so, complain and seek redress when necessary.' [27] For years, Consumer Law has introduced the provision of information in order to counterbalance the relations between consumers and traders, and therefore, to protect consumers. [28] Traditionally, it has been understood that consumers have less information than traders. As a result, consumers have difficulties in making realistic expectations and decisions that reflect their preferences, which it may increase harm. [29] Today, some studies suggest that consumers may not always respond to information provided as rationally as it may be assumed, or that those who take advantage of information are likely to be affluent, well-educated middle class consumers. [30] Nevertheless, as the European Parliament has recognised, providing consumers with accurate and clear information on how they may access an ADR body is of the utmost importance. [31] Therefore, the provision of information takes a leading role in order to enhance consumer protection. [32] Further to the legislative spheres, it is worthwhile to note that technology may also contribute to overcoming the lack of consumer awareness on ADR. As it will be shown in Section 3, information technology devices such as smartphones are improving consumers' access to information and

data. Therefore, they may contribute to providing better public services to consumers, [33] and giving them a greater access to justice. [34]

2. Objectives

This article shows the research undertaken in order to design and implement Geoconsum. [35] It provides both a conceptual framework and some tangible results in the form of a mobile application. Particularly, it shows the research carried out with two consumer related databases. Geoconsum may be of assistance before the conflict begins, as a tool for dispute avoidance or dispute prevention, [36] but especially when the conflict has already started. When this happens, Geoconsum may provide an immediate contact tool with consumer mediation entities.

The research undertaken with Geoconsum follows a line of research at the UAB Institute of Law and Technology which aims at analysing IT with relational justice means, specifically mediation in the consumer domain. [37] In particular, the WBMC aimed at both analyzing mediation activities and needs in Catalonia, as well as fostering mediation throughout the territory in its several domains of scope. The consumer chapter of the WBMC represents a deep and systematic approach and analysis of real data consumer mediation. [38] Moreover, chapter sixteen is devoted to studying the uses of technology in mediation services in the context of ODR. [39] It is interesting to note that this chapter proposes some recommendations such as the promotion and implementation of ODR, particularly in the consumer domain. [40] Moreover, the Ontomedia projects aimed at providing a semantic platform which it would allow users and ODR professionals to meet in a community-driven web portal where content are provided by users. [41] Finally, the on-going Consumedia project aims at implementing an online mediation platform. [42] This platform will implement a mediation room with diverse communication tools such as chats, electronic boards, videoconference, and audio conference by which mediators will be able to conduct private caucuses or joint sessions. In the near future, the application presented in this article might connect consumers with the online mediation platform, and thus Geoconsum may become the platform's mobile gateway. The research conducted under these projects as well as with Geoconsum suggests that, thanks to technology, consumers may be provided a modest, appropriate and low-cost device to facilitate the resolution of conflicts in the consumer domain.

Further to Section 1 that introduces consumer empowerment and online consumer mediation, Section 3 recalls that technology may also improve consumers' access to legal information and it addresses some relevant issues concerning legal information databases and information retrieval. Section 4 and 5 are particularly focused on the application. Section 4 focuses on the databases on consumer mediation entities and consumer legislation. Section 4.1 addresses the methodology employed to elaborate the databases whereas section 4.2 exposes some challenges that have had to be solved. Section 4.3 addresses the content of those databases and provides some quantitative data. Then, section 5 focuses on the mobile app functionalities. Finally, Section 6 points out some conclusions and further work.

3. IT and consumers' access to legal information

Today, the Internet and other information technologies (IT) have changed the accessibility of information to consumers. A vast amount of information is available in a digital format. As regards public sector information, Directive 2003/98/EC has established a European legislative framework regulating how public sector bodies should make their information available for reuse. In particular, it promotes the re-use of official texts of legislation and other administrative documents. [43] Pillar VII of the Digital Agenda for Europe, titled ICT for social challenges focuses on ICT's capability to deliver better public services. [44] Indeed, public sector information is an important primary material for added-value, digital content products and services that have a large unexploited potential, both economic and social. [45] The design of tools to make such access possible may also, in turn help professionals in their tasks and consumers, in their demand for public information. [46]

In 2012, the Free Access to Law Movement, represented under the World Legal Information Institute (World LII) celebrates the 20th anniversary of the first legal information institute. [47] The *Montreal Declaration* established the main principles of the Free Access to Law Movement. [48] This Declaration considers that public legal information 'is digital common property and should be accessible to all on a non-

profit basis and free of charge'. [49] It also promotes and supports 'free access to public legal information throughout the world, principally via the Internet' and recognizes the 'primary role of local initiatives in free access publishing of their own national legal information.' [50] In fact, as it has been put up, 'the LII Movement is a basis for a major worldwide transformation in access to justice for lawyers and the general public.' [51]

In the latest years, there have grown up a number of initiatives involving the use of mobile technologies in several domains such as the citizens' participation, public awareness, management of emergencies and crisis, or the provision of public services and information. [52] Indeed, mobile penetration has grown dramatically over the past decade, and it seems that services attached to mobile devices will increase accordingly: only in 2010 mobile broadband, as measured by the number of data cards, grew 71% in Spain. [53] In addition, some striking information foresees that mobile phones could outnumber humans by the end of 2012. [54] Indeed, mobiles are portable, durable, basic and relatively low-cost whereas they employ easy-to-use technology and have far-reaching functionalities. [55] These characteristics suggest that mobile devices may be particularly appropriate for empowering consumers by providing better information access and better access to justice. [56] For instance, the European Commission has recently launched Your Passenger Rights, a mobile app which provides information on passenger rights. [57] In Canada, a new free mobile app gives greater access to justice to Canadians by providing information on legislation and case law. [58]

Furthermore, some legal information databases are today being built up with collaborative or crowd sourcing efforts. The notion of crowd sourcing refers to the outsourcing of a task to 'an undefined and generally large group of people in the form of an open call'. [59] A large group of people submitting information through text messaging using a mobile phone, web forms or simple emails may be very helpful in building devices devoted to public awareness or public services provision. [60] For instance, the Constitution Explorer Project at Stanford University aims at tagging national constitutions of the world, by theme. Thanks to the collaborative effort of many students, a set of categories will feed a constitutions' database, which will enable people to compare other countries' constitutions. [61] Collaborative efforts may also be seen in consumer-dedicated web portals where content is provided by consumers. [62]

It is obvious that consumers are not experts in Law, and sometimes the understanding of either how legal databases work or legal jargon may be difficult for them. Since commercial legal databases are designed primarily to people who traditionally use legal texts, some studies suggest that even professionals that are not trained in Law find current online legal databases difficult to use, or harder to use than legal experts. [63] The Add-Wijzer project, co-financed under the e-Content programme, was set up to investigate ways to improve the usage of law information by business professionals who are not trained in law, in particular by combining public sector information from different sectors. [64] Moreover, some literature has studied the relevance of domain expertise and expert mental grouping as regards the end-user acceptance and willingness to online information systems, again when end-users are not experts in law. [65] Other scholars have supported the effects of expertise on information retrieval with implications for the design of systems to support the use of information. [66] It seems interesting to note the current relevance of visualization of information and data geolocation. The referred Add-Wijzer project introduced GIS objects (geographical information system objects) to deal with legal instruments. [67] Similarly, another European project developed a Legal Atlas where normative texts and geo-information were represented on maps. [68] In any case, it is common that consumer protecting bodies provide, in addition to a compendium of legislation, different assistance facilities that may help consumers understand the content of the law. These may include information services and tools such as frequently asked questions (FAQ) repositories with direct answers to eventual problems or 'consumer tips'. [69]

The process of obtaining legal documents from a search on an online database of a legal service provider is referred to as legal text retrieval. [70] Most legal database providers still use conventional search engines such as simple key word search or Boolean searches. These search engines require users to formulate strict queries to tie together individual words or phrases that form the search query, and only return those results that fulfil all the criteria defined by the query. [71] For instance, when an end-user asks for regulations containing the word 'car', the search engine might not search for statutes containing the word 'vehicle'. Thus, the use of keyword-based search engines poses some shortcomings such as the lack of understanding of synonym concepts or orthographic misspellings. Today, the development of semantic search engines is an area of research which tries to solve some of these problems. [72] Thanks to semantics, search engines may be able to use conceptual information retrieval, where the results can be clustered by meaning. [73] In this

domain, it could be said that many scientists are today putting their efforts in closing what R. Susskind names the technological lag. According to R. Susskind:

'Data processing is our use of technology to capture, distribute, reproduce, and disseminate information. We have become extremely adept at this. (...) But now, knowledge processing is coming to the rescue. This is a set of technologies that helps us analyse, sift through, and sort out the mountains of data that we have created and helps make them more manageable. Data processing has advanced well ahead of knowledge processing, but the gap between the two, the technology lag, is going to close. When it closes, we will be fully in the information society.' [74]

4. Consumer Databases in Geoconsum

4.1 Methodology for the database elaboration

Geoconsum has been developed in parallel with different research projects in the field of IT and relational justice mechanisms. [75] In particular, it has benefited from synergies from research projects dealing with consumer mediation and ODR. [76] The WBMC posed that consumers have a lack of information as regards consumer protection entities and the mediation process. [77] When a problem arises consumers usually do not know what entity could address to in order to seek for advice. Moreover, mediation bodies in Catalonia do not fully benefit from IT for either assisting consumers with ADR or improving consumers' access to information, such as with mobile applications. Thus, Geoconsum aimed at creating a mobile device which would empower consumers in Catalonia and give them greater access to justice by providing information and immediate contact to consumer mediation entities and by offering information on consumer legislation.

Research for setting up the content of the databases was initiated in 2010 and finished in July 2011. The information was manually searched for, extracted and classified from a variety of resources. There are various public consumer information sources mainly available on the web such as the Spanish Consumer National Institute's database or the Catalan Consumer Agency website. [78] [79] The Institute of European and Comparative Civil Law at the University of Girona provides a database on Catalan civil legislation. [80] Other consumer protecting bodies such as OMICS/OCICS or consumer associations may also provide digital information on various consumer-related issues, although their relevance varies a great deal among them. [81][82] The initial steps of the database research period identified two main subdomains. On the one hand, the application aimed at being a compendium of normative instruments applicable to consumers in Catalonia. These instruments were differentiated according to its binding and non-binding nature (identifying hard and soft law instruments, respectively). Moreover, according to the Spanish distribution of competences between the central State and the Autonomous Communities (regions) in the consumer domain, a further classification was adopted as to identify Spanish, national normative instruments and Catalan normative instruments. On the other hand, the second subdomain was related to consumer entities providing consumer mediation services. The WBMC showed that there is currently a wide array of public and private entities providing different kinds of services to consumers, ranging from information to mediation and arbitration services. [83] The application would provide a user-friendly and efficient way to access all those entities that are spread out in Catalonia.

The project involved a group of undergraduate students from the UAB Law School who helped collect information. Initially, a web-based document was used to collect a selection of regional consumer legislation instruments and consumer mediation entities. This allowed users to edit the document online in real time with other users. The document included information and contact details such as addresses, web pages, email contacts and telephone numbers of all consumer mediation bodies in Spain. [84] Another web-based document was used with the aim of covering national legislation and information covering the whole territory of Spain. Finally, another document identified instruments of European consumer legislation.

4.2 Challenges faced in the process of implementing the database

4.2.1 Challenges in the legislation set

As regards the legislation set implementation, some challenges were faced. The first and main concern was of a conceptual nature and was related to the concept of Consumer Law or, in other words, to the question of how many acts covering how many areas should be included in the database. Indeed, 'it is not possible neither even of use to work on a precise delimitation of Consumer Law (...) Legal disciplines such as Consumer Law do not have clear-cut borders drawn in straight lines,' as Calais-Auloy and Temple have put it. [85] In particular, the boundaries of Consumer Law may go beyond the private scene and enter into other branches of law, including public or administrative spheres. [86] There are already some compilations of Catalan and Spanish Consumer Law. [87] [88] Although they are not up-to-date, they have been of use as to determining the scope of the database.

According to Calais-Aloy and Temple, a core concept of Consumer Law encompasses two cumulative requirements: legal rules that are defined by the relationship between traders and consumers, and rules that are enshrined by their consumer-protecting element, that is, rules that are devoted to counterbalance the disproportion between those actors. [89] Additionally, Consumer Law may also be extended to some rules that are mainly, even if not exclusively, applicable to consumers. [90] According to this view, Geoconsum's legislation compendium has been implemented with normative instruments that follow the cumulative requirement, and it also includes some normative acts that are mainly applicable to the Business to Consumer (B2C) relationship. [91] Furthermore, Geoconsum also includes other normative instruments that are particularly relevant such as air transport regulations or personal data protection. [92]

The database also covers a selection of EU normative acts in the field of Consumer Law. [93] Consumer Law in Europe is a fragmented area, even though the EC Directive on consumer rights has tried to clarify this scenario. [94] Well-established principles of EC Law such as the principle of primacy of EC Law or the duty for national courts of interpretation of national Law in conformity with EC Law indicate that national consumer laws must always have a look at European Law. [95] Another challenge was related to the Spanish distribution of competences between the State and the Autonomous Communities in the consumer field. In Catalonia, the Catalan legislative and executive bodies have exclusive powers in matters of consumer affairs. [96] The central State has also exclusive powers in some matters related to consumer affairs. [97] As a consequence, the consumer domain in Spain represents a crossroad of centralized and decentralized levels of legislation. Furthermore, consumer Law is made up of mandatory rules that impose rights and obligations to consumers and traders. In addition, this field is also affected by different instruments of self-regulation and co-regulation such as codes of conduct, guidelines, good practices and other soft law instruments. [98] Some of these instruments are included in the database. [99]

Finally, another concern related to determine only existing legal instruments. In fact, since Consumer Law has had an extraordinary and chaotic development, getting to know those acts is not an easy task: further to the different levels of legislative jurisdiction (European, State and Autonomous Communities), legislation in this field varies considerably and may suffer quite often several changes. [100] Thus, as concerns the activities undertaken in the legislation subdomain, a revising phase was undertaken in order to introduce current normative instruments and discard repealed instruments.

4.2.2 Challenges in the consumer mediation entities set

One of the main challenges of creating a consumer mediation bodies' database in Catalonia was the heteronomy and territorial dispersion of those bodies. In addition, trying to put all the information together, classifying it and having contact details of all these bodies and institutions was a demanding task. The different types of entities are classified and stored in the database, which contains contact information such as addresses, emails, telephones and web pages. Moreover, the longitude and latitude of those entities (GPS position) is also stored.

4.3 Database Content

4.3.1 Content in the legislation set

The overall amount of legislation displayed in the database includes a total of one hundred and twenty-one legislative acts, twenty-eight acts of European nature, forty-five acts from the legislative and executive powers in Catalonia and forty-eight national instruments. The database includes one hundred and ten binding normative instruments and eleven non-binding instruments. As for the first category, at European level twenty EC Directives and six EC Regulations are included. Moreover, there are forty-five Acts, fifteen Royal Decrees, nineteen Decrees and two Legislative Decrees. There are also three Ministerial Orders. As for the non-binding instruments, the database finally reports eight Codes of Conduct and three Recommendations. This information is shown in Figure 1.

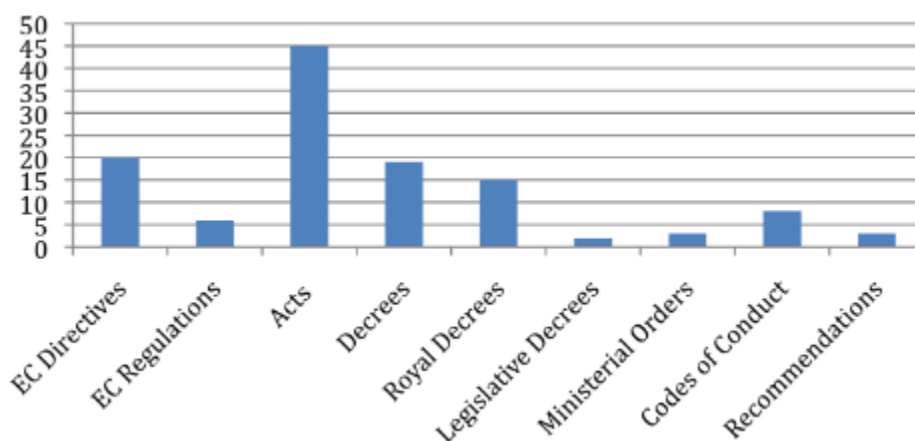


Figure 1: Number and type of normative instruments included in Geoconsum.

4.3.2 Content in the consumer mediation entities set

As regards the subdomain on consumer entities, the database contains details about a hundred and fifty consumer mediation bodies. This number includes the Catalan Consumer Agency (ACC) and one hundred and three local (OMICs) and supra-local (OCICs) bodies of consumer mediation. It also includes fourteen arbitration boards which encompass several delegations of the Catalan Consumer Arbitration Boards and the local Arbitration Boards. Finally, the database provides information and contact details of thirty-two consumer associations in Catalonia. In total, the database provides contact details of consumer protection bodies in ninety-six cities, towns and villages.

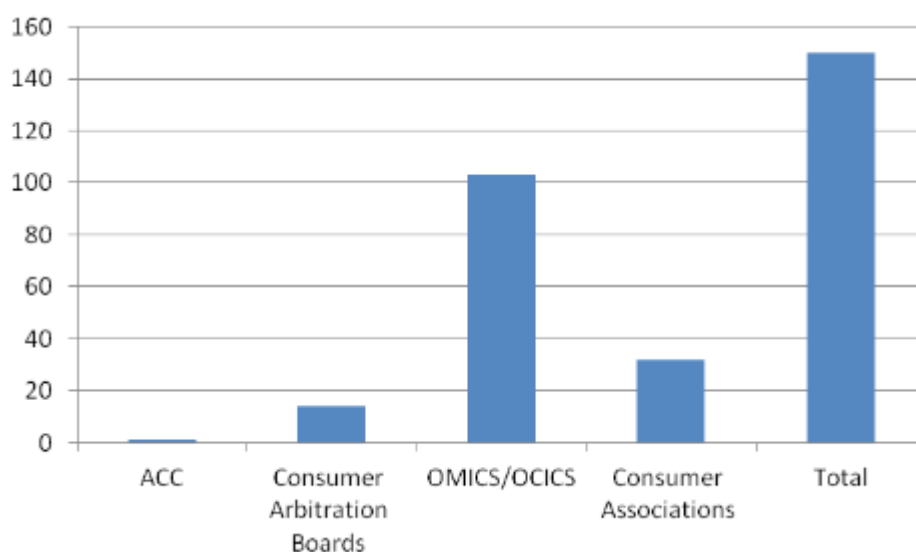


Figure 2 reports the total number of entities included in the database and its classification

5. The Mobile App functionalities

Geoconsum is devised to Android OS devices, although it will be later implemented in other operative systems, such as Windows Phone and IOS (Apple). It has been designed with a user-friendly interface, a basic and appropriate technology. For instance, the application uses android user interface elements such as spinners or bottoms. Moreover, the lay out adapts to the different size of tablets or smartphones .

The application incorporates sensors that smartphones usually use. [101] For one thing, it has a GPS (Global Positioning System) sensor that provides location awareness functionalities. Accordingly, end-users may be routed to the nearest consumer protection offices. Furthermore, Geoconsum runs as a standalone application. This means that some components of the client interface, such as screens and forms, are not sent from the server platform to the interface in every interaction. Moreover, some user data can be stored into the smartphone memory. These features are valuable in mobile devices to save battery and bandwidth usage. [102] End-users may install this application free of cost into their smartphones or tablet computers from the research centre's web page as well as from the Google Play Store. [103] [104] The software code is open source, so that any consumer entity can take advantage of it and use it to build other tools customized to its needs. [105] The interface is a search form that can initiate a search and generate results both of i) consumer mediation entities, and, of ii) consumer legislation.

As for the entities subdomain, the application shows results either by a geolocation tool or an advanced search engine, based on preset parameters. In the first case, the application displays a list of the nearest consumer entities through a GPS. The proximity parameter shows a 10 km's distance, although users are able to modify this parameter. Once the end-user clicks on one of the offices, the application initiates a Google Maps API in order to display a route planner to that entity. In the second case, the search engine enables consumers to perform a search between parameterised data, based on the type of entity or the location. The application may also generate a general search of entities. Consequently, Geoconsum may initiate a general search of entities operating in Catalonia, or it may initiate a more precise search of entities located in a particular province, city or village.

When the end-user has chosen an entity, the application displays its different contact details. Thus, the end-user may click on individual items such as the telephone number, electronic mail, website or localisation request on the map. Consequently, the application performs the corresponding action; that is initiating a phone call or opening an email form which can be sent to the entity's electronic recipient. It can also access the entity's website by opening a link in a web browser or show its localisation in Google Maps. Based on GPS parameters, the application calculates the distance to the nearest entities and offers a route planner to the chosen entity.

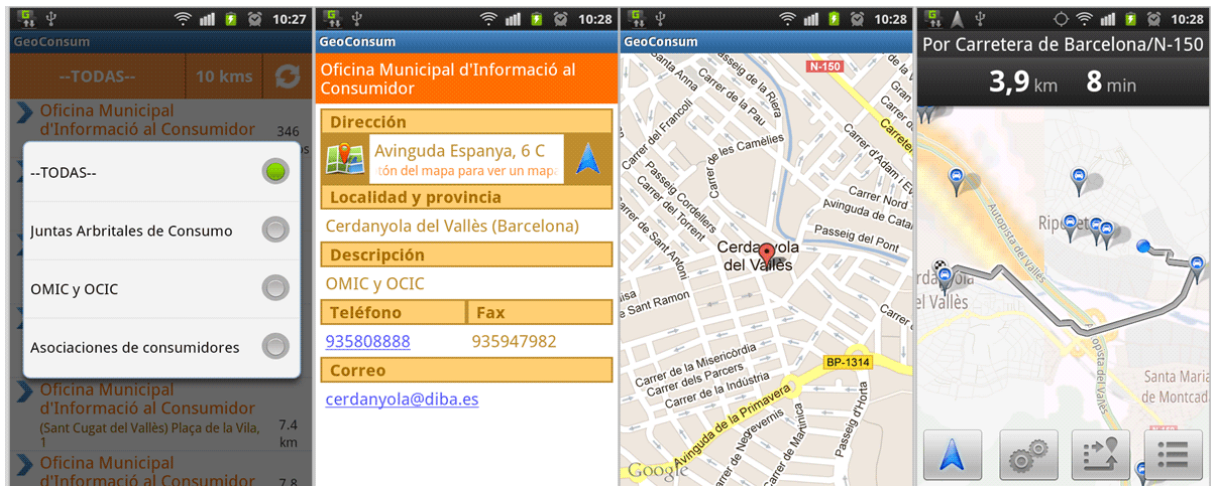


Figure 3: Search of consumer mediation entities in Geoconsum.

The application also informs consumers about the fact that they should first claim to the provider of the goods or services, and only address the consumer mediation service once the claim with the enterprise has not been resolved satisfactorily. In addition, the application informs that consumers should address to the consumer public service of their domicile; and if there is no office in their domicile, they should address to the competent supra-local office. [106] As regards the legislation subdomain, there are different search and retrieval options. First, the application implements a search by key words where end-users can perform a search by using key words in text or by audio. The application employs automatic speech recognition by Google. Moreover, the app has an advanced search, where end-users can perform a search by parameterised data. This advanced search includes the search by the level of legislation (European, Spanish, Catalan), by the binding and non-binding nature, or by the type of normative instrument (such as Acts, Decrees, Ministerial Order etc).

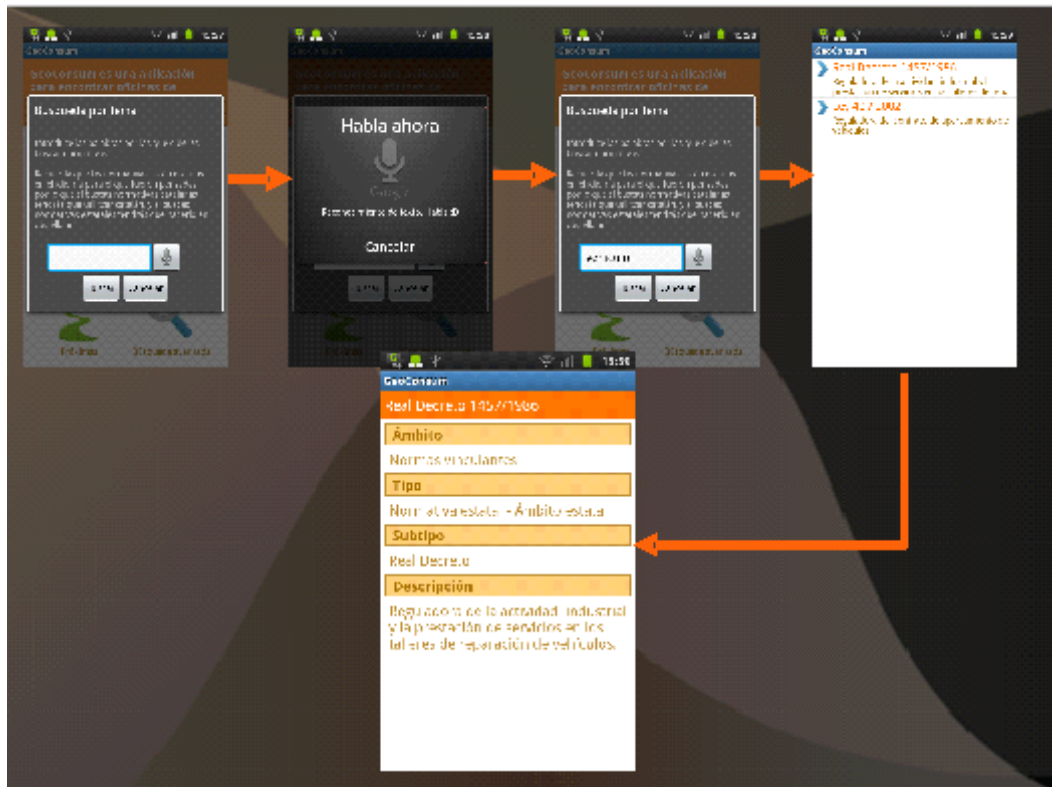


Figure 4: Geoconsum legislation search

6. Conclusions and further work

It is well known that when consumers have a problem with a product or a service they do not make use of courts, since court proceedings are expensive and complex. In this scenario, ADR and ODR mechanisms such as mediation remain as sources of consumer redress. However, European surveys show that consumers are not particularly aware of these methods of redress. Moreover, empirical research has showed that consumer mediation bodies do not make full use of existing IT devices which could enhance consumer protection. In order to solve the lack of consumer awareness on ADR means, the European legislature has put some efforts in both setting out some rules on ADR/ODR as well as providing consumer empowerment rules through improving consumer information. Beyond a legislative approach, this article has focused on the role that technology in general, and mobile technology, in particular, may have in providing better public services and giving better access to justice to consumers by improving access to information. The enormous growth of mobile penetration worldwide and some of the mobile device's characteristics such as its portability, durability and relatively low-cost suggest that mobiles are particularly suitable to providing information to consumers. In particular, this article has presented an open source mobile device that has been fully implemented at the UAB-Institute of Law and Technology; that is from the design of the databases' content to the final implementation of the mobile app by mobile software engineers. Geoconsum has benefited from some research projects in the field of Law and Technology which aim at providing relational justice means for consumers, in specific through mediation. Geoconsum aims at empowering consumers that may seek redress mechanisms and may need to initiate a mediation process. Moreover, in the near future it may become a mobile gateway of an online mediation platform. [\[107\]](#)

Geoconsum offers information and full contact details regarding consumer mediation bodies. In short, it presents a wide and heterogeneous contact list of consumer mediation entities from both the public and private sphere. In total, the database provides details of hundred and fifty consumer mediation entities covering ninety-six Catalan villages, towns and cities. Second, it also offers a search and full text retrieval option for consumer Law in Catalonia, encompassing legislation from the European Union, Spanish normative instruments, and normative instruments from the Catalan legislative and executive powers. In order to determine the scope of the legislation compendium, a conceptual exercise has been followed as regards what Consumer Law is, and what normative acts it should encompass. In total, Geoconsum offers a hundred and ten binding instruments and eleven non-binding instruments in the scope of Consumer Law.

Geoconsum has been implemented as a user-friendly, appropriate tool, a familiar application to consumers. [\[108\]](#) Its advanced search engine includes keyword-based text search and automatic speech recognition as well as geolocation technology. The software code is open source, so consumer entities may freely use it or customise it to their needs. It is hoped that Geoconsum may encourage other consumer bodies into developing mobile technologies for providing better public services to citizens.

Without doubt, this application can be improved. This is the first version of the application and further updates may be required. Among other things, it would be valuable to put efforts to implement a semantic capability in the search and retrieval engine. Indeed, this functionality would solve current general problems in key word-based search information engines such as the lack of synonym detection or of typographic errors. Additionally, helping consumers understand and make use of the returned legal documents remains another interesting line of research. [\[109\]](#) For instance, the legal information set could be further classified according to different topics, and it could be added a FAQ repository written in plain language. Moreover, thanks to the integration with the future online mediation platform, Geoconsum could also manage electronic complaints or assess a mediation process. In addition, other valuable functions could be added such as physically locating and storing the conflict in the smartphone, or taking a picture of a product and storing it in the platform's conflict management tool. Nevertheless, as of today it is hoped that, beyond complex software engines, a basic and easy-to-use mobile application that consumers may install in their smartphones may contribute, modestly enough, to empowering consumers by providing a better access to justice. [\[110\]](#)

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[2] European Commission, *Special Eurobarometre, Num. 342. Consumer Empowerment* (2011) 169.

[3] In fact, only 3% of European consumers access a court for a consumer relationship. European Commission, *Consumer attitudes towards cross-border trade and consumer protection. Analytical report. (Flash Eurobarometer)* (European Commission EB Series 299, 2011).

[4] See, Barral Viñals I and Suquet Capdevila J, 'La mediación en el ámbito de consumo' in P. Casanovas, J. Magre, M^a E. Lauroba (ed), *Libro Blanco de la mediación en Catalunya* (Departament de Justícia: Generalitat de Catalunya. edn, Huygens 2011).

[5] This definition conforms to the definition of mediation in Directive 52/2008/EC, of the European Parliament and of the Council of 21 May 2008 on certain aspects of mediation in civil and commercial matters (OJ L136/3) as well as with the definition of consumer mediation in the Catalan Consumer Code (article 132-1).

[6] See article 38 of *Real Decreto 231/2008, por el que se regula el sistema arbitral de consumo* (BOE Num. 48, 25-2-2008).

[7] Barral Viñals and Suquet Capdevila, 'La mediación en el ámbito de consumo' 308. See also I. Barral Viñals, 'The online dispute resolution system: E-consumers and individual redress in the EU' in James Devenney and Mel Kenny (eds), *European Consumer Protection, Theory and Practice* (Cambridge University press 2012) 90. Consumer mediation has a succinct regulation in the Catalan Consumer Code (articles 132-1 to 132-3), which was approved by *Llei 22/2010*, of 20 July (BOE Num. 196, 13-08-2010).

[8] Article 126-10 Consumer Code.

[9] The *Junta Arbitral de Consum de Catalunya* has several delegations in Barcelona, Girona, Lleida, Tarragona and Terres de l'Ebre.

[10] OMIC stands for *Oficina Municipal d'Informació al Consumidor* and OCICs stands for *Oficina Comarcal d'Informació al Consumidor*.

[11] The European Consumer Unit at the Catalan Consumer Agency deals with cross-border complaints.

[12] According to *Real Decreto 231/2008*, the so-called *Juntas Arbitrales de Consum* are the administrative bodies entitled to manage the institutional consumer arbitration scheme. They provide technical services, administrative and secretarial support to both parties as to the arbitrators (See article 5 to 11 of *Real Decreto*

231/2008). At the moment, there are local consumer arbitration boards in Barcelona, Badalona, Lleida, Mataró, Sabadell, Terrassa, Vilafranca del Penedès and l'Hospitalet.

[13] See Barral Viñals and Suquet Capdevila, 'La mediación en el ámbito de consumo' 301-370

[14] Barral Viñals and Suquet Capdevila, 'La mediación en el ámbito de consumo' 317

[15] From 2011 to 2012 consumer complaints handled by the Catalan Consumer Agency (CCA) have decreased (11%). From 2009 to 2010, consumer complaints increased more than 4% following a sharp increase of 40.93% in 2009 and of 8 % in 2008. See the 2011 Annual Report, Agència Catalana del Consum, *Balanç d'actuacions de l'Agència Catalana del Consum al 2011* (2012) and the 2010 Annual Report, Agència Catalana del Consum, *Balanç d'actuacions de l'Agència Catalana del Consum al 2010* (2011). These annual reports are available online at the ACC's website <http://www.consum.cat/> (Last accessed 15 July 2012).

[16] Barral Viñals and Suquet Capdevila, 'La mediación en el ámbito de consumo' 358

[17] According to article 51 and *seq.* Real Decreto 231/2008 the Spanish National Consumer Institute (*Instituto Nacional de Consumo*) is developing a consumer arbitration process supported by electronic means. Presently, it is not fully implemented. Accessible at <http://arbitrajedeconsumo.mspsi.es/cyu0.html> (Last accessed 15 July 2012).

[18] Poblet M and others, 'Tecnologías para la mediación en línea, estado del arte, usos y propuestas' in Casanovas, P., J. Magre and M. E. Lauroba (eds), *Libro Blanco de la mediación en Catalunya* (Departament de Justícia: Generalitat de Catalunya edn, Huygens 2011, 980). Also see Poblet M and others, 'ODR, Ontologies, and Web 2.0' (2011) 17(4) *Journal of Universal Computer Science*, Vol 17 N 4 619.

[19] Poblet and others, 'Tecnologías para la mediación en línea, estado del arte, usos y propuestas' 967.

[20] European Commission, 'Consumer attitudes towards cross-border trade and consumer protection. Analytical report. (Flash Eurobarometer)' 45

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[22] European Parliament, Draft Report on the proposal for a directive of the European Parliament and of the Council on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Directive on consumer ADR) ((COM (2012) 0793 -C7-0454/2011-2011/0373 (COD))2012)EP, Draft Report 2011/0373 (COD) p 8.

[23] European Commission, *Special Eurobarometre, Num. 342. Consumer Empowerment.*(2011) 146

[24] See Proposal for a Directive of the European Parliament and of the Council on Alternative Dispute Resolution for Consumer Disputes and Amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Proposal for a Directive on consumer ADR) SEC (2011) 1408.

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[26] Proposal for a Regulation of the European Parliament and of the Council on Online Dispute Resolution for Consume Disputes (Proposal for a Regulation on consumer ODR) SEC (2011) 1408

[27] See Commission of the European Communities *Communication from the Commission to the Council, the European Parliament and the European Economic and the European Economic and Social Committee. EU Consumer Policy strategy 2007-2013. Empowering consumers, enhancing their welfare, effectively protecting them.* (13.3.2007, COM(2007) 99 final. {SEC(2007) 321} {SEC(2007) 322} {SEC(2007) 323}, 2007) 5. Also, see the European Commission. 'Comission Staff Working Paper. Consumer Empowerment in the EU' (2011) Comission Staff Working Paper. Consumer Empowerment in the EU. SEC (2011) 469 final 2

[28] J. Calais-Auloy and H. Temple, *Droit de la consommation* (8e édition edn, Dalloz 2010, 8e édition) 24

[29] Geraint Howells. 'The Potential and Limits of Consumer Empowerment by Information' (2005) 32(3) *Journal of Law and Society* 349-357

- [30] Howells, 'The Potential and Limits of Consumer Empowerment by Information' 349-357. Also see Jan Smits. 'Full Harmonization of Consumer Law? A Critique of the Draft Directive on Consumer Rights' (2010) 1 *European Review of Private Law* 12
- [31] European Parliament *Draft Report on the proposal for a directive of the European Parliament and of the Council on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Directive on consumer ADR)* ((COM (2012) 0793 -C7-0454/2011-2011/0373 (COD)), 2012) 17
- [32] Howells, 'The Potential and Limits of Consumer Empowerment by Information' 352
- [33] Poblet M, 'Rule of Law on the Go: New Developments of Mobile Governance' (2011) 17(3) *Journal of Universal Computer Science*, Vol 17 N 3 498
- [34] From the EC Green Paper on 'Consumer Access to Justice in the Internal Market', the consumers' access to justice includes a wide array of measures aimed at strengthening their rights to redress such as ADR. Commission of the European Communities, *Green Paper. Access of Consumers to Justice and the Settlement of Consumer Disputes in the Internal Market* (COM (93) 576 final1993). See Barral Viñals, 'The online dispute resolution system: E-consumers and individual redress in the EU' 91
- [35] See an earlier version of Geoconsum in J. González-Conejero and others. 'Online Mediation Consumer Tools: Mediapp- Mediweb' (2011) eChallenges e-2011 Conference Proceedings
- [36] This terminology is respectively used by Pablo Cortés, *Online Dispute Resolution for Consumers in the European Union* (Routledge 2011) and Ethan Katsh and Daniel Rainey, 'ODR and Government in a Mobile World' in Marta Poblet (ed) , *Mobile Technologies for Conflict Management. Online Dispute Resolution, Governance, Participation* (Springer 2011) 81.
- [37] UAB-IDT is the Institute of Law and Technology at the Universitat Autònoma de Barcelona. Accessible at <http://idt.uab.es/> (Last accessed 15 July 2012)
- [38] Barral Viñals and Suquet Capdevila, 'La mediación en el ámbito de consumo'. The White Book on Mediation in Catalonia was financed by the Government of Catalonia. To access Catalan and Spanish versions (Conclusions are also in English) please visit: <http://www.llibreblancmediacio.com> (Last accessed 15 July 2012).
- [39] Poblet and others, 'Tecnologías para la mediación en línea, estado del arte, usos y propuestas'
- [40] Pompeu Casanovas, Jaume Magre and M. E. Lauroba, 'Conclusions and Recommendations' in Pompeu Casanovas, Jaume Magre and M. E. Lauroba (eds) , *Libro Blanco de la Mediación en Catalunya*(Departament de Justícia: Generalitat de Catalunya edn, Huygens 2011) 1172
- [41] These research projects are 'ONTOMEDIA. Semantic Web, ontologies and ODR: web services platform for online mediation' financed by the Spanish Ministry of Industry, Tourism and Commerce (CSO2008-005536/SOCI), and ONTOMEDIA: Ontologies and web Services Platform for Online Mediation, financed by the Spanish Ministry of Industry, Tourism and Commerce (TSI-020501-2008-131). See Poblet and others, 'ODR, Ontologies, and Web 2.0' 621.
- [42] The Consumedia Project is financed by the Spanish Ministry of Science and Innovation (IPT-2011-1015-430000)
- [43] Directive 2003/98/EC, of the European Parliament and of the Council, of 17 November 2003, on the re-use of public sector information. (L 345/90 OJ 31.12.2003). Transposed in Spain by *Ley 37/2007, de 16 de Noviembre* (BOE Num. 47160, 17/11/2007).
- [44] See Pilar VII. Accessible http://ec.europa.eu/information_society/newsroom/cf/pillar.cfm?pillar_id=49&pillar=ICT%20for%20Social%20Challenges (Last accessed 15 July 2012).
- [45] See the Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/98/EC on re-use of public sector information. Information on the revision of this Directive is available at http://ec.europa.eu/information_society/policy/psi/revision_directive/index_en.htm (Last accessed 15 July 2012).
- [46] Wilson F and Peters R, 'Mapping the Law: Knowledge Support for Business Development Enquiry', Proceedings of the eChallenges Conference (Vienna 2004) 7.

- [47] See J. Bing. 'Let there be LITE: a brief history of legal information retrieval' (2010) 1(1) Vol 1 European Journal of Law and Technology, Issue 1. It is understood that the free access to law movement began in 1992 with the creation of the Cornell Law School Information Institute. See <http://www.law.cornell.edu/> (Last accessed 15 July 2012)
- [48] The Declaration on Free Access to Law is available online at <http://www.worldlii.org/worldlii/declaration/> (Last accessed 15 July 2012)
- [49] Preamble
- [50] First and second agreements
- [51] Abdul Pawala. 'A History of Legal Informatics: An Introduction to the Special Issue' (2010) 1(1) European Journal of Law and Technology 6
- [52] Initiatives being in the scope of the so-called mobile governance. See Marta Poblet. 'Rule of Law on the Go: New Developments of Mobile Governance' (2011) 17(3) Journal of Universal Computer Science, Vol 17 N 3 498. Also see, Jane Vincent and Lisa Harris. 'Effective Use of Mobile Communications in E-Government. How Do We Reach the Tipping Point?' (2008) 11(3) Information, Communication & Society 11:3 395-413
- [53] Comisión del Mercado de las Telecomunicaciones (CMT) *Informe Anual 2010* (2011). Available at <http://informecmt.cmt.es/informes-anteriores> (Last accessed 15 July 2012).
- [54] CISCO, *Cisco White Paper. Cisco Networking Index: Global Mobile Data Traffic Forecast Update, 2011-2016* (2012) 3
- [55] Marta Poblet, 'Introduction to Mobile Technologies, Conflict Management, and ODR: Exploring Common Grounds' in Marta Poblet (ed) , *Mobile Technologies for Conflict Management. Online Dispute Resolution, Governance, Participation* (Springer 2011) 1; and Alina Huiu and Jeffrey Aresty, 'Mobile Technology and the Rule of Law' in Marta Poblet (ed) , *Mobile Technologies for Conflict Management. Online Dispute Resolution, Governance, Participation* (Springer 2011) 107
- [56] K. Banks considers that appropriate technologies may be broadly defined as anything that is suited to the environment in which it is used. Ken Banks, 'Appropriate Mobile Technologies: Is Grassroots Empowerment for All?' in Marta Poblet (ed) , *Mobile Technologies for Conflict Management. Online Dispute Resolution, Governance, Participation* (Springer 2011) 27
- [57] Accessible at <http://ec.europa.eu/transport/passenger-rights/en/index.html> (Last accessed 15 July 2012).
- [58] Accessible at <http://itunes.apple.com/en/app/wiseli/id530336189?mt=8> (Last accessed 15 July 2012).
- [59] Jeff Howe, 'The rise of crowdsourcing' (2006) Wired <<http://www.wired.com/wired/archive/14.06/crowds.html>>.
- [60] Poblet, 'Rule of Law on the Go: New Developments of Mobile Governance' 498
- [61] The results of this project will be particularly relevant in emerging democracies. See Marta Poblet. 'Tagging Constitutions Online: Constitution Day in Barcelona' (2011) <<http://serendipolis.wordpress.com/2011/11/29/tagging-constitutions-online-constitution-day-in-barcelona/>> (Posted on November 29, 2011. Last accessed 15 July 2012). See also <http://cddrl.stanford.edu/events/6902>(Last accessed 15 July 2012).
- [62] In Spain, for instance see <http://www.consumoteca.com/> (Last accessed 15 July 2012)
- [63] Newman DR and Doherty U, 'Making the law accessible to non-lawyers: effects of different kinds of expertise on perceived usability of online legal information services' (2008) 27(5) Behaviour & Information Technology, Vol. 27, No5, 2008, 425.
- [64] On the Add-Wijzer project, see Wilson and Peters, 'Mapping the Law: Knowledge Support for Business Development Enquiry' 1 and Newman and Doherty, 'Making the law accessible to non-lawyers: effects of different kinds of expertise on perceived usability of online legal information services'. Also see European Commission (Directorate General for the Information Society. Unit Information Market (E4)) Exploiting the potential of Europe's public sector information. Public sector information. Access and re-use (2004) 3.
- [65] L. Salmerón, J. J. Cañas and I. Fajardo. 'Are expert users always better searchers? Interaction of expertise and semantic grouping in hypertext search tasks' (2005) Behaviour & Information Technology 24:6, 471-475

- [66] Newman and Doherty, 'Making the law accessible to non-lawyers: effects of different kinds of expertise on perceived usability of online legal information services' 424.
- [67] Wilson and Peters, 'Mapping the Law: Knowledge Support for Business Development Enquiry' 1.
- [68] See Radboud Winkels, Rinke Hoekstra and Erik Hupkes. 'Normative Reasoning with Geo Information' (2010) (38) *COM Geo '10: Proceedings of the 1st International Conference and Exhibition on Computing for Geospatial Research* 1-7; Radboud Winkels, Alexander Boer and Erik Hupkes. 'Legal Atlas: Access to Legal Sources through Maps' (*Proceedings of the 11th International Conference on Artificial Intelligence and Law (ICAIL-2007) Palo Alto, CA USA 2007*) 27-36 (Available online at <http://www.leibnizcenter.org/~winkels/norms-maps.html>. Last accessed 15 July 2012).
- [69] See for instance the information resource 'Your Passenger Rights at Hand' from the European Commission DG Sanco. <http://ec.europa.eu/transport/passenger-rights/en/index.html> (Last accessed 15 July 2012). The ACC provides a list of topics in its web site http://www.consum.cat/temes_de_consum/index.html (Last accessed 15 July 2012).
- [70] Anton Geist, 'The Open Revolution: Using Citation Analysis to Improve Legal Text Retrieval' in Meritxell Fernández-Barrera and others (eds) , *Law and Technology. Looking into the Future. Selected Essays* (Series in Legal Information and Communication Technologies, European Press Academic Publishing 2009) 157
- [71] By Boolean searches it is referred the use of so called Boolean operators (AND, NOT, OR, and others) Geist, 'The Open Revolution: Using Citation Analysis to Improve Legal Text Retrieval' 158.
- [72] Ángel Sancho Ferrer, José Manuel Mateo Rivero and Alejandro Mesas García, 'Improvements in Recall and Precision in Wolters Kluwer Spain Legal Search Engine' in Pompeu Casanovas and others (eds), *Computable Models of the Law. Languages, Dialogues, Games, Ontologies* (Springer-Verlag 2008) 135.
- [73] Warren P, Studer R and Davies J, 'Introduction' in John Davies, Rudi Studer and Paul Warren (eds), *Semantic Web Technologies. Trends and Research in Ontology-based Systems* (John Wiley & Sons, Ltd 2005).
- [74] Richard Susskind. 'Legal informatics - a personal appraisal of context and progress' (2010) 1(1) *European Journal of Law and Technology* 12
- [75] Relational justice has been defined as 'a bottom-up justice, the justice produced through cooperative behavior, agreement, negotiation, or dialogue among actors in a post-conflict situation (...).' See Pompeu Casanovas and Marta Poblet, 'Concepts and Fields of Relational Justice' in Pompeu Casanovas and others (eds), *Computable Models of the Law* (Springer Verlag 2008) 323.
- [76] These research projects are referred to in foot notes number 34, 36 and 37.
- [77] Barral Viñals and Suquet Capdevila, 'La mediación en el ámbito de consumo' 331,352
- [78] See the Cidoc's database at <http://aplicaciones.consumo-inc.es/cidoc/default.aspx>. (Last accessed 15 July 2012).
- [79] Available online at <http://www.consum.cat>. (Last accessed 15 July 2012).
- [80] Available online at <http://civil.udg.es/normacivil/>. (Last accessed 15 July 2012).
- [81] Such as the local consumer information body at the Barcelona City Council http://w3.bcn.es/XMLServeis/XMLHomeLinkPI/0,4022,1013013389_1062088819_1,00.html (Last accessed 15 July 2012)
- [82] See, for instance *Organización de consumidores o usuarios* (Available online at <http://www.ocu.org>), *Unió de Consumidors de Catalunya* (available online at <http://www.consumidors.org/Home.jsp>) or *Facua-Consumidores en acción*, (available online at <http://www.facua.org>). In addition, there are other private projects built on a collaborative basis such as <http://www.consumoteca.com> (Last accessed 15 July 2012).
- [83] Barral Viñals and Suquet Capdevila, 'La mediación en el ámbito de consumo' 315
- [84] Initially, the project covered the whole territory of Spain.
- [85] Calais-Auloy and Temple, 'Droit de la consommation' 16

- [86] Consumer Law may encompass private Law aspects such as the contractual obligations between consumers and traders or public Law issues such as regulating business hours.
- [87] Immaculada Barral Viñals, M. Dolors Gramunt Fombuena and Rosa Llácer Matacás *Codi Bàsic de Consum i Comerç Electrònic* (Departament de Treball, Indústria, Comerç i Turisme , 2003)
- [88] M^a Ángeles Parra Lucán *Nota introductoria. Legislación de Consumo* (Tecnos, 2007)
- [89] See Calais-Auloy and Temple, 'Droit de la consommation' 17.
- [90] Calais-Auloy and Temple, 'Droit de la consommation' 17.
- [91] This is the case of rules on liability for defective products, leasing or warranties. Other instruments that do not apply exclusively to the B2C relationship but that may affect consumers have been omitted. This is, for example, the case of jurisdiction rules, contract non-performances or instruments governing specific products or services (alimentary, pharmaceutical, insurances, etc).
- [92] For instance, since air transport claims represent more than 63% of the total of cross-border complaints in Catalonia. Barral Viñals and Suquet Capdevila, 'La mediación en el ámbito de consumo' 321
- [93] For a vision of the past and future of EU consumer Law, see Christian Twigg-Flesner, 'Comment: the Future of EU Consumer Law - the End of Harmonisation?' in James Devenney and Mel Kenny (eds), *European Consumer Protection: Theory and Practice* (Cambridge University Press 2012) 7
- [94] Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council. (OJ L304/64)
- [95] Parra Lucán, 'Nota introductoria. Legislación de Consumo'.
- [96] See Article 123 of the Catalan Statute of Autonomy, approved by *Llei Orgànica 6/2006, de 19 de juliol de reforma de l'Estatut d'Autonomia de Catalunya* (BOE 172, 20-07-2006).
- [97] As for the distribution of competences in consumer Law in Spain, see Alicia de León Arce, 'La protección legal de consumidores y usuarios en España' in Alicia de León Arce and Luz María García García (eds) , *Derechos de los consumidores y usuarios (Doctrina, normativa, jurisprudencia, formularios)* (Tirant lo Blanch 2007) 103-155
- [98] See Cristina Poncibò, 'Modernisation for European Consumer Law' in James Devenney and Mel Kenny (eds), *European Consumer Protection: Theory and Practice* (Cambridge University Press 2012) 46.
- [99] For instance, see *Código de Conducta de Confianza Online* (<http://www.confianzaonline.es>; Last accessed 15 July 2012) or the Code of Conduct for the provision of Premium Rate Services (published by *Resolución de la Secretaría de Estado de telecomunicaciones y para la sociedad de la información* of 15 September 2004, BOE 30.09.2004).
- [100] Parra Lucán, 'Nota introductoria. Legislación de Consumo'.
- [101] González-Conejero and others, 'Online Mediation Consumer Tools: Mediapp- Mediweb' 5
- [102] González-Conejero and others, 'Online Mediation Consumer Tools: Mediapp- Mediweb' 5
- [103] See <http://idt.uab.cat/apps/GeoConsum/ca/> (Last accessed 15 July 2012)
- [104] End-users may download Geoconsum from the following web site: <https://play.google.com/store/apps/details?id=com.idt.ontomedia.geoconsum>. (Last accessed 15 July 2012). Geoconsum has not been developed from a commercial enterprise nor is it addressed to for-profit business.
- [105] The source code is published at <https://github.com/idt-uab/GeoConsum> (Last accessed 15 July 2012)
- [106] In accordance with Article 126-10 of the Catalan Consumer Code.
- [107] See note 42
- [108] Banks, 'Appropriate Mobile Technologies: Is Grassroots Empowerment for All?' 27.

[109] See Newman and Doherty, 'Making the law accessible to non-lawyers: effects of different kinds of expertise on perceived usability of online legal information services' 435

[110] Geoconsum has been nominated for the 2012 Innovating Justice Awards.
See <http://www.innovatingjustice.com/innovations/geoconsum> (Last accessed 15 July 2012)