

Specialised Government Publishing: the Law Pocket and Linked Legal Data in the Netherlands

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Abstract. In the Netherlands an infrastructure for collecting, linking and disseminating legal public data is gradually being created. One of the first end-user applications built on this infrastructure is the Law Pocket: a free app with which government officials, lawyers, students and citizens have the up-to-date legislation from the national and regional level always at hand. It gives access to more than 3,400 automatically updated law books, containing full texts and linked resources. The app also gives access to a growing number of manually composed books on specific topics, edited and annotated by specialised civil servants. The backgrounds of this linked data project are described, as well as the main components of the architecture and the functionalities of the Law Pocket. Also its use, future work and position on the legal information market are discussed.

Keywords: Access to legislation, user interfaces, open data, linked legal data.

1. Introduction

Almost everywhere the need for publication on the web of the fundamental documents of democratic society – promulgated laws, parliamentary documents and at least the landmark decisions of the highest courts – is self-evident nowadays. Providing access to these expanding volumes of raw documents though reveals the necessity to improve the accessibility as well, since otherwise the legal information contained in it cannot be understood or absorbed.

Roughly speaking, two lines of action are needed for such improvement. First, the raw data can be made available for – commercial or non-commercial – reuse. Within the European Union the legal framework is established by Directive 2003/98/EC on the reuse of public sector information (the ‘PSI directive’)¹ as amended by Directive 2013/37/EU.^{2,3} To stress its importance, in the Netherlands it was decided to transpose the amended directive into a dedicated legal instrument – the Act on the Re-use of Public Sector Information,⁴ entered into force on 18 July 2015 –

¹ [CELEX:32003L0098](#).

² [CELEX:32013L0037](#), latest consolidated version [CELEX:02003L0098-20130717](#).

³ See i.a. [van Opijnen 2015].

⁴ *Wet hergebruik van overheidsinformatie*, <wetten.nl/BWBR0036795>.

replacing a dedicated chapter in the Freedom of Information Act,⁵ into which the initial Directive had been transposed. The amended Directive obliges public bodies to make public documents, together with their metadata, available for reuse, in the most advanced technical formats possible, in accordance with formal and open standards. The limitations allowed are mainly confined to data protection and copyright issues and are not relevant for the documents under discussion here.

Notwithstanding the importance of making raw legal materials available for free reuse, the government cannot solely rely on third parties to improve accessibility to the information contained therein, since knowledge dissemination as considered necessary from a policy perspective might not always be commercially viable. Hence, the second way to improve accessibility is by active engagement of the public sector itself. One of the most obvious examples of such improvement is the creation of databases with consolidated legislation,⁶ but while the availability of the law is an important threshold requirement, the simple ability to have access to the law does not guarantee that the public can understand the law that has been made available. This holds true not only for citizens and legal professionals, but also for civil servants. And while much focus in the Open Data debate is on reuse by third parties, one shouldn't lose sight of the fact that the most important users and re-users of government information are to be found within the public sector itself. And although all textual documents are available, the disparity of the resources, the lack of proper metadata, document structures, semantic links and proper tools are impeding efficient and effective information retrieval and knowledge acquisition within the public sector.

In this paper we will focus on the Linked Government Data Project (in Dutch abbreviated as 'LiDO'), which particularly focuses on the semantic linking of (legal) public sector information.

The basic infrastructure of LiDO and some of its components will be discussed in § 2. In § 3 the 'Law Pocket' – an advanced app for use on mobile devices by which one can always have the most recent legislation and related documents at hand – will be described in greater detail. In § 4 we pay attention to the role of (products like) the Law Pocket as public service on a legal information market still dominated by commercial players. Some concluding remarks will be made in § 5.

⁵ *Wet openbaarheid van bestuur*, <wetten.nl/BWBR0005252>.

⁶ In the Netherlands this database has a legal base in article 13 of the Decree on Promulgation (*Bekendmakingsbesluit*), <wetten.nl/BWBR0025257>.

2. The Linked Government Data Project

2.1. MAIN COMPONENTS

As already outlined in the introduction, the most important incentive for this project is the efficient and cost-effective functioning of the public sector itself. Hence, the data to be gathered and linked are not Open Data by definition; because of legal restrictions some data can only be shared within or between public institutions.⁷ For this reason the project was named ‘Linked Government Data’ and not ‘Linked Open Data’. Nevertheless, most of the data sources used are open, and unless legal restrictions apply all results will be made available for public (re)use.

The project started in 2012 by developing a technical infrastructure with three types of components: storage, import and export. The storage component is the most standardized: the RDF triples are stored in Blazegraph,⁸ but it could easily be replaced by any comparable product.

For the extraction, transformation and loading of data from disparate sources a modularized XSLT pipeline processing framework was built based on Apache Cocoon.⁹ Because of the way the project was scheduled the consolidated legislation database currently is the pivot for all linked information, but this might change when more data sources are added. For other resources – like policy guidelines from the Tax Administration, the Immigration Office and the organization implementing national insurance schemes (*Sociale Verzekeringsbank*), Parliamentary documents and court decisions – various types of harvesting tools were built.

The third type of components are tailor-made solutions for making the linked data available to end-users, either via APIs or graphical user interfaces on the web.¹⁰

2.2. LINKING TOOL

Most metadata, especially references to legislation and other legal sources, present in documents that are included in the LiDO collection are tagged manually. Although in most organizations some uniform methodology is used, they often do not comply with official standards and therefore have to be transformed within the Cocoon pipelines.

⁷ See on the difference between ‘open data’ and ‘shared data’: [Tennison 2014].

⁸ <www.blazegraph.com>.

⁹ <cocoon.apache.org/2.0>.

¹⁰ <linkeddata.overheid.nl>.

To support the use of correct references in the original documents a linking tool was developed. With the linking tool a legal author can search for e.g. an act, by-law, treaty, ministerial decree or any other type of regulation stored in the consolidated legislation database, and retrieve a standardized link – as detailed below – which can be a plain URI, an HTTP-URI (pointing to the authentic or registered version of the document), or a link ready to be pasted into a Word-document or e-mail (with an adjustable label). The linking tool is also offered as a service, enabling software developers to plug it into their content management system or editorial tooling. Soon, authors will be able to use the linking tool to construct links to Parliamentary documents, official journals and judicial decisions.

2.3. STANDARD URIS

Within the linking tool links are constructed using the standard URIs that have been developed for identifying and referencing legal resources in the Netherlands. For referencing national legislation a URI scheme was developed by *Juriconnect*,¹¹ a standardization platform for legal information in which public and private stakeholders participate. The URI allows for a granular reference to every numbered element as well as sentences, with both validity date and observation date¹² as additional parameters.

For legislation of decentralized administrative bodies (provinces, municipalities and water boards¹³) there is also a standardized URI, although currently limited to the document-level. For judicial decisions the European Case Law Identifier¹⁴ is being used; in the Netherlands all court decisions published – either in the public case law database of the judiciary or in commercial periodicals – have been assigned an ECLI.¹⁵

All three standards are adopted for the official list of comply-or-explain standards of the Netherlands government,¹⁶ obliging public bodies to use

¹¹ <www.juriconnect.nl/>.

¹² See on the various date types i.a. [Palmirani and Cervone 2009].

¹³ Water boards are regional administrative bodies responsible for managing water barriers, waterways, water levels, water quality and sewage treatment..

¹⁴ Council conclusions inviting the introduction of the European Case Law Identifier (ECLI) and a minimum set of uniform metadata for case law, ([CELEX:52011XG0429\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011XG0429(01))). See also [van Opijnen 2015].

¹⁵ <uitspraken.rechtspraak.nl> contains an integrated repository of all case law published by the judiciary as well as ECLIs and essential metadata of judgments published in commercial periodicals.

¹⁶ <www.forumstandaardisatie.nl/english>. Some examples of other standards on this list: ODF, PDF/A, PNG, SKOS, WPA 2, SAML, DKIM..

them in the development of IT-systems. Not on this comply-or-explain list yet, but stable and well-documented are the URIs for Parliamentary documents and the seven different types of official journals.

2.4. REFERENCE PARSING

Still, the number of computer readable links in the harvested documents is quite limited, except for those in the consolidated legislation database itself. Especially judicial decisions and Parliamentary documents contain many legal references, but hardly in a computer readable format. To cater for the automated creation of links a reference parser is in the final stages of development, detecting links to national and European legislation, Parliamentary documents, national and European case law and official journals, all regardless of citation styles, ambiguities and typo's.¹⁷ All these references are transformed into the standardized URIs described above.¹⁸ The generated links can be used for advanced searching, products like the Law Pocket, citation analysis and tailor made alerting systems.

2.5. USE AND REUSE

Apart from the possibility to navigate the links on the LiDO website, they will be accessible via the interface of the revamped consolidated legislation database, which went live in February 2016. Most importantly though the LiDO repository contains the technical and functional basis for the Law Pocket, to be discussed in the next paragraph.

3. The Law Pocket

All lawyers and policy workers need to have at their immediate disposal all relevant legislation in force within their domain. Often they also need explanatory Parliamentary documents, European acts, policy instructions or – e.g. in the fiscal domain – historic versions. Sometimes annotated compilations of current legislation are offered by commercial publishers, but often paper documents are still being used, despite the fact they are often outdated soon and do not fully meet the needs of governmental

¹⁷ [van Opijnen, Verwer and Meijer 2015].

¹⁸ European regulations, directives and Commission decisions do not have resolvable sub-document URIs yet, but the introduction of the European Legislation Identifier (ELI) might change that. The ELI standard is available at [CELEX:52012XG1026\(01\)](https://www.eli.eu/). See also data.europa.eu/eli.

lawyers and policy workers. Most officials have their own way of gathering and storing relevant information; methods that are often labour intensive, lack search functionalities and do not offer portability – stored on a network the relevant documents are not accessible in a meeting and cannot easily be shared amongst colleagues. Sometimes an ‘information specialist’ is appointed to collect and annotate the relevant legal materials and to distribute them to co-workers via a network share, USB-stick or printed on paper.

No solution though meets the demands regarding portability, up-to-datedness, personalisation, ease of use, search functionality and shareability. To counter this information stress and the time lost on gathering and maintaining crucial legal knowledge the Law Pocket (Dutch: *Wettenpocket*) was developed.

3.1. COMPONENTS

The Law Pocket infrastructure is built on top of the Apache Cocoon implementation that was developed for the LiDO architecture. It uses its Blazegraph triple store and eXistdb¹⁹ for XML storage. Connections with the data repositories are implemented via REST services.

Four components are of relevance for the end-users:

- The Law Pocket App (hereinafter: ‘app’): for tablets on the iOS and Android platforms. The app contains ‘books’, which are either ‘bundles’ or ‘pockets’;
- The Law Pocket Bundle (‘bundle’): either a collection of acts and by-laws from the central government within a specific legal domain as defined within the consolidated legislation database, or a collection of all regulations from one regional government (province, municipality or water board);
- The Law Pocket Pocket (‘pocket’): a collection of legislation and other legal materials on a specific topic, selected and annotated by an author with extensive knowledge on the subject;
- The Law Pocket Portal (‘portal’): the website where authors can create and maintain their pockets. It also offers a viewing environment for bundles and pockets for those not having a mobile device.²⁰

Although available in the Dutch language only, some screenshots and accompanying descriptions might be helpful in explaining the most important features of the app.

¹⁹ <exist-db.org>.

²⁰ <wettenpocket.overheid.nl>.

3.2. THE LAW POCKET APP

When opening the app – see Figure 1, the numbers in the figures refer to the description of these elements in the text – the user is presented an overview of all previously downloaded bundles (having a small ‘B’ in the upper right hand corner {1}) and pockets (marked with a ‘P’ {2}). The last modification date is displayed in the lower left hand corner of each book {3}. If an updated version is available a button indicating so is visible in the lower right hand corner {4}.

Other core functions one has access to from this screen are: textual search in all downloaded books {5}, searching for other bundles and pockets in the library on the server {6}, help {7} and colophon {8}. These functions are not described here.



Figure 1. Opening screen of the app, showing all previously downloaded bundles and pockets.

3.3. FUNCTIONALITIES COMMON TO ALL BOOKS

Some features are shared by the bundles and the pockets. Functionalities only available in pockets are greyed-out in the interface of the bundles.

All books start with the table of contents listing all acts and regulations available; this can be a single or unlimited number of any type of legislation from the consolidated legislation database and/or the regional regulations repository.

After clicking one of these items, the full text is displayed (Figure 2). All internal references already available in the texts – originating from the richly linked consolidated legislation database – are maintained {1} – but only if pointing to items which are also available in the book on display. If the regulation is from the consolidated legislation database, there is always a link to the webpage with legislative metadata, containing i.a. information on delegated legislation, previous versions and enactment dates as well as direct links to accessory Parliamentary documents {2}.

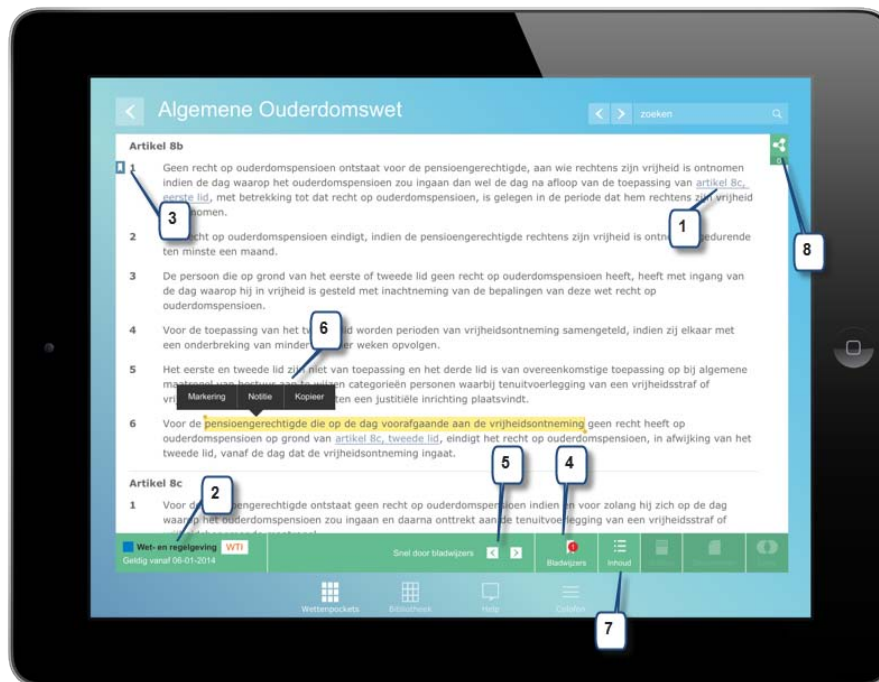


Figure 2. Core functionalities of all books, exemplified here by a bundle.

By simply swiping to the left every user of the app can make his own bookmarks, which then are visualized by an icon next to the text {3}. The total number of bookmarks is displayed {4} and they can be browsed {5}.

By selecting a text fragment additional options become available: highlighting the text, making personal notes or copying the fragment to the clipboard {6}. By clicking the TOC-button {7} a lay-over screen enables the user to quickly navigate through the regulation currently on display. Personal notes and bookmarks are not shared with others and are just stored on the users' tablet.

The most exciting function is the 'linked data' button {8}. When loading a page a query is sent to the server to check whether (and how much) links are available.. On each element within the act on display this indicator then shows the number of related items in the LiDO repository. When the icon is tapped the links are displayed in an overlay.

3.4. ADDITIONAL FUNCTIONALITIES IN THE POCKET

Contrary to the bundles, pockets are not generated automatically, but compiled and maintained by authors. These authors have a variety of means at their disposal to create enriched, tailor-made books (Figure 3). While bundles only contain full acts, an author of a pocket can choose to select specific chapters or articles only. And while bundles contain the latest versions only, in a pocket the author can decide to include also previous versions of a (single element of an) act. The author can write annotations on all (elements of the) acts, which become visible for the end-user by tapping the small green 'i' left to an element {1}, comparable with the blue 'i' used to indicate an end-user note.

The annotation appears in a scrollable lay-over; it can contain text {2} but also links {3}, either to other locations within the pocket or to the internet. A quick overview of all available annotations in an act can be obtained by tapping a button {4}.

In pockets not only items from the consolidated legislation database and the regional regulations repository can be added but also relevant PDF documents {5}. Often these documents (like European directives, Parliamentary documents or research reports) will also be available on the web, but within the pocket they are always at hand, even without an internet connection. Finally, the author can include a list of links to relevant websites {6}, also appearing in a lay-over.

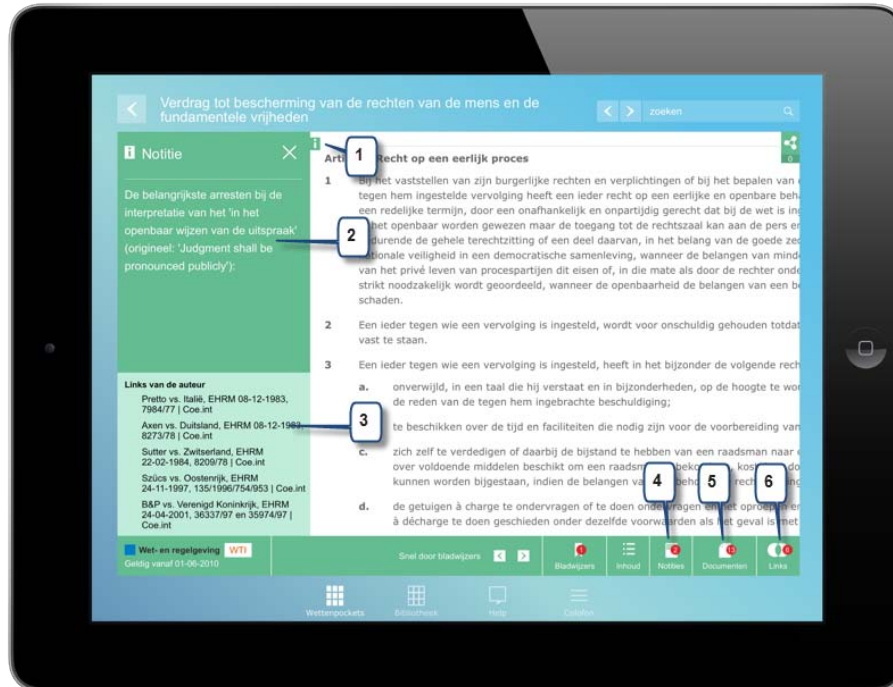


Figure 3. Additional functionalities of the pocket.

3.5. THE LAW POCKET PORTAL

The last component of the Law Pocket framework to be discussed is the portal. It can be used to view bundles and pockets by those who do not have a tablet, although user experience is less sophisticated as on a tablet. The most important function of the portal though is to offer an editing environment for the authors. Here they can initiate new pockets or edit existing ones. They can search, select and order (parts of) acts and regulations, add annotations, links and documents.

Depending on the topic, authoring a pocket requires quite some time investment, but it is well supported. After the initial pocket has been drafted and published, maintenance requires continuous attention of the author and consequently additional support within the portal. Especially regarding up-to-datedness some issues had to be tackled. Bundles are updated automatically, but this cannot be done for pockets. When parts of an act are amended or rendered inoperative, they are not deleted from the pocket automatically; maybe annotations are attached to them, or they are still relevant for interpreting old cases. Also the author might not always be

aware of all the changes in the sometimes very varied collection of legislation in his pocket.

To assist the author in this maintenance task a function has been developed by which the author can indicate for each object whether he wants to be notified (by e-mail and in the editing screen) when changes occur. He can then decide to update to the latest version, to keep the current one or to have both.

4. The Law Pocket on the Legal Information Market

The Law Pocket is an interesting phenomenon in the rapidly changing legal information market. Without claiming the Law Pocket is disruptive by itself, it is an illustration of the impact disruptive technologies have on the relationship between public and private sector. One could argue that developing such added value products are the prerogative of commercial publishers, and should not be a responsibility of the public sector itself. This was a generally held view in the early years of the internet, when public bodies started to disseminate their raw legal materials – a task that previously had been the privilege of commercial publishers – but a shift in opinion is becoming apparent.²¹ One of the most prominent advocates of a broad interpretation of ‘free access to law’ is the Hague Conference on Private International Law. In 2009 its Permanent Bureau drew up the ‘Guiding Principles to be Considered in Developing a Future Instrument’ with regard to accessing the content of foreign law, in which quite far-reaching provisions are formulated.²²

As in many other countries, in the Netherlands commercial activities of public bodies are strictly regulated. The Market and Public Sector Act²³ defines four rules of conduct public bodies should observe when engaging in economic activities:

1. The obligation to pass on the full costs in the price of products or services offered;
2. The obligation for separation of functions between government officials responsible for commercial services and those entrusted with the related public services;
3. A ban on favouring public companies above commercial companies;

²¹ I.a. [Lemyre 2009].

²² <assets.hcch.net/upload/wop/genaff_pd11a2009e.pdf>.

²³ *Wet markt en overheid*, <wetten.overheid.nl/BWBR0029818>.

4. The obligation to make available for reuse data which are used for commercial activities of the public body, if they have been collected for other purposes.

Regarding the applicability of this legal framework to the Law Pocket a first question to be answered is whether the activities concerned fall within the exercise of public powers. The EU Court of Justice ruled that activities which “(F)all within the exercise of public powers are not of an economic nature justifying the application of the (... EU ...) rules of competition.”²⁴ From the outset the Linked Data project and hence the Law Pocket have been initiated to improve the functioning and efficiency of the government itself. Although many well-drafted compilations and legal commentaries are in the portfolio of legal publishers, they do not fully cover the needs of many civil servants working in very specialised domains. Their information needs seem to be too specific to be met by the market. Even more in general though it cannot be denied that government activities aimed at improving its own functioning fall within the ‘exercise of public powers’.

A next question is whether a public body is allowed to offer Open Data based services that could be potentially disadvantageous to commercial players. On this issue an interesting judgment was rendered by the Court of Appeal in The Hague,²⁵ deciding that making available for reuse public data is always to be considered a public task and not an economic activity. There is no compelling argument against the view that, since they have been developed with public money and to serve the public task, making the bundles and pockets available for the public at large does not run counter to the cited legislation. The bundles and pockets are considered to be public data and hence have to be made available, in the format that makes them most useable, i.e. via the app.

A final question is whether also the service to author pockets should be made available to others than government officials as well. This is a little trickier since this is not necessary for the optimal functioning of the government itself, and is also not obliged by the PSI legislation since it does not concern data but a service. Mainly for this reason it has been decided to restrict the group of authors to civil servants.

²⁴ See e.g. the Compass-datenbank decision of the EU Court of Justice ([ECLI:EU:C:2012:449](#)).

²⁵ [ECLI:NL:GHDHA:2014:3702](#).

5. Final Remarks

5.1. ACTUAL USE

The Law Pocket project went live on 24 April 2014, although silently; some issues with adjoining projects had to be fixed before all functionalities were fully operational. These issues have been solved recently and a publicity campaign will start shortly. Still, already 64 pockets have been authored, alongside the 3,431 bundles.

The app has been downloaded 9,400 times (90% iOS vs. 10% Android). The total number of downloads for the bundles is 58,000, which makes an average of 17 downloads per bundle and 6 per app user. The most popular bundle is the 'General Administrative Law Act' (2,500 times). Pockets have been downloaded 8,000 times; averaging 125 downloads per pocket and 0,9 per app user, with 'Criminal Law and Procedure' authored by the Council for the Judiciary as the most popular.

Given the cited absence of active promotion these numbers are quite encouraging, as are the substantive evaluations received.

5.2. FUTURE WORK

The development of LiDO – the results of which will be directly of use in the app – is a work in continuous progress.

Resources from more public bodies will be made available as linked data. The Tax Office and the Immigration Service are the first organizations to publish their policy guidelines and handbooks as linked data. More links from all types of documents will be generated by humans and computers, but with this growing link cloud more intelligent filtering and visualisation will also be required. And while the ecosystem matures improving the availability of the raw data for reuse will also need attention, e.g. via a SPARQL endpoint and/or other APIs, notification services and other enhancements for advanced integration with other public services.

Further development work on the Law Pocket App is ongoing as well. Bundles and pockets will also be made available in the ePUB format, and adaptation of the app for use on mobile phones is on the wish list, as is full integration of EU secondary legislation.

5.3. IN CONCLUSION

Since its early years the internet has been actively used in the Netherlands to publish the most relevant legal materials. Open data, content enrichment and standardization of identifiers and metadata have been recognized as

fundamental objectives from the outset. As soon as semantic web technologies reached a sufficient level of maturity, work started to interconnect the available public legal data.

All these early investments seem to pay off now; notwithstanding the technical complexity of e.g. the Law Pocket infrastructure, it has been developed at little cost since it takes advantage of the highly structured and enriched content repositories that already had been developed. Benefits will be reaped by civil servants, legal professionals and citizens; hence the LiDO and Law Pocket projects show that cost-saving innovations – one of the underlying objectives of Open Data policy – can be realized by public institutions as well.

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