

# User requirements for legislative eParticipation applications

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**Abstract.** Legislation formation is an area of democracy, in which participation of target groups (citizens, companies, interest groups, experts) plays a critical role. With the emergence of the Internet and the growing maturity of more recent technologies such as the semantic web, a new potential emerged for supporting participation in the legislation process. Up to now, these potentials of the Internet are, however, barely used to better support Parliaments stakeholder participation in the legislation processes. If advanced, current offers of Parliaments in this respect cover web sites with basic information on law draftings, downloads of draft laws, and email mechanisms or dialogue forms to hand in a comment on a draft law document. To enable more effective and efficient involvement of stakeholders in the legislation formulation and debate processes, participation-oriented support systems, which go beyond the available content management technologies are requested. The EC supports a number of research projects under the eParticipation preparatory action, which target the legislation drafting and formation process. LEX-IS is among these projects. It aims at the development and deployment of a sophisticated eParticipation system for Parliaments to support the participation of different target stakeholders in governmental decision-making processes via advanced Semantic Web technologies and the usage of Ontology. A first step of LEX-IS was to analyse and understand the system and process requirements of target stakeholder groups. The paper presents the method and results of the user requirements investigation for electronic legislative applications in National Parliaments, which was performed within LEX-IS.

**Keywords:** User Requirements, Legislative processes

## 1 Introduction

Today, more than 50% of EU citizens are Internet users [4], and the National Parliaments of Member States have established a web presence. Enabling participation in governmental decision-making processes via advanced Information and Communication Technology (ICT) has recently become of high importance. ICT can e.g. help to cope with the increasing complexity and challenges emerging from the need to provide better information and wider involvement of citizens in governmental decision-making procedures.

In current web presences of Parliaments, the participation of stakeholder groups in legislation formation and debate process is usually not supported effectively and efficiently. Participation-oriented systems currently base on standard content management technologies providing web sites and simple forms of interaction (mainly email or dialogue forms). A few provide mechanisms of chat or discussion forums. Some also provide petitions, such as the Scottish Parliament with ePetitioner<sup>1</sup>, or the German Bundestag<sup>2</sup>, who tested the ePetitioner system of their Scottish colleagues. Enabling a broader involvement of stakeholders in the legislation formulation and debate processes via advanced technologies (e.g. argument trees to discuss a draft legislation or commenting online the draft legislation document) is not yet widely possible due to the fact that systems are not deployed or are at a very early stage of development. Some research solutions are e.g. presented in [12], [13], [14], [15].

At the European level, a number of policies to foster eParticipation have been published. E.g. in the i2010 initiative [2], eParticipation is one of the five key priorities. Also the Ministerial declarations of Riga [7] and Lisbon [18] stress the importance of eParticipation. In 2007 and 2008, thirteen EC projects start[ed] under the eParticipation preparatory action, which specifically target the legislation process and the support via advanced ICT. LEX-IS<sup>3</sup> is among these projects. Its overall aim is to improve the legislative process in National Parliaments through enhancing public participation in the preparatory stages with the use of state-of-the-art ICT tools and methodologies.

The paper investigates user requirements and conditions in legislative processes of national parliaments to be respected in the platform to be developed and deployed in the context of the LEX-IS project. More details on the LEX-IS project and the platform architecture are provided in [16] and [17] and on the website of the project. Next section introduces the methodology used to investigate the scope and conditions for eParticipation in the legislation formation and debate processes in national parliaments. Section 3 investigates the strategic, organizational and legal constraints of public participation in drafting laws. Section 4 describes the results of the investigation: the current context of parliaments, the targeted user groups and their requirements for LEX-IS. Apart from that, a list of requirements is provided. In section 5, concluding remarks are provided.

## **2 Methodology to investigate user requirements in LEX-IS**

The first step in the requirements investigation was the analysis of the specific conditions in different parliamentary environments<sup>4</sup>. We thereby followed the requirement analysis steps as depicted in ([1], p. 2-6):

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<sup>1</sup> See: <http://epetitions.scottish.parliament.uk/> and [11].

<sup>2</sup> See: <http://e-petitionen.bundestag.de/>

<sup>3</sup> For further information see <http://www.lex-is.eu>

<sup>4</sup> The context of the National Parliaments in Austria, Greece and Lithuania has been investigated.

- elaborating system requirements to derive software requirements,
- discovering the bounds of the software and how it must interact with its environment, and
- detecting and resolving conflicts between requirements.

The detection and elicitation of requirements is usually the first step in the requirement analysis [8]. It aims at addressing the problem, which shall be solved, and defining the boundaries of the system. The boundaries of a legislative system can be deduced from strategic, organizational and legal constraints, which are being described in section 3. The elicitation action includes the interpretation, analysis, modelling and validation of information gathered to identify the stakeholders and the goals of the system [8]. According to ([8], p. 3), stakeholders of a system may include “customers or clients (who pay for the system), developers (who design and maintain the system, and users (who interact with the system to get their work done)”. In the context of LEX-IS, different stakeholders have been identified, which may be grouped into these three categories. Since citizens and other interested parties who may make interventions in draft laws may have distinct interests and differing needs, the connotation “users” needs to be carefully investigated in the context of requirements analysis in LEX-IS.

To gather the user requirements, a questionnaire<sup>5</sup> was developed by the project partners involved in this task. It aimed at the identification of the different user types and their special needs for the LEX-IS platform, and to gather an overview of the existing situation in terms of:

- (1) Stakeholders of the legislation process in the different Parliaments
- (2) Documents used in the legislation formation and debate processes
- (3) Dissemination of documents for the purpose of debating a draft law
- (4) Concrete processes
- (5) Technology currently in use in the Parliaments to support the processes and stakeholder participation (if anything is already implemented).

The questionnaire was filled in by the contact persons in the parliaments with the help of technical partners from LEX-IS. This way, the technical partners could directly clarify open and unclear questions of the Parliaments, and they helped and guided the user partners to answer the questions.

### **3 Strategic (Organizational And Legal) Constraints**

Strategic constraints usually refer to a) boundaries set via organizational contexts a system is to be placed in, and b) legal constraints set by a constitution or by laws. Legal constraints result from national laws and regulations, and from the constitution

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<sup>5</sup> Further information on interviews as method for system analysis: <http://www.umsl.edu/~sauterv/analysis/>. Rules and useful hints to generate useful questionnaires can be found at: <http://www.ojp.usdoj.gov/BJA/evaluation/guide/documents/documentgg.html>

of a country. In implementing a platform such as intended in LEX-IS, the compliance with legal frameworks has to be ensured.

Further organizational preconditions for the success of systems such as the LEX-IS platform concern the political system, especially the governmental authorities and their behaviour. Parliaments need to proactively support such an implementation project. They need to motivate the Ministers, MPs and employees to participate and effectively use such a system.

Beyond that, the respective participative processes need to be adjusted and adopted to enable more active participation. Also, the contrast between informative and participatory elements of participation needs to be made explicit. For example, it must be clear to the engaged participants (citizens, external experts, companies), if they may have an impact on the draft law in the case they place their comments (cp. [3]).

Besides such organizational and legal conditions to be followed, a crucial problem of participation and democracy is the disengagement of citizens and especially young people in political debates. It is often argued to be a consequence of disappointments from political decisions and of the lack of transparency in such processes. It is expected that technology may help to overcome such problems. However, disengagement of citizens in participating in such debates is only to a minimum extent a matter of technology. Attractiveness and transparency of political debates (e.g. debates of draft laws) are crucial strategic requirements. If these are not fulfilled, technology will not help at all. Educational and promotion initiatives are further requirements to attract citizens' interest and to encourage them to get politically involved. In [6] and [10], Macintosh et al stress that the implementation and pilot phase of an eParticipation system should be accompanied by an initiative to engage people to participate. Still one needs to be aware of the fact that they cannot guarantee a lasting participation and engagement of citizens.

Other strategic eParticipation problems, which need to be overcome to ensure active participation of citizens and other interest groups, have been identified in the DEMO-net project<sup>6</sup> (cp. [3]): e.g. a bad quality of a discourse discourages citizens from participation; 'language problems' between administrations, political representatives and citizens have to be overcome. It is important that policy issues are being 'translated' in order to make them comprehensible for citizens. Digital and social divide are further constraints potentially hampering the success of a legislative system. As a consequence for the system, design requirements are "easy to use" and "simplicity" of the system interaction.

#### **4 Target groups' user requirements**

Through the questionnaire mentioned above, the following user groups of a legislative system have been identified for the legislation formation and debate processes in the three National Parliaments:

- (1) the Members of the Parliaments (MPs),

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<sup>6</sup> DEMO-net is a Network of Excellence project funded under the European Commission's sixth framework programme. For further information see <http://www.demo-net.org/>.

- (2) other operational staff of the Parliaments,
- (3) Citizens, with a specific orientation towards the participation of teenagers,
- (4) Businesses,
- (5) Non-governmental organisations and collective/representation bodies such as trade unions, citizen interest groups, etc., and
- (6) Independent legal experts and public servants taking part in law formulation.

The different groups impose different requirements on the system. The members of the parliaments require support in their daily work and need possibilities to easily discuss the legislative drafts and proposals. The employees of the parliaments need also support for their daily work, but more focussing on the workflow functionality of the system. Citizens, Businesses, Non-governmental organisations and collective / representation bodies are more interested in collaborative participation functionalities and information offerings. Independent legal experts need special participation possibilities because they can be part of the legislative formulation process.

The different user groups will need different roles and permissions to use functionality in the system as expressed in Table 1. Basic role stereotypes in a legislative system are coordinators, participant users, guests, data managers and system administrators. In the implementation, these rather general roles need to be further refined and detailed. Table 1 depicts the roles to stakeholder groups mapping.

Role Stereotypes	Stakeholder	Basic functionality / activities requesting support		
		Permissions / functionality to elaborate documents and data	View data and documents	Other
Coordinator	Members of the Parliaments (MPs), other operational staff of the Parliaments	Add or edit documents	View reports	
Guest	All		View reports	
Data Manager	Members of the Parliaments (MPs), other operational staff of the Parliaments	Can edit any data and download the data to the local machine.	Full rights to view all information gathered	
System Administrator	operational staff of the Parliaments	Change any information.	View any information.	Maintain the database and Web site. Grant or revoke the user permission.
Participant user	All	Comment documents	View data (comments	

		and vote on documents	from others) and reports	
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**Table 1:** Possible platform users and their permissions to access platform functionality

The analysis shows that different users of these user groups can be of different age, have different educational background and different experience with ICT. They operate from different locations and some of the users may have disabilities.

To reach as many users as possible some general requirements on the platforms' user interface and especially the Participative Services Subsystem (cp. [16], [17]) have to be considered. The requirements gathered in LEX-IS have been described along a template as used for the subsequent requirements descriptions. I.e. each requirement was given an ID, a description, an indication of functionality (process/service) to be supported / implemented, the targeted actors, and (optionally) an argumentation for the requirement.

A crucial requirement was to reach as many users as possible. Hence, the user interface should be web based. The requirement was described as follows:

R1	
Description	The client user interface should be web based.
Process/ Service	Users access to participation tools
Actor	All users
Argumentation	The web access should have a very simple interface that is even responsive if the bandwidth is low (e.g. no big images on the web site). Otherwise the usage of the platform could be unattractive for certain user groups.

Further requirements on the user interface were the following:

R2	
Description	The client user interface should be responsive to users when the bandwidth is low.
Process/ Service	Users access to participation tools
Actor	All users

An enlargement of R2 is the need for a simple and intuitive user interface. That helps to reach technical and inexperienced web users without training.

R3	
Description	The client user interface has to be very intuitive - users with no computer experience have to be able to use the system without training.
Process/ Service	Users access to participation tools
Actor	Users with no computer experience

The web based user interface should be accessible.

R4	
Description	The client user interface has to be accessible so that people with disabilities can use it.
Process/ Service	Users access to participation tools

Actor	Users with disabilities
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The user interface should be adaptable to different user groups for easier usage.

R5	
Description	The client user interface has to be adaptable.
Process/ Service	Users access to participation tools
Actor	All users
Argumentation	For example employees should have another view to e.g. the argument discussion than citizens. Likewise, functionality which must not be accessed by certain users shall not be presented to them (e.g. citizens see only functionality they are entitled to use such as adding a comment or opening an argumentation tree).

The analysis showed that many citizens and citizen groups still use paper as communication form. An argumentation trace is only complete and transparent if it refers all - even not electronically available - documents. Hence, hybrid systems with a Legal Metadata Subsystem support need to be explored, which allow the search of relevant documents available in paper form (which then can be ordered at the Parliament).

Furthermore the Argumentation Support Systems has to provide the possibility for citizens as well as associations of citizens and trade unions to propose ideas, comments and input during all process stages.

The platform has to support the daily work of the employees. Hence the Legal Metadata Subsystem should provide the possibility for employees to publish documents on behalf of others:

R6	
Description	The system should <ul style="list-style-type: none"> <li>o Integrate an upload functionality</li> <li>o Provide access to all prepared documents.</li> </ul>
Process/ Service	Users access to participation tools
Document	All legal documents

The analysis showed that no strategic programs or initiatives are held to motivate more stakeholders to take part in the legislative process via physical and electronic means. Typically the draft legal projects are presented in press and citizens. In some cases, stakeholder groups are explicitly invited to provide feedback and comments (see also [9] p.3, item 7).

Members of parliament can personally initiate or be involved in discussions with stakeholders. This leads to the following Participative Services Subsystem's requirements, which shall ensure an easy access for all target groups:

R7	
Description	Native language adaptation of LEX-IS platform (since all documents are only available in native language, an English GUI seems not applicable to increase eParticipation, cp. R1)

Process/ Service	Users access to participation tools
Actor	All users

R8	
Description	The system needs a linkage at the official web sites of the parliaments
Process/ Service	Easy access to user groups
Actor	All users

R9	
Description	The system has to integrate the existing technologies that support mingling (as e.g. email, Skype, etc.).
Process/ Service	Users access to participation tools
Actor	All users

Furthermore one important platform requirement is to help the citizens and especially the young citizens “find their ways to be involved”. An Argumentation Support Subsystem embodied in the LEX-IS platform will provide the necessary argumentation support to every group of users. Collaborative Argumentation and Computer Supported Argument Visualization can provide a graphical representation of online debates that maps the issues and the diversity of opinions formulated in order to enable a wider audience to better discuss emerging issues. An easy representation helps the users to understand and trace legislative processes, since some user groups may not be familiar with the general legislative process. But a Computer Supported Argument Visualization is only useful if the users can directly interact with it. These points lead to the following system design requirements:

R10	
Description	The system should have a discussion forum (or similar) to support discussions over legislative processes.
Process/ Service	Users access to participation tools
Actor	All users

R11	
Description	The system should present voting results
Process/ Service	Voting presentations
Actor	All users

R12	
Description	The system should present rejected drafts and the documented reasoning to give a survey of the whole process of a legal draft as well as integrate and visualize the conclusions of the committees
Process/ Service	Presentation of rejected drafts and committee conclusions
Actor	All users

The Argumentation Support Subsystem should help to find the proper contact person and support special expert roles in the Argumentation Support and Participative Services Subsystems (see also [16], [17] for more details).

R13	
Description	The system should support the special expert roles in the different process steps.
Process/ Service	Users access to participation tools
Actor	All users

As stated in R1 the user interface has to be responsive when the bandwidth is low. That includes the following requirement to the Participative Services Subsystem:

R14	
Description	The Participative Services Subsystem has to operate in real-time. Data entered at one site must be immediately available at all other sites. This is essential for a productive communication between different stakeholders.
Process/ Service	Users access to participation tools
Actor	All users

To ensure the use of the Legal Subsystem from the parliaments' side, it has to be simple to administer and maintain. All administration has to be handled simply by trained employees of the parliaments.

The analysis of the legislative processes and the target groups leads to security requirements. Only if the users trust the system, they will be willing to use it. Hence general security requirements can be seen as user requirements. General objectives and corresponding kinds of security requirements, as e.g. identification requirements, authentication requirements etc., can e.g. be found in Firesmith ([5]). In particular a legislative platform should be secured against sabotages to ensure the confidence of the users in the system.

R15	
Description	The LEX-IS platform should be secured against sabotages and needs authorization, authentication, and access control.
Purpose	Platform Security
Actor	All

For example official documents should be marked as such and not allowed to be modified by unauthorized users. Therefore the reading access to unofficial data and writing access to all data has to be strictly controlled and the rules for access control are subject to modification by an administrator. Even so data access has to be as comfortable as possible for the users. Access to data has to be logged and the detail with which logs were made has to be subject to run-time control by the user-administrator.

R16	
Description	The LEX-IS platform needs authorization, authentication, and access control.
Purpose	Security
Actor	All

The full set of requirements for the LEX-IS platform is described in the technical report D 1.1. The requirements shown here only represent a small set.

## 5 Next steps and concluding remarks

The aim of LEX-IS is to embark on existing processes and technology to establish a more advanced eParticipation process in the legislation formation and debate stages of National Parliaments. Hence, the LEX-IS platform needs to be adapted and customized for the specific requirements and contexts of each parliamentary environment.

The identification of targeted user groups and their requirements served as the starting input to the subsequent implementation. Another part of the requirements and early design phase was to model the individual workflows of each legislation process in sequence diagrams (cf. Deliverable 1.2 of LEX-IS). Likewise, an ontology has been developed which is described in Deliverable 1.3. In both cases, the data gathered via the survey analysis as described in this paper were the main input.

In the next phase of system development, LEX-IS partners aim to advance a system of currently disconnected components and pre-defined models to a fully integrated eParticipation platform, thereby amending current system infrastructure with advanced argument support. The basis for that are the user requirements, the workflow models and the ontology as defined in the first phase of LEX-IS.

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