# Human Rights Monitoring in Virtual Community

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Abstract. Holistic disability rights monitoring is essential in order to translate rights on paper into rights in reality for people with disabilities. At the same time, evidence-based knowledge produced through holistic monitoring has to be made accessible to a broad range of groups – researchers, representatives of disability community, people with disabilities, the media, policy makers, general public - and also has to contribute to building capacity within disability community around human rights issues. This article focuses on the design process of a complex Virtual Knowledge Network (VKN) as an operational tool to support mobilization and dissemination of evidence-based knowledge produced by the Disability Rights Promotion International Canada (DRPI-Canada) project. This tool is embedded in the more general framework of the project grounded in a human rights approach to disability and that acknowledges the importance of creating knowledgeable communities in order to make the disability rights monitoring efforts sustainable, advancing thus the decision making process in Canada in order to enhance the quality of life of people with disabilities.

Keywords. Virtual Community, Human Rights, Disability Rights, Monitoring, Knowledge Management

# Introduction

Disability activists and scholars refer to disability rights as "...the equal effective enjoyment of all human rights by people with disabilities" [1]. The majority consensus is that "disability" is a consequence of negative social conditions rather than an individual's specific medical impairment [2-7].

A review of international human rights literature shows that, unlike areas such as women's rights [8, 9], disability rights monitoring is relatively underdeveloped [10].

Mobilization and dissemination of evidence-based knowledge produced through monitoring processes represent the keystone of the holistic approach to monitoring. Integrating different aspects of monitoring requires fluent collaboration and communication among a broad range of individuals, organizations and policy makers.

This paper proposes an operational tool that enables dynamic collaboration among project's participants and knowledge creation and sharing across the four themes of the project and with larger communities to support them in their efforts to improve the life of Canadians with disabilities.

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#### 1. Methods

This paper describes the design and development process of a Virtual Knowledge Network (VKN) to support disability rights monitoring.

## 1.1. Virtual Communities

Humans meet and form groups for a variety of social purposes. The Internet provided the infrastructure for the formation of other forms, but nonetheless similar, communities: the online or virtual communities (VCs). VCs received a visible level of attention from the research community in Computer Science, Sociology, Psychology and other disciplines [11]. A virtual community is a form of social system; it inherits some of the social system's characteristics [12] such as causal reciprocity, purpose, design, roles, circumstances, officers, passion, needs, loyalty, and access. From the perspective of Causal reciprocity; a VC is about a mutual "give and take" that structures the common interest of VC members. On the other hand, the *purpose of a VC* is the main aim of its creation, i.e. share knowledge, exchange experiences, work together, etc. Members of a VC may assume different *roles* in the community, for example, consumer, producer, administrator, lurker, and others.

While several virtual communities platform exist, neither general purpose ones such as dolphin [13], nor educational oriented ones such as WebCT and Blackboard who recently merged [14], and Moodle [15]; are adapted to build and create and share Disability Rights knowledge and to monitor rights indicators; besides, none of these sites is fully accessible to people with visual disabilities, while accessibility is an essential objective that we strive for in our project.

#### 1.2. D.R.P.I. Virtual Knowledge Network Design

In the field of disability, tools and training resources for evidence-based data collection are scarce as are tools and methods for multiple levels of analysis (i.e. individual, systemic) and particularly those tailored to the Canadian context. Development and dissemination of these tools incorporating an e-learning component to a virtual knowledge community in order to support continuous training to develop monitoring skills (online manuals, course guides, books, tools...). These dissemination tools (fact sheets, research reports, analysis and recommendations) need to be directed to multiple groups (i.e. researchers, community organizations and individuals, the media, policy makers).

Internally, the VKN should support team members' communication to enable researchers to *communicate* and *cross-check* their findings, and to *collaborate* around subjects of interest during the research activities. In addition it should provide partners with online communication tools to enable them to collaborate continuously and exchange findings, experiences and strategies regarding disability rights. Therefore, members will need a component allowing collaboration to facilitate knowledge creation.

Finally, the VKN needs to facilitate the search for information for communities' members; therefore, the presence of alert/notification system that triggers members' attention to specific information of interest to them is important. Besides, the VKN should allow the administrator to monitor the extent of knowledge dissemination: how many people are accessing the VKN, the number of hits, which documents are being

downloaded the most, what is the profile of people interested in download/uploading a specific topic, what is the feedback of users, etc.).

Consequently the VKN was designed into four components allowing (1) knowledge creation, (2) knowledge discovery, (3) knowledge dissemination and (4) VKN management. The VKN platform was designed to comprise functionalities that support all four components: knowledge creation (file, co-editing), knowledge discovery (alerts, monitoring), knowledge dissemination (education, reports), and community management.

The platform architecture in two parts, one part represents the virtual community architecture in a three tier architecture model, and the other part represents the knowledge management component comprising knowledge creation, discovery and dissemination. The platform has been developed using Java servlets and Java server pages, and Java Server Faces; running over a tomcat server and a JavaDB database. JavaDB is robust and with a multi-user database engine and supports concurrent users.

#### 1.3. Unique Systems Components

The available open source systems such Moodle, wiki, Joumla, or others are interesting choice to share and edit, document and different kind of content; though no one offered us the capacities that we developed in our system such as document co-editing and fine granularity in file sharing. Document co-editing exists in some systems that are currently part of the cloud paradigm. On the other hand, some systems like Moodle allows only an administrator to upload documents and gives her/him full control on how to share these documents and with whom. In our system collaborators will participate in different communities (i.e. be members of different communities) and every member should be able to upload documents and choose the communities (all members) and/or some specific members of same/other communities to allow them access to these documents (grant them visibility to the documents). Clearly, the levels of granularity in which we would like to have the members share their documents was not offered by existing systems; we need to create our own sharing environment.

#### 1.4. Usability and accessibility

To ensure the usability of the portal, we took into account relevant guidelines [16] and decided to use a light XHTML W3C compliant template for the layout, with few pictures, to reduce users waiting time and enhance accessibility. The layout is light and easy to scan by the users, a menu on the left gives access to all the features of the portal in one click. The navigation was designed to minimize users' interaction to access information. Fonts and colors have been chosen for their clarity for people who are not visually impaired. To avoid accessibility issues, we use a layout with few pictures. Thus, most of the content being readable text, accessibility features were implemented easily. We followed the Web Content Accessibility Guidelines [17] from the W3C; thus, for example, we made menu items accessible using keyboard shortcuts. Activity and outcome monitoring.

#### 2. Results

Open source material has been used throughout the development of this model. In the first phase only the virtual community component has been implemented using Java Servlets and Java Server Pages (jsp) and JavaBeans technologies. Security of information is guaranteed through SSL protocol using an Apache and Tomcat servers; while the database used is Derby. In this phase, users of the system have been consulted both in the development and implementation as a way of testing the efficacy of the system. Adaptations are being made in the process of development, as the input of people with disabilities in particular is essential to its ethical implementation and use, as well as the participation of people with disabilities in all aspects of the research and it dissemination. The VC platform allows two major **roles** to be played: *Administrator* and *Member*; the members can play two possible roles: *consumers* and *producers* of information. The difference between members and administrators is that the latter are given the power to create/drop communities and to allow members to join a particular community.

Five communities have been created; four of them deal with the four substantive themes of research and one is public. The portal allows a person to connect to the portal and to create his/her own profile. In order; to simplify information dissemination, we decided that the *public community* allows people to join without administrator approval since it is designed to disseminate knowledge (research findings, articles, reports, etc.) to the public in the society at large. To be a member of a specific community (the current 4 or any other future one) the interested person sends a request to the portal administrator who can assign that person to the particular community in question.

Members of the *public community* can play the role of *information consumer* (i.e. they seek and access information); occasionally they can produce information via email or bulletin board. The other role enabled is a participative role of *information producer*. People members to all communities, other than the public, are mainly information producer (e.g. upload documents); nevertheless, they are also information consumers of information exchanged inside their community (e.g. download documents).

The administrator can create new communities or drop/delete them. A "pending request" functionality allows the administrator to display the public members' requests to join a particular community and answer their requests by granting them membership to particular community/communities.

Administrators and members of the themes communities can upload and assign each file a "visibility" right (figure 1); that is a member can decide if his/her file is visible by a whole community or a specific person in that community, or any combination of these two possibilities. Members can download files and use an email and bulletin board to communicate with each other. A member can request membership to one of the existing communities.

## 3. Discussion

We have created a sustainable disability rights virtual knowledge network that will enhance the Quality of Life for People with Disabilities in Canada. It (1) supports the research team and participant organizations, and (2) continues to mobilize community members, academics, students, as well as the media and policy makers around disability rights and (3) empowers the users in the development and use of the network. Members are provided tools to publish and read information; to communicate to each other in synchronous and asynchronous ways. We designed a system to encourage members' participation to receive continuous desktop notification (push) on issues of interest happening in the community (a new document uploaded, a new meeting is scheduled, etc.) as well as a "What's New" (pull) functionality that a member can use feature when someone is logged in. To evaluate the utility and effectiveness of the project, we are designing a monitoring component in order to monitor the knowledge dissemination on the platform.

This VKN is supporting DRPI Canada which is part of a larger international Disability Rights Monitoring endeavor (DRPI international). DRPI is working to establish a monitoring system to address disability discrimination globally. DRPI is working to establish a comprehensive, sustainable international system to monitor human rights of people with disabilities. This VKN provides a virtual community component that will help DRPI to accomplish its mission. It helps in monitoring and thus in empowering because it provides a voice to marginalized people, enhances public awareness by documenting abuses and violations, reinforces a collective identity among persons with disabilities, and supports efforts to achieve social justice.

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