ACTIVITY REPORT

THE VIRTUAL HUMAN RIGHTS LAWYER

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Chapter 1: Introduction

Project background

The Public International Law & Policy Group (PILPG) is a global pro bono law firm providing free legal assistance to parties involved in peace negotiations, drafting post-conflict constitutions, and war crimes prosecution/transitional justice. The Netherlands office of PILPG has a specific focus on transitional justice and the International Criminal Court, and engages in capacity building through organizing workshops, seminars and professional development events, and preparing investigations and handbooks.

The Netherlands office set up the ´Human Rights Handbook´-project in response to the observation that while throughout the world many human rights mechanisms exist (although with varying redress capabilities), victims of human rights violations often do not know of their existence, where and whether their situation applies, and how to use these mechanisms. PILPG and other international legal organizations only have limited capacity to assist victims of human rights violations and can only do so much with their resources. The aim of the Handbook was to serve individuals and communities without a background in (international human rights) law by providing them with the information necessary to access international human rights mechanisms to which they could address their situations. Considering the project's aim of developing practical entries that would assist readers in applying to the relevant mechanism(s) in question, the format of a handbook was reconsidered. The project therefore evolved into the Virtual Human Rights Lawyer (VHRL)-project, aimed at designing a legal architecture that codes the information of the Handbook and develops a tool that incorporates chatbot technology that will guide individuals to the mechanisms applicable to their case and provide them with information regarding these mechanisms. The project undertaken for the Knowledge Management Fund is a pilot project, focused on developing a prototype chatbot for Namibia to better understand what technology, security measures, and legal architecture to develop for future global application.

Virtual Human Rights Lawyer

The Virtual Human Rights Lawyer was set up as a joint project of the Vrije Universiteit Amsterdam and the Netherlands Office of the Public International Law & Policy Group (PILPG-NL). The funding provided by the Knowledge Platform Security & Rule of Law through their Knowledge Management Fund enabled this project, taking place between April and October 2019. The main aim of this project phase was to develop a prototype of a web application-based chatbot for our pilot country Namibia. The choice for Namibia flowed from our interaction with a local NGO, the Legal Assistance Centre (LAC). The LAC observed a need for access to and information about international human rights mechanisms, which together with the availability of internet and mobile devices for a large share of the (urban) population, informed the decision for Namibia as our pilot country. A prototype of the chatbot tailored towards the Namibian context was developed across six project modules in partnership with LAC and the Brazilian InterCidadania Institute, working closely together with the VHRL-project team and (external) experts. This project was concluded with an analysis of the lessons learned and recommendations for future project phases and other projects with a similar objective. This analysis was presented at a conference at the Vrije Universiteit on 27 September 2019 and is included in this project report.

Outline of this report

This report provides an overview of the pilot project. Chapter 2 contains a project overview, partners, and a description of activities and processes of the six project modules. This chapter also presents the main deliverables of this pilot project. Chapter 3 focuses on the process of developing this project and discusses the main challenges of this project and corresponding solutions. Lastly, Chapter 4 includes the steps taken towards continuation of the project, including applications for grant and fund-based programs.

Chapter 2: Project and Processes Description

Project overview

The problem central to this project: local lawyers, CSOs and individual victims of human rights violations often have limited access to information about regional and international human rights mechanisms, and access to (among others) filing a case or complaint with these mechanisms is hence limited.

PILPG's Human Rights Handbook led to the idea for a chatbot tool: **The Virtual Human Right Lawyer**.

The Virtual Human Right Lawyer should work according to the following logic mimicking the logic of a human lawyer:

| 1. The victim answers questions about their story | 2. Translate facts into human rights | 3. Link the rights to the mechanisms | 4. Does it have jurisdiction? Is it admissible? | 5. Offer options for mechanisms and explain |
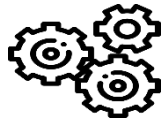
The project was organized in six modules:

Module 1	Identification of Human Rights Violations in Namibia using PILPG's Human Rights Research Framework
Module 2	Creation of Decision Trees for Namibia
Module 3	Technical Development and Data Protection
Module 4	Testing Phase
Module 5 & 6	Chatbot Prototype, Presentation and International Knowledge Sharing, and Dissemination

This pilot project focused on Namibia, and the chatbot prototype that was developed during the project is tailored towards the Namibian context.

This project inherently has several challenges, the main ones being access to internet and/or mobile devices, the requirement of exhaustion of domestic remedies, adaptation to local customs, interacting with victims, data protection, and keeping content up to date.

To find ways to address these challenges, we worked together with several (local) partners and received input from external experts throughout the project at several events, including Friday Sessions (workshops), expert panels in June, and a conference in September.

Project team

Our project team consisted of an enthusiastic group of staff members of PILPG-NL and staff members and students of the Vrije Universiteit Amsterdam. PILPG-NL's Research Associates (RAs) were involved in research across all modules, with senior staff members and affiliated experts providing supervision and training. Staff members of the VU moreover provided supervision of two interns with specific skillsets relevant to the VHRL and provided training during the Friday Sessions. The project was directed by dr. mr. Marieke de Hoon, Senior Counsel and Director Netherlands Office at PILPG and Assistant Professor at Vrije Universiteit, and co-coordinated by Gabriella Gricius, Bethany Houghton and Jasmijn de Zeeuw, Senior Research Associates at PILPG-NL.

Partners

Vrije Universiteit in Amsterdam (VU) and the Public International Law & Policy Group's Netherlands Office (PILPG-NL) form a Consortium for this project and co-coordinate and execute the project. VU has generously contributed to this project in various ways. It facilitated the direction and coordination of the project by enabling the contribution of dr. mr. Marieke de Hoon, Assistant Professor at the VU. Moreover, the VU enabled the Friday Sessions, June expert panels and VHRL-conference in September 2019 by providing logistical support. The VU also offered the administrative and organizational support required for our international partnerships and provided access to a community of experts across various fields, including computer science and innovation. PILPG provided its substantive expertise, network in the human rights field, and project coordination.

Jointly, VU and PILPG-NL express their gratitude towards their partners and sponsors, who played a vital role in this project. In particular, the contributions from the Knowledge Management Fund, the InterCidadania Institute in Brazil, the Privacy Company in Berlin, the Legal Assistance Centre, and the VUvereniging aided significantly in the development of this first VHRL-prototype.

KNOWLEDGE PLATFORM SECURITY & RULE OF LAW: KNOWLEDGE MANAGEMENT FUND (KMF)

The KMF is an annual grant from the Knowledge Platform Security & Rule of Law, aimed to support innovative initiatives in the field of Security & Rule of Law. The grant offered by KMF has been vital for PILPG to reach out to partners and experts who in return have been of the utmost importance in the development of the prototype. More information about the KMF can be found here.

INTERCIDADANIA INSTITUTE (BRAZIL)

InterCidadania Institute is an organization located in Brazil that aims to articulate, encourage and multiply actions of citizenship and solidarity through the dissemination of informative, cultural and educational content on the internet. Among other projects, the Institute has developed the iTEIA System - Digital Network of Culture and Citizenship and Citizen Technology. InterCidadania

Institute has taken on the task of coding and developing the actual application and has advised PILPG on the technical possibilities. More information about the InterCidadania Institute can be found [here](#).

LEGAL ASSISTANCE CENTRE (NAMIBIA)

The Legal Assistance Centre (LAC) in Windhoek, Namibia, was founded two years before Namibia's independence in 1988. It has three main departments: Gender Research & Advocacy, Land Rights, Environment & Development, and the Social Justice Project. The latter is the litigation vehicle of the LAC and provides pro bono legal assistance to clients in public interest cases. The LAC has played an important role in the development of the application by providing PILPG with legal advice and information on the needs and concerns of the possible users of the chatbot. In addition, the LAC has conducted the testing module of this project. More information about the LAC can be found [here](#).

THE PRIVACY COMPANY (GERMANY/NETHERLANDS)

The Privacy Company has several offices across Europe and aims to assist organizations with achieving privacy compliance. The Privacy Company offers trainings, templates, and other services to achieve this goal. The organization has played a key role in ensuring that the VHRL would adhere to (inter)national privacy guidelines by offering pro bono assistance and advice. More information about the Privacy Company can be found [here](#).

VUVERENIGING

The VUvereniging is a network of people connected to the VU and the VUmc. It is committed to the identity of the VU and supports initiatives in the university that contribute to societal objectives. The VUvereniging generously contributed to this project by providing funding for the team members involved in the coordination of this project. More information about the VUvereniging can be found [here](#).

Module I – Research

Goal	Identification of Human Rights Violations in Namibia using PILPG's Human Rights Research Framework
Output	• Research on Namibian legal system and domestic remedies (ppt) • Thesis 'Investigating the needs when accessing human rights mechanisms after a violation of the right to health in Namibia' by Msc-student Lisanne van Lent o Including questions for further research on user needs • Output documents for the chatbot
Events	• Friday Session (22/2/2019) on Namibia and the Namibian legal system

Process

Module 1 developed our research on human rights violations in Namibia, the (availability of) domestic remedies, and the local legal system. This information was prepared to aid team members involved in Module 2 in drafting the decision trees. Utilizing existing resources from PILPG-NL and a database from the LAC, background research on the main human rights issues in Namibia was conducted. Other research aspects included the domestic legal system, with a focus on the available domestic remedies, and the regional and international human rights mechanisms applicable to Namibia.

Simultaneously, as part of her internship with the VHRL-project, Lisanne van Lent conducted a study of user needs in Namibia with regards to the right to health. Through surveying and interviewing experts – who were either Namibian or had relevant work experience in Namibia - she assessed the extent to which the VHRL currently aligns with user needs concerning the right to health. This research resulted in a thesis and research questions concerning user needs assessments for the following project phases.

This module was finalized with the production of the first output documents, which the users of the chatbot can access after they have been informed of the mechanisms suitable for their situation. Sections from the Human Rights Handbook were updated and adapted to create step-by-step manuals on how to access the mechanism in question.

This process underscored the importance of adaptation to local customs and the challenge of ensuring the content in the chatbot is up to date. Moving forward, we will use the work done as part of this Module to further develop our user assessments across different local contexts and expand our network of CSOs. In collaboration with these local actors, we can develop the chatbot on a global scale with attention to local differences concerning language, the use of specific messaging platforms and legal system.

Module II – Decision Trees

Goal	Creation of Decision Trees for Namibia
Output	• Decision trees (right to access to justice/right to adequate standard of living/right to equal treatment)
Events	• Friday Session (1/3/2019) on decision trees, ontologies, and applications from AI potentially useful to the VHRL • Friday Session (12/4/2019) on enhancing language in chatbots

Process

The aim of this module was the creation of the decision trees that would map out all possible interactions the user could have with the chatbot in the Namibian context. These decision trees were used in Module 3 to build the structure of the chatbot. We envisioned that the chatbot would (ideally) go through the following steps:

1) The chatbot develops an understanding of the situation the user has encountered and what facts and details are relevant.
2) The chatbot translates the relevant facts and details from the user into potential human rights violations that may have occurred.
3) The chatbot links the human rights violations with the relevant mechanisms that can provide redress in those situations.
4) Next, the chatbot would assess whether the mechanism(s) would have jurisdiction and whether the situation would be admissible at the mechanism.
5) The interaction would end with output documents, explaining the features of the relevant mechanism(s) and instructions on how to proceed forward with lodging a complaint with the mechanism.

The decision drafting-process started with the creation of an introductory decision tree that begins the user interaction with the chatbot and helps determine which specific human rights are violated. This section also included a brief explanation of what a human rights violation is. An overview of potential interactions the user could have with the chatbot in the Namibian context was then created. This mapping process also helped to consider the number of decision trees that could feasibly be created with the existing budget and time available. Ultimately, the decision trees for the right to access to justice, the right to an adequate standard of living, and the right to equal treatment were drafted and included in the prototype. These rights were chosen as they reflect the majority of the cases presented to the LAC, thereby maximizing the potential number of results from the testing phase. Of the steps outlined above, all except step four were incorporated in this prototype chatbot. To ensure all aspects of the process were present, the output documents of step five included information relevant to step four in the traditional text-based format. Before the decision trees were sent to InterCidadania, the trees were reviewed by the LAC, and tested using specific case studies based on Namibian case law on human rights.

Operating dynamically, the comments of the LAC at this stage were incorporated into the design of the chatbot.

The two main challenges in this module concerned the expansive scope of rights applicable in Namibia and the importance of user-friendly and understandable yet legally sound chatbot questions. In order to deal with the number of rights and mechanisms applicable in the Namibian context we adapted our method of creating and visually depicting the decision trees and limited our scope for the current prototype. This development was supported by the input of the LAC and the external experts attending the panel on Human Rights Community Testing in June.

The process of this module was documented thoroughly to facilitate the creation of decision trees with a global application. We analyzed this process to determine the order in which questions should be asked (balancing an efficient chatbot design and user friendliness), to find which structure facilitates local adaptation with minimal alterations and how decision trees can be created coherently in collaboration.

Module III – Technical Development and Data Protection

Goal	Technical Development and Data Protection
Output	- Virtual Human Rights Lawyer – chatbot ('@PILPGbot' on Telegram) - Data Protection & Privacy Policy - Thesis 'Knowledge Representation for a Human Rights Chatbot' by Bsc-student Thomas Wessels
Events	- Friday Sessions (22/3/2019 & 26/4/2019) on data protection and privacy considerations for the project - Expert panel (14/6/2019) on Technical Development - Expert panel (14/6/2019) on Data Protection & Privacy

Process

This module had a dual focus on the incorporation of the decision trees into the chatbot structure, and the development of an adequate data protection framework. The first aspect primarily concerned communicating the design of the decision trees to our development partner, the Institute InterCidadania, and providing feedback on new versions of the chatbot. Moreover, Thomas Wessels conducted his internship research on knowledge representation as part of this module. His research focused on the potential of ontologies as an option for scaling up chatbots such as the VHRL.

Our focus for the data protection framework was initially aimed at developing a privacy policy for the VHRL-project within PILPG-NL. Through our consultations with privacy experts of the Privacy Company and the VU, it became clear that formally embedding the project, and therefore the data protection framework, within the organizational structure of the VU could provide a stronger foundation in terms of ensuring privacy and security. These conversations, and the expert panel on Data

Protection & Privacy provided us with key insights about the implications of privacy regulations for, among others, partnership agreements; user needs assessments and testing phase; and the platform in which the chatbot operates.

Technical Development

Throughout our work on conceptualizing the chatbot technologically, we encountered several decisions to make along the way. The first was the choice for decision trees. Because we wanted the VHRL to replicate the attorney-client interaction, decision trees were our first instinct as a good replicable way of organizing information. In essence, decision trees exist as a base way of conversation that a computer could easily follow and that we could produce. However, this choice in decision trees led to another option: Natural Language Processing.

Natural Language Processing (NLP) is a subfield of artificial intelligence in which a computer learns how to better understand and process human language. The goal is to have computers which can fully understand text in the same way that humans understand each other. In some chatbots and existing technology, NLP has been proven useful. However, these cases often refer to easily understandable linguistic structures, do not take into account metaphors and deal with very specific interactions. Take, for example, a chatbot that will help a user find a flight to a specific location. The chatbot only needs to know a certain set of information, namely the origin of the flight, the desired destination, and the desired dates and times that the user wishes to search for. After research and discussion with experts, we determined that NLP is not yet advanced enough for many of the concerns that the VHRL users would be writing about. For example, if a user wishes to use a metaphor that the computer does not understand, the text will not be understood. This led us back to using decision trees with pre-formulated answers as buttons for the user.

As we began to work on the decision trees, we also learned that we would have to handle the question of whether or not to use an avatar. While some chatbots use avatars, we quickly learned that for our purposes, an avatar would not suitable. Notably, female avatars are used in many cases to intimate empathy. However, we again ran across an issue in cultural differences. While in the Netherlands, we

associate 'females' in some cases to indicate empathy, that might not be the case in other parts of the world. Further, if we used an avatar – what skin tone would we use? Would it be better to use a robot avatar rather than a human one? In some studies, it has been shown that robot avatars produce more empathy in its users as the user feels more comfortable, for example, sharing secrets. However, in other cases this has had the opposite effect. Our takeaway from this was to stay away from avatars as they presented many perceived biases.

In the future of the chatbot, another technical question that we have yet to answer is whether we ought to shift our decision tree model to one that focuses on ontologies. This is because while decision trees are very useful for our current prototype, they present some problems. Firstly, they are very difficult to adapt and as case law changes, so too might a decision tree. Secondly, decision trees may not always be the best option when dealing with the kind of data that international and regional human rights mechanisms presents. Ontological chatbots are a very new type of chatbots that work using ontologies. In computer science, ontologies show a representation of categories and the relations between concepts and data. When considering admissibility and jurisdiction requirements for many of these mechanisms, ontologies seem like a very good way of sorting through this data. Thomas Wessels worked on this potential option as a way of scaling up the VHRL chatbot in the future.

The Chatbot Prototype

In its current early prototype form, the VHRL chatbot is hosted using the open source solution Node-red using the Telegram messenger software. Node-red is a JavaScript based solution first developed by IBM. While this is neither a real workable version nor is it helpful to clients yet, by building this first prototype, we gained a better understanding of how to not only build a more successful second prototype in the future, but we also learned a lot about what is and is not possible in this field. Our current prototype only has 40 connections covering 3 rights due to financial constrictions. These decision trees contain three parts: 1) Introduction and Small Talk, 2) The body of the chatbot where we got from the violated right to the applicable mechanism and 3) the ending in which we provide the user with information about the chosen mechanism. This truncated version of the VHRL

chatbot was created with users from Namibia in mind. Hence the types of rights involved in the chatbot are also limited.

The Virtual Human Rights Lawyer (VHRL) Prototype Chatbot has been developed for web-based communication platform [Telegram](). On Telegram, the VHRL-chatbot can be accessed by searching for '@PILPGbot'. After typing '/report', the conversation will start. This prototype of the chatbot will be maintained until May 2020.

Data Protection

Data protection and privacy form a core part of the development of the Virtual Human Rights Lawyer. In the context of this project, data protection informed several key choices regarding the design and development of the chatbot. With the current scale and prototype of the chatbot, we decided not to collect or process (as defined by art 4(2) GDPR) any data users enter into the chatbot. Processing data, particularly in the context of human rights violations, comes with serious risks in terms of data breaches and requires an adequate cyber security framework. Collecting some of the data processed by the chatbot can in principle offer certain advantages in terms of training the chatbot and adapting it to, for example, local cultural phrases and expressions. However, our current organizational structure better fits a chatbot that does not process any personal data due to the vast amount of resources that would need to be spent in order to successfully protect the necessary data. Moreover, the prototype currently covers only a small number of questions, and thereby offers limited training potential for the chatbot.

While this decision informed our data protection strategy for this project, we also dedicated a considerable part of the project to mapping data protection concerns for the further development of the chatbot – keeping the option of data collection in the future in mind. Users need to be able to safely use the chatbot and data protection should hence form the basis of any development decision made. This for example concerns the choice for the technology used. In general, we have taken the advice to design the decision trees in such a way that, should data collection become an objective, the answers to the questions posed provide as little information about the human rights violation in question. A more specific decision on this topic concerns

Natural Language Processing (NLP). As outlined under 'Technological Development', NLP is currently not suitable for our type of chatbot. From a data protection perspective, it also poses additional risks as it allows users to write freely instead of choosing from a restricted number of options. This implies less control over the information entered into the chatbot, and, if data collection does become an option, less control over the data collected. Such information could for example entail sensitive information about the user's identity categorized as 'special categories of data' in the GDPR, such as someone's ethnic or racial origin or political beliefs which could, in a worst-case scenario, allow them to be located by antagonists.

Another choice that will be impacted by data protection concerns the choice of platform. During this project we were, among others, advised to avoid reinventing the wheel by developing the VHRL for an existing messaging platform such as Telegram. This offers considerable benefits concerning technological development and, depending on the platform, potentially cyber security. For future development, whether the chatbot will process data or not, this will however require solid research into the platform's security measures and a partnership agreement covering data protection. This applies to other partners as well, who might be data processors as part of their work on the VHRL (depending on their role and involvement). This for example becomes relevant when we perform testing cycles of the chatbot, for example through focus groups or questionnaires among users in collaboration with partners. Here, the location of the partner (in- or outside the European Union), local regulations, the partner's privacy framework and infrastructure to ensure adequate data protection during the testing cycle become relevant. During the testing cycle of this project, we have mapped these considerations and translated them into testing guidelines.

Module IV – Testing Phase

Goal	Testing Phase
Output	• Testing Guidelines • Questionnaire
Events	• Friday Session (8/3/2019) on gamification and user experience • Friday Session (3/5/2019) on community-based health interventions and education innovation • Expert panel (24/6/2019) on Human Rights Community Testing

Process

The testing phase of this project entailed both a general exploration of testing methods useful for assessing the VHRL, and a testing pilot at the Windhoek-office of the Legal Assistance Centre. The former consisted of two Friday Sessions, which discussed the utility of focus groups and the ways in which user experience can be optimized through gathering input in a testing phase. During our Expert Panel on Human Rights Community Testing, the existing testing guidelines and questionnaire were extensively reviewed, and afterwards improved versions were developed. The panel also provided many ideas on how to make the testing process more efficient, and how to incorporate the local context in the design and language of the chatbot.

The testing pilot was designed to either take place on location in the San-community in Tsumeb or at the Windhoek-office of the LAC. The time path of the development process ultimately made testing in Windhoek more suitable. Walk-in clients of the LAC were invited to participate in the testing pilot, which involved conducting a conversation with the chatbot and subsequently filling out a questionnaire. LAC-staff members were also asked for their impressions and points for improvement. The recurring themes in this (small-scale) testing pilot were:

- Clients indicated they preferred human interaction and/or that the chatbot was too mechanical in its current set-up.
- Clients and staff indicated that although the knowledge the chatbot disseminates about international human rights law is useful, they felt a concrete link to the issues of the clients was missing. Some requested an incorporation of the Namibian legal system in the chatbot in order to directly assess the client's problems.
- The use of English proved a stumbling block in finding participants for testing. English is Namibia's official language, but various languages are spoken across the country and staff and clients indicated they would prefer versions in local languages.

These were very helpful responses to address in our follow-up projects. The user experience needs to be very easy to use, helpful, logical and visually attractive. Moreover, the tool will only be helpful when it is more comprehensive than we could develop in our current pilot project. The language challenge is hard to overcome. In further development, we will try to use illustrations and animations where possible, keep textual input limited, and use other ways to address the language challenge where possible.

Module V + VI – Presentation and Knowledge Dissemination

| Goal	Chatbot Prototype, Presentation and International Knowledge Sharing, and Dissemination
Output	- VHRL project presentation (ppt) - Blog posts on the Lawyering Justice-blog Creating A Virtual Human Rights Lawyer Week: Friday Sessions Creating A Virtual Human Rights Lawyer: Expert Panels Creating a Virtual Human Rights Lawyer Week: Spring Outreach Creating a Virtual Human Rights Lawyer Week: VHRL Conference Creating a Virtual Human Rights Lawyer Week: Addressing Challenges - Video dr. Marieke de Hoon & dr. Charlotte Gerritsen - VHRL-website
Events	- Migration clinic workshop (10/5/2019) - Justice Challenge (4/4/2019) - Conference (27/9/2019) 'Creating a Virtual Human Rights Lawyer' - Livestream – Part 1 - Livestream – Part 2

Process

Module 5 concerned the presentation of the chatbot and Module 6 focused on international knowledge dissemination. In practice, the activities of both modules often interacted through their shared goal of building an (international) network for the VHRL.

As part of Module 5, the chatbot was presented to three groups of experts during the June Expert Panels, and to experts and the general public during the conference on 27 September. Furthermore, the VHRL was presented at VU's Migration Law Clinic, the Amsterdam Law Forum Conference, and during a pitch at the Innovating Justice Challenge. The project has been a part of discussions with the International Criminal Court, with potential exploration of exchanging experiences on the horizon. The project has furthermore been presented via PILPG-NL's social media channels, the Lawyering Justice-blog, and a website. A [first](#) version of the website was created by one of the Research Associates, and a [new website](#) launched recently. Finally, we recorded a video of project director dr. Marieke de Hoon and associated expert dr. Charlotte Gerritsen. This video gives an overview of the VHRL and can be used for both development and knowledge dissemination-purposes.

As part of Module 6, these activities also focused on disseminating the knowledge gained during this project. We shared our experiences, challenges, and lessons learned during the aforementioned events and meetings, impressions of which have been shared with the general public through our blogs on the Lawyering Justice-platform. We have compiled our lessons learned, as well as our general recommendations for other organizations with projects or objectives like the VHRL in Chapters 3 and 4 of this report. Chapter 5 summarizes the next steps and future direction of the project. With regard to knowledge dissemination, this Module has also stimulated our decision to launch a website on which further project developments as well as content related to the VHRL can be shared.

Chapter 3: Challenges, Solutions, and Recommendations

Prior to the start of this project, several practical challenges of developing the VHRL chatbot were envisioned. These challenges have been visualized below and include: availability of internet access; the actual technical development of the chatbot; the remaining need of users for a lawyer; the requirement of exhaustion of domestic remedies; need to adapt to local customs; interacting with victims; data protection and keeping the content of the chatbot updated. This section first outlines the ways in which this project has helped us find solutions to these challenges, as well as other challenges on the project-level and ongoing solutions.

CHALLENGES

| Internet | Building the Chatbot | Need for a Lawyer | Domestic Remedies |
| Adaptation to Local Customs | Interacting with Victims | Data Protection | Keeping the Content Updated |
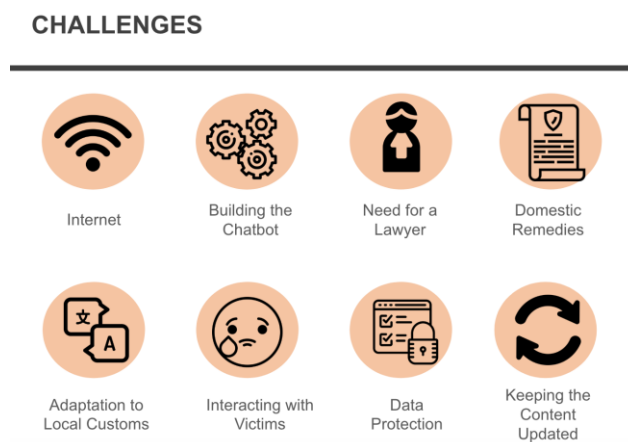
Implementation Challenges and Solutions

ACCESS TO INTERNET AND INTERACTING WITH VICTIMS

Perhaps the clearest challenge of developing the VHRL as an accessible tool is its dependency on an internet connection, as victims of human rights violations in Namibia often lack sufficient internet access. This lack of internet access is replicated globally with victims of human rights violation. We also put a strong focus in this project on ways in which a chatbot like the VHRL can appropriately interact with victims of human rights violations.

These challenges were addressed in this project during Module 1 and 4, and through our sessions with experts. The gathering of knowledge required for the decision trees in Module 1 and the testing cycle in Module 4 further underscored the importance of

local knowledge of domestic remedies, factors impacting access to justice, and the use of potential platforms, particularly in light of ensuring adequate communication with victims. Together with the insights from expert sessions about the feasibility of the VHRL in its original set-up, the target audience was narrowed to create a tool for legally minded CSOs, such as legal aid and human rights organizations. Rather than interacting with victims directly, the target audience of legally minded CSOs puts a human interaction in between the VHRL and victims. This mitigates the challenge of ensuring adequate interaction between the VHRL and victims and addresses the testing feedback from the LAC. Moreover, a legal orientation also narrows the gap between legal information from international mechanisms and information that is accessible at the local level. Lastly, the impact of the need for internet access decreases as CSOs are more likely to have a stable internet connection than individual victims. This solution will be further implemented by building a network of local NGOs and mapping their needs and interests in relation to the VHRL.

THE NEED FOR A LAWYER & DOMESTIC REMEDIES

The objective behind the VHRL is to close a 'knowledge gap' by bringing currently dispersed information on international and regional human rights mechanisms together in a highly accessible tool, thereby aiming to improve access to these mechanisms. It cannot and does not aim to replace human lawyers in providing legally binding advice. The remaining need of users for a lawyer to aid them with their case, for example if they would like to make a complaint at one of the mechanisms, poses a challenge in terms of expectation management and user communication. This is connected to the fact that in nearly all cases international human rights mechanisms require the exhaustion of all domestic remedies. In order not to raise false expectations among users, we used this project to find ways of incorporating this requirement in the structure of the chatbot.

In the current project, these challenges are addressed through the LAC providing guided use of the chatbot and inclusion of information during the introductory section so that expectations are not raised at the outset. Moving forward, we have addressed these challenges by redirecting our target audience to legally minded CSOs. Through their knowledge of the local legal system and local network of legal assistance providers, they can assess whether domestic remedies have been exhausted in a

specific case and thus whether the VHRL can be of use in this case. Similarly, the outcomes of the testing cycle in Module 4 and expert panel on community testing indicate that CSOs can play a very valuable role in assisting the victim with defining potential 'next steps' based on the information provided by the VHRL.

DATA PROTECTION

The VHRL should not only be designed to ensure appropriate and sensitive interaction with victims, but also to safeguard any information they may share about their case through the use of the chatbot. The challenge of data protection is at the core of this project and cuts across all project modules: its requirements should be taken into account and impact (among others) the development of the chatbot, the platform on which it runs, the choice of target audience, design of testing cycles, and the development of a revenue model to ensure the sustainability of the tool.

Data protection was one of the topics of Module 3 of this project but was at the core of nearly all modules and was also discussed at the general project level. As this challenge can impact the project in many ways, we addressed it firstly by developing partnerships that represent different ways in which adequate data protection can be guaranteed. The development of an internal data protection policy (in partnership with the Privacy Company) and mapping of the concrete ways in which data protection will impact the project and solutions to this (in partnership with the Vrije Universiteit) have helped us decide how to further develop the VHRL. For example, they shaped the decisions to aim for local technical development of the chatbot (ideally within the European Union) and to for the time being not ambition the incorporation of Natural Language Processing-technology.

ADAPTATION TO LOCAL CUSTOMS

This project involved the creation of decision trees in the context of Namibia and highlighted the challenge of adequately adapting to local customs. This relates to both local linguistic variety and to different (cultural) approaches to some of the topics covered by the chatbot (e.g. sexual violence is often described in metaphorical terms). We have addressed this during this project by focusing one of the expert panels on this topic and incorporating the topic in the testing cycle in Namibia. This led to suggestions about how to incorporate local customs and knowledge into the

chatbot, for example illustrating how CSOs could not only be the target audience of the VHRL but also be partners to project development. During Module 3 and the expert panel on technology it was highlighted how local adaptations should be balanced against a uniform chatbot structure that can easily be implemented in different contexts.

The two concrete outcomes surrounding this challenge are therefore firstly the (continued) development of a network of (local) CSOs, among whom a user assessment on this topic can be conducted. Secondly, the technical development process will explicitly take this aspect into account by developing alternative chatbot structures and assessing their comparative benefits in terms of local adaptation.

BUILDING THE CHATBOT & KEEPING THE CONTENT UPDATED

The development of the VHRL involves the translation of legal information into accessible natural language, which poses challenges to the building of the chatbot. The structure of the chatbot should also be constructed in such a way that it can be used in a different local context with minimal structural alterations and be run from a platform that is accessible and safe (in terms of data protection and cyber security). In this project, we used the expert sessions and the work done as part of Module 3 to map the different options and their benefits and costs. This relates to the need to keep the content of the chatbot up to date: in order to facilitate the sustainability of the VHRL, an efficient and low-cost way of keeping the content updated as international human rights law develops should be found.

Mapping the different options for the development of the chatbot in order to find a solution to this challenge (partially) informed several decisions. In addition to the data protection concerns, the limitations of current technological advancements led us to the conclusion that Natural Language Processing (NLP) currently cannot viably be used for the VHRL chatbot. Furthermore, the expert and Friday sessions have shaped our intention to aim for a more local approach to development to facilitate coordination and efficiency. Moreover, this project phase has illustrated the potential benefits of seeking collaboration with IT-corporations operating on a larger scale to ensure the sustainability of the project in terms of cyber security and data protection. Lastly, through a well-organized backend ongoing collaboration between PILPG-NL

and the International Law Clinic of the VU, the content can be maintained and updated when there is a legal development.

Project Level Challenges and Solutions

REFINING THE SCOPE AS MUCH AS POSSIBLE AND TESTING USER NEEDS

This project phase has indicated that the scope of our initial project design is likely too broad considering the aim to develop a scalable and usable chatbot. To work within resource constraints, we have adapted the current scope of the VHRL to focus on CSOs rather than victims of human rights violations directly and CSOs. This has the benefit of addressing many of the challenges above and simultaneously being a reasonably attainable product to develop.

In order to adapt to changing focus, further and regular user needs testing will be conducted. Consultation with the LAC allowed us to engage in assessing user needs on an ongoing basis during the development of this phase. Moving forward, further and more widespread user needs testing will need to be done. As the development continues, we are conducting further user needs assessments so that the VHRL matches user needs as closely as possible. Dr. Marieke de Hoon, Ernst van Bemmelen van Gent, Hadi Purnama, and Bethany Houghton are traveling to Indonesia in December 2019 to present the VHRL at the Indonesia Netherlands Legal Update conference and conduct user needs testing with local human rights defenders and CSOs. These are important to avoid reliance on assumptions that may be taken for granted after many years of experience in the human rights field. Reflection of potential biases and cultural factors plays an important role in this regard, particularly for projects like the VHRL that deal with sensitive topics.

INTERDISCIPLINARITY AND ENGAGING WITH EXPERTS FROM DIVERSE BACKGROUNDS

Engaging at the intersection of law and technology requires a diverse range of backgrounds. With PILPG-NL composed of primarily lawyers, expertise in technology needed to be found elsewhere. This project brought together team members and experts from many different backgrounds and highlighted the various benefits of this collaboration. This direct interaction brought the inflow of new ideas

and perspectives and made the process of incorporating considerations from the different disciplines very efficient.

Many of the solutions to the above practical challenges faced by the VHRL have arisen through engagement with a range of experts from diverse backgrounds. Through engaging with academic, third sector, and corporate experts, the project was assessed from different angles and different types of feedback was given ensuring that the project can be developed using insights and best practices from these fields. Working together with a local partner in our pilot country also helped us align the project with local needs and questions.

Furthermore, by having different types of sessions – in our case varying from hands-on workshops (Friday Sessions) in the beginning of the project, followed by informal panel sessions (June Panels), and a final, public, presentation of the project to experts (conference) – we were able to adapt the project to the new developments and knowledge gained. For instance, Dr. Camilla Elphick, Post-Doctoral Research Associate of Psychology at the Open University and representing Spot, noted that the use of avatars should be carefully considered before being implemented as users may be influenced by perceptions of race and gender. For example, female victims may be less likely to use a chatbot to report sensitive issues if a male avatar is used. Rather, non-human avatars were recommended to avoid perceptions of bias or exclusion. This insight clashed with previous recommendations of using virtual reality to enhance user interaction using human-like avatars. Engagement with experts from diverse backgrounds allows us to look at the VHRL through a broader lens.

As the project continues to be developed, we are continuing to engage with experts across different fields to maintain an ability to resolve challenges faced. We are very grateful for the experts and partners that collaborated to this and offered their time and ideas and hope to continue this way of working during the further development of the VHRL.

SUSTAINABILITY IN TECHNOLOGY AND FINANCES

As the initial preferred artificial intelligence technology, natural language processing, is not currently viable for the VHRL, we are using already existing and feasible technologies. This minimizes costs and ensures delivery of the product. However, for future sustainability, it is important to consider how to maintain a backend that can be adapted to new technologies when they become available. Accordingly, we have adapted the design of the VHRL to include considerations of partnering with establishing tech-platforms. These have a reduced tech development and maintenance burden, (potentially) a stronger cyber security framework, and reduced risk of getting blocked in certain user countries. Of course, there are risks too, which should be considered carefully and, ultimately, communicated clearly to users.

The project modules' focus on exploring the options for further development of the VHRL also highlighted the overall project challenge of developing a sustainable revenue model. This particularly concerns the stage of the project at which the structure of the chatbot has largely been developed and the focus shifts to keeping the content updated and adapting the chatbot to (new) local contexts. During this project, this challenged has been addressed through our conversations with experts. These conversations focused on the technology behind the chatbot (which infrastructure is most sustainable and makes the updating process as efficient as possible?), its content (which language works best across local contexts? Which aspects should be adapted to local customs?), and data protection (which revenue models used by similar tools are consistent with our commitment to data protection?). This information will be used in our development process, described further under 'Next Steps' in Chapter 4.

Recommendations based on our insights for stakeholders of the Knowledge Management Platform

- Engage with experts from diverse backgrounds
    - Implementing technology in the context of the rule of law and security requires more than legal expertise. Human-computer interaction, cybersecurity, and user experience experts will greatly benefit a legal tool
    - Create a network of experts of different fields to provide ongoing assistance and feedback
- Remain flexible with the technology used
    - The envisaged end design of the tool may not be feasible due to technological limitations
    - Engage with your network of experts to ensure that the backend design is sustainable for future technological developments
- Adapt to the technological capacity and needs of the user
    - Users where internet blackouts are common will benefit greatly from a tool that has offline capabilities
    - In areas of restricted internet access and censorship, integrating a chatbot through other pre-existing platforms may allow wider access
- Don't reinvent the wheel: make use of other software that is available
    - Creating your own cybersecurity infrastructure is expensive and difficult. Incorporate your tool into pre-existing software can reduce costs
    - When using other software, ensure that data privacy considerations are taken into account.

Chapter 4: Next Steps and Development

As we look forward to the next steps of the VHRL project, our primary goal has been changing the product from a chatbot accessible on a third party platform towards working in partnerships with local civil society organizations (CSOs) to create a more adaptable software that can be tailored to each country on the basis of local needs as an independent foundation.

We are also aiming to create a welcoming user experience, which includes using graphics, animations and other visually appealing ways that help the user/client to best understand human rights, to what extent their situation qualifies as such, what kind of human rights violations the user/client is facing and whether it makes sense to seek redress and how to do that.

One of the most important aspects of our partnership with the KMF was ensuring the sustainability and continuation of the project after the end of our funding period. Our aims for next steps of our project therefore matched up with the further development of the chatbot vis-à-vis the KMF including a) a more advanced prototype, b) business and technical development of the idea and c) reevaluating where the best environment to build this project truly was.

With their longstanding relationship, PILPG-NL and VU will continue work on the VHRL project. The first step in the scaling of the project lies in creating the backend of the chatbot. This consists of creating universal and comprehensive decision trees that are not limited by budgetary and geographical constraints. Furthermore, alongside this, the VHRL team continues to work on conceptualizing the ideal frontend and user experience for the project.

Moving forward, the VHRL focused the target audience of the chatbot on legally minded CSOs. This is because the distance between a walk-in client and international human rights mechanisms is too large for a well-developed chatbot focused on these mechanisms. The fully scaled version of the international and regional human rights mechanisms will now be designed for civil society organizations and quasilegal service providers. This allows a level of technicality in the language that working with victims, who are often illiterate, does not. This audience will be able to work in conjunction with the victims of the violations to go through the chatbot.

Throughout the project, the VHRL continued to apply for and is remains under consideration for other funding opportunities including the NWO Open Mind Programme, the Amsterdam Science and Innovation Award as well as Vrije Universiteit's Demonstrator Lab. Students working on the VHRL project also applied to and were accepted to the Justice Programme - which is an opportunity provided through the University of Amsterdam. Two senior members of the VHRL team, dr. Marieke de Hoon and Bethany Houghton, will also be hosting a roundtable on the 'Developing a Virtual Human Rights Lawyer in Indonesia: An Exploration of Needs and Possibilities' at the Netherlands Rule of Law and Security Update (INLU) Conference in Jakarta, Indonesia in December 2019.

The next stages of the VHRL project as an independent foundation are also currently in progress. The four founders of this new foundation are dr. Marieke de Hoon, Gabriella Gricius, Bethany Houghton and Jasmijn de Zeeuw. This is because a project development takeaway was that the VHRL project can thrive best with its own institutional structures and financial sustainability. The VHRL project will continue to be associated closely with its partners and supporters. Furthermore, the project will remain closely connected to PILPG and the university framework to take full advantage of research and relationships within the VU by operating as a consortium project with deep ties. However, creating a VHRL foundation will allow the project to branch out and take advantage of independent funding opportunities and have a greater chance of success with exciting business and tech partnership opportunities.