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Overview

International criminal law is practiced in ad hoc tribunals distributed around the world and at the permanent ICC in The Hague. These tribunals try cases concerning war crimes, crimes against humanity and genocide. They are designed to dissolve, but the practices, actions, and judgments of the tribunals have lasting effects. Their legacy is carried in future practice of international criminal law, in the development of domestic legal practice, and in social processes of reconciliation and building civil society.

The Virtual Tribunal is a project of the War Crimes Studies Center (UC Berkeley, U Hawaii). It is a digital resource for promoting the legacy of these tribunals, as they affect the social processes of reconciliation and peace. The Virtual Tribunal is a digital research database, providing storage and access to the documentary legacy of the courts as well as a multimedia platform for educational resources that contribute to further dialogue around the court’s social legacy. Our long-term goal is to create a resource with a comprehensive archive of war crimes tribunal documents, spanning from WWII through contemporary international criminal proceedings.

In this paper, I describe the pilot project that we are developing with the Extraordinary Chambers in the Courts of Cambodia (ECCC). I introduce the contexts in which this pilot will exist, including the social and historical context of Cambodia’s conflict and the institutional context of international criminal law. I introduce criticisms of how tribunals can aid social processes of reconciliation and present the Virtual Tribunal as a method for bridging some of the weaknesses identified.

I then discuss my design methods, which include Comparative Analysis, Stakeholder Analysis, Methodology and Theory Review, User Needs Assessment (through semi-structured interviews and participant observation in Cambodia and the United States). I explain findings from this research and describe resulting recommendations for technical requirements and proposed UI designs. I conclude with information about the status of development and plans for future work.
Context

Cambodia, No time for healing – Khmer Rouge 1975-1979, Civil war 1979-1999
In 1975, the Khmer Rouge (KR) captured Phnom Penh. Led by Pol Pot, the KR renamed Cambodia the Democratic Republic of Kampuchea. They attempted to reinvent Cambodia as a socialist agrarian society, calling their first year of power Year Zero. Anti-capitalist, anti-intellectual, anti-religious, and anti-foreign, the KR’s brutal policies included extermination of previous government officials, business people, intellectuals, Buddhists, foreigners, and anyone who opposed the regime. An estimated 2 million Cambodians were killed during the 4 years of the KR regime, nearly 1 in every 4 Cambodians, by execution, torture, forced labor, depravation or starvation (Chandler 2008, 259).

By the time the Vietnamese overthrew the KR in 1979, ending the official KR regime rule, the nation was in shambles. As many as 600,000 Cambodians fled to refugee camps in Thailand. Those who remained in country endured twenty more years of civil war and instability, during which the scarred and reduced populace struggled as the Russian-Vietnamese backed government fought for legitimacy and stability against a Chinese-American backed KR insurgency. Hundreds of thousands of people were killed in fighting during these decades. In the intervening time, coalitions and political maneuvering rendered a government that had absorbed many former KR.

In 1997, the Cambodian co-prime ministers requested UN assistance for Khmer Rouge Tribunals. In 1998, when civil war had ended and the Cambodian government stabilized, Prime Minister Hun Sen, again requested assistance from the UN. In 2003, an agreement was reached establishing a Cambodian run court with UN assistance for trying KR officials “most responsible for serious crimes” during 1975-1979. In 2007, the Extraordinary Chambers in the Courts of Cambodia (ECCC) opened.

The Extraordinary Chambers in the Court of Cambodia (ECCC)
Arguments concluded in December 2009, and a judgment is still pending for Case 001, which involves defendant Kaing Guek Eav. Also known as Duch, this former head of the S-21 Toul Sleng detention center is accused of crimes against humanity and war crimes including murder, rape, and torture. There are currently four additional member of the KR cadre accused of crimes against humanity and war crimes in detention at the ECCC. These are Nuon Chea, former head of the Security Committee, Ieng Sary, former Deputy Prime Minister and Foreign Minister, Ieng Thirith, former Minister of Social Action, and Khieu Samphan, former Head of State of Democratic Kampuchea.

Pol Pot and Ieng Sary, leaders of the KR, were both tried in absentia by the People’s Revolutionary Tribunal in 1979. Both were found guilty. Neither served his
sentence. King Sihanouk granted Ieng Sary a pardon, but he will be tried again by the ECCC. Pol Pot was tried again in 1997 by the KR, accused of crimes by his own party and died in 1998.

Unlike previous trials, the ECCC is an internationally recognized tribunal. It follows internationally accepted rule of law with no one tried in absentia or posthumously. ECCC documents explain clearly that low level, middle ranking KR, including those who defected to the Cambodian government and those related to perpetrators of crimes will not be prosecuted.

**Organization and History of International Criminal Law and Transitional Justice**

International criminal law was first practiced at the end of WWI when a tribunal was created to try perpetrators of war crimes. Again after WWII, the Nuremberg and Tokyo Tribunals tried those accused of war crimes and crimes against humanity. Although interest in an international court continued after WWII, such global cooperation was made impossible by Cold War politics. In the 1990s, after many decades, international criminal tribunals again began. First after the war in Bosnia with the International Criminal Tribunal for Yugoslavia (ICTY) in 1993 and the International Criminal Tribunal for Rwanda (ICTR) in 1994.

The International Criminal Court (ICC), established in by the Rome Statute in 2002, is a permanent tribunal in The Hague. It is intended to prosecute individuals who have committed genocide, crimes against humanity, war crimes, and crimes of aggression. The ICC has the right to prosecute individuals who are citizens of state parties where that state is “unwilling or unable” to prosecute. The ICC’s preference is for states to prosecute their own criminals, but many states lack judicial systems with sufficient infrastructure for this. The lack of capacity is compounded by war, which erodes national resources.

The ECCC is a mixed tribunal, administered by Cambodians and internationals. Other mixed tribunals include the tribunals of Sierra Leone, East Timor, Kosovo and Bosnia. These are ad hoc courts, created to try certain crimes and then to dissolve. The legacy of the courts is debated greatly. The internationals that work at these courts carry the knowledge gained from practicing international criminal law and the experience of working on prior tribunals to future ones. But for nationals, the ability to continue practicing justice at international standards is not guaranteed and many of the crimes may be outside of the jurisdiction of the local courts. The social legacy is also debated. Scholars argue that transitional justice may serve as a good example for “justice as an alternative to victim’s desire for revenge” (Harvard Law Review, 1971), but that they are not ideal for healing and reconciliation.

**Reconciliation, the complex work of many**

_The Extraordinary Chambers is designed to provide fair public trials in conformity with international standards. The chief goal is to provide justice to the Cambodian people, those who died and those who survived. It is hoped that fair trials will ease the_
burden that weighs on the survivors. The trials are also for the new generation - to educate Cambodia’s youth about the darkest chapter in our country’s history.

By judging the criminals in fair and open trials and by punishing those most responsible, the trials will strengthen our rule of law and set an example to people who disobey the law in Cambodia and to cruel regimes worldwide. If criminals know that they will be held accountable, they may be deterred. By supporting and learning about justice, we can all contribute to the reconstruction of our society. –ECCC website

The ECCC professes to serve important social roles. For the people of Cambodia, the trials are touted as an opportunity for healing for survivors and an opportunity for youth to learn about the past and to move the country forward. A letter of introduction by Han Sen in the ECCC produced pamphlet, “An Introduction to the Khmer Rouge Trials, 3rd Ed” reads, “Even those of you born after 1979, who did not directly experience these crimes still bear a heavy burden... You also share in the difficulties of rebuilding our society from Year Zero without the benefit of the wisdom and experience of those who were lost... Now the time has come for those responsible for planning and directing the horror to be held accountable for their crimes... When the judges have delivered their verdicts, we hope that Cambodians and all who support us will feel a load lifted from our backs as we finally bring justice in the name of the victims” (ECCC, 2004).

In practice, the ECCC is an international legal institution concerned with legal procedure and the guilt or innocence of the accused. The work of reconciliation, of healing by survivors, and of the continued rebuilding Cambodia by the next generations occurs in different venues and is overseen by different institutions.

This is echoed in debate on transitional justice scholars like Staub who states that “[e]ffective reconciliation requires a engaging with and changes in a whole range of actors in society, from members of the population whose psychological orientation is the core to reconciliation, to national leaders who can shape policies, practices and institutions “ (Staub 2006, p. 873).

A Berkeley Human Rights Center study (Jan 2009) investigated public awareness of the ECCC and found awareness of the court, its workings, and even names of those on trial to be limited among average Cambodians, especially those too young to have had direct experience of the KR. The study recommended that the court greatly expand outreach efforts. Donors and NGOs were advised to find ways to help the ECCC better inform Cambodians about its mandate and activities, and the government was asked to conduct a major review and overhaul of the national criminal justice system – one that “integrates the judicial legacy of the ECCC, ends corruption, and institutes transparency, accountability, and efficacy.” The government was also advised to “continue work with civil society to integrate what happened during the Khmer Rouge regime into school history curriculum” (Pham 2009, 48-49).
The Role of the Virtual Tribunal and Overview of my methods and findings

The Virtual Tribunal will be one more tool in the toolbox and will seek to engage with a range of actors, as indicated by Clark. It will very much perform some of the major recommendations given by the HRC.

In order to best design this tool for these purposes, I conducted:

- **Methodology and Theory Review** of transitional justice and IT development theory, both for context and indication of areas of inquiry
- **Stakeholder Analysis** of the strengths and weaknesses of our team in order to highlight needs for farther partnerships and collaboration and to illuminate potential conflicts between project goals and stakeholder goals
- **Comparative Analysis** of IT and non-IT genocide education and transitional justice work
- **User Needs Assessment**
  - In Cambodia through *participant observation* of outreach events and *semi-structured interviews* with ECCC legal and administrative staff, law school and other university professors and students, NGOs, victims, UN and legal professionals involved in legal capacity building, private and non profit IT developers
  - From the United States with teammate Penelope Van Tuyl through *semi-structure interviews* and *low-fidelity prototype walk-throughs* with legal officers from other international tribunals, local Cambodian community groups, and developers of genocide education

We will not be able to serve all users immediately, but understanding the needs of different groups, we can choose to develop a feature set common to most. We will need to build our system with flexibility so that we can easily create additional representations of our content. Because our users are quite diverse, we will build the VT in a way that is open for extensibility. We should give users the same flexibility that we have in repurposing content.

**Lessons from methodological theory; implications for design**

**Accessibility for non-legally trained users, Capacity Building, Value sensitive design**

Our primary corpus is the documentary legacy of the court. These documents are key to the functioning of a court and the practices of law. But, for every one judgment pronouncing guilt or innocence, there are hundreds of documents regarding opaque procedures of the court and processes that might never affect the general public.

Debate in transitional justice sheds light on the shortcomings of this corpus for reconciliation. We will first create search and retrieval methods for our corpus based on to a legal ontology, but many of our users will not know what these
categories mean. We look to value sensitive design methodology that challenges designers to consider “the ways in which [technologies] can embody specific forms of power and authority” (Winner 1986, p. 121). Creating a rigid ontology with technical legal terms as the only methods for navigating content would only serve to strengthen the divide between the work of courts and reconciliation and healing among non-legally trained people.

**Privacy concerns**

We believe that access to court records can help processes or reconciliation and also knowledge of rule of law, but the ability to aggregate and analyze court documents raises concerns about individual privacy and safety. Harry Surden’s discussion of latent structural constraints leads us to consider the ways that individuals or groups may be protected from negative social consequences due to inaccessibility of court records and whether easier access to these records may lead to personal harm.

**Access and Literacy, lessons from Information Communication Technology for Development (ICTD) Research**

We draw on work in the field of ICTD for guidance in designing IT projects for users in developing nations and consider limits to access infrastructure (Brewer 2006), low literacy rates and potential needs to develop non-text interfaces (Parikh 2006, Medhi 2007), the necessity of developing content in local languages and consideration of access to computers and the internet (Keniston 2003).

**Distribution**

As with many developing nations, Internet infrastructure and access to computers is low. A 2009 study estimates that there are 44,000 Internet users in Cambodia, a mere .05% of the population (CIA 2009). In order to reach the other 99.95% of the population, we will need to design distribution methods via shared and public computers and possibly via different media. The latest socio-economic survey data published by the National Institute of Statistics (2004) estimates the literacy rate for population aged 15 and over at 60% for women and 80% for men. We also will have to develop non-text based interfaces the sizeable illiterate population in Cambodia, 40% of all adult women and 20% of all adult men.

**Language**

We are working with two IT professionals via the ECCC to develop the UI in Khmer. We plan to make all content fully text searchable and will need to use optical character recognition (OCR). Khmer OCR is an open problem and a complex one due to character rules in Khmer. We will work with PAN Localization to develop Khmer OCR.

**Designing a Useful and Usable Tool, Participatory Design**

Bottom up design methodologies like participatory design help designers to create the most useful and usable tools for their users. Participatory design methods suggest that designers have continued and deep interaction with users during design (Schuler 1993). It is not possible for us to have continued interaction with
our users throughout our design process because of the distance between the Bay Area and Cambodia. Unfortunately, the distance also means that the design and development team know very little the users’ context making a bottom-up approach even more important.

In December 2009/January 2010, I travelled to Cambodia where, through semi-structured interviews and participant observation at tribunal and outreach events, I met with and attempted to understand some of the needs and values of our users. From the United States, I have conducted further semi-structured interviews with my colleague Penelope Van Tuyl in order to assess additional needs, values, and potential services of users. I will return in July and August of this year to conduct user tests.

I will return to Cambodia in the summer to conduct usability testing. At that point, I will test the working prototype of the research tools with lawyers and legal professionals at the ECCC. To test as yet un-implemented functionalities, I will use low fidelity prototypes, likely created in Balsamiq. In order to elicit suggestions for design improvements, I expect to use the following testing methods:
- Cognitive walkthroughs
- Task-based usability testing
- Semi-structured interviews

I will also conduct focus groups with content development partner Matthew Robinson and Khmer Mekong Films to determine users’ content interests.

**Practical implications of these methodologies**

Methodological theory gives frameworks for addressing some of the most difficult challenges we face in designing the VT. Issues of time, money, and stakeholder interests will limit our ability to practice some of these frameworks. Even so, theory can help us to understand the capabilities and limitations of our designs to serve user groups.

The first iterations of the VT will likely serve legal users best, as our corpus will be court legal documents organized based on a legal ontology. Our first designs will also include tools for interpreting the legal ontology and the contents of the documents so that non-legally trained users can understand the structure of the system. As we develop partnerships with other organizations, we will build a secondary corpus and expand the ontology.

We will develop the Khmer UI simultaneously with the English UI so as to serve both Khmer readers and English readers. Full-text search on Khmer documents may lag behind full-text search on English and French documents while the OCR problem remains open.

We will aim to serve semi and illiterate users by providing content that is mostly video based, but the development of an entirely text-free interface will be a future project. Initially, we will design for distribution on the Internet and expect users to
have access. This likely limits our users to people working in offices and at schools as students or teachers. Even if we are limited to people working and studying in offices and schools, many potential target users could access the VT. We plan to distribute via shared computers, and are developing partnerships with groups that plan to create IT centers of this kind including iReach, a Cambodia-based IT capacity building organization.

**Stakeholder Analysis**

Our multidisciplinary team includes international criminal lawyers and scholars, professional IT and search developers, and human computer interaction (HCI) and computer science (CS) scholars. Our strengths are knowledge of transitional justice and IT development. We rely on partners in Cambodia for expertise and direction in appropriate content development. Partners include members of the ECCC monitoring team overseen by the War Crimes Studies Center, television producer Matthew Robinson of Khmer Mekong Films. We will be working to develop partnerships with people and organizations in Cambodia to contribute and produce content. We have an informal partnership with PAN Localization, IT developers with whom we are working to solve open problems in Khmer OCR.

Key stakeholders include the ECCC and our donors who are both primarily interested in the VT as a legacy project. We are experiencing delays and difficulties in transferring court documents between the ECCC and our backend team. Further and future delays are possible and it is unclear how we will reconcile this as we continue to develop. At present it is delaying our ability to organize the materials and to implement a user interface.

If we can develop a method for delivering content more efficiently, the VT may become a resource that grows as tribunals release public records, but if not, the VT will be more of an archival and historical tool. Looking forward, support from the courts themselves will be limited if not impossible after they dissolve. Tribunal archiving projects overseen by the UN, which guarantees preservation of documents, but not necessarily our easy access to them. The Japanese government will fund and oversee an archiving project for the ECCC that will create a physical archive for the documentary legacy of the court. In Cambodia, we will likely be able to work with this archive to manage document exchange after the court dissolves.

Our current major funder Open Society Institute (OSI) is interested in the Virtual Tribunal as a capacity building tool. To satisfy our funding objectives, OSI will want to see a demonstration that we are able to speak to a “general Cambodian user” and a “general international user.” These are not groups that fit within our design methodology, which is chiefly concerned with individualizing users to better understand their needs.
Reconciling funder’s understanding of user groups will be simple. The difficult work will be navigating funders’ conceptions of continued need for money and development after we demonstrate a working pilot. We anticipate work in the future to include refining the design, expanding the corpus with the help of partners.

Comparative Analysis: Learning from other work, identifying partners and users
I looked to a survey of Cambodian and international genocide and war crimes tribunal education projects to draw lessons about best practices in designing interfaces and content and to better understand the roles of individuals and organizations in reconciliation.

Below I classify resources into 5 different groupings and identify some key variations and best practices in resource features and characteristics.

**Figure 1: Comparative Analysis Categories and Major Features**

<table>
<thead>
<tr>
<th>Categories researched</th>
<th>Variable Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cambodia Genocide and Tribunal Education Projects</td>
<td>• Content and UI in multiple languages</td>
</tr>
<tr>
<td>• Cambodia Media Resources</td>
<td>• UI Text-based and non-text-alternatives</td>
</tr>
<tr>
<td>• International Genocide Education Projects</td>
<td>• Archival content versus original content production</td>
</tr>
<tr>
<td>• International Human Rights Organizations</td>
<td>• Distribution method: online, radio, television, print; in-person</td>
</tr>
<tr>
<td>• International Legal Resources</td>
<td>• Outreach to villages</td>
</tr>
<tr>
<td>• Tribunal and Court Sites</td>
<td>• Resources available at physical location</td>
</tr>
<tr>
<td></td>
<td>• Formal and informal education</td>
</tr>
<tr>
<td></td>
<td>• Government, private, and public-private partnerships</td>
</tr>
</tbody>
</table>

Cambodia genocide and tribunal education projects

**Informal education**

Of the Cambodian genocide and tribunal education projects I reviewed, I found that most projects with physical presence in Cambodia do not emphasize web products and services. Those with web sites have content and the UI in Khmer. The digital audio and visual archive, Bophana, has developed a platform for navigating the archives in Khmer, French and English. Due to low bandwidth and limited personal computer ownership, Bophana maintains and runs a computer resource center for users to view the collection and to practice filmmaking and digital editing. Some other sites of genocide education include the Documentation Center of Cambodia (DC-Cam) archives and memorials like the S-21 detention center in Phnom Penh. These established physical sites of genocide and tribunal education might be good sites for VT access and training. Additionally, we may consider developing our own
physical sites or partnering with organizations running shared computer resource projects.

Formal education

In 2009, the Ministry of Education enacted a policy requiring secondary school teachers to teach about the KR regime. Over 75% of the country’s population was born after the KR and lack of formal education about the regime along with older generations’ unwillingness to talk about the traumatic past means that many young people do not know about the regime. The Ministry of Education and DC-Cam have produced a textbook and teaching guide. They are distributing these books to all secondary school children in Cambodia and conducting teacher trainings in Phnom Penh and in the provinces. In Cambodia and many other countries, a Ministry of Education determines school curriculum. In order to participate in formal education projects, the VT should look to form partnerships with these official curriculum developers.

Web-based Cambodia genocide projects are mostly available just in English or French. A notable exception is the KRT Web Portal, run by Open Forum of Cambodia (OFC), a website with written materials about the tribunal and context of the crimes history of the KR regime. The VT may contain some similar documents and content, but will improve on this resource by giving users more abilities to search and sort materials, and methods for reusing content.

Cambodia Media Resources

Cambodian media covers court news in papers, radio, television and online news portals. One particularly successful television program is “Duch on Trial,” a joint production of the War Crimes Studies Center and Khmer Mekong Films. This show features a weekly review of trial events hosted by Cambodian anchors. It attracts a viewership of as many as 3 million viewers. This shows an interest among the general public in the tribunal and we will partner with Khmer Mekong Films to develop video content for the VT.

Radio programming about the tribunal includes a number of NGO radio shows designed to speak to the needs of victims and their roles in participating as civil parties in the ECCC. The format of most of these shows is call-in and victims frequently call in, using the radio show as a public forum for catharsis. We should consider the popularity of this format and implications for the VT as a platform for testimony and catharsis.

International Genocide Education Projects

Many international genocide education projects I reviewed aim to serve this desire for catharsis through video testimony. Organizations like the USC Shoah Foundation Institute is an archive of victim testimony and smaller scale projects like the University of Washington Voices of Rwanda Tribunal an archive of video interviews with officers from tribunals. The Voices of Rwanda Tribunal project encourages reuse of their materials and actively works with organizations to develop uses for
the videos. We can learn from the ways that they have fostered partnerships with Rwandan organizations to reuse their content.

A video testimonial project in Liberia designed by Michael Best, Professor of Computer Science at Georgia Tech, represents some of the best practices among all the tools I reviewed for creative distribution methods and a text-free interface. Deployed in freestanding kiosks, designed for users who are unfamiliar with computers and who are illiterate. Users navigate the text-free interface by interacting with an animated avatar that speaks the local dialect. Users can interact with the kiosk to their own testimonial and to view others’ testimonials.

*International Human Rights Organizations*
Organizations like Amnesty International and Human Rights Watch publish current news and calls to action about human rights concerns in particular regions. Some organizations’ sites have content and UI in local languages.

*International Legal Research Tools*
Lexis Nexis and Westlaw are the leading legal research tools. They contain mostly United States (US) law and limited international criminal law. These include complete collections of judgments from courts in the US and robust research tools like legal reference content developed by legal experts. Law students in the US are trained and given free access to these tools while they are in school. For non-students, these tools are expensive to use. Users pay per search, which is cost prohibitive for many lawyers in international criminal tribunals. We will look to these tools for best practices, but will not be able to include some of the most human-resource intensive features.

The ICC Legal Tools Project aims to be the leading international legal research tool. Legal Tools, led by Morten Bergsmo of PRIO, is a development partner of the VT. The Legal Tools Project is a legacy project built principally for legal practitioners and the legal legacy of courts.

*Tribunal and Court Resources*
Each tribunal has its own website commonly featuring court news, court documents and basic information about cases. Tribunal outreach departments publish materials to the court websites. Some of these include FAQs and descriptions of outreach department work.

The ICTY has the best interface for searching of court documents, allowing users to search by categories like case name, document type and date range. This tool is not open to the public and requires a user name and login. It is, however, the best example of a searchable database of tribunal documents.

The ICTY outreach department materials are also some of the best among tribunals. The “Voices of the Victims” is a compendium of courtroom footage of victims’
testimony. The VT will have a corpus similar to the ICTY and we can build on these features.

User Needs Assessment

In the pilot version of this tool, to be implemented for testing and demos by November 2011, we are designing content for educational use in Cambodia – for Cambodian educators and students; and for a generally curious international user.

Figure 2: User Types, level of legal expertise, user name and location

<table>
<thead>
<tr>
<th>Type</th>
<th>Legal Expertise</th>
<th>User Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Research</td>
<td>Non legal expert</td>
<td>Cambodia Expert</td>
<td>International</td>
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<tr>
<td></td>
<td></td>
<td>Statistician</td>
<td>International</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Historians</td>
<td>International</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intellectuals</td>
<td>International</td>
</tr>
<tr>
<td>Capacity Building</td>
<td>Legal expert</td>
<td>Legal Training</td>
<td>International</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ministry of Justice</td>
<td>Cambodia</td>
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<tr>
<td></td>
<td></td>
<td>Rule of Law</td>
<td>Cambodia</td>
</tr>
<tr>
<td>Fact Finding</td>
<td>Non legal expert</td>
<td>General information seeker</td>
<td>International</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diaspora</td>
<td>International</td>
</tr>
<tr>
<td>Legal Research</td>
<td>Legal expert</td>
<td>Genocide Scholars</td>
<td>International</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transitional Justice Scholars</td>
<td>International</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Legal Scholars</td>
<td>International</td>
</tr>
<tr>
<td>Public Communication</td>
<td>Non legal expert</td>
<td>Media</td>
<td>International</td>
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<tr>
<td></td>
<td></td>
<td>Media Voices of Authority</td>
<td>Cambodia</td>
</tr>
<tr>
<td>Teaching</td>
<td>Non legal expert</td>
<td>Students</td>
<td>International</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ministry of Education</td>
<td>Cambodia</td>
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<tr>
<td></td>
<td></td>
<td>School Teachers</td>
<td>Cambodia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students</td>
<td>Cambodia</td>
</tr>
<tr>
<td>Victims Activities</td>
<td>Non legal expert</td>
<td>Humanitarian Organizations</td>
<td>International</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Victims/Victim Groups</td>
<td>Cambodia</td>
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<tr>
<td></td>
<td></td>
<td>Support Groups</td>
<td>Cambodia</td>
</tr>
</tbody>
</table>

Academic Research
Academic researchers are concerned with implications of proceedings and judgments on their area of scholarly interest. These users are not legally trained and may want to understand the content of technical court documents but not to read these documents completely. To best support these users, we should include
explanation of legal categories especially where legal categories are used to help people navigate the collection. We should also include citation support so that users can easily export citations to common citation management software like Zotero.

Capacity Building

The ECCC, domestic legal practitioners, and international organizations are interested in leveraging the practices and experience of Cambodian lawyers and judges in the ECCC to begin dialogue about legal reform and capacity building in Cambodia. The ECCC performs capacity building activities through training activities with lawyers, judges, and administrative staff working at the court, and through lectures at law schools and universities.

They will use the Virtual Tribunal to gather primary materials. To support these capacity building efforts, the VT should give users a way to save collections of material for reuse and particularly, methods for users to create collections of courtroom videos and video clips of courtroom footage.

Law students also participate in capacity building. At Pannasastra University in Phnom Penh, I spoke with legal students who had worked as interns at the ECCC and who were interested in studying the effects of the ECCC on Cambodian legal practices. These users might need a method for to search courtroom video and documents for instances of specific legal practices.

Domestic legal practitioners are fluent and literate in Khmer, but not necessarily in English and French, so UI and content availability in Khmer will serve these users.

Fact Finding

This user group has a general interest in the court but not a specific scholarly interest like academic researchers. They may approach the corpus with some general knowledge about wars and crimes, but will not have expert legal knowledge. For these users, we should create non-legal categories for navigating the content like a map or timeline based interface and an annotated judgment.

Legal Research

Legal users like international criminal lawyers and researchers currently locate court documents through tribunal websites, court library exchanges, and through informal personal connections to colleagues working at other tribunals. These users will benefit most from the VT if it is a complete compilation of documents from tribunals and if they can search the corpus by legally meaningful terms and concepts.

To legal officers in courts, it is often important to conduct an exhaustive search of all treatment of a certain crime or legal issue. These users will want assurance that our collection is complete and that our search methods will return accurate results. We should consider a feedback system so that users can report missing documents or inaccuracies in search returns. We should create tools to help these users find the most complete set of records of interest perhaps through suggesting additional search terms or
related search terms.

These users need to reuse primary documents and to cite documents. We should support these needs by creating methods for saving document collections, exporting citations, and printing.

Public Communication
Already newspaper reporters, radio announcers, and television programming cover events at the court. Newspapers focus on current events in proceedings as well as in the administration of the court. Making courtroom footage easily searchable and navigable will help reporters review courtroom events and for reporters who are unable to be in the courtroom during proceedings.

Teaching
We should try to work with DC Cam and the Ministry of Education to develop companion materials for the curriculum in the new textbook. At the moment, very few secondary students or teachers have access to the Internet and computers. We should consider supporting these users by creating non-internet based collections, perhaps delivered on CD-ROMs, DVDs, flash drives, or on paper. University students and law students are most likely to have access to computers. Many universities have computer labs and some students own personal computers. We should consider ways that the VT can figure into university level curriculum.

Victims Activities
Outreach and education activities support the need to inform and register potential civil parties. The ECCC communicates with the general public through the Victims Unit, the Public Affairs Unit, and the Witness and Expert Support. Court employees and other NGO groups conduct this work in-person through visits to villages and gatherings at the ECCC, and through written materials and radio and television announcements.

ECCC legacy projects also focus on civil parties. For instance, a proposed Victims Register Database would hold information about civil party participants in order to capture their personal stories of the KR Regime. The Center for Justice and Reconciliation (CJR) is one of many NGOs that conducts outreach and produces radio programming about the ECCC. In a conversation with the radio production team, they discussed an interest in capturing stories in audio and visual media of civil parties and survivors. Organizations like Transpersonal Psycho-Social Organization (TPO), a community health program, and victims groups may also be interested in capturing or using victim stories.

Figure 3: Summary of implications for design

<table>
<thead>
<tr>
<th>Summary of implications for design</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide UI and content in local languages</td>
</tr>
<tr>
<td>• Create navigational tools that do not depend on knowledge of legal terminology</td>
</tr>
</tbody>
</table>
• Define legal terminology wherever it is used
• Create methods for users to export content in sets and as individual documents
• Make video easy to search by transcripts
• Create methods for users to create collections of videos and video clips
• Create method for identifying video and content that relates to victim testimony
• Give users the ability to leave feedback
• To engender trust, clearly define corpus and explain any exceptions
• Consider alternate delivery methods
• Pursue partnerships for content development with existing organizations and individuals

Implications for Backend Design

Build for Flexibility
The VT should have a RESTful design where resources can be retrieved by following links. Our system should provide ATOM feeds that are paginated and sortable to allow us to manipulate content and to facilitate easy creation of interface and visualizations approaches for our different users.

Build for Capacity Building
We should build with an open source backend like Fedora (http://www.fedora-commons.org). Nonproprietary solutions will serve the capacity building goals of Cambodians better than expensive proprietary solutions. Especially where we are participating in solving Khmer-language computing issues, we should make these efforts free and available to the public. We should use an open standard for legal documents so they are easily repurposeable.

Current State of Development and Future Work

Information Organization (IO)
Document Type Ontology
Our back end team has received an excel spreadsheet with metadata exported from the ECCC court management system that they have been using to create a preliminary ontology of document types.

Taxonomy of a Judgment
To build a preliminary metadata schema, Penelope Van Tuyl and Morten Bergsmo are working together to create a taxonomy of a judgment, identifying categories of “facts” that appear in judgments. As the judgment is the final document of a case, it provides the best summary of all facts in a case.
They identified three classes of “facts” in judgments. The classes are: Contextual/Circumstantial Facts, Facts Concerning Criminal Responsibility, and Facts Concerning Modes of Liability. Judgments include Contextual/Circumstantial Facts to illustrate the social and political context of the crimes. Contextual and Circumstantial discussions are less structured and part of our work is to review enough judgments that we feel our categories are exhaustive. Facts proving Criminal Responsibility and Modes of Liability are enumerated in laws, so we draw classifications of facts in these categories directly from internationally accepted legal documents. Parts of documents will be classified according to these fact categories and will be the first categories along which we will give users the ability to sort, search, and filter.

**Long Term Impact and Sustainability**

The Virtual Tribunal is envisioned as a long term project, one that will expand to include all tribunals and that supports ongoing social processes. To make a long term impact, we will have to consider ways that we can continue to change in order to serve changing and unforeseen needs of users, to be a stable platform, and to sustain funding and capacity for upkeep and maintenance.

*Open and Extensible*

We need to design in a way that will allow for expansion of the corpus as we develop secondary materials and take on documents from other tribunals. A flexible and easily extensible metadata system will allow us to incorporate new sets of documents. We cannot anticipate all of the needs of users and recognize that building a system that is open and offers easy reuse and recontextualizing of content will help future users to serve their own needs and to reduce the workload on the VT team for continued development work.

*Stability and User Trust*

Our impact will rely, in part, on users’ trust in our system. Permanent links, demonstrated commitment to reliability over time and a commitment to a complete corpus and clear recognition of what documents we lack will help to build this trust. Our partner, the Hoover Institute, will store the VT data and software in perpetuity.

*Meaningful Accountability and Funding*

In order to provide ongoing support for the use and maintenance of this tool, the project requires human staff and funding to pay them. Our current funding cycle is annual and is based on demonstrable implementation of features that will promote the legacy of the court. Funding streams might vary as we work with different courts, with some funders interested in particular regions. Sustainable funding might be more available for formal education-based work as there will always be school children and where there is national curriculum, a need to materials to support teachers in teaching this curriculum. Alternatively, we can look for funders who commit to long term support.
General Methodology for Expansion
As we pursue agreements with other tribunals, we will refine our development and design processes. A generalized process begins with forming a partnership with a tribunal. We will then need to form partnerships in areas where we need additional expertise. This will likely always include partnerships with local IT developers who can help to develop local-language features including UI, OCR, and search. We will also need to build partnerships with local organizations and individuals participating in reconciliation and education activities.
Sources


Young, P. (2008), Integrating Culture in the Design of ICTs, British Journal of Education Technology.
Appendices

Appendix A: Project Team and Development Partner Descriptions

Project Team
David Cohen, Professor War Crimes Studies Center, UC Berkeley

Rebecca Hurwitz, BS MIT, MA UC Berkeley School of Information expected

Penelope Van Tuyl, JD Boalt Hall, UC Berkeley

Development Advisors
Ruzena Bajscy, Professor Computer Science, UC Berkeley

Terry Winograd, Professor Computer Science, Stanford University

Development Partners
Extraordinary Chambers in the Courts of Cambodia (ECCC)

Franz Guenthner, Professor, Director Center for Computer Science and Linguistics, University of Munich (LMU)

Hoover Library and Archive – Dr. Richard Sousa, Director, Stanford University

ICC Legal Tools Project – Dr. Morten Bergsmo, PRIO, Norway and International Criminal Court

Khmer Mekong Films – Matthew Robinson
http://www.cambodiafilms.com/

Open Society Institute (OSI)
http://www.soros.org

Sawteeth Inc. – Paul Dixon
http://www.sawteeth.com/
Appendix B: Comparative Analysis Descriptions and Sites Reviewed

Cambodia Specific Genocide and Tribunal Education Projects

In Cambodia and outside, organizations and individuals are undertaking Cambodian Genocide education projects. Below are descriptions of some major ICT and Non-ICT projects.

Bophana Audiovisual Resource Center
http://www.bophana.org
Bophana aims to be an audiovisual archive of Cambodia. In the Khmer Rouge, much film and other content was destroyed, and Bophana seeks to preserve and collect content for Cambodians to learn more about the lost history of the past and to promote the growth and training of audiovisual production. This is a French NGO working together with the Cambodian Ministry of Culture and Fine Arts. Users can visit the archive in Phnom Penh, find content via the digital catalog, listen to and view content, and produce their own media.

The Cambodian Genocide Program at Yale University
http://www.yale.edu/cgp/
An extensive archive of documents related to the Cambodian Genocide including KR official documents, biographic and bibliographic records, photographs, translations, maps, research papers and books. The archives is stored physically, digitally, and on microfilm and is available in person at Yale University, by request, and online. DC-Cam originated from this Yale project.

Cambodia Tribunal Monitor
www.cambodiatribunal.org
A project run by David Scheffer, Professor of Law, Northwestern University and Youk Chhang, DC-Cam. This web-based resource republishes public documents from the court, courtroom video and transcripts and additional content written and edited by David Scheffer including news, expert commentary and Cambodian history. Documents are published, as they are made public by the court. The site is in English.

Documentation Center of Cambodia (DC-Cam)
http://www.dccam.org
Located in Phnom Penh, DC-Cam is an archive for “to record and preserve the history of the KR regime” and “to compile and organize information that can serve as potential evidence in a legal accounting of the crimes of the Khmer Rouge.” DC-Cam played a prominent role in the ECCC investigations. The organization has a public reading and research room, publishes books featuring parts of the DC-Cam Collection and original commentary, works on the national curriculum project, and has announced plans to open a museum in Phnom Penh. DC-Cam just completed a formal agreement with David Cohen and the Hoover Institute to digitize the archive, after which the archive will be stored by Hoover and maintained by DC-Cam.
Killing Fields Museum (Seattle)
http://www.killingfieldsmuseum.com/
A museum founded by KR survivor Dara Duoung is an archive and collection of materials about the KR Regime with the goal of educating people in the US about the KR.

KRT Web Portal – Open Forum
www.krtrial.info
Open Forum of Cambodia (OFC), a Phnom Penh based NGO working on IT capacity building in Cambodia, runs this site. Written in Khmer and English for the dissemination of information related to the ECCC. This site includes written materials concerning contextual history of the KR and the tribunal, current news and the stated goals are to collect all relevant information to the Khmer Rouge Tribunal and to encourage dialogue.

S-21 Detention Center (Phnom Penh)
http://www.tuolsleng.com/
As many as 30,000 people were held at S-21, or Toul Sleng Prison, in Phnom Penh. The KR transported thousands of prisoners here where they tortured and forced confessions from prisoners. When the Vietnamese Army invaded in 1979, the prison was converted into a memorial. On weekends, the museum docent leads groups of high school students through the museum, explaining treatment of prisoners by KR. The tour concludes with a presentation by Vann Nath, one of the few survivors of S-21 and the museum director. Students ask questions and are given handouts to take home, ask their parents questions, and return to the museum.

The UN Assistance to the Khmer Rouge Tribunal (UNAKRT)
http://www.unakrt-online.org/
This website is maintained by the UN organization for supporting the KRT. It is written in French and English and contains official documents about the court as well as information about the history of the court and the context of the crimes.

International Genocide Education Projects
These are educational, multimedia, projects, aimed at teaching people about injustice in order to teach morality and to help victims address their experiences. Distribution ranges from web-only, to specialty kiosk installation, to physical archives with paper records. Most are public resources, available to anyone who can access the content through these distribution methods.

Aegis Trust, preventing crimes against humanity
http://www.aegistrust.org
The Aegis Trust is an international organization whose work includes “research, policy, education, remembrance, media work, campaigns and humanitarian support for victims.” Most closely related to the Virtual Tribunal, Aegis has built memorials
and educational curriculum about the Rwanda genocide and the Holocaust that include archives and research facilities.

**Facing History and Ourselves**  
Facing History and Ourselves develops educational programs to teach students about personal accountability and morality through teaching about injustice of the past. Facing History develops curriculum, content for teachers and students and teacher trainings.

**Fourtunoff Video Archive of Holocaust Testimonies**  
[http://www.library.yale.edu/testimonies/](http://www.library.yale.edu/testimonies/)  
The Fourtunoff Video Archive is a collection of videotaped interviews with witnesses and survivors of the Holocaust. The archive is located physically at Yale University and is also available via the web.

**United States Holocaust Memorial Museum (DC)**  
Located in DC, the museum maintains an extensive website for promoting activism against genocide.

**Michael Best, Professor of Computer Science, GA Tech** (Liberia)  
Michael Best directs an ICT project for teaching about genocide in Liberia.

**USC Shoah Foundation Institute (USC)**  
[http://college.usc.edu/vhi/](http://college.usc.edu/vhi/)  
Shoah is a collection of video testimonies of genocide survivors from 5 different continents. Users can view and search video on the project website. The Shoah website includes a map-based interface.

**Stasi Archives**  
[http://www.bstu.bund.de/nn_715068/DE/Home/homepage_node.html_nnn=true](http://www.bstu.bund.de/nn_715068/DE/Home/homepage_node.html_nnn=true)  
In 1989, the Berlin Wall fell, and the citizens of the newly unified Germany and the just-fallen East Berlin, raided Stasi archives and undertook the process of recovering the files that documented East Germans’ lives as seen through Stasi eyes. People can request to see their own personal file.

**Voices of Rwanda, Taylor Krauss**  
The Voices of Rwanda project is an oral history archive of video recorded testimonies from individuals who survived the Rwanda genocide. Future plans include developing curriculum based around the testimonies for US students; a digital web-based archive including video-aligned transcripts and transcript-based searching through the video archive; map and timeline-based interface for searching the video archive.
Voices from the Rwanda Tribunal
http://www.tribunalvoices.org/
The Voices from the Rwanda Tribunal project is run by researchers from the University of Washington iSchool. This is a video project of interviews with officers from the ICTR. All videos have Kinyarwanda subtitles. The project is this content creation and also a web-based platform for viewing videos and for combining content in user-selected groupings for re-use. This project aims to distribute to organizations that will re-use content so that it has a broader reach among Rwandans.

Cambodia Media resources of ECCC News: Newspapers, Radio, Television

Figure 4: Cambodian Media featuring Tribunal Coverage

| Newspapers | Cambodia Daily  
| Phnom Penh Post  |
| Radio | Cambodia National Radio (FM 96 and AM 918)  
| National public radio  |
| | The Women’s Media Centre of Cambodia, weekly program The Truth, information about the KR and the ECCC  
| DC-Cam, Searching for the truth  
| ADHOC, Khmer Rouge Tribunal and the International Criminal Court  
| Cambodia Human Rights Action Committee, KRT Watch  
| Center for Justice and Reconciliation, Voice of Justice and Reconciliation  
| Radio Free Asia (RFA), Khmer language broadcast  
| Voice of America (VOA), Khmer language broadcast  
| ABC Radio Australia, Khmer language broadcast  
| Radio France International (RFI), Khmer language broadcast  |
| Television | Apsara TV  
| CTN, live transmission of court proceedings  
| Khmer Mekong Films [see partners]  
| TVK, Equity  |

Tribunal and Court Sites
All recent tribunals and the international courts maintain websites. These sites are often designed for a diversity of users including: tribunal staff, other tribunal staff, local populations, the UN. These sites include content and UI in local languages as well as official UN languages English and French. Court sites reviewed include:

Extraordinary Chambers in the Courts of Cambodia (ECCC)
http://www.eccc.gov.kh/

International Criminal Court (ICC)
http://www.icc-cpi.int/

International Court of Justice (ICJ)
http://www.icj-cij.org/

ICTY
http://www.icty.org/

ICTY Voices of the Victims (former Yugoslavia)
http://www.icty.org/sections/Outreach/VoiceoftheVictims

ICTR
http://www.unictr.org/

*International Legal Resources*
Resources under this category include commercial and non-commercial research tools for legal professionals.

The Electronic Information System for International Law (EISIL)
www.eisil.org
This site links to other document repositories. Notably, it includes descriptions of legal categories.

ICC Legal Tools

Lexis Nexis
http://www.lexisnexis.com/

West Law
http://www.westlaw.com

War Crimes Research Database
http://www.wcl.american.edu/warcrimes
American University of Washington College of Law runs this site with support from OSI. Users must pay to search the database.

*International Human Rights Organizations*
Amnesty International
http://www.amnesty.org/en/region/cambodia

Genocide Watch
www.genocidewatch.org

Human Rights Watch
http://www.hrw.org/

Open Society Justice Initiative (OSJI)
http://www.soros.org/initiatives/justice
War Crimes Studies Center
http://socrates.berkeley.edu/~warcrime/