

## *Expressions:*

### Inter-Professional Culture via Coactive Digital Humanities Platform

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**Abstract**—This paper explores an integrated inter-professional collaborative model and technology for a break-through digital humanities platform called, “Expressions.” This platform was co-created by the Center for Research in Entertainment & Learning (CREL) at Calit2, UCSD, in partnership with Visual Exchange Network (VEN), which is an hybrid research and production group for upstream multi-venue media.

**Keywords**—component; Digital Humanities; interdisciplinary; coactive; participatory; upstream; collaborative.

#### I. INTRODUCTION

January 27th is the United Nation’s International Day of Commemoration of the Victims of the Holocaust, and this date coincides with the anniversary of the liberation of Auschwitz. Center for Research in Entertainment & Learning (CREL) & Visual Exchange Network (VEN) collaborated with the cultural institution Beit Avi Chai, and InTV.co.il, (INTV) in Jerusalem to produce a live event, as part of a national television broadcast in the US, with participation occurring simultaneously between two audiences, two groups of scholars and several musical performances, shared across the network between Calit2 at UC San Diego, California, and Beit Avi Chai (BAC) in Jerusalem, Israel, on January 27, 2011. The challenge for the creative, technical and productions teams on two continents was to honor the memory of these victims in a meaningful and respectful way, which would resonate across cultures, across borders, across the network, across time zones ten hours apart and which could be mounted effectively across a new digital humanities platform.

This challenged the team of scholars, engineers, new media directors, producers, musicians, programmers, students and stage managers collaborating between CREL, VEN and BAC with INTV. By combining the disciplines of music performance, creative production across multi venues and upstream collaborative technologies, Expressions formed an inter-professional community. This bridge across practices and across the globe, employed a dedicated fiber network, which itself featured widely diverse engineering

and creative cultures and also involved a 10 hour time difference. At the intersection of CREL’s upstream collaborative technology, called “Provoke,” together with VEN’s “coactive” multi-venue production model, the endeavor resulted in an integrated scholarly and creative process, culminating in a live, international collaborative performance, which engaged remote audiences, by engaging in use of new models for upstream participation via the fiber network and the Internet, during a live, national cable television broadcast and web cast.

The digital humanities platform employed a managed, dedicated, trans-national undersea fiber connection with a 1gigabit capacity between the Calit2 HD studio and the BAC venue in Jerusalem. “Jack Trip” was used across this network to support 8 channels of uncompressed audio between locations.

#### II. DEVELOPING SPECIALIZED CONTENT

Off-the-shelf Standard Definition video codecs were connected to large display monitors and/or projection screens, so that participants at both locations were able to view both of the audiences, as well as the speakers and performing artists at the other location, in real time. The broadcast event featured three forms of audiences: 1) live “in-venue” audiences; 2) television viewing audiences; 3) webcast viewing audiences. Since the visual experience for these combined audiences would be key to engaging these three audiences in the commemorative event, and also since visual interaction would help facilitate collaboration between the two groups at the two venues, it was necessary to determine what visual references would be used to represent the Holocaust for the event.

It was decided that the visualizations would be based upon art work created by victims of the Holocaust and that the audio would include music created at concentration camps, or authored by victims on the way to the camps, as well as ‘*nigunim*’ (traditional melodies) sung by victims immediately prior to their execution.

This process of exploring how to present such challenging material using this new digital humanities

platform, required that the creative production team of the two participating venues engage in a series of telephone conference and IP video calls, in order to establish an integrated artistic and scholarly approach to the material.

### III. COLLABORATIVE PROCESSES

The program explored how today's understanding of the loss of so many victims during the Holocaust is reflected in art work and musical composition. To involve the scholars and musical performances across both venues, a program was envisioned that would feature sections to be co-narrated by speakers in both locations. Musical segments in the program were designed to integrate musicians and singers working between the two venues collectively in real time. This musical integration required specialized rehearsals across the network in both locations simultaneously. Stage management of this networked rehearsal and performance process is its own emerging discipline with new terminologies and new multi-venue roles being developed by VEN in collaboration with Lisa Porter from the Graduate Stage Management Program, UCSD School of Dance and Theatre.

To engage all three audience groups in the material in real time, as a base for the event, the team used CREL's Provoke, a collaboration tool for upstream interaction across multiple large group audiences. Use of the Provoke capacity allowed for audiences to participate upstream during the event. This complimentary collaboration successfully harnessed the VEN Choir to Choir production model to form a new digital humanities platform, called Expressions, with new roles and new modes of collaboration on several levels.

Digital images of the art work (used by permission from Yad v'Shem) and digital files of the music were made available to the creative team, which worked with the engineer writing code for Provoke, to create an unique "Expressions" interface available to all three audiences. During the performance, participating audience members were able to see a work of art and then, in the context of the event narrative and music, submit their own title for that work, then see their title appear during the event.

### IV. CULTURAL, SOCIAL AND TECHNOLOGICAL CONCEPTS BEHIND THE PROVOKE SYSTEM

The Provoke system is built around several core concepts: moderator, shared display and a recommendation system.



(Audience members using lap top to name an art work)

These elements address social aspects of guiding a group or users around a common theme and cognitive aspects of machine assisted human information processing. The central problem is how to manage contributions from users in an environment of collective authoring. Using communication, databases, and semantic search methods we stimulate group activity and participation by combining audience back-channel with automatic search and recommendation of related materials algorithms from a database (Dubnov and Kiyoki 2009).

These design principles are based on a model of virtual community (Holtzman and Dubnov, 2010) that identifies four main dimensions: social, personal, managerial and technological. Expressions can be considered as one such realization of social-computing interaction that combines several such dimensions. In terms of novel cultural practices mediated by technology, the system recreates exegetic practices in a digital setting, putting the audience in the role of "significance givers", a practice that had been already a dominant force in shaping cultural and religious thought in the transition from oral to written collective texts in early scholastic practices (Dubnov and Codognet, 2010). Exegetic techniques employed in Provoke include textual commenting and threaded responses, polls, ranking, image selection and labeling, enhanced through technologies of automated text analytics, sentiment and topic analysis, summarizing, visualization and more.

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Excerpts from the Expressions coactive event:

[http://www.youtube.com/watch?v=r96w\\_xSdrCk](http://www.youtube.com/watch?v=r96w_xSdrCk)



(Choir in Israel sings coactively with Singer in San Diego)