Open Locast: Locative Media Platforms for Situated Cultural Experiences

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Abstract. Our interactions with space are becoming increasingly mediated – the further integration of context-aware mobile devices into everyday life continues to enable new understandings of our surrounding social, cultural and geographic spaces. Utilizing these devices in conjunction with emerging web technologies, online platforms that enable situated cultural experiences centered on the consumption and production of rich media content can be designed. This paper presents two projects based on the Open Locast framework, a web and mobile framework created for the design and development of locative media platforms towards these ends: Locast Tourism, aimed at re-envisioning the tourist experience in the Abruzzo region of Italy, and Memory Traces, a spatially-oriented interactive documentary that presents the stories of prominent Italian American immigrants in the City of Boston.

Keywords: Participatory media, locative media, digital humanities, spatial narratives

1   Introduction

New types of networked media ecologies are fundamentally transforming engagement with shared cultural knowledge [3]. These ecologies are enabled by various online platforms characterized by new representational forms and emerging types of interaction. The concept of locative media, digital media annotated with geo-spatial coordinates, plays an important role in this changing landscape. Locative media objects are, in a sense, fixed within places, existing as part of a conceptual layer on top of physical space – the connection between media objects and space is made explicit in locative media platforms.

Galloway presents the practices of locative media as closely related to that of archeology, stating that a central concern of locative platforms is "how to collect and curate cultural objects." [1] Along these lines, the Open Locast project[1] is best described as a systematized approach for designing online locative platforms in support of unique user experiences with situated sociocultural topics. Online platforms based on the Open Locast framework provide context-aware interfaces for the consumption and production of media content related to a given topic. This paper presents an overview of the architecture of the Open Locast framework, and describes the design and

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[1]   http://locast.mit.edu/

implementation of two differently oriented projects. Locast Tourism[2] was a project that aimed to re-imagine the tourist experience in the Abruzzo region of Italy, incorporating user-generated media content alongside traditional broadcast material. Memory Traces[3] is an interactive documentary that is designed to provide a look into Italian immigration in Boston through the memories of prominent Italian immigrants.

2 The Open Locast Framework

The Open Locast framework was designed to support the rapid prototyping of locative media platforms. Although Open Locast platforms are created for different purposes, the framework provides the design principles and core components – Open Locast platforms consist of two main components, a Web application and a Mobile application that act in unison to provide a cohesive user-experience. The Open Locast framework is developed using open source software and standardized web technologies, making it flexible and widely accessible.

2.1 Information architecture

The core data model in the Open Locast framework is the Cast, which is a collection of visual media (photographs and videos) created at a specific time, at (or about) a specific place. Casts function both as objects containing curated media content about a given topic, as well as objects created by users as they interact with a platform. Aside from geospatial coordinates, Casts are additionally described with a title, a description, and semantic tags. Tagging, a well-established practice in participatory media platforms, is central to Open Locast platforms. From an interface perspective, when content in a platform is tagged, it allows for simpler interactions to find relevant data – searching existing tags is an act of "browsing" as opposed to "finding," and thus a user is exploring a space to formulate questions, rather than searching for answers to specific queries [2].

Open Locast also is designed to support collections of Casts, which themselves are titled and described, allowing them to be purposed towards various needs. Collections are curated around places or themes. However, they are designed not just to group related content, but also to influence the creation of media content. Users are encouraged to create Casts towards specific collections, helping ensure that produced content is relevant to the to the topic and thus creating a higher level of coherence through the platform.

2.2 Open Locast Web

The Open Locast Web Application is made up of back-end and front-end components. The front-end is a map-based interface that visualizes Casts as icons on a

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map (with closely adjacent Casts displayed as clusters), and additionally supports the browsing, filtering, and searching of Casts based on their meta-data. The front-end is developed using standard web technologies (HTML, CSS, and JavaScript), and online mapping services (the Google Maps API and OpenLayers[4]).

The back-end is responsible for the storage and processing of media content. One of the primary components of the back-end portion is the API (Application Programming Interface) that is used both by front-end interface as well as the mobile application to access and publish media content. The API is RESTful[5] and makes use of the JSON data-interchange format, both of which are well-established web standards, making the API accessible to a wide variety of client interfaces. The API allows for the querying of content along various parameters – by tag, by author, by distance to a point, among others. This is reflected in the front-end interface, which is designed to allow users to filter Casts based on the parameters that can be queried on the API.

2.3   Open Locast Mobile

Mobile devices play a central role in Open Locast platforms, and the Open Locast framework consists of an Android-based mobile application that is designed to enable the consumption of media content in situ, as well as the production and geo-tagging of media content. Photographs and videos are created and automatically geo-located from within the mobile application itself.

One of the core features of the mobile application is a synchronization engine, a necessary component as wireless connectivity, while becoming increasingly ubiquitous, can rarely be relied on. Content can be stored from the web application locally on the mobile device, and can also be produced and geo-located without a network connection – once a reliable network connection has been established, the created content is then synchronized and uploaded onto the web platform.

3   MEMORY TRACES

Memory Traces is an interactive documentary about the memories and experiences of Italian-American immigrants in Boston that was developed using the Open Locast framework. The project was done in collaboration with the Italian Consulate of Boston in commemoration of the 150th anniversary of the Unification of Italy.

Memory Traces was designed to show the narrative potential of locative media platforms, and is comprised of short (2-3 minute) video clips taken from interviews with 1st, 2nd, and 3rd generations of Italian immigrants. Each clip (or "story") consists of memories about events and topics based around specific places. These stories were geo-located, tying the memories of places to their physical locations within the city Boston. In addition, each story was described by various pieces of meta-data, such as

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[4]   http://openlayers.org/
[5]   A web service architectural style that is well regarded for its simplicity

the time period in which it occurred, as well as one or more reoccurring themes (modeled as semantic tags) that were relevant to the Italian immigration experience.

3.1 Mobile and Web-based Interfaces

The stories themselves were Casts, visualized on the map-based interface provided by Open Locast, and organized within collections that corresponded to the individual interviewees. The stories could be displayed all at once, drawing attention to the spatial characteristics of Italian immigration, with historically relevant neighborhoods containing larger clusters of memories. The web interface additionally featured controls to filter the map, allowing users to browse the content based by selecting an interviewee, but also by choosing a time period (e.g. the 1950's), or theme (e.g. "Achievement"). Filters could be applied in conjunction, allowing the user to control exactly what content was visualized (e.g. stories about food from the 1970's).

The Memory Traces project also featured a mobile application, designed around providing an in-situ viewing experience. Using the mobile application, a user exploring Boston could watch stories that were physically close to their location. Similar to the web interface, the mobile application also provided mechanisms to browse nearby stories by theme and by time period.

Fig. 1. Memory Traces Mobile Interface

4 Locast Tourism

Locast Tourism was developed in order to provide a platform to re-imagine the tourist experience in the Abruzzo Region of Italy. Aburzzo is a region well known for its

food, wine, and natural beauty, but often off the beaten path for tourists[6]. Locast Tourism was designed to create a media ecosystem of both professionally produced broadcast content supplied by the RAI national network of Italy and user-generated content from tourists within Abruzzo. The goal of the project was to highlight the cultural importance of the region, as well as to support the changing role of media in the tourist experience through the 4 stages of tourism – before traveling, in transit to the destination, while traveling in the destination, and after the trip has been completed.

4.1 Itineraries and User Generated Content

The Locast tourism platform was envisioned around the notion of the itinerary, which was modeled as an Open Locast collection – itineraries were designed either around specific places (e.g. Pescara, the capital of Abruzzo), or important cultural topics (e.g. The Churches of Abruzzo), and consisted of curated collections of geo-located broadcast content from RAI combined with a path through the landscape along the locations of the content.

Fig. 2. An Itinerary visualized on the web-interface

Locast Tourism also featured a mobile application that was designed to work in close conjunction with the web application. A user could browse the various itineraries and media content through the web interface before travelling, and were able to "favorite" itineraries and Casts, ensuring that they would be viewable offline and in-transit on the mobile application. Once they arrived, the user would follow an itinerary using the mobile application and watch media content at the related places. Additionally, as users progressed along an itinerary, they were encouraged to create their own Casts, contributing media content corresponding to their personal experience

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6 Robin Robinson, *Hidden gems and buried treasures: Abruzzo could be Italy's best kept secret*, http://www.torontosun.com/2012/04/25/hidden-gems-and-buried-treasures, April 2012

back into the itinerary. In Locast Tourism, user-generated content was designed to be in conversation with professionally produced broadcast content and authored itineraries.

5   Conclusion

Both Locast Tourism and Memory Traces, while oriented around very different subject matter and cultural contexts, were designed around similar principles based on in situ media consumption and site-specific practices of media production. Designed around these new realities of mediated interaction with space, the Open Locast framework was created to enable projects directed towards increasing user engagement with cultural material within a defined geographic context.

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