Eyewitness: Platform Design for Visualizing and Synthesizing Citizen Media Video Content of Political Significance

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Abstract

New strategies of societal control are emerging as a result of citizens' growing access to information facilitated by the Internet. These strategies are used to subvert the positive effects of information democratization and Citizen Media disseminated by Social Media platforms. The increasing quantities and idiosyncratic qualities of citizen media are challenging characteristics that stand in the way of its exploration, perception, and interpretation. I propose the Eyewitness Visualization and Platform design that adapts meta-design frameworks to contextualize, synthesize, and leverage citizen media video content (CMVC). Eyewitness participants will be able to construct a synthetic, comprehensive representation of a politically significant event from the view point of multiple witnesses (including themselves). The designed platform empowers citizens by mobilizing their efforts to achieve a common goal: reconstructing a historical record of a politically charged event as documented by average citizens' media video content rather than state and corporatized media. The platform focuses on CMVC that does not carry any meta-data due to technological and/or governmental restrictions. The design prototypes focus on CMVC capturing the recent events of the Arab Awakening in Egypt. Factors that support cultures of participation and meta-design methodologies will be studied in light of Eyewitness. Based on these insights, I argue that a meta-design framework can play a role in neutralizing the negative effects of information overload on citizen media video content.

Table of Content

Table of Content

1. Design Proposal

1.1 Introducing the Design Ecology and the Design Problem

1.1.1 The Grand Narrative and the Spectacle

John Stephens and Robyn McCallum (1998) define the grand narrative as “a global or totalizing cultural narrative schema which orders and explains our knowledge”. Similarly Jean Francois Lyotard (1992) says that the “Grand narrative claims to be the story that can reveal the meaning to all stories” (Readings, 2012, p. 63). In other words this narrative (that is also known as the master narrative and the meta-narrative) signifies a story about a story or an interpretation of a story. Lyotard in his book *The Postmodern Condition* anticipates the decline of the grand narratives, he states “The grand narrative has lost its credibility, regardless of what mode of unification it uses, regardless of whether it is a speculative narrative or a narrative of emancipation” (p. 37).

A few years before Lyotard’s argument, in 1989 Jonathan Crary wrote about two media models that were responsible for disseminating the grand narrative. In "Spectate, Attention, Counter-memory" Crary discusses Guy Debord’s ideas about the models of the spectacle: the diffused spectacle and the concentrated spectacle. In the context of the former, media is disseminated by monopolistic corporatized media and the latter by a totalitarian state media. Both models propagate a grand narrative. In a time where authoritative parties instrumentalized available media (television, broadcast, and printed media) to promote specific interpretations of stories, ‘strategies of enforced scarcity’ over information that communicates counter narratives were deployed to secure the dominance of the grand narrative (Andrejevic, 2013). As Andrejevic states “Many (but not all) of the historical struggles related to control over information in the history of contemporary democratic societies revolve around issues of scarcity and the restrictions of access to information” (p. 10).

1.1.2 The Political Implications of the Internet & the Multiple Narratives

It is in this context of ‘information scarcity’ that the Internet has appeared to be a "scarcity-fighting" technology. The developments in the medium changed the dynamics of information production, dissemination, and sharing (Shirky, 2009). Technological developments and the shift in sender-receiver dynamics resulted in information overload. In a world cluttered by information, whether the user is a "Super User" or an average one, making sense of information is a challenge. The increasing flood of data received by users each day has impacted the notion of the grand narrative and its symbolic efficiency. Symbolic efficiency according to Zizek (1997), refers to the condition in which a fact is not true until the “big Other” approves it. The “big Other” is the party that is recognized and officially approved by the masses. Symbolic efficiency is determined based on the relationship between forms of knowledge and power (Andrejevic, 2013). The accessibility to information provided by the Internet, affects the symbolic efficiency as well as the status of the “big Other”.

Information overload makes users aware of the impossibility of being fully informed about a subject,

and that every message they receive represents only a part of the whole. In addition, the availability of many news sources on the Internet leads users to be more informed about the bias of journalists, news corporations, and state media (Andrejevic, 2013). In this regard the Internet acts as a supporting platform for alternative narratives, such as the ones embedded in citizen media content (CMC). CMC is an influential medium that provides communities with the opportunity to capture counter narratives for events and empowers marginalized witnesses by giving them means to communicate what they have witnessed (Al-Ani, Mark, Chung, & Jones, 2012). Like any technological development and evolving medium, the Internet and citizen media content has political implications. A report published by Reporters without Borders in March 2012 titled "The Enemies of the Internet" claims that the Internet in two countries that are experiencing political unrest, Egypt and Tunisia, are categorized as “under surveillance”. The report highlights that the repetitive citizen media news block-outs, Internet slow-downs, and arresting of bloggers is a clear proof, and obvious recognition of the value, and facts that CM carries and the change that it is capable of exerting (Zhang, 2012). The number of Internet subscribers in Egypt between the year 2011-2012 increased by 16.9%; this increase is believed to have been stimulated by the January 2011 revolution (Chabenne, Dean, De Bellefonds, Stevens, & Zwillenberg, 2012).

This quick preview of the political implications of the Internet and citizen media (as a type of information disseminated through the Internet) in states witnessing political unrest, might suggest that the totalitarian grand narrative strategy of control that dominated in the past does not exist or have an effect in countries with open access to the Internet. In his book *Infoglut*, Mark Andrejevic states that if in past times authorities in different states adapted the strategy of the grand narrative to control citizens’ awareness, currently a new concept of control is emerging; the Multiple Narratives. The multiple narratives is a new strategy in ideological control that aims at creating confusion by multiplying facts, critiques, and narratives related to an incident. It disseminates both a narrative and its counter-narrative (Andrejevic, 2013).

The multiple narratives formulate a different relation between knowledge and critique in which critique is used to propagate confusion rather than reduce it. In this case the flood of information is used to obscure a subject rather than clarify it. This results in a growing doubt about facts-based-decisions and evidence-based-claims (Andrejevic, 2013). This strategy of control is considered a result of the fact that societies are gaining more access to information in a way that can not be controlled by authoritative parties.

The interaction and open access to the Internet has without doubt many political implications. They empower the receiver (the average user) (Shirky, 2009) yet the authoritative powers have found a way to use the open (excessive) information to its favor. Post-truth Politics (Fallows, 2012) uses narratives and counter narratives to undermine critiques and discourses, an act that indirectly dictate another truth; the uncertainty of truth.

1.1.3 Post-truth Politics and Citizen Media

The term "Post-truth politics" first entered discourses during the last presidential campaign in the United States. Many journalists published articles discussing aspects of post-truth politics in speeches given by Mitt Romney, the Republican candidate in the 2012 presidential election (Zeleny & Rutenberg, 2012; Bennet, 2012 ; Fallows 2012; Johnson, 2012). During one of his speeches Romney ignored the original context of Barack Obama's quote, and placed it in a different context to subvert its original meaning (Johnson, 2012).

Post-truth politics is a strategy of disseminating uncertainty by ignoring facts, contexts, or evidence. It affects different sources of news and information: "post-truth politics will sooner or later force the press out of its preferred, comfortable pose of "balance" if it is to come close to doing its fundamental job of describing reality" (Fallows, 2012). Citizen media (as it is considered a form of news), is surely affected by strategies of post-truth politics. De-contextualization, massive amounts (Comninos, 2011), non-prosfessionality (Hogg, 2009) of citizen media among other characteristics, stand in the way of its dissemination, aggregation, and consequently exploration (Harkin, Anderson, Morgan, & Smith, 2012). The obstacles this media faces directly and strongly affect the perception and understanding of its content or in other words the "sense making" of this material.

A form of post-truth politics in the context of citizen media can be exemplified in this scenario: one citizen media video clearly condemns one party over other, yet contradictory narratives are propagated with the aim to promote uncertainty about the video's clear content. Such claims could cast doubt on the videos' date, location, factuality, chronology, or circumstances. This will result in uncertainty around the information embedded in the citizen media video. The context of citizen media is crucial if it is to be considered a part of news or a piece of evidence. The practice of post-truth media politics and the multiple narratives with regard to citizen media content is facilitated due to the absence or uncertainty of the context surrounding the content. Context in this regard is time, date, location, and circumstances related to citizen media.

1.1.4 Challenges of Citizen Media

Elizabeth Churchill, a psychologist specializing in Human-Computer Interaction (HCI), co-authored several academic texts that discuss digital archives and cultural memory. In "Designing for Digital Archives", Churchill and Ubois point to the different challenges that citizen media content faces. Among them: the existence of the content in different online and offline locations, and the threats exerted by political partisans, and political media (Churchill & Ubois, 2008). In another article, Giaccardi, Churchill, & Liu, (2012) point out the challenges that face the content's users rather than the content itself. The authors mention the need to create archiving systems that conform to the huge amounts of user generated content that has cultural and historical significance. They add "We also do not yet have a

good sense of what is needed to mobilize technology development and design to support remembering and forgetting at the personal and collective levels".

Designing for Remembering and Forgetting

The concern that Churchill et al. mention raises the question: what role can design, designing, and designers play in order to restore the collective memories of people and their communities that are embedded in citizen media content? As system designers, we have the ability to create mediums that influence the experience of remembering and forgetting on both micro and macro levels (House & Churchill, 2008).

In one of her papers, Churchill points to the importance of differentiating between algorithmic search and human memory. Churchill and Ubois (2008) suggest in one of their papers an approach to design for digital collective memories: "understanding the way in which human memory works– by recreating context to facilitate retrieval (…) we narrow the search space through circumstance reconstruction—a kind of semantic way-finding to the content" (Churchill & Ubois, 2008, p. 11-12). Their statement points to an important aspect in this regard: the difference between algorithmic search processes (typically executed by search engines), and human memories' processes. While the former is based on keywords or dates related to a personal or collective memory, the latter is based on contextual circumstances of a memory (personal or collective), also known as the "Context-Dependent Memory". Context-dependent memory is one important characteristic of human cognition. Theories concerning this type of memory inform us that the probability of remembering an occurrence is much higher when people recall the specific occurrence in relation to its context (Stefanucci, O'Hargan, & Proffitt, 2007).

Some of the challenges that face citizen media content can be understood by looking at it from the perspective of journalism. Journalism codes of ethics outline principles that the field adheres to. Among these values are trustfulness and accuracy (APME | Statement of Ethical Principles). The field of journalism is interested in the content of citizen media as a source of news. Authors of "Making Sense of it All" (Diplaris et al., 2012) present a guideline that attempts to help journalists benefit from user generated content. Verification, visualization, and cross-platform issues are some of the challenges that journalists face when relying on citizen media posted on social networking sites (YouTube, Twitter, Flickr) (Diplaris et al., 2012). Verification means ensuring the accuracy of the content; visualization means the display of the content in an understandable manner; and cross-platform issues means performing searches of content across different social media sites. Other guidelines are provided by Mandy Jenkins who is a social media journalist. One of her presentations (Jenkins, 2013) states that: context verification (date, time, location) is key for journalists who want to rely on citizen media content as a reference for a news event.

Hence, secondary research into ways to leverage citizen media and increase its sensemaking[1], and

1 Karl E.Weick defines sensemaking as "a search for contexts within which small details fit together and make sense." (Weick, 1995, p.133 as qtd in Todd n.d.)

validation suggests that providing context to citizen media may decrease uncertainty about its content. Consequently it can play a better role in informing citizens. Technologies such as meta-data and geo-location data that are in some cases embedded within different media (videos, photos, tweets) are useful in providing a reliable reference for citizens, but if this data is missing due to technological or governmental restrictions, how can citizen media be contextualized, and made sense of in a multiplied narrative realm that uses citizen media subversively?

There are several challenges to working with citizen media (based on secondary research). They can be summarized as follows:

- Quantity. Quantity of citizen media (CM) content is enormous (Cominos, 2003), an aspect that makes it difficult to explore.
- Cross Platform. Citizen media exists in multiple online and offline platforms, an aspect that makes it hard to document (Churchill & Ubois).
- Quality. Quality of CM is diverse technically and aesthetically. Citizen media videos have different visual qualities[1], duration, resolution,… that might/might not help the viewer to make sense of its content.
- Contextualization. Citizen media context is often absent, which results in it being dis-attached from its original circumstances.
- Political partisans. Some political partisans request "take-down demands" of specific citizen media videos, this threatens its content.
- Verification. Verifying citizen media content is hard when the embedded meta-data is lost.

After examining the various problems related to citizen media, it is worth noting the potential relation between the problem of contextualization and the other problems. Hypothetically, contextualizing citizen media videos can lessen the negative impact of their massive quantities. The act of contextualizing citizen media according to its spatial, temporal and/or circumstantial dimension might create categories (spatial or temporal or circumstantial) that are capable of improving the management of this content. Contextualization might also help solve some negative aspects related to the qualities[2] of citizen media.

The reconstruction of the occurrence's context is then a key element to consider when designing a medium that embodies collective memories; accommodates the specific properties of citizen media; appropriately manifests the subject content; and permits a representation of lost layers of meaning.

1 Based on a survey I conducted, respondents reported that the visual qualities of citizen media video discourage them from watching it. The survey is discussed in section (4.2.4).

2 Citizen media videos with higher quality, and longer duration could compensate for videos with lower quality, captured during the same event.

1.1.5 The Design's Research Question

In the following section I present the way in which the thesis research question has evolved along with the hypothesis that accompanied each question. The research based design started by asking the following question:

How to design a medium that increases the sensemaking[1] of citizen media of political significance?

After primary and secondary research into the ecology of designing for citizen media and the difficulties related to exploring and understanding its content, I discovered that the key component in this regard was the contextual aspect of citizen media. In addition I also decided to focus on citizen media videos. So the research question became:

How to design a medium that contextualizes citizen media videos of political significance? Hypothesis: Contextualizing citizen media videos of political significance will increase the sensemaking of this content.

This question was followed by further primary and secondary research that investigated the different contextual aspects related to citizen media videos. In the course of the research this thesis question evolved to investigate aspects of citizen media videos that require contextualization. The results of this research-based practice helped narrow down to specific contextual aspects of citizen media video that I title the "Contextual Specificity" of citizen media videos (Figure 1.1). The contextual specificity of citizen media is the relation between citizen media content and three notions: time and space, where the occurrence unfolded; other citizen media content, captured in similar time and space of the occurrence; and the situational circumstances of the witness, meaning his/her emotive conditions. I refer to this relationship as the "contextual specificity" of citizen media content. So then the question evolved to be:

How to design a medium that embodies[2] the contextual specificity of citizen media videos of political significance?

In this stage I researched, prototyped, and tested models that embodied the temporal spatial and circumstantial dimension of citizen media videos. These prototype consisted of visualizations and platform prototypes of citizen media videos. One of the visualization designs prototypes proved in the testing to

1 Wilson and Wislon (2012) refers to the work of Belkin and Dervin(1980, 1983) to define sensemaking. According to the authors sensemaking is the task undertaken by users to fill a gap in their knowledge; this task is achieved by building a knowledge bridge. They explain that sensemaking is the process of fulfilling a need for information (or "containing an information gap"). It is the method used to find the adequate information that fill this gap in knowledge (Belkin, 1980; Dervin, 1983 as qtd in Wilson & Wilson, 2012). Among the variables used to measure a user's sensemaking is the information source used; time given to learn the information; the quantity and form of the user's output that expresses the acquired information (such as a written summary), and the time spent to produce the output.

2 Embody in the context of the research is "To give a concrete form to" according to Oxford English Dictionary.

be capable of experientially communicating the spatial, temporal and circumstantial dimensions of citizen media videos. The third dimension of citizen media contextual specificity (which is the relation between a citizen media video and other citizen media videos that were captured during the same time and space) required a visualization design solution in addition to a platform design solution. The visualization design aimed at finding ways to stitch different videos together. And the platform design solution aimed at creating a platform for different individuals to contribute their videos and together construct a representation of politically significant events as documented by potentially themselves and others.

At this stage I reviewed the latest research publications that are attempting to synthesize video-based user-generated content then consulted with an expert in the field. This secondary and tertiary research informed me that synthesizing[1] citizen media videos that do not embed meta-data is not a feasible task. So my question at this stage of the research was:

How to synthesize citizen media videos that do not embed meta-data?
Hypothesis: Meta-design frameworks are capable of facilitating the synthesis of CMV that do not embed meta-data.

At this stage I examined meta-design frameworks as a solution to re-compensate for the absence of embedded meta-data. The platform opened a space where target participants[2] can experience the temporal, spatial, and circumstantial dimension of citizen media videos. So I designed a platform that adapts a meta-design framework to allow users to visualize, synthesize, explore, and experience citizen media videos in respect to their temporal, spatial, and circumstantial dimension.

After embodying the contextual specificities of citizen media videos (meaning the temporal spatial and circumstantial dimension of citizen media videos from one and multiple views), I began to test my initial hypothesis that is:

Contextualizing citizen media videos of political significance will increase the sensemaking of this content.

Measuring whether embodying the contextual specificity of citizen media videos of political significance increases the margin of sensemaking of political events was executed based on a measuring technique developed by Wilson and Wilson (2012) and published in the Journal of American Society for Information Science and Technology. Their technique measured the level of sensemaking in an open-ended learning context. (Testing the hypothesis can be viewed in sub-chapter 5.6 and 4.2.3.)

1 Synthesize in the context of the research is "any compound produced by uniting two or more elements; or the process of combining things into one" according to Oxford English Dictionary.
2 In this research the terms users and participants are used interchangeably.

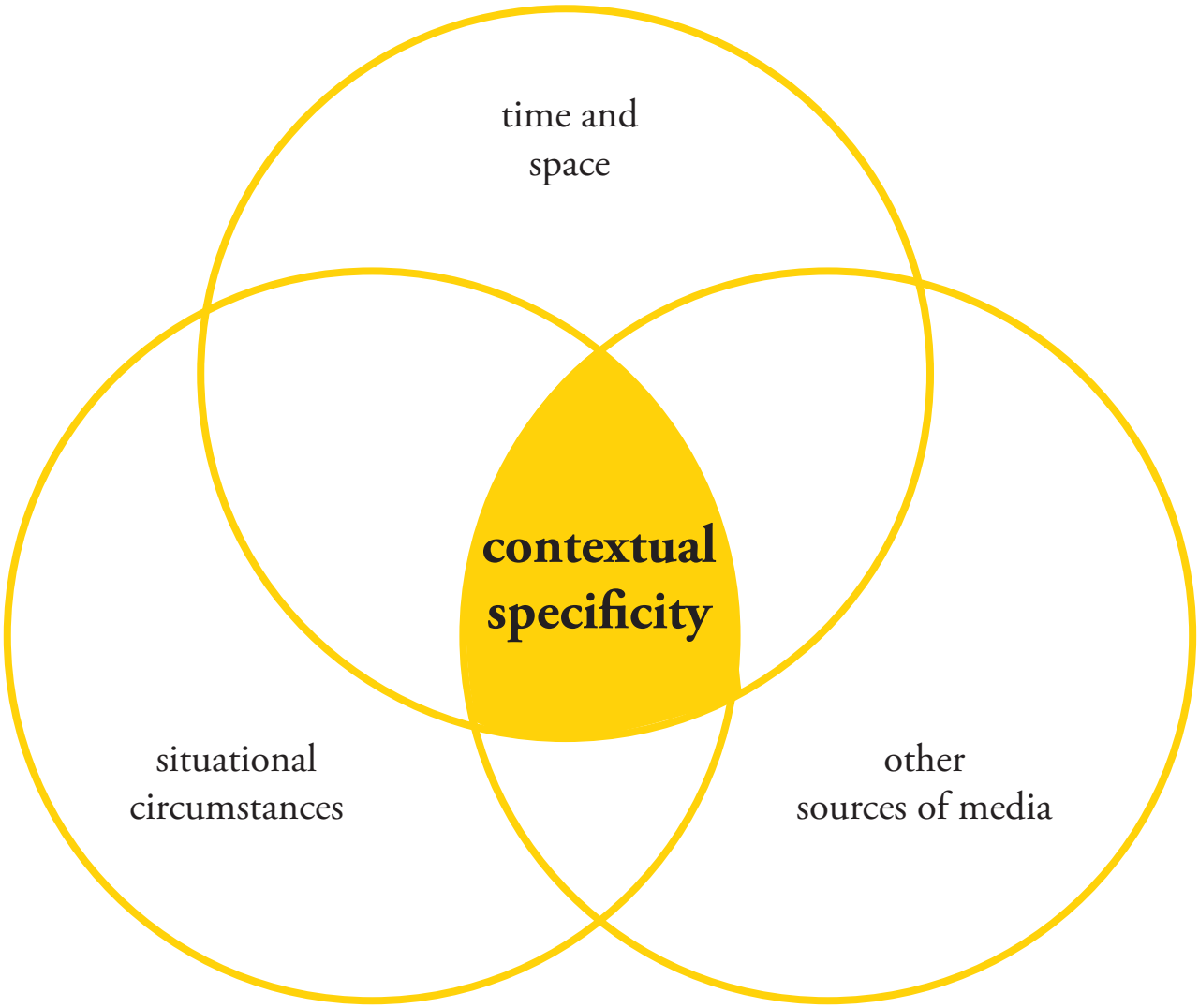

Figure 1.1: Contextual Specificity in light of my design designate the temporal, spatial, and circumstantial dimension of an occurrence, as examined from one and multiple witnesses' perspective (in relation to other citizen media content).

1.2 Design Overview

1.2.1 Eyewitness, a Platform & Visualization Design for Citizen Media Videos

By taking the previously mentioned factors into account, I present a visualization and platform design dedicated to contextualizing and synthesizing citizen media video content (CMVC) with an aim to facilitate the sensemaking of this content by facilitating the exploration of the spatial, temporal, and circumstantial dimension of CMVC that was captured during historically, and politically significant events in Egypt. The research-based design presented in this paper takes Egypt as a case study. It is the second country after Tunisia to experience the events of the Arab Awakening (also known as the Arab Spring). The design consequently aims at increasing sensemaking of information, that will potentially decrease the uncertainty that results from strategies of control, and consequently leverages citizen media content in the face of narrative multiplication.

The proposed design is titled "Eyewitness". Eyewitness is a platform that focuses on citizen media video content that does not carry any meta-data due to technological restrictions, or ideologies of information scarcity enforced by governments. Eyewitness is both a visualization design (the Eyewitness Visualization) and a platform design (the Eyewitness Platform).

The Eyewitness Visualization aims at putting a viewer of a citizen media video in the shoes of the witness who captured the video. Eyewitness focuses on a specific layer of information embedded in citizen videos: that is the camera motion of the witness. This layer is of specific importance because the witness, who is an average person, has untrained hands and eyes that are capturing a historical event. Meaning that the shaky, spontaneous camera motion translates the motion of the witness's head and eyes creating a more direct relation between the witnesses' cameras capturing the event and the witnesses' perception of the event. But the value of this direct relation between the witnesses' cameras and their perception of the event is often not perceived meaning that viewers lose the valuable information that this relation communicates about the way an event unfolded, and the value that lies in seeing an event through untrained eyes of the witness. Unless the video was reconstructed differently, if it was *spatially contextualized*. Then the shaky, spontaneous camera motion of the witness will reflect the movements of the witnesses' eyes and the shock of witnessing an unpredictable unfolding event. This reconstruction of space and unfolding of time in the Eyewitness visualization communicates the intensity, continuity, and spontaneity of a historical event as captured by the cameras of eyewitnesses. This is precisely what Eyewitness was designed to accomplish.

The Eyewitness Platform aims at allowing people to preserve, explore, and experience collective memories embedded in citizen media videos in respect to their temporal, spatial, and circumstantial dimension (in order to enhance the sensemaking of citizen media videos and the events it capture). The absence of meta-data embedded in citizen media videos creates the need to adopt meta-design as a framework for the platform. The incapability of online technologies to automatically spatially contextu-

alize and synthesize citizen media videos made meta-design frameworks a well suited solution to mobilize users' contributions in solving a personally meaningful problem for them.

The design adapts a meta-design framework to decrease the effect of uncertainty that is a result of the multiplied narrative strategies, post-truth media politics, lack of data embedded in CMV, and videos' qualities. Methods of participatory design were deployed during the process of designing, and meta-design frameworks were used to open the citizen media platform for citizens to contribute and co-design. Meta-design is part of cultures of participation that allow users to participate in shaping and maintaining a design (Fischer, 2011). It is deployed to open the interpretation and shaping of the meaning of the content of the design to its users (participants) rather than predefining it by the designer. Consequently the designed medium does not suggest a specific interpretation of citizen media content, it rather creates a space for exploration and open interpretation.

Eyewitness participants will be able to construct a synthetic, comprehensive representation of a politically significant event from the view point of multiple witnesses (potentially including themselves). The designed platform empowers citizens by mobilizing their efforts[1] to achieve a common goal: reconstructing a historical record of a politically charged event as documented by average citizens' media rather than state and corporatized media.

The Design Opportunity

The value of citizen media content can be examined in light of the events of the Arab Awakening. Citizen media content generated in the Arab countries that has witnessed the Awakening (that started at the end of 2010 and continues till the present) are aesthetically and functionally rich and unique (Elshahed, 2011). The important role the content played (and still plays) derives from an increasing respect for the model of participatory media versus a decreasing one for the traditional authoritarian model (Harkaway, 2012). This type of media was one of the aspects that characterized the Arab Awakening (Schmidt, 2012). But the massive amount of citizen media content (Comninos, 2011) among other characteristics, stands in the way of its exploration (Harkin, Anderson, Morgan, & Smith, 2012).

There is a need to design systems and platforms that facilitate the exploration and sensemaking of citizen media content with respect to its contextual specificity. The quantitative and qualitative characteristics of this content can be considered a weakness as well as an opportunity. The key to make it an opportunity might be designing with respect to its characteristics rather than adapting it to existing systems.

When this content is embodied, and communicated using a platform that was tailored to conform with its specificity, there might be a chance of benefiting from its quantitative and qualitative characteristics. And it might then communicate a new meaning and understanding for politically charged events.

1 Participants engage with the platform by performing four main tasks. These tasks are laid out and divided into small steps, in each, participants play a different role. Participants do not have to perform tasks in a chronological order, nor perform all the tasks. Activities of participants complement one another.

1.2.2 Target Participants

Target participants (users) of the Eyewitness Platform are media literate users, who have Internet access, familiar with capturing, uploading, and sharing media on social networking or media sharing websites. Users age range is between 18-35 and are socio-politically engaged. They are users living, or belonging to communities witnessing socially, politically, and historically significant movements. Their motivation to use the platform is to explore, contribute to, and document alternative narratives other than the ones disseminated by corporatized media.

Csikszentmihalyi, (as qtd in Fischer, 2011) states that participant's motivation for taking part in (design) cultures of participation is an intrinsic motivation. Participants are motivated to interact with a meta-design platform in the use time (such as Eyewitness, the meta-design I am proposing) as their interaction will result in solving what Fischer (2011) refers to as "a personally meaningful problem". In the context of Eyewitness, the problem that participants aim at solving is the reconstruction and documentation of their history and collective struggle based on their own records.

2. The Contextual Framework of the Design

2.1 Frameworks that Affect the Conceptual Context of the Design

2.1.1 Citizen Media Model

The design is centered around the medium of citizen media and its users. This section will present an existing model that demonstrate the characteristics of citizen media (CM). The examination of the model is an entry point to understand the design ecology and its challenges.

Clemencia Rodriguez was the first to use the term "Citizen's Media" in her book *Fissures in the Mediascape* (2001). Citizen media is also referred to as alternative media, citizen journalism, and participatory media. Rodriguez identifies two potential actions that result from the practice of individuals for citizen's media[1]: first, citizens practicing citizen's media exert a transformation to conventional mediascapes; second, individuals practicing citizen's media empower their communities and consequently have the ability to change it. The participatory practices in citizen's media provide a democratic opportunity that lets citizens creatively communicate their opinions (Rodriguez, 2001).

The framing of a model for the study of citizen media must consider the different forms in which citizen media exists (blogs, tweets, images, videos, …), therefore such a model must be flexible and open to accommodate the dynamic evolving nature of citizen media (Atton 2002; Rodriguez 2001). "A Typology of Alternative and Radical Media" is the name of Chris Atton's model for citizen media. Although Atton put together this model in 2002, years before the rise of social networking sites (that play a major role in the production and dissemination of CM), the flexible and open nature of his model allows us to still use it to examine CM products, processes, and characteristics.

In this model, Atton demonstrates citizen media characteristics by examining six dimensions related to the ways CM is produced and processed: Content, Form, Reprographic Technologies, Distribution, Transformed Social Relations, and Transformed Communication Processes. The last two dimensions were grouped together based on Mihal (2004) revised version of Atton's model (2002) who, in addition to grouping these two dimensions, added another dimension that is Finance.

In the next section I will briefly present the six –revised– dimensions on which Atton (2002) framed his model of citizen media, then demonstrate the impact of these dimensions on designing platforms for citizen media.

1. Content: Citizen media content is social, political, or cultural. It usually differs from corporate media content as it opposes the grand narrative propagated by the latter. Content of visual-based citizen media differs from professional media content as it is captured and disseminated by citizens rather than professionally trained journalists and news corporations.

1 She refers to it as citizen's media not citizen media.

Some professional journalists think that this makes citizen media inaccurate especially that it does not adhere to professional codes of journalism (Hogg, 2009). Image-based citizen media content is not captured or documented systematically, which sometimes results in inaccuracy. Designing to leverage and synthesize such content requires then the incorporation of tools and techniques that verify image-based citizen media (images and videos). In this regard reverse image search (that is a content-based image retrieval (CBIR) query) such as tineye.com or Google reverse image search can be useful. In reverse image searches users input an image, and the search engine shows visual content that is similar to this image (Margolis, 2013). A similar reverse search for videos is not widely accessible.

2. Form: Citizen media form designates the visual qualities of the media. Among the characteristics that affect the visual rhetoric of citizen media videos are its duration and technical qualities (Liam, 2012). In this regard Sontag (2004) in *Regarding the Pain of Others,* discusses the form and content of visual citizen's media: "The less polished pictures are not only welcomed as possessing a special kind of authenticity. Some may compete with the best, so permissive are the standards for a memorable, eloquent picture"(p. 23). Her statement suggests that viewers are more likely to trust the imperfect, spontaneous captured images. Sontag adds:

> Photography is the only major art in which professional training and years of experience do not confer an insuperable advantage over the untrained and inexperienced—this for many reasons, among them the large role that chance (or luck) plays in the taking of pictures, and the bias toward the spontaneous, the rough, the imperfect.(p.24)

This suggests that the qualities of image-based citizen media, or amateur photography compete with professional photographs not due to technical expertise but due to the contextual specificity of citizen media. It's worth mentioning that she wrote her book (quoted above) in 2004, and people's perception of citizen media images or videos might have changed since then, especially with the spread of social networking sites that circulate a large number of citizen media content (CMC).

3 & 4. Reprographic Qualities and Distribution Technologies:
Citizen media reprographic qualities designate the ways in which the content is (re)produced. And citizen media distribution designates channels through which the media is disseminated. This dimension involves the subject of copyrights.

I group these two dimensions together (reprography and distribution) as both depend on the same medium and networks. While the production of the citizen media content is facilitated by the growing access to documentation devices (such as mobile and hand-held cameras), the reproduction of CM is mainly (if not solely) dependent on the medium of the Internet (Shirky, 2009): media sharing websites,

and social networking sites. The same applies for distribution. These two processes are essential to examine when designing for citizen media, since verification processes heavily depend on the data embedded in media during the reproduction and distribution processes.

5. Transformation of social relations and communication processes: Citizen media transforms social relations and communication processes, since it changes the relationship within and between citizens and organizations who are engaged in the process and production of citizen media content (Mihal, 2004). The social transformation is reflected in the shift of roles, a shift that blurs the boundaries between the sender and receiver, the producer and consumer. An understanding of the impact of such a transformation can be well observed in the recent events of the Arab Awakening, where citizen media played an important role in motivating socio-political change (Sturm & Amer, 2013).

6. Finance: Citizen media's finance dimension refers to the revenue that is generated as a result of the production and dissemination of citizen media. Users involved do not often make a profit from being engaged in CM. In some cases users can set up their YouTube and Flickr accounts in a way that allows them to receive monetary compensation in exchange for adding advertising to their popular uploaded citizen media videos (on YouTube), or of selling their citizen media photos (on Flickr) (E.Gill, 2013).

2.1.2 Bias and Verification in Citizen and Mainstream Media

Under the content dimension in Atton's model is a discussion of the accuracy and bias of citizen media. Such a discussion requires the examination of accuracy and bias in both citizen and mainstream corporate media. Citizen media is often compared to mainstream media and criticized for being less accurate. This section reveals some of the significant aspects related to the discussion concerning accuracy and bias of citizen and professional media related to news stories.

Mainstream Media Bias

Mainstream media is defined by Branston and Stafford (1999) as "that area of media production in which dominant cultural and industrial values operate" (p. 442). It is also known as mass media. Corporate media is a system of mass media that is controlled by media corporations. State media is another form of mass media communication that is controlled financially and editorially by a governing political party (in some regions the mainstream media is the state media).

The process of news production in mainstream media is controlled by "news values". These values are criteria used in the selection, construction, presentation of the news, and the priority of the news publications. Another tradition of mainstream news media mentioned by Branston and Stafford (1999) is the reliance on big agencies to report hard stories, while small agencies reproduce these stories. Large news agencies such as "Reuters" or "Associated Press" construct their news using facts, statistics and quotes from official sources. Their practice adheres to the Journalism Code of Ethics. These ethics consist of concepts, ideal-typical traits,

and values according to Deuze (2005) who categorizes them into five main values:

- Public Service: journalists provide a public service;
- Objectivity: journalists are impartial, neutral, objective, fair and (thus) credible;
- Autonomy: journalists must be autonomous, free and independent in their work;
- Immediacy: journalists have a sense of immediacy, actuality and speed;
- Ethics: journalists have a sense of ethics, validity and legitimacy. (Deuze, 2005)

Ideally all news corporations and news workers adhere to the Journalism Code of Ethics. But in reality some news corporations and workers adhere to these codes in varying degree. In other words the Code of Ethics is “interpreted, used and applied differently among journalists across media” (Shoemaker and Reese, 1996 as qtd in Deuze, 2005). This varying degree of adhering to the Journalism Code of Ethics (JCE) by news corporations has led media studies to criticize the process and practice of news production (Branston and Stafford,1999). The media studies field often criticizes news production in some corporations for being nontransparent, serving the dominant interest, in addition to indirectly affecting public opinion through the selection of news to be aired/published while intentionally leaving others unpublished (Herman & Chomsky, 2002). These criticism could be applied to state media. For example in recent events such as the "Massacre of Rabaa" that occurred in Egypt, Egyptian state media (such as Nile News) as well Egyptian corporate media (such as CBC and ONTV) covered the Rabaa events from one perspective: that is the perspective of the governing authority (El Masry, 2013).

Another consequence resulting from adhering to the JCE in varying degrees is the appearance of “Spin Doctors”; who contribute to the construction of news. The “spin” in that context signifies a form of propaganda led by people “doctors” who manipulate the public opinion toward or against an event, an institution, or a figure in favor of whomever is hiring them. Famous "spinning" tactics according to Branston and Stafford (1999) include:

- Casting material that supports a single point of view. This tactic is called “cherry picking”.
- Placing unfavorable news in the middle of other popular news, pulling citizens’ focus toward popular ones.
- Employing “Euphemism”, or replacing words or expressions for the purpose of suggesting another meaning.
- Delaying the casting of news that is not relevant to a particular ideology.

Branston and Stafford (1999) state that news selection in some news corporations follows a “hidden agenda” pre-settled by those in control of the corporation. According to the authors, the “hidden agendas” and the power to control public discourses result in "the spiral of silence": a political and mass communication theory developed by the German political scientist, Elisabeth Noelle Neumann. In her book *The Spiral of Silence: Public Opinion- our Social Skin*, Noelle (1993) indicates that the “Spiral of Silence” occurs when the minority refuses to speak up their opinion and express their views because

they are afraid to become isolated by the dominant majority. (This forced silence is interpreted to be the motivation behind the production, dissemination, and sharing of citizen media.)

Citizen Media Bias and Accuracy Concerns

Like professional mainstream media, the objectivity of citizen media is questioned as well. The following section presents the common critiques against the accuracy of citizen media[1].

Professional corporate media journalists describe text-based citizen media (blog posts) as subjective, unprofessional, and not adhering to ethical codes of journalism (Hogg, 2009 ; Goh, 2007). On the other hand some professional journalists appreciate the role citizen media plays. Robert Fisk, a well known, award winning Middle East reporter for the Independent newspaper criticizes news agencies where reporters "report what is happening in Syria, from their offices in New York." (Dharsii, 2013). Fisk who has been reporting from the Middle East for 30 years says in an interview: "My own view is the mainstream press coverage of the Middle East has been so awful, so cowardly, so cringing for so long, I'm not surprised people look elsewhere for reporting. They should." (Dharsii, 2013). In his talk at St. Andrew's-Wesley Church (Vancouver, 2013), he acknowledged the role citizen media is playing in informing citizens about local and global events.

Image-based citizen media or citizen photojournalism is sometimes doubted for being altered or "photoshopped." One of the iconic statements that went viral after the 25th of January revolution demonstrates the doubt related to citizen photojournalism. A famous international Egyptian composer –Amr Mostafa– stated that "videos of the [Egyptian] revolution were photoshopped" in one of his interviews (altahrirtvchannel, 2011). That statement which received a lot of critiques reflects the opinion of a considerable number of citizens who doubt the credibility of citizen photojournalism. Like text-based citizen media, citizen photojournalism is accused of not respecting the basic ethics of journalism (Lacey, 2011).

Finally, video-based content remains relatively the most difficult to manipulate by citizens as it requires a complicated set of skills, a considerable amount of time, and is easier to detect when altered. Yet de-contextualizing a citizen media video remains another factor that devalues the content of this medium[2].

1 Based on research I conducted to write this section, the critiques against the accuracy of citizen media differ according to the form of media. Text-based citizen media content (CMC) (such as blog posts) is more often criticized than image and video-based CMC.

2 According to a survey I conducted with 43 Egyptians, 58% of the respondents reported that they came across citizen media videos that were wrongly tagged or de-contextualized from its original date and place. 84% of the respondents that they came across citizen media images that were tagged or de-contextualized. The survey suggests that the de-contextualization of image-based citizen media is higher than the one of video-based citizen media (84% versus 58%). In the same survey 86% of the respondents that their primary source of news during the the first 18 days of the Egyptian revolution (between January 25, and February 11, 2011) was time-based media (TV, online newschannels, and YouTube). The survey is discussed in section (4.2.4).

2. The Contextual Framework of the Design

Reflections on Citizen and Corporate Media Bias

Rachelle Goh in her paper "Mainstream Media Meets Citizen Journalism" (2007) discusses issues related to evaluating the credibility and accuracy of citizen journalism. The author presents two points of view in this regard. The first point of view notes that the absence of journalistic norms, research, and verification processes are all factors that make citizen media less credible and accurate. The second point of view acknowledges the potential absence of these factors (journalistic norms, research, and verification) in the process of citizen media CM, but it argues that CM adapts a better mechanism to correct errors than the one adapted in corporate media (Posner, 2005 qtd in Goh, 2007). This mechanism is embodied in the feedback system available on citizen media platforms. These systems facilitate an instantaneous and flexible way to give feedback (Michael Korzi, 2006 qtd in Goh, 2007).

In this respect, Rachelle Goh (2007) argues that: "The fundamental difference between the two systems [corporate media and citizen media] is that the mainstream media does its vetting and fact-checking pre-publication, whereas the blogosphere [and citizen media] carries out those same processes post-publication [via feedback]." (Goh, 2007). Her statement reflects her refusal to acknowledge a superiority for the credibility of corporate mainstream media over citizen media. She instead counts on potential future developments of tools that will facilitate the verification of citizen media. In this regard she adds that citizen media literacy is a vital requirement that will allow citizens to better navigate and evaluate citizen media. In one of the interviews quoted in Goh's paper, Jill Lang states:

> People need to understand the stuff is unfiltered; that it may be opinion; that it may be imperfect; that it is part of the larger picture and should be taken as part of the whole, not as a single, perfect picture of an issue or event. But that it does have value. (Jill Lang, interview by Goh, April 2007)

Lang's statement provides a general, yet informative understanding of citizen media content as a lens among other lenses that presents a view that might be either distorted or accurate, yet is still a valuable view.

2.1.3 Meta-design Frameworks

Meta-design is a socio-technological environment that is a part of cultures of participation (Fischer, 2011). My design applies a meta-design framework in the design time and use time of the design. I'll shortly introduce meta-design, then assess my design in relation to some central factors that affect cultures of participation.

Cultures of Participation in Design

Cultures of participation look at design problems as dynamically evolving problems that shape the design during the design process (design time) as well as after the design process (during use time). Therefore in design's cultures of participation, designers structure the design process in a way that invites stakeholders (participants, formerly users) in different phases to be actively engaged in identifying the design problem, framing the design solution (Fischer & Giaccardi, 2006), and maintaining the design by "allowing [design] systems to be evolved through use" (Fischer, 2011, p. 115).

Recent developments in media technology have transformed cultures of consumers to cultures of participation. The latter allows users to be involved in the development of the design before use (using participatory design methods) and after use (using meta-design frameworks). In design's cultures of participation, the user is a contributor, collaborator, and co-designer. The development in design methodologies has occurred through different phases: it moved from professionally dominated design to user-centered design, to participatory design to meta-design (Fischer & Giaccardi, 2006). Each of these phases marks a better consideration and integration for the user during and after the design process. Participatory design is different than meta-design frameworks in the fact that the former integrates the user in the designing process while the latter extends the integration of the user beyond the designing phase, as noted by Gerhard Fischer (2011): "Whereas participatory design focuses on "designing for use before use", meta-design extends the design activities by "designing for design after design" (p. 116).

Political Implication of Cultures of Participation

The shift toward cultures of participation has affected the political and social aspects of communities (Fischer, 2011). It does not only democratize the design process (Hippel, 2005), cultures of participation empower citizens by giving them tools that allow them to freely express themselves. The forms of expression embedded in citizen media is an example of a socio-technical culture of participation that facilitates and disseminates novel forms of expressions.

Eyewitness and the Essential Factors that Shape Cultures of Participation

My design, Eyewitness is a design that applies meta-design frameworks to visualize, synthesize, and verify[1] the context of citizen media videos (CMV). The synthesis of CMV context will contribute to

1 Using crowd-sourced verification

decreasing uncertainty related to its content. Consequently, it will protect this type of information from being subversively used in confusing citizens, or from being another narrative that contribute to the multiplied narratives strategy (of authoritative power). The following is an assessment of the design in relation to essential factors that shape and affect culture of participation. The factors are: Motivation, Control, Ownership, and Quality. In the assessment I'll refer to users as participants or stakeholders.

a. Motivation

The motivation for people to take part in a design culture of participation is their involvement in solving personally meaningful problems. Increasing the motivation of participants can be done through giving importance to their contributions and letting them sense the potential change that their contributions can exert (Fischer, 2011). In Eyewitness, the users of the platform design are encouraged to participate as their contribution will help contextualize their collective memories embodied in CMV and consequently leverage it. Together, participants will be able to construct a synthetic, comprehensive representation of a political event from the view point of multiple witnesses (potentially including themselves). The designed platform mobilizes the effort of the participants to achieve a common goal: reconstructing a historical record of a politically charged event as documented by average citizens' media rather than state and corporatized media. I interpret the dynamics of this virtual mobilization to be closely related to dynamics of protests as it has an effect only when participants are active.

b. Control

Control in participatory cultures is distributed among the designer and participants as well as participants among other participants. Control in Eyewitness is unequally distributed among stakeholders throughout the designing process. I facilitated the contributions of users during the design time by adapting participatory design methods including interviews, surveys, low fidelity mock-ups (Crabtree, 1998), scenarios, prototypes, and user testing. In the use time of the design, the control over the design is distributed fairly among users, as every user has the right to contribute what they have witnessed, or what others have witnessed. Among the participatory design methods that were used during the design process (design time):

Interviews with multiple stakeholders. I spoke with 3 Egyptian users to determine their use patterns of social media during the events of the 25th of January, in Egypt.

Low-fidelity mock-ups. I mocked up prototypes that represent the design solution. It opened discussion among my classmates (as potential users) around the solution approach, the features that they saw useful and others that were not, and the usability of the design.

Scenarios. In class sessions were held where participants (classmates) were asked to interact with design prototypes and mock-ups. That helped me understand the difficulties associated with the execution of

the proposed design solution.

c. Ownership

The integration of stakeholders during the different development phases of the design gives them a sense of ownership over the design. Fischer (2011) notes that people are more motivated to develop, shape, and use a design if they feel ownership over the design problem. The sense of ownership in Eyewitness comes from the fact that users are integrated during the design time (design process) in solving a personally meaningful problem that concerns their collective memories (hence the participants own the problem). In addition, during the use time they are responsible for creating and verifying the content of the platform.

d. Quality

The distributed control over the designed platform, makes the quality of the content a challenging issue. Therefore, Eyewitness enables its users to monitor and control the quality of the content. Crowd-sourced verification is adapted for this purpose (Naroditskiy, Rahwan, Cebrian, & Jennings, 2012). Participants control the verification and falsification of other participants' contributions (e.g. date, time, or place where the video was captured). False contributions, whether committed by sabotage or mistake, are penalized by subtracting from the user's score points. In early stages of the project I assumed the existence of embedded meta-data within some YouTube videos, and then I was informed by primary and research that this data is lost once the video is uploaded to YouTube. The approach to solve this issue was to deploy crowd-sourced verification.

2.2 Frameworks that Affect the Critical Context of the Design

2.2.1 Adversarial Design

Designing with and for citizen media content (CMC) that is politically significant requires an examination of adversarial design as a mode of cultural production. In his book *Adversarial Design*, Carl DiSalvo examines the ways in which political theory, design, and technology can together give birth to political –cultural productions that embody the notion of agonism. These productions are exemplified by "agonistic designs", designs that are capable of embodying the political theory of "agonism". The political theory of agonism is based on the belief that dissensus and confrontation between parties is a basis and condition of democracy. (The theory opposes "centrists" politics that encourage and promote consensus within parties as an act of democracy and a reflection of democratic decision-making).

The author quotes Chantal Mouffe, a political theorist who states that democracy must allow confrontation, disagreement, and challenge between power relations. In other words it must allow creating spaces that are open for agonistic discourses. This discourse is believed to result in a positive impact that is an effect of a constant state of contestation and challenge (DiSalvo, 2012). In an agonistic context and according to Mouffe, "democracy is a situation in which the facts, beliefs, and practices of a society are forever examined and challenged." She adds, "For democracy to flourish spaces of confrontation must exist" (p. 5). Her statement emphasizes the role that disagreement and competition between different parties plays.

In the context of design, DiSalvo (2012) suggests that these "spaces of confrontation" are essential to the practice of democracy. He also suggests that in a design context it is "adversarial design" (he also refers to it as agnostic design) that facilitates and creates these "spaces" where contestation, challenge, and critique of power relations takes place. Adversarial design might take the form of political design, critical design, or tactical media. An understanding of political design requires distinguishing it from "design for politics".

"Political Design" uses designed objects, services, or information to contribute to public discourses. It aims at revealing new relationships that result in discussing and debating the meaning behind a design. An example of political design could be info-graphics that expose the relation between poverty and crime rates such as the Million Dollar Block which is a series of infographics designed by Laura Kurgan. Another example is Michael Kraugner's infographics titled 300 Days. In this infograph the designer compares the number of deaths caused by certain crisis and disease to the number of deaths caused by the "swine flu" in 300 days. Observing the relatively small number of deaths caused by swine flu, the infograph leaves the viewer to wonder about the propaganda that was associated with this flu (Pringle, 2009). For a design to be categorized as "adversarial" it should open a discourse that questions, challenges and re-frames our traditional understanding and experience.

"Design for Politics", on the other hand, uses design to improve access to services or information that supports and facilitates the work of existing governing parties. An example could be the Design for Democracy (DfD) project executed by AIGA aimed at increasing citizens' participation in the elections. The purpose of design for politics is then to provide solutions that support existing governing parties (or power relations) rather than open a discourse around socio-political relationships.

While "political design" reveals sometimes problematic relationships to prompt or provoke discourse, "design for politics" resolves problems that facilitate existing relationships.

2.2.2 Prosthetic Memory

Prosthetic Memory (PM) describes a new form of public cultural memory. The term coined by Landsberg in her book *Prosthetic Memory the Transformation of American Remembrance in the Age of Mass Culture* describes a memory that manifests itself at the interface between a person and a historical event. Prosthetic memories occur at a space that is capable of facilitating an experiential –technological– mediation of a past event. This space can be a movie theater, exhibition, installation, or an augmented reality platform.

In this research prosthetic memory is referred to since the Eyewitness Visualization prototype is thought to mediate prosthetic memories. This mediation is achieved by the existential capacity of the Eyewitness Visualization in embodying the temporal, spatial, and circumstantial dimension of a historical and political event as experienced from the view point of the witness. This interaction (between a person and a mediated past event) makes the subject that experienced it relate him/herself to a larger historical pattern than they not would naturally relate to (Landsberg, 2004). As a consequence, the mediated historical event becomes more personally related to their memories. This simulation of memories is achieved by deploying the authentic qualities of a witness's dwelling eyes, camera, and body.

According to Landsberg, one of the main effects of prosthetic memory practices is shaping a person's judgments and political views as she states: "Through such powerful but unlived events, these people come to understand their own subjectivity. In this way prosthetic memory might be a powerful corrective to identity politics." she adds "A sensuous engagement with the past is the basis for meditated collective identification and the production of potentially counter-hegemonic public spheres."(p. 21).

2.2.3 Surveillance and Technology Design

A platform designed to leverage and synthesize citizen media videos raises a discussion related to the potential impact of this design and whether it empowers citizens, by giving them a venue where they can present what they have witnessed or disempower them by monitoring their records.

2. The Contextual Framework of the Design

Surveillance studies examine this double edge of technology, and title it “Janus Face of Surveillance” (Lyon, 2001). Janus is an ancient Roman god who has two faces, one that looks toward the future and the other that looks towards the past. In the context of surveillance, one of his faces represents the premise of care and empowerment, while the other face represents control and privacy invasion.

A discussion of surveillance in relation to new technologies and media is relevant to design studies, especially technological designs that involve media with embedded data (such as GPS data, meta-data, geo-location), media that reveals personal identities (Albrechtslund & Ryberg, 2011), or media captured in politically significant events (Hodson, 2013).

Albrecht and Ryberg in "Participatory Surveillance in the Intelligent Building", present “care” and “control” as two opposing aspects of surveillance. They characterize this mode of surveillance (where care opposes control) with a vertical relationship between the watcher and the watched. The former in this case is in a more privileged position that the latter. This relationship is commonly referred to as the “big brother” or the “panopticon[1]”.

Examining this relation in image-based citizen media offers a different understanding of surveillance. This type of citizen media captured in politically charged events, such as the Arab Awakening often documents human rights violations executed by authoritative powers against civilians. Capturing, disseminating, or watching such citizen media puts the average citizen in a privileged position where the citizen is the watcher rather than the watched. In the context of Eyewitness (the design I am proposing in this paper), the platform reverses the traditional relationship between authoritative powers as watchers and citizens as watched. But still this reversed relationship might place citizens in a risk of privacy invasion.

Albrecht and Ryberg suggest that carrying participatory design methods can help designers as well users find approaches that lessen the effect of vertical surveillance. They state: “all developments seem to involve a dilemma—namely, the choice of development over ethics”(p. 42). Their statement suggests that designers have to constantly balance between the benefits and risks related to a newly designed technology. They suggest understanding surveillance as horizontal and not only as vertical relationship, as well as understanding that privacy invasion is a side effect of some technological design and not the main intention, and finally balancing the social context and impact of technology design (Albrechtslund, 2008).

Surveillance practices vertical or horizontal differ from one country to the other, therefore it is indispensable to investigate surveillance practices in each context where the Eyewitness Platform will exist. This investigation can take the form of contacting local citizens and activists and being informed about common surveillance practices .

1 The panopticon is defined as a "form of prison of circular shape having cells built round and fully exposed towards a central ‘well’, whence the warders could at all times observe the prisoners." according to the Oxford English Dictionary.

2. The Contextual Framework of the Design

The design process involved a number of interviews, surveys, and testing with local resident from Egypt. This allowed me to frame some features to protect citizens from possible Electronic Panopticon exerted by local authorities, such as giving subscribed users of the platform numbers rather than names.

Tracking personal accounts through social networking and media sharing sites is practiced in a country like Egypt, where Wael Ghoneim (Oehmke, 2012), and other activists (Spencer, 2013) were arrested after government authorities broke into their personal accounts. The proposed design uses videos that already exist on video sharing websites, in other words the design is not revealing new content that will put participants or citizens portrayed in CMV at stake, since these videos are already published.

I also recognize the possibility that authoritative powers might inject content into the platform that is inaccurate in term of its content, location, and date. Several features of the platform are capable of managing wrong submissions such as: crowd-sourced verification, overview of other videos that are already associated with that day on platform, the number of verifications that the user had on videos, and number of hours invested by the user.

3. Design Precedents

The following is a presentation of relevant precedent platforms and research related to citizen media along with a reflection on the ways these precedents relates (or not) to my design.

3.1.Citizen Media and Crowd-sourced News Websites

Global Voices
Motto: the world is talking are you listening?
Global Voices (GV) is a network of bloggers, citizen journalists, and translators from around the world. Their mission statement is "shedding light on places and people [that] other media often ignore" to "help all voices, everywhere, to be heard." They aggregate, present, and highlight text-based citizen media, namely blogposts. Global Voices partnered with Reuters in 2006 and with BBC in 2010. GV coordinates with local authors (volunteers), translators, local editors, and language editors. Some call themselves the "bridge bloggers". The difference between GV and other citizen media journalism websites is that GV do not seek first-hand reporting, their teams focus on aggregating and presenting content that has been already created by people in their own platforms and languages.

Participation
Being a part of Global Voices (as author, translator) is easy; it is done by simply filling in a form. Their frequently asked questions (FAQ) section is very informative, it gives a concise understanding of their policies and processes. It also reflects a good understanding of users' concerns regarding citizen media.

Site management
Comments are moderated to avoid spam, and authors do not moderate posts. GV accepts bloggers to be anonymous especially if they are living in countries that does not respect freedom of speech. News are categorized by country and topics. There is an image and video search but it is not well developed.

Global Voices and Eyewitness
Eyewitness can benefit from GV's approach of collaborating with local participants and activists not only to contribute to the platform but to identify surveillance practices in their local contexts. As such identification will decrease the risk of citizen's privacy invasion. The two platforms (Eyewitness and Global Voices) deal with the same type of media: citizen media that are not specifically created for the platform, they are rather media that already exist on other venues, and the platforms (Eyewitness and Global Voices) remediate them.

Crowd Voice
Motto: tracking voices of protest
Crowd Voice is an online open source platform that curates and contextualizes information aggregated from citizen and mainstream media. These information includes articles, videos, pictures, reports. Crowd Voice (CV) aims at facilitating access to these information in order to increase the visibility of

social struggles around the world. The platform also considers itself as an archive for diverse forms of media related to socio-politically significant movements.

Participation

Crowd Voice aggregates and allows citizens to post different media content related to existing news events, and it give them the option to "add a voice" or create a dedicated page for a news story. Users do not have to have an account to post content, but must have one to add a new voice.

Site management

Crowd Voice curates the content of each news page (or voice). The platform says that content awaits in a moderation queue to receive crowd-sourced verification before getting published. Out-dated content captured in 2011 can easily go into the 2013 archives. The system lacks time verification.

Crowd Voice and Eyewitness

The lack of date accuracy in Crowd Voice is an aspect that I try to address in EW. Videos brought to the platform are accompanied with the original date on which they were uploaded (to video sharing websites). A wrong submission of the video date can be verified by the platform participants, or by an overall examination of other videos captured in the same date and place. This will potentially decrease wrong submissions, and the de-contextualization of citizen video content. The possibility to add an event is a common feature in both platforms with an exception that in EW the user can not add media without being a subscribed user except for their first time they use EW.

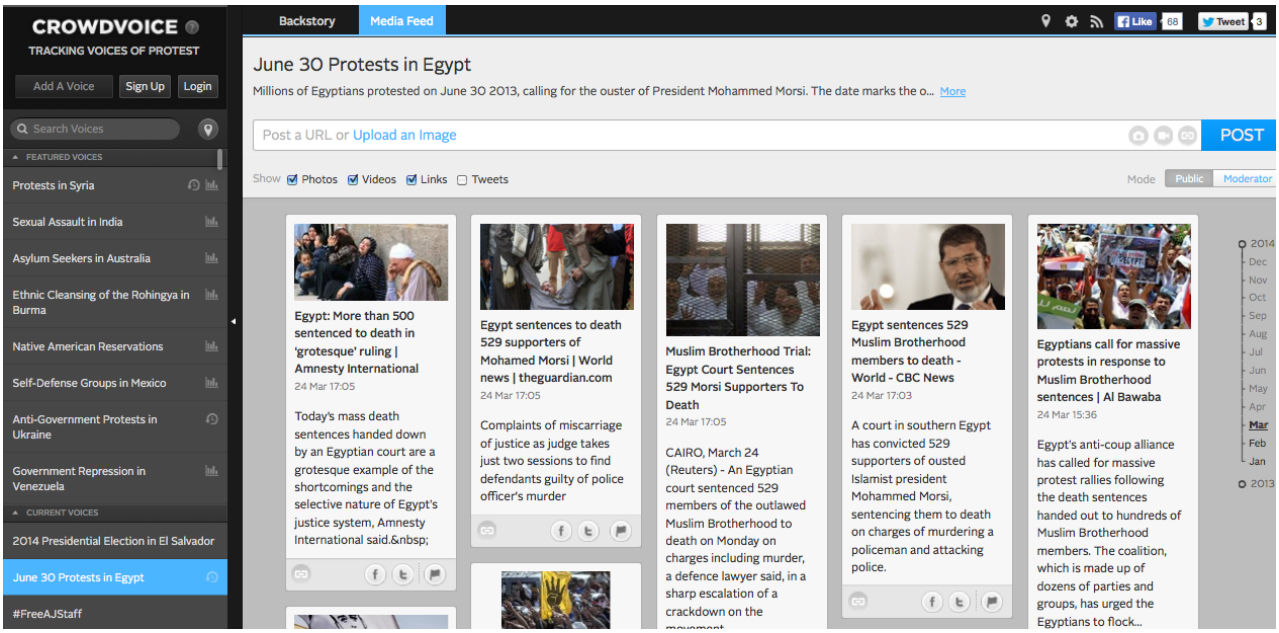

Figure 3.1:Crowd Voice page dedicated for June 30th protests in Egypt

3.2 Citizen Media and Crowd sourced Verification

Quora

Motto: the topic network

Quora is a question and answers website, system knowledge. Users ask, answer, verify, and organize questions belonging to a range of different topics. Answers that receive the highest number of votes are not necessarily the first to show up in the answers thread. Many factors affect the ranking and the hierarchy of answers placement, they are estimated to be 100 factors (Hardy, 2014), including up-votes, down-votes, and the voter's records. Although there are over 100 factors that affect answers' hierarchy, only voting is the visible criteria to the user. Only registered users can access and contribute to Quora, its executives believe registration is a factor that increases the platform reliability (Hardy, 2014). Users' up-vote and down-vote affect their "Quora credit" as well as the status of users or their "rank" (Reddit is a similar website, with a major difference that any user is capable of accessing it.)

Stack overflow

Stackoverflow is similar to Quora, it is a question and answers network but specialized in computer programming questions. The system offers informative solutions for programming problems (Cochran, D'Antoni, & Livshits, 2013)

Stackoverflow has a well-established system for up-votes, down-votes, and comments. Voted answers are in a higher hierarchy than others. The ability to down-vote is granted to users who have a good reputation. Reputation points are gained by asking good questions and posting useful answers. Votes on answers and questions let the user gain points and reputation. Other actions make the user loose their reputation these includes: when your questions or answers are voted down, or when you vote down an answer. The main difference between Quora and Stack overflow is that the latter clearly layout the results of users verification and interaction, while the former have a range of criteria that is not clear to the user (Hardy, 2014).

Figure 3.2: Stackoverflow and gaining reputation.
Figure removed due to copyright restrictions. The information removed is a snapshot of Stackoverflow.com help center page. The page's snapshot demonstrate the way in which users gain reputation.

Quora, Stack overflow and Eyewitness

Eyewitness takes Stack overflow as a reference regarding users' rating. Participants in Eyewitness who contribute to the platform earn (or loose) score points depending on their type of interaction. The following figure (figure 3.3) demonstrates an initial estimation of scores earned on Eyewitness. Flagged items will be suspended from being previewed till an EW moderator reviews it. A user account might be suspended as well if their content was flagged. Suspending users is a protocol practiced by Stack overflow.

The adaptation of unannounced criteria –such as the one used in Quora– to sort citizen media content is found inadequate for Eyewitness. As applying such hidden criteria to control the presentation of citizen media video content is against the objective of Eyewitness, to allow the visualization and synthesize of events without letting filters select specific views and leave others hidden.

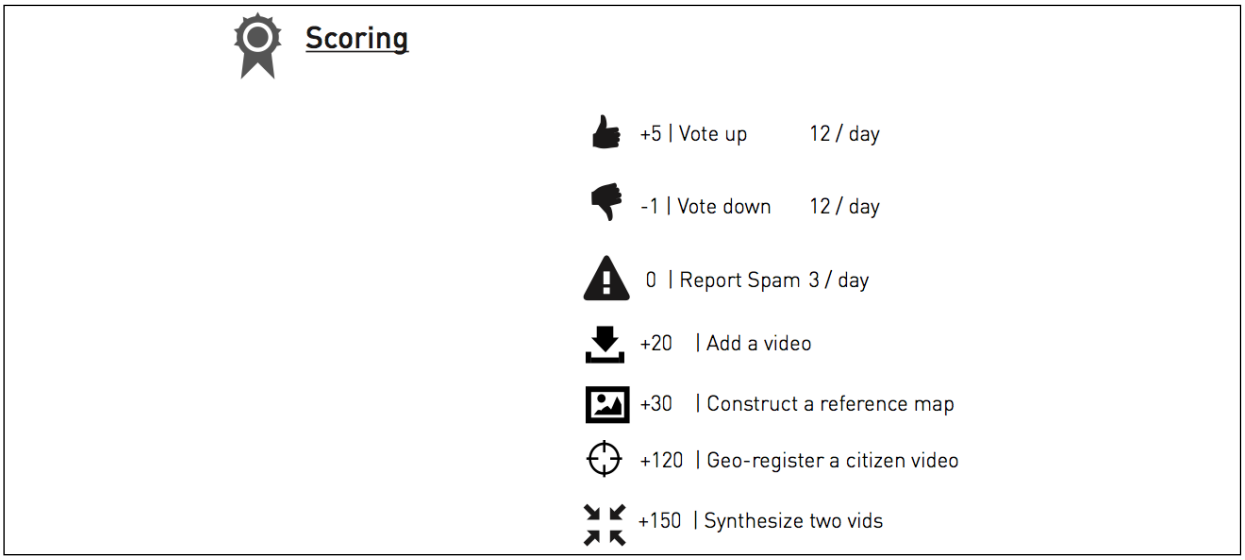

Figure 3.3: Eyewitness initial scoring system

3.3 Citizen Media and Corporate Media

iReport CNN

iReport is a platform that hosts and collects the citizen media of average citizens letting them contribute to news stories. The Forms of citizen media hosted by iReport are videos, images, and audio files. The CNN news channel dedicates 30 minutes daily to present some citizens' submissions hosted on iReport. It considers itself the most dynamic online platform designated for citizen journalism worldwide (Silverman, 2012).

Selection Criteria, Verification, and Moderation

A team of CNN producers moderates content submitted to iReport. Lila King, leader of the iReport team, says in an interview with Silverman (2012): "we do apply a level of moderation to every single

piece of content." Later she adds: "There is a moderator who looks at the piece and will see if it meets the brand standards for what CNN can host on its site." Her statement reflects that there is a considerable amount of citizen media content that is left out, because of CNN's moderation processes or because it may not be in accord with their agency's house style. This moderation is only applied to media that CNN intends to highlight, or air on its television channel. The rest of the content is labeled "not vetted by CNN".

King states that their vetting process is "too conservative", and that has helped and protected them from fake reports. Part of their vetting process is contacting the citizen who submitted the media content and asking questions beyond the content submitted (such as the type of camera, location of capturing). Regarding the ways that help them identify if a story is truly a citizen's media submission, she pointed out that if it was perfect and "polished" like a traditional news stories, that is a hint that it's a fake submission.

King's criteria for selecting citizen media (namely its un-polished qualities) are the same qualities that render citizen media (or amateur photography) authentic and trustworthy according to Susan Sontag (2004). Sontag states: "Pictures of hellish events seem more authentic when they do not have the look that comes from being "properly" lighted and composed, because the photographer either is an amateur or—just as serviceable— has adopted one of several familiar anti-art styles" (p. 23).

Watching Syria's War by the New York Times
Watching Syria's War is a video project that tells stories of some events in Syria using citizen media videos. The platform is not constantly updated.

Features
Besides displaying videos and tweets related to specific incidents happening in Syria, the platform offers two sections displayed with each video. These sections are named "what we know" and "what we do not know". The "what we do not know" section is a feature that is not present in many (or any) citizen media platforms that I have examined (figure 3.4). In an interview with Liam Stack, a video curator at *Watching Syria's War,* Stack explains the rationale behind the "what we do not know" section by saying in an interview with Bair (2013):

> There are limits to what we can know from this footage. Each video is a window into someone's life that usually closes after a minute or two, and as such it is very hard to know for certain what we are actually seeing. Identifying what we do not know, helps viewers understand the partiality of any event's representation.

Selection Criteria, Verification, and Moderation

The project aggregates (only) citizen media videos from different sources including YouTube, Facebook, twitter, in addition to videos disseminated by Syria's state media. Liam states that the project is looking for citizen media videos with specific qualities such as: it must tell a story and feature people rather than destroyed buildings. Other technical qualities include: the citizen media video should be steadily shot, relatively long in duration, and does not present "extremely graphic violence" (Bair, 2013).

CNN, New York Times and Eyewitness

Both platforms iReport and *Watching Syria's War* have moderators who verify citizen media content before publishing or airing it, it is an important precautionary process, but at the same time it limits much content from being presented. In Eyewitness, however verification is done post publishing and it is executed by registered users (this type of post publishing verification is acknowledged by Posner (2005 as qtd in Goh, 2007) and Korzi (2006 as qtd in Goh, 2007)). In addition Eyewitness has no moderators who decide which content get published. Moderation over the publishing of content is against the democratic open discourse that Eyewitness (the proposed platform design) aims at creating.

In addition to pre-verification processes executed in iReport, Watching Syria's War (WSW) have a set of extra criteria for selecting citizen media videos. The New York Times project requires citizen media videos to meet specific contextual and technical characteristics: the video should be long, the video should be steady, the video should capture people not buildings. These citizen video qualities are not required in my platform. Eyewitness do not pre-require visual qualities for different reasons:

In my design process of modeling video visualizations, the less professional the shot (the shakier) the better it was for constructing the panorama of the space where the video was captured. My platform Eyewitness suggests a different way of looking at the characteristics of citizen videos. The shakiness of a video, which is a characteristic that traditionally de-values a video in a professional context, is an advantage for Eyewitness. The act of educating citizens about ways to capture events might take away the instantaneous qualities from the representation of the event. The spatial contextualization of the camera

Figure 3.4: Watching Syria's War displaying a "what we don't know" section. Figure removed due to copyright restrictions. The information removed is a snapshot of two paragraphs titled "What We Know" and "What We Don't Know" displayed underneath a citizen video captured in Syria.

movements in the Eyewitness Visualization technique decreases the uncomfortable feelings that viewers might have when watching shaky videos.

3.5 Research Oriented Precedents

Videoscapes: Exploring Sparse, Unstructured Video Collections (2012)
In this project researchers from University College London (UCL), and Max-Planck-Institut für Informatik (MPI) in Germany offer a data structure that enables the exploration of numerous videos captured in the same location or event. The system that they call Videoscapes allows the spatial and temporal exploration of video collections (figure 3.5). The system also offers automatic video transitions. Researchers use GPS data, and orientation data to structurally synthesize videos. (In this publication as well as other in the field of human computer interaction (HCI) amateur videos, such as citizen media videos, are referred to as "casually captured videos".)

In this regard it's worth mentioning that linking videos to a map can be done using orientation information, metadata (Toyama et al., 2003 as qtd in Tompkin et al., 2012), geo-location (Li et al. 2008; Baatz et al. 2010; Zamir and Shah, 2010 as qtd in Tompkin et al., 2012), or GPS data (Tompkin et al., 2012).

Vidicontext: Video Collections in Panoramic Contexts (2013)
Vidicontext is a an interface that allows the exploration of videos in space, and throughout different time periods. Vidicontext links videos to "omnidirectional panoramas" and allow previewing multiple videos that was captured in the same place over different time. The system uses geo-tagged videos and link it to panoramas with the help of "orientation sensor data" and "time stamps". The team uses the Photosynth application for photo stitching the panorama, smart phones to record videos and embed GPS location, as well as orientation data. They highlight that GPS data should be accurate to be able to link the panorama to the geo-tagged videos.

In this regard it's worth mentioning that the construction of panorama can be done, manually by con-

Figure 3.5: Videoscapes interactive exploration. Figure removed due to copyright restrictions. The information removed is Videoscape's interface that displays five video players and a satellite map that indicates the location of the five videos.

necting frames (Pongnumkul et al., 2008 as qtd in Tompkin et al., 2013), automatically by stitching single photos (Brown et al., 2006 as qtd in Tompkin et al., 2013), by stitching videos (Agarwala, 2005 as qtd in Tompkin et al., 2013), and by using mobile applications (Tompkin et al., 2013).

The Rashomon Project
Motto: An open-source toolkit for assembling and analyzing multi-perspective video timeline

Rashomon started as a research at UC berkley. It is a toolkit that synchronizes and displays videos and photos captured during socially and/or politically significant events. The toolkit allows the user to preview different citizen videos captured from different perspective (figure 3.6). One of the project's aims is to provide evidence to prosecutors. The toolkit automatically synthesizes different videos shot by different camera (perspectives), based on audio cues, visual cues, and metadata embedded in videos and photos captured by mobile devices. Rashomon do not reveal the identity or metadata of its users, and allow to "face-blur" citizens who are captured in the videos. The absence or misuse of meta data is a concern for the team. Therefore, they ensure the protection of embedded metadata. In this regard, an application called the "International Evidence Locker" is currently under development. The app embeds, encrypts, and send citizen media metadata to two parties that secures it: Amnesty and the International Criminal Court. This procedure is taken to facilitate the verification of evidences in courts (Hodson, 2013).

Videoscape, Vidicontext, Rashomon and Eyewitness (EW)
The three research projects discussed above, are all concerned with casually captured videos (such as

Figure 3.6: Rashomon timeline. Figure removed due to copyright restrictions. The information removed is a snapshot of http://rashomonproject.org/istanbul/. The snapshot shows a timeline and three citizen videos that are playing simultaneously.

citizen media videos) and spatio-temporal exploration. Their treatment for citizen media videos pre-requires the existence of metadata, or other embedded data in videos. These recent researches related to my design theme (space-time exploration of casually captured video collections) prove that my design is a novel contribution, since it allows spatio-temporal exploration of casually captured video collections that does not carry meta-data, GPS data, orientation information, or any other data embedded in citizen media videos.

Vidicontext is thought to be close to my platform Eyewitness. One of the difference between both lies in the fact that visually Vidicontext projects videos on omnidirectional panoramas. While in Eyewitness panoramas are not pre-made, they are rather specific to each event (since eyewitness is using stills exported from the same video to construct the panorama). The process of constructing panoramas in Eyewitness has an aesthetic as well functional aspect.

Regarding Rashomon, its efficiency also depends on metadata, and visual cues. The display of multiple simultaneous videos on one timeline, is a feature that characterizes Rashomon. But it challenges the viewers' capability to perceive the event. That reflects that the spatial and circumstantial dimensions of citizen media videos are not closely addressed in Rashomon. This might be understood taking in consideration that one of Rashomon's main objective is to provide evidence to prosecutors. On the other hand, Eyewitness offers a different representation of time, space, as well as a more chronological relationship between different videos. Rashomon's protection of users' meta-data is useful to consider in Eyewitness (in case any of the submitted videos carry meta-data, or GPS data). Eyewitness considers carrying similar precautionary procedures to secure its users' data.

The overall examination of precedents, and related systems clarifies that the contribution of Eyewitness as a citizen media platform lies in its visualization technique and its independency from embedded meta-data.

4. Research Methodology

My research consisted of conducting primary and secondary research. I repeatedly synthesized then analyzed the different organisms and relationships involved in the ecology of citizen media. That was achieved by iterative studio and seminar workshops that often interfaced with one another. My studio prototypes introduced below visualize and embody my questions, findings, insights, and solutions.

4.1 Phase One

Abstract understanding and making

Phase one took place during the fall semester of 2012. I started this phase by prototyping a number of abstract models and prototypes that were informed by my secondary research and tacit knowledge related to citizen media, professional media, and collective memories. The aim was to understand the ecology of citizen media. It is in the first phase that I used mixed media to prototype a visualization of citizen videos that I titled the “Eyewitness Visualization". I later on built on this visualization. Its concept became the base of my final visualization design.

The majority of these models and prototypes did not represent a discrete, systematic approach to solve the design problem, they rather provided me with a broad conceptual understanding of the design ecology. I received in-class responses and feedback on each prototype I built in this phase (and in upcoming phases as well). I conducted a number of design methods in phase one including: paper sketching, video sketching, scenarios, 2D, 3D, and mixed media models to reflect my questions and insights.

The following is a preview of one out of seven models that I have prototyped in this phase. I chose to present this prototype as it is considered the initial concept of the visualization I have developed in phase two and three. It was later on integrated into the final design.

Eyewitness, the Initial Visualization Prototype

The concept of this visualization prototype started when I was searching for information about the events that happened in Cairo’s Tahrir square on February the 2nd, 2011. I executed a scenario to explore the difference between the level of knowledge that a local resident of Cairo would know about a specific event that occurred in Tahrir square, and the knowledge that a foreigner or non-resident of Cairo would know about the same event. The first variable –a local resident of Cairo– was me, while the second variable was the way this event was reported and portrayed on international news websites specifically in their “Egyptian Revolution” timeline section. The event that I investigated is called “the Incident of the Camel” and it took place on February 2nd, 2011 (the 9th day since the eruption of protests on January 25th, 2011). As a resident of Cairo, February the 2nd was a significant day: thugs were paid by the ruling party at the time (National Democratic Party (NDP)) to terrorize protesters by breaking into Tahrir square on camels and horses (“Violence flares in Cairo square”, 2011) (figure 4.1). This event was very significant in Cairo because it contributed to shaping the public opinion toward the ruling regime.

4. Research Methodology

I examined the way this event was reported in international news websites. I looked specifically for the "Egyptian Revolution" timeline section section for Feb 2nd, 2011. I checked the websites for the Los Angeles Times (LAT), CNN, the BBC, and PBS. LAT and CNN reported that these were clashes between opponents and proponents of the former president Hosni Mubarak Mubarak's. The BBC did not mention this date on their "Egyptian Revolution Timeline" (they only mention February the 1st and the 3rd). As for the PBS, who reported the day using citizen media content (tweets, and citizen media videos) was the only news website that mentioned the existence of thugs and violence in the square. It was the only site that reflected what I knew about this event, in other words it reflected this event from the perspective of local residents. Surprisingly, the perspective of average citizens on the events was not documented in many news websites that reported this event. The February 2nd search scenario –that I undertook– might hint to a problem related to covering news based on the hegemonic version of the story. As Phil Barth wrote in 1943, "News is only the first rough draft of history" (Shafer, 2010). Corporate media news websites have ignored the perspective of average individuals as well as their collective memories in what is considered the "draft of history." The scenario that I undertook might suggest that Cairo residents' version of the story was mainly reported to foreigners/non-locals via citizen media.

Figure 4.1: A photograph captured during "the Incident of the Camel" by Reuters. Figure removed due to copyright restrictions. The photograph shows a man riding a camel and surrounded by a crowd who is running away.

The Actual Visualization Prototype

The realization of this prototype was inspired by the February the 2nd scenario mentioned above. The aim of this prototype was to model a medium that is capable of putting the viewer in the shoes of the witness. My vision was to create a visualization that let the viewer re-live an event of political significance by projecting all citizen media videos captured in a specific event onto the exact spaces where they were captured and with respect to the camera motion of the witness (who captured the video). The prototype was rough like most of the prototypes executed in this phase. I chose a video captured during the "incident of the camel", sketched the space in which the video took place, and previewed the video using a mini-projector (figure 4.2). The mini-projector projected the video against the sketch of the space. The projection was manually positioned with respect to the movement of the witness's camera. I

presented this visualization prototype in class to get feedback. The students informed me that they felt more engaged with the video when they watched it unfold throughout the space.

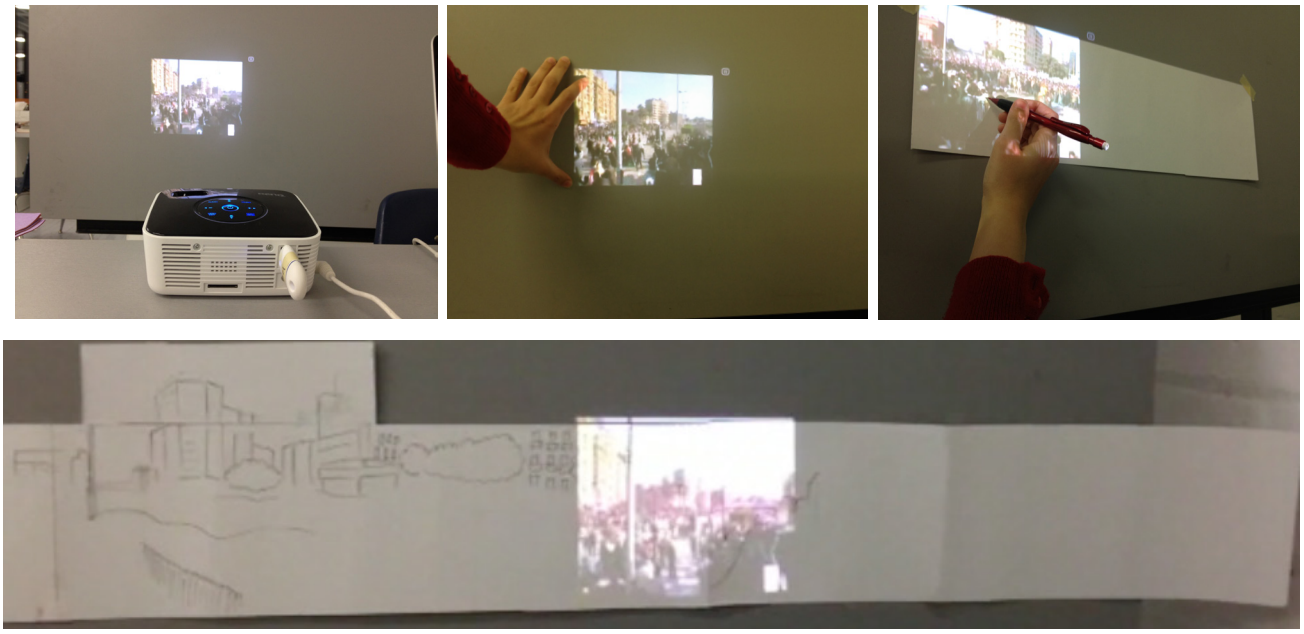

Figure 4.2: Executing the initial Eyewitness visualization prototype

4.2 Phase Two

Direct understanding and making

In phase two, I continued exploring and working on new prototypes, some of them were based on concepts I came across in phase one, the initial ideation session. I also narrowed down my secondary research to inform myself about the academic and professional context of citizen media.

My studio practice in this phase focused on prototyping potential design solutions that are situated in real world context. The models and prototypes produced in this phase included: user-interface screen prototypes and paper prototypes for citizen media platforms (Citizen Mashup, cSquare, eSquare), and a high-fidelity video model that visualized citizen media videos (Eyewitness visualization prototype). The design methods that I have conducted in phase two are: field observation, paper prototypes, screen prototypes, and visualization prototypes.

4.2.1 Field observation

I conducted a field observation during an Enbridge demonstration (figure 4.3). It took place on January 14th, 2013, in Victory Square, Vancouver. The intention of the observation was to inform myself about:

1. The different ways in which the march's participants capture the event.
2. The way that my experience as an actual participant (in the march) contrasted with my experience as a user/viewer who perceived the march through citizen generated media content.

I was interested in observing these two aspects in order to understand the way in which visual information related to a socially significant event gets captured, and the layers of meaning that are preserved versus the ones that are lost when mediating this representation event via online video sharing websites.

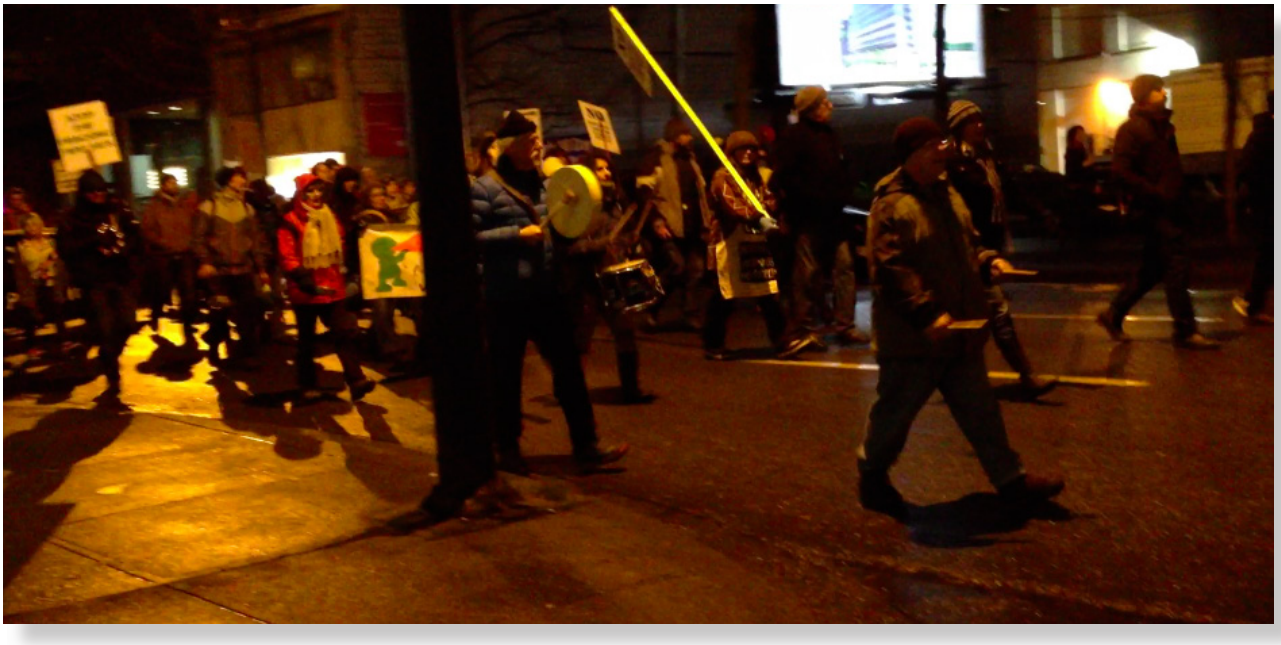

Figure 4.3: Field observation during an Enbridge demonstration
January 14th 2013, Victory Square, Vancouver

Reflections

The observation provided me with relevant information about people's behavior when documenting a march, and their common motivation towards capturing a moment of the event. For the march's participants capturing media was a form of participation/activism that represented an additional level of engagement, solidarity, and support to the march's causes. Individuals who seemed not to have time to take part in the march, grabbed their cell phones to capture images, or videos for few seconds before walking away from the demonstration.

4.2.2 Platform Prototypes

a. Citizen Media Mashup

Citizen Media Mashup is a rough interface prototype of a platform design. The prototype aimed at understanding the possibility of soleley depending on citizen media to get informed about socio-political news and events. It started after conversing with an Egyptian graduate student at UBC. He followed

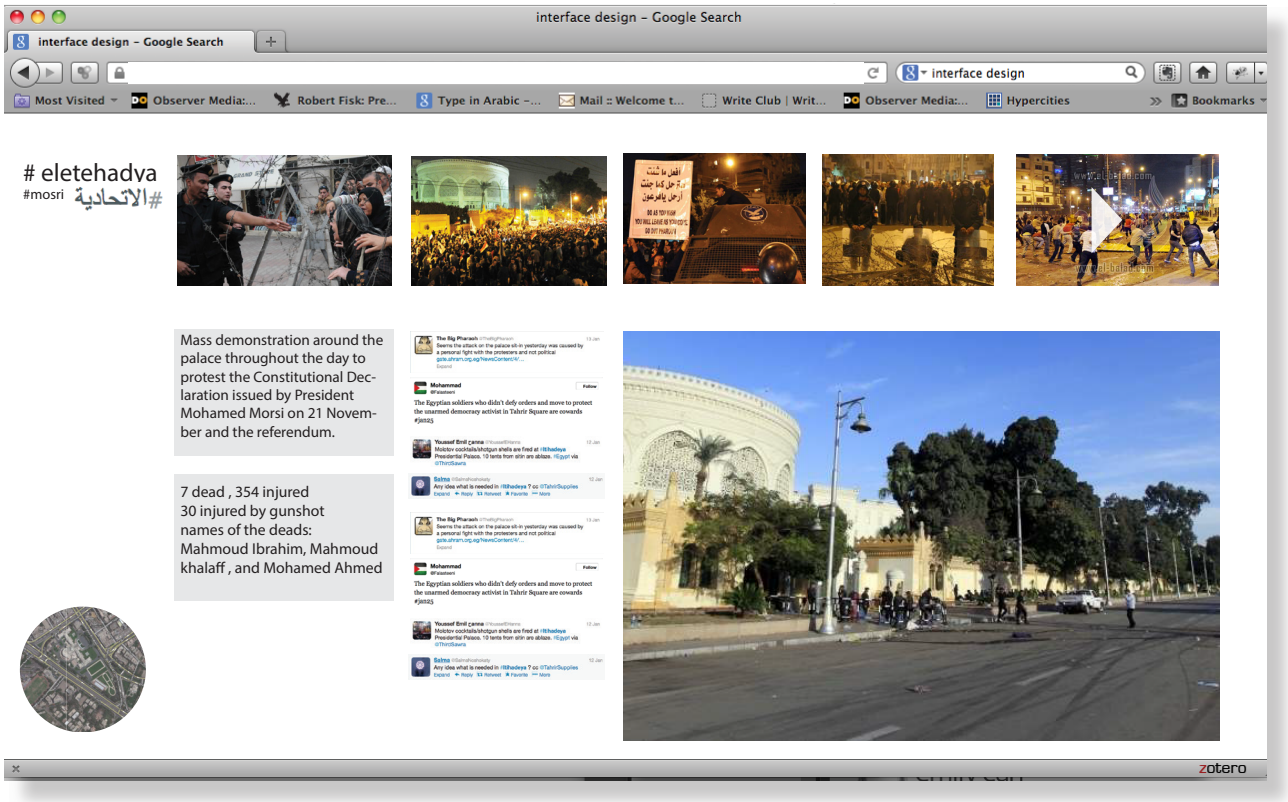

Figure 4.4: Citizen Mashup, a platform prototype that aggregates different forms of citizen media information

the events of the January 25th, 2011 Egyptian revolution from Canada. During the interview I asked him about his use pattern of the Internet during the politically charged events of January the 25th Revolution. He said : "I used to open a tab or two [in my Internet browser] one casts a live stream of Cairo's streets, and another one casting tweets". When asked about YouTube he said "What would I search on YouTube? If there was an important video to watch, probably I'll open it via a tweet or a Facebook link." Then I picked up a recent event happening in Cairo named "El Etihadeya" that he was not well informed about and I asked him: which type of information is needed to inform you about "El Etihadeya" events? And which ones of these information are provided by citizen media?

Based on his response, I prototyped Citizen Mashup, an online platform that informs a user about politically charged event using only citizen-generated media content. The platform casted tweets, corporate and citizen media images and videos, a google map, and a fact sheet (figure 4.4).

b. C² (cSquare) : where citizen and corporate media meet

C² (cSquare) is an interface prototype that I modeled, it creates a space where citizen and corporate media can meet. It offers a view on events from the perspective of both citizen and corporate media. The interface questioned: whether the synthesis of both kinds of media content can create a better understanding of an event (figure 4.5). In this prototype I intentionally chose to place corporate media content (in the TV and news headline section) that contradicted citizen media content (in the tweets section). In two shots, the television anchor was stating information that contradicted with the content aggregated from Twitter. I wanted to investigate if users would detect the contradictions.

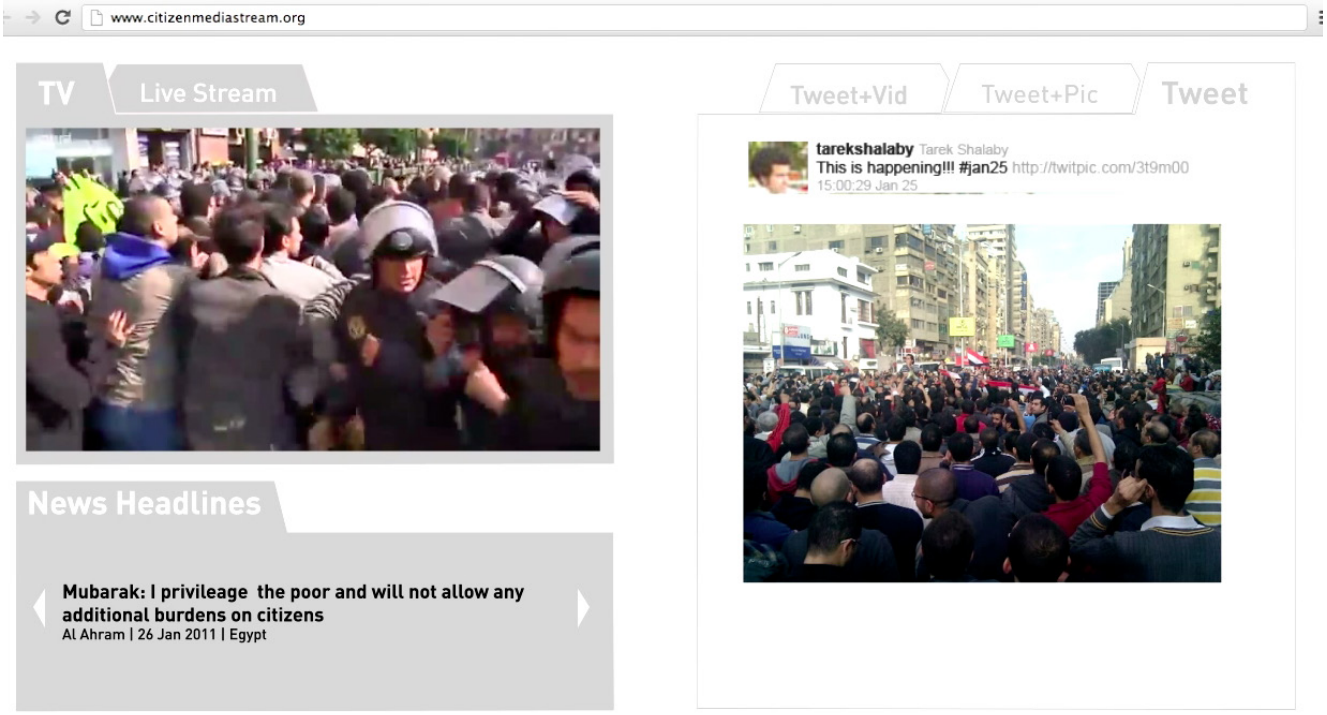

Figure 4.5: C² (cSquare) platform model brings corporate and citizen media together

A testing for the interface was conducted in class using a animated video. The following is the testing summary:

1. The corporate media attracted users more than citizen media.
2. The news headline at the bottom did not grab any of their attention.
3. The contradicting content of corporate and citizen media was not noticed.
4. Users reported that it is "too much information" that they can not process it all.

c. E² (eSquare): Explore and Express

The previous design models was concerned with the exploration of citizen media content (videos, images, and text). This model adds a different layer to the exploration of content: expression. The concept of this platform prototype titled "E² :Explore and Express" is to enable the users not only to navigate news but have their say on it as well. I wanted to add this layer of expression to give users an opportunity to reflect on the contrast (or similarity) of information that they receive from different news sources and news forms (figure 4.6). For testing results of this platform see Appendix C.

This interface consists of:

1. A search bar, where the user chooses to search for news by an event name, a hash-tag "#", time, or location.
2. An option to select the source of news whether aggregated from citizen media, corporate media, or both.

The user has two streams of information: visual (images and videos) and textual (headlines, tweets, and quotes by public figures). The streams are scrollable. An intriguing blend happens in the intersection of the two streams, especially if an image aggregated from citizen media, is combined with a statement announced by a state representative (figure 4.7a). I call this intersection a "moment".

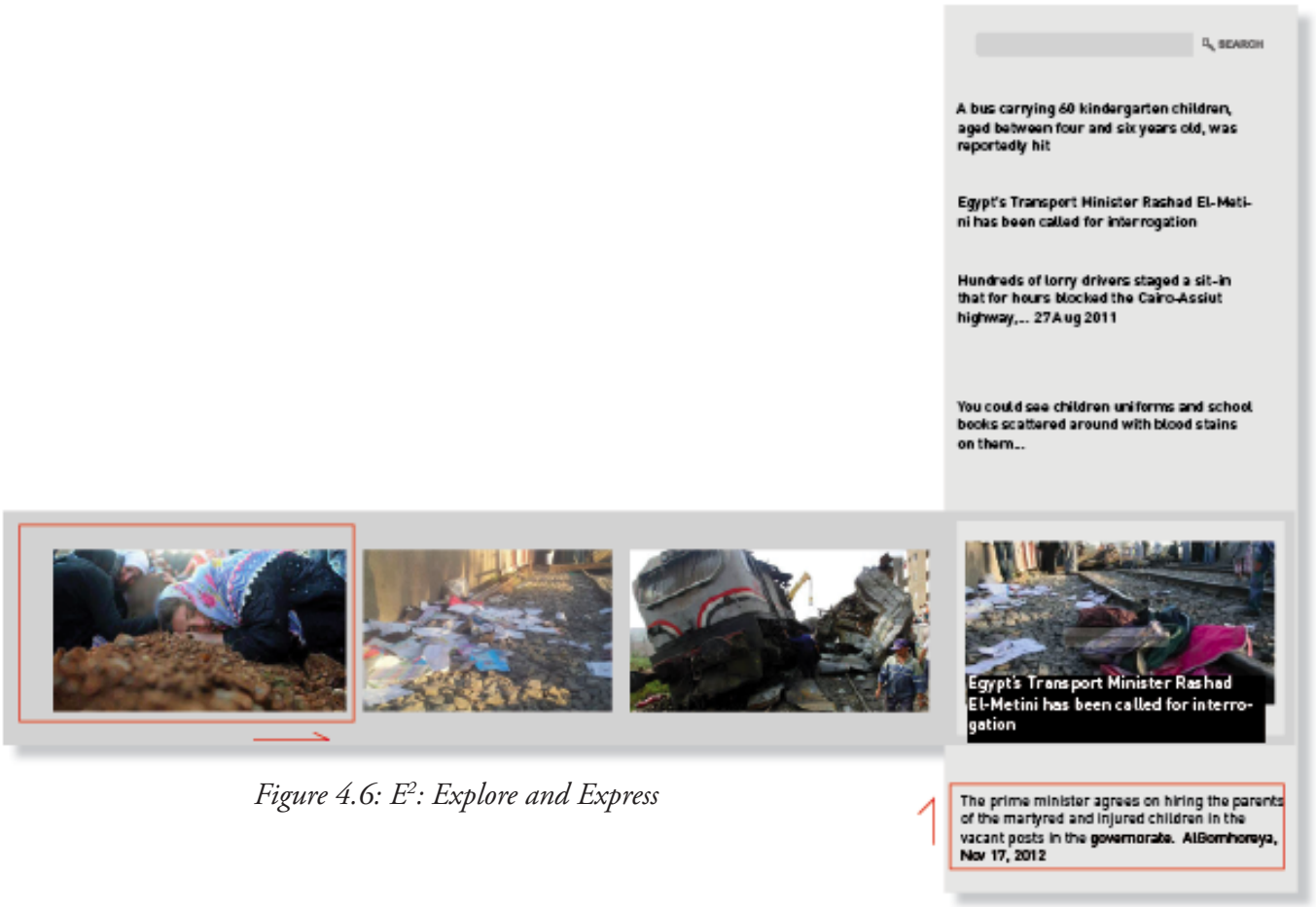

Figure 4.6: E²: Explore and Express

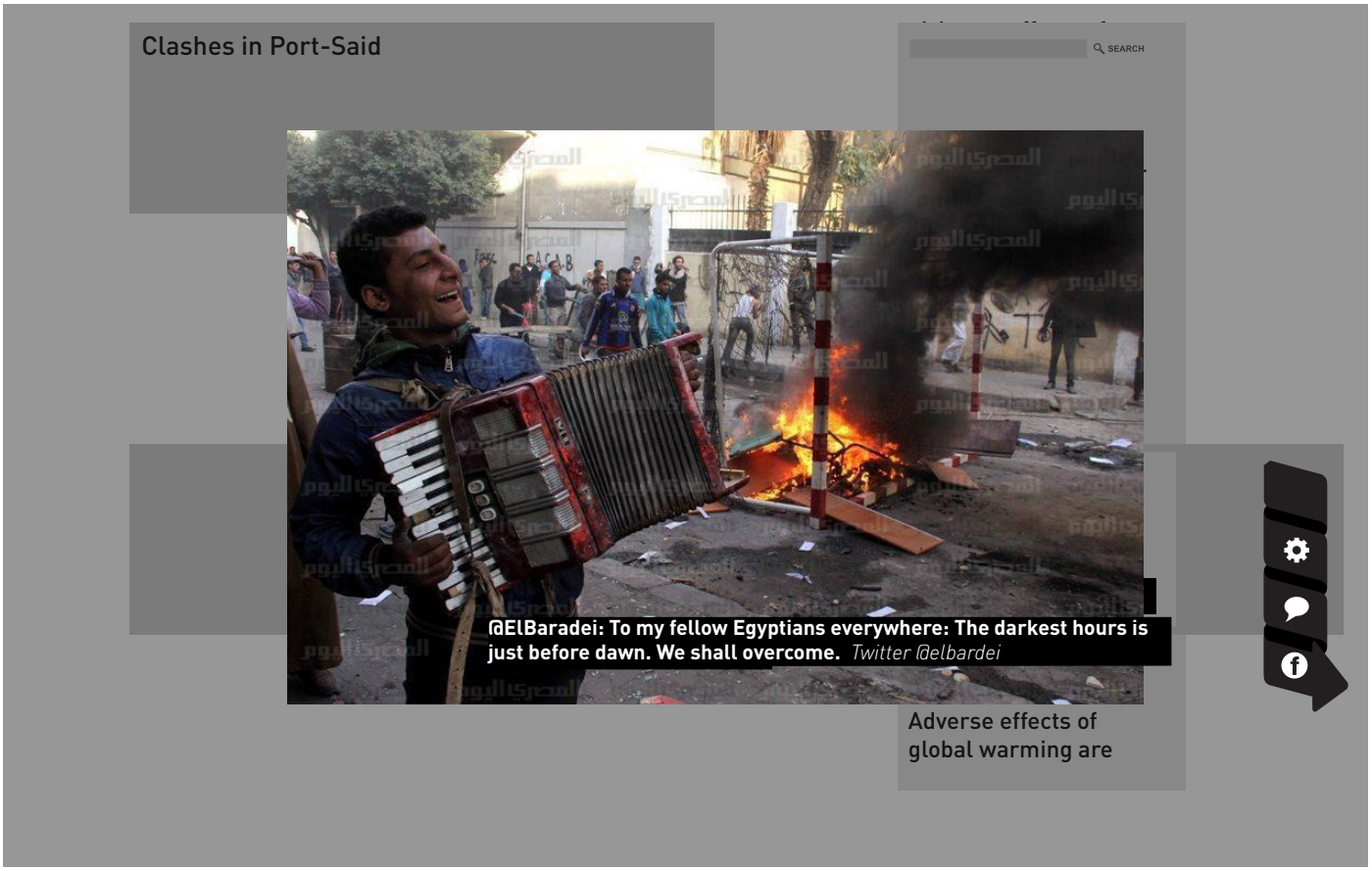

Figure 4.7.a & 4.7.b: Moments created usign E²

4.2.3 Visualization Prototypes

Eyewitness

I reworked a visualization prototype that I roughly modeled in phase one, it is titled Eyewitness. In this video model I tried to push the Eyewitness Visualization further, to discover its potential, and capacities. The main aim of the video model is to embody the contextual specificity of citizen media videos and transfer the situational circumstances of the witness.

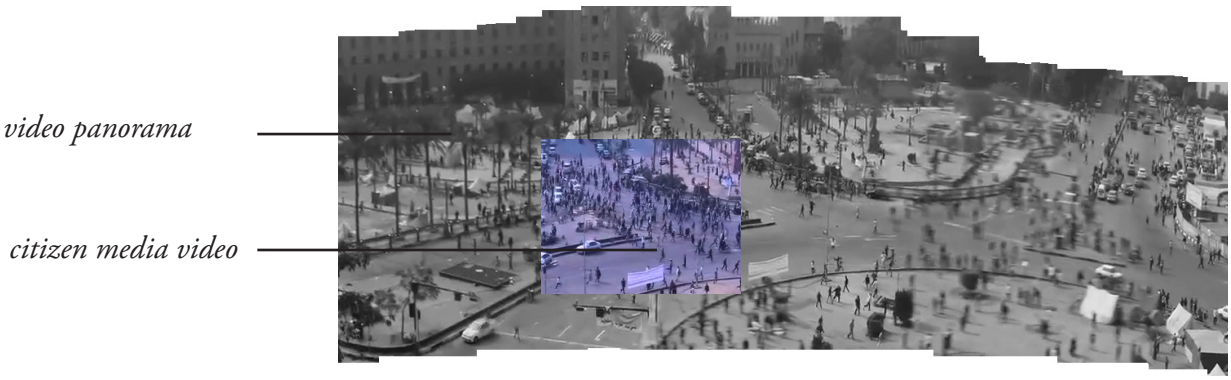

Figure 4.8: Eyewitness Visualization terminologies

The following section overviews the video prototyping process that I undertook. It is relevant to discuss this process, as in later stages of the design, and after knowing that this visualization could not automatically execute a similar visualization, this process will be divided into simple activity that can be undertaken by the user of the Eyewitness Platform.
The process that I undertook to produce this video visualization prototype consisted of two steps:

(1) Constructing a two dimensional (2D) version of the space where the citizen video was captured. This representation of space is referred to as the video's panorama (figure 4.8, 4.9). Constructing the space where the video was captured (video panorama) is achieved using video-based-rendering (VBR). It resulted in a form of panoramic mosaic that is considered a unique representation of the event's time and space. The construction of the space was executed using semi-automatic processes.

(2) Geo-registering the citizen media video against the 2D space constructed earlier (the video panorama). In this context "geo-registration" is the process of linking a video to the 2D video panorama. This is achieved by locating the video on the panorama in the geographical location that corresponds to it. After constructing the video panorama, the geo-registration took place. During geo-registration the citizen video was reprojected onto the video panorama (figure 4.10). The re-projection is done in respect to the citizen video location. The process that I undertook to re-project and track the citizen video was executed manually.

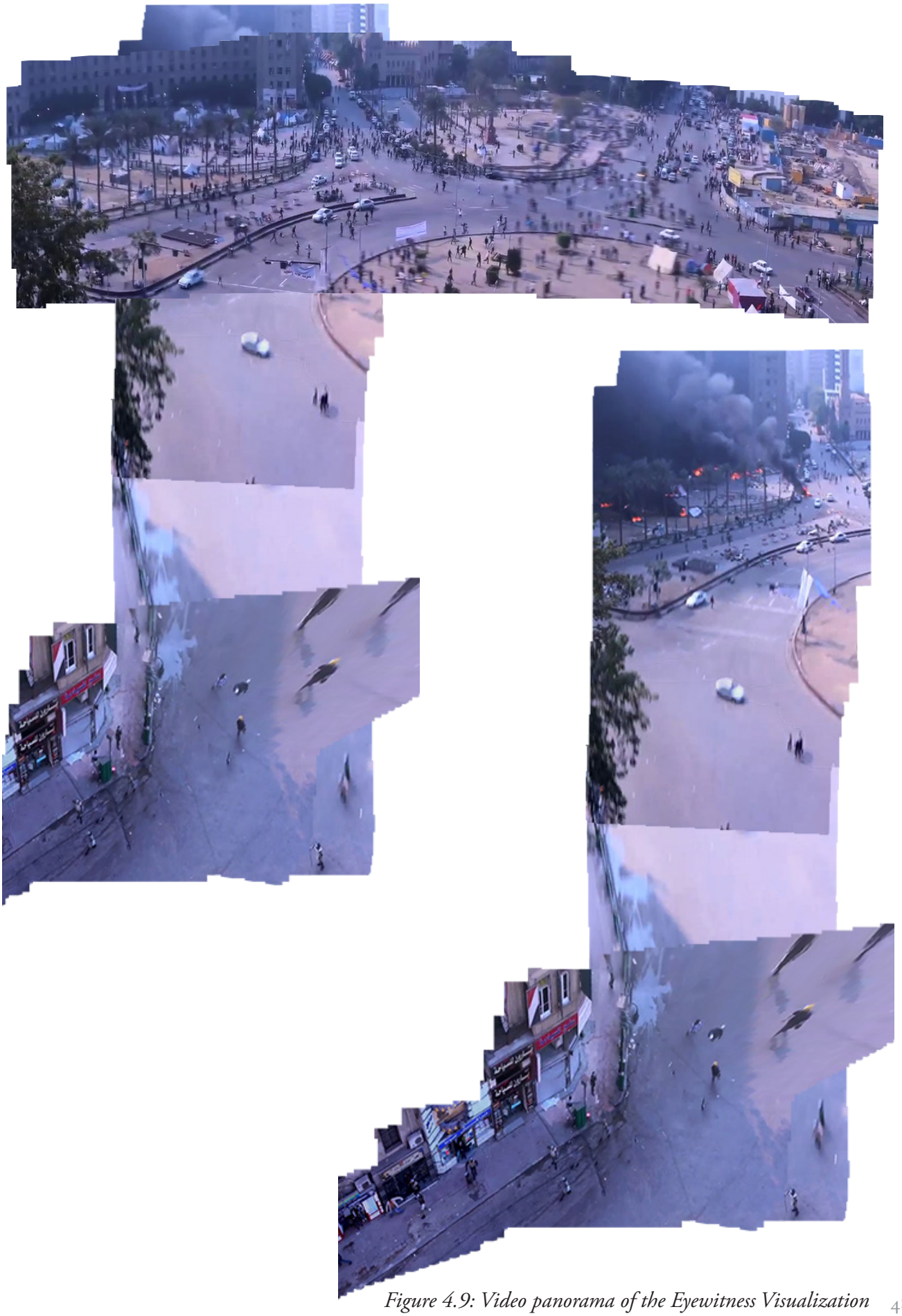

Figure 4.9: Video panorama of the Eyewitness Visualization

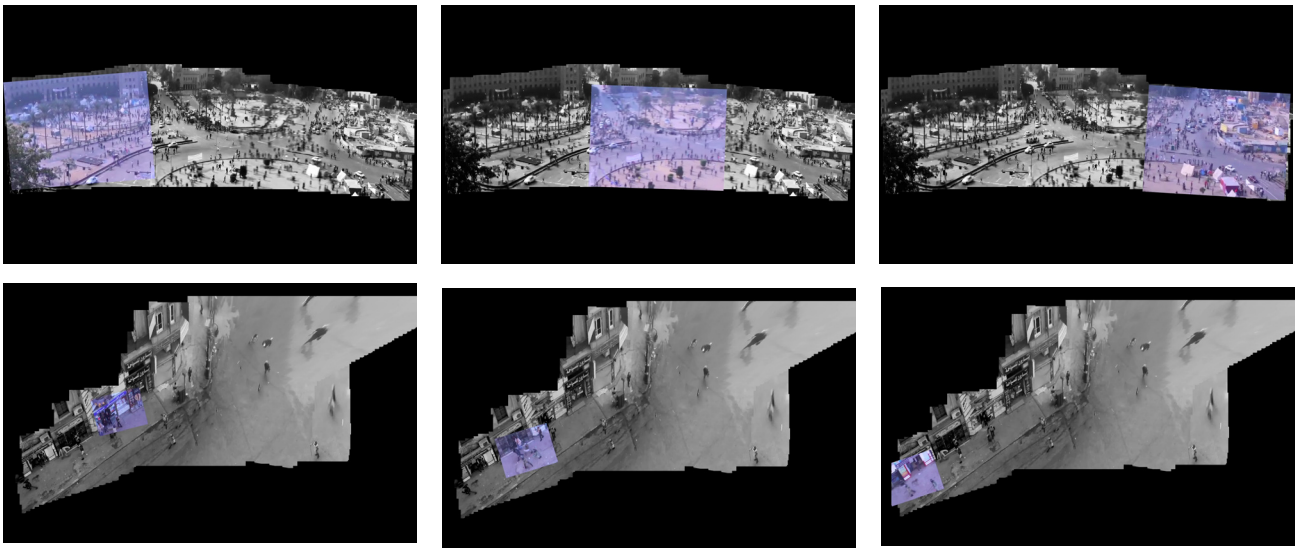

Figure 4.10: Snapshot of the Eyewitness refined visualization prototype

I executed the video prototype by undertaking the process mentioned above. Then I exhibited it in the Media Room at Emily Carr University of Art and Design. I placed a block note on a plinth in the media room to collect anonymous feedback from visitors and viewers (figure 4.11). There, I asked visitors the following question, "If you have a moment...How does this display medium impact your interpretation of events?" I chose the format of written feedback (written summaries) since it is one of the techniques used to measure sensemaking (Wilson & Wilson, 2012). The level of sensemaking is a variable in my hypothesis which is: embodying the contextual specificity of citizen media videos increases the sensemaking of its content.

Feedback analysis

The written feedback was very encouraging. I received 22 pieces of written feedback for the posted question (see Appendix A). The feedback was qualitative. I conducted a response analysis where I grouped the viewers' responses. The main aspects that the viewers referred to were:

Motion. Some viewers wrote that watching the prototype made their eyes and/or necks constantly move . Consequently (according to some viewers) this movement made them more aware of the event (space and time) that the video captures. Their responses reflect that the prototyped visualization posses an immersive and experiential quality.

Emotion. Some viewers wrote that watching the prototype evoked a number of feelings such as: anxiety, fear, disturbance, and sadness. Thus, the prototyped visualization is capable of conveying the emotive condition of the witness and the witnessed.

Media. Some viewers wrote that the "Eyewitness" visualization made them more aware of the different/simplistic representations of events in mainstream media.

Viewers' written feedback proved that the prototyped visualization embodied two dimensions of the contextual specificity of citizen media videos of political significance. Based on the viewers' feedback: the spatial, temporal, and circumstantial dimensions of the political event were embodied in the proto-

typed visualization and enhanced their engagement with the event (portrayed in the video). The feedback also suggested that the visualization provided the viewers with a specific kind of sensemaking, that is experiential sensemaking (Brandt & Brandt, 2005).

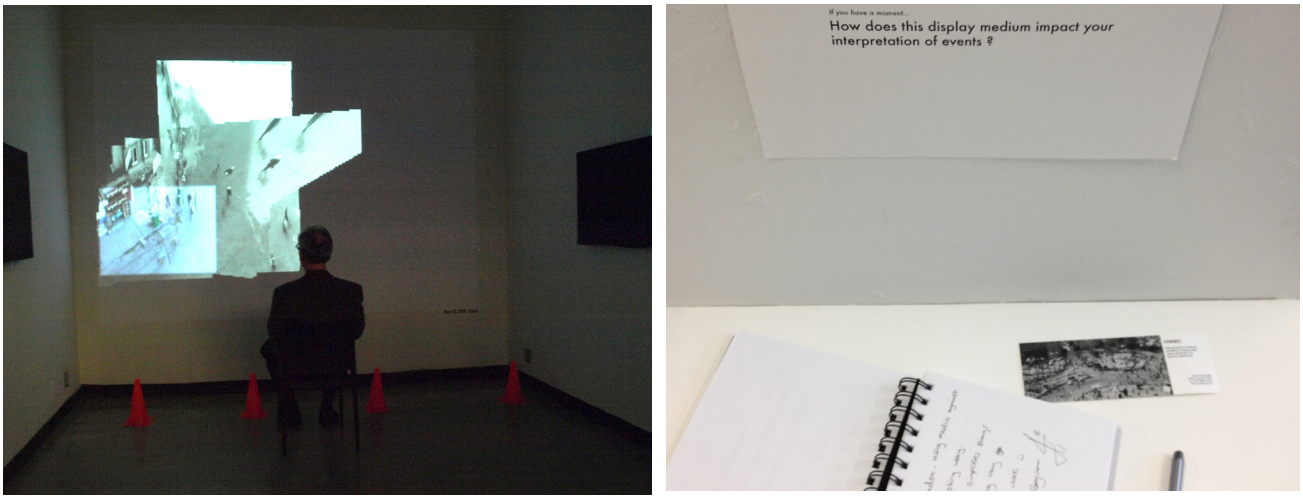

Figure 4.11: Left: projecting the video in the media room. Right: asking viewers about the way in which the visualization prototype impacted their interpretation of these events.

4.2.4 Informal Interviews & a Survey

I conducted interviews with three Egyptians (since the design takes Egypt as a case study). The aim of the interviews was to identify the ways in which the target participants get informed about politically significant events from online sources, their media preferences (corporate news media or citizen media), and the ways in which the representation of citizen media content could improve. The interviewees age ranged between 28- 31 years old. They all hold a university degree. They use the Internet for non-work purposes on an average range of 10-14 hours a week. The following is a summary of the relevant information received from each interviewee:

The first interviewee stated that he trusted some corporate news agencies such as the BBC. He added that he does not trust citizen media content unless it is cited by a known news agency. To get informed about politically charged events occurring in Egypt he searches the BBC website and if it is a dated event he uses Google search. Finally, when asked about whether he uses Youtube to search occurrences related to a politically significant event, he replied that he does not. He usually watches videos on facebook.

The second interviewee stated that she watches AlJazeera to get informed about politically charged events in Egypt. She expressed her interest in the AlJazeera's citizen media program that dedicates a daily program that airs significant citizen media content.

The third interviewee had a different pattern than the first two. He stated that in the time when a socio-political event is unfolding, he opens an online channel that live-streams the place where the protests/clashes are occurring, in addition to following twitter threads. Finally he stated that –like the first interviewee– he does not access video content through YouTube but via Facebook.

The three interviewees' usage pattern reflects various degrees of independence on corporate and citizen media news. While the first heavily depends and trusts corporate news content the third depends more on citizen media content. The interviews informed me about some use-patterns of corporate and citizen media news sources. This information helped me later in drafting an online survey.

Survey

Informed by the informal interviewees, I conducted an online survey to closely investigate Egyptian youths' usage patterns of online and offline news. The survey focused on investigating their usage patterns of media during the first 18 days of the Egyptian revolution (January 25th to February 11th, 2011). It focused on Egyptians who are 20-35 years old. 43 participants responded to this online survey. The following are some of the survey's questions that their results will be discussed:

5. Are there any recent sociopolitical event that occurred in Egypt, which its context is not clear for you? If "Yes" then why do you think citizen media videos is not helping you in clarifying its context?
6. In your opinion, which of the following information can help you trust a video/picture posted by a citizen on social networking sites?
7. When you are trying to get informed about a political event, what do you usually type in your search query?

Respondents were allowed to choose more than one answer for most of the questions, except for binary questions (yes/no).

When asked about the potential reasons for which citizen media videos (CMV) were not helpful in informing them (respondents) about the context of sociopolitically charged events, 17 respondents (39%) stated that the quality of CMV is responsible for it (videos) being uninformative. 16 respondents (37%) attributed this lack of information provided by CMV to the absence of a timestamp (the time in which the citizen video was originally captured). And 14 respondents (32%) stated that the absence of the location where the video was captured is responsible for videos being uninformative (figure 4.12).

The interesting findings in this survey were the responses to question 6 and 7. Question 6 asked participants about the type of information that can help them trust a video/picture posted by a citizen on

social networking sites?

34 respondents (79%) stated that the location where the video/picture was captured would help them trust a citizen media content. While 31 respondents (72%) stated that the time at which the video/

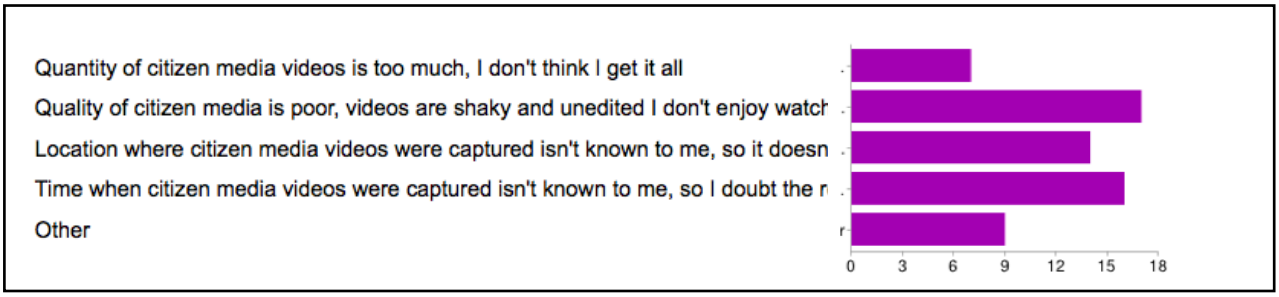

Figure 4.12: Quality, timestamp, and location could possibly enhance the sensemaking of citizen media videos

picture was captured would help them trust a citizen media. And 30 respondents (69%) stated that the backstory related to the political event portrayed in CM would help them in trusting the content.

Question 7 asked participants about what do they usually type in their search query when they are searching a specific political event. 39 respondents (90%) stated that they type the "name" of the event and only 10 respondents (23%) stated that they use the "date" to search a political event.

Answers to question 6 and 7 might show that although 72% of the respondents reported that the "date" is an important criteria that will help them trust citizen media, only 23% of the respondents reported that they use the "date" to search for media related to an event. This suggest that there is a gap between the criteria that respondents trust (which is date of capturing a media) when assessing the trustworthiness of a media and the criteria that people use to search media. The reason behind this gap might be attributed to the inefficient integration of search criteria such as the "search by date" into existing media search engines.

4.3 Phase Three

In phase three I continued exploring ways to leverage citizen media videos through visualization design, as well looking at ways to integrate such visualizations into existing video sharing websites. Methods used in this phase were: concept models, and video prototypes.

4.3.1 Two Eyewitnesses (video prototype)

While the previous visualization prototype titled “Eyewitness” explored the possibility of embodying the temporal, spatial and situational circumstances of a citizen media videos, the "Two Eyewitnesses" visualization prototype aimed at embodying the third dimension of citizen's media contextual specificity, that is the multiplicity of camera perspective on a specific event (figure 4.13). Two Eyewitnesses examined embodying a citizen media video (CMV) in relation to another CMV that was captured at the same time and place.

In Two Eyewitnesses I combined the citizen video used in the "Eyewitness" visualization prototype with another one captured at the same time and space but by a different witness. So I brought the two citizen media videos that were captured on the same date (Dec 17th, 2011 event known as the "Clashes of the Ministers' Council" and at the same place (Tahrir square) into one scene.

Figure 4.13: Two Eyewitnesses visualization prototype model, combining two citizen videos that were captured at the same moment. In red is the first video, and in blue is the second one. When they overlap they create a bigger window into the event.

Both videos overlap for 8 seconds, meaning that they both captured a specific action for 8 seconds. This model is considered an exploration of whether embodying multiple videos could enhance the sensemaking and significance of the captured event.

Reflections

Watching the first citizen video that was captured by a citizen journalist, the viewer will notice the obvious shakiness of the camera that result in the blurriness of some shots of the video. The second citizen video is even shakier than the first, a characteristic that traditionally de-values a video in a professional context, since the viewer perception is trained to see static shots. But in the process of video modeling for my design, the less professional the shot (the shakier) the better it was for constructing the video panorama and for communicating the emotive condition of the witness. This seemed interesting, since it suggests a different way of looking at the characteristics of videos.

The output of this prototype was a 20 seconds video in which two citizens' videos overlap for few seconds (figure 4.14). Viewers reported that it was difficult for them to watch both videos in the same time. This suggested that it is necessary to preview the videos sequentially (not simultaneously) when employing the Eyewitness Visualization technique.

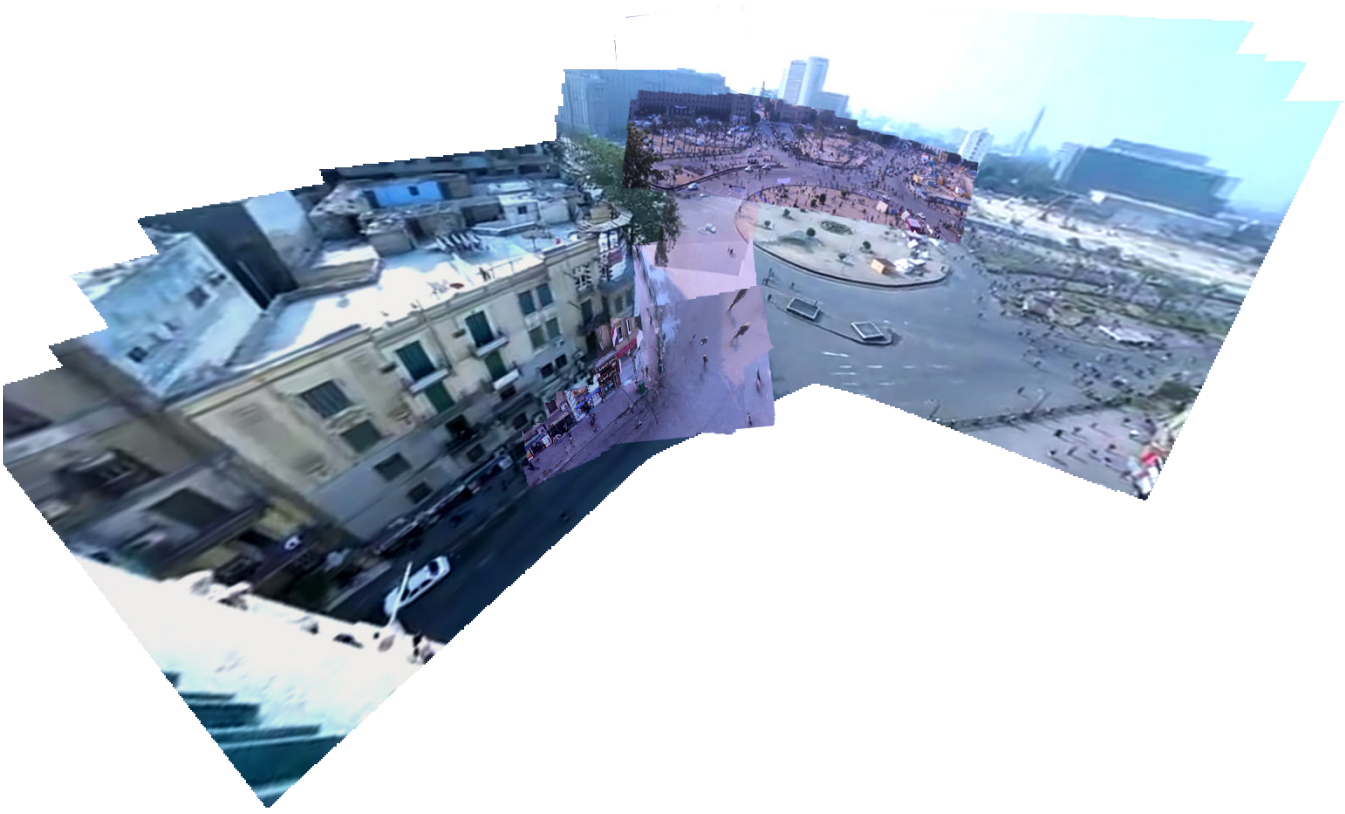

Figure 4.14: Preview of the videos' combined panorama in the Two Eyewitnesses prototype

4.3.2 Eye-level Witness (visualization prototype)

While the previous prototypes were executed using citizen videos captured from an aerial view, this video visualization prototype used a citizen video captured from an eye-level view. The citizen video used was captured by Kegham Karsian, in the area of Tahrir square. The camera motion of the witness mainly consisted of a track out (the camera moves but stays at a constant distance from the subject).

Process and challenges

Following the process of prototyping, the first step was constructing the reference space using a VBR technique. The stitching of still images (exported from an eye-level video) was challenging. The algorithm that executed the stitching of images was unable to perform when the input was eye-level shots.

Figure 4.15: Video panorama of an eye-level video

The reason lies in the image's foreground. The algorithm considers the people moving in the foreground as landmarks. Accordingly it stitched the video panorama (the space where the video was captured) by considering moving objects –people– as landmarks. As a consequence the space constructed was centered around people (figure 4.15), something that made the space very limited in scope, (as opposed to the previous visualization where the algorithm discarded the people moving in the foreground since they were relatively smaller in size than the buildings.)

4.3.3 YouTube Models

These models envisioned the possibility of integrating some visualization techniques used in "Eyewitness" into YouTube.

Quickview

In this model I envisioned integrating a “Quickview” button beside the video’s thumbnails in the search results page of YouTube. The button would also be accessible while previewing a video in You Tube. The button would allow the user to have an overall preview of the location(s) where the video is taking place. The option would be available only for raw, unedited videos as the process of constructing the video panorama is not executable for edited videos.

Trackview

The “Trackview” option would allow the user to watch the video in relation to the space where it was captured. The model envisions integrating the geo-registration of citizen videos against a reference space, into a You Tube preview window (Figure 4.15).

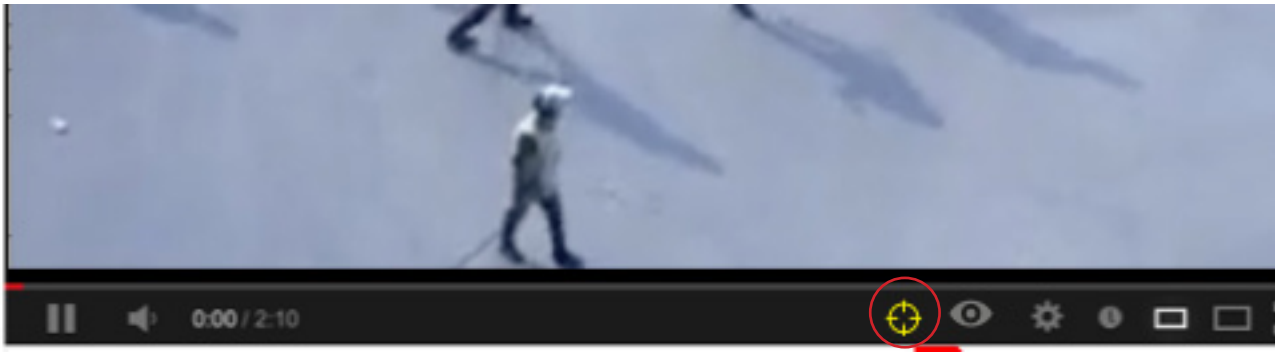

Figure 4.16: Preview of Trackview

The Peak

This user interface prototype is centered around intense moments in a citizen s video. It aimed at highlighting these moments and giving them a form that makes them easier to view and share.

The "Peak" envisioned an extra option in YouTube’s preview window. This option would allow the viewer to set markers that designate an intense moment in a video (a portion of the video). After that the user has the option to freeze this moment in a chronophotography like image. The image would be easily sharable on social networking sites. The still image would carry a stamp-like print that designates the upload date and video’s location if its metadata[1] is available.

1 Metadata is data that carries information about a media, such as its size, date created, and geolocation.

5. Framing the Design Solution

In this phase I built on the knowledge and feedback acquired from previous protoypes (that I have explored and executed in phase two and three), to frame a system for the design solution. To achieve an adequate framing I evaluated previous protoypes. I looked for ways to combine successful ones to frame a holistic solution that facilitates the exploration and synthesis of politically charged events documented using citizen media videos. Integrating the visualization design into a platform design for citizen media videos was the result of reviewing and evaluating feedback I received on previous prototypes. The visualization design would embody the temporal, spatial, and circumstantial dimension of citizen media videos, while the platform design would open a space for the synthesis and verification of these videos with other ones that captured the same event. Together the visualization and the platform design would embody the contextual specificity of citizen media videos (figure 1.1).

5.1 Initial user scenario

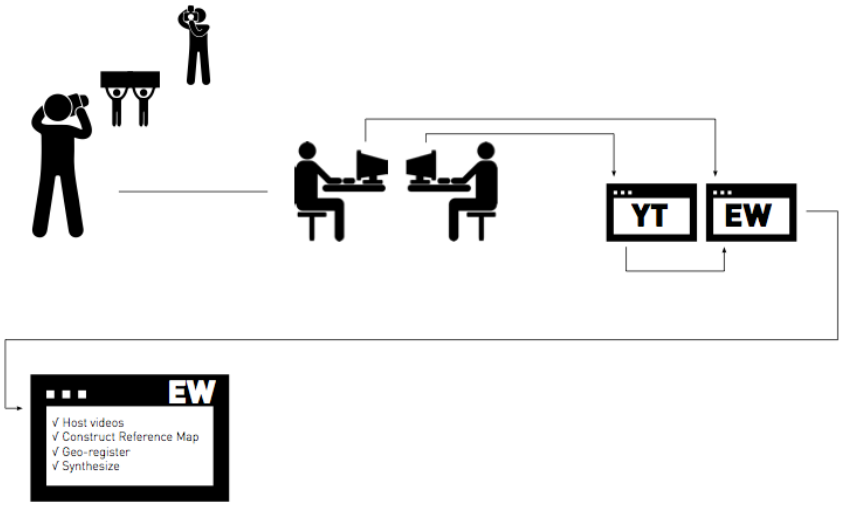

Figure 5.1: Initial user scenario of Eyewitness

The following is a diagram for the initial user scenario of Eyewitness (EW) (figure: 5.1). It envisioned the following scenario (from upper left to right): individuals capture citizen media videos on different devices, upload them directly to the Eyewitness (EW) platform (scenario one), or to a video sharing website such as Youtube then post it into EW (scenario two). In either scenarios I envisioned that the EW platform will be capable of performing the following tasks: hosting the videos, constructing a panorama of the event's space automatically (also called the video panorama), geo-registering the video against the panorama automatically, and synthesizing videos automatically. I counted on the processing capabilities of the online processing of the EW platform in finding visual cues, executing audio synchronizations (Hasler et al., 2009) and other advanced technological processes, that are capable of executing all the tasks automatically. But I was wrong.

5.2 Expert Interviews

David Ascher, Vice President of Product at the Mozilla Foundation, September 2013
After presenting to David Ascher my vision for the design and the user scenario, he informed me that hosting videos on EW will not be easy: it is expensive and has political implications. The process of geo-registration and video synthesis in the absence of highly precise data, GPS data, meta-data, orientation information, … is “incredibly hard" (D. Ascher, personal communication, September 2013). Once I learned this, I realized that the initial scenario of the design is not feasible, since citizen videos that are posted on video sharing sites commonly do not carry meta-data.

So I asked Ascher whether a “gamification” of these processes (geo-registration, video synthesis) can help in this regard. He agreed and pointed to the example of citizen science projects. He stated that engaging interested users can help executing processes (geo-registration, video synthesis) that are hard to execute in absence of meta-data (see Appendix D for analysis of citizen science in relation to the Eyewitness design).

Geoffrey MacDougall, Head of Development for Mozilla, November 2013
Ascher introduced me to Geoffrey MacDougall who currently serves as the Head of Development for Mozilla. We had a Skype meeting on November 15th, 2013. He showed me a project he developed with David Ascher titled “time map”. Time map is a platform that aggregates media from different servers such as YouTube and Flickr. The platform captures metadata every 3 seconds and media that were captured by metadata is placed against its geographic location on a satellite map. After showing a preview of Eyewitness to MacDougall he said that the challenge for my platform EW as well as his (time map) is “the single player motivation”, meaning what will motivate citizens to contribute? He said: "There are 20,000 persons who want to watch it, but how many want to make it.” (G. MacDougall, personal communication, November 2013).

5.3 Reworking the User Scenario

Introduction
The first approach to design the Eyewtiness platform aimed at breaking specific tasks into simpler ones that are feasible for current online computer processing capabilities. In addition, I thought to simplify each task into tasks that are feasible for an average user, so they are motivated to engage with such tasks. The tasks that were simplified are:

- Geo-registration of citizen videos against the panorama of the event.
- Synthesis of videos that were captured in approximately the same time and location.
- Stitching a panorama of an event. Although the stitching of panoramas can be done using existing photo stitching applications, there are some videos that are very shaky, and/or captured at night time which are hard to automatically stitch. These videos

require that a user manually contribute to adequately stitch a panorama of an event.

The new user scenario requires the user to perform the following tasks:

1. Capturing and uploading citizen media videos (CMV).
2. Posting citizen media video (CMV) to the Eyewitness Platform (EW).
3. Constructing the video panorama and locating it.
4. Geo-locating the video against the panorama.
5. Synthesizing videos.

These tasks can be executed by the same user, or by different ones.

The following is a detailed description of each of the tasks

1. Capturing and uploading CMV: a person captures a video of a socially or politically signifi cant event, then uploads the video to a video-sharing website such as YouTube.
2. Posting CMV to EW: a person thinks a CMV (whether a video that he/she captured, or just viewed online) is important and relevant to a political event so he/she post it to the Eyewitness Platform.

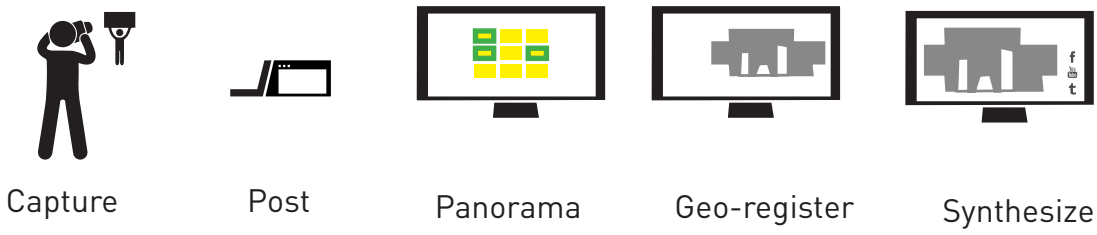

Figure 5.2: New user scenario of Eyewitness

The person thinks that there is a value to visualize it and synthesize it with other videos captured in the same day using EW Visualization (as that will help document and create a holistic record for the event). Consequently :

- The user copies the video link from Youtube.
- The user opens EW and pastes the link in the “post” section.
- The user inserts information related to this citizen video, such as: the date, location, approxi mate time, event (demonstration) name, camera angle, etc.

3. Constructing the video panorama and locating it (figure 5.3): when a citizen chooses to construct a panorama of the space where a citizen video took place, EW transforms the video into a series of still images (Brown & Lowe, 2007). This can be done automatically in some citizen videos (Agarwala et al., 2005), but in other citizen videos (that are unstable, or shot at night time) this task can not be accomplished using automated actions. The user process is

as follows:

- The user will be given a series of images exported from the citizen video that he/she chose or has posted
- The user will be asked to select a series of images that together construct a panorama of the space where the video was captured.

After constructing the space panorama:

- The user will be asked to locate on a satellite map the space represented in the constructed panorama. In addition the user will be asked to estimate the approximate position of the witness (this requirement will change in the next iteration).

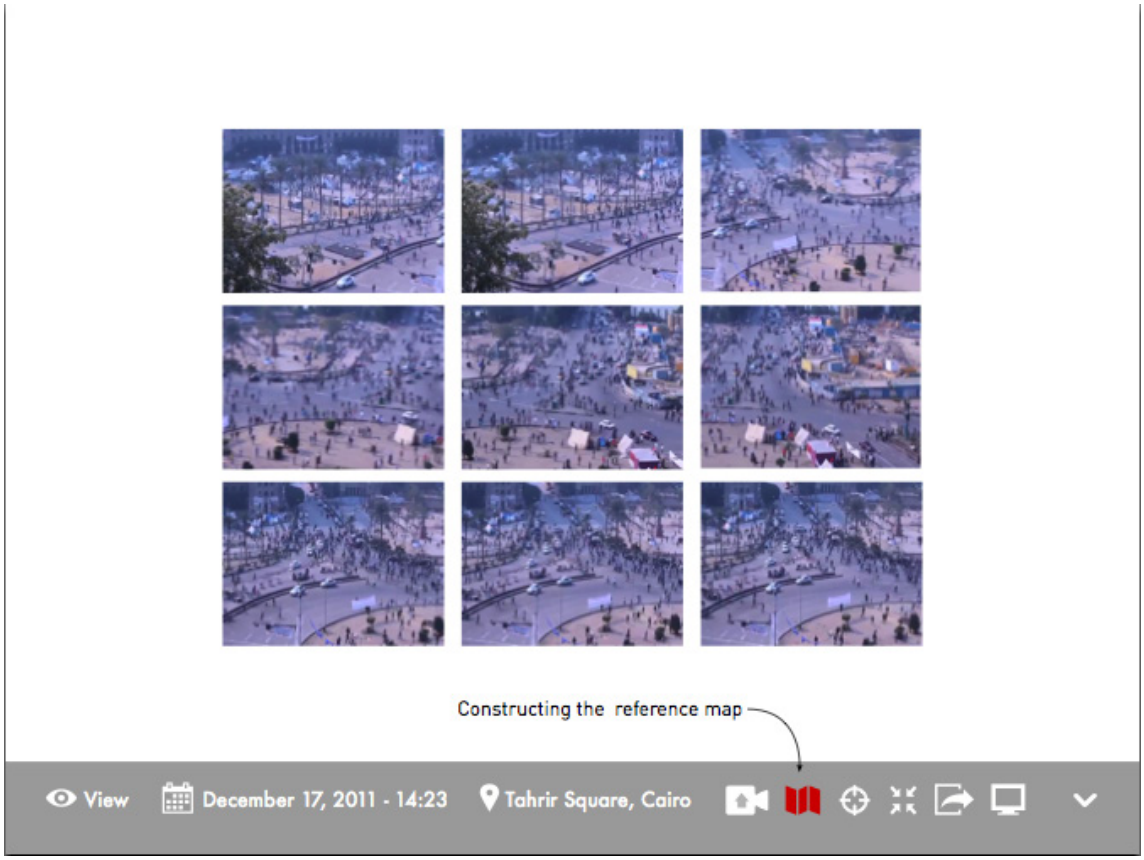

Figure 5.3: Constructing the video panorama by selecting a series of still images

4. Geo-locate the video against the panorama (figure 5.4): the user will be given a preview of the constructed panorama beside a series of stills exported from the video (with different frame export rates depending on the video). The process is as follows:

- The user will be asked to locate the still image on the constructed panorama; he/she will be given the option to change the location, rotation, and scale of the stills in order to locate it in its corresponding place on the panorama.
- EW will register values inserted by the user. Using online video editing capabilites it will then animate the video from one registration to another.

After rendering, the EW video will be ready to be shared and/or to be synthesized with other videos that were posted to EW and that were captured in approximately the same time and location.

Figure 5.4: Geo-locate the still image on the constructed panorama

5. Synthesizing videos. The user will be offered a stream of other citizen videos posted on EW that were captured on the same date and from the same camera angle and approximately at the same time and location (figure 5.5). The process is as follows:

- The user will choose one video that he/she thinks is suitable for synthesis with the video they already have.
- The user will be shown a preview of the two constructed panoramas that belong to the two citizen videos that are about to be synthesized.
- The user is asked by EW to manually put together (stitch) the two panoramas to create a larger one.

EW will render, then play back the two videos against their panoramas simultaneously. The user will be able to preview the synthesized videos and their geo-location. This preview will inform users about where events took place as documented by citizen media videos (CMV). This potentially will help in verifying incidents, and in reviewing politically charged events from the viewpoint of average citizens, or eyewitnesses.

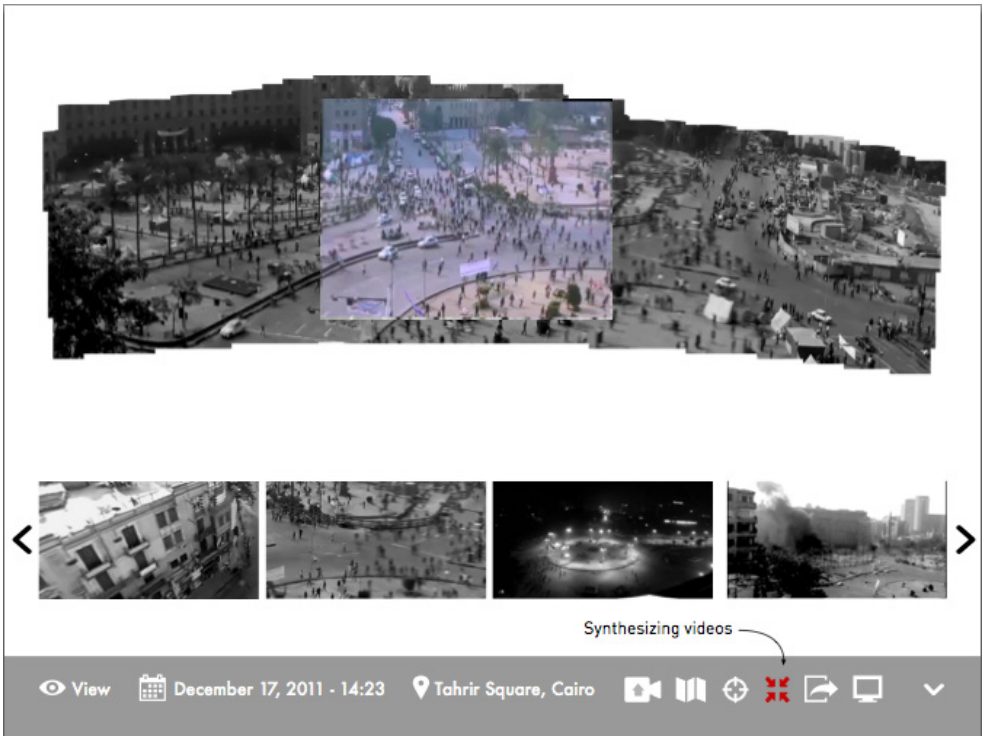

Figure 5.5: Synthesizing a video requires choosing another one captured in the same time and space

Wireframe

In this wireframe or rough interface (figure 5.3- 5.6), tasks performed by the user participant were grouped in a bottom menu. Colors are reduced to red, gray, and black. Each of the bottom right icons represent the different contributions or activities that the user can interact with. It includes: posting a video, constructing the video's panorama, geo-registering a video, synthesizing it, sharing his/her contribution, and displaying EW videos in full screen mode. The icons on the bottom left represented the camera angle, date, time, and location.

Figure 5.6: Wireframe layout

5.4 Feedback Sessions on the New Design Scenario

To get feedback that would help me proceed with designing the platform, I presented the Eyewitness Visualization and the Eyewitness Platform wireframe to two groups of students who were not familiar with my design. The first consisted of 14 participants, and the other of 9 participants. Participants were students at Emily Carr University. After a quick presentation of the designed visualization and platform, participants were asked to give their feedback about the platform design, and the visual or functional qualities that they thought should be changed, added, or removed. Among the features they suggested:

- Letting users search citizen videos by hash-tags "#".
- Showing users other videos in similar location as their own. One of the participants said : "The more you add to it [synthesize videos], the more hits it gets." In their opinion this preview of other videos will encourage the user to geo-register and synthesize citizen videos.
- Adding visual cues that demonstrate which stage the user is at.
- Shortening tasks as much as possible, especially if there are any tasks that can be performed automatically.
- Facilitating the insertion of information related to the task of "posting a video" by pro viding drop down menu options.
- Adding tweets to video streams is an idea that they found interesting.
- Considering modeling for a citizen video that was captured from an eye-level perspective (as opposed to the top-down perspective used in previous visualization model).
  Some participants stated that the EW visualization of citizen videos provided them with a more immersive experience of the event.

Dave Humphrey, Creative Director at Jostle Corporation.

The same wireframe and video visualization was presented to Dave Humphrey, Among the feedback he gave was:

- Consider having different layouts for the explore mode (where users are watching an event) and for the contribution mode (where users are constructing panoramas).
- Consider that the "credibility" of posted citizen videos is the issue not "contextual specifici ty". I argue that providing contextual specificity for videos is an aspect that adds to the credi bility of the content.
- Add more layers of information such as tweets, corporate news headlines, and the back ground of users. I argue that although the latter suggestion might add credibility, it also might put users at risk.
- Consider that the platform could have a surveillance aspect.

5.5 Platform Design Prototype, User Testing, and Two Design Iterations

After the feedback sessions I started designing a prototype for the platform's user interface (UI) as well as an Eyewitness Visualization from an eye-level perspective that would be a part of the UI testing. I looked at a group of award-winning user interfaces for inspiration. I focused on websites related to photography, film & television, culture & education, and games & entertainment. The designed platform is a full screen website, where a full screen large image is displayed in the background since the platform is designed to communicate visually rich content. Condensed size icons are used to represent the different tasks of the contribution section, along with typography.

The user can basically perform two tasks on the platform: **(1)Explore** and **(2)Contribute.**

1. **The Explore Mode** asks users to select the date, location, or name of a politically charged event, to explore it from the viewpoint of citizens' videos.
2. **The Contribute Mode** offers participants a range of activities that will let them contribute to the platform, these activities include posting a citizen video, constructing the citizen video panorama, geo-registering the citizen video, and stitching citizen media videos.

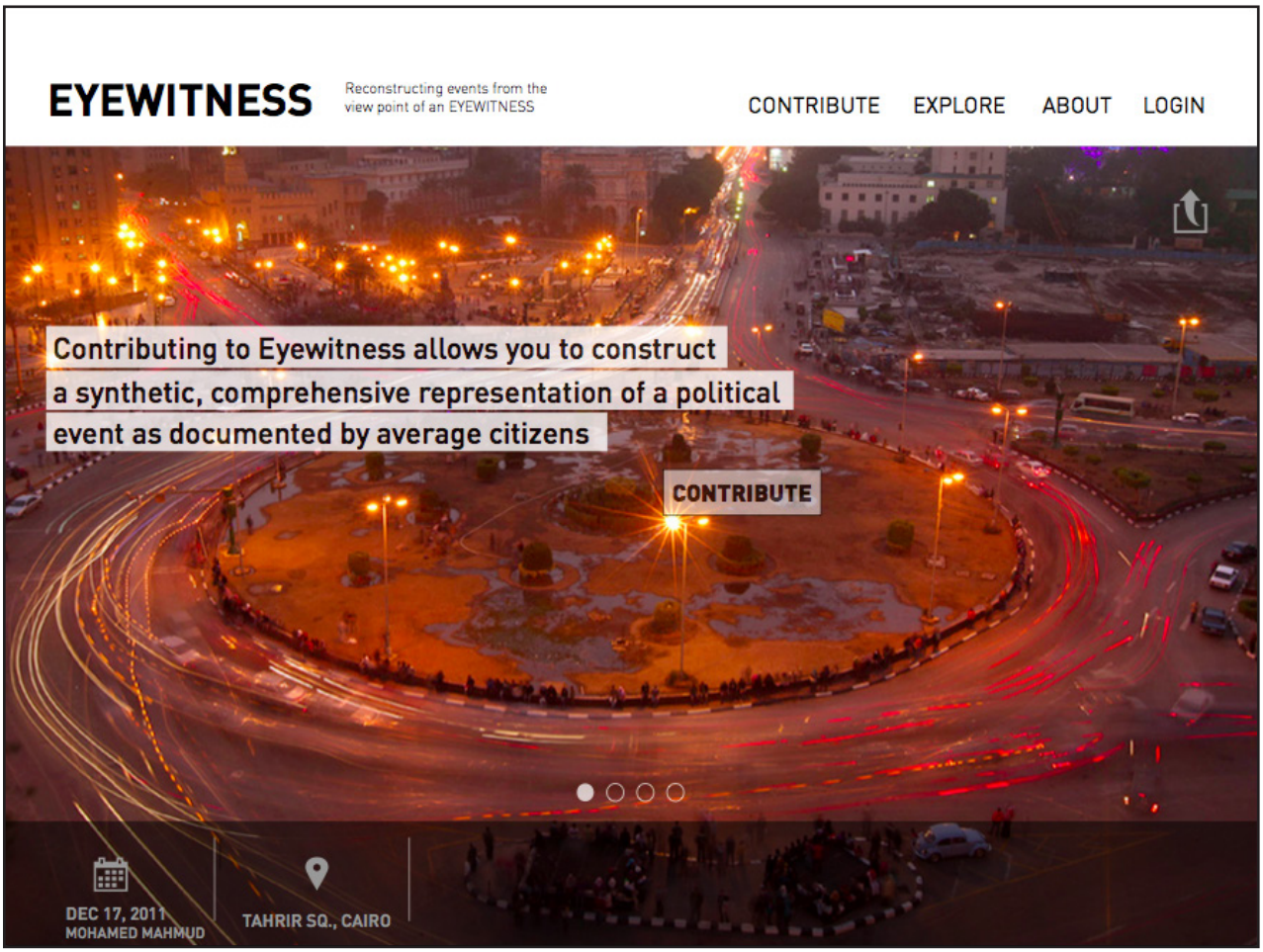

Figure 5.7: Home page of the Eyewitness Platform

5. Framing the Design Solution

The following section presents the third iteration of the platform design. The design was tested on 13 user. Results of the user testing are included in Appendix B.

1. Explore Mode

- Users are asked in this mode to select a date, and a location of a politically charged event

- The next page has a video playback window in the center, video controllers (play/pause, audio, video timeline, full screen), event information at the bottom, tweets aggregated during the same time of the previewed event, information about users who contributed to the construction of the previewed videos, and event's context (Fig 5.8).

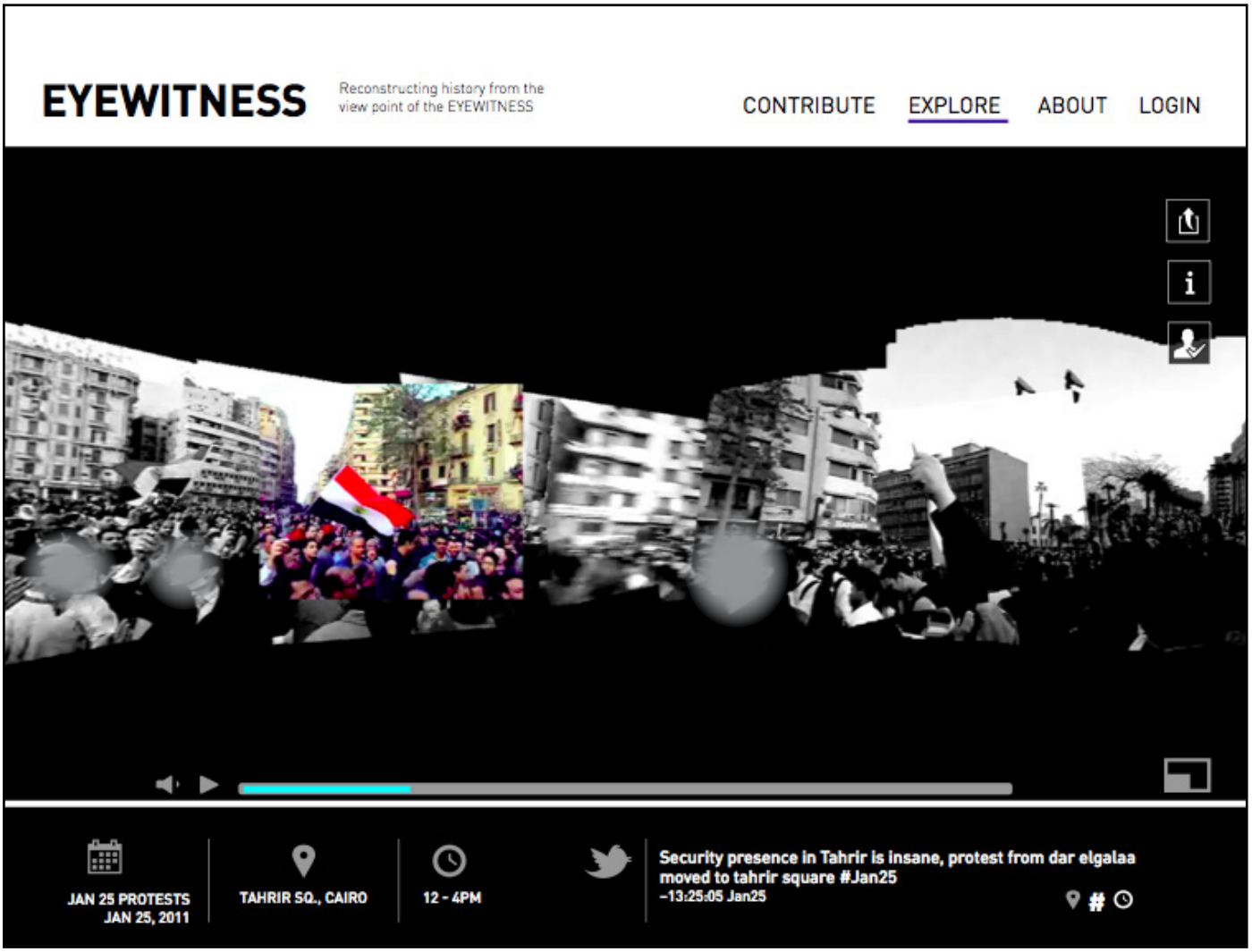

Figure 5.8: The "Explore" mode: in Eyewitness.
Faces were blurred for privacy concerns.

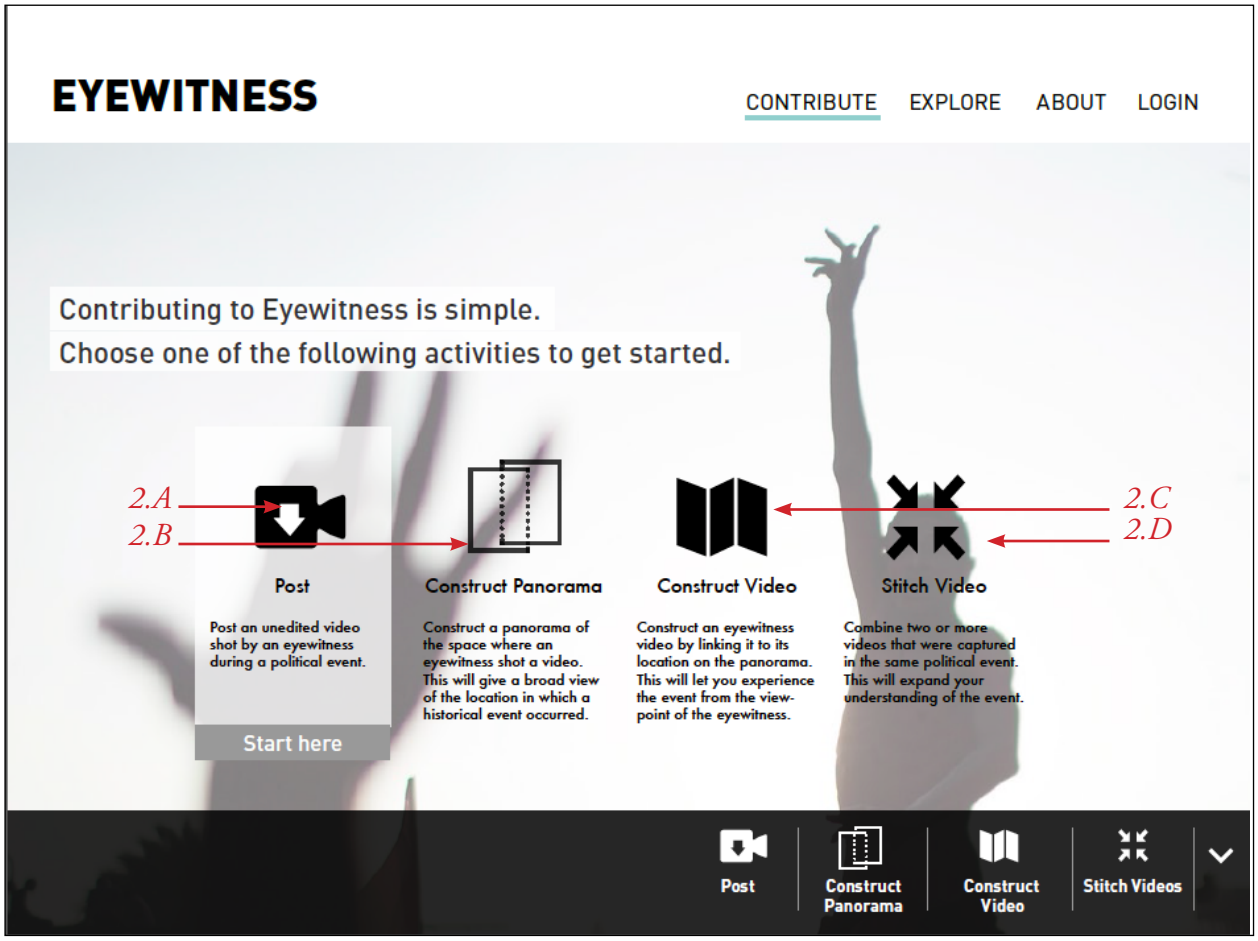

Figure 5.9: The Contribute mode: Four main tasks to contribute to Eyewtiness

2. Contribute Mode (figure 5.9)

It includes the following tasks

(2.A) Posting citizen media video (CMV) to the Eyewitness Platform.

(2.B) Constructing the panorama of the video.

(2.C) Constructing the video against the panorama.

(2.D) Stitching videos.

The following is a brief demonstration of each of the tasks

(2.A) Posting citizen media video (CMV) to the Eyewitness Platform

This task is divided into two subtasks:

2.A.1 Entering a citizen video URL or search a citizen video.

2.A.2 Entering information related to the posted citizen video.

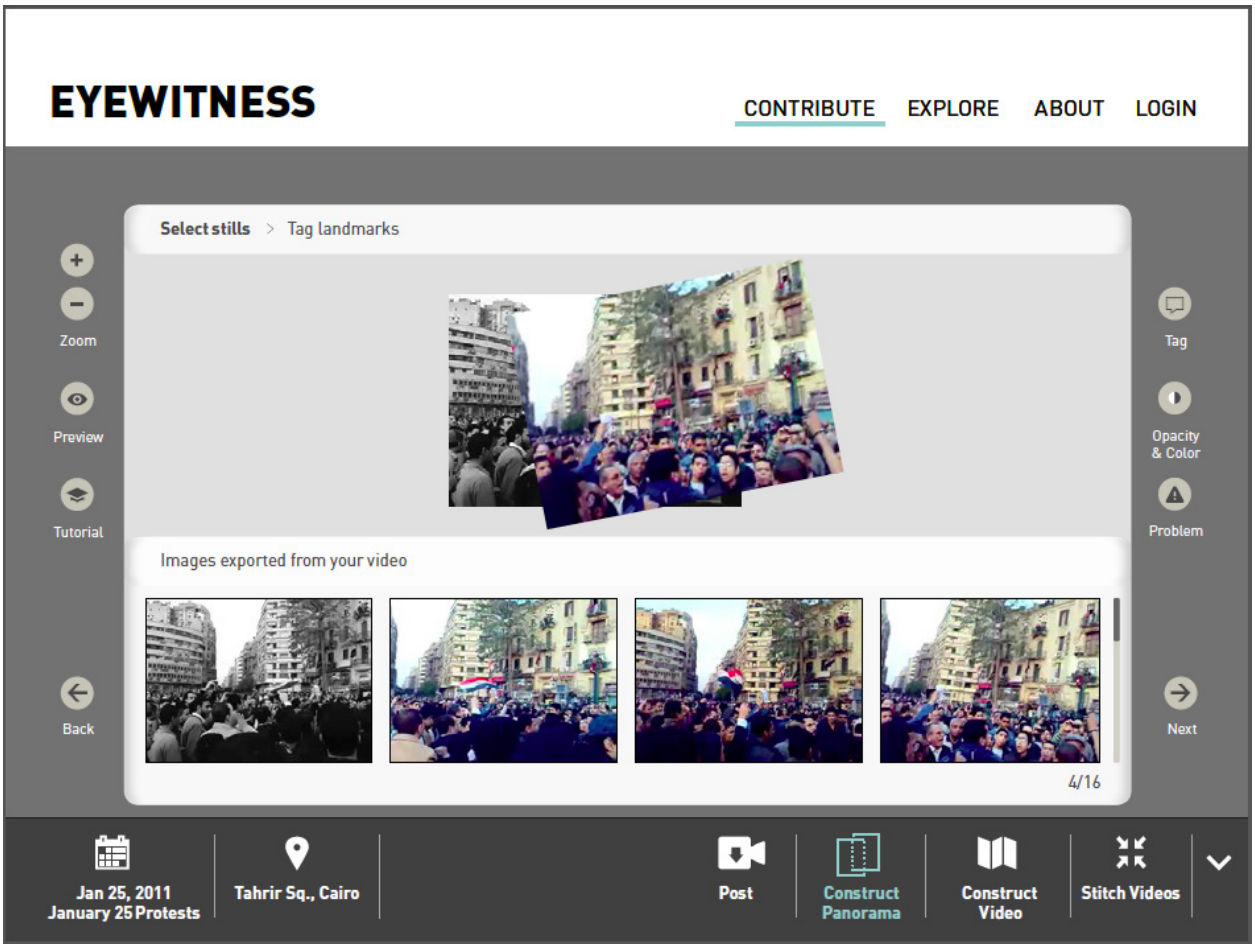

Figure 5.10: The user is asked to select a series of photographs that show as much of the location as possible.

(2.B) Constructing the panorama of the video and locating it

This task is divided into four subtasks:

2.B.1 Selecting stills
2.B.2 Previewing
2.B.3 Locating landmarks (step removed user testing)
2.B.4 Marking the map (step removed after testing)

To construct a panorama of the space where the video occurred, the user is asked to select a series of still images that together construct a panorama of the space. After choosing the stills, the constructed panorama will be previewed to the user who has the ability to further refine it.

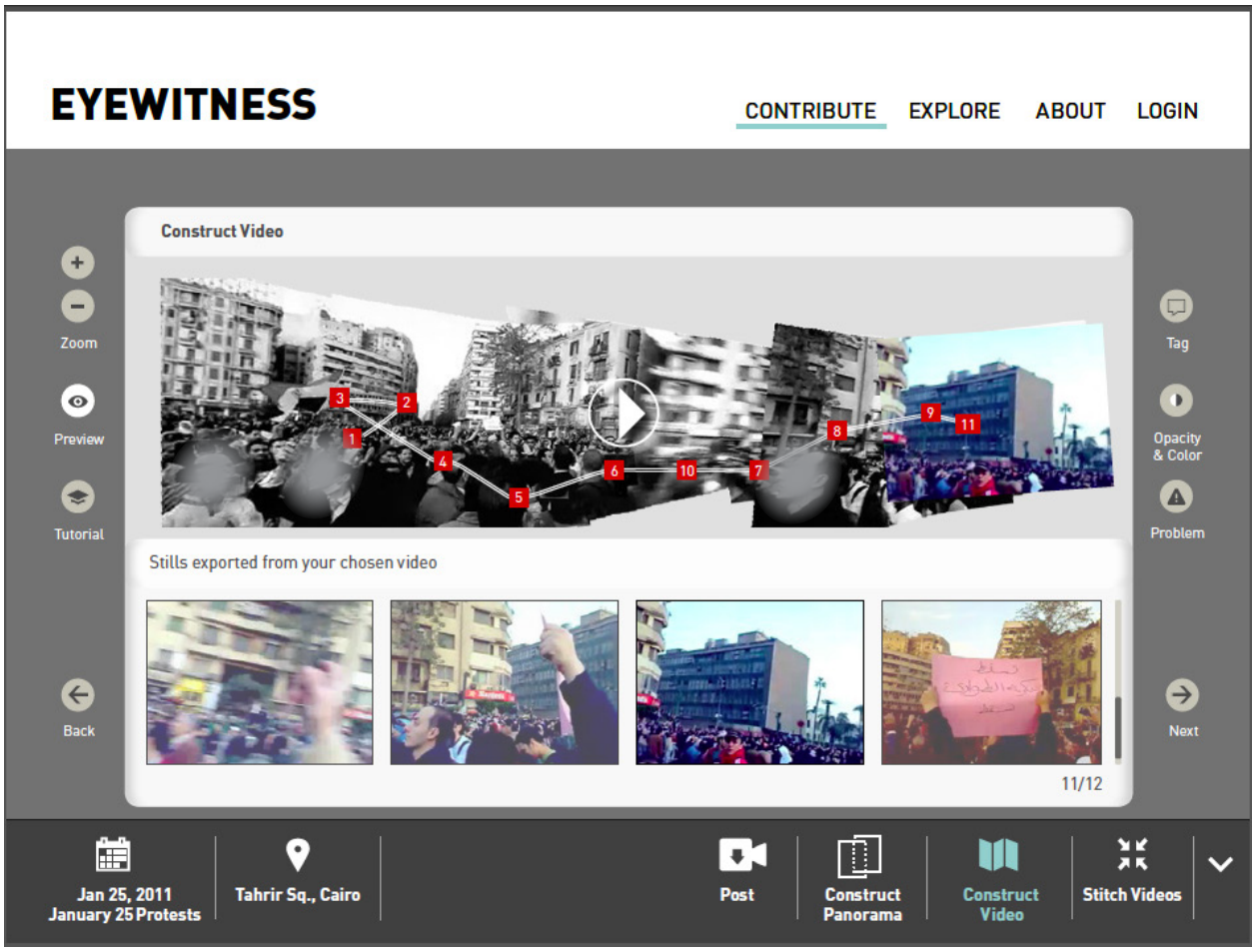

Figure 5.11: Constructing the video (or Geo-registering it). The user will be asked to locate the still image on the constructed panorama

(2.C) Constructing the Video (against the panorama)

This task is divided into two subtasks:

(2.C1) Locating stills

(2.C.2) Previewing

This task like all the other tasks starts with a semi-transparent demo screens that inform the user about the actions required to geo-register the citizen video.

- The user will be given a preview of the constructed panorama and a series of stills exported from the video.
- The user will be asked to locate the still image on the constructed panorama; he/she will be given the option to change the location, rotation, and scale of the stills in order to locate it in its corresponding place on the panorama.
- EW will register values inserted by the user. Using online video editing capabilities EW will then animate the video from one registration to another (figure 5.11).

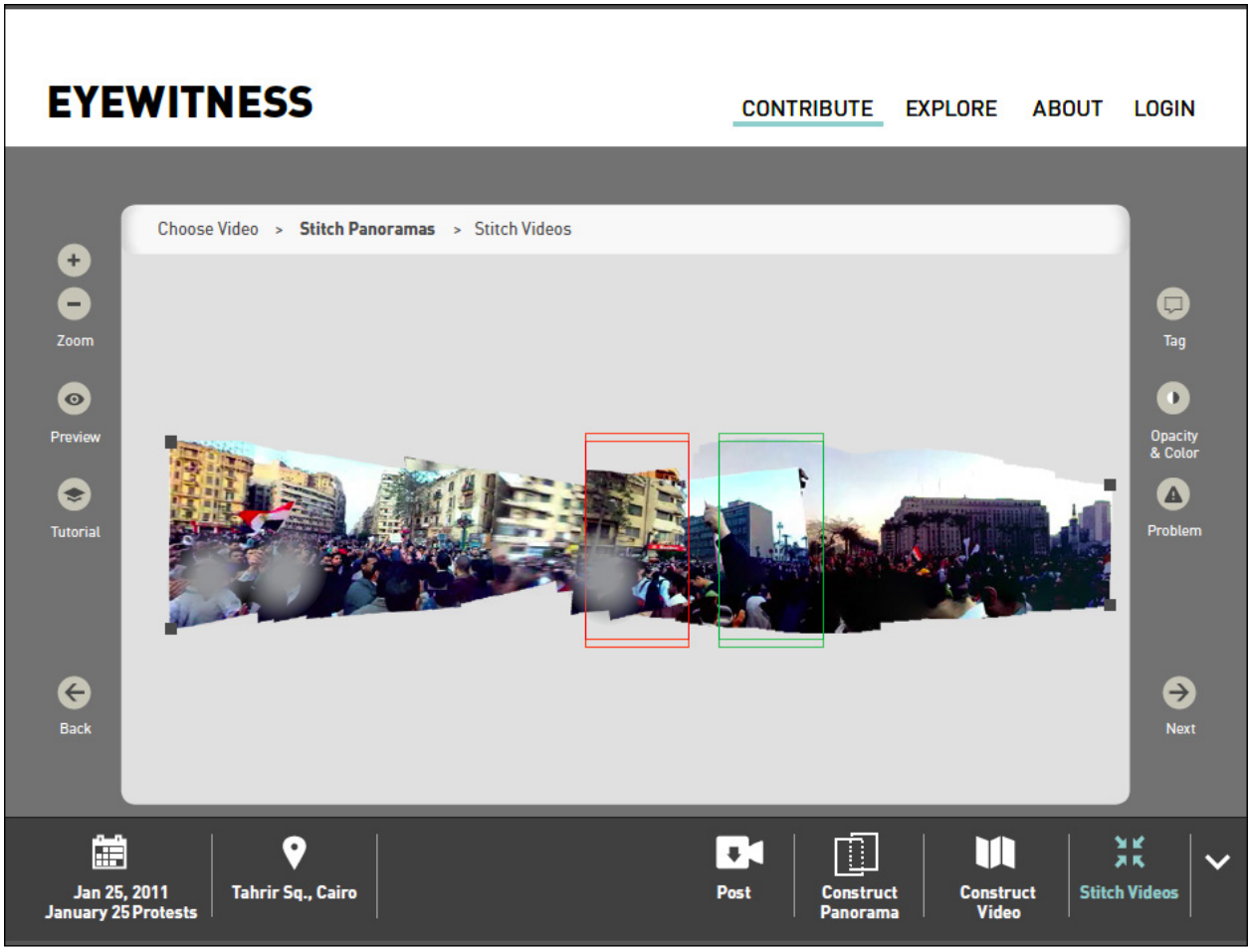

Figure 5.12: Stitching videos. User is asked to manually place together (stitch) the two video panoramas

(2.D) Stitching Videos

This task is divided into three subtasks:

(2.D.1) Choosing a video

(2.D.2) Stitching Panoramas

(2.D.3) Stitching Videos

Finally, in this task, the user will be offered a stream of other citizen videos posted on EW that were captured on the same date and from the same camera angle and approximately at the same time and location.

(2.D.1) Choosing a video. The user will choose one video that he/she thinks is suitable for synthesis with the video they already have based on the existence of a common landmark between both videos.

(2.D.2) Stitching Panoramas. The user will be shown a preview of the two constructed panoramas that belong to the two citizen videos that are about to be stitched. The user is asked by EW to manually put together (stitch) the two panoramas based on the location of common landmarks to create a larger one (figure 5.12).

(2.D.3) Synthesizing Videos. EW will render, then will play back the two videos against their panoramas simultaneously.

Terminologies on the contribution menu page

The first user testing showed that the terminology associated with the different contribution activities did not reflect the actual tasks that users performed under each category. I conversed with users about alternative terms that better describe these tasks; they suggested some, and I suggested others. The following is a summary of the users feedback on the terminologies related to the different tasks of the platform:

Embed: some users reported that the term is too technical; they preferred "**post**" instead.
Map: some users reported that the term is misleading; for them it denoted a task related to Google maps. The term was replaced by "**constructing panorama**" in the second iteration.
Geo-register: users thought it was related to registering GPS data. The term was replaced by "**track video**" in the second iteration. And was replaced by "**unfold video**" in the third iteration and finally **"construct video"**.
Stitch: some users thought that technically they were not stitching videos; they are stitching only their panoramas. The term was replaced by "**synthesize videos**" in the second iteration. And was re-placed by "**stitch video**s" in the third iteration.

Icons on the contribution menu

Some users reported that the "map" and "geo-register" icons are not representative of the corresponding tasks. In the second and third iteration the tasks were renamed and some icons were redesigned.

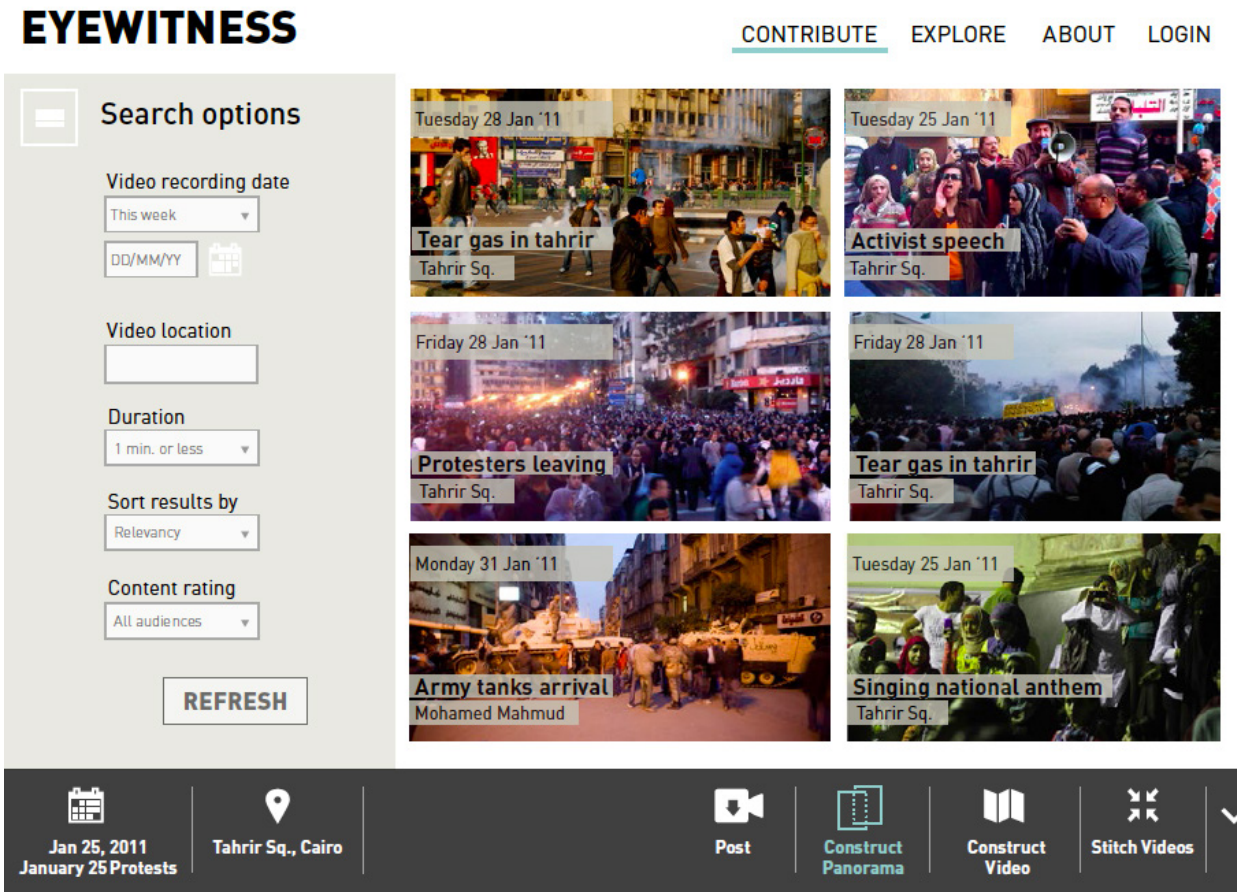

Figure 5.13: Search list

5.6 Platform Design, a Third Iteration

In this section, I present the last design iteration covered in this thesis (see Appendix E for a preview of the platform's user interface). Iterations were based on the feedback I received from users during the second user testing.

The Explore Page

In the "Explore" mode of the Eyewitness Platform the webpage's visual was replaced with a more vivid visual that reflects the dynamic quality related to the act of exploring events from the view point of average citizens' media.

Search List in the Explore and Contribute Mode

An option was added in this mode, that is the ability to explore videos from a list view (figure 5.13). Some users in the second user testing reported that due to the fact that they might not know a specific event to explore, they would like to have a thumbnail list that presents events that they could explore. In the "Contribute" mode, there was a need as well for this thumbnail list view. Users who did not contribute following a chronological order (e.g. they constructed a panorama for an already posted video rather than posting the video themselves) needed a page with thumbnail lists of videos that were already posted.

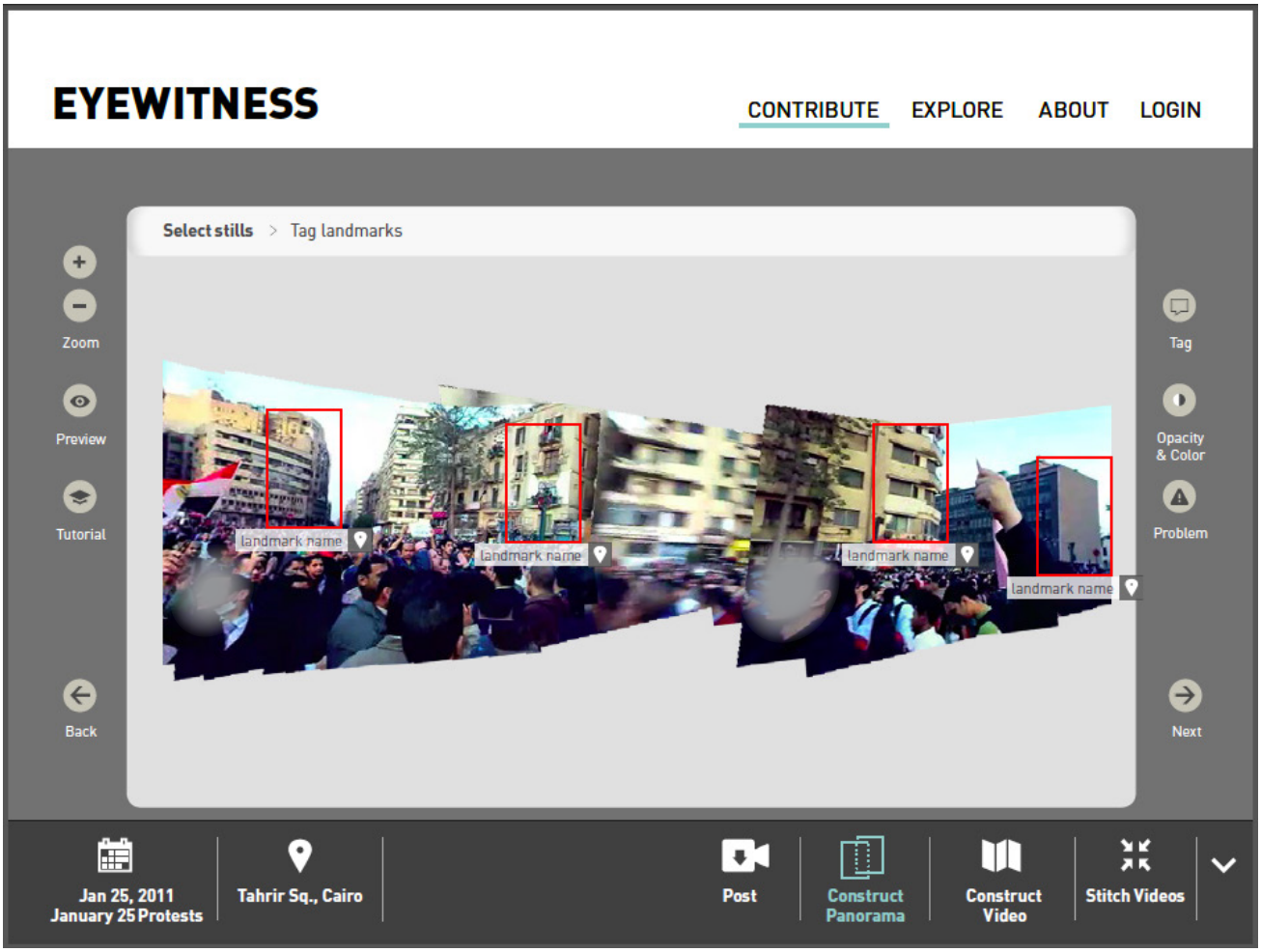

Figure 5.14: Tagging landmarks

Contribution Mode

The contribution pages were redesigned to resemble software working stations (figure 5.21). That redesign was necessary in order to be able to differentiate the "contribute" mode from the "explore" mode as well as to communicate to the user the practicality of this mode.

Tagging instead of Locating Landmarks

In the "Construct a Panorama" task, two subtasks were removed: the "locate landmarks" and "mark the map". Originally these two subtasks were designed to help the user in the "Stitch Videos" task assuming that the landmark's outline across two videos will facilitate for the user the process of deciding whether the videos were captured in the same location. But the majority of the tested users did not find the landmark's outline useful in this regard. In this iteration, tagging landmarks is implemented instead (figure 5.14).

Terminologies

The terminologies of some contribution tasks were changed for the third time. The task previously titled "Geo-register" in the first testing and "Track Video" in the second testing failed to communicate the

actual task it designates according to users' feedback in the first and second user testing. In this iteration the task was named "Construct Video".

Proof of Concept

The final design is a proof concept that is demonstrated using a visualization design prototype and a platform design prototype. The following is a demonstration of existing technologies that validate the feasibility of this proof of concept:

Regarding the construction of panoramas from videos, this operation is feasible based on the research conducted by Brown et al. (2007) and Agarwala (2005). The "Unfold Video" task depends on online video editing capacities. Given that there are several online video editing platforms such as YouTube Video Editor, Video Tool Box, Wevideo, and FilaLab Video Editor, this task is technically feasible online. The "Stitch Video" task depends on photo and video editing capabilities as well, which are feasible given the existence of online editing platforms such as the ones previously mentioned.

5.7 Testing the Impact of Contextualization on the Margin of Sensemaking

Previous Testing

At this stage the capability of the Eyewitness Visualization prototype to increase the margin of sensemaking was previously tested during an exhibit, where viewers gave their feedback in the form of written summaries (collected while exhibiting the visualization prototype and described in section 4.2.3). The viewers' responses (22 responses) informed me that the visualization prototype enhances the experiential sensemaking of citizen media videos. In addition, I conducted user testing for the platform design interface with 13 users across two iterations (see Appendix B for the first and second user testing results).

About this Testing

In this section I present another testing that was conducted with Egyptian users. This testing was conducted to measure the level of sensemaking of information communicated using the Eyewitness Visualization and Platform Prototype. It aimed at examining my hypothesis which is whether embodying the contextual specificity of citizen media video content of political significance increases the margin of sensemaking of the video content and the event. Before conducting this testing, I conducted another one for the purpose of pre-testing. While the pre-test measured sensemaking using the guidelines provided by Wilson & Wilson (2012) to measure sensemaking in open learning environments, this test (presented below) depended less on the Wilson et al. as a result of the feedback I received in the pre-testing.

Originally this testing was intended to be an online user testing for the platform and the visualization design (as I was not physically present in Egypt). But knowing that such an online demonstration will take around 45 minutes, people ignored my invitation to conduct this testing. So I altered the method used to get feedback from Egyptians about the visualization and the platform design prototype. The method I adapted could be considered a combination between a test and a survey. First, I briefly demonstrated the prototype using an Eyewitness Visualization prototype video then I asked participants to give feedback on the prototype. Their feedback took the form of written summaries and answers to short multiple choice questions. The participants were intended to be Egyptians since the case study of this research focused on citizen media video content captured during recent protests in Egypt.

Test Description

Briefly, the testing started by asking participants to rate their current knowledge related to a specific political events that occurred in Cairo in 2011, these were the January 25th protests and the "Clashes of the Minsters' Council" that took place in December, 2011. This question was followed by watching two Eyewitness Visualization prototypes of citizen media videos captured during these events. Then participants were asked to state whether the design prototype provided them with rele-

vant/irrelevant information about these events and why. Afterward participants were asked whether they will be encouraged to use an online tool/platform that allows them to visualize, synthesize, and explore citizen media videos such as the ones that they were shown during the testing. The duration of this online testing was estimated to be 15 minutes.

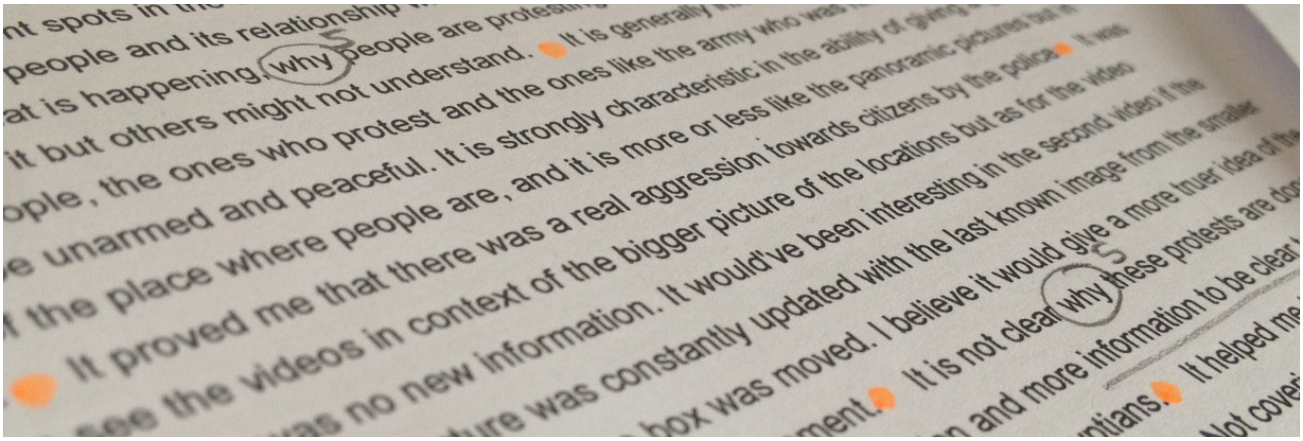

Figure 5.15: Participants' written responses on why the prototype content was relevant/irrelevant?

Participants' Demographics and the Prototypes used in the Testing

The number of participants in this testing was 32. The testing was conducted on two groups consisting of: 8, and 24 participants. The event investigated with the first group (consisting of 8 participants) was "January 25th Protests" and the event mainly investigated with the second group (consisting of 24 participants) was the "Clashes of the Ministers' Council" (in addition to January the 25th). Participants are all Egyptians, and their age range is between 20-35 years old (except for 3 between 35-60).

Participants Prior Knowledge

Starting by the participants prior knowledge of the political event investigated in the testing:

- 7 out of 8 participants (85%) reported high-prior knowledge about the events of "January 25th Protests".
- 15 out of 24 participants (63%) reported low-prior knowledge about the events of the "Clashes of the Ministers' Council". This rating was done using a scale of 1 to 7, where 1 is low knowledge, and 7 is high knowledge.

The low prior knowledge of a topic is a variable that directly correlate with the level of information sensemaking according to Wilson & Wilson (2012).

Relevancy of Information Communicated by the Visualization (Quantitative Results)
After watching the Eyewitness Visualization, participants were asked whether the visualization provided them with relevant or irrelevant information related to the political events of "January 25th Protests" and the “Clashes of the Ministers’ Council”:

- 10 participants (31%) reported that it provided them with *no* additional information
- 12 participants (38%) reported that it provided them with *general* information.
- 8 participants (25%) reported that it provided them with *useful* and *very useful* information about this political event.

The written responses of participants reflected that the absence of a backstory related to the event’s video previewed in the prototype, might be the reason why it added no additional information. Some participants wrote: “It is not clear for me what is happening, why people are protesting and because I'm Egyptian I have been through it but others might not understand”. The original platform design has an information button that presents the backstory of the previewed video (by referring to Wikipedia) but due to the time constrains of online testing, this backstory option among others was not properly presented to participants of the online testing (figure 5.15).

The Impact of the Visualization Prototype on the margin of Sensemaking (Qualitative Results)
The last question was followed by another question that helped identify why participants considered the prototype informative/uninformative. Their responses were in the form of written summaries. Some participants reported that the visualization offered them a better sense of the events' time and space. A participant wrote:

> It was informative –especially the second video[1]– because it gave me a general view of what happened in different spots in the same public space, which facilitate the understanding of the movement of the people and its relationship with the space (Tahrir square) itself.

Other participants reported that the visualization prototype affected them emotionally. One of them said: "it is emotional and touching"; another one wrote: "(the video) made me feel like I was there".

1 The second video of the testing is a visualization prototype of January 25th protests. It that was constructed using 3 witnesses videos

5. Framing the Design Solution

The most significant feedback came from participants who stated that the videos' visualization was informative for them because the videos portrayed people whom they thought did not participate in the protests of January 25th. After watching the Eyewitness Visualization prototype of "January, 25th Protests", some participants reported:

> (The video) shows clearly who were there, the diversity of activists and protesters, their age group, socioeconomic status, gender.

Another said:

> This video is informative about the participation of large and diverse portions of Egyptians in the revolution not only young educated but middle age and old , men and women.

Their statements reflect that respondents acquired new information related to the demographics of protesters. This information could be considered to be filling a gap in respondents' knowledge; in other words, it enhanced the respondents' sensemaking[1] of information related to the protests of January 25th in Cairo. It was propagated locally –in Egypt– and globally that the people who started the January 25th Revolution in Egypt were the "educated, middle-class, young Egyptians"locally[2]. The visualization prototype for the protests (specifically the spatial contextualization and synthesis of several citizen videos) provided clear proof of the participation of modest social classes since the first day of protests. This information has a great significance, because it reflects the opposition of different social classes against the former regime since the beginning of protests. The hegemonic coverage of the January 25th protests in different forms of media ignored –intentionally or unintentionally– the diverse range of social classes, age groups, and genders who participated in these protests.

The feedback received from the tested participants shows that the visualization prototype enhanced the sensemaking of information (filled a gap in the knowledge of viewers) portrayed in citizen media videos of "January the 25th" and consequently the visualization enhanced the sensemaking of the event (January the 25th Protests).

Although the quantitative results do not show a significant enhancement in the margin of sensemaking, the qualitative results (written summaries) showed different results. It showed that individuals who participated in the testing reported a better sense of the spatiotemporal dimension of the event, as well as the situational circumstances. In addition, participants acquired new information

1 See footnote on page 11 for a definition of sensemaking.

2 As an Egyptian and resident of Cairo at the time I had the same preconception –based on corporate media– that the young, educated, middle class Egyptians are the one who started the revolution. I also had a preconception that other social classes were encouraged by the middle class youth to join the protests of "January 25th".

about the demographics of the protesters who participated in the January 25th Protests.

Using the Platform to Create Content and to Explore Content
When asked about whether they would use such a tool to create content (to visualize and synthesize video of political significance):

- 58% responded with “yes”
- 41% responded with “no”

Participants were slightly more encouraged to use the platform to explore content rather than create content:

- 60% responded with "yes" to use the platform to explore recent political events.
- 40% responded with "no" to use the platform to explore recent political events.

The question that followed showed answers that contradict with the previous question: when asked about why would they use the Eyewitness Platform, only 12% reported that they will not use it (they prefer YouTube) and 80% reported that they will use it to watch the spatiotemporal dimension of an event unfolding as well as to watch the way different videos relate to one another.

More accurate responses to these questions and to the testing might be obtained in another testing where the prototype is fully demonstrated to Egyptian participants one-to-one. The fact that this testing was conducted online, and was limited to 15 minutes did not give the prototype enough demonstration time.

6. Future Work & Conclusion

Future Work

Future Testing

There were limitations associated with testing the prototype on Egyptians. Since the testing with Egyptians was conducted online, there were limitations on the time (15 minutes) and consequently the amount of information presented and gathered from the participants. Future work could test on Egyptians face-to-face (or one-to-one) instead of online in order to gather more accurate feedback. The event used in the testing also played a role in the testing results, so future research could look into the impact of users' high prior knowledge of the event on the sensemaking of information communicated by the design. Future work will consider the videos' copyrights and licenses as well as an examination of surveillance practices within communities where the design will be implemented.

Future Visualization

Further work in the Eyewitness Visualization could examine the visualization of citizen media videos captured in different locations such as streets and underground stations. Regarding the platform, further research on the effect of up-voting, down-voting, verifying, or flagging videos on the rank and trustworthiness of a user is required. The significance of different video preview scale could be tested in future prototypes. Further research could examine embodying the contextual specificity of other forms of citizen media content such as images, and tweets.

Conclusion

Citizen media draws its significance from its role in giving a voice to marginalized witnesses. The latest events known as the "Arab Awakening" reflect the role citizen media plays in motivating the ongoing change in democratic and non-democratic states. The content embedded in citizen media is important in informing local and global individuals with narratives that might contradict or complement hegemonic narratives communicated by corporate or state media. The research presented in this thesis investigated ways in which design can help leverage citizen media content (CMC) of socio-political significance. Primary and secondary research into ways to leverage CMC suggest a number of challenges that faces this type of media. The problem of de-contextualization of citizen media was found to be a prominent challenge as it inter-connects and directly affects its exploration and sensemaking.

The research focused on designing a medium that leverages citizen media videos (CMV) by embodying its contextual specificity. The contextual specificity of citizen media videos is the relationship between citizen media and three dimensions: time and space, where the event unfolded; other citizen media content, captured in similar time and space of the occurrence; and situational circumstances of the witness, meaning his/her emotive conditions. Egypt was taken as a case study for this research and the target group was sociopolitically engaged youth.

This research paper presented a number of conceptual, and critical frameworks associated with design-

ing for citizen media. The conceptual aspect of the design studied Atton's (2002) and Mihal's (2004) citizen media model, as well as significant aspects related to bias in corporate and citizen media, and meta-design frameworks. The critical aspect of the design looked into the practice of adversarial design, the mediation of prosthetic memories, as well as the dilemma of surveillance in relation to technology design.

The research methodology included primary, secondary, and tertiary research. The primary research consisted of studio practice that started with an abstract understanding and prototype making, and then moved to more practical prototyping approaches. A number of participatory methods were deployed throughout the research. They included user interviews, surveys, feedback sessions, expert interviews, user testing, and mobile user testing. A total number of 83 participants were involved in the different phases of the project.

The final design is a proof of concept prototype, and it consisted of two designs: a visualization design and a platform design. The design prototypes were tested and the users' feedback reshaped some aspects of the design in each testing. Future research could conduct more one-to-one testing for the platform design with local Egyptians. This research focused on citizen media video content captured in or around city squares, so further research into the visualization design could examine the visualization of events occurring in other spaces such as streets, or underground stations. Future research could look into designing for other forms of citizen media content with respect to the media's contextual specificity.

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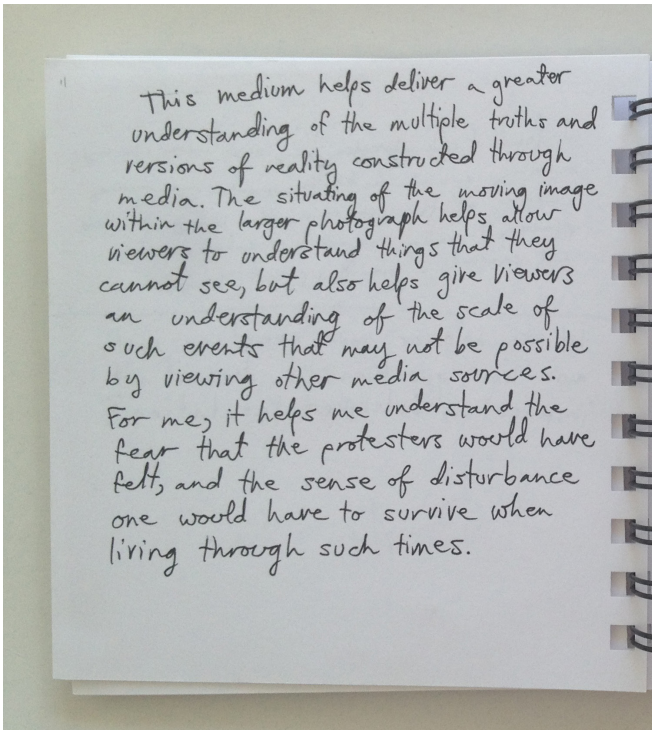
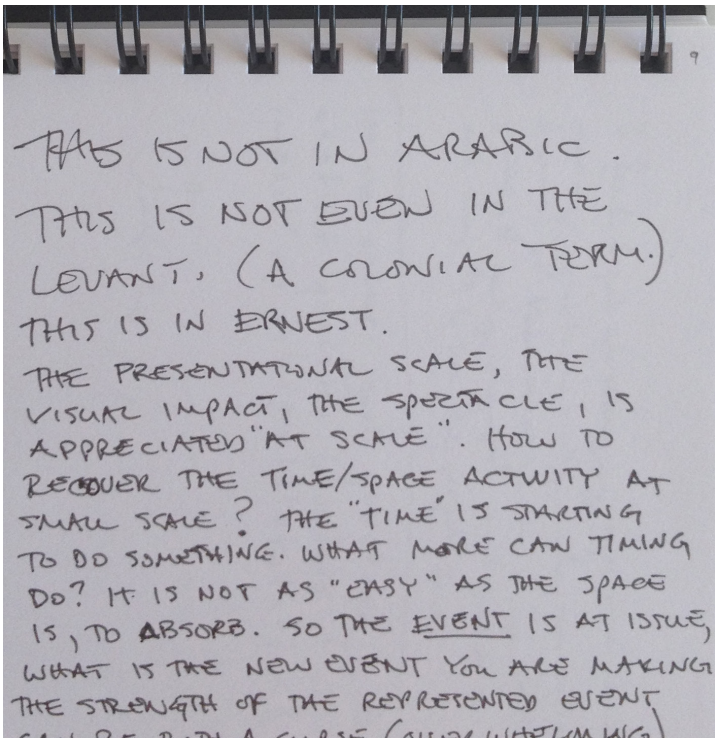
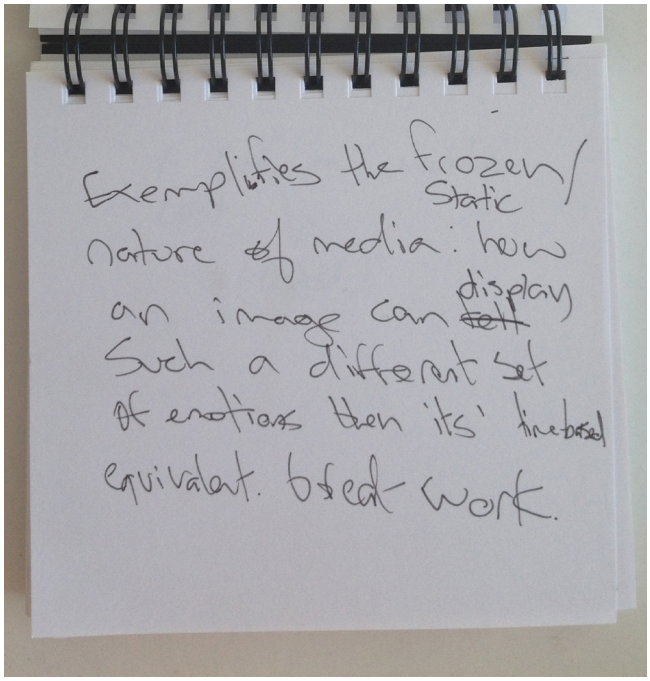
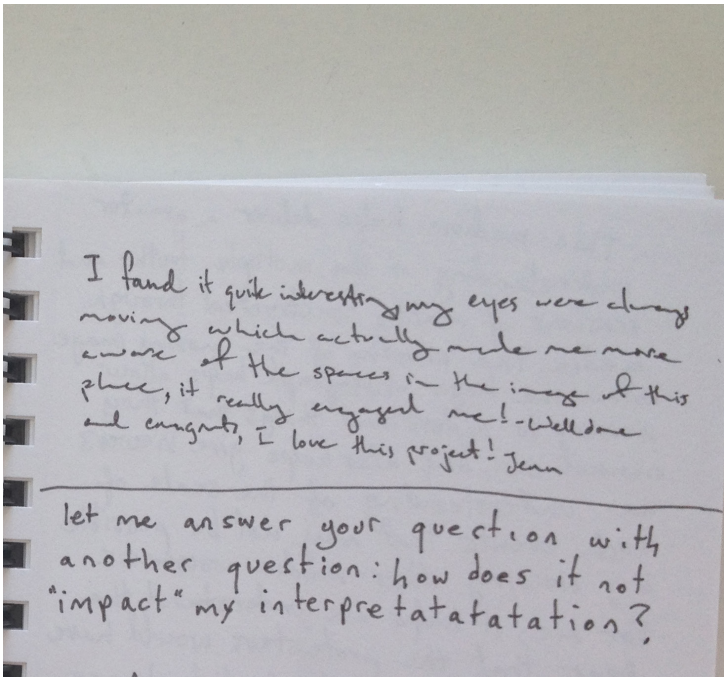
8. Appendix A

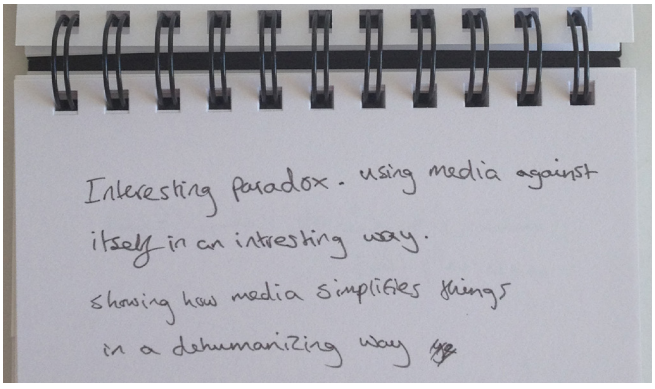
Written responses from exhibit viewers





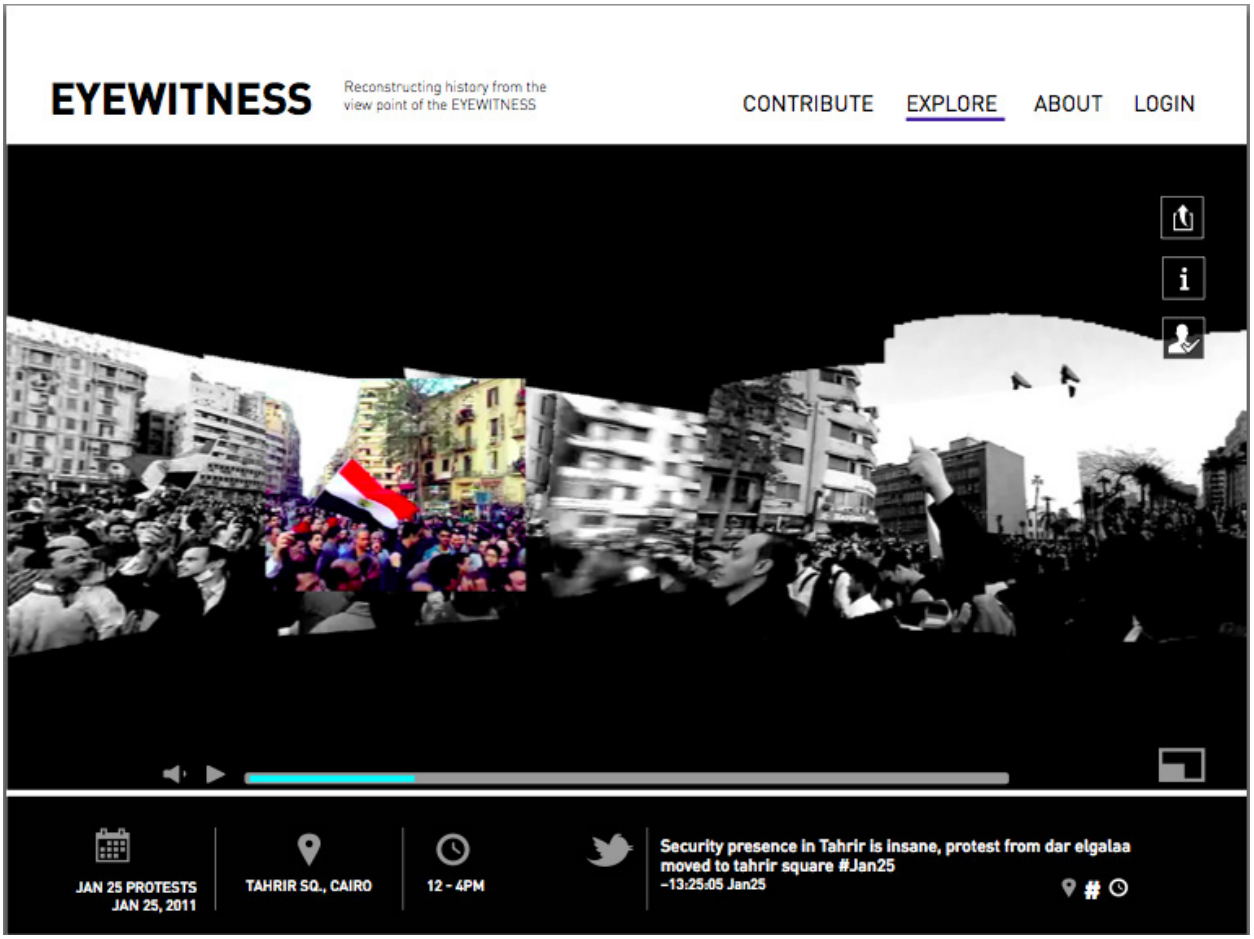






8. Appendix B

User Testing Results (of the first and second testing)



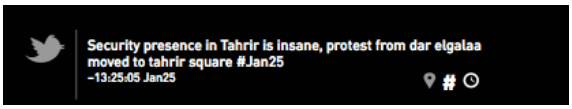


Figure B.1: The "Explore" page in Eyewtiness

(1) Explore Mode

The first and second round of user testing of the "explore mode" showed the following:

- The tweets were not recognized, users thought they were news headlines.
- Users considered Wikipedia to be a neutral source to aggregate the event context. Context is accessed by clicking the "i" icon.
- The icon related to contributors information was not recognized (only 1 out of 13 users recognized it)
- Regarding the contributors information icon, users wanted to know more information about users who verified the previewed citizen video, such as the number of videos these users previously verified, the type of contribution these users engage with on the platform (whether post videos, or synthesize them).

In this regard some users stated the importance of communicating that they can either insert an event name or its date, and not necessarily both.

8. Appendix B

User testing results of the first and second testing

(2) Contribute Mode

Results of the first and second user testing for Post a citizen video:

Users asked to add "unknown" as an option in the drop down down menus.

Results of the first and second user testing for the Construct Panorama task

Users were confused regarding the task of selecting a series of still images (2.B.1) that construct the panorama. The reason is the layout of the window that contains the still images, as well as the "Selected Stills" box.

A new layout was designed for the second iteration and the "selected stills" box was removed. The second iteration layout for the window was a suggestion from one of the users, which was found to be practical. The new layout is a two-window layout where the stills are arranged in the right window, while the constructed panorama is previewed dynamically in the left window after each selection is made by the user. Whenever the user selects a still image, it shows in the left window; whenever the user adds other stills, they are stitched with the existing one panorama.

In step (2.B.3) Locating landmarks, I asked users if displaying photographs of the landmark will help them better identify landmarks portrayed in the panorma than the existing outline drawings. Four users said "maybe" and the other four said that if this (the space represented in the panorama) is a place they are familiar with, matching the outline drawing to its place on the panorama would be easy. Given that the target participants of the platform are primary locals who are familiar with locations and events portrayed in citizen videos and its panoramas, it is best to keep the outline drawings of the landmarks. Using photographs instead will require embedding a number of photographs from different perspectives.

Results of the first and second user testing for the Geo-locating a Video task

Users reported that they did not envision the output of their activity geo-location activity. They stated that they did not understand what their actions are leading to. Therefore in the third testing I will add textual or visual description of the output of this task to the demo screen.

The "Ignore" button that intends to let a user skip locating a still frame was not communicative to users. An alternative will be implemented and tested in the third round of user testing.

Results of the first and second user testing for the Synthesizing Videos task

The subtask (2.D.1) Choosing a video, users testing showed the following:

- Users tend to think that the first video displayed at the bottom left of the video stream is the nearest video to their own video. (It was the first choice for 6 out of 8 users in the second testing round.)

8. Appendix B

User testing results of the first and second testing

- Tagging landmarks on the panorama and the video stream did not help users identify “the nearest

In (2.D.2) Stitching Panoramas, users testing showed the following:

- Users reported that they needed an “opacity” option, as adjusting the opacity of one of the panoramas will help them stitch it more accurately.

8. Appendix C
User testing for E^2

4.2.2 Platform Models
E^2 (eSquare): Explore and Express

Testing E^2

In-class testing was conducted for E^2 (eSquare). The topics chosen for testing were "climate change" and "Swiss bank corruption". Users participants had two streams: one placed horizontally, the text stream, and another placed vertically, the visual stream. They were asked to create their own 'Moment' of news where they had to match an image with a text.

Users were asked to

1. Move the two streams horizontally and vertically.
2. Stop when they encountered an interesting 'Moment' that assembled a text and image.
3. Capture it with the camera.

Testing Summary

- Users reported that it is a hard process. Assembling the text with the visuals required a lot of thinking (according to the users).
- It's easy to cheat and to assemble texts and images that are not true (whatever 'truth' is).
- It's better to have more information regarding the source of this informa- tion (the source of the image and the text).

Figure C: E^2 in-class testing

Appendix D
Citizen Science and Eyewitness

Citizen science projects (also known as participatory science, crowd science, crowd-source science, networked science, and public participation in scientific research) are projects based on employing the effort of citizens to help scientists conduct research. In Framework for Defining and Describing Key Design Features of Virtual Citizen Science Projects, authors refer to citizen science as "virtual citizen science" VCS projects, that employ computer-mediated interaction to mobilize citizens interaction to accomplish specific tasks. This mobilization helps scientists advance scientific research in concerned fields (Reed, Rodriguez, & Rickhoff, 2012).

Citizen science projects are of specific interest to the design proposed in this document (Eyewitness) because they both benefit from crowd-source engagement in solving a wicked problem. While in VCS projects, cultures of participation combined with crowd-sourcing are used to benefit and solve science-related problems, in Eyewitness this combination is used to benefit and solve citizen media-related problems. Examining a user's motivation in VCS benefits the conceptual context of my design. My interest in examining this specific aspects resulted from an interview, with Geoffrey Macdougall (Head of Development for Mozilla), who pointed out that the challenge for my platform (Eyewitness) is "the single player motivation" — in other words factors that will motivate the user to contribute to the platform.

Users Motivation in Citizen Science Projects

In Purposeful Gaming & Socio-Computational Systems, authors try to identify the motivation of participants to take part in a citizen science projects (Prestopnik & Crowston, 2012) . They refer to Malone, Laubacher, and Dellarocas (2009) who study users' motivation to engage in online activities. According to Malone et.al users basic motivations are: "money", "love", and "glory". In the context of citizen science, Prestopnik et.al suggest that love and glory are the main users' incentives to take part in citizen science projects. In relation to my design, this description for users' motivation seems inaccurate. In contrast, meta-design description of users' motivation is more appropriate in the context of my design. Although an examination of citizen science in this regard (users' motivation) doesn't benefit the conceptual context of my design, it might however suggest that researchers of citizen science can benefit from research related to meta-design frameworks. Especially when taking in consideration that both citizen science and meta-design frameworks rely on forms of crowd-sourcing to solve problems (Prestopnik & Crowston, 2012; Fischer 2011). Prestopnik et.al (2012) point to the limited number of studies that look at ways that motivate users and engage with citizen science projects. Designers of citizen science can benefit from meta-design in this regard by studying "factors that shape cultures of participation" in the work of Gerhard Fischer (2011).

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ECU-REB PROJECT-BASED APPLICATION

EMILY CARR UNIVERSITY RESEARCH ETHICS BOARD (ECU-REB)
PROJECT-BASED RESEARCH APPLICATION

Application for Ethical Review of Research Involving Human Participants at Emily Carr University

(ECU-REB Use Only) ► File #: 2012112201	
Date Received: 2012112201, 20130125	Date Reviewed: 20121204, 20130206
Reviewers:	
Status/Date:	

PROJECT TITLE:	A Comparison between Citizen versus Corporate Generated Media Content regarding the Representation of Live Events				
PROJECT SCOPE: (Check as appropriate)	☑ Graduate Thesis Project ☐ Faculty Research ☐ Administrative Research ☑ Other (specify) INITIAL EXPLORATION PHASE				
PROJECT DATES: (Commencement to Completion)	September 2012- July 2014				
RESEARCHERS:	Name	Faculty position/ MAA year of enrollment	Faculty/ Program	Phone	E-Mail
Principal Investigator (Faculty Member)	Christopher Hethrington	Assistant Professor	faculty of design + dynami		chethrington@ecuad.ca
Principal Student Investigator (if applicable)	Hoda Latif Hamouda	MAA first year	Grad Studies/ Design	778 847 4585	hhamouda@rcuad.ca
Co-Investigator	Melanie Wadell	MAA first year	Grad Studies/Design	604 440-6113	mwadell@ecuad.ca
Co-Investigator					

The title **Principal Investigator** designates the person who leads the research. The Principal Investigator is assumed to have the abilities to supervise other researchers, be responsible for the financial administration of the project, have the authority to ensure that appropriate guidelines and regulations are followed, and be competent to conduct the research in the absence of faculty supervision. A student cannot be identified as a Principal Investigator, but for the purpose of recognizing a student's leadership role in the research, a faculty member may designate a **Principal Student Investigator**.

The restriction of the term Principal Investigator to faculty does not impact the ownership of intellectual property of publication authorship. (See Emily Carr University Policy # 5.2 Intellectual Property.) All of the researchers who are listed as investigators on this form will have exclusive access to the data once it has been deposited into secure storage following the conclusion of the research.

Send an electronic file of your completed application and all of the accompanying documents listed on the Document Checklist (page 2) to: ethics@ecuad.ca

This application will not be considered complete and ready for review until all of the documents have been submitted electronically, and one signed copy of the Declaration Form from each applicant has been submitted in paper or as a scan.

No research with human participants at Emily Carr University shall commence prior to approval from the ECU-REB.

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ECU-REB PROJECT-BASED APPLICATION

SECTION A – DOCUMENT CHECKLIST

Document Description: - Eg. "Dr. Wilson's Signed Applicant Declaration" "TCPS2:CORE Certificate for Dr. Wilson"	**Electronic file name:** - Eg. "Wilson_Project-based_ApplicantDeclaration.pdf" "Wilson_TCPS2cert2012.pdf"	**Is this document included with the application?**
Applicant Declaration: (Each investigator is required to submit a signed copy of the applicant declaration that accompanies the application form. The signed copy can be submitted in paper form, or as files made from scans of the original signed copies.)		
Hoda Hamouda's Declaration - attached M. Wadell's Declaration Christopher Hethrington's Declaration - pending	Hoda_Project_based_Application_2012.pdf (page # 30)	☑
TCPS2: CORE Tutorial Certificates: (Each investigator is required to supply evidence of their completion of the TCPS2:CORE.)		
"TCPS2:CORE Certificate for Hoda Hamouda	Hoda_Project_based_Application_2012.pdf (page #17)	☑
Letters of Agreement with External Agencies: (eg. Letters of Agreement or Approval from cooperating organizations, funding agencies, school boards, or other partners)		
		☐
Project Proposals: (eg. Funding proposals, Thesis Proposals, or Project proposals for external agencies, etc.)		
		☐
Data Gathering Instruments: (eg. questionnaires, survey, interview guides, probes, co-creation and ethnographic process documents, participant observation and storytelling documentation materials, etc.)		
Participants' Guideline (p# 23) Interface Paper prototype (p# 24)		☑
Recruitment Materials: (eg. Letters of invitation, telephone or verbal scripts, advertisements, social media notices)		
E-mail Invitation Method A (p# 18) General Invitation/Consent Form Method A (p# 19-22) E-mail Invitation Method B (p# 25) Applicant Declaration (p# 30)	Email Invitation Method A.pdf General_Invitation_Consent_Hoda_Method A.pdf Email_Invitation_Method_B.pdf Project-based_ApplicantDeclaration_hoda.pdf	☑
Consent and Media Release Documents: (other than ECU-REB templates)		
		☑

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SECTION B – EXTERNAL FACTORS IMPACTING THE PROJECT

1. External Partnerships -

All external partnerships in participant research must conform to the criteria listed in Emily Carr University Policy 3.4 Educational Partnerships. The ECU-REB requires letters of agreements with all external partners to be received prior to the start of participant research. External partners in research might include school boards, hospitals, Aboriginal community organizations, owners of private locations upon which research is conducted, industry partners, funders, and more.

If partnerships develop during the course of the term, the applicant can submit the letters of agreement to the ECU-REB when they arrive and in advance of the start of participant research.

Attach any other approval documentation that has been produced for or by any partnering organizations or funders.

Name of External Partner (List the organizations and locations)	**Name of Contact Person**

2. Research Settings -

List all of the locations where the research will be conducted. This might include Emily Carr University facilities, community settings, hospital departments, schools, and more. Be as specific as possible by including street addresses.

Emily Carr University facilities,
1706 W 1st Avenue (Mitchell Press Building),
3rd Floor

Emily Carr University
1399 Johnston Street,
Vancouver, BC V6H 3R9

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ECU-REB PROJECT-BASED APPLICATION

3. Other Ethics Clearance -

Has another University or Institutional Research Ethics Board approved this research? **Yes** ○ **No** ◉

If **YES**:
File number & title of the project on the other REB applications: _____

Name of the other REB: _____

Date of the decision: _____

A contact name and phone number for the other REB: _____

If **NO**:
Will another individual, University or Institutional REB also be asked for approval? **Yes** ○ **No** ◉

Provide details of the plan for other REB approval (deadline, name of REB, etc.):

_____

4. Funding

Is this project currently being funded? **Yes** ○ **No** ◉

If **YES:**
Include the funding proposal with this application.

Period of Funding (YY/MM/DD): _____

What is the source(s) of funding?: CIHR ☐ NSERC ☐ SSHRC ☐ Other (specify):

_____

Funding / Agency File # (**not** your Tri-Council PIN): _____

If **NO:**
Is funding being sought?: **Yes** ○ **No** ◉

What is/are the anticipated source(s) of funding?: _____

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SECTION C – CONFLICT OF INTEREST

1. Investigators

Will any of the investigators, members of the research team, other students involved in the project, spouses, or immediate family members of the research team receive any personal benefits related to this study (e.g., financial remuneration, patent and ownership, employment, consultancies, board membership, share ownership, stock options), other than academic credit?

Yes ○ **No** ◉

If **yes**, please describe the proposed benefits and the rational for the proposed benefits:

2. External Agencies

Describe any restrictions regarding access to or disclosure of information (during or at the end of the study) that any of the external partners, agencies, or sponsors have placed on the investigator(s):

Personal information of any collaborators or participants involved will not be used in the research.

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ECU-REB PROJECT-BASED APPLICATION

SECTION D – SUMMARY OF PROPOSED RESEARCH

1. Rationale

Briefly describe the purpose and background rationale for the proposed project, as well as the hypothesis(es) / research question(s) to be examined. Please describe the project in terms of phases and a time line. Research proposals that were used for funding applications or thesis proposals can be included in the accompanying documents. If they are included, please record them on the Document Checklist on page 2.

TITLE: Designing Systems and Interfaces that Explore Events Utilizing User-Generated Content

BACKGROUND: User-generated content, UGC or citizen generated content is the term used to describe any form of content such as video, digital images, audio files, and other forms of media that are created by citizens or end-users of an online system or service and are publicly available to other consumers and end-users. This medium is facing external and internal threats. While the external threats are mainly from political partisans and governments (Giaccardi, Churchill, & Liu, 2012), the internal ones are from characteristics of the medium itself, such as its decentralization (mounted on multiple servers) and de-contextualization (detachment from the source content on the original date and place). These threats make it harder to utilize user generated content as a reference (since it is shredded and hard to locate by time and place). Current re-presentation and exploration tools do not fit the special characteristics of user generated content therefore there is a need for new models, interfaces, and systems that fit its quantitative and qualitative richness (Kouros, 2012).
The types of user generated content considered in this research are: time based media (video, audio), static media (photographs), and tweets.

RATIONALE: The expansion of user generated content is strongly related to the affordability of documentation instruments (hand held, mobile built-in cameras) and the accessibly of dissemination channels (Kim, 2010). It is an influential medium that informs communities with counter narratives of the news. In addition it empowers marginalized witnesses by giving them the means (instruments and channels) to communicate their messages and testimonies (Al-Ani, Mark, Chung, & Jones 2012).

RESEARCH AIM: This research aims at designing systems and interfaces that allow exploration of events, utilizing user generated content.

RESEARCH QUESTION: How to Design Interfaces and Systems that Explore Events Utilizing User Generated Content?

Fall 2012: Phase 1: Secondary Research
Spring 2013: Phase 2 : Interface Design, Paper Prototype testing
Fall 2013: Phase 3: Design alteration, Prototype testing
Spring 2014: Phase 4: Project documentation and thesis submission

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ECU-REB PROJECT-BASED APPLICATION

2. Methods

Check all of the procedures or methods involved in this course research.

- [ ] Questionnaire/survey (mail, email/web)
- [ ] Questionnaire (in person)
- [ ] Interview(s) (telephone, Skype)
- [x] Interview(s) (in person)
- [x] Secondary Data
- [x] Computer-administered tasks
- [ ] Ethnography/Documentation
- [x] Observational Field Notes
- [ ] Oral History
- [ ] Focus Groups
- [ ] Journals/Diaries/Personal Correspondence
- [x] Photo/audio/video recording
- [x] Unobtrusive observations
- [x] Non-invasive physical measurement
- [ ] Participatory Design (probe, co-creation, storytelling)
- [ ] Other (specify below)

Describe sequentially the methods involved in this study and all procedures in which the research participants will be involved (paper and pencil tasks, interviews, questionnaires, physical assessments, physiological tests, time requirements, etc.). Please provide copies of any questionnaires, interview guides, or other instruments that have been generated for this research project. Include them on the Document Checklist that is found on page 2 of this application form.

Fall 2012: Method of Phase 1 : Secondary Research: Reviewing academic research.

A- Summer 2013: Method A : Paper Prototype: Interface Design: Website (PDF page # 24)

This is a study about an Web site interface intended for participants whose age ranges between 20 - 35 years old, and who are literate in electronic media (able to browse web sites, and social media sites). The goal of the prototype is to inform the researcher about possible modification in the upcoming prototypes. The aim is to design a web site interface that is informative and user-friendly, one that organizes information in a comprehensive manner that challenges popular search engines and social networks by offering a comprehensive view on events and news.

STEP 1 - The participant will be asked to search (using the google engine) for the user generated content (such as tweets, youtube videos, googleimages) that was captured to document the events of a riot that took place on the 17th of December 2012, in Cairo, Egypt. Their search shall last for 30 minutes. Afterwards they will report the knowledge (about the event) they deduced from the searching process. The participant is free to report using written or spoken words.

STEP 2 - A paper prototype of the web site will be handed in to the participant. During the Paper prototype testing, participant will perform realistic tasks by interacting with a paper version of the web site. The participant will be asked to try several things that people might typically do on this site, such as clicking on the buttons and navigating from one page to another. The research assistant will sit in the same room, quietly observing the session and taking notes. A session facilitator (me) will sit near the participant and help him/her in case they have any questions. After finishing the paper testing, the participant will report (using written or spoken words) his/her experience interacting with the web site paper prototype (see PDF page #23 for a draft of the participant guideline.)

Only one participant is testing the prototype in each time slot, and a total number of 6 participants will be involved in that testing. Each session will take 60 minutes in total.
The website interface components are: a map (that indicate where the event is taking place), visual stream (of video and images captured in such an event), and tweets about an event that occurred in Cairo, Egypt during the month of December 2012. The content is extracted from publicly available content that is under the creative commons attribution license.

B- Summer 2013: Method B: Video Prototype: Interface Design: Video Display Interface (see Video of Step 1 on http://youtu.be/mNq893fMg88?t=8s and see Video of Step 2 on http://youtu.be/uMZER30UwPY)

This is a study about a Video Display Interface intended for participants whose age ranges between 20 - 35 years old, and who are literate in electronic media (able to browse web sites, and social media sites). The goal of the video prototype is to inform the researcher about possible modification in the upcoming Video Display Interface prototypes. The aim is to design a display interface that is capable of informing the viewers about the context of a past event. One that give the viewer a sense of time & space of the past event and that challenges popular display interfaces of video sharing web sites (such as YouTube) by offering a different engaging view on events.

STEP 1 - The participant will be asked to watch a 2 minute video that was captured to document the events of a riot that took place on the 17th of December 2012, in Cairo, Egypt. The video will be displayed on a computer display (screen). The participants is free to watch the video up to 3 times if they wish. Web link to this video : http://youtu.be/mNq893fMg88?t=8s

STEP 2 - The participant will be asked to watch the same video but this time it will be displayed differently, using the video display interface that I designed. The video will be displayed on on a computer display (screen) as well. The participants is free to watch the video up to 3 times if they wish.
link to this video: http://youtu.be/uMZER30UwPY

STEP 3 - Afterwards participants will be asked the following: How does this display medium impact your interpretation of events? The participant is free to answer the question using written or spoken words.

3. Professional Expertise/Qualifications:

Do any of the procedures require professional expertise or recognized qualifications (e.g., first aid certification, registration as a clinical psychologist, or counseling certification)?

Yes ○ **No** ◉

If **YES**, describe if any members of the research team have the professional expertise or recognized qualifications required or if professional expertise or recognized qualifications will be sought elsewhere?

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SECTION E – PROPOSED RISK / BENEFIT RATIO

1. Participants

Describe the number and demographics of the participants that will be involved in this course work.

The *TCPS2* (2010) specifically cautions against research design and recruitment that contributes to the exclusion of groups from research on the basis of criteria such as their ability, age, gender, and cultural identity. Therefore, exclusion of specific groups (like children, elders, pregnant women, disabled people) needs to be justified. If it is not obvious, please explain the rationale for any specific inclusion or exclusion criteria.

THE PARTICIPANTS DEMOGRAPHICS:
The participants in the 'paper prototyping' are adults, age range between 20-35 years old, who are media literate (adults who are able to access online information in a variety of forms –representative of the potential users of the design–.

The participants are not defined by citizenship or gender.

Recruiting participants will be done using two methods:
1- Through the Internet. I will make a call on the various social sites I belong to— LinkedIn, Twitter, Facebook.
2- Through personal connections. I will ask friends and academic colleagues to take part in the testing of the design.

The invitation e-mail for Method A can be found on PDF page 18.
The invitation e-mail for Method B can be found on PDF page 25.

2. Recruitment

Describe how participant recruitment will be administered in this research project. Describe how and from what sources the participants will be recruited, including any relationship between the investigator(s), sponsor(s) and participant(s) (e.g., family member, instructor-student; manager-employee). Include any recruitment tools including posters and invitations. List them in the Documents Checklist on page 2 of this application.

The recruitment will be through personal and professional connections within the ethnographic and academic communities in Vancouver.

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ECU-REB PROJECT-BASED APPLICATION

3. Incentives and Coercion

Describe any compensation or incentives to participation that will be used in research during this course.

If the researcher is in a position of power over the participant, as with Faculty Member's whose students are participants in his/her study, there is the potential that the participants will feel an obligation to participate to ensure the Faculty Member's favourable perception of their performance as students. Explain how the researchers can mitigate the risk of this kind of undue participant coercion in this study.

Acknowledgment.

4. Known risks to participation

Is the probability and magnitude of possible harm implied by participation in this research greater than the possibility of harm encountered by participants in aspects of their everyday life that is related to the area of this research?

Yes ○ **No** ◉

If yes, describe those probable risks of harm. Are they:

- ☐ Physical (including bodily contact with participants, physical stress, or administration of external substances)?
- ☑ Psychological (including participants feeling demeaned, embarrassed, worried, upset, or emotional stress)?
- ☐ Social (including possible loss of status, privacy, and / or reputation for participants)?
- ☐ Is deception involved in the research design?

Describe the probability and magnitude of the risks of harm listed above. Describe how the research team will mitigate these risks. Explain why less risky approaches cannot be used.

Method A
Since Step 1 involves an uncensored review of user-generated materials from an on-line search, participants may be exposed to violent or provocative imagery. The risk of being negatively impacted by this topic or by the material generated from the internet search will be explained in the introduction of the activity prior to the research (and prior to the consent materials being introduced). Participants will be assured that they can stop the activity or even withdraw from the study at any time, and that their withdrawal will not adversely affect them further.

Method B
Step 1 and 2 involves violent imagery. The risk of being negatively impacted by the video imagery content shown will be explained in the e-mail invitation (PDF page # 25), in the introduction of the activity prior to the research (and prior to the consent materials being introduced). Participants will be assured that they can stop the activity or even withdraw from the study at any time, and that their withdrawal will not adversely affect them further.

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5. Known benefits to participation

Discuss any potential direct benefits to the participants from their involvement in the project(s). Comment on the (potential) benefits to the scientific community/society that would justify involvement of participants in this research.

The participants will explore an event from a perspective that is different than the traditional one, by utilizing user-generated content (UGC) instead of the mass professionally generated content. They will gain a general knowledge and understanding of the ways different mediums are employed to represent and report events.

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SECTION E – CONSENT AND WITHDRAWAL PROCESS

1. Informed Consent Process

A process that ensures the voluntary, informed and ongoing consent of participants in research involving humans is at the core of an ethical research practice. The characteristics of an ethical informed consent process are outlined in the "ECUAD Informed Consent Checklist". The ECU-REB also provides a Template Informed Consent Form and Template Media Release Agreement. Will the researchers in this course-based research be using the ECU-REB checklist or template agreements in their informed consent process?

Yes ◉ **No** ○

If no, explain the rationale and details of the informed consent processes that will be used. Include all of the Informed consent materials (forms, scripts, media releases, etc.) and list them in the Documents Checklist on page 2.

If yes, include Informed consent materials (forms, scripts, media releases, etc.) in the way that they will be presented to the participants (i.e. modified with the project name, the researchers' names, project descriptions, etc.). List them in the Document Checklist on page 2.

CONSENT
The participants will be invited to sign the consent forms before the start of the user trial
(PDF page # 19 - 22).
(PDF page # 26 - 29).

WITHDRAWAL
Participants will have the opportunity to voluntarily withdraw their participation and their contributions at any time.

2. Capacity

The TCPS2 explains "capacity" as "The ability of prospective or actual participants to understand relevant information presented about a research project, and to appreciate the potential consequences of their decision to participate or not participant" (Chapter 3). It is recognized that capacity might not be constant in the case of people with impairments (like dementia) or children (who might have variable capacity to understand). Further, the TCPS2 recognizes that individuals who lack capacity should not be excluded from research. Instead researchers should aim to include them, while protecting their interests.

Describe the ways, other than those described in the Informed Consent Template, that researchers will accommodate conditions of limited or variable capacity in research participants?

The participation will require a certain level of social media literacy and intellectual capacity to manage the paper prototype activity.

If the researcher perceives that the participant isn't able to manage the activity, it will end and he/she will be thanked for his/her contributions.

3. Disclosure and feedback to Participants

Explain how feedback/ information will be provided to the participants after their participation in the project(s). Explain any restrictions to disclosure of the results of the research.

Participants will be informed of public presentations or publications on request (see consent form).

4. Withdrawal Process

According to TCPS2 Article 3.1, voluntary consent requires that the participants understand their right to withdraw their consent from the research at any time. According to the BC Privacy Act, the use of identifiable materials (portraits, names of others) without consent is an actionable violation of privacy. For this reason, participants have the right to withdraw identifiable materials from the data or research results at anytime.

Explain how the participants' right to withdraw is ensured through the informed consent process, and in the way data and research results are stored.

Participants will have the opportunity to voluntarily withdraw their participation and their contributions at any time.

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ECU-REB PROJECT-BASED APPLICATION

SECTION F – CONFIDENTIALITY AND SECURITY

According to the TCPS2 (2010), it is the obligation and ethical duty of the researcher and partnering organizations to safeguard entrusted private information. "The ethical duty of confidentiality includes obligations to protect information from unauthorized access, use, disclosure, modification, loss or theft. Fulfilling the ethical duty of confidentiality is essential to the trust relationship between researcher and participants, and to the integrity of the research project." (Chapter 5)

Researchers collect, use and share different types of information. Check the categories from the TCPS2 of information gathering and storage, which will be used in this research project (check all that apply):

- ☐ Directly identified information – the information (data) will identify specific participants through direct identifiers like name, address, social insurance number, personal health number.
- ☐ Indirectly identifying information – the information (data) can reasonably be expected to identify specific participants through a combination of indirect identifiers like date of birth, place of residence, etc.
- ☑ Coded Information – direct identifiers are removed from the information (data) and replaced with a code. There exists a possibility that with access to the code, it may be possible to re-identify specific participants.
- ☐ Anonymized Information – the information (data) is irrevocably stripped of direct identifiers, a code is not kept to allow for future re-linkage, and risk of re-identification of individuals is low or very low.
- ☐ Anonymous information – the information (data) never has identifiers associated with it (e.g. anonymous surveys) and risk of identification of individuals is low or very low.

1. Directly or Indirectly Identified Information

If "Directly identified information" or "Indirectly identifying information" from the above list is checked, provide a description of which identifiers will be kept and a comprehensive rational for why retention of this information is required. Explain in detail how the information (including the consent and release forms, photographs, video and other recordings) will be securely collected and stored, including who will have access to it before the conclusion of the course.

The data of the participants will be coded. It will not be possible to link a certain participant with his/her personal information that they provided.

The data will be treated by the researcher only for the purpose of analysis and documentation.

Any personal information (name, date of birth, address) will not be revealed, given, exchanged with any third party. It will be securely stored on the researchers (investigator) personal external hard drive, stored in a locked locker at 1706 W 1st Avenue (Mitchell Press Building) until the end of the research. Data will be submitted with the Completion Form to the ECU-REB Office for long term secure storage.

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SECTION G – STORAGE AND SECONDARY USE OF DATA

Emily Carr University Procedure 5.1.1 "Integrity in Research and Scholarship" states,

> "A complete set of all original research data must be retained by the principal researcher for a period of five (5) years from the date of publication of results based on the data. All collaborators must have free access to the relevant data at all times, and authorization to copy may not be withheld by any team member without valid reason. In no instance should primary data be destroyed while investigators, colleagues or readers of published results may raise questions requiring reference to original data."

1. Storage and access within the University

The ECU-REB Office will securely store and make available to the researchers all confidential documents and information (data) collected during the research projects from the time of the conclusion of the course until 5 years have passed, unless the researchers provide evidence of an alternative plan for storage and retrieval. If there is an alternate plan for long-term information storage and retrieval of information (data) from the course-based research projects, describe it in detail here.

The Emily Carr University REB will be responsible for the long term storage/ retrieval of the research information upon the completion of the thesis.

2. Storage and access to data outside of the University

Will any of the information (data) be made available to researchers outside of the university?

Yes ○ **No** ◉

Describe in detail what information will be released, to whom, where they will store it, and any other details of the transfer. If this is an external transfer, include a letter of agreement or transfer agreement with this application and include it in the Document Checklist on page 2. Explain how participants will be given the opportunity to consent to this secondary use of their contributions.

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SECTION H – MONITORING OF RESEARCH AND SERIOUS ADVERSE EVENTS (SAE)

In accordance with Emily Carr University Procedure 5.1.2 "Procedure for Research Involving Humans", the ECU-REB continues to monitor research after the application has been approved:

"1. The REB will maintain a continuing interest in the research after the project has undergone ethical approval. The REB will be available for additional advice, if requested.
2. If a change in the research procedures is contemplated, the principal investigator(s) will immediately submit an amended proposal to the REB for review.
3. An on-going status report on the research must be submitted to the REB by the principal investigator(s) annually, or as required by the REB.
4. A report must be submitted by the principal investigator(s) to the REB when a project is completed."

1. ECU-REB Monitoring

Is it expected that this project will require additional monitoring, beyond the minimum yearly requirement?

Yes ○ **No** ◉

If yes, describe in detail below.

2. Anticipated Additional Research

Is it expected that any of the research described in this application will continue beyond the conclusion of this project?

Yes ○ **No** ◉

If yes, describe in detail below. Changes to the scope of the research can be reported to the ECU-REB at anytime.

Serious adverse events (unanticipated negative consequences or results affecting participants) must be reported to the ECU-REB ethics@ecuad.ca and the Director, Office of Research & Industry Liaison oril@ecuad.ca as soon as possible.

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PROJECT-BASED APPLICANT DECLARATION

EMILY CARR UNIVERSITY RESEARCH ETHICS BOARD (ECU-REB)

PROJECT-BASED RESEARCH APPLICATION - **APPLICANT DECLARATION**

(ECU-REB Use Only) ► File #:

PROJECT TITLE:

	A Comparison between Citizen versus Corporate Generated Media Content regarding the Representation of Live Events

Each of the research investigators listed on the Project-Based Application is required to sign and print a copy of this form to complete the application.

Please indicate that you have read and fully understand the following research ethics obligations by checking the box beside each statement.

☑ **(All Investigators)** I have read the Emily Carr University Policy and Procedures 5.1 – 5. 2.1. I will ensure that all participant research activities that are administered in this project will meet these Emily Carr University standards and any other legislation or professional codes of conduct that may apply.

☑ **(All Investigators)** I have completed the TCPS2:CORE (Course on Research Ethics) that is found here http://www.pre.ethics.gc.ca/eng/education/tutorial-didacticiel/ . Certificates of completion are included in the application and noted on the Document Checklist (page 2 of the application).

☑ **(All Investigators)** I will comply with all of the provisions for confidentiality and security that are outlined in this application. I will comply with the maintenance and storage of the data and results generated in this project so that the privacy and property rights of all involved are lawfully protected.

☑ **(All Investigators)** During the course of the research, I will inform the ECU-REB of any changes to participant research in this project or any incidents of adverse effects relating to the participant research covered by this application.

☑ **(Principal Student Investigator)** I will ensure that a request for renewal of this application is submitted if the research continues beyond the expected date of completion.

☑ **(Principal Student Investigator)** At the completion of the project, I will assemble all of the documents including the signed consent forms and media release forms, data sets, completion form, and any other pertinent documents including correspondence of adverse effects. I will submit this package to the Emily Carr University Research Ethics Board Office for secure filing for five (5) years, in compliance with Emily Carr Procedure "5.1.1 Integrity in Research and Scholarship". Alternatively, I will supply accurate information to the ECU-REB office of the location of these documents during the five (5) year period. I understand that this evidence needs to be available to the ECU-REB *before* any subsequent ECU-REB applications from any of the researchers involved in this application can be processed.

☐ **(Principal Investigator)** I agree to provide the proper supervision of a graduate student engaged in her/his thesis project to ensure that the rights and welfare of all human participants are protected.

☑ **(Principal Investigator)** I take full responsibility for ensuring that all other investigators involved in this research follow the protocol as outlined in this application.

PRINT NAME	**SIGNATURE**	**Designation** (check)
		Principal Investigator
Christopher Hethrington Hoda Hamouda Melanie Wadell		☐ (Faculty Member) ☑ Principal Student Investigator (if applicable) ☑ Co-Investigator

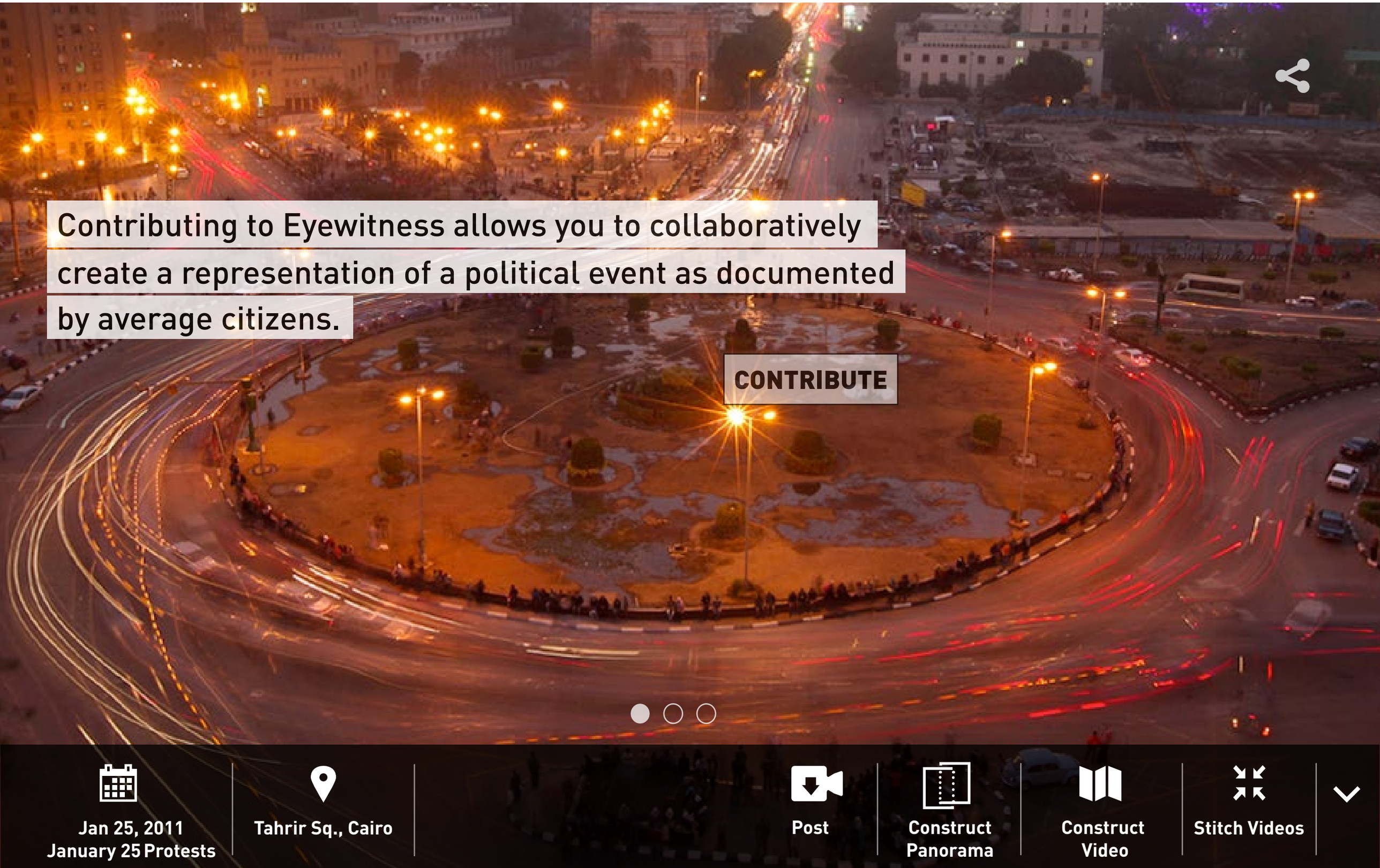
8. Appendix E: Platform Design: Second iteration

A preview of the iteration that preceded the last iteration

This is a preview of the third iteration that preceded the last iteration
Please rotate the document.

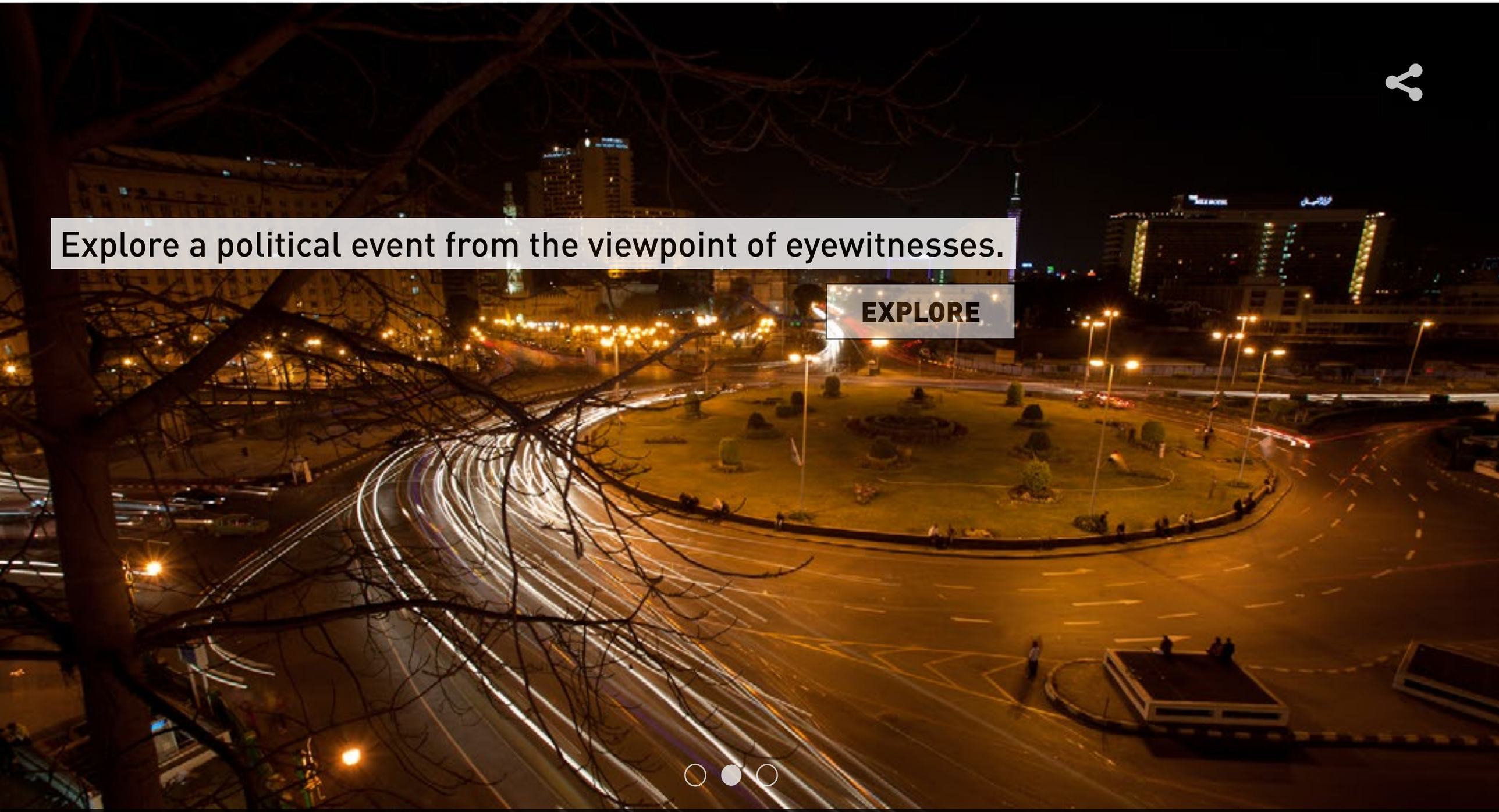
EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN



EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN



Explore a political event from the viewpoint of eyewitnesses.

EXPLORE

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

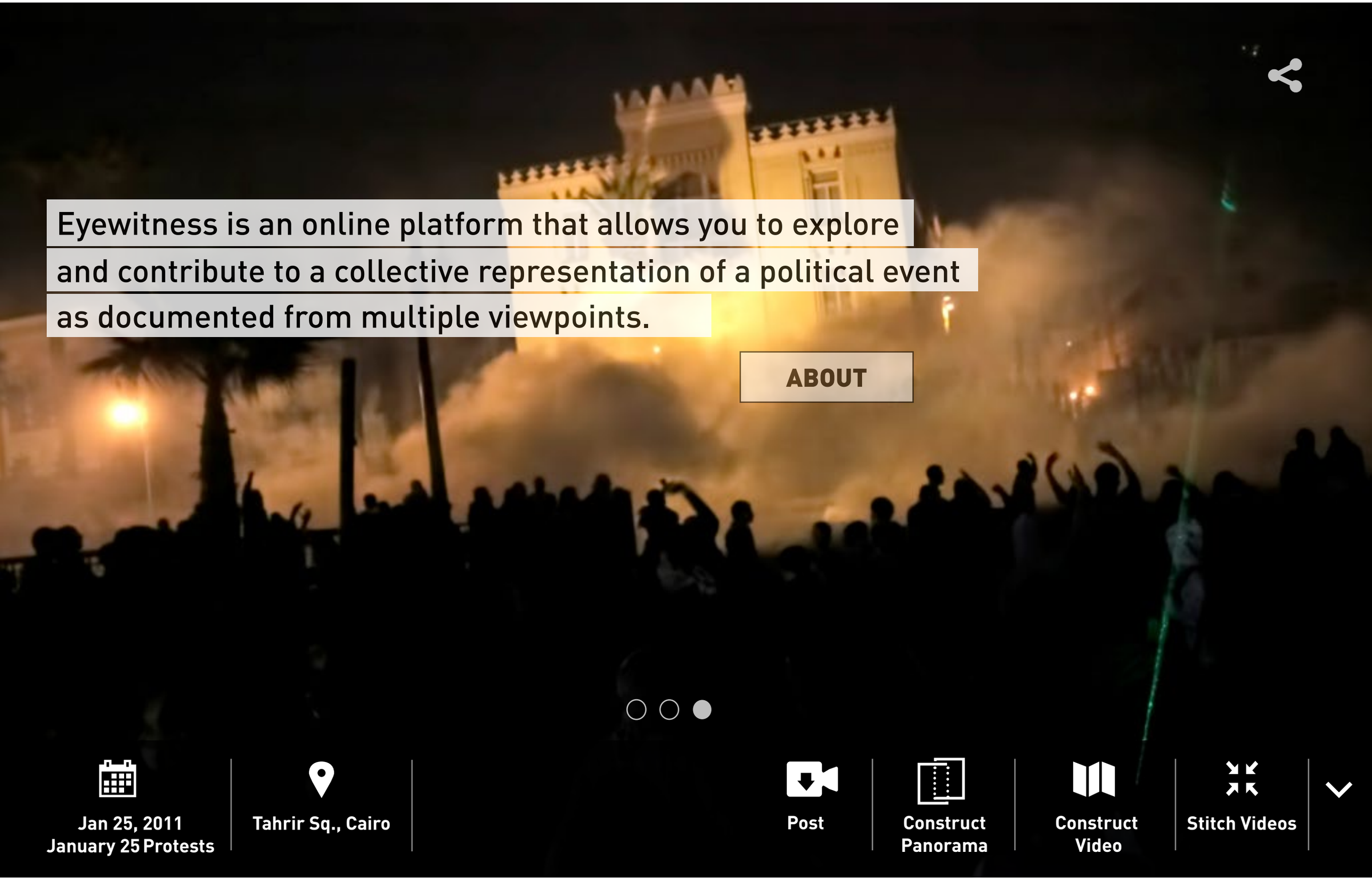
Construct Panorama

Construct Video

Stitch Videos

EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN



Eyewitness is an online platform that allows you to explore and contribute to a collective representation of a political event as documented from multiple viewpoints.

ABOUT

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos

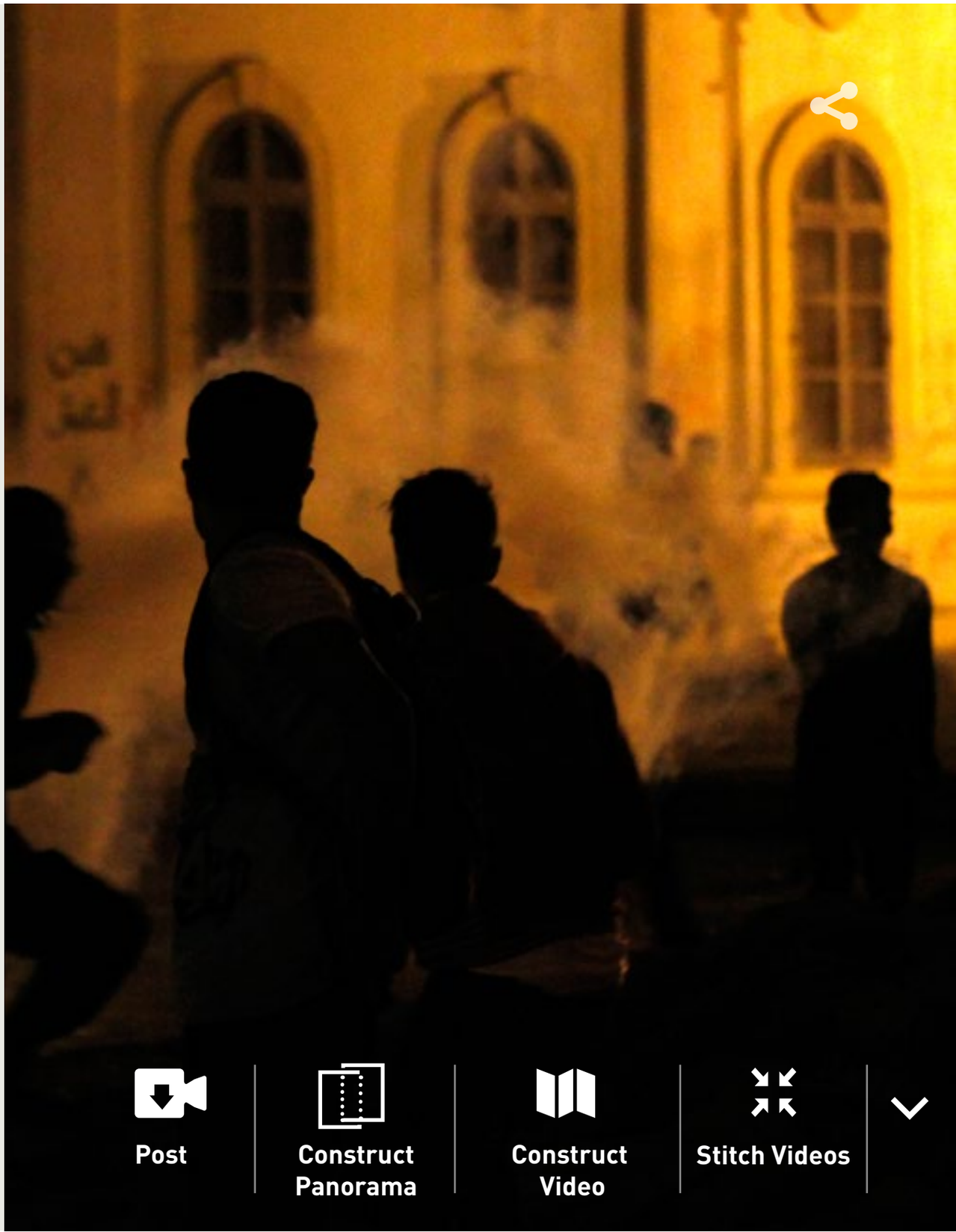
EYEWITNESS

Eyewitness is an online platform that allows you to explore and collectively create a representation of a politically significant event from the viewpoint of multiple witnesses. The platform empowers you and others around the world to reconstruct a historical record of a politically charged event using videos captured by average citizens.

You don't have to be a witness to contribute to Eyewitness. If you have seen a video that you think is important for the documentation of a historical-political event then post it onto Eyewitness. You can then synthesize it with other videos that were captured during the same event.

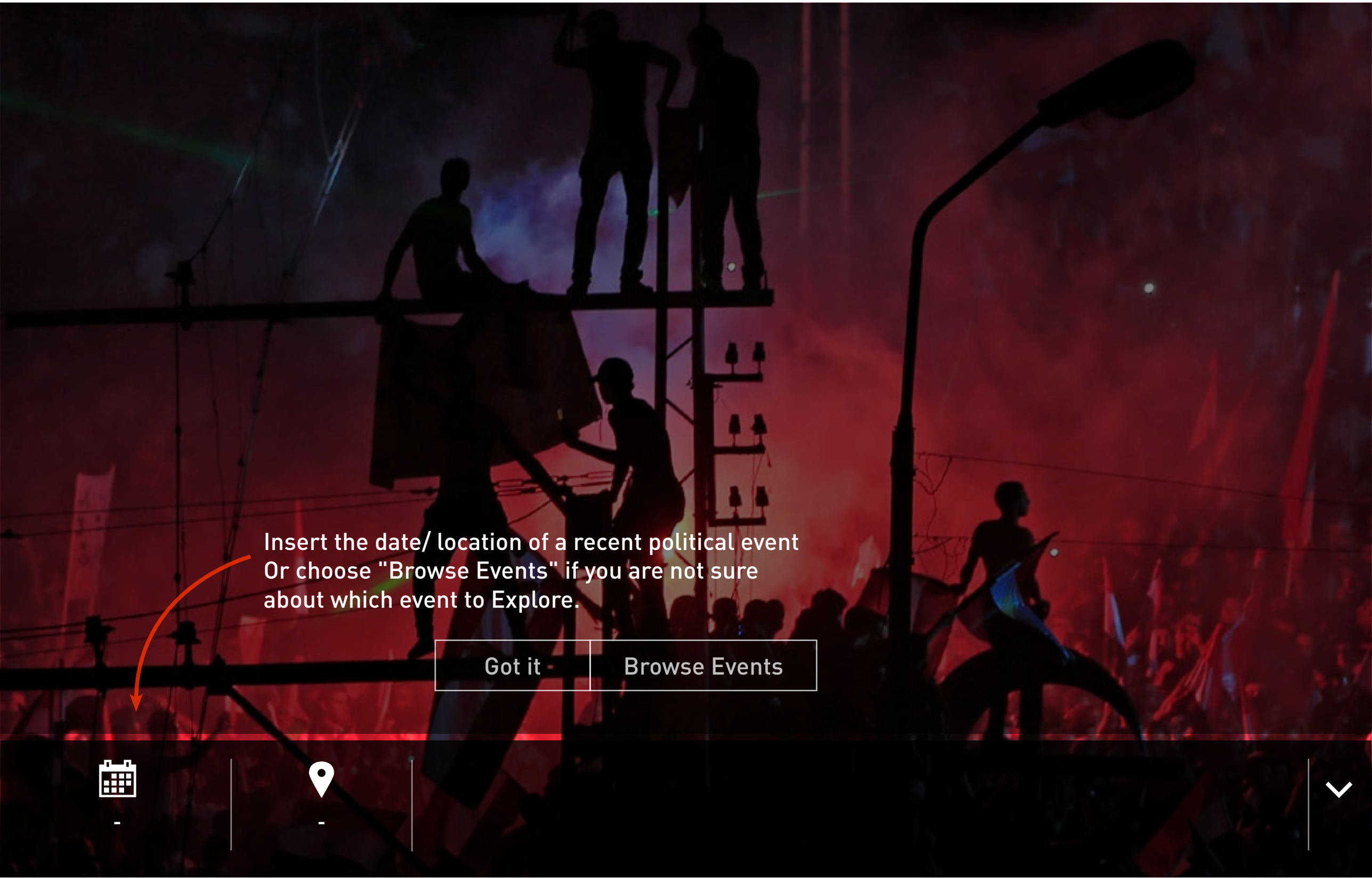
Contributing to Eyewitness will enable you to construct a historical record of a politically charged event that matters to you and to create the first account of history as documented by average citizens and citizen media rather than journalists and corporate media.

In your first visits to the Eyewitness platform you can contribute and explore without signing up. Afterwards we'll ask you to join our community of Eyewitness(es) but your contributions to the platform are always kept anonymous.



EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN

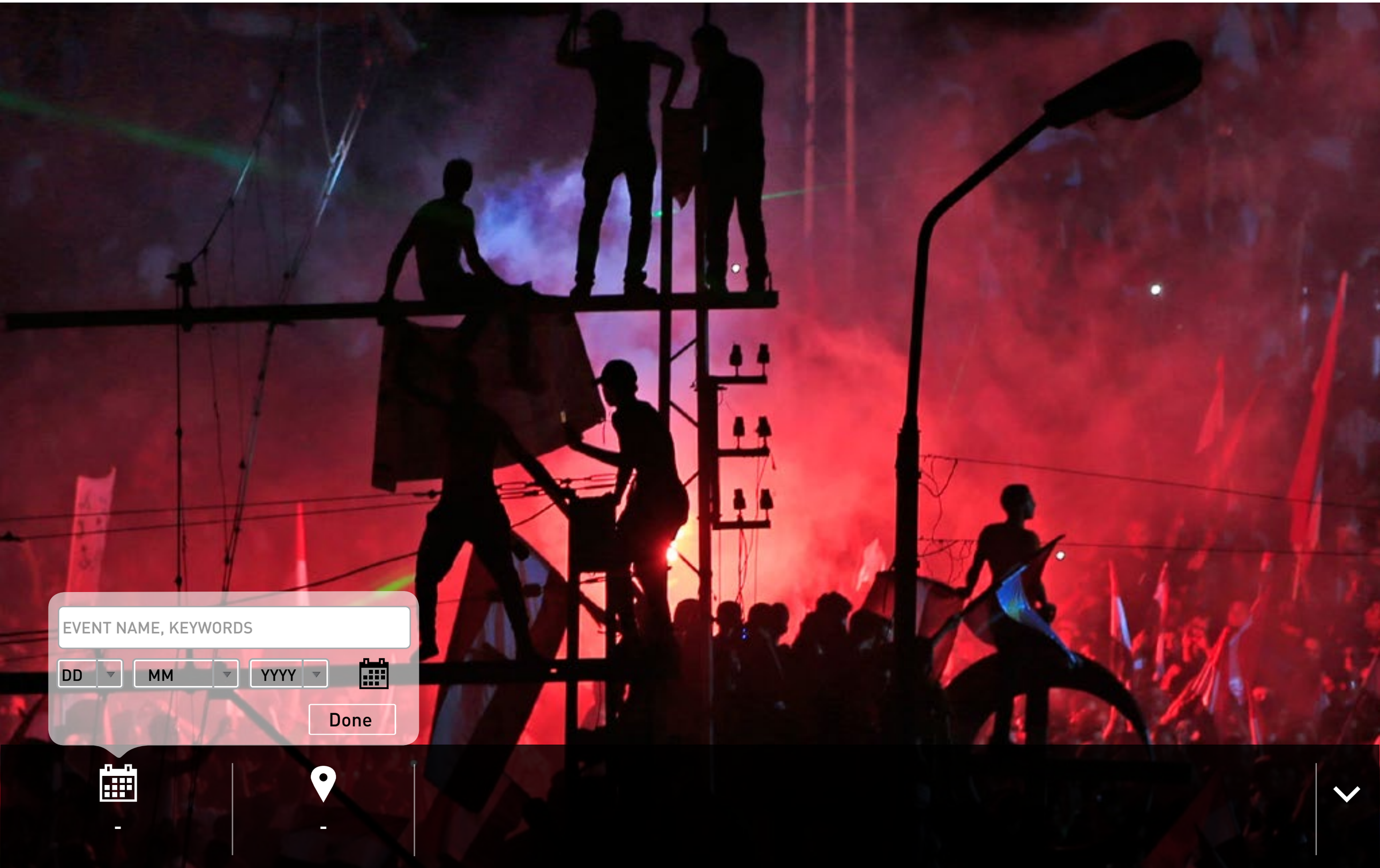


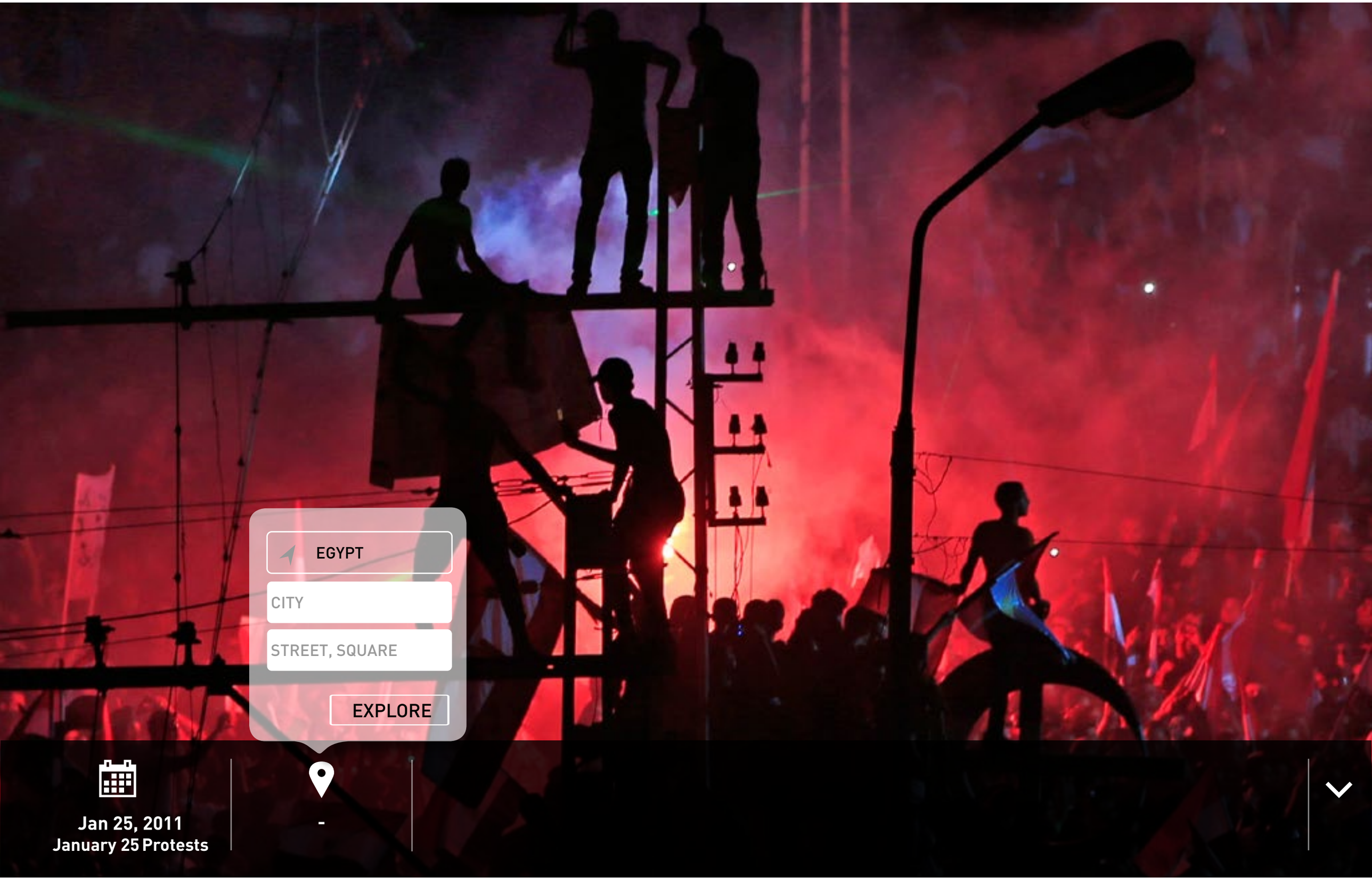
Insert the date/ location of a recent political event
Or choose "Browse Events" if you are not sure
about which event to Explore.

Got it | Browse Events

-

-


EVENT NAME, KEYWORDS
DD
MM
YYYY
Done
-
-


EGYPT
CITY
STREET, SQUARE
EXPLORE
Jan 25, 2011
January 25 Protests
-

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

12 - 4PM

Security presence in Tahrir is insane, protest from dar elgalaa moved to tahrir square #Jan25
–13:25:05 Jan25

EYEWITNESS

The “Day of Revolt”: Protests erupted throughout Egypt, with tens of thousands of protesters gathered in Cairo and thousands more in cities throughout Egypt ...

–Wikipedia

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

12 - 4PM

Security presence in Tahrir is insane, protest from dar elgalaa moved to tahrir square #Jan25
–13:25:05 Jan25

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

12 - 4PM

Security presence in Tahrir is insane, protest from dar elgalaa moved to tahrir square #Jan25
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EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

12 - 4PM

Security presence in Tahrir is insane, protest from dar elgalaa moved to tahrir square #Jan25
–13:25:05 Jan25

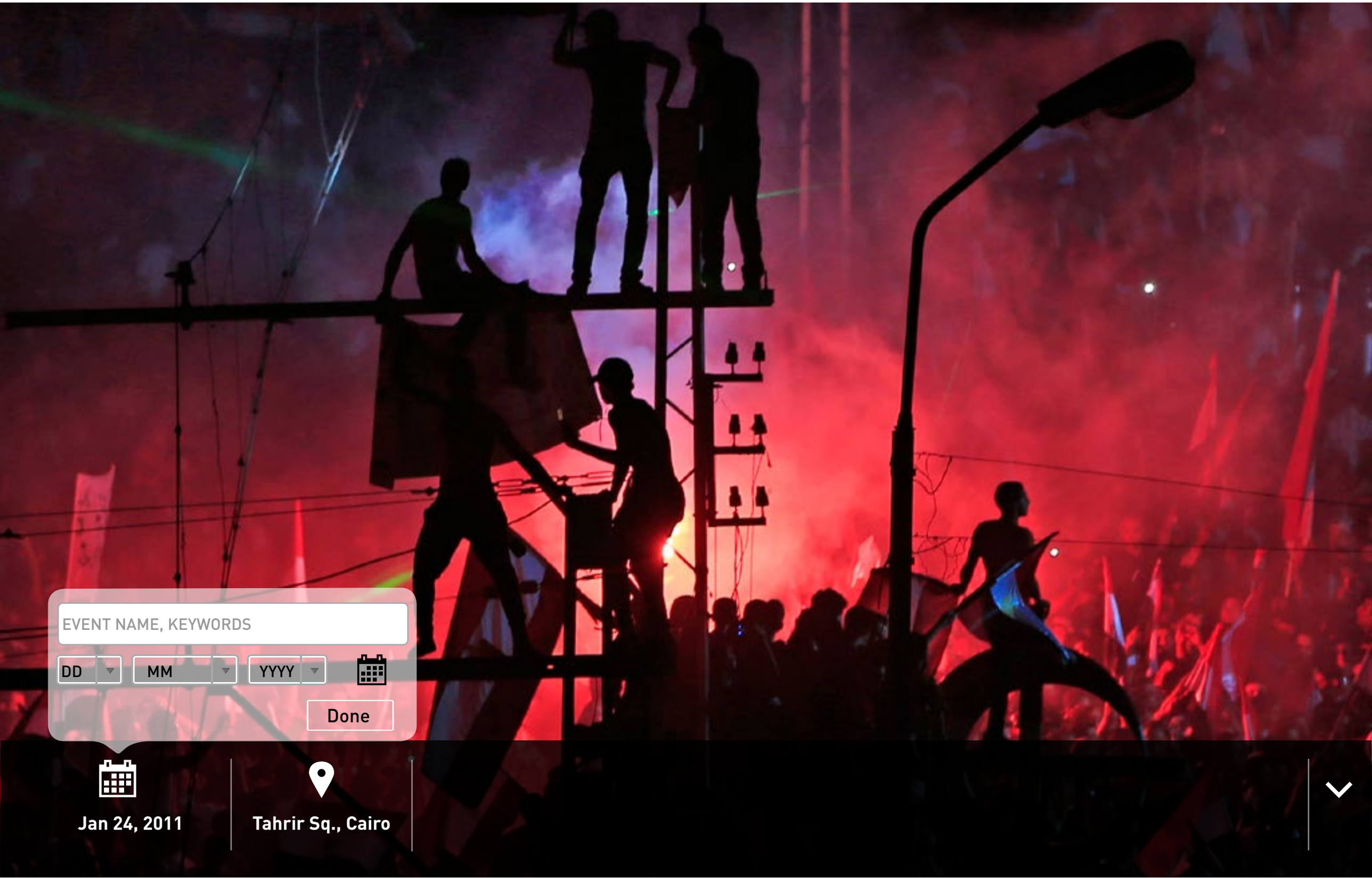
Jan 25, 2011
January 25 Protests

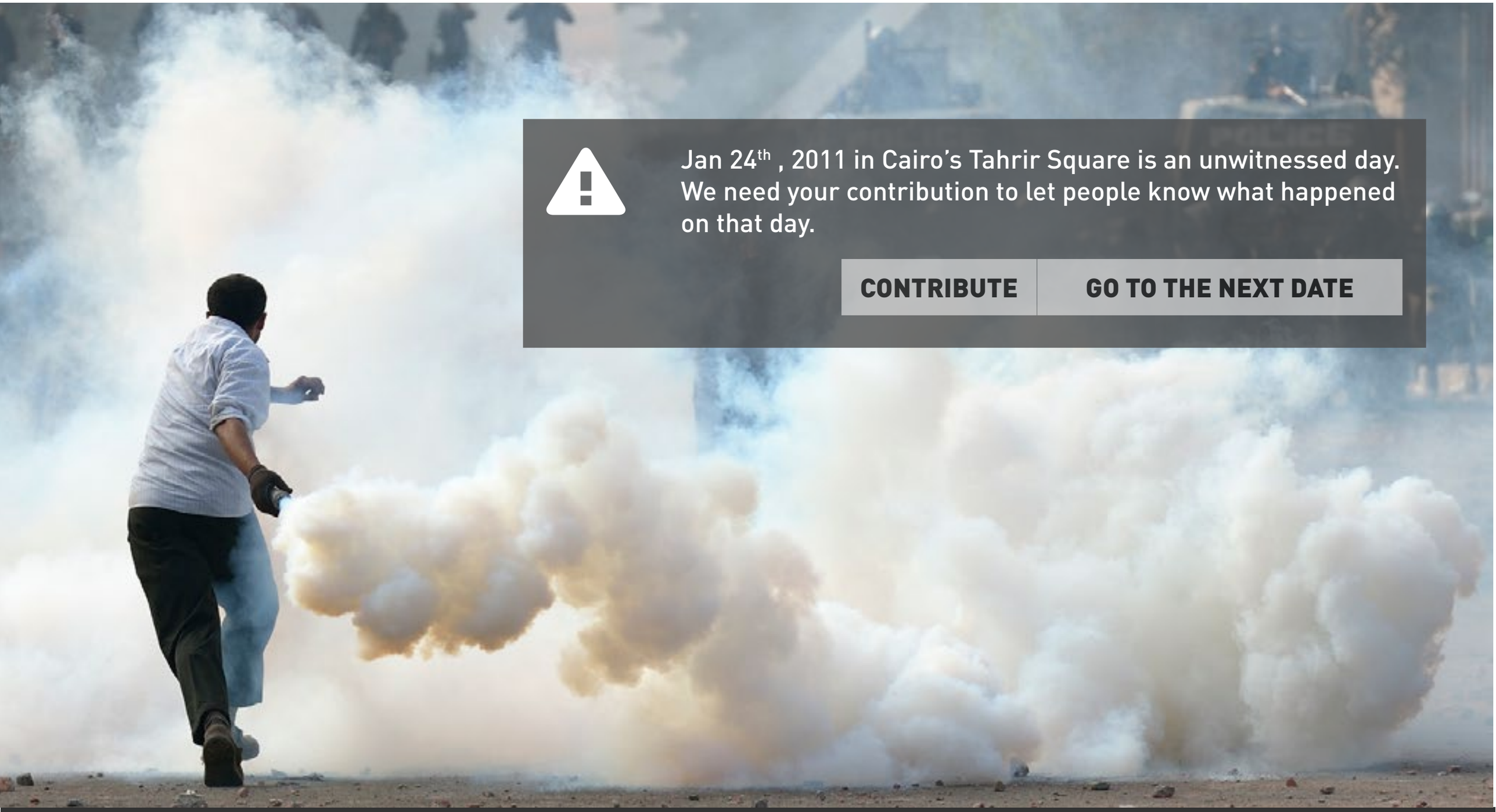
Tahrir Sq., Cairo

12 - 4PM

Security presence in Tahrir is insane, protest from dar elgalaa moved to tahrir square #Jan25
–13:25:05 Jan25

EYEWITNESS


EVENT NAME, KEYWORDS
DD
MM
YYYY
Done
Jan 24, 2011
Tahrir Sq., Cairo



Jan 24th , 2011 in Cairo's Tahrir Square is an unwitnessed day. We need your contribution to let people know what happened on that day.

CONTRIBUTE | GO TO THE NEXT DATE

Jan 24, 2011 | Tahrir Sq., Cairo

Contributing to Eyewitness is simple.

Choose one of the following activities to get started.

Post

Post an unedited video shot by an eyewitness during a political event.

Start here

Construct Panorama

Construct a panorama of the space where an eyewitness shot a video. This will give a broad view of the location in which a historical event occurred.

Construct Video

Construct an eyewitness video by linking it to its location on the panorama. This will let you experience the event from the view-point of the eyewitness.

Stitch Video

Combine two or more videos that were captured in the same political event. This will expand your understanding of the event.

EYEWITNESS

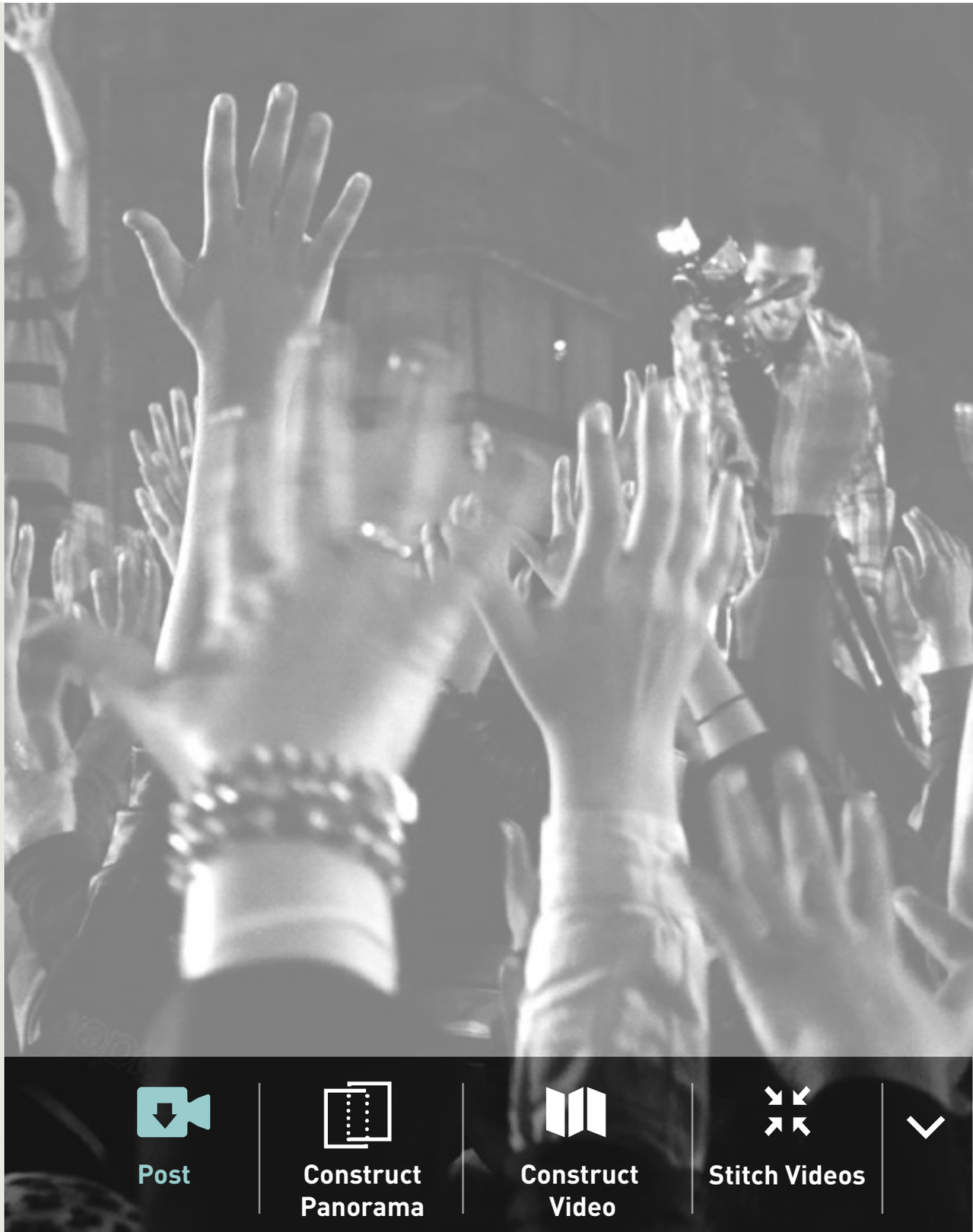
CONTRIBUTE EXPLORE ABOUT LOGIN

Post a Video

Copy and paste the URL of an unedited video captured by an eyewitness. The video must already exist on YouTube or on other video sharing websites.

Post a citizen video URL

POST



EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN

Video Information

Recording date

DD/MM/YY

Recording time

at / between

Recording location

Event name

event known as

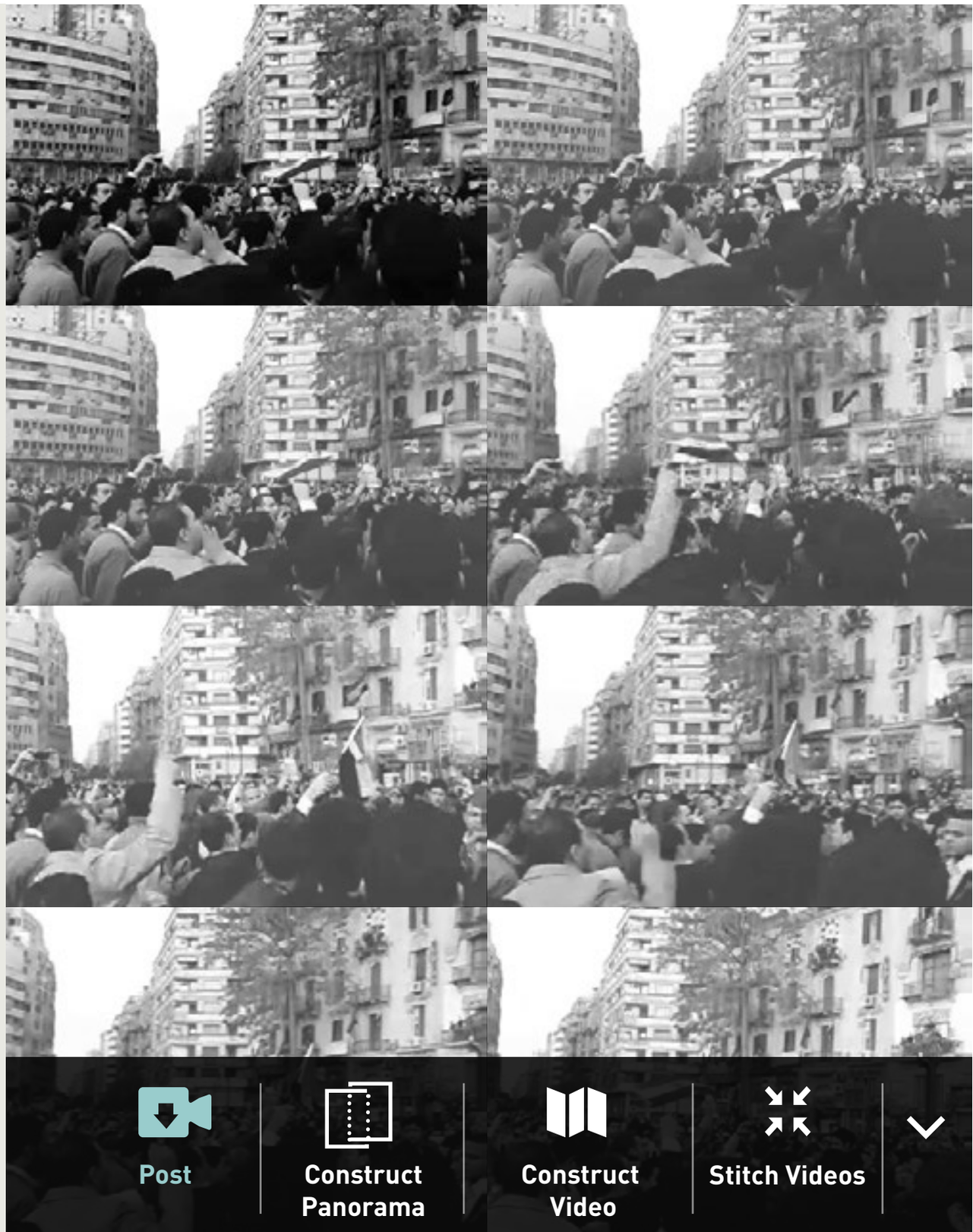
This video was captured by

me / my friend / else

This video was captured from

a buidling / a street

POST CANCEL



You have successfully posted a video of political significance.

What would you like to do next?

Post another Video | Construct the Video's Panorama

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos

Contributing to Eyewitness is simple.

Choose one of the following activities to get started.

Post

Post an unedited video shot by an eyewitness during a political event.

Construct Panorama

Construct a panorama of the space where an eyewitness shot a video. This will give a broad view of the location in which a historical event occurred.

Start here

Construct Video

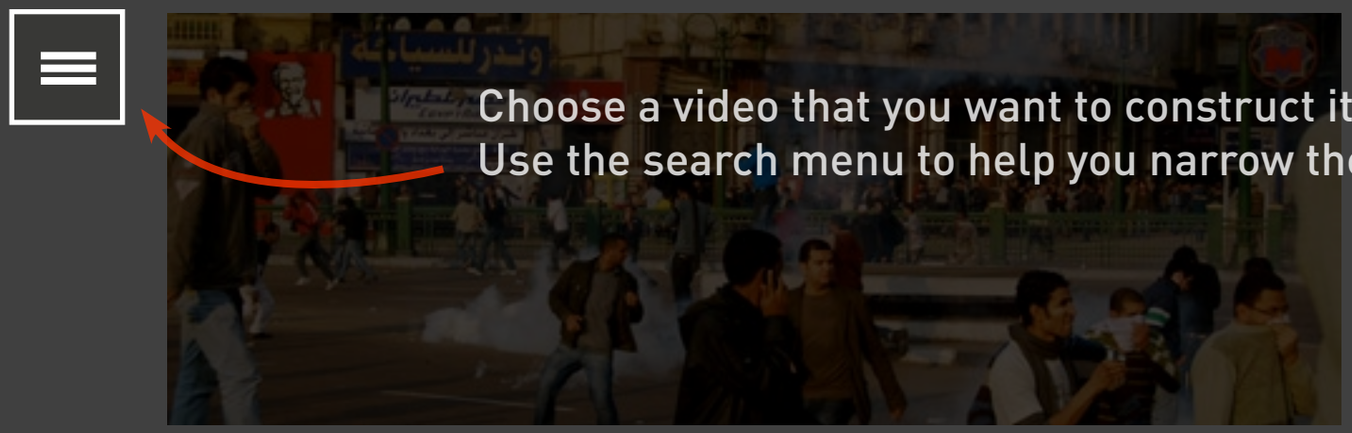
Construct an eyewitness video by linking it to its location on the panorama. This will let you experience the event from the view-point of the eyewitness.

Stitch Video

Combine two or more videos that were captured in the same political event. This will expand your understanding of the event.

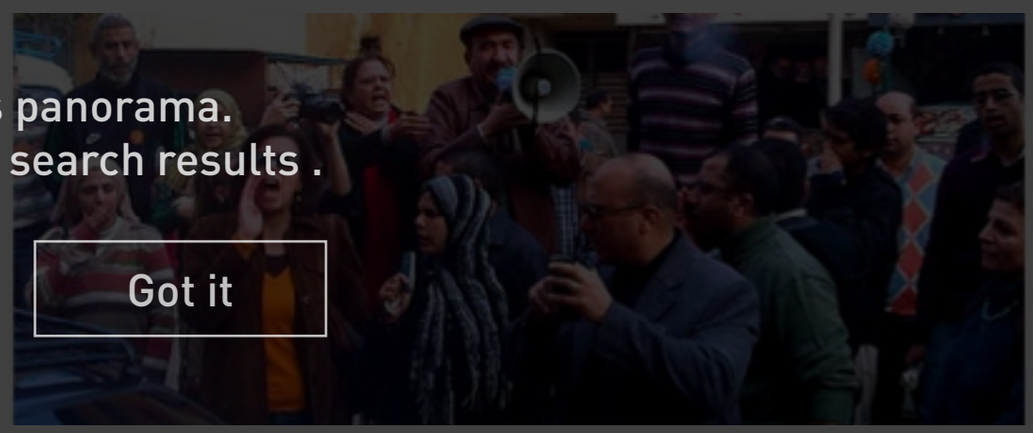
EYEWITNESS

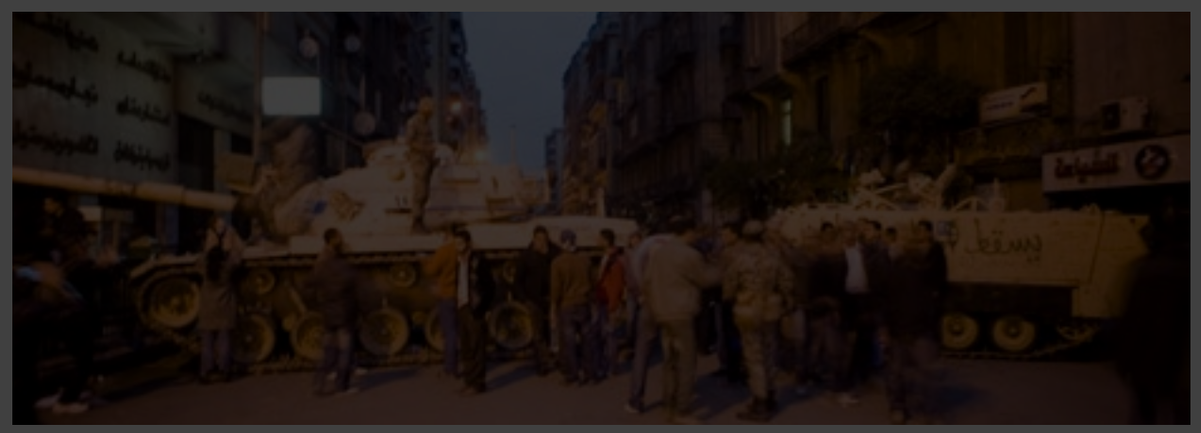
CONTRIBUTE EXPLORE ABOUT LOGIN



Choose a video that you want to construct its panorama.
Use the search menu to help you narrow the search results .

Got it





Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos

EYEWITNESS

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos

EYEWITNESS

Search options

Video recording date

This week

DD/MM/YY

Video location

Duration

1 min. or less

Sort results by

Relevancy

Content rating

All audiences

REFRESH

Select stills > Tag landmarks

Zoom

Preview

Tutorial

Back

This video is shaky. We'll need your help to construct its panorama.

Got it

Tag

Opacity & Color

Problem

Next

Images exported from your video




Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos

Select stills > Tag landmarks

Zoom

Preview

Tutorial

Tag

Opacity & Color

Problem

The images below are exported from the chosen video.
Choose images that show as much of the location as possible.

Got it

Images exported from your video




Back

Next

Images exported from your video




4/16

Zoom
Preview
Tutorial
Back
Tag
Opacity & Color
Problem
Next

Images exported from your video

Zoom

Preview

Tutorial

Back

Select stills > Tag landmarks

Tag

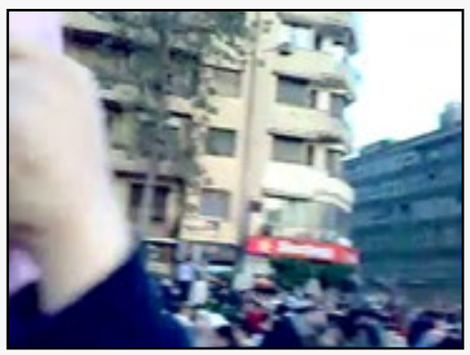
Opacity & Color

Problem

Next

Images exported from your video



16/16

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos

EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN

Select stills > Tag landmarks

Zoom

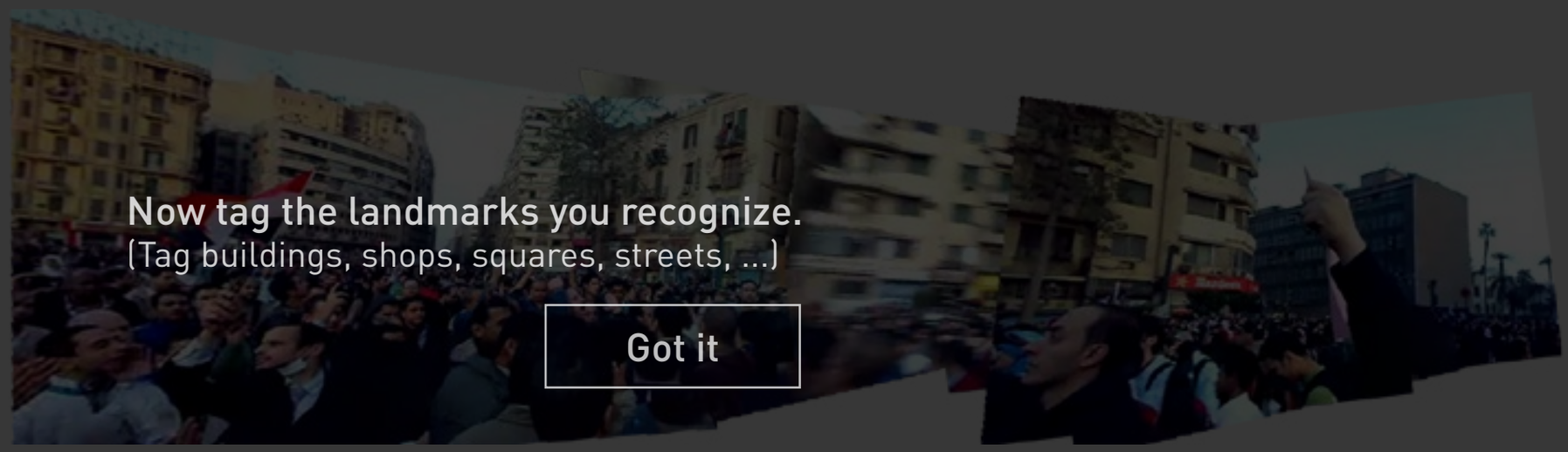
Preview

Tutorial

Tag

Opacity & Color

Problem

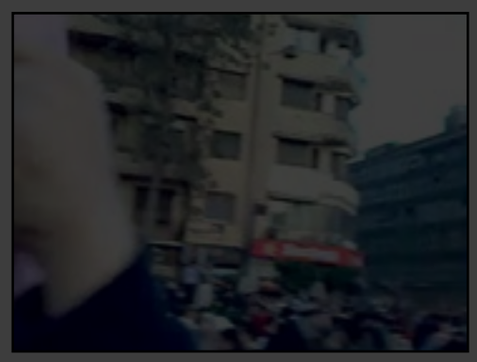


Now tag the landmarks you recognize.
(Tag buildings, shops, squares, streets, ...)

Got it

Images exported from your video



16/16

Back

Next

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos

EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN

Select stills > Tag landmarks

Zoom

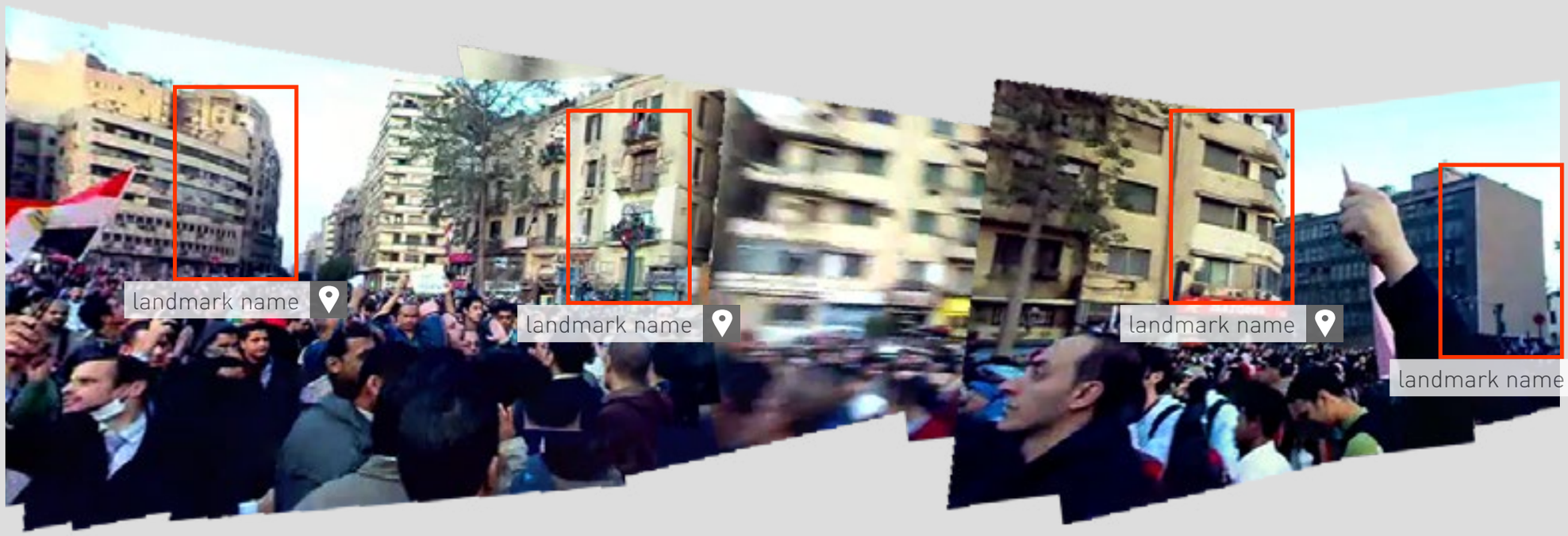
Preview

Tutorial

Tag

Opacity & Color

Problem



Back

Next

Jan 25, 2011
January 25 Protests

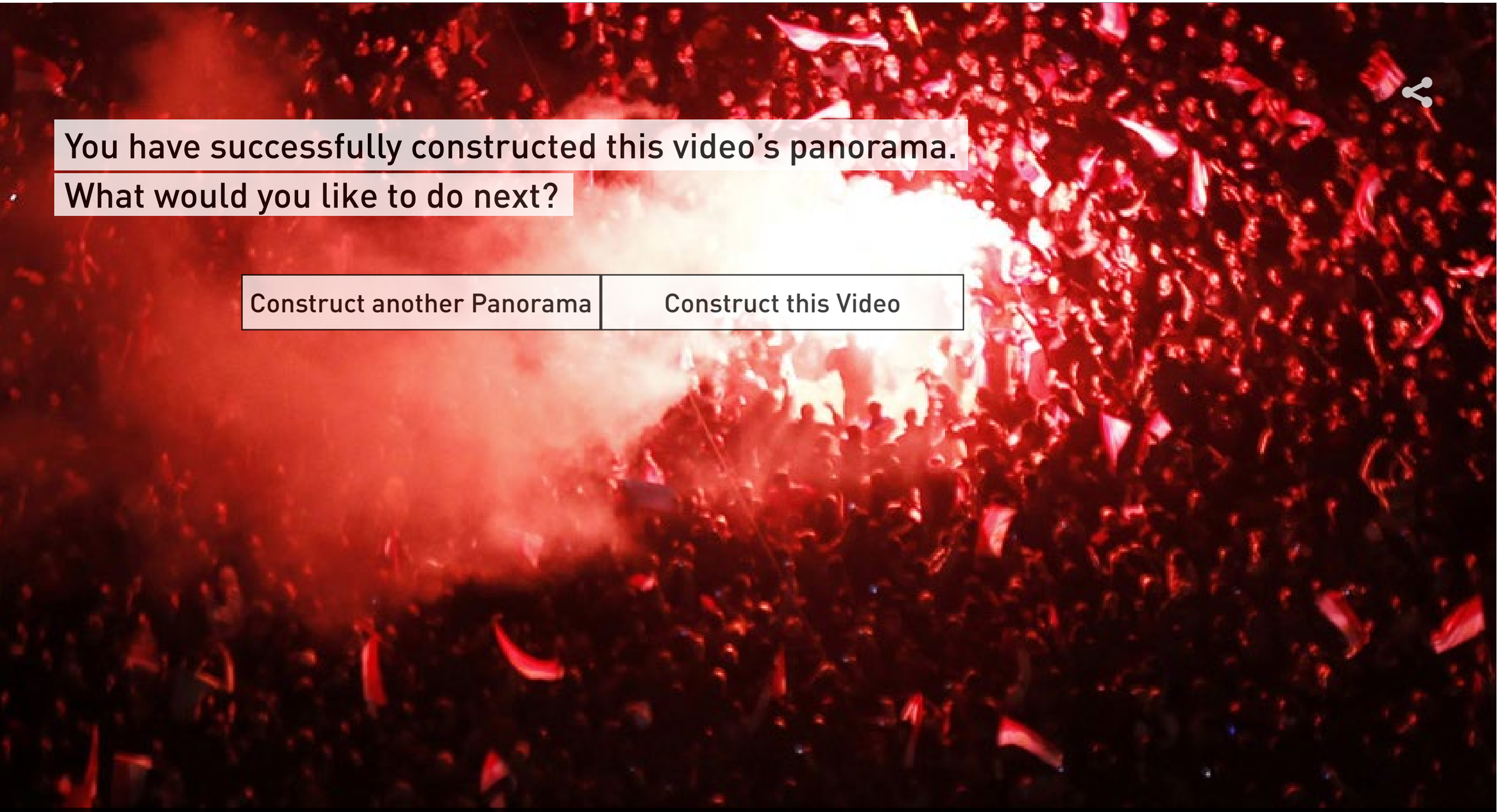
Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos


You have successfully constructed this video's panorama.
What would you like to do next?
Construct another Panorama
Construct this Video
Jan 25, 2011
January 25 Protests
Tahrir Sq., Cairo
Post
Construct Panorama
Construct Video
Stitch Videos

This is your video panorama,

Zoom

Preview

Tutorial

Tag

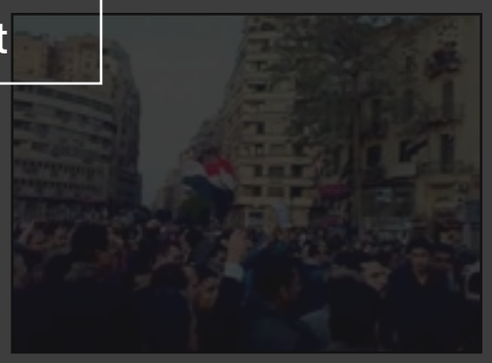
Opacity & Color

Problem

and these are photos exported from your chosen video.

Got it






4/12

Back

Next

Drag the photos to where they belong on the panorama.

Got it

Zoom

Preview

Tutorial

Tag

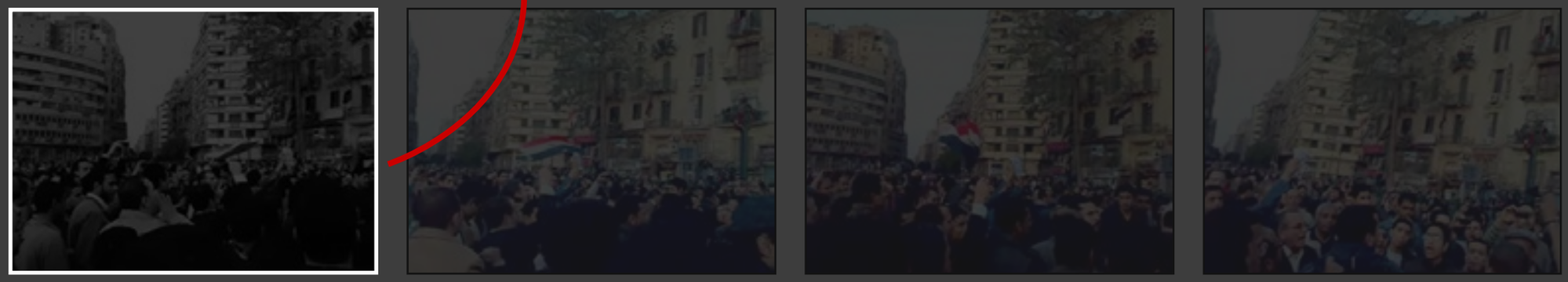
Opacity & Color

Problem

Back

Next

Stills exported from your chosen video



4/12

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

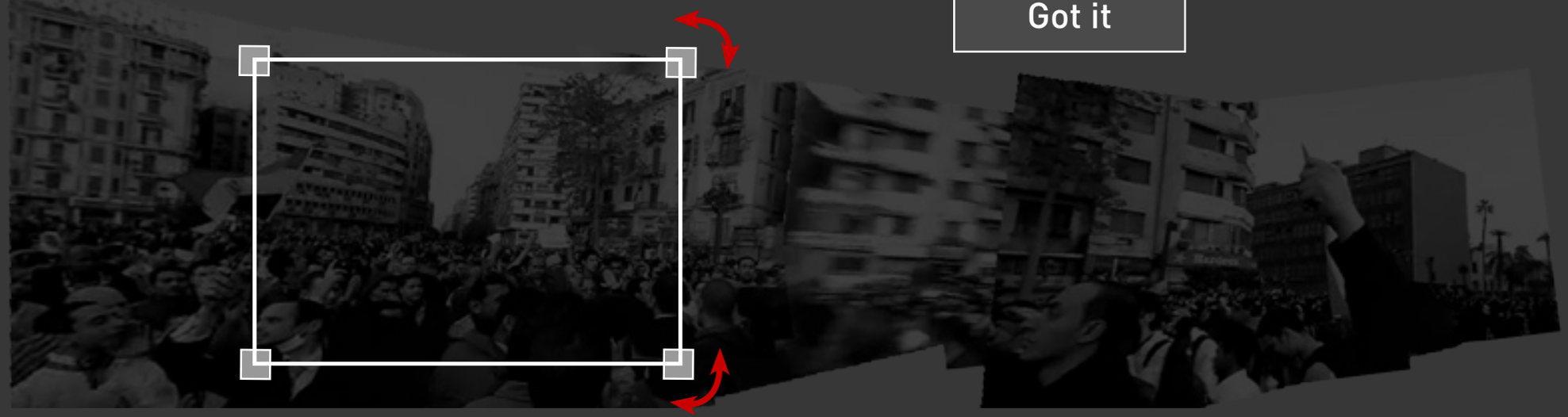
Construct Panorama

Construct Video

Stitch Videos

Change the scale and rotation of the photo to match the video's panorama.

Got it



Zoom

Preview

Tutorial

Tag

Opacity & Color

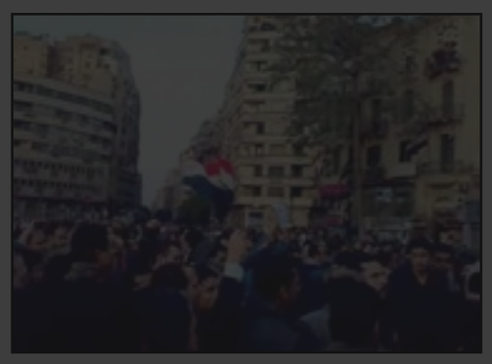
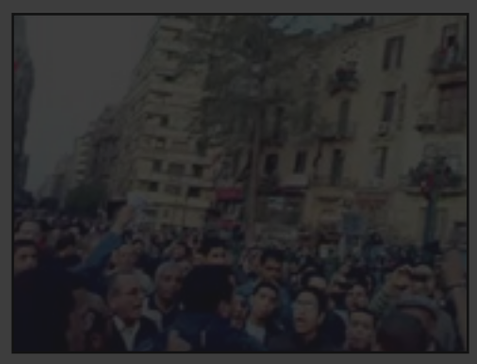
Problem

Back

Next

Stills exported from your chosen video



4/12

Zoom

Preview

Tutorial

Back

Construct Video

Tag

Opacity & Color

Problem

Next

Stills exported from your chosen video




1/12

Zoom

Preview

Tutorial

Back

Construct Video

Tag

Opacity & Color

Problem

Next

Stills exported from your chosen video




1/12

Zoom

Preview

Tutorial

Back

Construct Video

Tag

Opacity & Color

Problem

Next

Stills exported from your chosen video




2/12

Zoom

Preview

Tutorial

Tag

Opacity & Color

Problem

Back

Next

Construct Video

Stills exported from your chosen video

2/12

Zoom

Preview

Tutorial

Back

Tag

Opacity & Color

Problem

Next

Construct Video

Stills exported from your chosen video




11/12

Zoom

Preview

Tutorial

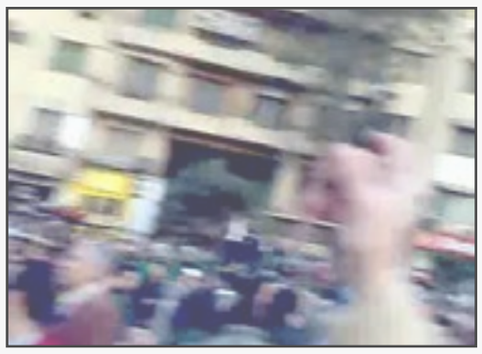
Tag

Opacity & Color

Problem

Construct Video

Stills exported from your chosen video




11/12

Back

Next

Zoom

Preview

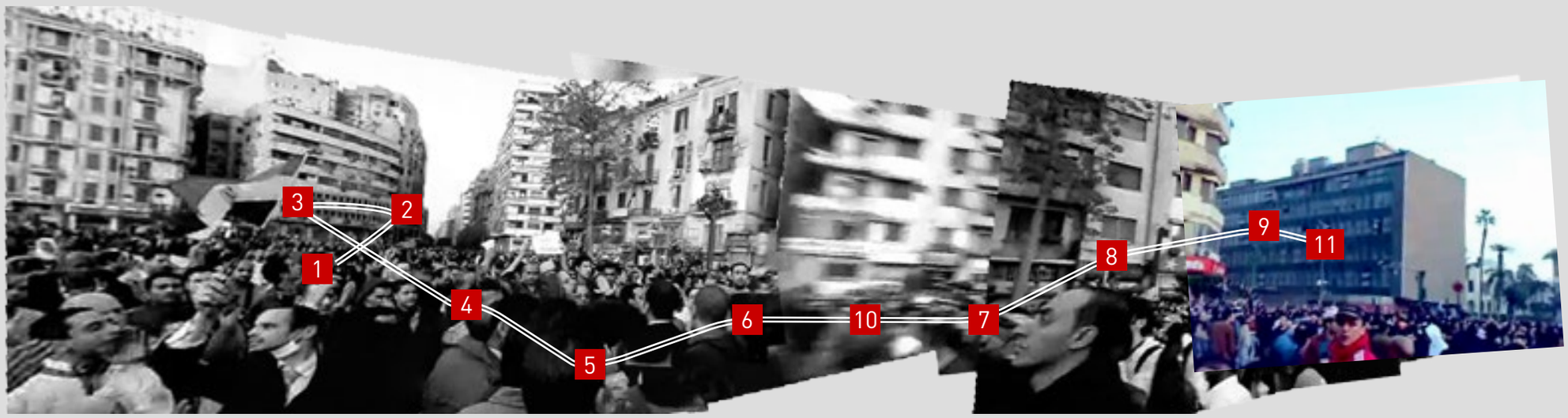
Tutorial

Tag

Opacity & Color

Problem

Construct Video



Stills exported from your chosen video




11/12

Back

Next

Jan 25, 2011
January 25 Protests

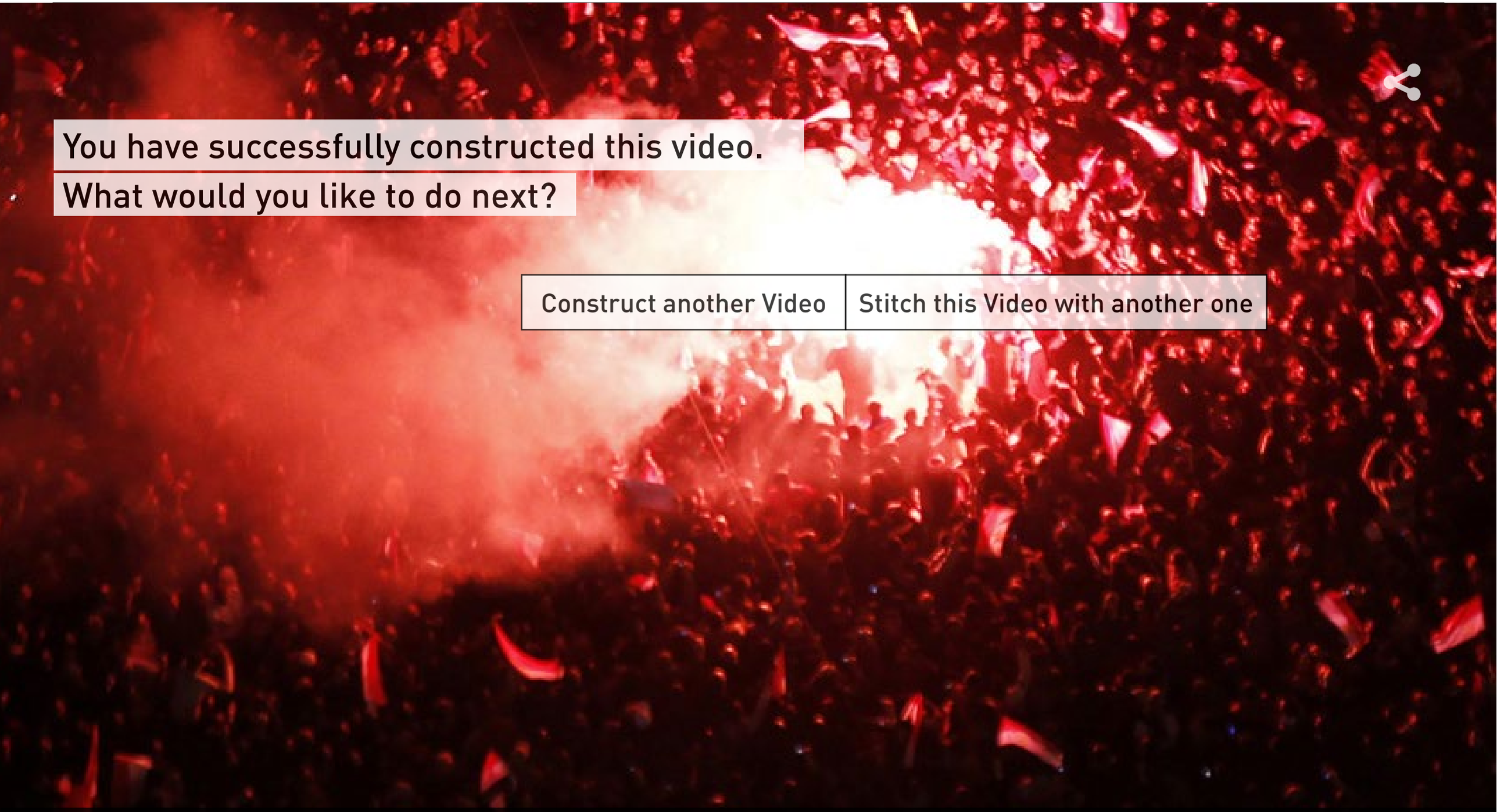
Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos



You have successfully constructed this video.

What would you like to do next?

Construct another Video | Stitch this Video with another one

Jan 25, 2011
January 25 Protests

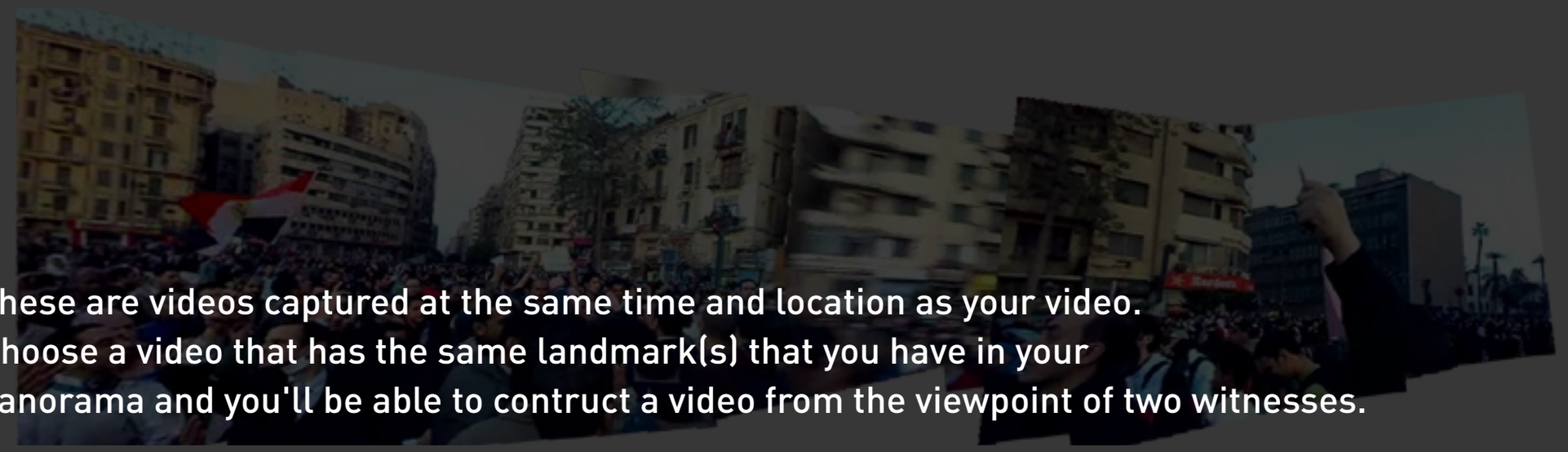
Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos



Zoom

Preview

Tutorial

Tag

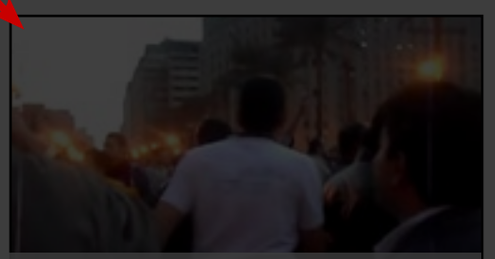
Opacity & Color

Problem

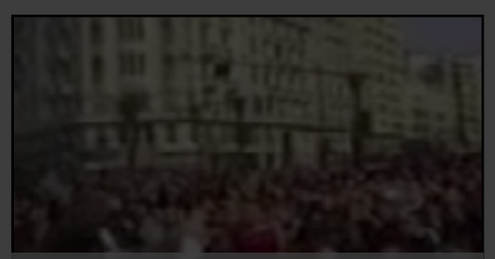
These are videos captured at the same time and location as your video.
Choose a video that has the same landmark(s) that you have in your panorama and you'll be able to contruct a video from the viewpoint of two witnesses.

Got it

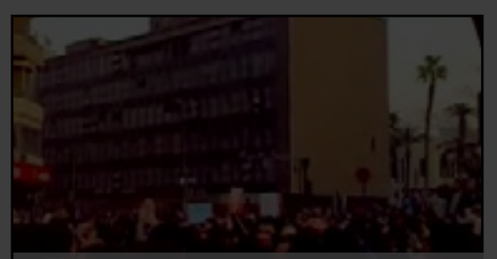
Videos captured at the same event



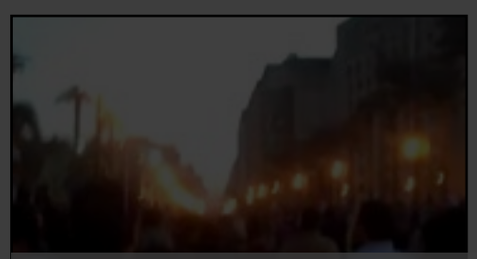
Featured landmarks
Mogama bldg.



Featured landmarks
Egy. Insurance bldg



Featured landmarks
Hardee's Tahrir



Featured landmarks
Mogama bldg.

4/6

Back

Next

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

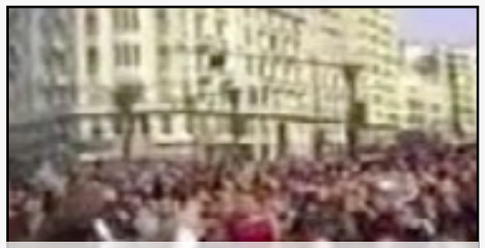
Construct Panorama

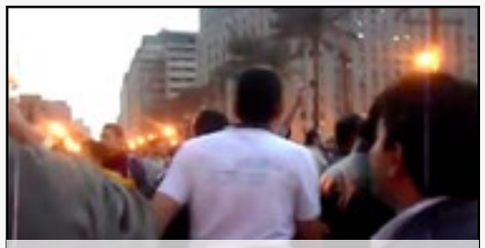
Construct Video

Stitch Videos

Videos captured at the same event

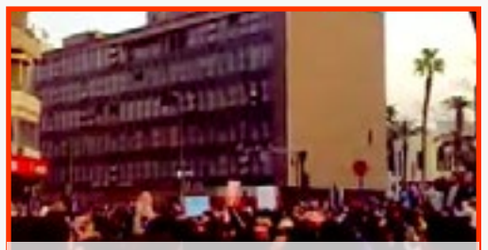

Featured landmarks
Hardee's Tahrir


Featured landmarks
Egy. Insurance bldg


Featured landmarks
Mogama bldg.

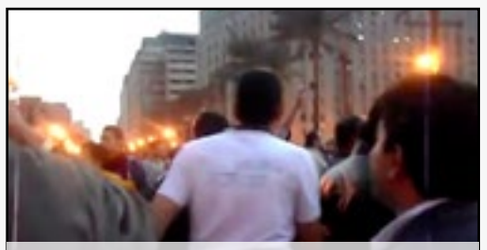

Featured landmarks
Mogama bldg.

Videos captured at the same event



Featured landmarks
Hardee's Tahrir

Featured landmarks
Egy. Insurance bldg



Featured landmarks
Mogama bldg.

Featured landmarks
Mogama bldg.

The two videos you want to stitch are estimated to have been captured between 12 - 4 PM on January 25th, 2011.

Select the video that you think was captured first, based on the lighting (time of day), number of protestors, or any other factors that signal a particular time.

Got it

EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN

Choose Video > Stitch Panoramas > Stitch Videos

Zoom

Preview

Tutorial

Tag

Opacity & Color

Problem

Back

Next

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

Construct Panorama

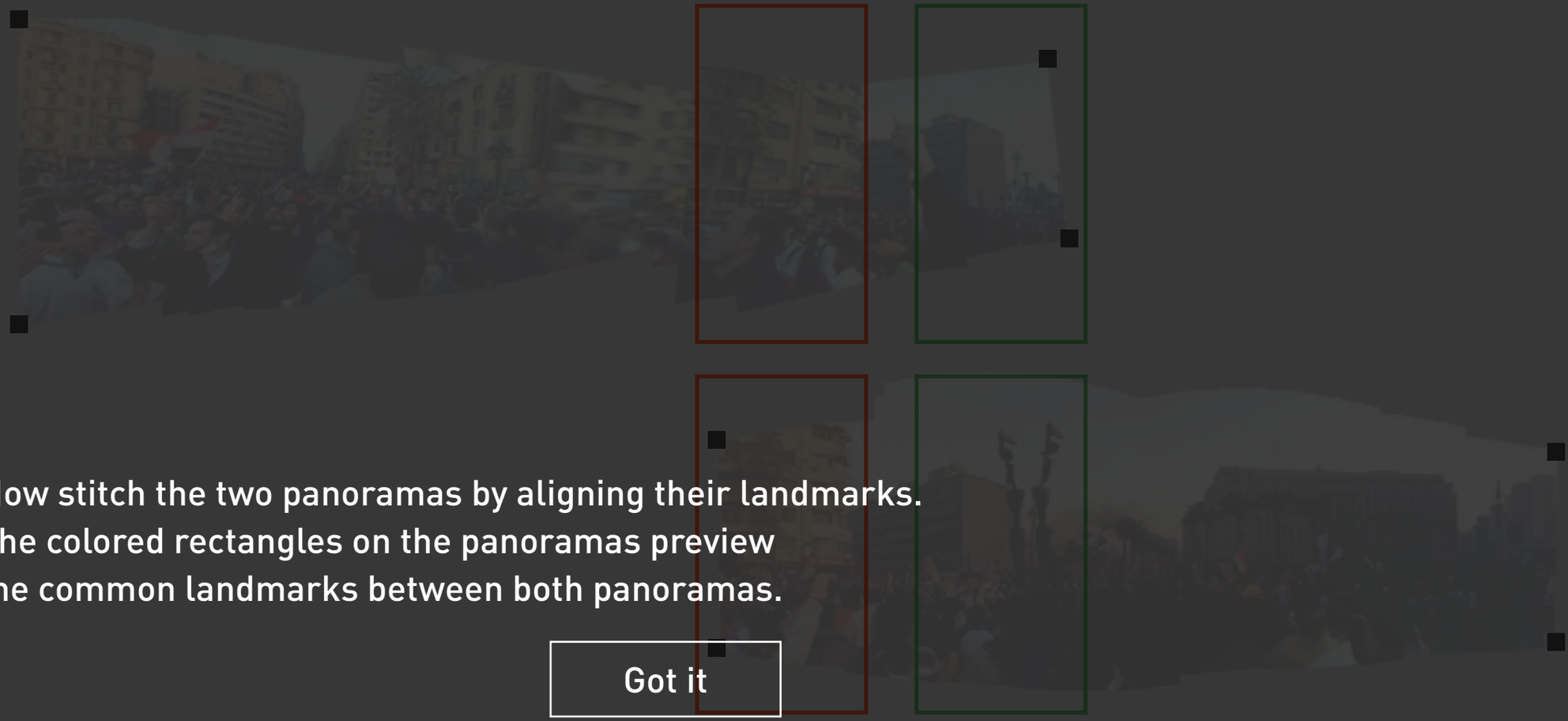
Construct Video

Stitch Videos

EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN

Choose Video > **Stitch Panoramas** > Stitch Videos



Zoom

Preview

Tutorial

Back

Tag

Opacity & Color

Problem

Next

Now stitch the two panoramas by aligning their landmarks.
The colored rectangles on the panoramas preview
the common landmarks between both panoramas.

Got it

Jan 25, 2011
January 25 Protests

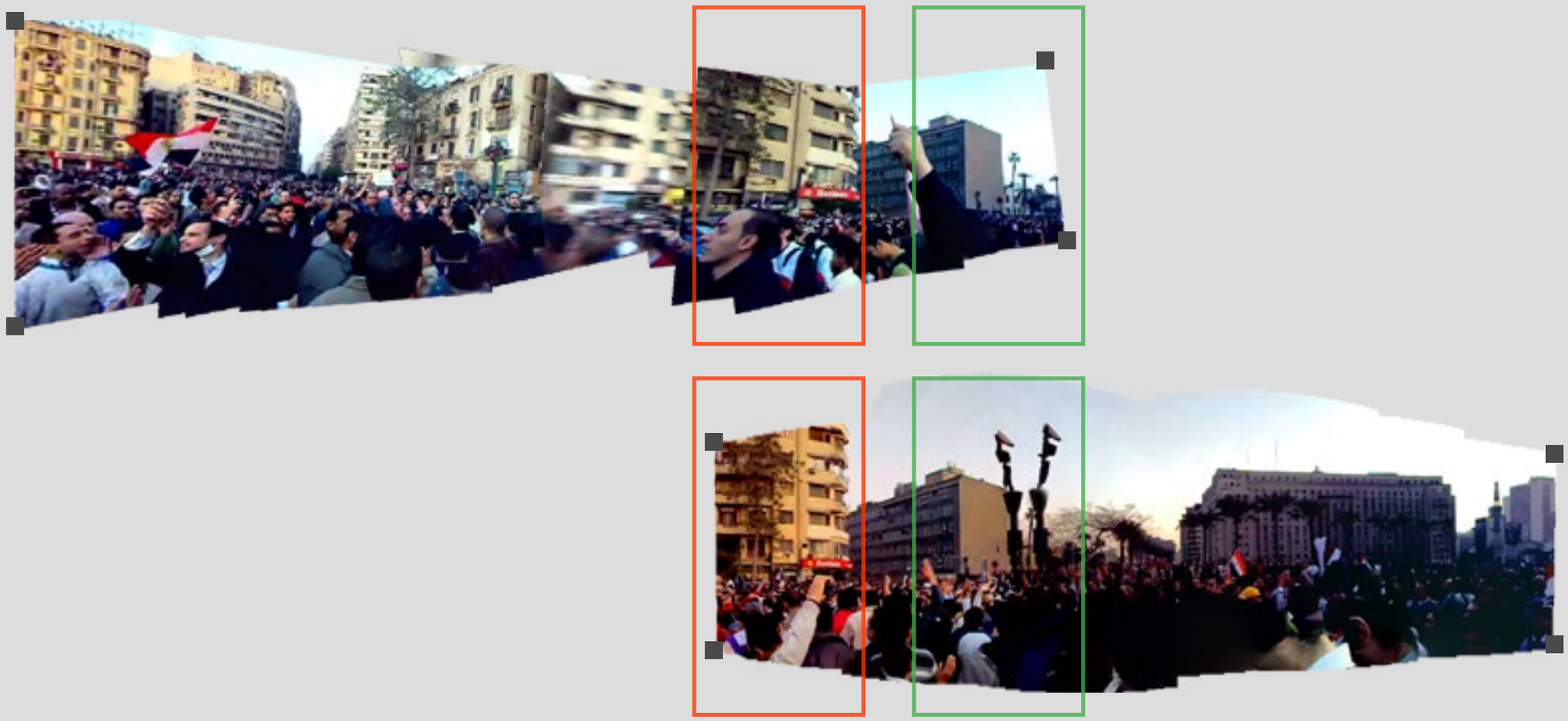
Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos



EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN

Choose Video > **Stitch Panoramas** > Stitch Videos

Zoom

Preview

Tutorial

Back

Tag

Opacity & Color

Problem

Next

Jan 25, 2011
January 25 Protests

Tahrir Sq., Cairo

Post

Construct Panorama

Construct Video

Stitch Videos

Choose Video > **Stitch Panoramas** > Stitch Videos

Zoom

Preview

Tutorial

Back

Tag

Opacity & Color

Problem

Next

Zoom

Preview

Tutorial

Tag

Opacity & Color

Problem

40%

Stitching Videos in Progress...

Back

Next

You have successfully stitched two videos.

What would you like to do next?

Stitch them with a Third Video | Post a new Video

EYEWITNESS

CONTRIBUTE EXPLORE ABOUT LOGIN

User ID

1316

PASSWORD

******

Create an account Lost Password?

LOGIN

Post | Construct Panorama | Construct Video | Stitch Videos

EYEWITNESS

Profile

User ID	1316
Member since	August 2014
Reputation points	188

Activity

Contributed Hours	16
Explored Events	6

Contribution Stats

Posted Videos	12
Constructed Panoramas	7
Constructed Videos	3
Stitched Videos	4

Tags

#Council of Ministers Clashes #January 25 '11Protests #Feb11 #Dec17 #Jan25 more

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more

Recent Contributions



more

Top Contributions



more

Post | Construct Panorama | Construct Video | Stitch Videos