Abstract. Storytelling is a powerful, but frequently overlooked, tool for the construction, interpretation, transmission, and preservation of cultural heritage. "The Heritage Story Zone" paper argues that newly affordable multimedia tools – specifically, digital story stations – make it possible for local communities to resurrect and record personal stories associated with cultural heritage and the spirit of place. Through case studies, it explores the potential of digital technology to facilitate the creation of a “Heritage Story Zone” whereby individuals – both long-term residents and new migrants – can tell their own stories and immerse themselves in the stories of others, dynamically assigning meaning, value, and emotion to cultural expression. After presenting an overview of the costs and benefits involved, the paper concludes that the heritage story station enables the actual users of place to ‘virtually’ reinvent and recontextualize an inclusive community memory, serving as both ‘tradition bearers’ and ‘interpreters’ in the promulgation and preservation of place-based cultural heritage, thereby ensuring its inheritance.

1. The Power of Storytelling

Storytelling has long played a prominent role in the transmission of place-based cultural heritage. From oral narrative and written text to the more visual representation found in architecture and painting, stories have become a large part of the heritage that we now seek to transmit and preserve. Embedded in both the tangible and the intangible, they are a way of passing on wisdom, knowledge, and culture. In this way, they preserve the memory of various groups of people, helping each subsequent generation understand who they are, where they came from, and what they are to value.

While stories are sometimes universal, more frequently, they are culturally specific, binding communities to their built environment, language, costume, and other cultural expression. In this way, they
serve as a *heritage compass*, for, in the words of a fourteenth century mystic, “a tale, however slight, illuminates the truth.”

Even though it is overreaching to suggest that storytelling developed in response to a specific need for documentation, preservation, or promulgation, the 35,000 year old paintings on the walls of Lascaux do assure us that storytelling is an ancient form of expression, perhaps like language, hardwired into our human biology. So while the technology we use today is new, stories, themselves, have played a central role in human history, evolving and changing with each new form of communication, from the circle of the campfire to hieroglyphics, the printing press to the motion picture, the television screen to today’s computer terminal. They are part of our culture, defining our self-identity, and transmitting authenticity from one generation to another.

2. The Heritage Story Station™

In today’s world, technology makes it quite easy to swap, critique, and revise stories. Newly affordable multimedia tools enable local communities to resurrect and record personal stories associated with cultural heritage and the spirit of place. Many advocates of this new method of storytelling are promoting what they call a *digital story station*, noting its promise as a communication device capable of bridging the technological divide between analog and digital. Simply stated, the ‘station’ is little more than a dedicated personal computer with associated peripherals and appropriate software. Scanners allow the public to digitize print photographs and other documents, and digital voice recorders facilitate the narration of personal impressions and memories. When used by the heritage community, the digital story station becomes a “Virtual Heritage Zone,” a space where individuals can preserve their own cultural linkages or, through a dedicated website, immerse themselves in the values and experiences of others.

Through the power of multimedia storytelling, heritage is experienced and dynamic, not static, incorporating feelings and emotions as well as intellect. This is important because, as Pine and Gilmore argue (1999), the world is changing, and we are moving from a service-based to an experience-based economy, one in which cultural production is more important than physical. In this new surround, the most successful undertakings are transformational, and
those heritage professionals determined to succeed must build potentially transforming experience-based activities into all their endeavors.

Digital storytelling allows us to transport the listener/viewer, spellbound, to a heritage realm where physical places and intangible spaces meet the virtual sphere. In this unbounded area, active engagement is the norm and it is possible to assign meaning, value, and emotion to cultural expression. As Freeman Tilden (2008) suggests regarding the interpretation of cultural heritage, the objective is not instruction, but provocation, implying an experience that engrosses and compels the human spirit. This involves participation and engagement of the imagination, key elements in the production of digital stories.

Online storytelling combines the power of images, narration, music, and text to establish the personal and emotional connections that change minds and ignite action. In essence, the age-old world of storytelling is given a new home, not landlocked but virtual. Limitless space and the capability to incorporate all types of media – text, photos, audio, and video – facilitate the creation of compelling narratives. These stories become both ‘tradition bearing’ and ‘interpretive,’ embedded in the construction and transmission of place-based cultural heritage. Ranging from simple recorded interviews like oral histories to audio slideshows or short video clips, the heritage story station TM encourages individuals and communities to dig deep, to collectively recount new discoveries and unearth previous ones. As they move toward the compilation of an inclusive community memory, their authentic narratives become ours to collect and conserve.

It is important to note that even though these stories belong in the public sphere, the ‘virtual heritage station’ described in this paper is not a general public access computer or a public access kiosk. Instead, it is a work station dedicated to the telling of digital stories, and it is intended solely for the recording and preserving of memories associated with cultural heritage and the centrality of place. Also, while the digital story station alone is a powerful tool, the Internet is just as important. When joined, the two become a reliable and inexpensive way to reach broad global audiences, serving as a strong voice for the construction, interpretation, transmission, and preservation of cultural heritage.
Whether temporary or permanent, the most successful story station environments provide a quiet recording space with good lighting, a backdrop for video recording, a table for the work station itself, and several chairs. In this dedicated space, with a staff member or trained volunteer available to assist, individuals have multiple options. They can compile a story with materials brought from home, record a three to five minute digital video clip onsite, narrate a first person recollection and illustrate it with still images or other materials of their own choosing, or put together a story based on personal interviews and associated visual material. Subject matter might encompass traditions and customs, tales of how things used to be, observations about changes to the built environment, remembrances of childhood, or the recounting of a recent migratory experience. All contribute to a continuum of impressions of both tangible and intangible cultural heritage. California Stories, a compendium of online stories sponsored by the California Council for the Humanities, (http://www.calhum.org/programs/story_intro.htm) provides a glimpse of the diverse tales waiting to be told, boasting such topics as: The Central Coast Filipino American Heritage Mural Project; Gardens Telling Stories: The Japanese Gardens and Gardeners of West Los Angeles; and Hmong Folk Stories: Carrying the Meaning to California.

3. Operating Considerations

Both the stationary/permanent and the mobile/portable story station consist of several interlocking systems, each difficult to maintain. These include: 1) a power supply; 2) durable computing; 3) multimedia associated peripherals; and 4) end-user devices like software and applications. Providing the four essential components is not easy, especially in rural areas and other isolated locations that are not able to support a permanent/stationary station. Difficulties resulting from shortcomings in the power and telecom infrastructure are to be expected since they are common to most developing countries.

In terms of infrastructure related difficulties, the most demanding situation often involves off-grid or poorly electrified areas where the cost of providing electricity can consume as much as 80 percent of initial project funding. The best first move is to keep total power requirements for the station as low as possible. Selecting low-power
equipment such as notebook computers, more energy efficient desktop computers, LCD screens, and inkjet printers can result in significant savings. A diminished power requirement makes it possible to use lower and less costly power-generating sources, like solar panels, wind turbines, or diesel/gas generators to provide electricity to power equipment and recharge equipment batteries.

Everyday struggles associated with maintaining equipment in good working order are often even more recalcitrant than challenges relating to infrastructure. Much off-the-shelf computing equipment is not designed to withstand the strains of demanding surroundings where, often, routine maintenance is not easy to supply. Under these circumstances, selecting the best mix of equipment is complex and requires balancing multiple considerations, such as initial cost, convenience of local service, operating costs, expected service life, reliability, ruggedness, and warranty coverage.

Digital story stations do not require Internet connectivity for the recording and production of heritage stories. But connectivity is required to reach broad global audiences via the World Wide Web (WWW), a crucial tool in the effort to preserve, transmit, educate, raise awareness, and enlist advocates for heritage endeavors. In light of the above, connectivity solutions become decisive. Fortunately, rapid advances in wireless technologies are making it increasingly cost effective to deploy networks in rural and underserved urban areas. These new wireless technologies are also more scalable and can be deployed more rapidly than ever before. (For more detailed information on technical and equipment considerations see www.reynoldswolfe.com/specs/.)

4. Return on Investment

When weighing costs and benefits, it’s best to start with an assessment of what’s immediately available or knowable as well as what is realistic from a financial perspective. While projects are often quite difficult to quantify, it’s important to avoid relying unduly on the intuitive, personal, parochial, or political factors that influence us all. However, it’s also good to remember that Return on Investment (ROI) can have different meanings depending on context. For example, if examined strictly from a business or financial perspective, ROI might refer solely to the amount of money returned over a period of time compared with the amount of money invested. But, as heritage
professionals, we might be better served by measuring success in terms of mission-related return on investment. In either case, ROI analysis requires that we answer the following questions:

- Are the efforts and costs associated with the lifetime of the proposed project worth its expected mission or financial benefit?
- How does the return on investment in one project compare with the return on investment of other proposed projects?
- Is the project plan as efficient and effective as it could be?

Answering these questions requires a thoughtful combination of fact gathering, internal impact analysis, outcome valuation, risk assessment, review of alternative mechanisms for achieving the same goal, and recognizing the ramifications of foregoing alternative opportunities.(Din and Hecht, 2007).

Typically, story station costs are proposed in terms of software, hardware, installation, and training costs – mostly one-time, direct costs. But indirect costs and opportunity costs must also be considered. Indirect costs might include staff training and retraining over time, contract legal review, administration, and some electrical and environmental costs. Opportunity costs, of course, center on the value of opportunity, benefit, or income forfeited as a result of the implementation of a story station project.

Table 1, below, presents some key features to consider when evaluating whether or not it is desirable to implement a heritage story station.™

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<th>TABLE 1: Key Elements of Total Cost of Ownership and Use.</th>
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<td>• Initial capital costs: buying the right equipment</td>
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<td>• Energy costs</td>
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<td>• Costs associated with downtime</td>
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So far as the heritage story station\textsuperscript{TM} is concerned, it is also critically important to consider the near real time WWW exposure of the project. This publicity may generate almost instantaneous interest without a great production investment in professional media. At the same time, success can also generate risks. What happens if traffic to a site soars and bandwidth and server are overwhelmed? In the end, the project may best be evaluated qualitatively, with the ultimate decision based on the risks of not preserving or transmitting heritage memories, a failure foreshadowing a loss that cannot be recovered.

5. Case Studies

5.1. THE STATIONARY HERITAGE STATION: TELLING LIVES

We can learn much from one of the earliest large-scale digital storytelling efforts, \textit{Telling Lives}, a project sponsored by the British Broadcasting Corporation (BBC). (http://www.bbc.co.uk/tellinglives/).\textit{Telling Lives} is based on the premise that the tradition of personal storytelling was co-opted in the twentieth century when the growing popularity of the mass media led to the escalating influence of journalists and script writers. During this timeframe, the custom of passing experiences, culture, and memories from one generation to the next evaporated, and stories were told by outsiders, based more on imagination than authenticity.

The digital stories created in BBC sponsored workshops counter this trend by breaking the mould of modern media storytelling. Created solely by individuals working on their own – without professional mediation and using new technology – the workshops have allowed tellers to take back their historic right to communicate experience through stories. Participants are taught the new skills they need to prepare a multimedia story, and the workshops emphasize an underlying premise of most digital story telling projects, the notion that even those with little or no technical background are able to ‘tell their story their way.’

5.2. COMMUNITY STORYTELLING: BARRIO LOGAN & REFUGEE VOICES
Barrio Logan is a partnership between the City of San Diego Public Library and Media Arts Center San Diego. This project is centered in Logan Heights, once primarily a residential area and one of San Diego’s oldest communities. Between 1910 and 1920 the area was transformed into a predominantly Mexican-American community as immigrants fled north from revolution and a poor Mexican economy. In the 1950s, city zoning laws were changed, and Logan became an industrial area rather than a residential one. The neighborhood immediately experienced an influx of Anglo-owned junkyards. Later, the black civil rights movement inspired many emerging leaders of the community and, in the 1960s, the United Farm Workers movement led by Cesar Chavez sparked a new political awareness.

Today local youth learn the media technology skills that allow them to document the life histories of the area’s oldest community residents. In the process, they tighten and/or rebuild intergenerational ties and reinforce their own community roots by connecting the past to their future. With training and support from Media Arts Center, San Diego’s local media artists, and librarians at the Central Library, young people research and produce a series of videos. Like a sister project, Refugee Voices, the Barrio Logan effort has focused on teaching local teens high tech media skills and library research so that they can produce short documentaries that offer a model to help other communities maintain their cultural survival.

5.3. eTUKTUK: THE PORTABLE HERITAGE STATION

In contrast to the two cases, above, which feature permanent story stations, the eTukTuk is portable, with system components installed on a tuk-tuk, a three wheeled motorcycle adapted to provide storytelling capability. The tuk-tuk is a common form of local transport in South Asia. However, to remote villagers in the Kothmale region of Sri Lanka, it is more than a convenient way to get around. It is also a self-contained mobile telecenter and radio broadcasting unit, providing public access to information and communication technologies, including newly introduced digital technologies and the Internet. In its innovative “e-” configuration, the tuk-tuk houses a laptop computer,
battery operated printer, camera, telephone, and scanner. Internet connectivity is provided by wireless connection, and electricity is provided by a 1000 Watt generator. These alterations enable the tuk-tuk to serve as an extension to Kothmale’s permanent telecenter, sharing wireless internet capability, loudspeakers, and multimedia functionality. (http://www.etuktuk.net/)

In its current form, the eTukTuk is not a heritage story station. However, eTukTuk programs often include activities that focus on the preservation of cultural heritage, and it would be relatively easy to make the technical modifications necessary to provide programs directed solely toward transmitting and promulgating cultural heritage. While technical issues are relatively easy to resolve, a more difficult challenge centers on barriers involving language and illiteracy. However, with creativity and determination, these problems too can be resolved. For example, the Kothmale project faced difficulty in recruiting Tamil speakers, a problem that required a rather extensive public relations effort to resolve. Only after the eTukTuk traveled throughout the community, blasting an invitation on its loudspeakers, were residents curious enough to attend a gathering at a well-known tea estate where they would learn more about eTukTuk activities. After attending an information session and watching digital stories, many became interested and signed up for a training course at the Community Multimedia Center so that they could qualify as Tamil speaking instructors and content producers.

6. Conclusion

The heritage story station, a newly affordable multimedia tool, enables local communities to resurrect and record personal stories associated with the spirit of place in a way that conveys the essence of cultural heritage. As both long-term residents and new migrants recount their stories, they become ‘tradition bearers’ and ‘interpreters.’ Through their efforts, storytelling’s age-old appeal is updated for modern times, touching the hearts and minds of broad global audiences as well as sustaining, celebrating, and maintaining community identity, authenticity, and association with place.

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