

Living Cultural Storybases: Self-empowering narratives for minority cultures

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Half the planet's languages and cultures are held by 5% of its population—370 million indigenous peoples—the most marginalized, fractured and least represented. For every group dispossessed, urbanized or assimilated, a culture vanishes taking with it unique worldviews and ancient knowledge of the environment, irreplaceable skills, artistry and stories—the rich diversity of humanity. The digital revolution, rather than creating a “global village”, accelerates this worldwide cultural demise.

ICT access is scant and inappropriate for indigenous people, while content is dominated by the languages, interests and ideologies of the largest economic blocks.

We argue here that these same technologies causing the “digital divide” could nurture indigenous languages and cultures. Until now ICT initiatives have addressed immediate developmental needs, rarely even acknowledging minority languages or traditions. ‘Living Cultural Storybases’ (LCS) seeks to go further: facilitating appropriate, two-way access for all community members to gather and share cultural knowledge through spoken stories.

We propose community-controlled ‘Virtual Cultural Networks’ (VCNs): cultural intranets supporting role-based access, secure distributed communications and private cultural resources. LCS promotes natural and respectful interfaces for indigenous peoples’ interaction with their oral tradition around a co-designed database core that reflects the culture, inviting further contributions and stimulating internal social debate. We hope to reconnect dispersed communities and urban members of minority cultures to embrace, grow and re-interpret their traditional narratives, strengthening their cultural identity across the generations. Aspirations for the future may lie with the young, but the old are the custodians of their proud heritage.

Background: Vanishing Cultural Diversity

This paper gives the background rationale for work in progress to planned community engagements.

What is ‘culture’?

UNESCO defines culture as “as the set of distinctive spiritual, material, intellectual and emotional features of society or a social group, and that it encompasses, in addition to art and literature, lifestyles, ways of living together, value systems, traditions and beliefs...”

Culture as a legacy originates in locale, because it needs context in which to thrive: the context of the people and land that shaped it. While culture might be exported, without this context, it will decay. In this paper we address ‘culture’ at the level of a common root language.

Minority Cultures and Disappearing Biocultural Diversity

There are 370 million indigenous peoples on Earth, rooted to a particular place by history, legend, and language. They represent only about 5% of the Earth's population but more than half of the intellectual legacy of humanity—its languages and cultures. Yet these same people are the most marginalized, fractured and least represented in society: they are being swept away by poverty, disease,

conflict, land appropriation and inappropriate technology (UNPFII, 2006).

While new forms of language and dialect are evolving on the Internet (Crystal, 2002), the world's diversity of native languages is disappearing. There are currently about 6500 living languages, but 10 dominate as the mother tongues of almost half of the world. Of the other 6490 languages 52% are spoken by fewer than 10,000 people, 28% by fewer than 1000 and 83% are restricted to single countries (SIL: Ethnologue, Grimes 1996). At least 512 native languages are all but extinct: one living language already dies with its last speaker about every two weeks. This means words with unique definitions, perceptions of the world, their own intimations and humor are vanishing, never to be replaced.

Cultural diversity and biodiversity are correlated. Moreover, loss of indigenous culture may directly effect biodiversity. Many indigenous cultures have developed low-impact interdependencies with their land. Traditional interactions with the environment that have less impact on biodiversity are passed on in local languages, but when those languages die the traditional methods die out too. (Terralingua, Maffi et al, 2004) .

Minority cultures matter. For every language that is lost a world perspective vanishes. For every group uprooted or assimilated, a culture vanishes, taking with it knowledge of the environment, unique ways of living, irreplaceable skills, artistry and ancient wisdom. Each time a minority culture disappears it is as if a species becomes extinct.

We all need cultural diversity just as much as we need biodiversity—humans thrive when there are many perspectives, languages, skills, and ways of living in the world. The Unesco Universal Declaration on Cultural Diversity, adopted in 2001, states that cultural diversity is:

1. the common heritage of humanity;
2. necessary for human rights;
3. encourages creativity; and
4. strengthens capacity for international solidarity.

The Threat: Emergence of a global monoculture

Minority cultures face growing threats on external and internal fronts. Externally, they face economies of scale,

trade and capital domination by G8 nations and pressure from their own governments.

More insidious are the internal threats created by the spread of a global monoculture. 1 billion people now live in urban shantytowns—doubling by 2030, while 200M Chinese peasants have migrated to the development zones in the last 30 years. The youth are moving to the cities and abandoning their traditional languages and lifestyles. Ancient relationships between people and their environments are breaking down without the time for adaptation. These threats are urgent: minority cultures are disappearing at an accelerating rate.

Cultural survival is not about 'preservation', sequestering indigenous peoples in enclaves like zoological specimens... it is for communities to debate for themselves their developmental choices or interactions with the outside world, making informed decisions.

The paradox of the 'digital divide'

Western media forms and digital ICT tools have evolved for majority cultures and thus disadvantage indigenous oral cultures. The predominant tools are screens, written language and digital technologies, inappropriate for indigenous, oral cultures. A strong Western monopoly on programming exacerbates this 'digital divide': only 10% of the world's tongues are represented on the Internet (NVTC, 2006). The

cultural content is dominated by the interests and ideologies of the big cash economies (Global Reach, 2006). Against this, the very small size of many indigenous linguistic groups makes it difficult to support the research and orthographic work needed for textual exchanges in their language on the Internet.

From our previous work with deprived communities, we fully agree with Warschauer (2002, 2003) that like literacy in printed media, several factors contribute to effective digital technology for social inclusion. Warschauer comments on several barriers to ICT use, and notes:

Those people who cannot read, who have never learned to use a computer, and who do not know any of the major languages that dominate available software and Internet content, will have difficulty even getting online much less using the Internet productively.

Making the analogy with literacy, he adds:

As for relevant and accessible content, one of the major obstacles toward literacy acquisition

is the dearth of published material in many if not most of the 7,000 languages that are spoken around the world.

ICT access for indigenous people is scant and then dominantly keyboard based effectively shutting them out of the political and social empowerment brought by digital networking. The digital revolution, rather than creating a global village, has accelerated worldwide cultural demise by increasing the gap and economic leverage between the high-tech haves and have-nots. But we believe that the same technologies that are implicated in the “digital divide”, if applied appropriately and with innovation could in fact nurture indigenous languages and cultures: the focus of our endeavour.

Oral heritage, storytelling and role models

For most of human history culture has been transmitted through stories, music and poetry. Our brains are hard-wired to respond to stories: through narrative we find meaning and inspiration, they are our source for role models, heroes and aspirations. Stories told by one person to another are more powerful than writing or videos because they include an immediacy of contact and response—the storyteller can respond to her audience in the moment, providing what will help convey the message and culture most effectively. Storytelling is at the heart of social and personal identity; the story we choose to tell tells the listener and the world something about our culture and ourselves.

Beyond individual identity, the recounting of oral narratives plays a vital role in maintaining ethnic identity and group solidarity. Stories encapsulate the deeper beliefs and values of a culture, promoting ways of living, behaving and believing. Stories have social and teaching functions, representing the collective memory of the people. Spoken stories convey and maintain cultural identity as a living entity far more effectively than written documents or videography, because stories can change as a culture changes, e.g. the archetypal heroic quest to find self-identity is re-clothed in fresh narrative.

Oral narrative—storytelling—is the natural teaching medium about skills, the environment and survival. It enables a social process that in turn enables cultural survival. Traditional stories or personal stories of life experiences allow elders to communicate history, knowledge and wisdom to youth in ways that youth might not otherwise countenance.

It is not as if there was a single set of ‘authentic’ stories that define a culture. Rather, exchanges and commentary on a culture’s personal and collective narratives, debate and conversation around stories test and strengthen cultural

identity. Reference to stories is often the medium to reach social consensus in response to external, environmental or developmental pressures. This has always been the old social process, because it allows the past to come to agreement with the pressures of the present. But fragmentation, urbanization and globalization now makes ‘gathering around the fire’ increasingly difficult, as youth move away and there is less and less time for these old methods.

New technology need not hinder this ancient process. If stories can be captured and shared in ways that keep them alive and encourage transmission and reinterpretation then technology can actually foster a living oral storytelling tradition. Younger community members might then aspire to role models in their own stories and find value in their own traditions whilst telling new stories for their elders.

Cultural Ownership, Memory and Identity

For orally-based cultures the significance of storytelling goes beyond individual or social identity; stories and verbal communication form the database in which everything from medicinal practice to land rights is stored. They are the evolving communal memory of the group, the basis of a culture’s intangible heritage. Intangible heritage is not only that which gives the past meaning and acts as a building block for personal identity, but also nurtures what UNESCO refers to as the “capacity to aspire”: highly specific ways in which various cultures define the ‘good life’ through ‘specific images of beauty, harmony, sociality, well-being, and justice’. The capacity to aspire propels a community into the future because it provides the drive to ‘be full participants in designing their cultural futures’. In short, storytelling has moral, practical, political, legal and financial implications in defining the past and shaping the present, and functions as social capital, ensuring a healthy future for the community.

Ownership, control and privacy should frame any initiative or system that outsiders start for handling traditional material and languages, being essential qualities for maintaining healthy personal and communal identity. Disregarded, the culture that an outsider may think they are preserving, is actually being undermined. Those in possession of stories should be the ones who determine how, when, and where they are communicated. Knowledge, cultural memory and intangible heritage are often strongly located in an indigenous community’s physical territory, clan structure and seasonal observances. Some stories should only be told or heard in special or sacred places in their clan’s country, therefore not in any computer centre. Furthermore, because group membership is often not explicit and cultural membership has granularity, any community engagement

is best via gatekeepers whom the community trusts.

Limitations of Previous initiatives: LCS Differentiators

Cultural survival is not about 'preservation', sequestering indigenous peoples in enclaves like zoological specimens. Rather, our paradigm is for communities to debate for themselves their developmental choices or interactions with the outside world, making decisions which are informed: both by an understanding of the new options, opportunities

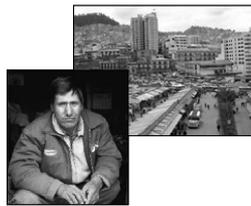
Storyboard 1: Bridging Bolivian generations



Village life for a shepherd in the Bolivian Andes was never easy, but stories and music warmed the bitter nights in Churavi



In his home the old 'cacique', Lucio records one of their traditional stories in Quechua, this time a parable about the need for unity in times of hardship



Florencio lost his wife and had to leave the village with his son and young daughter Marina to find work in the El Alto barrios of La Paz



Marina is teased at school for being a 'campesina' and longs to breathe the mountain air again. She uses the school computer to listen to Lucio's parable and asks her grandpa to explain.



Grandpa Santiago in the mountains listens on the handset to Marina's message about her life in the city and together they talk about what the story means for Marina



by talking around Quechua stories and remember the time the family was together. Marina records a story of her own for the village to share.

Photos © Nicolas Villaume, 2006
Conversations du Monde

or threats brought by globalization and by their core values, beliefs and cultural strengths. One challenge is thus that cultural members may be too dispersed or that there is insufficient opportunity for face-to-face gatherings to support the traditional decision processes in the face of accelerating outside changes.

Too many past initiatives by outsiders have studied indigenous cultures academically, rather than helping the insiders value their own living culture. Culture is lived and enacted. Neither the collection of physical artifacts, nor the preservation of monuments, nor recordings of its stories will preserve a culture.

UNESCO has as a prime declared objective the identification and preservation of the best of the world's 'intangible cultural heritage' (Stenou and UNESCO, 2002), including the proclamation of 'Living Human Treasures': musicians, poets, elders or expert storytellers. Whilst participating national states do offer programs to help preserve their intangible heritage, few try to exploit new digital means to engage all members of a community in the refreshment of their oral heritage.

Initiatives to create keyboards, lexicons or phrase books for a few of the thousands of endangered languages are pitifully resourced and risk changing the oral-nature of the culture. Attempts to apply digital technology to support living stories within a minority culture are rare. All too often the ICT solution proposed is PC-based, but it is hard to believe that the traditional knowledge, practices and traditions of an oral culture can be funneled through a text keyboard by the trained elite of community youth sitting in a special computer centre. Frequently the teaching of ICT skills in developing countries follows the concept of education as 'banking' which Paulo Freire strongly criticized (Freire, 1970).

ICT initiatives 'for' the developing world have understandably focused on immediate basic developmental needs, rarely even acknowledging minority languages or cultural traditions. This approach is not self-sustaining, being based on a false dichotomy: it is the capacity to aspire which ultimately nurtures the collective creativity, energy and will to survive. Tangible development in terms of people's material well-being must be balanced with intangible development of spiritual and intellectual well-being rooted

in identity if sustainable diversity is to be achieved (Unesco, 2002).

In short, digital ICT solutions using majority languages developed by, and for, the large urban power blocks are inappropriate for indigenous peoples. Those solutions undermine minority cultures by inherently carrying messages of Western cultural superiority, mental models, mores and aspirations. Instead we advocate participatory community informatics projects: to facilitate appropriate two-way access for all community members to virtually gather, share and re-interpret cultural knowledge through spoken stories. We see opportunities to exploit new mobile, digital, oral technologies for direct exchanges in their own language of their intangible heritage of stories, songs, poems and music across the indigenous community's territory and with their diaspora.

A new initiative: Living Cultural Storybases

The aim of the 'Living Cultural Storybases' not-for-profit initiative to 'nurture the oral heritage of minority cultures in a digital world' will be realized through balancing two

approaches: social and technical¹. We will:

- Develop trustworthy, participatory methodologies that engage and empower dispersed communities and displaced members to embrace, grow and re-interpret their traditional narratives. This includes strengthening a sense of cultural identity, motivating youth pride in their inheritance and promoting the intergenerational transmission of oral heritage, community dialogue and decision making in their own language.
- Evolve a generalizable architecture providing access for the entire population to a database for storing and sharing their stories. The system should reflect and respect the culture, through the database's ontology, secure role-based access and protection of their intellectual property. Two-way spoken access will be via devices that are appropriate and easy-to-use within the community setting, thus encouraging further contributions and discourse.

Storyboards

The two storyboards encapsulate how our aims of re-connecting a dialogue between the generations and reconnecting communities sharing the same culture might be realized. These storyboards are only examples. The particular usage models and access devices, exchanged content and concerns, participants, locations and the social dynamic that is enabled should be designed by the community to suit their culture, selecting and adapting digital options that LCS and others can suggest.

A 20:20 Vision

We do not see the Internet evolving into a flat network for seven billion people, equally online without any social structures. The Internet is just the scalable transport layer, to be overlaid with a mosaic of overlapping cultural and ethnic nets.

Our vision for 2020 is of community-managed 'Virtual Cultural Networks' (VCN's): InuitNet, BushmanNet, TuaregNet, RomaniNet etc. These are distributed cultural intranets running across open public networks, supporting

easy role-based access, secure communications in indigenous languages and searchable private cultural resources such as dynamic audio databases.

The access models should reflect each culture's social processes, being both multi-level and multi-faceted for community, family and individual participation. The system should support easy membership authentication and set the level of participation, e.g. by birth right, initiation rite or invitation to a trusted outsider.

Over time we want to work together with minority cultures and partners to create a rich virtual 'connection landscape'

Storyboard 2: Linking Thai hilltribe villages



The Akha are one of 7 tribal groups, settled in 250 villages scattered over the forested Northern hills of Thailand



Proud of their identity, the Akha still dress traditionally. Animist beliefs and ceremonies are threatened by majority religions and lowland education.



Jamusi they have collected Akha artefacts into a museum, but they have no written language for their rich oral heritage.



Elders can still recite all the names of their line of 50+ ancestors. The spirit leader of Ban Par SangNguen records creation myths, checking with the other villages' versions



In Ban Jamusi they add a trickster tale to the communal cultural resources and join the regular discussion with other Akha villages over 'Akha-Net': today about water shortages



The young people in BanAber use Akha-Net to learn the significance of their sacred village spirit gate and about Akha plant medicines.

Photos © Paul Rankin, 2005
Winston Churchill Fellowship project

having private, family, sacred and community meeting places—as well as the current Internet 'market places'. Cultural identity, self-determination, political empowerment and ownership of intellectual property require privacy and security against 'digital colonialism', plagiarism, cultural piracy, cultural pollution or external surveillance.

This virtual landscape is completed with common meeting grounds where multi-lingual dialogues are encouraged and supported by interpretation tools, where shared knowledge and cross-cultural understanding, respect and creativity are fostered.

Social methodology

The tenets underpinning our social methodology are:

- Diversity is precious.
- Culture is experienced and enacted—it is lived, it can't

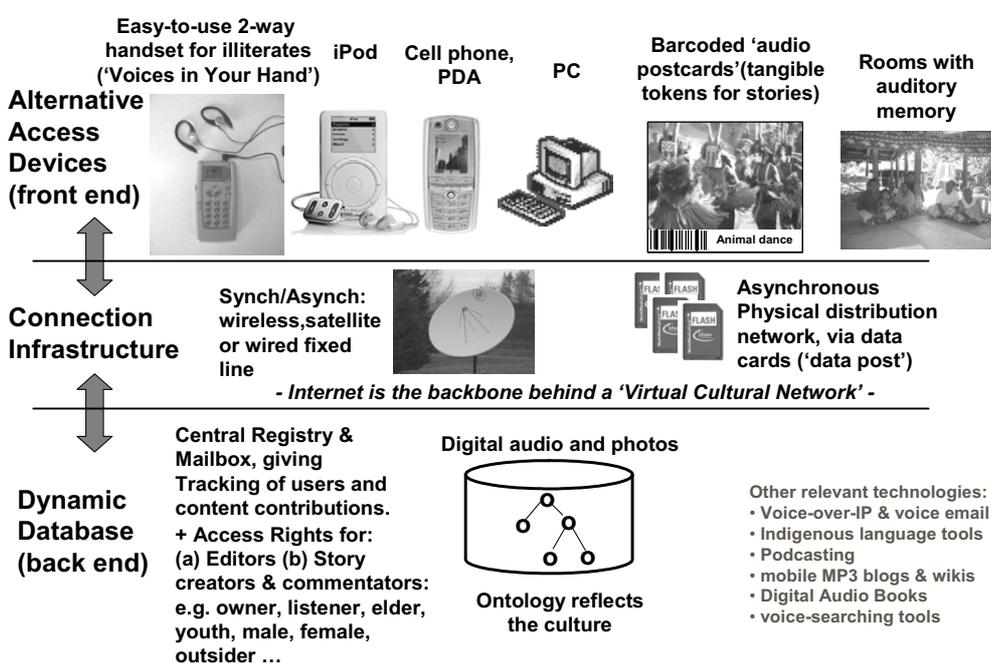
¹ See www.storybases.org

be preserved like an artifact.

- Cultures are not static, they evolve.
- Stories are the essence of a culture.
- Once the stories are no longer re-told, the culture is dead.
- The communities should own the process and its pace.
- Outsiders can facilitate—bringing a global perspective, options, the general principles and tools which can help nurture other minority cultures.

Solutions to the threats facing minority cultures and their oral tradition must be co-designed with the communities.

Technology platform: Multilayered



We advocate community participation at all levels, including staffing, evaluation, and oversight. Community members must become the real, informed decision makers in any project process. They are best equipped to identify their strengths, weaknesses, opportunities and threats, as well as what they need and desire from a digital initiative. Engaging the youth is a particular challenge, otherwise the hope of handing stories from generation to generation founders. The methodology must involve youth as well as elders from the outset in design and implementation so that excitement, ownership and pride are cultivated.

Through co-design, trust, respect and openness are slowly built. As acceptance and trust in the system grow, the cultural resources held by the project can become more confidential. Outsiders may never have access to this sensitive information, however its inclusion is a metric of success.

As LCS progresses we envision a cumulative growth path, working incrementally with a few communities at a time and trying to infer those technologies and methodologies that are effective in nurturing oral heritage and bring these progressively more general tools and insights to help the next initiative.

Digital Technology

Technology platform: multilayered

Evolution towards our vision requires a multilevel architecture (see inset above). A general-purpose customizable multimedia core is needed applicable to a diversity of cultures for which different access devices are appropriate, exchanging different content via alternative usage models across a cultural intranet (see inset: Multilevel LCS architecture).

Access devices

For appropriate user access and system management devices, we envisage a variety of options depending on culture and context. These range from council rooms that can automatically record and replay conversations, to bar-coded tokens that tangibly index multimedia content- as well as PCs or mobile phones.

We have particular experience in piloting systems of cheap, easy-to-use mobile two-way MP3 devices, fostering social inclusion and empowerment in a marginalized community in Brazil. Such devices can be used in dispersed cultural locales far away from Internet, radio or cellular coverage and even without any main electricity supply (Rankin, 2003). These handsets run a tagged audio format in any language that supports interactive, branching audio programs and asynchronous voice messaging. The result is like playing on-demand, personalized radio programs or a downloaded 'podcast', but users can talk back or supply numeric answers to specific questions embedded in the program. These digital possibilities can extend the reach, engagement, impact and cost-effectiveness of the proven medium of analogue community radio. As UNESCO (2006) points out:

because group membership is often not explicit and cultural membership has granularity, any community engagement is best via gatekeepers whom the community trusts.

Radio is by far the most favoured community medium in developing countries. Given its accessibility and cost-effectiveness, community radio represents a democratic and participatory medium. It is easy to operate and lies within the capacities of many local communities who are not often a subject of mainstream media and information channels.

Database and system core

Any multimedia database resource on a VCN must be dynamic, evolving with the communities it serves. Design by the community itself of the ontology of content and the relationships between narratives or issues of concern can bring engagement and insight to reflect on their developmental process (Srinivasan, 2002), just as knowledge management by the community brings ownership, responsibility and sustainability.

First Community Engagements

Cultural Triangulation and Triage

Given that there are more than 5,000 indigenous cultures and that building relationships of mutual understanding and trust needed for participatory co-design can take years, the choice of community partnerships for future LCS initiatives begs an awareness of how their cultural specificity and context will shape success and subsequent replicability. We need to assess at least at a high-level our partner communities' comparative positions in the cultural space and those design implications. This cultural appraisal should address the strengths, weaknesses, opportunities and threats perceived by the culture and features including:

- Demographics.
- Hofstede (1984) indices.
- Environmental influences.
- Social structure.

- Development indices and primary concerns.
- Principal components of the oral tradition and its current strength viz-a-viz literacy and the majority language.

Other practical matters must also be considered:

- State of ICT provision (existing infrastructure, digital inclusion of the population, support for the language etc).
- Openness to collaboration with outsiders (legacy of previous initiatives and actors) and accessibility of communities (gatekeepers, interpreters).
- Other stakeholders in the culture (possible partners, sponsors or external experts).
- Initial community and its location (project costs).

Evolutionary Prototyping with a Community

Taking a specific community we know, Tuareg nomads near Timbuktu in Mali as an example, we can sketch our plans for progressing the social methodology and technology through iterative prototyping. This participatory process should itself to be empowering—both the community and outsider facilitators learn together, as community capacity is built towards a critical level of consciousness and leadership in their developmental decisions (Freire, 1970).

After building common ground and purpose together, community co-design might commence by discussing their narratives, reviewing permissible but engaging initial story genres and appraising alternative usage models such as linking women across nomadic encampments. Important seed stories need to be gathered, e.g. from elders in the desert, to flesh out the initial ontology. Hopefully these prime the accretion of further related stories, say from youth in the towns, growing linked discussion threads and debate. 'Social tags' need to be added via a metadata schema to contributions, setting location, ownership, access rights, popularity, authority, scarcity, or recommendations.

Much can then be learnt from simple prototyping technology: even paper cartoon storyboards with a few voice clips can stimulate focus group discussions on the plethora of technology options. Audio 'blogs' or 'wikis' carried on portable storage media, with which users can interact via an offline mobile device and supplemented by indexed photos, next seem promising tools to prototype first experiences of story-sharing. However, the Western metaphors behind both these may not fit indigenous mental models, so other metaphors and digital oral technologies will need to be developed in parallel.

Both linking the resulting virtual 'story networks' to live, located performances and the projection of certain community-selected parts of the oral heritage to outsiders, offer further ground to explore as potential 'cultural goods' for sustainability. Possibilities include story-telling cafes in Timbuktu which would promote the craft and gather audience feedback, linking to their annual desert music festival or community gatherings, and traveling exhibitions of photos and stories (Villaume, 2006) that stimulate village-to-village or village-to-city dialogue. Story playback and audio recording apparatus can even be embedded in the adobe architecture or the streets to use the tangible heritage of Timbuktu recognized by Unesco **literally** as hooks for the intangible.

Evaluation of Cultural Impact and Metrics of success

Given the subtle and complex changes in cultural communication that LCS is aiming to effect, the question of how to measure success is crucial. Traditional forms of evaluation place great emphasis on demonstrating causal relationships or statistically significant changes but can miss the real impact of cultural initiatives. Above all, the community itself must own the engagement's objectives and indicators of value. New tools are needed to evaluate these types of projects which not only measure program effectiveness and progress, but act as a compass to actively steer incremental prototyping with the community (Kellog Foundation, 2006). We call one such evaluation tool 'Cultural Return on Investment' (CROI).

Measuring CROI starts at the level of the program participant. While meta-changes in group behavior may take years to sense, a change in individual attitudes or relationships can indicate whether the project is on track. A baseline on the existing cultural attitudes should be determined. Interim outcomes may be seen in trust and understanding of the project, a feeling of connectedness to the community's knowledge and stories or quality of inter-generational relationships. These can be evaluated by participatory and theory-based methods, e.g. via ethnography, individual and

group interviews, as well as quantitative analysis such as the number of stories recorded or quantity of comments triggered by stories.

Performance indicators for evaluation of efficacy at the program level may include demographic penetration, frequency of use, use by remote community members, local language skills, entrustment of cultural secrets to the system and inter-generational transmission of cultural knowledge. When using proxies or indicators one must remember that they are meant to measure outcome goals, not become outcome goals in themselves. Our goal is to nurture cultural memory, not increase web traffic.

Summary and Points for Discussion

We have established that minority cultures bring precious value and creative variety to the world stage, even as they are encroached by dominant cultures from the world. Their oral cultures, while no longer the prevalent paradigm for cultural transmission, allow an intimacy and capture subtleties and different world views that written and electronic cultural transmission may not.

Digital technologies can strengthen the oral traditions of endangered minority cultures, if they provide appropriable systems that support a dialogue in the local language linked to content. Many anthropologists or artists over the years have collected some of the rich stories from elders of tribal communities—'last chances to preserve' the oral heritage for outsiders. We wish to go further, to create Living Cultural Storybases for the communities themselves. These are to be vibrant and accessible evolving digital repositories of cultural knowledge that offer ways to gather, search, connect and access the cultural life of a community. If spoken stories and visual material are celebrated by old and young alike, the recording of further content and a better understanding of their own identity within their unique context and locale will evolve. This core of cultural material might become the trigger and mirror to stimulate community conversations about their own heritage and the development choices they face in reconciling new aspirations with ancient cultural memory.

New technologies present new challenges for oral traditions, yet they also offer greater ease for cultural connections and the transmission of knowledge across boundaries. Questions abound: What tools can be developed to strengthen and support the oral traditions of these cultures? Can a common solution foster diversity? What procedures should be put into a technology and what retained in traditional cultural processes via rites, social status etc? We welcome dialogue with peers, sponsors, experts or volunteers wishing to help answer such questions.

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