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## Focusing on Cultural Design Features for an Indigenous Website

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### Abstract

*This paper reports on part of a user-centred study examining the design of a website for an Indigenous Australian community. It focuses on the capture of culturally relevant design features and describes the outcomes from a focus group undertaken with 12 members of the community stakeholders. Key cultural themes to emerge from the focus group were the need for visually relevant imagery, support for kinship and community, as well as fun, local language and traditional forms of music, dance and oral history. These themes were mapped into design features such as a virtual tour of the building and grounds, video messages from community members, a facility for feedback and interactive games. Many existing guidelines for cultural design were affirmed in the study, including the use of simple language, local imagery and the provision of an interaction style appropriate to the Indigenous group.*

### Keywords

Indigenous Website, Culture, Focus Group, Localization

### INTRODUCTION

Culture is in many ways fundamental to design. This is true of all design including the design of computer interfaces in terms of interaction style, affordances and content. These design aspects are evident in the artifacts produced by a culture, the way a culture interacts with those artifacts and also the process by which they are produced. The incorporation of culture in design thinking and design processes is critical if we wish to attain the highest quality of human interaction (Sato and Chen 2008).

However culture in terms of behavior, values, aesthetics and standard practices is a complex phenomenon that can emerge at multiple social scales, from small groups to entire nations. These scales can be thought of as multiple complex layers (Hofstede 2005) or as a mass of underlying social rules that, like an iceberg, lie mostly hidden below the surface (French and Bell 1979). Understanding a group's culture, its layers, the hidden rules that underlie them and then the way they might impact on design, is a difficult challenge.

In order to better understand these issues of culture and design, we are undertaking a case study that investigates how to incorporate the cultural identity of an Indigenous Australian community into a website. We provide some background to the project here and report on the outcomes from a focus group that was undertaken to identify the key 'cultural' design features for this website. This report is of general interest for all IT practitioners who wish to consider the role of culture in the design of an interface. The specific design features are of further significance to designers of interfaces for Indigenous websites.

### THE WOLLOTUKA WEBSITE

This project was motivated by a request to design a more culturally acceptable website for the Wollotuka Institute. The Wollotuka Institute is an indigenous study center. It is part of the University of Newcastle, a large regional university about 170 kilometers north of Sydney, located in the traditional lands of the Awabakal nation. Wollotuka supports a broad range of Indigenous programs incorporating administrative, academic and research activities. It also provides support and development services for Indigenous staff and students. It employs about 40 full time staff, who come from a wide range of Indigenous tribes all over Australia and the Torres Strait Islands. Thus the community embraces a broad range of urban, regional and educational backgrounds.

The diverse culture of this community is the focus of a three-year case study that centered around the redesign of their website. Although Wollotuka already has an existing website (Wollotuka 2011), it was designed to fit a more traditional, Western, corporate framework as prescribed by the University. Although this existing website is functional, it provides a mismatch with the cultural identity of the community it serves. This is not a criticism, nor should it be surprising, as computer programs are human creations and as such can bear the imprints of the cultural nuances of those who create them (Chen 2007). It is in this context that we address the question of: "What design features of a website best meet the cultural requirements of this Indigenous group?"

## WHAT IS CULTURE?

For our project we took "culture" to mean the way of life for a social group or community; including their arts, beliefs and institutions and the way these are practiced and shared within the group. For the purpose of website design, the importance of culture can manifest itself in many ways, including the methods and techniques to be used as well as the customs, ideologies and values of the shareholders and users. Assumptions and expectations of such a group may vary in hard to predict ways. Indeed any observed behaviors and artifacts may simply provide a glimpse of the subconscious cultural foundations. Because these foundations may lie hidden below the surface, culture is sometimes compared to an 'iceberg' (French and Bell 1979; Selfridge and Sokolik 1975). In an analogous way culture has been described using many layered models (Hofstede 2005; Trompenaars and Hampden-Turner 1997). Core layers of 'basic assumptions' or 'values' align with different levels of social groupings. These different levels of culture can capture beliefs related to national or regional identity, ethnic, religious and linguistic influences or be based on a person's gender, generation, social class or work culture. All these can combine to impact on the externally observed practices.

These models help illustrate difficulty of trying to understand and integrate cultural differences into interface design. If we consider the community associated with our project, there is some overarching cultural factors related to their Indigenous backgrounds. However, there are also the conflicting influences associated with working in the framework of a Western style university. There is further individual diversity as the group members come from disparate tribes that embrace a spectrum of Indigenous values, including different languages and conflicting traditions.

## DESIGNING FOR CULTURAL NEEDS

Culture in web design is usually addressed in one of two ways. "Globalization" of an interface focuses on removing culture-specific elements (Tixier 2005) and developing a more generic but culture-neutral design. The benefit of this in the global market place is that one design can be deployed internationally. By contrast, is the approach called "localization" which tries to target the culture of a group as accurately as possible (Shannon 2000). This can have the advantage of increasing the level of engagement and identification with the design. Localization can still be designed in a way that is flexible enough for reuse. For example, changing the images on the site is a simple approach. While the principle aim of this project aligns with localization there is no intention to design a flexible, reusable product. Perhaps "individualization" or "personalization" is a better way to describe our approach as the intention is to encapsulate the cultural identity of the community in the design.

One approach for designing such cultural artifacts is to first categorize the target group along some well-defined cultural dimensions. Choosing the most appropriate cultural measures is problematical because many of these are subjective scales that are hard to measure and rank on. In fact, as many as 29 different dimensions have been identified for the purpose of cross-cultural design (Scadwitz 2008). In terms of interface design, one of the most frequently used sets of cultural dimensions was designed by the cultural theorist Geert Hofstede (2005). The four original dimensions of Hofstede's model are: power distribution; individual versus collective relationships; masculine versus feminine characteristics and the tendency to avoid uncertainty (Hofstede 2005). Marcus and Gould (2000) have studied web design in terms of these dimensions and identify a number of correlations between design elements and each dimension. For example, the power distance index has been suggested to impact on the level of structure, the use of symbols and the level of security. The individualism measure can influence what images are used on a website as well as the rhetorical style. While the masculinity dimension can be reflected in the range of tasks supported.

A study by Callahan (2005) compared the way university websites from eight different countries were structured as well as the design features they used. This study reported some general correlation with Hofstede's cultural dimensions. Another study of website designs in the Netherlands and Austria found some partial correlations (Dormann and Chisalita 2003) with Hofstede. There have been several other analytical studies that employ this model for studying the design of culture in websites (Robbins and Stylianou 2003; Singh 2005; Yuan et al. 2005). Hofstede's cultural model is not without criticisms (Sondergaard 1994) but it does provide a pragmatic, structured framework for studying culture in terms of interface design (Williamson 2002). We do not focus on this model further in this paper but would recommend the study by Callahan (2005) for a further introduction

and a review of the issues surrounding its use in interface design. Outcomes from our work in terms of design elements and the connections to Hofstede's model are discussed in more detail elsewhere (George et al 2012).

## OUR APPROACH

Our case study is designed around three distinct phases. The first phase was to identify significant design features that capture the cultural requirements of our group. The second phase, used iterative prototyping (Goransson et al. 2003) to refine and evaluate these design features. The final phase of the project entails an analytical evaluation based on Hofstede's model (George et al. 2012).

The involvement of the community was seen as essential to the success of this project and so we adopted a user-centric approach as this relies on the active involvement of representative users throughout the process (Nielsen 1993). The importance of involving the user community in the planning and design stages of any program for Indigenous Australians has been borne out by other studies (Johnston 2001; Dyson 2003; Turner 2006; Fernandez 2000). A positive preference for real-time communication, face-to-face contacts and one-to-one or small group meetings has also been identified (Clemens 2002).

As recommended by Bourges-Waldegg and Scrivener (1998), we adopted a design approach based on ethnographic principles. The primary researcher in the project was an Indigenous Doctoral student and thus shared many close ties with the community. The work was centered within the Indigenous community to create many opportunities for dialogue during the extended timeframe of the project. We believe this ethnographic approach would best match the cultural requirements of our community as well as the aims of our project. The use of a focus group for identifying initial design features was seen as essential in this respect.

Note that by "design features" we mean general design factors dealing with the look and feel of the site. We did not set out to necessarily capture all the functions or user tasks to be performed on the site. Nor did we consider in detail strict technical limitations in the design, for example, network bandwidth or cross-platform browsing issues. The planned outcome in this phase was a consensus about the critical design factors that would meet the cultural requirements of the community and allow for future prototyping.

## FOCUS GROUP

The focus group was based within the community at the Wollotuka Institute. This community is comprised of around 40 members who fill teaching, research, administrative and other diverse community roles. From this group 12 subjects were selected by convenience to be directly involved in the study. These 12 participants included five women and seven men who represent a range of Indigenous tribes, including the Worimi, Eora, Gumbaynggir, Bundjalung, Murray Island, Wirajuri woman, Wonnarua and Awabakal nations. The participants thus represent a range of Australian and Torres Strait Island, Aboriginal culture rather than providing a single tribal perspective. Of these participants five have academic roles at the Institute while the other seven perform important administrative functions. Nine of them are graduates and four of these have post-graduate qualifications. The primary researcher is from an Indigenous tribe in North Western Australia, and is responsible for conducting, analyzing and reporting on outcomes from the study.

The focus group was organized on principles from audience ethnography (Murphy 1999) and involved story telling about individual events that had occurred in the community. These stories were not necessarily associated with the website but rather personal accounts of things that happened within the community. As the focus group proceeded the story telling process was refined as participants were asked to relate where, what, how, when, who and why events happened. A more detailed description of the focus group process is provided in Table 1.

Table 1 – A detailed description of the steps used in the focus group

Focus Group Activities
<p>1 - Introduction</p> <p>Participants were told they were being approached for their thoughts on the design of the Wollotuka website as part of a research project that was trying to understand how to design a website in a way that was more meaningful for their culture, a culture that communicates differently.</p>
<p>2 - First stories</p> <p>Participants were asked not to focus on websites at this stage but rather to think of a personal story about Wollotuka. These stories should involve the way the Aboriginal people engage with the school of Aboriginal studies and the space itself. They were instructed to think of each story as a brief event, like a 30 second movie. Participants were given a few minutes to think about their stories and briefly write them down. The facilitator then asked for volunteers to share their stories. Ideally each story should have answered three main questions: <u>Where did it happen? What happened? How did it happen?</u> This activity was intended as a training</p>

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round and so the facilitator interacted with the group to highlight these features (Where? What? How?). A whiteboard was used to assist in this activity.

### 3 - Stories about the space

Participants were reminded to share stories dealing with the place or space of Wollotuka. The group broke into pairs. One person listening as their partner told a story. The listener helped the storyteller to clarify the main points of the story by asking pertinent questions (Where? What? How?). When the first person had finished their story the pair swapped roles and repeated the exercise.

After the work in pairs was completed the group came together. The facilitator again asked for volunteers to share a story. Once more the key elements of the stories were emphasized (Where? What? How?). Often one story generated further discussion about the event. During this activity some further key elements of stories were introduced: When did it happen? Who was involved? Why did it happen?

### 4 - Stories about communication

Participants were directed to focus on stories dealing with communication, some kind of interaction that happened in relation to the school of Aboriginal studies. Along with the original key elements (Where? What? How?) they were asked to clarify the additional elements (When? Who? Why?) for each story. Participants broke into pairs and worked as before, discussing and writing down stories. At the end of this story telling the group again came together and worked with the facilitator to share their stories. The facilitator again helped to clarify the key elements of each story that was discussed (Where? What? How? When? Who? Why?). Once again the told stories generated further discussion about the event and some related stories were also told.

### 5 - Stories about the existing website

The story-telling process was repeated. Participants were now asked to share stories that related directly to the existing website, specifically stories involving people's interactions with the website. They were reminded that the key elements (Where? What? How? When? Who? Why?) should be identified for each story. This session began with pair work and was once again followed by a group discussion with the facilitator.

### 6. Direct design ideas

As a group the participants were asked for any general ideas about how a new website would look. They were also asked to share what they liked or didn't like in other websites. Suggestions were captured on a whiteboard.

### 7. Conclusion

Participants were thanked for their help and encouraged to contact the researchers if there were any further discussions or items of relevance they would like to share.

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The focus group ran for 2 hours. Participants at times worked in pairs, sharing and writing down their stories. Group discussions also took place at key stages and during this time key points were summarized on a white board. These group discussions also served to help participants understand and contribute to the process. A non-Indigenous researcher experienced in audience ethnography facilitated the discussions. The session was recorded and transcribed for later analysis and the primary researcher made additional notes during the discussions, capturing key points and first impressions.

## COMMON CULTURAL THEMES

As the focus group progressed the storytellers were directed to include some key elements in each story. Namely, where, what, how, when, who and why? That is, where did the event occur, what actually happened, what caused the event to happen, when did it happen, who did it happen to and, why did it happen? These elements provided categories to structure the data. The data was then analyzed for major cultural themes. The six themes identified were: visual imagery, kinship, language, humor, community and traditional music, dance and ceremony. We briefly discuss each of these themes below.

### Visual Imagery

During the focus group, participants made significant references to the local landscape. For example, the Birabahn building is "our concept of place in a contemporary cultural environment." Participants spoke of the building itself as a symbol: "the unique symbolism of clap sticks echo from the Birabahn building as though the building had a life. The very design of the building produces a unique communication and has given symbolic life to the building." The various participants highlighted the "reception area", "the student common area" and "the blue lounges upstairs" as places where staff engage with students and visitors to the building. Much care was given to the various aspects of the landscape, both animate and inanimate during the storytelling. For

instance, the “dust in the car park”, the “sign out the front” and the “flagpoles” were referenced during the discussion.

### **Kinship**

A number of the focus group stories revolved around the relevance of kinship. One member went to the extent of comparing the Wollotuka environment to “a family unit and not like a school.” The members had clear notions of how this kinship feeling works and benefits the community: “the members of Wollotuka would make themselves available to help one another if they were in trouble.” One participant commented: “there is a special sense of community, sharing of good and bad times.” One participant spoke of his “sense of belonging and personal pride in Wollotuka.” Another participant compared the return of a former staff member to the reunion with a relative or close friend: “laughing and embracing, like an old friend coming home.” In terms of kinship, one member suggested: “An indigenous website must reflect the personal family connections.”

### **Language**

During the focus group a participant commented: “Most importantly, the website needs to speak the message rather than have written text.” Another confirmed this idea: “There needs to be more than just writing about indigenous people, there needs to be elements that identify Aboriginal people.” We must also show respect for the elderly and for those members of the community who were not able to read: “Many Aboriginal people cannot read and write and so you can have videos or people speaking about the information instead of just having it in writing”.

### **Humor**

The stories in the focus group were noted for the humorous content. For instance, when commenting on the design of an Aboriginal website, one participant suggested “putting the name ‘Wollotuka’ up in pink neon lights across the top of the building, like the ‘Hollywood’ sign, saying ‘Wollyworld is here’ with a big arrow.” Another participant related a story about a student attempting to stamp her assignment with a child’s toy instead of the bundy clock: “One of the students was putting in an assignment; she went to use the bundy clock. She was given instructions about where the bundy clock was and what was supposed to be done. Next to where the bundy clock there was also a little kid’s toy, a white duck; so the student picked up the little toy and tried to stamp her assignment with the toy.”

### **Community feeling**

Much emphasis was placed on the need for community spirit. Participants remembered typical examples. One staff member recalled large groups of people from Wollotuka going out together. The group included lecturers from other faculties and students. They would play a game of pool and have a meal. People wanted to be a part of Wollotuka because of this community spirit. One participant recalled the return of an old staff member with her high school students. The story tells of laughing and embracing old staff members. This appeared truly like an old friend visiting. Another story involved inviting students every Wednesday to community lunches where they could sit, talk and eat together. This activity was designed for Aboriginal medical students with the intention of providing a sense of community support.

### **Music, dance and ceremony**

Quite some time was spent on traditional activities. Significantly, music, dance and ceremony were spoken of in relation to creating life. Singing and dancing are related to community spirit and the sharing of Aboriginal knowledge. Some recounted relevant experiences elsewhere: “There was a student camp up at the Barrington Tops where a group of Torres Straits dancers performed for the rest of the students. People from all around the camping site heard what was going on and started popping their heads in. The second night they went around and invited all of the people who were also camping in the area to come and see the Aboriginal dances the next night.” The consensus of the focus group was that such traditional activities should be engrained in the website.

## **DESIGN FEATURES**

After analyzing the themes and stories from the focus group, we met to discuss possible design features that would address these cultural themes. The intention of this phase was to identify some key design features to be prototyped. The researchers were already familiar with many technical aspects of web design and implementation. This, for example, constrained the choice of features to make use of existing technology in the design. The researchers were also aware of many related work, having previously identified guidelines related to cultural interface design (see table 2, 3). In all ten key design features were identified. These features are listed in Table 4 along with the motivation as identified in the focus group. The table also provides appropriate

references back to the guidelines and other literature that relate to each feature. These connections to existing literature are discussed in the following section.

Table 2: Cultural issues to be considered in the localization of interface designs

General Cultural Design Issues	
2.1	Translation of the menus, boxes, and icon text can be problematic because the length of words varies between languages (Dray 1996)
2.2	New technical words in other countries have to be recreated by adapting English words or creating new ones based on native concepts (Callahan 2005)
2.3	Design to fit the local writing style. e.g. languages such as Arabic are written right-to-left (Amara and Portaneri 1996)
2.4	Icons based on metaphors such as the mailbox and trashcans may be interpreted differently (Duncker 2002; Shen et al. 2006)
2.5	Icons considered international are not necessarily understood globally (Brugger 1990)
2.6	Using icons versus text for navigation can affect error rates and task completion times depending on culture (Choong and Salvendy 1998)
2.7	Care should also be given to the presentation of pictures. Some cultures are very sensitive to how human features are represented (Russo and Boor 1993)
2.8	Use of non-local images (scenes, faces, architecture, and customs) can affect learnability (Barber and Badre 1998)
2.9	Cultures vary in how they present numbers, time, and dates (Callahan 2005; del Galdo 1990)
2.10	Use of colour in web design can impact on the user's expectations about navigation, content, and links, as well as overall satisfaction (Barber and Badre 1998)
2.11	Specific orientations and page placement vary by culture (Barber and Badre 1998)
2.12	The way holistically versus analytically minded people scan a webpage is different. Ordering and arrangement of information needs to be considered (Dong and Lee 2008)

Table 3: Cultural Issues to be considered in the design of Indigenous interfaces

Indigenous Cultural Design Issues	
3.1	Aboriginal students prefer simple, "straight to the point" and easy to read English (Gibb 2006)
3.2	Navigation by images is preferred over navigation linked to words (Williams 2002)
3.3	Familiar images of concrete things that are understood and loved are the key communication device and a text in themselves. Use of local pictures and images of people is essential (Williams 2002)
3.4	Icons may be used as an alternative form of language (Munn 1973)
3.5	There is a preference for real-time communication (Clemens 2002)
3.6	Provide multimedia rich environments rather than text based and incorporate a range of audio and visual techniques to encourage usage. (Fischer 1995; Buchtmann 1999)
3.7	A site needs to plan for change and provide the ability for redesign as the needs of the target groups change (Clemens 2002)
3.8	Respected teachers or elders are typically used to impart knowledge (Trudgen 1983)
3.9	Signing and dancing are often used to teach in the traditional Aboriginal culture (Fischer 1995)
3.10	Use of our stories, our songs and our images to pass on the message ((Remedio, 1996, as cited in Buchtmann, 1999)
3.11	Aboriginal community, family life and children always come before individual pursuits (Gibb 2006)
3.12	The geographical land is the foundation of Indigenous thinking. They have a strong respect for the land, as well as their culture and language (Auld 2007).
3.13	The 'land' has been identified as the most fundamental aspect in Aboriginal Indigenous culture and so spatial aspects like location are especially significant (Turk and Trees 1998).

3.14 The user should be able to ‘perform knowledge’. Actively participate in knowledge construction, rather than merely accessing and manipulating what is provided (Pumpa and Wyeld 2006).

Table 4. The key design features related to focus group outcomes and related guidelines (Table 2, 3)

Prototype Design Features	Focus Group	Related Guidelines
Virtual tour of the school and surrounds	Stories frequently reference to the Wollotuka building, local landscape and wildlife.	3.10, 3.12, 3.13
Satellite image map	The identity of the place and the ease with which someone could find it are very crucial in the success of the institution.	3.2, 3.6, 3.12, 3.13
The use of videos (incorporating community)	The participants were unanimous in wanting interactive images, video, things happening, things moving, not just images.	3.3, 3.5, 3.6, 3.10, 3.11
Online games (with Indigenous images and style)	Participants were certain that visitors to the website needed to see that the school was a fun place to study.	2.10, 3.3, 3.4, 3.6, 3.10
Images of community events and links.	Community feeling.	2.7, 2.8, 3.3, 3.4, 3.8, 3.9, 3.10, 3.11, 3.14
A feedback system	Community involvement.	3.5, 3.7, 3.12
Indigenous Wiki	Participants felt that old people are now forgotten and there is little respect for their knowledge amongst younger people.	2.7, 2.8, 2.14
The single page layout	Navigation needs to be simple.	2.11, 2.12, 3.2,
Traditional dot images, earthy colors and handwritten fonts	Participants wanted to see Aboriginal art on the website as it immediately identified the site as Indigenous.	2.5, 2.6, 2.8, 2.10, 3.2, 3.3, 3.4, 3.9, 3.10
Use of informal English	Participants said the website needs to ‘speak’ the message rather than just using written text.	2.2, 3.1, 3.5, 3.10

## DISCUSSION

The focus group identified a number of key cultural requirements for the project. They wanted to see Aboriginal art on the website as it would immediately identify the site as Indigenous. Therefore we intend to use custom dot images and earthy colors that identify with traditional Indigenous culture. We are aware that simple things, such as colour, can affect the user’s expectations and overall satisfaction (Barber and Badre 1998). The importance of adapting language to local styles is also suggested (Amara and Portaneri 1996; Callahan 2005). In particular, Aboriginal students often prefer simple, “straight to the point” and easy to read English (Gibb 2006). Therefore we intend to keep the language very informal and simple and reinforce this by use of a casual, handwritten font.

In terms of navigation and layout of web sites we are aware that preferences for orientations and page placement do vary by culture (Barber and Badre 1998). In particular, ‘holistically’ versus ‘analytically’ minded people tend to scan a web page in different ways and therefore the ordering and arrangement of information needed to be carefully considered (Dong and Lee 2008). We identified a need for a simple layout and navigation, avoiding too many links and jumps. We also identified the need to provide a virtual tour of the building and surroundings and also to provide a satellite-image map. This is intended to reinforce the spatial location of the group, an idea that emerged quite strongly from the focus group. It is well known that geographical features form the foundation of Indigenous thinking (Auld 2007). Indeed, the location or ‘land’ has been identified as the most fundamental aspect in Aboriginal Indigenous culture (Turk and Trees 1998). The participants of the focus group were also unanimous in wanting interactive images, “video, things happening, things moving”, and not just images. This concurs with more general cultural guidelines that recommend providing multimedia rich environments rather than text-based ones and also including a range of audio and visual media (Buchtman 2000; Fischer 1995). We will also include many local images from Wollotuka, as this is another useful strategy suggested for the localization of websites (Williams 2002).

To provide further multimedia content, while addressing the requirement that visitors to the website would see the school as a fun place to study, we intend to develop some casual interactive games that incorporate local

wildlife and Indigenous art. The games will also be designed to have humorous overtones. This definite requirement for humor in the site was probably the most unexpected outcome from the focus group. Although the importance of community as reflected in the shared humor of Aboriginal people has been identified before (Kleinert and Neale 2006). Many of the design features can also serve to highlight community and kinship. For example, by using appropriately selected imagery of community groups. We will also add to this by providing links to community relevant information and including a range of Indigenous role models. Consultation with an Indigenous community has also been recognized as a continuous two-way process (AIATSIS 2000) and so a feedback system will be included to encourage the sharing of ideas among the extended website community.

## CONCLUSION

This work forms part of a user-centric study designed to investigate the design of culturally significant features in an Indigenous website. Many existing guidelines for cultural design were affirmed in the study, including the use of simple language, local imagery and providing an interaction and style appropriate to our Indigenous group. The case study also identified some unexpected requirements in terms of the need for fun activities and humorous content. A preference among Indigenous groups for spoken language, visual imagery and interactive multimedia such as video were confirmed. The use of a virtual tour will allow users to navigate the building and interact with objects, images and video situated within the environment. This landscape-based or place-based metaphor also matches findings from other studies (Pumpa and Wyeld 2006). In future work we perform iterative prototyping involving the same members of our focus group to evaluate and refine the design requirements. We expect our ethnographic approach will match well with Indigenous knowledge traditions, in particular the idea that such objects can be 'sung' or 'talked' into existence (Pumpa and Wyeld 2006).

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