



Using Museum Reserves to Teach the Public About the Living Cultures of Ecuador

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Using the Ethnographic Reserves of Museo Pumapungo to Teach the Public about the
Living Cultures of Ecuador

An Interactive Qualifying Project Report
submitted to the faculty of
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in partial fulfillment of the requirements for the
degree of Bachelor of Science

by
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Project Center:
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Report Submitted to:

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Museo Pumapungo

Professor Melissa Belz and Professor Courtney Kurlanska
Worcester Polytechnic Institute

This report represents work of three WPI undergraduate students submitted to the faculty as evidence of a degree requirement. WPI routinely publishes these reports on its web site without editorial or peer review. For more information about the projects program at WPI, see <http://www.wpi.edu/Academics/Projects>

Abstract

Although there are almost 20 living indigenous cultures in Ecuador, not much is known about them by the public. Museo Pumapungo has thousands of cultural artifacts in their ethnographic reserve which they would like to make publicly available. The goal of this project was to create a website to teach people about the living cultures of Ecuador. Through interviews with museum staff, the people of the Saraguro culture, and observation of museum exhibits and existing digital archives, we determined the best methods of highlighting information about cultures. We developed a website prototype for Museo Pumapungo which displays an interactive map with the location of each culture, when clicked information about different aspects of the cultures with images from the reserves is displayed.

Resumen

Aunque hay casi 20 culturas indígenas vivas en Ecuador, el público no sabe mucho sobre ellas. El Museo Pumapungo tiene miles de artefactos culturales en su reserva etnográfica que les gustaría poner a disposición del público. El objetivo de este proyecto fue crear un sitio web para enseñar a las personas sobre las culturas vivas de Ecuador. A través de entrevistas con el personal del museo, la gente de la cultura Saraguro y la observación de las exhibiciones del museo y los archivos digitales existentes, determinamos los mejores métodos para resaltar la información sobre las culturas. Desarrollamos un prototipo de sitio web para el Museo Pumapungo que muestra un mapa interactivo con la ubicación de cada cultura, al hacer clic se muestra información sobre diferentes aspectos de las culturas con imágenes de las reservas.

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Executive Summary

Introduction

In the native Ecuadorian language of Quichua, the word “Pumapungo” means “Door of the Puma”. Today, the Museo Pumapungo in Cuenca, Ecuador, safeguards culturally significant artifacts and showcases them to the public to protect and share the culture, history, and traditions of the indigenous groups of Ecuador. The museum has five reserves which are not currently open to the public, however Museo Pumapungo is looking for a way to digitally showcase their ethnographic reserves, which are currently only accessible to researchers, and provide public virtual access through an informative website. Providing this access will allow people both in and out of Ecuador to learn about the 20 living cultures of the region, which will foster greater understanding of the diverse living cultures of the world.

Methodology

The goal of this project was to assist Museo Pumapungo in providing easy and educational public virtual access to the contents of their ethnographic reserve and was achieved through the following three objectives:

1. *Determine the wants, needs, and resources of the museum in relation to the project*
2. *Determine effective features of digital archives*
3. *Identify representational preferences of the living culture being presented*

We interviewed museum staff across five different departments (Archeology, Education, Ethnography, Museography, and Library) to better understand the wants and needs of the museum, as well as departmental resources. We also evaluated museum exhibits using a set of predetermined criteria to understand how the museum currently presents information on living cultures and what resources the museum has for presenting digital information. Furthermore, we analyzed a selection of digital archives using Jakob Nielsen’s 10 Usability Heuristics for User Interface Design and determined which features were the most important to include in our website. Finally, we interviewed members of the Saraguro community, an indigenous culture in Ecuador, to gain insight on how living cultures believe they should be represented to the public and help determine what aspects of living cultures are most important to include, as well as to obtain specific information on the Saraguro culture to include on the website.

Findings

Analyzing the data from our research methods, we determined three important themes: the wants, needs, and resources of the museum, presenting indigenous cultures, and developing a website.

Wants, Needs, and Resources of the Museum

Museo Pumapungo has 11,000 ethnographic objects in their reserves, representing the 20 different living indigenous cultures of Ecuador. They want to prioritize using these objects, to build the digital archive. However, they currently lack the personnel to create a thoughtful, culturally sensitive website.

Presenting Indigenous Cultures

When presenting living cultures, it is important to highlight the concepts and values that are most important to them and acknowledge any hardships and discrimination they have faced, including how they adapted, while also avoiding misinformation and stereotypes. During our interviews with the Saraguro people, a few members of the community told us that the Spanish conquistadors, Ecuadorian government, and other groups attempted to ban and therefore erase indigenous peoples' language, religion, traditional music, clothing, and educational system. One of the individuals we interviewed mentioned that in his culture shoes were not traditionally worn, and that other students in non-indigenous schools used to stomp on his feet because he did not wear shoes. Additionally, we found in our interviews with the museum staff and Saraguro people that it is important to have conversations with members of the cultures being represented to learn their real history and minimize the creation and spreading of misinformation.

Developing a Website

On an educational website, interactive components along with visual and textual appeal are important to keep users engaged and interested. The website should also be simple and well-organized to increase usability. This means there is not a lot of text, or images, and it is very to the point, direct and concise. Technological limitations such as the high percentage of mobile users in Ecuador must also be kept in mind in order to reach the widest audience; this means the number of images and content that can be loaded must be considered in making a website.

Recommendations

Based on the analysis of our data collection methods, we developed a set of recommendations for Museo Pumapungo and future web developers.

Website Prototype

We created a prototype of an interactive website to showcase culturally significant objects from Museo Pumapungo's Ethnographic Reserve (Figure 1), while also acting as an educative platform to highlight the twenty different living cultures of Ecuador and bring awareness to the general public. The website consists of an interactive map of Ecuador that links to a secondary page on the Saraguro culture with important cultural topics. This prototype can be used as a template by Museo Pumapungo to add secondary pages for the remaining living cultures of Ecuador.

Educación

Aviso

Este proyecto fue creado por estudiantes del Worcester Polytechnic Institute con el ayuda del Museo Pumapungo y miembros de la Comunidad Saraguro. Es un trabajo en curso, hasta el momento solo se ha completado la página de Loja/Saraguro.

Mapa Interactivo

El país de Ecuador está ubicado en la encrucijada de las montañas de los Andes y el ecuador en América del Sur. Se divide en tres regiones geográficas distintas: la Costa, la Sierra y la Amazonía. En estos territorios ecuatorianos existen regiones con una destacada presencia de grupos indígenas. Por ejemplo, en la Amazonía existen las siguientes naciones: Achuar, Waorani, Secoya, Shuar, Shiwiar y Kichwa de la Amazonía. En la Sierra viven: Otavalo, Kayambi, Panzaleo, Kisapincha, Waranka, Puruhá, Kañari, Saraguro y Paltas. En la costa se encuentran: Awá, Chachi, Tsáchila, Manta y Kichwa de la Costa.

¡Usando el mapa, haga clic y explore las muchas provincias de Ecuador y aprenda sobre el grupo indígena que reside allí!



Leyenda del Mapa

Azuay/Cañar - Kañari	Bolívar - Waranka	Carchi - Awá
Chimborazo - Puruhá	Cotopaxi - Panzaleo	El Oro - Montubio
Esmeraldas - Chachi	Guayas/Manabi - Manta	Imbabura - Otavalo
Loja - Saraguro	Los Ríos - Kichwa de la Costa	Morona-Santiago - Achuar
Napo - Waorani	Orellana - Kichwa de la Amazonia	Pastaza - Shiwiar
Pichincha - Kayambi	Santo Domingo de los Tsáchilas - Tsáchila	Sucumbios - Secoya

Figure 1: Education Page of Museo Pumapungo's Website with the Interactive Map of Ecuador

As shown in Figure 2, the secondary page introduces the indigenous culture, in this case Saraguro, and provides a brief overview and history of the culture. This Culture Overview includes who they are, where they reside, any pertinent historical information which may include the dark history, and their values. Additionally, a map highlighting the province the culture resides in is also provided. There are four drop-down menus: Language, Immaterial Memories, Clothing, and Nourishment (*Idioma, Memorias Inmaterial, Vestimenta, Alimentacion*). A user can click on the drop-down menu for more information.

Saraguro

Historia

Los Saraguros forman parte de la nacionalidad Kichwa del Ecuador. Viven en la sierra, de donde son originarios, pero han llegado a poblar también la alta Amazonía. Algunos investigadores dicen que descienden de los Ambocas, los Cañaris que vivían antes de que llegasen los españoles en la provincia de Loja, mientras que otros afirman que vinieron de los mitmaquna o mitimaes traídos desde Bolivia por los incas en tiempos de Tupaj Yupanki. Probablemente son el resultado de la mezcla de unos y otros en la época colonial.

En la Sierra, sus casas están construidas con paredes de tapial, ladrillos, bloques, adobes, y bahareque. El techo está cubierto con tejas de barro cocido. Otras casas tienen techos de paja y losa. En la Amazonía, las paredes son de madera y guadua, y el techo está cubierto de paja y hojas de palma.

Sus familias viven de la agricultura, la ganadería y la venta de artesanías como tejidos, cerámica y cestos.



PROVINCIA DE LOJA

▸ IDIOMA

▸ MEMORIAS IMMATERIAL

▸ VESTIMENTA

▸ ALIMENTACION

Figure 2: Secondary Page of Virtual Exhibit; Overview of Saraguro Culture

The first drop-down menu (Figure 3) is language. This section describes the language spoken by the culture and provides examples of “simple words” and their translations into Spanish and/or English. In the prototype, based on conversations with members of the Saraguro community, we included words that are central to the beliefs of their community.

▾ IDIOMA

Los Saraguros hablan Kichwa y el Español. Ejemplos de palabras en Kichwa son:

- "Yaku" = "Agua"
- "Nina" = "Fuego"
- "Achpa" = "Tierra"
- "Wayra" = "Aire"
- "Ayllu" = "Familia"
- "Ayñi" = "Reciprocidad"
- "Chukllu" = "Maiz"
- "Ruwana" = "Poncho"
- "Muchiko" = "Sombrero"

A a	Ch ch	G g	H h	I i	K k	L l	Ll ll
[a-æ]	[ʃ]	[g]	[h-x]	[i-e]	[k]	[l]	[ʎ]
M m	N n	Ñ ñ	P p	R r	S s	Sh sh	T t
[m]	[n]	[ɲ]	[p]	[r-r]	[s]	[ʃ]	[t]
Ts ts	U u	W w	Y y	Z z	Zh zh		
[ts]	[u-o]	[w]	[j]	[z]	[ʒ]		

Other letter combinations

nk	np	nq	nt
[ng]	[nb]	[no]	[nd]

ALFABETO KICHWA

Figure 3: Drop Down Menu #1; Providing Language of Culture

The second drop-down menu (Figure 4) is immaterial memories. This section includes aspects of the culture which are not concrete objects, but rather ideas or ideologies. Including, but not limited to rituals, traditions, religion/beliefs, stories, and legends. Based on conversation with Museum Staff and the Saraguro Community, an important topic of discussion was the four Raymis which are celebrated on the solstices and equinoxes throughout the year, so we decided to include an image of Saraguro’s agro-festive calendar which depicts the cycle of these Raymis.

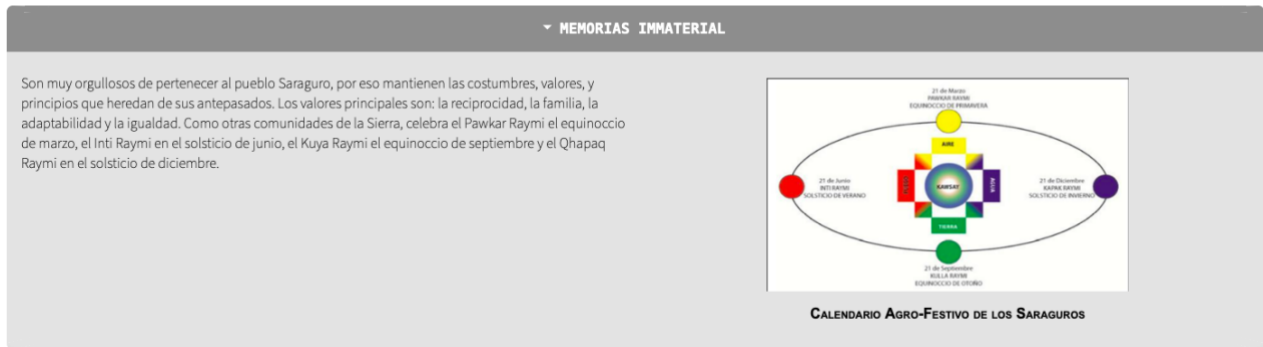


Figure 4: Drop Down Menu #2; Providing Immaterial Memories of Culture

The third drop-down menu (Figure 5) is clothing. This section covers the traditional and, where applicable, more modern versions of the clothing worn by members of the culture as well as its history and evolution, significance, and how it is made/what it is made from. On our prototype, we included images of Saraguro cow hats, brooches (*tupus*), ponchos, belts and other pieces of clothing that were available in the ethnographic reserve.



Figure 5: Drop Down Menu #3; Providing Clothing of Culture, Gathered from Ethnographic Reserve

The fourth drop-down menu (Figure 6) is Nourishment. This section consists of traditional dishes or cookware that are central to the culture in question, including descriptions with their history, significance, and how it is made/ingredients. Based on conversations with the Saraguro Community, we made the decision to include information about the different types of crops they grow and harvest.



Figure 6: Drop Down Menu #4; Providing Nourishment Details of Culture

Recommendation #1: Identify key items in the reserves to digitize

Based on the findings of our museum interviews and the creation of our website, we recommend that Museo Pumapungo identify a few key items to digitize in the reserves based on the categories we determined: general information, language, immaterial memories, clothing, and food. One approach to this could be to identify key items for each culture, one culture at a time, and add them to the website. By selecting a few items to display, instead of the whole reserve, one can choose specific objects that help communicate the culture the best, similar to the curation process in the design of physical museum exhibits.

Recommendation #2: Partner with Indigenous Cultures to develop culturally appropriate content

Based on the findings of our interviews with the Museo Pumapungo staff and the people of Saraguro, we recommend that Museo Pumapungo and their future web developers work with members of the remaining nineteen living cultures of Ecuador to develop their pages on the website in order to better understand them, prevent misinformation, and allow them to tell the story they want to tell about their culture. In addition, when interacting with these communities it is important to research their specific customs and expectations so that trust and mutual respect can exist between both parties.

Recommendation #3: Partner with local universities or hire a programmer to finish the website

The museum currently lacks the staff and budget for many projects, so if website development fits into an existing employee's role or if one was willing to take it on as one of their duties, they could develop the website. However, we have found that all of the staff are very busy, so it would be more practical for the museum to hire one person to take on the role of finishing and updating the website or work with local universities such as the University of Cuenca who could provide student volunteers or interns from the computer science and/or graphic design departments to continue this project.

Conclusion

Teaching the public about indigenous cultures fosters a greater understanding between people and cultures worldwide and helps bring awareness to the problems indigenous cultures face. It also ensures cultures are not lost or erased, which helps maintain cultural diversity and identity. Ultimately, culture is worth protecting and teaching about because it reminds us of where we came from and is a defining aspect of our identities as humans.

Uso de las Reservas del Museo para Enseñar al Público Sobre las Culturas Vivas del Ecuador

Por: Macey McEnaney, Victor Paiz, Emma Pruitt

Resumen Ejecutivo

Introducción

En el idioma nativo ecuatoriano de Quichua, la palabra “Pumapungo” significa “Puerta del Puma”. Hoy, el Museo Pumapungo en Cuenca, Ecuador, salvaguarda artefactos culturalmente significativos y los muestra al público para proteger y compartir la cultura, la historia y las tradiciones de los grupos indígenas de Ecuador. El museo tiene cinco reservas que actualmente no están abiertas al público, sin embargo, el Museo Pumapungo está buscando una manera de exhibir digitalmente sus reservas etnográficas, que actualmente solo son accesibles para investigadores, y brindar acceso virtual público a través de un sitio web informativo. Brindar este acceso permitirá a las personas dentro y fuera de Ecuador de aprender sobre las 20 culturas vivas de la región, lo que fomentará una mayor comprensión de las diversas culturas vivas del mundo.

Metodología

El objetivo de este proyecto era ayudar al Museo Pumapungo a proporcionar un acceso virtual público fácil y educativo a los contenidos de su reserva etnográfica y se logró a través de los siguientes tres objetivos:

1. *Determinar los deseos, necesidades y recursos del museo en relación con el proyecto*
2. *Determinar las características efectivas de los archivos digitales*
3. *Identificar las preferencias de representación de la cultura viva que se presenta*

Entrevistamos al personal del museo en cinco departamentos diferentes (Arqueología, Educación, Etnografía, Museografía y Biblioteca) para comprender mejor los deseos y necesidades del museo, así como los recursos departamentales. También evaluamos las exhibiciones del museo utilizando un conjunto de criterios predeterminados para comprender cómo el museo presenta actualmente información sobre culturas vivas y qué recursos tiene el museo para presentar información digital. Además, analizamos una selección de archivos digitales utilizando las 10 heurísticas de usabilidad para el diseño de interfaz de usuario de Jakob Nielsen y determinamos qué características eran las más importantes para incluir en nuestro sitio web. Finalmente, entrevistamos a miembros de la comunidad Saraguro, una cultura indígena en Ecuador, para obtener una idea de cómo las culturas vivas creen que deberían ser representadas ante el público y ayudar a determinar qué aspectos de las culturas vivas son más importantes para incluir, también para obtener información específica sobre la cultura Saraguro para incluir en la web.

Resultados de la Investigación

Al analizar los datos de nuestros métodos de investigación, hemos determinado tres temas importantes: los deseos, las necesidades y los recursos del museo, la presentación de las culturas indígenas y el desarrollo de un sitio web.

Los Deseos, Las Necesidades y Los Recursos del Museo

El Museo Pumapungo tiene 11,000 objetos etnográficos en sus reservas, que representan las 20 diferentes culturas indígenas vivas de Ecuador. Quieren priorizar el uso de estos objetos para construir el archivo digital. Sin embargo, actualmente carecen del personal para crear un sitio web reflexivo y culturalmente sensible.

La Presentación de las Culturas Indígenas

Al presentar culturas vivas, es importante resaltar los conceptos y valores que son más importantes para ellos y reconocer las dificultades y la discriminación que han enfrentado, incluida la forma en que se adaptaron, evitando la desinformación y los estereotipos. Durante nuestras entrevistas con el pueblo Saraguro, algunos miembros de la comunidad nos dijeron que los conquistadores españoles, el gobierno ecuatoriano y otros grupos intentaron prohibir y, por lo tanto, borrar el idioma, la religión, la música tradicional, la vestimenta y el sistema educativo de los pueblos indígenas. Una de las personas que entrevistamos mencionó que en su cultura tradicionalmente no se usaban zapatos, y que otros estudiantes en escuelas no indígenas solían pisotearle los pies porque no usaba zapatos. Además, encontramos en nuestras entrevistas con el personal del museo y la gente de Saraguro que es importante tener conversaciones con miembros de las culturas representadas para conocer su historia real y minimizar la creación y difusión de información errónea.

El Desarrollo de un Sitio Web

En un sitio web educativo, los componentes interactivos junto con el atractivo visual y textual son importantes para mantener a los usuarios comprometidos e interesados. El sitio web también debe ser simple y estar bien organizado para aumentar la usabilidad. Esto significa que no hay mucho texto o imágenes, y es muy directo, directo y conciso. También se deben tener en cuenta las limitaciones tecnológicas como el alto porcentaje de usuarios móviles en Ecuador para llegar a la audiencia más amplia; esto significa que se debe considerar la cantidad de imágenes y contenido que se puede cargar al crear un sitio web.

Recomendaciones

Con base en el análisis de nuestros métodos de recopilación de datos, desarrollamos un conjunto de recomendaciones para el Museo Pumapungo y los futuros desarrolladores web.

Prototipo de Sitio Web

Creamos un prototipo de un sitio web interactivo para exhibir objetos culturalmente significativos de la Reserva Etnográfica del Museo Pumapungo (Figura 1), al mismo tiempo que actuamos como una plataforma educativa para resaltar las veinte culturas vivas diferentes de Ecuador y concienciar al público en general. El sitio web consta de un mapa interactivo de Ecuador que enlaza con una página secundaria sobre la cultura Saraguro con temas culturales importantes. Este prototipo puede ser utilizado como plantilla por el Museo Pumapungo para agregar páginas secundarias para las culturas vivas restantes de Ecuador. prototipo puede ser utilizado como plantilla por el Museo Pumapungo para agregar páginas secundarias para las culturas vivas restantes de Ecuador.

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Figura 1: Página de Educación del Sitio Web del Museo Pumapungo con el Mapa Interactivo de Ecuador

Como se muestra en la Figura 2, la página secundaria presenta la cultura indígena, en este caso Saraguro, y brinda una breve descripción general e historia de la cultura. Esta descripción general de la cultura incluye quiénes son, dónde residen, cualquier información histórica pertinente que pueda incluir la historia oscura y sus valores. Además, también se proporciona un mapa que destaca la provincia en la que reside la cultura. Hay cuatro menús desplegables: Idioma, Memorias Inmateriales, Vestimenta y Alimentación. Un usuario puede hacer clic en el menú desplegable para obtener más información.

Saraguro

Historia

Los Saraguros forman parte de la nacionalidad Kichwa del Ecuador. Viven en la sierra, de donde son originarios, pero han llegado a poblar también la alta Amazonía. Algunos investigadores dicen que descienden de los Ambocas, los Cañaris que vivían antes de que llegasen los españoles en la provincia de Loja, mientras que otros afirman que vinieron de los mitmaquna o mitimaes traídos desde Bolivia por los incas en tiempos de Tupaj Yupanki. Probablemente son el resultado de la mezcla de unos y otros en la época colonial.

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PROVINCIA DE LOJA

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Figura 2: Página secundaria de la exposición virtual; Panorámica de la Cultura Saraguro

El primer menú desplegable (Figura 3) es idioma. Esta sección describe el idioma hablado por la cultura y proporciona ejemplos de “palabras simples” y sus traducciones al español y/o al inglés. En el prototipo, basado en conversaciones con miembros de la comunidad de Saraguro, incluimos palabras que son centrales a las creencias de su comunidad.

▼ IDIOMA

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- "Yaku" = "Agua"
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A a	Ch ch	G g	H h	I i	K k	L l	LI ll
a	cha	ga	ha	i	ka	la	lla
[a-a]	[tʃ]	[g]	[h-x]	[i-e]	[k]	[l]	[ʎ]
M m	N n	Ñ ñ	P p	R r	S s	Sh sh	T t
ma	na	ña	pa	ra	sa	sha	ta
[m]	[n]	[ɲ]	[p]	[r-r]	[s]	[ʃ]	[t]
Ts ts	U u	W w	Y y	Z z	Zh zh		
tša	u	wa	ya	za	zha		
[ts]	[u-o]	[w]	[j]	[z]	[ʒ]		

Other letter combinations:

nk	ɲp	ɲg	nt
[ng]	[nb]	[no]	[nd]

ALFABETO KICHWA

Figura 3: Menú desplegable #1; Proporcionar el lenguaje de la cultura

El segundo menú desplegable (Figura 4) son recuerdos inmateriales. Esta sección incluye aspectos de la cultura que no son objetos concretos, sino ideas o ideologías. Incluyendo, entre otros, rituales, tradiciones, religión/creencias, historias y leyendas. Basado en una conversación con el personal del museo y la comunidad de Saraguro, un tema importante de discusión fueron los cuatro Raymis que se celebran en los solsticios y equinoccios durante todo el año, por lo que decidimos incluir una imagen del calendario agrofestivo de Saraguro que representa el ciclo de estos Raymis.

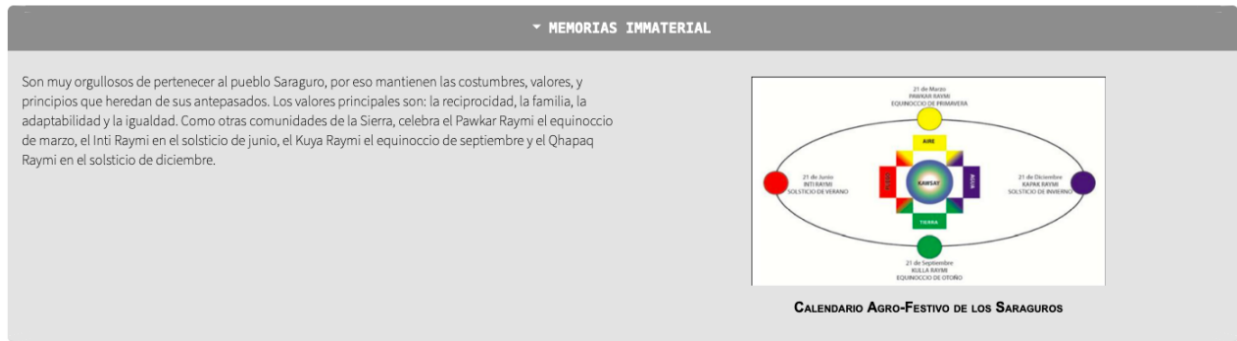


Figura 4: Menú desplegable #2; Proporcionar recuerdos inmateriales de la cultura

El tercer menú desplegable (Figura 5) es ropa. Esta sección cubre las versiones tradicionales y, en su caso, más modernas de la ropa usada por los miembros de la cultura, así como su historia y evolución, significado y cómo está hecho/de qué está hecho. En nuestro prototipo incluimos imágenes de sombreros de vaca Saraguro, broches (tupus), ponchos, cinturones y otras prendas que estaban disponibles en la reserva etnográfica.



Figura 5: Menú desplegable #3; Aportación de Indumentaria de la Cultura, Recogida de Reserva Etnográfica

El cuarto menú desplegable (Figura 6) es Nutrición. Esta sección consta de platos tradicionales o utensilios de cocina que son fundamentales para la cultura en cuestión, incluidas descripciones con su historia, significado y cómo se elaboran/ingredientes. Con base en conversaciones con la comunidad de Saraguro, tomamos la decisión de incluir información sobre los diferentes tipos de cultivos que cultivan y cosechan.



Figura 6: Menú desplegable #4; Proporcionar detalles de nutrición de la cultura

Recomendación #1: Identificar elementos clave en las reservas para digitalizar

Con base en los hallazgos de nuestras entrevistas con el museo y la creación de nuestro sitio web, recomendamos que el Museo Pumapungo identifique algunos elementos clave para digitalizar en las reservas según las categorías que determinamos: información general, idioma, recuerdos inmateriales, ropa y comida. Un enfoque para esto podría ser identificar elementos clave para cada cultura, una cultura a la vez, y agregarlos al sitio web. Al seleccionar algunos artículos para exhibir, en lugar de toda la reserva, uno puede elegir objetos específicos que ayuden a comunicar la cultura de la mejor manera, similar al proceso de curación en el diseño de exhibiciones físicas de museos.

Recomendación #2: Asociarse con culturas indígenas para desarrollar contenido culturalmente apropiado

Con base en los hallazgos de nuestras entrevistas con el personal del Museo Pumapungo y la gente de Saraguro, recomendamos que el Museo Pumapungo y sus futuros desarrolladores web trabajen con miembros de las diecinueve culturas vivas restantes de Ecuador para desarrollar sus páginas en el sitio web con el fin de mejorar comprenderlos, evitar la desinformación y permitirles contar la historia que quieren contar sobre su cultura. Además, al interactuar con estas comunidades es importante investigar sus costumbres y expectativas específicas para que pueda existir confianza y respeto mutuo entre ambas partes.

Recomendación #3: Asociarse con universidades locales o contratar a un programador para terminar el sitio web

Actualmente, el museo carece del personal y el presupuesto para muchos proyectos, por lo que si el desarrollo del sitio web se ajusta a la función de un empleado existente o si uno está dispuesto a asumirlo como una de sus funciones, podría desarrollar el sitio web. Sin embargo, hemos encontrado que todo el personal está muy ocupado, por lo que sería más práctico para el museo contratar a una persona para que asumiera el rol de terminar y actualizar el sitio web o trabajar con universidades locales como la Universidad de Cuenca que podría proporcionar estudiantes voluntarios o pasantes de los departamentos de informática y/o diseño gráfico para continuar con este proyecto.

Conclusión

Enseñar al público sobre las culturas indígenas fomenta un mayor entendimiento entre las personas y las culturas en todo el mundo y ayuda a generar conciencia sobre los problemas que enfrentan las culturas indígenas. También garantiza que las culturas no se pierdan ni se borren, lo que ayuda a mantener la diversidad cultural y la identidad. En última instancia, vale la pena proteger y enseñar la cultura porque nos recuerda de dónde venimos y es un aspecto definitorio de nuestra identidad como humanos.

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Introduction

In the native language of Quichua, the word “Pumapungo” means “Door of the Puma”. Today, the Museo Pumapungo in Cuenca, Ecuador, safeguards culturally significant artifacts and showcases them to the public to protect and share the culture, history, and traditions of the indigenous groups of Ecuador. Everyone should be able to learn about cultural heritage, whether it is through museum exhibits and historical sites such as the ones featured in the Museo Pumapungo or through virtual archives. Instead of keeping cultural patrimony (consisting of culturally significant objects and artifacts) hidden away forever in museum reserves, only accessible to a select few, it can be shared with everyone to foster a greater understanding of the diverse living cultures of the world.

The Museo Pumapungo is looking for a way to digitally showcase their ethnographic reserves, which are currently only accessible to researchers, and provide public virtual access through an informative website. Giving the public virtual access will allow people outside of Ecuador to access and learn about the cultural heritage of the region more easily. To better understand what is needed to digitally showcase ethnographic reserves, there are some key topics that must be explored such as: the importance of cultural heritage and patrimony, importance of museums, archives, and virtual access, and different types of virtual platforms.

We begin our background detailing the importance of cultural heritage and patrimony followed by the role of ethnographic reserves. We detail some of the aspects and advantages of providing public digital access to reserves. This is followed by a discussion of methods and results which illustrate how to successfully create a digital showcase of ethnographic reserves.

Background

Cultural Heritage and Patrimony

Cultural heritage is a defining aspect of humanity that binds us together, reminds us of where we came from, and determines a significant part of our identities. Cultural heritage consists of the traditions, culture, and general way of life of a certain community, usually expressed and passed on through customs, stories, moral values, artisanry, artifacts, and other culturally significant entities. Performing traditional dances, sewing traditional clothing, cooking traditional foods, and adapting these practices to meet contemporary needs are all part of cultural heritage (Vecco, 2010). The protection and promotion of cultural heritage is important because it helps maintain cultural diversity, provides a sense of belonging and identity to members of a culture, and helps members and non-members of that culture understand its history (Matravers & Frowe, 2019). Cultural heritage is commonly organized into the intangible and tangible categories, with intangible cultural heritage consisting of ideas or practices unique to a certain culture such as customs, stories, and moral values, and tangible cultural heritage, also known as cultural patrimony, consisting of the various physical - typically human-made - objects such as artifacts and monuments (Vecco, 2010).

When working with such objects, it can be easy for researchers to get caught up in the more technical aspects of the artifacts, such as their size, shape, color, basic function, or other classification, and forget their cultural significance (Bates, 2012). Every aspect of an artifact has cultural significance: how it was made, its appearance, the context in which it is used, and the effect it has on people and the world around it are just as important as its intended function (Bates, 2012; Johnson, 1995; Kartomi, 2001; Shelemay, 2001). Because of their inherent cultural significance, artifacts can provide valuable insights into the culture from which they were created and used and can therefore help safeguard cultural heritage. However, this requires that the cultural story of the artifacts - the complete picture - is considered when studying and exhibiting them (Birley et al., 2000).

Presentation of Living Cultures

The study and presentation of living cultures requires different considerations than that of cultures that no longer exist (Evelyn, 2006). With extinct cultures (cultures that are no longer practiced or self-identified by anyone), interpretations are completely up to the interpreter because there is no one to ask about the way of life (Zhang & Mace, 2021). With living cultures (cultures that are actively practiced, and that people identify with), this is not the case - when a question arises about the cultural patrimony of a living culture, the researcher can clarify with a member of that community. In fact, when presenting living cultures, it is imperative that members of that culture are consulted so that the presentation is true to their lives and does not contain any misinformation or stereotypes (Kevseroğlu et al., 2021).

When presenting living cultures, we must be cognizant of the diversity between and within cultural groups. An understanding of diversity helps us recognize and respect different ways of living that are not necessarily our own. As such, it helps dispel negative, generalizing stereotypes and biases about cultural groups - allowing us to gain a sense of trust, respect, and understanding for all people (Jokilehto, 1998).

The ways living cultures have been able to adapt and survive is important to consider (Evelyn, 2006). In the modern world, globalization plays a big part in the erasure of cultures and encourages a push towards cultural homogeneity by encouraging the adoption of globally

dominant cultures or values and discouraging more local ones (Lenzerini, 2011). This environment has caused many cultures and parts of cultures to be erased and has forced cultures to evolve and adapt to a rapidly changing world in order to survive (Lenzerini, 2011). One example of this is the large and violent urban planning projects in Rio de Janeiro during 2014 and 2016. These projects were justified by the hosting of three international sports mega-events and were used to evict poorer communities and restructure parts of the city with little or no regard for the local communities and their living cultures. The communities put up resistance to the projects and tried to get involved in the urban planning process in various ways to try to maintain their community structure with varying levels of success. One of the more successful strategies has been the creation and maintenance/updating of living cultural museums, such as the Evictions Museum of Vila Autódromo, which details the human rights violations committed by the projects to the local communities and showcases the culture and memory of the Vila Autódromo community through photographs, videos, sculptures, and fresco murals. This community was a fishing village that was then expanded by an influx of in-migrants from Northeast Brazil, and like other local communities, had its own unique culture. This culture is often expressed on the street or in shared public spaces, for instance in performances of *samba*, *bossa nova*, *baile funk*, and *capoeira*, as well as spiritual ceremonies such as *Candomblé*. (Simon & Braathen, 2019). When communities like this are displaced and dispersed, much of their culture is lost because most of it is practiced in physical community spaces that are disrupted in the process. The challenges living cultures, like the communities in Rio de Janeiro, have faced and how they adapted and survived is a major part of their story and is important to include when presenting them to the public (Jokilehto, 1998).

The Importance of Ethnographic Museums and Reserves: Why Public Virtual Access?

Ethnographic museums and reserves both play important roles in our society. Museums are public institutions that acquire, conserve, research, communicate, and exhibit tangible and intangible heritage. The purposes of museums are education, interpretation, exhibition, research, and enjoyment and commitment to the community (ICOM, 2007). Museums are important because they allow society to learn from the past, which will aid future development. Museums also connect people by bringing together both local communities and people with similar interests (Alexander et al., 2017). The exhibits in Museums are carefully curated based on the research of experts in the field in order to tell a story about a culture, event, or history to the audience; this story is communicated through the placement and selection of objects. Curation facilitates learning while leaving room for viewers to form their own interpretations and conclusions (Wolff & Mulholland, 2013).

Reserves are key components of museums that contain important artifacts not on public display. Museum reserves serve as a repository of information; however, they are not curated in the same way as museum exhibits. Museum reserves contain the history of the museum and ensure that vital records are preserved and that the information and resources are available to staff, researchers, and the general public (Society of American Archivists, n.d.). Ethnographic reserves are a type of reserve that contain pieces of cultural patrimony for ethnographic research, specifically pieces from living cultures. They are often only accessible to researchers, not the general public - this protects the artifacts from being broken or stolen and preserves their quality for research purposes (Clavir, 2002). In some cases when secret and sacred cultural pieces are put on display it can be seen as exploiting the indigenous cultures (WIPO, 2005). To prevent this, it is best that some items stay in the reserves or are very carefully curated, for example a

small number being displayed for a short period of time with permission of the culture group. Ethnographic reserves contain many highly important and delicate artifacts, which makes it difficult to give the public physical access.

Providing virtual access to museum reserves increases accessibility for researchers and other people who are unable to physically visit the museum but want to learn more about what they contain. Virtual access also increases general knowledge of cultures and societies by making the information publicly available, which helps promote the preservation of cultural heritage (Adane et al., 2019). Virtual records of the archives reduce the risk of losing important information/artifacts and reduce the amount of time it takes to find physical artifacts (Morris, 2006). This is important in improving the longevity of the reserves and ensuring their existence and usefulness for years to come. Virtual access to museum reserves can extend the ideas and concepts of a collection into the digital space (Schweibenz, 2004). Which allows for more perspectives on the cultural significance of objects and more diversity of thought as people of different backgrounds are able to gain access to the reserves and learn about different cultures (Nugroho et al., 2020). Ethnographic Museums are looking to find ways to digitize their archives for direct public access.

Providing Virtual Access

In January of 2021, an estimated 4.66 billion people were active internet users (Roser, 2021). Individuals can access a variety of digital media online for the purpose of increasing and spreading knowledge. Virtual exhibitions are one of the most widely used tools to present information and are dynamic and interactive (Chiarenza et al., 2019). An example of a virtual exhibition is a virtual museum exhibit, which uses images, videos, and sounds to convey information. Virtual exhibits emulate a user experience of being in an exhibit without requiring an individual to be physically present. Museums use virtual exhibits to disseminate information about themselves and to provide the opportunity for easy access of their collections to the public.

The role of virtual exhibitions has expanded as a result of the internet being used as a means of communicating information. According to Soyeon Kim in *Virtual Exhibitions and Communication Factors*, exhibitions are used as a communication medium in different areas, specifically communication with diverse visitors. Barring some limitations, technology and the digitization of exhibits removes barriers and improves accessibility to most, resulting in virtual exhibits experiencing a large visitor range. Digitizing exhibits allows for museums to reach audiences around the world and affords the opportunity for the number of virtual visitors to surpass those of physical exhibitions. To communicate effectively between museum exhibits and its digital visitors, it is important to understand the characteristics of user behavior and the visitor experience and interactions (Kim, 2018). Simply creating a virtual exhibit does not guarantee visits. Therefore, when creating virtual exhibits, one must be cognizant of how visitors will use and react to the presentation of information digitally. An effective implementation of a virtual exhibit will successfully reach a larger audience of people and aid a museum's goal of disseminating information.

In the implementation of virtual exhibits, a collection of images, videos, or other multimedia is used to recreate the experience of being in a physical exhibit. With advancements in technology, and if resources are available, museums find themselves with a vast framework and different mediums to present their exhibits virtually. Depending on the medium used, museums can create a virtual exhibit that is flexible and whose structure is customizable in a way

that satisfies a wide user target, ranging from experts to general visitors (Chiarenza et al., 2019). In a conventional sense of virtual exhibits, there exist web pages of interpretive text paired with a visual in which a user can search. This standard virtual exhibit proves to be versatile and flexible and can therefore target the widest range of users (Chiarenza et al., 2019). This method allows users to query databases, using keywords, to consult collections of digital multimedia related to the exhibits being explored. Furthermore, it is necessary to have virtual exhibits paired with a detailed interpretation, allowing the museum to present the necessary information for visitors to learn from exploring certain pieces.

As outlined by Stephen Bitgood in *The Anatomy of An Exhibit*, a virtual exhibit should be developed in respect to its audience, narrative wanting to be told, design intent, and web accessibility. Before a virtual exhibit can be developed, one must first consider the intended audience for which the exhibit is being created and what awareness/knowledge this audience has of the subject at hand. Next, a narrative which outlines the story hoping to be told and the potential takeaways from the exhibit must be developed. Furthermore, in terms of design, the exhibit should be created in a way that is visually interesting and makes use of a variety of images and descriptive texts to properly showcase the desired objects or ideas. Finally, web accessibility and the potential technological limitations of the intended audience must be kept in mind as the development process continues so that a wider audience may be reached (Bitgood, 2022). Ultimately, the presented criteria aim to provide the best practices in the creation of a virtual exhibit.

Creating virtual exhibits aims to provide a solution to museums which hold numerous artifacts that cannot be exhibited to the public either due to limited space, fragility of an item, or lack of resources. Yet, as with anything, challenges exist. Because of lack of governmental policy focused on the importance of digitizing cultural heritage coupled with inadequate funding, museums lack the technology needed for exhibit digitization (Adane et al., 2019). As a result, there are no guidelines, plans, or standards on how to create a virtual exhibit and museums find themselves ill-equipped in virtualizing exhibits.

El Museo Pumapungo: Providing Virtual Access to Ethnographic Reserves

El Museo Pumapungo is an ethnographic museum located in Cuenca, Ecuador. The museum safeguards culturally significant artifacts and showcases them to the public to protect and share the culture, history, and traditions of the indigenous groups of Ecuador. The museum has a set of reserves that contain over 11,000 artifacts, including ones from the surrounding area dating back to the first human settlements in Ecuador all the way up to 1830 (Pumapungo Museum, 2020). The museum has asked our team to determine the best method for providing virtual public access to these reserves.

Methodology

The goal of our project was to assist the Museo Pumapungo in providing easy and educational public virtual access to the contents of their ethnographic reserve. To achieve this goal, we:

1. Determined the wants, needs, and resources of the museum in relation to the project
2. Determined effective features of digital museum collections
3. Identified representational preferences of the living cultures

Objective 1: Determine the wants, needs, and resources of the museum in relation to the project.

First, we needed to determine the wants, needs and resources Museo Pumapungo had in relation to digitizing the archives. In order to do this, we used semi-structured interviews to obtain targeted information from the museum employees (Beebe 2014 p. 55). This method allowed the interviewee to talk on a subject by giving them a few guiding questions, the questions we asked can be found in Appendix A. We interviewed five members of the museum staff from the library as well as the Education and Museography departments. The interviews were conducted in Spanish. We took notes and recorded interviews with permission for future reference. Four of the five interviews were recorded. Once all of the interviews had been completed, we coded the data to find common themes and compiled a list of the resources we learned about. We analyzed the data using a grounded theory approach where the categories of analysis emerged from the content of the interviews (DePoy & Gitlin, 2016). This allowed us to determine which features and content were most wanted and needed by the museum for a digital platform.

To further learn about the wants and resources of the museum, we observed and evaluated exhibits. This method allowed us to understand how the museum exhibits objects and the technology used. This allowed for a deeper understanding of what the exhibits do to engage visitors, how artifacts were displayed, and what type of information was displayed with them. It also allowed us to observe what the interviewed employees were talking about and find things they may not have mentioned. We developed a list of criteria to evaluate the exhibits which can be found in Appendix B. Each member of the team chose a different part of the Ethnographic exhibit and evaluated it based on the list of criteria. Once the observation was completed, a spreadsheet was created to store data on each exhibit. The data was coded to find common themes in displays, things that were done well in terms of the criteria and things that we enjoyed, the type of information displayed, and any virtual exhibit features (digital displays and interfaces) we noticed. Once we evaluated the exhibits, we analyzed common themes in the displays and determined what type of information the Museo Pumapungo includes when presenting living cultures and which resources the museum had for digitization.

Objective 2: Determine effective features of digital archives.

In order to determine the effective features of digital archives we compiled a list of existing digital archives, and then reviewed them systematically. The list of existing digital archives consisted of archives we had used before, archives from museums we knew of, and ones from lists we found of highly rated digital archives (found in Appendix C). From this list, which contained 9 digital archives and 2 virtual tours, we selected a sample of 4 digital archives by choosing ones that spanned a variety of topics and types, avoiding archives that were very

similar or created by the same organizations. We adapted Jakob Nielsen's 10 Usability Heuristics for User Interface Design (Appendix D) to systematically review the archives on their interface usability, as shown in Appendix E, as well as a couple criteria we selected based on what we learned in Objective 1 to evaluate the appeal of the archives and document what information they included about their objects. A systematic review helped us analyze the digital archives objectively and determine a set of best practices for creating digital archives based on the most effective features (Torgerson, 2003). We evaluated the digital archives based on these criteria, then compared them to find what was most effective. We used coding to further help organize our data. To analyze the data, we compared different implementations, found pros and cons of each, and determined what worked and what did not in order to create a list of best practices.

Objective 3: Identify representational preferences of living cultures

To investigate how living cultures want to be represented and to avoid misrepresenting indigenous communities, we conducted semi-structured interviews with people from Saraguro. This method provided insight into the Saraguro culture, how they wanted their culture to be represented, and insights on cultural representation in general (Beebe, 2014). We interviewed seven members from the community of Las Lagunas in Saraguro, Ecuador, including: community leaders, educators, and artisans. A few guiding questions (found in Appendix F) were asked with subsequent follow-up questions and clarifications. These questions focused on the topics of traditions, rituals, clothing, and culture, and tended to follow a format more akin to a conversation, wherein the culture, traditions, and way of life of the Saraguro people was explained and explored. These interviews were not recorded, and notes were not taken during these conversations as the people being interviewed did not want to be recorded and preferred a more casual conversation format than formal interviews. Once all interviews were completed, we discussed and compiled notes on the topics that were explored. We coded the data to find common themes that were brought up and compiled a list of the themes and ideas we learned about. Once the data had been coded, we analyzed it using a grounded theory approach (DePoy & Gitlin, 2016). This allowed us to determine what content was most wanted by the Saraguro people on the digital platform to ensure their proper representation.

Findings and Discussion

This chapter discusses what we learned from our research methods. These findings informed our recommendations and shaped how we completed our deliverables. First, this chapter explains the wants and needs of the museum as well as their available resources. Next, it dives into how to present living cultures, followed by best practices for a virtual exhibit on living cultures.

1. Wants, Needs, and Resources of the Museum

Museo Pumapungo has a wide variety of ethnographic objects in their reserves that they would like to use in a website to inform the public about the living indigenous cultures of Ecuador. However, they currently lack the personnel to create a thoughtful, culturally sensitive website.

The museum's mission is to acquire, preserve, study, exhibit and disseminate cultural and heritage assets. Museo Pumapungo has five reserves which are not currently open to the public, however they would like to digitize these reserves to help teach a larger audience of people both inside and outside of Ecuador about the twenty living cultures of Ecuador. According to our interviews with museum staff, many people, including Ecuadorians, are unfamiliar with these cultures, much less realize that these cultures still exist. Development of an educational website showcasing objects from the museum's ethnographic reserves aims to be the first step in correcting this. A free, public website increases access to the reserves and allows this information to be shared with a much wider audience.

Reserve

Museo Pumapungo's five reserves contain over 11,000 objects which are only accessible in person to museum staff and researchers with permission. We toured the reserves with museum staff multiple times and saw a wide variety of artifacts, art, historical documents, and other forms of cultural patrimony. The ethnographic reserve was the most relevant to our project as it contains objects from the living cultures of Ecuador. It is organized into five different sections sorted by type of material and level of fragility, each of the sections is temperature- and humidity-controlled based on the material of the objects contained in the room. Within each section, the objects are organized by indigenous culture, with all twenty of Ecuador's living indigenous cultures represented. The thousands of objects contained in the ethnographic reserve include clothing, jewelry, pottery, art, tools, furniture, musical instruments, children's toys, festival and ritual items, and other cultural objects. Most of the objects are used in daily life, while some are meant only for special occasions such as festivals or rituals. All of them can give some insight into the living culture they belong to if they are presented and explained well.

Museum Staff

The museum is made up of the education department, museography department, as well as departments for each of the reserves: archaeology, art, ethnobotanical park, ethnography, and library (historic archives, photographs, and sound recording archive), each of them managed by one or two people. The museum staff's background and areas of expertise consist of the following areas of study: art history, history, archaeology, ethnography, and museum studies. One person in the museography department was working on the museum's website, but they are not normally a programmer, just someone filling a role that was needed. Overall, most of the

museum staff is not knowledgeable in programming or websites, and no one is working on digitizing the reserves. During our interview with the library director, we were told that the museum's website programmer left unexpectedly and that they had no one dedicated to working on their website. We were told the museum had a new programmer coming; however, he did not come until the very end of our project. Our sponsor, a major proponent in digitally showcasing the ethnographic reserve, said that the museum lacks both the time and money to dedicate to creating a website or digitizing the reserves. This was also brought up by the employee who was working on the website when he explained he was only working on it because the museum had not been able to hire a new programmer yet, and none of the other employees have knowledge about creating websites. He was also busy with his work in the museography department and did not have much time to devote to the website, additionally we were told that the museum did not have a license to Adobe Dreamweaver, so he was using his personal account to create the website. This lack of resources has prevented the museum from creating a working, professional website, digitizing the reserves, and updating outdated exhibits.

Other Resources

From interviews with museum staff, we learned that the museum has 8,000 digital photos, 19,000 non-digital photos, a collection of research documents on the different living indigenous cultures of Ecuador in the library database, 2 high quality cameras, a document scanner, a collection of recordings including music and stories, and a map collection. The two high quality cameras and the document scanner can be used to take photos/scans of non-digitized items in the reserves. Most of these resources are located in the library. In addition, the photographic collections include photos of cultural objects and indigenous festivals that were hosted by the museum; however, it was also pointed out that they do not necessarily have the rights to use all of them. After discussion with our sponsor, we learned that in the past, the museum has published some photos of indigenous people and then those people made complaints and stated that they did not give permission for them to be used. It is important to get written consent from indigenous people when photographing and showcasing images of them on the internet.

Exhibits

Through our evaluation of the museum's ethnographic exhibits, we found that the museum has preexisting exhibits on all the living cultures of Ecuador, including objects from the reserves and multiple types of media. The exhibits included maps of the area where the indigenous group lives, a description with basic information about the culture, representative mannequins depicting typical clothing and activities, model traditional houses, objects from the reserves consisting of common items used in many different parts of everyday life, and spiritual, cultural, and ceremonial items. In the *Tierra, Agua, Aire, Fuego* exhibit which focused on shamans, there was a glass prism with representative videos of the four elements (water, earth, air, fire) projected onto it, rotating 3D images of a few objects displayed on a screen, TVs with slideshows of images of traditional festivals being held at Museo Pumapungo, audio recordings of shamans performing rituals and people talking about shamans being played through speakers, in addition to quotes about shamans in the native and Spanish languages displayed on the floor and walls. From these observations, we concluded that the museum has access to some material on the living cultures of Ecuador (though the quality of this material is discussed later); physical models of the people and houses from some of the cultures; objects from the reserves for each of

the cultures; videos, images, and sounds of some of the indigenous people and ceremonies; and 3D scans of some of the objects from the reserves. Some of these materials could be used as content for or to enhance the website.

2. Presenting Indigenous Cultures

Through our evaluation of the museum's ethnographic exhibits, we learned that the information Museo Pumapungo includes about each of the living indigenous cultures of Ecuador consists of a little bit about their history, location, festivals, and traditions. The ethnographic exhibit was organized by region, with a map of the area where the indigenous group lives followed by basic information about the culture, shown in Figure 1.



Figure 1: Image of Saraguro Exhibit – Map and General Description

Of the twenty different cultures and regions showcased, two of them focused more on their Spanish/Catholic-influenced aspects than indigenous aspects, for instance they included which Catholic holidays were celebrated in the region but left out all the traditional indigenous holidays that are also currently celebrated. In presenting living indigenous cultures, it is best to showcase both the indigenous holidays and the Catholic/Spanish influenced holidays as it highlights the relationship between them in contemporary society. Each exhibit also had many objects from the museum's collection on display. In the ethnographic exhibit, however, none of the 20 sections provided information about the individual objects being presented, only what group they came from; this was not helpful to the viewer for learning about the item and the culture it was from and could be improved by including basic information such as the object's name, when and how it was made, how it was used, and where it was from, as well as its story including its cultural context and history.

In the *Tierra, Agua, Aire, Fuego* Exhibit which focused on shamans, the objects also did not have individual labels with the exception of rotating objects displayed on the screen as shown in Figure 2 to the right. On the other hand, in the Tsantsas, or shrunken heads, exhibit, which focused on the Shuar people, many more details about objects were provided. At the entry to the exhibit there is a spinning display with panels that give information in both English and Spanish about the following topics: food and dwellings, world view, contacts, exploitation of resources, and land ownership. Having this information in both English and Spanish is helpful to reach a larger audience. The in-depth explanations are useful, however we noticed that many visitors did not take the time to read all the panels. Within this exhibit there were also many plaques with information in both English and Spanish. Overall, there was more specific cultural information in the Tsantsas exhibit, due to its highly sensitive nature, within the ethnographic exhibit than any other culture being showcased, which greatly aided the viewers' understanding of the objects and the culture.

When presenting living cultures, it is important to highlight the concepts and values that are most important to them. A member of the museum staff who is also a member of the Saraguro indigenous community emphasized the importance of language to many cultures, including the Saraguro culture. While many indigenous languages have been lost, several are still spoken today so it is important to raise awareness about them. During our interviews with members of the Saraguro community, several members stated that the concept of 'give and take' is central to their culture - if someone wants to ask a favor of someone else in the community, they bring *chicha* to their house, a hot, sometimes alcoholic drink made from corn to offer in return for the favor. If the person accepts the *chicha*, they agree to complete the favor. Another concept central to the Saraguro culture is equality, as we saw demonstrated in one of the local schools. This school is trying to style itself more after the indigenous culture - the teachers and students are not separated by a hierarchy; both can speak freely to each other and ask any questions they want. A third important value of the Saraguro culture is family - family is the main social unit of the culture, with children traditionally being taught by their parents everything they know, instead of in a school. Neither of the schools in the Saraguro community we spoke to assigned homework, instead encouraging the students to help their families with chores at home.

When presenting living cultures, it is also important to acknowledge any hardships and discrimination they have faced and how they adapted, while also avoiding misinformation and stereotypes. There is a long history of people trying to erase indigenous cultures and racism toward indigenous people in Ecuador. During our interviews with the Saraguro people, a few members of the community told us that the Spanish conquistadors, Ecuadorian government, and other groups attempted to ban and therefore erase indigenous peoples' language, religion, traditional music, clothing, and educational system. Many indigenous communities' lost aspects of their culture due to the Spanish and Catholics forcing them to assimilate to a European way of



Figure 2: 3D Rotating image of a ceremonial stone with a label displayed on a TV screen in the Shaman Exhibit

life. Now, the indigenous groups of Ecuador are slowly trying to restore their lost culture and practices. One member told us that the culture of Saraguro is very cyclical and adaptive to changes. He described it as “that’s how life is”. This idea is reflected in their agrofestive calendar (Figure 3) which is made up of many circles and based around the life cycle of corn. As described by a member of the Saraguro community, this ability to adapt to change has allowed them to survive, though it has come at the expense of losing parts of their culture.

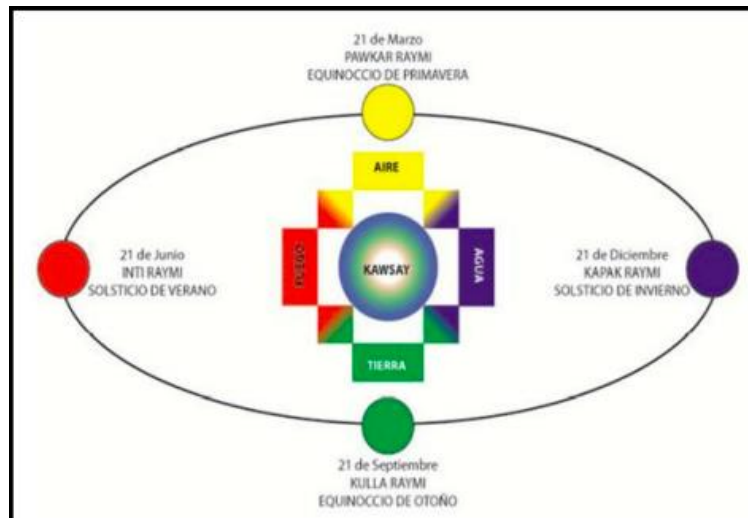


Figure 3: Agrofestive Calendar Outlining the 4 Raymis

Racism against indigenous populations is still a major issue. One of the individuals we interviewed, whose experiences are recounted from his childhood in the 1960s and onward, was forced to learn Spanish in addition to his native language to avoid discrimination from non-indigenous children in school. He explained that in his culture shoes were not traditionally worn, and that other students in non-indigenous schools used to stomp on his feet because he did not wear shoes. In general, the members of the Saraguro culture emphasized that when presenting indigenous cultures, it is important to discuss these darker sides of their history - forced erasure and assimilation, discrimination, but also how they have resisted and made efforts to maintain and restore their culture. Often, these more uncomfortable themes are not discussed by museums, and the abuses are covered up, which is something the indigenous cultures would like to change.

It is important to avoid misinformation and assumptions. In our interviews with museum staff, one member who is an indigenous woman stated that we must be careful how information is presented because there is a lot of ignorance and stereotypes about indigenous cultures. She also stated, that within her own culture of Saraguro, that the value of cultures must be recognized, since many people do not understand their value. Additionally, she told us that there is not much written history of the living cultures of Ecuador because most of it is passed orally from generation to generation within communities. Since much of their history is not easily available, it is easy for misinformation to be created and spread, stemming from assumptions and stereotypes. Because of this, we determined that it is important to talk to members of the cultures that are being represented to learn their real history.

3. Developing a Website

Through our systematic analysis of museum websites, we found that websites showcasing information from museums were either simple repositories of objects where images of the objects were displayed with some basic information, or full virtual museum tours where the user could walk themselves through the museum. We looked at nine digital archives and two museum tours from around the globe (See Appendix C for full list) and chose four archives to evaluate. For creating a digital archive, images of objects with basic information works well because these are usually intended for use by researchers who want to be able to see all of the items, but do not necessarily need much contextual information about them because archives are “raw” in the sense they are designed to make materials available in an unbiased way, without an interpretive discussion of sources/material. In contrast, virtual museum tours walk a visitor through a full, curated exhibit as if they were actually walking through the museum's current exhibits, showing the context and critical information on each piece. They are effective because they allow people to experience the museum exhibits without being at the museum physically. Museo Pumapungo, for example, has a virtual tour, found in Appendix C. This virtual tour walks the user through the archaeological park of the museum; the user can click in certain spots to move through the park and drag the mouse across the screen to rotate their perspective, there are also icons that can be clicked on to learn more about the location or object, which are the same descriptions that are found physically at the museum. The museum's reserves, however, are not included in this tour, and although the virtual tours were enjoyable, they were more confusing and complicated to use than the digital archives because the user must learn how to navigate the 3-D space.

Additionally, in our systematic analysis we determined that the typical information provided about each individual object included its name, description, people involved in the object's creation/collection, the culture, or people that it was from, the location and date that it was collected/from, what it was made out of, and its individual history. All of this is useful information to include when presenting objects from a reserve or collection, however, for a website presenting living cultures using ethnographic objects, it should also tell a story and give cultural context and history, these are more than just objects, they have cultural significance (Wolff & Mulholland, 2013).

Visual and textual appeal is very important in creating a website designed to present information to the public. In our systematic analysis of museum websites, we found that large, clear, and close-up images of the objects being showcased are important to have – if they are not clear or photographed well the user will likely be left confused or uninterested. The websites we found to be most useful and engaging and that were ranked the highest by online sources also included interesting and informative descriptions, which told a story with basic information as well as some more detailed facts about the objects. Tables containing the evaluations of individual museum exhibits can be found in Appendix G. One of the museum employees said, “it is best to not have a lot of text, or images, something very to the point, direct and concise” *“A la mejor no con tantas textos, no con tantas imágenes, sin algo muy puntual, muy directo, muy conciso.”*

Interactive components are also necessary for an engaging and educational website. In our museum interviews, one member of the education department stated that it is important to have interactive components; if children are the target audience, interactive games or a mascot are useful tools for keeping them engaged in learning. After providing our idea of an interactive map, employees stated that clicking on a location on the map should provide images of objects with descriptive text, and an overview of the culture being presented.

In terms of displaying information on the website it is important to keep it simple and well-organized. In our systematic analysis, and as supported by the U.S. General Services Administration in *Writing for the Web*, we found that the information included should use simple words and phrases that the general public would understand, but more technical words and phrases can be included so long as they are explained or can be inferred from context (U.S. General Services, n.d.). On all of the websites we looked at, the information included was written in simple language that did not include many technical terms. Only relevant information should be provided, so that the page is not bloated with irrelevant information, however enough information must also be provided to tell a story about the objects and give cultural context, something many of the websites we analyzed lacked, an example of which is shown in Figure 4.

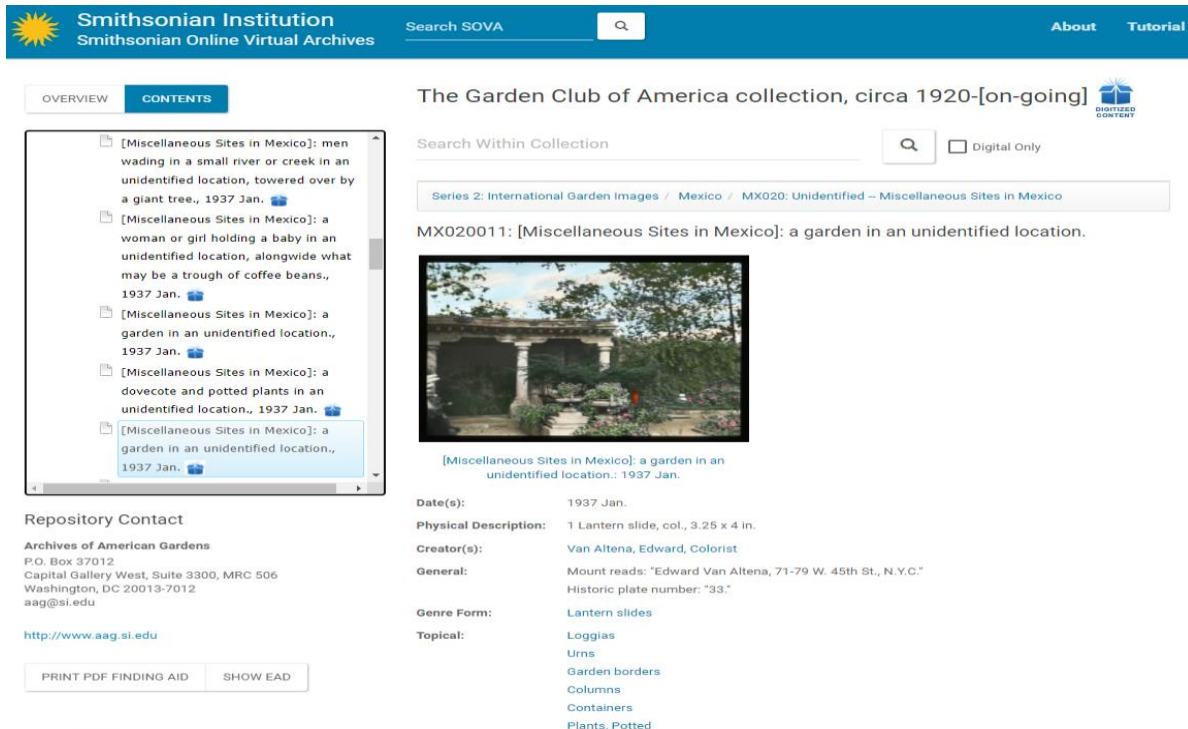


Figure 4: Item and information from Smithsonian Online Virtual Archives which displays very little information and gives no cultural context for the object

In about one half of the websites, we looked at, little to no information was provided about each object aside from its name and a collection number (which did not provide any additional information). Details such as where the object came from, what it is used for and how it is used, who made it, and its cultural story to give it context would be useful additions to help the reader understand the object and its significance. Additionally, all the categories and subpage labels should be concise, in a logical order and have clear names that allow users to navigate the page with ease. This type of organization and clarity within the website improves the user's ability to find specific parts or pages in addition to knowing where they are on the website at all times. Table 1 displays a comparison of four of the archives we analyzed over five of the criteria we looked at.

Name of museum archive	Uses words/phrases/concepts the general public would understand.	All information present is necessary/relevant (no unnecessary info).	Interesting and appealing pictures, visuals	Descriptions of the archived objects are informative and interesting	What information was included about the objects?
Smithsonian National Museum of the American Indian	Mostly Most were understandable, but there were a few difficult words that could mostly be figured from context	Yes	Yes. Pictures of objects are large, clear, close up, and do a good job of showing their many colors.	Sometimes. There is only information about the properties of the object, no ethnographic details	Culture/People, Expedition, Expedition leader, Expedition sponsor, Object Name, Media/Materials, Techniques, Object Type, Place, Collection History, Catalog Number, See related items
Smithsonian Online Virtual Archives	Yes	The information varies widely for different objects, some have a little, some have a lot	Not particularly visual appealing, mostly just a white page, a lot of the things do not have pictures	Some more than others	Collection ID, Creators, Dates, Languages, Physical Description, Repository, Content description, arrangement, biographical/historical, link to digital content, Access/citation/rights, Keywords, Repository contacts
Institute of Making Materials Library	Yes. The descriptions are understandable by most people, but they do include bigger words, but they are very relevant, don't have a simpler version, and can easily be looked up	Yes	Yes Pictures of objects are large, clear, close up, and do a good job of showing their many colors and features	Yes Very interesting and informative backgrounds on the objects, with typical archive info as well - "Particularities"	State, Compound, Donated by, Maker, Selections, Categories, Curiosities, Relationships
The MoMA	Yes	Yes Might need more information for some pieces	Yes Images of the art as well as multiple views of the installations for some works.	Not very descriptive Mostly just the artist, name, year, and medium are given not much other info	Artist, Title, Year, Medium, Dimensions, Credit, Object number, on/not on view, Copyright, department

Table 1: Table Comparing Different Digital Archives on a Range of Criteria

When creating a website, it is also important to keep technological limits in mind in order to reach the widest audience. One member of the museum staff stated that technology is generally limited in Ecuador, so keep the website simple - do not try to load too much content or make it too flashy, and it should be formatted to be easily accessed on a mobile device. Too much content such as numerous images and videos loading at the same time or too many interactive components may be difficult to load, or difficult to view on a mobile device due to size constraints. Of course, all of these components are important to include on the website, however including too many will make the website crowded and difficult to use, so it is important that a balance of content and simplicity is created.

When using objects from a reserve to increase public knowledge of different cultures, an effective approach is to include a few select items with detailed descriptions of their cultural context and history – this is more effective than a digital archive or virtual tour approach for this purpose because the items are given cultural context while keeping the format simple and easy to use for the public. In addition, by selecting a few objects to display, instead of the whole reserve, one can choose objects that help communicate the culture well, similar to the curation process in the design of physical museum exhibits. This allows the dedication of more time and resources to developing informative and interesting descriptions of the individual items instead of to digitizing many thousands of items. A good example of a website with a selected object and detailed description is found in Figure 5 below.

The screenshot shows the website for the Institute of Making at UCL. At the top, there are social media icons and a 'Join Mailing List' button with fields for 'Name' and 'E-mail'. The main header features the 'Institute of Making' logo and the UCL logo. Below this is a navigation menu with links: Home, Blog, About, Materials Library, MakeSpace, Members, Research, Events, and Contact. A secondary navigation bar includes: Materials, Selections, Categories, State, Curiosities, and About/Visit, along with a search icon. The main content area is titled '3D Printed Lidinoid' and includes a breadcrumb trail 'Materials > 3D Printed Lidinoid'. On the left is a large image of a yellow, porous, spherical 3D printed object. To its right is a text description: 'This cube of mind-boggling geometry was donated by our member supervisor and Medical Physics PhD student Thore Bucking. He 3D printed and hand-finished this model of a Lidinoid, a shape with a 'minimal surface' that was discovered by scientist Sven Lidin. Minimal surfaces are often explained using the example of a wire frame dipped in soapy water: of all the possible shapes that could span the wire frame, the soap film takes the one with minimal energy.' Below the text is 'Sample ID: 1344'. To the right of the description is a black 'Add to selection' button. Further right is a 'Your selections' section with a list of items: 'Nano Goldfish' and 'PVC Tensile Strength Test Specimen', each with a 'Test' button and an 'Edit | Share' link. A 'New selection' button is also present. At the bottom left, there are links for 'Gallery' and 'Particularities'.

Figure 5: Item and Description from Institute of Making Digital Archive

Recommendations

This chapter discusses the recommendations and conclusions for Museo Pumapungo based on our findings. First, we go over our website prototype, then provide recommendations on how best to continue developing this resource.

Website Prototype

Drawing from our findings from our interviews with the Museo Pumapungo staff, the people of Saraguro, our evaluation of museum exhibits, and our systematic analysis of museum websites, a prototype of the website was developed, explained in further detail in Appendix H. At its base, the website serves as a means to showcase culturally significant objects from Museo Pumapungo's Ethnographic Reserve, while also acting as an educative platform to highlight the twenty different living cultures of Ecuador and bring awareness to the general public. The new virtual exhibit of Ecuador's living cultures as well as its corresponding interactive map of Ecuador (used to navigate between the twenty different living cultures) will be found under the "Educación" tab of Museo Pumapungo's website, as shown in Figure 6.



Figure 6: Landing Page of Virtual Exhibit with Corresponding Interactive Map of Ecuador

Drawing from the museum's ethnographic exhibits and reserves, which are set up and organized by region, a user can click on a province of Ecuador on the interactive map and be taken to a secondary page about the indigenous group found in that region. As shown in Figure 7, on this secondary page there exists a brief overview of the culture and four individual drop-down menus with the following topics: Language, Immaterial Memories, Clothing, and Nourishment. Contained in each of these drop-down menus are descriptions with culturally relevant information.

Saraguro

Historia

Los Saraguros forman parte de la nacionalidad Kichwa del Ecuador. Viven en la sierra, de donde son originarios, pero han llegado a poblar también la alta Amazonía. Algunos investigadores dicen que descienden de los Ambocas, los Cañarís que vivían antes de que llegasen los españoles en la provincia de Loja, mientras que otros afirman que vinieron de los mitmaquna o mitimaes traídos desde Bolivia por los incas en tiempos de Tupaj Yupanki. Probablemente son el resultado de la mezcla de unos y otros en la época colonial.

En la Sierra, sus casas están construidas con paredes de tapial, ladrillos, bloques, adobes, y bahareque. El techo está cubierto con tejas de barro cocido. Otras casas tienen techos de paja y losa. En la Amazonía, las paredes son de madera y guadua, y el techo está cubierto de paja y hojas de palma.

Sus familias viven de la agricultura, la ganadería y la venta de artesanías como tejidos, cerámica y cestos.



PROVINCIA DE LOJA



Figure 7: Secondary Page; Overview of the Saraguro Culture

Based on the findings of our interviews with the Museo Pumapungo staff, the people of Saraguro, our evaluation of museum exhibits, and our systematic analysis of museum websites, we recommend that when Museo Pumapungo, future programmers, or volunteers add additional cultures to the website, follow this skeletal prototype, and include the following topics: General Information/Culture Overview, Immaterial Memories, Language, Clothing, Nourishment, and Ethnographic Objects, detailed further in Appendix I.

The decision to structure the virtual exhibit around these topics is a direct result of the lack of background and context in the physical displays at Museo Pumapungo, limiting the capacity of the exhibit to inform the public about the indigenous people's unique history, culture, and traditions. As outlined in Table 2, these topics allow for the inclusion of important information about the culture discussed while also showcasing objects from the museum's reserves. The General Information/Culture Overview should provide a brief overview of the culture that is being discussed, including but not limited to who they are, where they reside, any pertinent historical information which may include the dark history, and their values. Immaterial Memories should include any aspects of the culture which are not concrete objects, but rather ideas or ideologies, such as rituals, traditions, religion/beliefs, stories, and legends. Contents included within the dropdown menus, as shown in Figure 8, is as follows: Language, Immaterial Memories, Clothing, and Nourishment. The language section should describe which language is spoken by the culture in question and provide examples of "simple words" and their translations into Spanish and/or English. Clothing should include the traditional and, where applicable, more modern versions of the clothing worn by members of the culture as well as its history and evolution, significance, and how it is made/what it is made from. For example, on the Saraguro page, we included images of their cow hats, brooches (*tupus*), ponchos, belts and other pieces of clothing commonly worn that were available in the ethnographic reserve. Food should consist of

traditional dishes or food-related items (cookware) that are central to the culture in question, including descriptions with their history, significance, and how it is made/ingredients. Objects from the reserves, if they apply, should be included in each of these sections as the purpose of the website is to display the contents of the reserves for public education. On the website prototype for Saraguro, images were taken in the reserves of jewelry, clothing, textiles, pottery, and objects used for festivals; these items as well as many other items that may be found in the reserves for other cultures, such as art, should be included. A few pictures should be included for each section, but not so many that it is overwhelming to the user.

▼ IDIOMA

Los Saraguros hablan Kichwa y el Español. Ejemplos de palabras en Kichwa son:

- "Yaku" = "Agua"
- "Nina" = "Fuego"
- "Achpa" = "Tierra"
- "Wayra" = "Aire"
- "Ayllu" = "Familia"
- "Ayñi" = "Reciprocidad"
- "Chukllu" = "Maíz"
- "Ruwana" = "Poncho"
- "Muchiko" = "Sombrero"

A a	Ch ch	G g	H h	I i	K k	L l	Ll ll
a	cha	ga	ha	i	ka	la	lla
[a-æ]	[tʃ]	[g]	[h-x]	[i-e]	[k]	[l]	[ʎ]
M m	N n	Ñ ñ	P p	R r	S s	Sh sh	T t
ma	na	ña	pa	ra	sa	sha	ta
[m]	[n]	[ɲ]	[p]	[r-rʲ]	[s]	[ʃ]	[t]
Ts ts	U u	W w	Y y	Z z	Zh zh		
tsa	u	wa	ya	za	zha		
[ts]	[u-o]	[w]	[j]	[z]	[ʒ]		

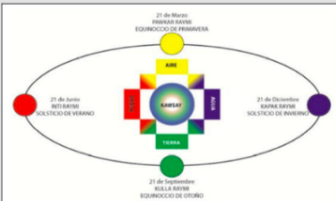
Other letter combinations

rk	rp	rq	rt
[ng]	[mb]	[no]	[nd]

ALFABETO KICHWA

▼ MEMORIAS INMATERIAL

Son muy orgullosos de pertenecer al pueblo Saraguro, por eso mantienen las costumbres, valores, y principios que heredan de sus antepasados. Los valores principales son: la reciprocidad, la familia, la adaptabilidad y la igualdad. Como otras comunidades de la Sierra, celebra el Pawkar Raymi el equinoccio de marzo, el Inti Raymi en el solsticio de junio, el Kuya Raymi el equinoccio de septiembre y el Qhapaq Raymi en el solsticio de diciembre.



CALENDARIO AGRO-FESTIVO DE LOS SARAGUROS

▼ ALIMENTACION


En el clima frío crían vacas, burros, ovejas, y caballos, así como gallinas, pavos, chanchos, cuyes, y conejos. Junto a sus viviendas siembran maíz, fréjol, trigo, oca, melloco, achogcha, jicama, sambo y zapallo.

En el clima cálido siembran maíz, papa china, yuca, plátano, cacao, café, y caña de azúcar, asimismo cultivan frutas como mandarina, limón, y piña. Ellos se alimentan con todos estos productos, de los cuales el maíz es para ellos el más importante.



FINCA SARAGURO

▼ VESTIMENTA



FAJAS Y TUPUS SARAGURO



SOMBREROS SARAGURO

Figure 8: Contents of the Drop-down Menus of the Saraguro Virtual Exhibits

Unfortunately, due to time constraints, we were not able to create a complete description with all relevant details about the Saraguro culture or provide descriptions/cultural context for all of the objects from the reserves included on the website, especially evident in the clothing section where we only included images of Saraguro clothing from the reserve with no description. We also did not have time to include audio recordings of the example words from the native Kichwa language in the language section. All of these features and details would be helpful to add to the website in the future.

These recommendations were made to properly teach the public about the indigenous people’s unique history, culture, and traditions. If possible, 3D images or other interactive visuals of the artifacts should be used to enhance the website.

<u>Topic</u>	<u>Description</u>	<u>Examples</u>
General Information/Culture Overview	Brief overview of the culture that is being discussed	<ul style="list-style-type: none"> ● Who they are, ● Where they reside ● Pertinent historical information
Immaterial Memories	Aspects of the culture which are not concrete objects, but rather ideas or ideologies	<ul style="list-style-type: none"> ● Rituals ● Traditions ● Religion/Beliefs ● Stories ● Legends
Language	Language spoken by the culture in question	<ul style="list-style-type: none"> ● Simple Words ● Translation into Spanish/English
Clothing	The traditional and, where applicable, more modern versions of the clothing worn by members of the culture	<ul style="list-style-type: none"> ● History and evolution ● Significance ● How it is made ● What it is made from
Nourishment	Traditional dishes or food-related items	<ul style="list-style-type: none"> ● Descriptions with their history and significance ● How it is made and ingredients
Ethnographic Objects	Objects found in Museo Pumapungo’s Ethnographic Reserve	<ul style="list-style-type: none"> ● Jewelry ● Clothing ● Textiles ● Pottery ● Art

Table 2: Structure of Virtual Exhibit

Recommendation #1: Identify key items in the reserves to digitize

Based on the findings of our museum interviews and the creation of the website, we recommend that Museo Pumapungo identify a few key items to digitize in the reserves based on the categories we determined, such as the ones included on the Saraguro page of the website prototype. One approach to this could be to identify key items for each culture, one culture at a time, and add them to the website. By selecting a few items to display, instead of the whole reserve, one can choose specific objects that help communicate the culture the best, similar to the curation process in the design of physical museum exhibits. This would allow the dedication of more time and resources for developing informative and interesting descriptions of the individual items instead of digitizing the thousands of items in the reserves.

Recommendation #2: Partner with Indigenous Cultures to develop culturally appropriate content

Based on the findings of our interviews with the Museo Pumapungo staff and the people of Saraguro, we recommend that Museo Pumapungo or their future web developers work with members of the remaining nineteen living cultures of Ecuador to develop their pages on the website to better understand them, prevent misinformation, and allow them to tell the story they want to tell. It is important that what the cultures think is important is highlighted. We also recommend that when interacting with members of indigenous cultures, customs and expectations specific to the culture in question are researched so that trust and mutual respect can exist between both parties.

Recommendation #3: Partner with local universities or hire a programmer to finish the website

Based on the findings of our interviews with the Museo Pumapungo staff, we found that the museum currently lacks the personnel and budget for a lot of projects. If website development fits into an existing employee's role or if one was willing to take it on as one of their duties that could be a viable option to complete the website, however, we have found that all of the staff are very busy, so it would likely be more practical for the museum to hire one person to take on the role of finishing and updating the website or work with local universities such as the University of Cuenca who could potentially provide student volunteers or interns to continue this project.

Conclusion

Museo Pumapungo is an ethnographic museum located in Cuenca, Ecuador with the mission to acquire, preserve, study, exhibit and disseminate cultural and heritage assets. Museo Pumapungo has five reserves which are not currently open to the public, however they would like to digitize these reserves to help educate a larger audience of people both inside and outside of Ecuador about the twenty living cultures of Ecuador. Many people, including Ecuadorians, are unfamiliar with these cultures, and do not realize that some of these cultures still exist. Developing an educational website showcasing objects from the museum's ethnographic reserves aims to be the first step in correcting this. A free, public website increases access to the reserves and allows this information to be shared with a much wider audience. We evaluated exhibits, analyzed existing reserve websites, and interviewed museum staff as well as members of an indigenous community in order to understand how best to present the contents of the reserves and information on living cultures. The findings of these research methods allowed us to develop a prototype of a website as well as provide recommendations to Museo Pumapungo and others developing ethnographic websites. Using the guidelines and prototype we developed, Museo Pumapungo can make additions to the website in the future in order to further their goal of promoting education about the living cultures of Ecuador using their reserves.

Teaching people about indigenous cultures fosters greater understanding between people and cultures worldwide and helps bring awareness to any problems indigenous cultures are facing, which can help them survive and continue their practices the way they want to. Making sure cultures are not lost or erased ensures more cultural diversity, helps people maintain cultural identity, and gives them a sense of belonging. Ultimately, culture is worth protecting because it reminds us where we came from and is a defining aspect of our identities as humans.

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Appendices

Appendix A: Objective 1 Method 1 - Semi-Structured Interview with Museum Employees

Hello,

We are a group of students from Worcester Polytechnic Institute (WPI) located in MA, USA working with Pumapungo Museum, Macey McEnaney, Victor Paiz, and Emma Pruitt. We would like to invite you to participate in an interview in order to help us learn about the wants, needs, and resources of the museum for our research project. The purpose of our research is to assist the Museo Pumapungo in developing a system that would allow the public to have easy and educational virtual access to the contents of Pumapungo's Ethnographic Reserve.

The interview should take 30 minutes to 1 hour, and with your permission will be audio recorded. These recordings will be used in addition to our notes and will not be published. If it is okay with you, we may include quotes from our interview in our report, but we will not attach your name to the quote. Personal information will not be shared, and the information we collect will be used to find common themes to develop a prototype for virtual access. Our research will be published on a Worcester Polytechnic Institute online database

This interview is voluntary, and you do not need to participate. You may ask us not to audio record. You may skip any questions you do not want to answer. Do you have any questions before we begin the interview?

For more information about this research or about the rights of research participants, contact: Macey McEnaney, Emma Pruitt, Victor Paiz, Email: gr-Pumapungo-D22@wpi.edu, Courtney Kurlanska, Email: cbkurlanska@wpi.edu Melissa Belz, Email: mbelz@wpi.edu.

Goal of Interview: Learn what museum employees think is important in showcasing the ethnographic objects and what resources they have

Questions	Notes
Which ethnographic objects would you prioritize in making virtually accessible?	
What are the most important things to consider when showcasing the ethnographic objects to the public?	
What equipment for digitizing archives do you have?	
Do you know of/have you used any other digital archives?	
What information do you think is most critical to include in digital archives?	
Are you looking for any specific features in a digital archive?	

Appendix A: Objective 1 Method 1 - Semi-Structured Interview with Museum Employees (Spanish)

Hola,

Somos un grupo de estudiantes del Worcester Polytechnic Institute (WPI) ubicado en MA, EE.UU trabajando con el Museo Pumapungo. Macey McEnaney, Victor Paiz y Emma Pruitt quisiera invitarte a una entrevista para ayudarnos a conocer los deseos, necesidades y recursos del museo para nuestra investigación. El propósito de nuestra investigación es ayudar al Museo Pumapungo a desarrollar un sistema que permita al público tener un acceso virtual fácil y educativo a los contenidos de la Reserva Etnográfica de Pumapungo.

La entrevista debe durar de 30 minutos a 1 hora y, con su permiso, se grabará en audio. Estas grabaciones se utilizarán además de nuestras notas y no se publicarán. Si está de acuerdo con usted, podemos incluir citas de nuestra entrevista en nuestro reporte, pero no adjuntamos su nombre a la cita. La información personal no se compartirá y la información que recopilamos se utilizará para encontrar temas comunes para guiar nuestro proyecto. Nuestra investigación se publicará en una base de datos en línea del Worcester Polytechnic Institute.

Este proceso es voluntario y no es necesario que participe. Puede pedirnos que no grabemos audio. Puede omitir cualquier pregunta que no desee responder. ¿Tiene alguna pregunta antes de comenzar la entrevista?

Para obtener más información sobre esta investigación o sobre los derechos de los participantes de la investigación, comuníquese con: Macey McEnaney, Emma Pruitt, Victor Paiz, Correo electrónico: gr-Pumapungo-D22@wpi.edu, Courtney Kurlanska, Correo electrónico: cbkurlanska@wpi.edu Melissa Belz, Correo electrónico: mbelz@wpi.edu

Objetivo de la Entrevista: aprender qué piensan los empleados del museo en que es importante en la exhibición de los artefactos y también qué recursos tiene el museo

Pregunta	Notas
¿Qué artefactos priorizaría para hacerlos virtualmente accesibles?	
¿Cuáles son las cosas más importantes a considerar al presentar estos artefactos al público?	
¿Qué equipo para la digitalización de archivos tiene?	
¿Conoces otros archivos digitales?	
¿Qué información cree que es más importante incluir en los archivos digitales?	
¿Está buscando alguna característica específica en un archivo digital?	

Appendix B: Objective 1 Method 2 - Evaluation of Museum Exhibits

Evaluation Criteria:

	Response	Other Notes
Name of Exhibit/Display		
Section of the Museum		
Types of Items on Display		
Condition of Items		
Type of information provided for each item: Origin, Age/Date, Contextual Information		
Uses words/phrases/concepts the general public would understand		
Information appears in a natural and logical order		
Consistent formatting/labeling/wording		
All information present is necessary/relevant		
Descriptions of the objects are informative and interesting		
Are digital interfaces used? If so, what type?		
Anything that stood out?		
Interesting and appealing pictures, visuals		
Engaging?		

Appendix C: List of Virtual Archives Looked At

The Archives we analyzed are in bold.

Virtual Archives

Museum	Link
The Metropolitan Museum of Art	https://artsandculture.google.com/partner/the-metropolitan-museum-of-art
The Peabody Essex Museum	https://www.pem.org/visit/library-02/online-collections
Smithsonian Online Virtual Archives	https://sova.si.edu/
National Museum of the American Indian	https://americanindian.si.edu/explore/collections/search
Victoria and Albert Museum	https://www.vam.ac.uk/collections?type=featured
Cooper Hewitt	https://collection.cooperhewitt.org/
Vitra Design Museum	https://collection.design-museum.de/#/en/?_k=kpyzuu
Museum of Modern Art	https://www.moma.org/collection/
The Institute of Making	https://www.instituteofmaking.org.uk/materials-library

Virtual Tours

Museum	Link
The British Museum	https://britishmuseum.withgoogle.com/
Museo Pumapungo	http://museopumapungo.gob.ec/VIRTUALTOURPUMAPUNGO/

Lists of Good Digital Archives

<https://metropolismag.com/viewpoints/10-digital-archives-worth-staying-inside-for/>

Appendix D: Objective 2 - Systematic Review of Virtual Exhibits/Archives Criteria

Jakob Nielsen's 10 Usability Heuristics for User Interface Design (Nielsen, 2020)

1. **Visibility of system status:** The design should always keep users informed about what is going on, through appropriate feedback within a reasonable amount of time. Ex: The website should make it clear where the user is on the website, i.e., Home Page, Artifacts, Categories
2. **Match between the system and the real world:** The design should speak the users' language. Use words, phrases, and concepts familiar to the user, rather than internal jargon. Follow real-world conventions, making information appear in a natural and logical order.
3. **User control and freedom:** Users often perform actions by mistake. They need a clearly marked "emergency exit" to leave the unwanted action without having to go through an extended process.
4. **Consistency and standards:** Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform and industry conventions.
5. **Error prevention:** Good error messages are important, but the best designs carefully prevent problems from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.
6. **Recognition rather than recall:** Minimize the user's memory load by making elements, actions, and options visible. The user should not have to remember information from one part of the interface to another. Information required to use the design (e.g., field labels or menu items) should be visible or easily retrievable when needed.
7. **Flexibility and efficiency of use:** Shortcuts — hidden from novice users — may speed up the interaction for the expert user such that the design can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.
8. **Aesthetic and minimalist design:** Interfaces should not contain information which is irrelevant or rarely needed. Every extra unit of information in an interface competes with the relevant units of information and diminishes their relative visibility.
9. **Help users recognize, diagnose, and recover from errors:** Error messages should be expressed in plain language (no error codes), precisely indicate the problem, and constructively suggest a solution.
10. **Help and documentation:** It's best if the system doesn't need any additional explanation. However, it may be necessary to provide documentation to help users understand how to complete their tasks.

Appendix E: Objective 2 - Systematic Review of Virtual Exhibits/Archives Criteria Table

	Response	Other Notes
Archive/Exhibit:		
1. Visibility of system status: Can always tell which page/subpage you are on.		
2. Match between the system and the real world: Uses words/phrases/concepts the general public would understand.		
3. Match between the system and the real world: Information appears in a natural and logical order.		
4. User control and freedom: Clear back button/way to go back.		
5. Consistency and standards: Consistent formatting/ labeling/wording.		
6. Error prevention: Smooth, error-free experience.		
7. Aesthetic and minimalist design: All information present is necessary/relevant (no unnecessary info).		

<p>8. Help users recognize, diagnose, and recover from errors: Error messages (if applicable) expressed in plain language (no error codes), precisely indicate the problem, and constructively suggest a solution.</p>		
<p>9. Help and documentation: Has a useful “Help” page.</p>		
<p>10. Interesting and appealing pictures, visuals</p>		
<p>11. Descriptions of the archived objects are informative and interesting</p>		
<p>What information was included about the objects?</p>		
<p>Anything that stood out?</p>		
<p>Any new criteria suggestions?</p>		

Appendix F: Objective 3 - Semi-Structured Interviews with Saraguro Community Members

Hello,

We are a group of students from Worcester Polytechnic Institute (WPI) located in MA, USA working with Pumapungo Museum, Macey McEnaney, Victor Paiz, and Emma Pruitt. We would like to invite you to participate in an interview in order to help us learn about the Saraguro Community. The purpose of our research is to assist the Museo Pumapungo in developing a system that would allow the public to have easy and educational virtual access to the contents of Pumapungo's Ethnographic Reserve.

The interview should take 30 minutes to 1 hour, and with your permission will be audio recorded. These recordings will be used in addition to our notes and will not be published. If it is okay with you, we may include quotes from our interview in our report, but we will not attach your name to the quote. Personal information will not be shared, and the information we collect will be used to find common themes to develop a prototype for virtual access. Our research will be published on a Worcester Polytechnic Institute online database

This interview is voluntary, and you do not need to participate. You may ask us not to audio record. You may skip any questions you do not want to answer. Do you have any questions before we begin the interview?

For more information about this research or about the rights of research participants, contact: Macey McEnaney, Emma Pruitt, Victor Paiz, Email: gr-Pumapungo-D22@wpi.edu, Courtney Kurlanska, Email: cbkurlanska@wpi.edu Melissa Belz, Email: mbelz@wpi.edu.

Goal of Interview: Learn about the Saraguro Community and its culture, traditions, and beliefs.

Questions	Notes
What does it mean to be a Saraguro?	
What do you want people to know about the Saraguro culture?	
What are some traditions or rituals of your culture?	
What is one story or legend from your culture?	
Can you describe the traditional clothing and its significance (if any)?	
(Talk about a piece of their clothing) What is that piece of clothing? How was it made/who made it? What does it mean to you?	
What are the traditional foods or dishes of your culture?	
What is your favorite Saraguro (food) dish? Maybe from childhood, something your mother often cooked for you?	
What should we avoid doing or saying when talking about your culture in order to avoid any misinformation?	
What is one Saraguro tradition you remember fondly from your childhood? How has it changed?	
Draw one thing that reminds you of Saraguro.	
What places have meaning/significance for you in Saraguro?	
What do you do in your daily life that represents the Saraguro culture well?	
If you had to use one word to describe your culture, what would it be?	

Appendix F: Objective 3 – Semi-Structured Interviews with Saraguro Community Members (Spanish)

Hola,

Somos un grupo de estudiantes del Worcester Polytechnic Institute (WPI) ubicado en MA, EE.UU trabajando con el Museo Pumapungo. Macey McEnaney, Victor Paiz y Emma Pruitt quisiera invitarte a una entrevista para ayudarnos a conocer la comunidad de Saraguro para nuestra investigación. El propósito de nuestra investigación es ayudar al Museo Pumapungo a desarrollar un sistema que permita al público tener un acceso virtual fácil y educativo a los contenidos de la Reserva Etnográfica de Pumapungo.

La entrevista debe durar de 30 minutos a 1 hora y, con su permiso, se grabará en audio. Estas grabaciones se utilizarán además de nuestras notas y no se publicarán. Si está de acuerdo con usted, podemos incluir citas de nuestra entrevista en nuestro reporte, pero no adjuntamos su nombre a la cita. La información personal no se compartirá y la información que recopilamos se utilizará para encontrar temas comunes para guiar nuestro proyecto. Nuestra investigación se publicará en una base de datos en línea del Worcester Polytechnic Institute.

Este proceso es voluntario y no es necesario que participe. Puede pedirnos que no grabemos audio. Puede omitir cualquier pregunta que no desee responder. ¿Tiene alguna pregunta antes de comenzar la entrevista?

Para obtener más información sobre esta investigación o sobre los derechos de los participantes de la investigación, comuníquese con: Macey McEnaney, Emma Pruitt, Victor Paiz, Correo electrónico: gr-Pumapungo-D22@wpi.edu, Courtney Kurlanska, Correo electrónico: cbkurlanska@wpi.edu Melissa Belz, Correo electrónico: mbelz@wpi.edu

Objetivo de la Entrevista: Aprender sobre la Comunidad Saraguro y su cultura, tradiciones y creencias.

Questions	Notes
¿Qué significa ser Saraguro?	
¿Qué quieres que la gente sepa sobre la cultura Saraguro?	
¿Cuáles son algunas tradiciones o rituales de su cultura?	
¿Cuál es una historia o leyenda de su cultura?	
¿Puede describir la vestimenta tradicional y su significado (si corresponde)?	
(Hable acerca de una pieza de su ropa) ¿Qué es esa pieza de ropa? ¿Cómo se hizo/quién lo hizo? ¿Qué significa para ti?	
¿Cuáles son las comidas o platos tradicionales de su cultura?	
¿Cuál es tu comida favorita de Saraguro? Tal vez desde la infancia, ¿algo que tu madre te cocinaba con frecuencia?	
¿Qué debemos evitar hacer o decir cuando hablamos de tu cultura para evitar cualquier desinformación?	
¿Cuál es una tradición Saraguro que recuerdas con cariño de tu infancia? ¿Cómo ha cambiado?	
Dibuja una cosa que te recuerde a Saraguro.	
¿Qué lugares tienen significado para ti en Saraguro?	
¿Qué haces en tu vida diaria que representa bien la cultura Saraguro?	
Si tuvieras que usar una palabra para describir tu cultura, ¿cuál sería?	

Appendix G: Systematic Analysis of Digital Archive

Archive 1 Smithsonian National Museum of the American Indian https://americanindian.si.edu/collections-search/search	Yes/no/response	Notes (examples, justification)
1. Visibility of system status: Can always tell which page/subpage you are on.	Sometimes yes	It is clear for the larger pages, but when looking at individual objects it is not completely clear, though this does not really affect the usability.
2. Match between the system and the real world: Uses words/phrases/concepts the general public would understand.	Mostly	I understood most of the words, but there were a couple that I did not know, but I could mostly figure out what they meant from context
3. Match between the system and the real world: Information appears in a natural and logical order.	Yes	
4. User control and freedom: Clear back button/way to go back.	Sometimes	There is a “back to search” button when viewing individual objects but there are sometimes when changing searches or accessing other pages that it gets messed up and there is no good back button
5. Consistency and standards: Consistent formatting/ labeling/wording.	Yes	There are sometimes more/less details on certain objects but otherwise it is pretty consistent
6. Error prevention: Smooth, error-free experience.	Yes	
7. Aesthetic and minimalist design: All information present is necessary/relevant (no unnecessary info).	Yes	
8. Help users recognize, diagnose, and recover from errors: Error messages (if applicable) expressed in plain language (no error codes), precisely indicate the problem, and constructively suggest a solution.	N/A	
9. Help and documentation: Has a useful “Help” page.	No	Has a “contact us” method for concerns/corrections/additions
10. Interesting and appealing pictures, visuals	Yes	Pictures of objects are large, clear, close up, and do a good job of showing their many colors.

11. Descriptions of the archived objects are informative and interesting	Sort of	There is only information about the properties of the object - detailed below, it would be nice if there was a brief description of how the object was used/what it meant to the culture (ethnographic details)
What information was included about the objects?	Culture/People, Expedition, Expedition leader, Expedition sponsor, Object Name, Media/Materials, Techniques, Object Type, Place, Collection History, Catalog Number, See related items	
Anything that stood out?	no	
Any new criteria suggestions?	Comprehensive search options/filters	

Archive 2 Smithsonian Online Virtual Archives	Yes/no/response	Notes (examples, justification)
1. Visibility of system status: Can always tell which page/subpage you are on.	I think so	Doesn't show the pages when on the actual artifact page. Shows query: [name of page/filter] at the top of the page
2. Match between the system and the real world: Uses words/phrases/concepts the general public would understand.	Yes	
3. Match between the system and the real world: Information appears in a natural and logical order.	Yes	
4. User control and freedom: Clear back button/way to go back.	Not exactly	Only the back button in the browser or clicking on the logo to go back to the home page
5. Consistency and standards: Consistent formatting/labeling/wording.	Yes	Same subsections for each artifact
6. Error prevention: Smooth, error-free experience.	Yes	
7. Aesthetic and minimalist design: All information present is necessary/relevant (no unnecessary info).	The information varies widely for different objects, some have a little, some have a lot	

8. Help users recognize, diagnose, and recover from errors: Error messages (if applicable) expressed in plain language (no error codes), precisely indicate the problem, and constructively suggest a solution.	Have not encountered an error message	
9. Help and documentation: Has a useful "Help" page.	Yes	Has a clearly visible tutorial button and page
10. Interesting and appealing pictures, visuals	Not particularly visual appealing, mostly just a white page, a lot of the things do not have pictures	
11. Descriptions of the archived objects are informative and interesting		Some more than others
What information was included about the objects?	Collection ID, Creators, Dates, Languages, Physical Description, Repository, Content description, arrangement, biographical/historical, link to digital content, Access/citation/rights, Keywords, Repository contacts	
Anything that stood out?		
Any new criteria suggestions?		
What software was used to make the archive?	N/A	

Overall, this may have been more useful if looking for something specific or to get to specific Smithsonian Museum reserves. It was overall kind of bland, had no back button and did not offer a lot of information on the objects. Things were well organized and there were lots of filters to narrow a search.

Archive 3 Institute of Making Materials Library https://www.instituteofmaking.org.uk/materials-library	Yes/no/response	Notes (examples, justification)
1. Visibility of system status: Can always tell which page/subpage you are on.	Yes	It is always very clearly labeled which page/subpage you are on
2. Match between the system and the real world: Uses words/phrases/concepts the general public would understand.	Yes	The descriptions are understandable by most people, but they do include bigger words, but they are very relevant, don't have a simpler version, and can easily be looked up

3. Match between the system and the real world: Information appears in a natural and logical order.	Yes	The categories/subpages are short, clear, and interesting
4. User control and freedom: Clear back button/way to go back.	Yes	They use a system similar to the file system in a computer
5. Consistency and standards: Consistent formatting/labeling/wording.	Yes	
6. Error prevention: Smooth, error-free experience.	Yes	
7. Aesthetic and minimalist design: All information present is necessary/relevant (no unnecessary info).	Yes	
8. Help users recognize, diagnose, and recover from errors: Error messages (if applicable) expressed in plain language (no error codes), precisely indicate the problem, and constructively suggest a solution.	N/A	
9. Help and documentation: Has a useful "Help" page.	No	Has a helpful "about" page and contact info
10. Interesting and appealing pictures, visuals	Yes	Pictures of objects are large, clear, close up, and do a good job of showing their many colors and features
11. Descriptions of the archived objects are informative and interesting	Yes	Very interesting and informative backgrounds on the objects, with typical archive info as well - "Particularities"
What information was included about the objects?	State, Compound, Donated by, Maker, Selections, Categories, Curiosities, Relationships	
Anything that stood out?	Very visually appealing, informative, interesting	
Any new criteria suggestions?	N/A	
What software was used to make the archive?	N/A	

Archive 4 The MoMA	Yes/no/response	Notes (examples, justification)
1. Visibility of system status: Can always tell which page/subpage you are on.	No	
2. Match between the system and the real world: Uses words/phrases/concepts the general public would understand.	Yes	
3. Match between the system and the real world: Information appears in a natural and logical order.	Yes	
4. User control and freedom: Clear back button/way to go back.	No	There is a button at the bottom of the screen which will take to you the next/previous piece in the archive and to the home search page
5. Consistency and standards: Consistent formatting/ labeling/wording.	Yes	
6. Error prevention: Smooth, error-free experience.	Yes	
7. Aesthetic and minimalist design: All information present is necessary/relevant (no unnecessary info).	Yes	Might need more information honestly
8. Help users recognize, diagnose, and recover from errors: Error messages (if applicable) expressed in plain language (no error codes), precisely indicate the problem, and constructively suggest a solution.	N/A	
9. Help and documentation: Has a useful "Help" page.	No	Does not really need one though
10. Interesting and appealing pictures, visuals	Yes	Images of the art as well as multiple views of the installations for some works.

11. Descriptions of the archived objects are informative and interesting		Mostly just the artist, name, year, and medium are given not much other info
What information was included about the objects?	Artist, Title, Year, Medium, Dimensions, Credit, Object number, on/not on view, Copyright, department	
Anything that stood out?	Included links to other works by the same artist and other art in the same category. There are lots of filters to narrow down a search	
Any new criteria suggestions?	N/A	
What software was used to make the archive?	N/A	

Appendix H: Detailed Website Walkthrough

The decisions made in the development of the new Museo Pumapungo ethnographic website including website design, functionality, and content to be included, was based on an analysis of existing website archives as well as feedback and guidance from research participants (Museum Staff and Saraguro Community) and our sponsor. This website was developed using Adobe Dreamweaver, a web development tool. As shown in Figure I.1, the website is divided into 8 tabs: Home, Museum, Exhibits, Collections, Education, Services, Investigation, Transparency (*Inicio, El Museo, Exposiciones, Colecciones, Educación, Servicios, Investigación, Transparencia*). The museum tab explains the mission and vision of Museo Pumapungo, the Exhibition tab to highlight the current collections of the museum, the Education tab to house a virtual exhibit of the museum's reserves, the Services tab to highlight the resources of the Museum, the Investigation tab to provide a description of the museum's layout, and the Transparency tab to release monthly mandatory governmental documentation. The Home page was intentionally left blank so that Museo Pumapungo may populate it with information they see fit (their current website has a virtual tour of the archaeological park here, however, we were not provided with the necessary documentation to add that to our prototype). Additionally, the home page provides the address, working hours of the museum, and links to social media accounts.

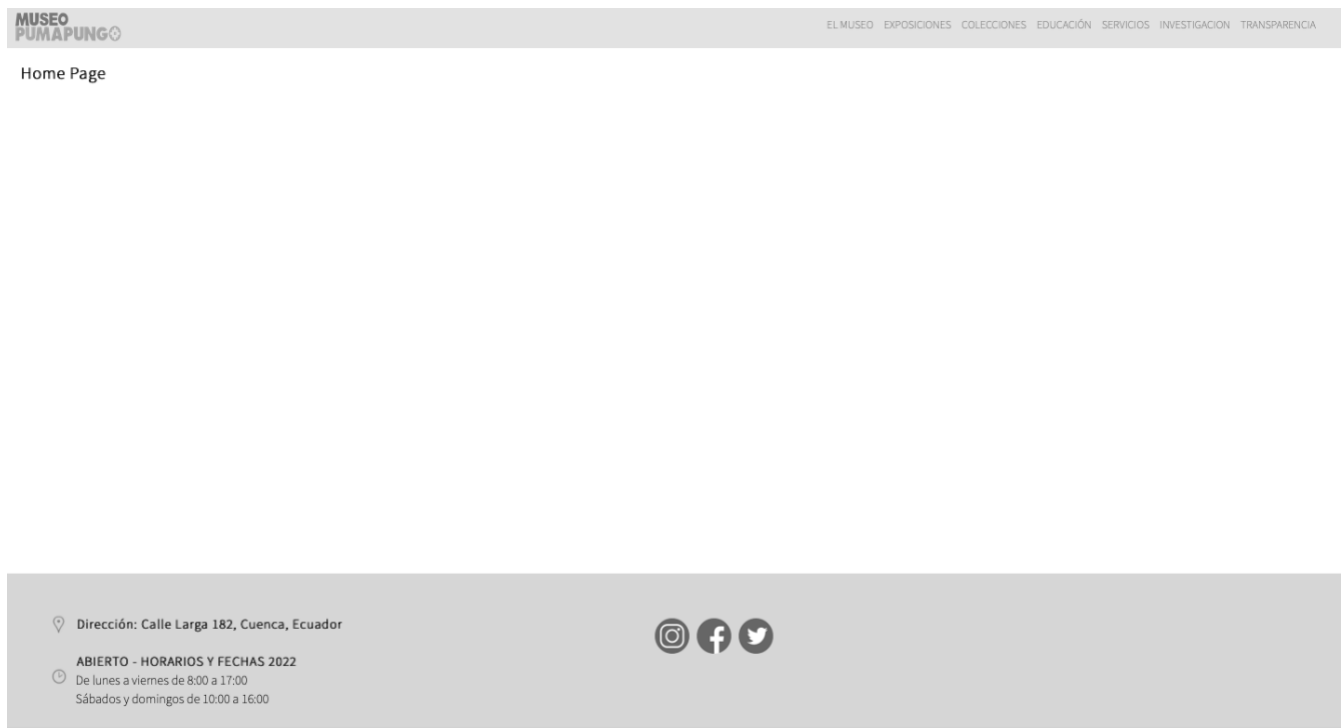


Figure H.1: Home Page; Default Page of Museo Pumapungo's Website

Our focus, however, was to create a prototype of an interactive website to showcase culturally significant objects from Museo Pumapungo’s Ethnographic Reserve, while also acting as an educative platform to highlight the twenty different living cultures of Ecuador and bring awareness to the public. This was accomplished through a virtual exhibit, housed under the “Education”/“Educación” tab. As shown in Figure I.2, the virtual exhibit consists of an interactive map of Ecuador wherein the twenty different living cultures of Ecuador are mapped to the province in which they reside/can be found in. Once on this page, a user can mouse over the map of Ecuador, be greeted with a pop up of the province’s name, click on a province, and be taken to a secondary page which provides an overview of the respective culture. When it came to the decision on how to make the exhibit interactive, we drew on the concepts Museo Pumapungo uses to display these cultures in their physical ethnographic display - by region with a map of the area where the indigenous group lives and basic information about the culture.

Educación

Aviso

Este proyecto fue creado por estudiantes del Worcester Polytechnic Institute con el ayuda del Museo Pumapungo y miembros de la Comunidad Saraguro. Es un trabajo en curso, hasta el momento solo se ha completado la página de Loja/Saraguro.

Mapa Interactivo

El país de Ecuador está ubicado en la encrucijada de las montañas de los Andes y el ecuador en América del Sur. Se divide en tres regiones geográficas distintas: la Costa, la Sierra y la Amazonía. En estos territorios ecuatorianos existen regiones con una destacada presencia de grupos indígenas. Por ejemplo, en la Amazonía existen las siguientes naciones: Achuar, Waorani, Secoya, Shuar, Shiwiar y Kichwa de la Amazonía. En la Sierra viven: Otavalo, Kayambi, Panzaleo, Kisapincha, Waranka, Puruhá, Kañari, Saraguro y Paltas. En la costa se encuentran: Awá, Chachi, Tsáchila, Manta y Kichwa de la Costa.

¡Usando el mapa, haga clic y explore las muchas provincias de Ecuador y aprenda sobre el grupo indígena que reside allí!



Leyenda del Mapa

Azuay/Cañar - Kañari	Bolívar - Waranka	Carchi - Awá
Chimborazo - Puruhá	Cotopaxi - Panzaleo	El Oro - Montubio
Esmeraldas - Chachi	Guayas/Manabi - Manta	Imbabura - Otavalo
Loja - Saraguro	Los Ríos - Kichwa de la Costa	Morona-Santiago - Achuar
Napo - Waorani	Orellana - Kichwa de la Amazonia	Pastaza - Shiwiar
Pichincha - Kayambi	Santo Domingo de los Tsáchilas - Tsáchila	Sucumbios - Secoya

Figure H.2: Landing Page of Virtual Exhibit with Corresponding Interactive Map of Ecuador

Due to the timing constraints of the project, we quickly realized we would not have the time to properly discuss all twenty living cultures of Ecuador. As such, we made the decision to focus only on one indigenous culture. Through our interviews with the Museum Staff, we met a woman from Saraguro who provided us with useful insight about the culture and traditions of Saraguro. As a result, we chose the Saraguro Community to be the main focus for our prototype. As shown in Figure I.3, the secondary page introduces the indigenous culture, in this case Saraguro, and provides a brief overview and history of the culture. This Information/Culture Overview should provide a brief overview of the culture that is being discussed, including but

not limited to who they are, where they reside, any pertinent historical information which may include the dark history, and their values. Additionally, to provide context, a map highlighting the province(s) the culture resides in is also provided. For further discussion of the culture, there are four drop-down menus: Language, Immaterial Memories, Clothing, and Nourishment (*Idioma, Memorias Inmaterial, Vestimenta, Alimentación*). A user can then mouse over a drop-down menu, click, and be presented with information about the topic of the drop-down menu.

Saraguro

Historia

Los Saraguros forman parte de la nacionalidad Kichwa del Ecuador. Viven en la sierra, de donde son originarios, pero han llegado a poblar también la alta Amazonía. Algunos investigadores dicen que descienden de los Ambocas, los Cañaris que vivían antes de que llegasen los españoles en la provincia de Loja, mientras que otros afirman que vinieron de los mitmaquna o mitimaes traídos desde Bolivia por los incas en tiempos de Tupaj Yupanki. Probablemente son el resultado de la mezcla de unos y otros en la época colonial.

En la Sierra, sus casas están construidas con paredes de tapial, ladrillos, bloques, adobes, y bahareque. El techo está cubierto con tejas de barro cocido. Otras casas tienen techos de paja y losa. En la Amazonía, las paredes son de madera y guadua, y el techo está cubierto de paja y hojas de palma.

Sus familias viven de la agricultura, la ganadería y la venta de artesanías como tejidos, cerámica y cestos.



PROVINCIA DE LOJA



Figure H.3: Secondary Page of Virtual Exhibit; Overview of Saraguro Culture

The first drop-down menu (Figure I.4) is language. This section should describe which language is spoken by the culture in question and provide examples of “simple words” and their translations into Spanish and/or English. In our prototype, based on conversations with members of the Saraguro community, we decided to include words that are central to the beliefs of their community. Words included are the four elements (water, fire, earth, wind ... central to the Raymis and traditional rituals), reciprocity (core value), corn (main crop), and poncho/sombrero (words to describe their clothing).

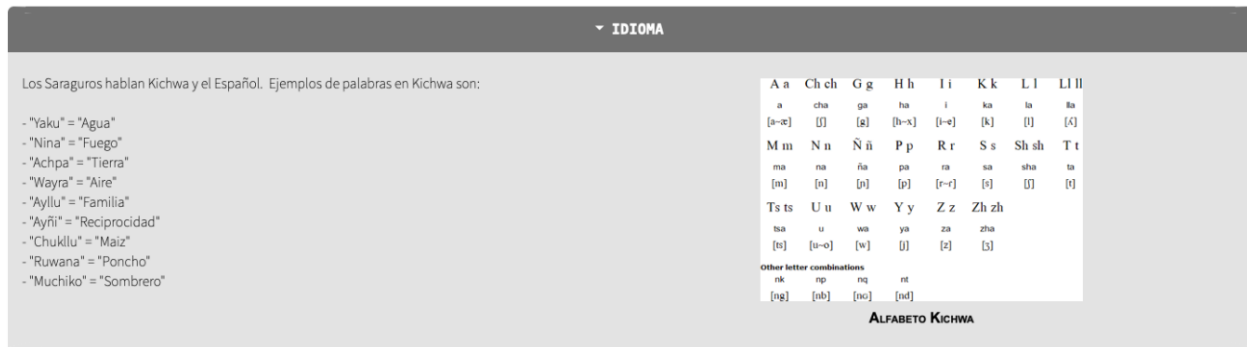


Figure H.4: Drop Down Menu #1; Providing Language of Culture

The second drop-down menu (Figure I.5) is immaterial memories, or abstract ideas that are not necessarily represented by physical objects. This section should include any aspects of the culture which are not concrete objects, but rather ideas or ideologies. Including, but not limited to rituals, traditions, religion/beliefs, stories, and legends. Based on conversation with Museum Staff and the Saraguro Community, an important topic of discussion was the four Raymis which are celebrated on the solstices and equinoxes throughout the year. As a result, we made the decision to include an image of Saraguro’s agro-festive calendar which depicts the cycle of these Raymis.

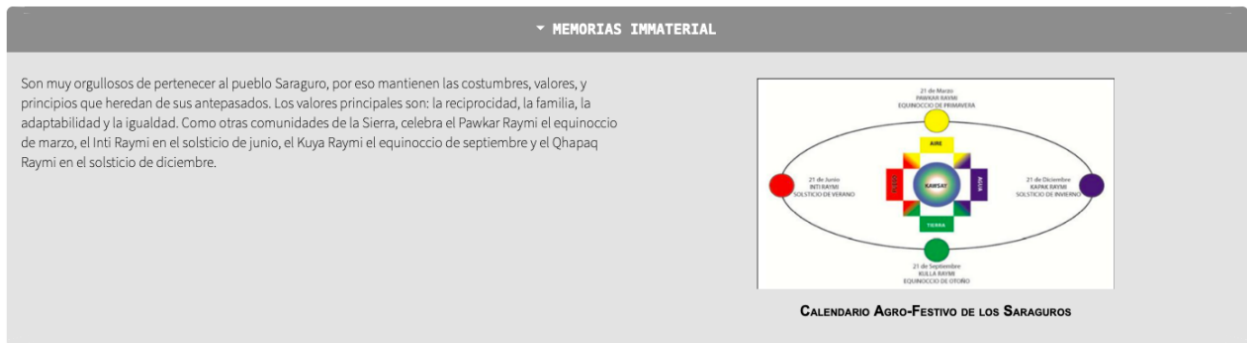


Figure H.5: Drop Down Menu #2; Providing Immaterial Memories of Culture

The third drop-down menu (Figure I.6) is clothing. This section should include the traditional and, where applicable, more modern versions of the clothing worn by members of the culture as well as its history and evolution, significance, and how it is made/what it is made from. For example, on our prototype, we included images of their cow hats, brooches (*tupus*), ponchos, belts and other pieces of clothing commonly worn that were available in the ethnographic reserve.



Figure H.6: Drop Down Menu #3; Providing Clothing of Culture, Gathered from Ethnographic Reserve

The fourth drop-down menu (Figure I.7) is Nourishment. This section should consist of traditional dishes or food-related items (cookware) that are central to the culture in question, including descriptions with their history, significance, and how it is made/ingredients. In our prototype, and based on conversations with the Saraguro Community, we made the decision to include information about the different types of crops they grow and harvest.



Figure H.7: Drop Down Menu #4; Providing Nourishment Details of Culture

Unfortunately, due to time constraints, we were not able to create a complete description with all relevant details about the Saraguro culture or provide descriptions/cultural context for all of the objects from the reserves included on the website, especially evident in the clothing section where we only included images of Saraguro clothing from the reserve with no description. We also did not have time to include audio recordings of the example words from the native Kichwa language in the language section. All of these features and details would be helpful to add to the website in the future.

Appendix I: Detailed Descriptions of Cultural Topics to Include

1. General Information/Culture Overview

This section should provide a brief overview of the culture that is being discussed, including but not limited to who they are, where they reside, and any pertinent historical information. This should include maps of their geographical location(s), as well as any interesting images related to the culture that do not fit in any of the specific categories.

2. Immaterial Memories

This section includes any aspect of the culture which are not concrete objects, but rather ideas or ideologies. Including, but not limited to: rituals, traditions, religion/beliefs, stories, and legends. Since these are not physical objects it is difficult to provide images, however visuals are still important to include, so photos or videos of traditions being practiced, or related objects or locations should be incorporated. Recordings of stories and legends or the sounds associated with rituals or traditions can also be included if available. Cultural symbols and ideas can also be incorporated into the layout of the webpages.

3. Language

This section should describe which language is spoken by the culture in question and provide examples of “simple words” and their translations into Spanish and/or English. In this section images of common items with names in Spanish and/or English as well as the native language can be included. Recordings such as songs in the native language may also be incorporated.

4. Clothing

The section should include the traditional and, where applicable, more modern versions of the clothing worn by members of the culture as well as its history and evolution, significance, and how it is made/what it is made from. Images of the clothing from the reserves labeled with what it is, what it is used for, and who wears it should be presented.

5. Food

This section should consist of traditional dishes or food-related items (cookware) that are central to the culture in question, including descriptions with their history, significance, and how it is made/ingredients. Visuals of the dishes, cookware from the reserves, and recipes should be included.

6. Objects from the ethnographic and other reserves, if they apply, should be included in each of these sections as the purpose of the website is to display the contents of the reserves for public education. If possible 3D images or other interactive visuals of the artifacts should be used to enhance the website.