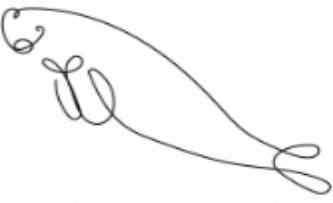


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TEAM DUGONG



Tutorial 02
AUTUMN 2023

TEAM PROPOSAL

DESING AREA 2.1

Low-cost tools to enable Elders to remotely visit Country

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Executive summary:

The content of this report entails a solution to the Engineers Without Borders challenge section 2.1: *Low-cost tools to enable Elders to remotely visit Country*. Many elders lack the ability to travel to traditional lands to connect with Country, this paired with their lower socioeconomic status, roughly 35% lower income than that of the national median status highlights the need for the tool to be low cost to ensure it is appropriate (Australian Bureau of Statistics, 2022). Elders who lack the mobility to travel to traditional lands can result in an inability to connect with their culture, posing an issue for their own wellbeing and that of the community as information from these knowledgeable elders cannot be passed on to the rest of the community. Hence, the proposed solution is a low-cost, user-friendly software application which will allow elders to remotely participate in traditional cultural rituals. This will be achieved through several features; elder-made learning modules, 3D interactive maps and video/audio/message communication. The platform will be designed in collaboration with elders and cultural advisors to ensure that it is appropriate and meaningful to its users. The success of this solution will depend on the involvement of elders and cultural advisors in all stages of the project to ensure that the platform is effective and culturally appropriate. Other stakeholders may include community members who may not have had the opportunity to visit their traditional lands and cultural sites. Further research is necessary to ensure that the platform is accessible to users with varying levels of technological proficiency and ensuring that they have the pre required hardware to run such program.

Team Reflection

After making this proposal for the EWB challenge in the Design Area 2.1, we evaluated our strengths and weaknesses. We reflected on what worked well and identified areas that would need improvement in future group tasks.

One of our groups strengths was our effective communication, allowing for open discussions, collaborative decision-making, and equal participation. Our ability to assign tasks and divide workload allowed us to work efficiently and effectively. By recognising each other's skills, we distributed tasks wisely. Allowing us to create a cohesive and well-rounded proposal. Integrating everyone's contribution through clear communication allows us to leverage our diverse perspective to create this proposal.

While we did not encounter any significant issues, we identified time-management skills as an area for improvement. We all tend to not start right away, but rather close to the individual due dates. We recognized that better time management would decrease the stress we occasionally faced which in turn would allow us to collaborate and produce cohesive content. However, this problem was mainly present in the early stages, and everyone adapted. We also went through the process of feeling the importance of being flexible when unexpected challenges arise, like someone getting sick and having to plan around that by adapting and responding to it swiftly and considered.

Overall, the teamwork on the project was a positive experience that helped us acknowledge our strengths and identify our weaknesses. We left the proposal feeling more confident and prepared for future projects, knowing that we can build on our strengths and continue to improve our collaboration and communication skills. By reflecting on our work, we were able to appreciate our accomplishments and learn from our mistakes, which will help us be even more successful in the future.

Introduction

The 2023 Engineers Without Borders (EWB) is a nationwide initiative that aims to 'protect, secure, support and promote' the interests of Aboriginal and Torres Strait Islander peoples of Australia (Engineers Without Borders, n.d.). EWB in collaboration with Dawul Wuru Aboriginal Corporation, have supplied project briefs that focus on the Yirrganydji community's "self-identified gaps" (Engineers Without Borders, n.d.) within the community, aiming to strengthen individual wellbeing, restore cultural connection to Country and promote environmentally sustainable practises (Engineers Without Borders, n.d.).

This document will provide background information on the Yirrganydji region, define the project problem, compare design solutions against strict criteria and then propose an innovative solution that combats the project problem. This process ensures that a human-centred design approach is prioritised, ensuring that the identified "gaps" (Engineers Without Borders, n.d.) within the community are resolved with a solution that aligns with the cultural requirements of the community.

The authors of the proposal promise to respect the Yirrganydji people's traditional ownership of the land; always acknowledging past, present and emerging Elders. The information presented relies on the wealth of knowledge that surrounds the Yirrganydji tradition, ensuring that the proposed design solution aims to assist in preserving and transferring this rich cultural heritage for and to successive generations.

Problem

Design Opportunity

The design opportunity that is being addressed within this report is design brief 2.1 "*Low-cost tools to enable Elders to remotely visit Country*". Essentially, the solution needs to ensure that elders who face mobility challenges are still able to engage with Country.

In direct comparison to stereotypical "Western" perspectives of Country, within the Yirrganydji community, Country incorporates the physical, social and cultural and within design brief 2.1, all these must be accounted for.

Problem Statement

How might we use low-cost IT tools to remotely connect Yirrganydji elders facing mobility challenges to country, in order to strengthen social connectivity and cultural identity.

Problem Scope

To maintain transparency between developers and stakeholders, outlining the scope of the project is crucial in establishing realistic expectations.

The below elements are being addressed within the solution:

1. Physical connection to land
2. Social connection to community
3. Cultural connection to country

However, it is important to highlight that devices will not be supplied. After contacting an EWB representative they highlighted that elders would have access to personal devices.

Background

The Yirrganydji peoples' elders hold a significant role carrying the knowledge of tradition, connecting with Country and metatemporal nature. They are the traditional owners of the land stretching from the coastal strip of Djabugay Country in Cairns to Port Douglas, and it is estimated that up to 4000 Indigenous people still reside within the region (Engineers Without Borders, 2023a). However, the Yirrganydji community has experienced intergenerational trauma and disadvantage since British colonisation in 1788, including forced removal from their culture and traditional land.

Despite these challenges, Yirrganydji Country remains a vital element of the Yirrganydji people's identity, providing life and sustenance as the central hub of medicinal resources and customary activity. One challenge faced by the community is enabling elders to remotely visit Country due to mobility issues, especially as their appreciation for the land is enhanced by the decreasing activity of the Yirrgay dialect. Thus, a low-cost alternative is urgently needed to nourish their well-being. However, any solution must consider the economical, socio-cultural, and environmental implications.

Sociocultural

An exploration of the sociocultural background including the history and customs of the Yirrganydji people highlights the importance of sustaining Country for it is the medium enabling social-connection and enhanced wellbeing. Ongoing intergenerational trauma and suffering as a result of the colonisation of Aboriginal land has forced Aboriginal communities across Australia – including the Yirrganydji people, to continue practising and sustaining what remains of their culture (Australian Human Rights Commission, n.d.). The responsibility of this conservation lays more heavily on the Elders, where they carry through their perspective of the land beyond its physicality, appreciating it as a source of life and thus establishing a spiritual connection to Country. As the central hub of medicinal resources and customary activity (Engineers Without Borders, n.d.), it is no wonder the vulnerability and importance of this Country has resulted in both international and national endeavours to protect both title and the land itself, such as the Native Title Act 1993 (National Native Title Tribunal, 2023).

The Dreaming is substantial evidence for the deep connection to Country that has thrived for thousands of years. It is the concept of metaphysical storytelling and ritualistic expression where the land is the medium for this exchange of story. Caring for Country is a community-driven initiative that promotes both ecological and spiritual well-being – holding power not just to improve environmental health but also mental health (Berry et al., 2009). Therefore, it is important that an implemented tool is able to preserve and advance this relationship – particularly for the Elders as their connection to Country holds greater weight on their wellbeing. In addition to this factor, it is crucial that the proposed solution is not executed at the expense of social interaction. With intimate communities such as these that span across far-North Queensland, Elders must be able to nourish their relationships with others.

Economic

Cape York is typically a lower income region with the median income for an individual in this region being just \$520 per week which is around 35% lower than that of the national median (Australian Bureau of Statistics, 2021). The region also has an 11.1% higher unemployment rate (Australian Bureau of Statistics, 2021). In regard to infrastructure, accessibility measurements are limited including walking-aid (such as wheelchairs) and ramp locations (Quicksilver Group, n.d.). With this disadvantaged economic state, both the production and implementation of the synthesised ICT tool must therefore be extremely inexpensive while still successfully supporting connection to Country and others.

Environmental

To evaluate the accessibility problem for the elderly with decreased mobility, it's important to consider the region's sea and land environment. The Yirrganydji Country, a region in North Queensland, Australia, spans from Cairns to Port Douglas and is part of the wet tropics bioregion, covering around 20,000 sq. Km (Department of Environment and Science, Queensland, 2013). The immense region can be divided into two major parts: Sea Country and Land Country, and the climate also plays a significant role in the culture and environment. The sea region is mainly habitat for a wide variety of rare species. Furthermore, these areas are interwoven with the Yirrganydji culture, since they are parts of stories passed down from ancestors. This is referred to as "bio-cultural diversity". (Dawul Wuru Aboriginal Corporation & Yirrganydji People, 2014)

The weather in the Yirrganydji Country can be divided into two major seasons: wet season (Nov-May) and dry season (May-Nov). The wet season has two minor seasons, storm time (Jawarranyji) and cyclone time (Jimburriliji), while the wet duration has winter (Jinjim), windy time (Yiwanyji), and hot and humid period (Wumbulji). (Bureau of Meteorology, 2016).

This should show how hard the land is to access not only for elders, but even in general for most people. With this inaccessible land and water country and the strong weather changes the ICT solution still needs to be able to perform its task.

Final Considerations

Analyses of these three factors: sociocultural, economic, and environmental, all allow for a final judgment to be made regarding this low-cost ICT tool. From this evaluation, one can deduce that both capital and operational expenditure must be kept minimal due to the already low-socioeconomic state, and that the final product must support Country and social connectivity for Elders in order to nourish their sincere relationship to land and yearning for connection to others. Within environmental means, it is important that no damage is left on their Country and that despite extreme fluctuations in climate, Yirrganydji Elders still hold full access to the new solution.

Design Criteria

To effectively implement a solution that meets the stakeholder's requirements, outlining a success criteria is imperative, this is featured below.

Criteria	Justification
Low-Cost	As highlighted by Dawul Wuru, a low-cost IT tool must be implemented. Upon further investigation, it was found that the median weekly household of Port Douglas was \$822 lower when compared to Brisbane; finance must not hinder access to Country.
User Friendly	Due to the primary users of the ICT tool being Indigenous elders, it was important to consider and accommodate their technical literacy and skill.
Interactive	Although the main purpose of the solution was to ensure education and connection to the country, developing an ICT solution that encouraged user enjoyment and continued use was of high priority.
Culturally Appropriate	Due to the application being developed for target stakeholders who value their rich cultural heritage, ensuring the solution aligned with these values was imperative in ensuring the solution was successfully implemented.
Social Connectivity	It was also important to ensure that all elements of Country have been accounted for in the design's solution. Within the Yirrganydji culture, Country is not just the physical landscape, but it is a medium where social connectivity is facilitated.

Based on the criteria established, several design options have been ideated and thus compared against the criteria; highlighting the most effective solution that can be implemented.

OPTION 1: social media

An Internal Yirrganydji Social Media app (similar to Instagram) where community members can communicate a shared connection to country through direct messages and posts/videos regarding country and cultural identity.

CRITERIA	POSITIVE	NEGATIVE
LOW-COST	Due to the application only requiring simple website/application technology this idea is a low-cost solution.	
USER FRIENDLY		The technical literacy of the elders may pose an issue as to obtain the resource, fundamental knowledge about

		downloading applications and interacting with technology must be understood.
INTERACTIVE	Users can control the application through creating message, calls and posts to other elders.	
CULTURALLY APPROPRIATE		A social media style application is not culturally appropriate as many believe it too 'Shallow'.
SOCIAL CONNECTIVITY	This solution is very effective in providing a platform for elders to communicate remotely.	

OPTION 2: Software application: Kurra Kurra

Option 2 is a Software Application that aims to share and strengthen the cultural identity of the Yirrganydji tradition. Features include:

- Elder-Made learning Modules
- 3D immersive video map technology that has been already developed by Dawul Wuru for Virtual Reality technology (Engineers Without Borders, 2023b)
- Private Message/Call Technology

CRITERIA	POSITIVE	NEGATIVE
LOW-COST	The solution utilises already established technology which contributes to the sentiment of creating a low-cost IT tool that can be accessed by all. The technology that is needed includes a phone/computer, internet infrastructure (already established within the region) and previously developed VR technology	
USER FRIENDLY		The technical literacy of the elders may pose an issue as to obtain the resource, fundamental knowledge about downloading applications and interacting with technology must be understood.
INTERACTIVE	Due to the content within the learning modules being made by the elders, this solution is highly interactive.	
CULTURALLY APPROPRIATE	The learning modules also allow elders to educate and share traditional knowledge - fulfilling their cultural responsibility by communicating cultural knowledge and strengthening community connections.	

SOCIAL CONNECTIVITY	The private message/call technology strengthens the social and community connection to country. Elders are able to communicate about content creation, cultural history and community needs.	
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OPTION 3: Website and Software Application: Understand My Culture

Option 3 is an online Website/Application that features pre-made learning modules for elders to view and reconnect with the knowledge and traditions that Country holds. Private cultural information will be encrypted for protection of practices.

Information will include:

- Dreaming stories
- Cultural Art and Rituals
- Languages and Sacred Sites.

CRITERIA	POSITIVE	NEGATIVE
LOW-COST	Due to the application only requiring simple website/application technology this idea is a low-cost solution.	
USER FRIENDLY		The technical literacy of the elders may pose an issue as to obtain the resource, fundamental knowledge about downloading applications and interacting with technology must be understood.
INTERACTIVE		Users are simply just reading the content provided. Therefore, the solution is not interactive or engaging.
CULTURALLY APPROPRIATE		A Lack of elder involvement arises a problem of accuracy of information and cultural appropriateness
SOCIAL CONNECTIVITY		Lack of connection to the country through the community as it's an individually paced learning program,

DECISION MATRIX

	Low-Cost IT Tool	User Friendly	Social Connectivity	Interactive	Culturally aligned	Total Score	Ranking
Weighting	5	3	5	3	4		
Idea 1	Social Media application that allows for community communication through direct messages and posts						
Weighted Score	3	1	3	2	0	39	3
Idea 2	Software Application featuring elder-made learning modules, messenger functions and interactive 3D map resources						
Weighted Score	3	3	5	3	3	70	1
Idea 3	Website that displays pre-Made learning modules for elders to view and learn from						
Weighted Score	3	2	1	1	2	37	4

Design Solution

To reiterate, option 2 is a Software Application that shares and strengthens the cultural traditions of the Yirrganydji tradition. Features include:

- Elder-Made learning Modules which allow elders to spread the cultural heritage of the Yirrganydji community.
- 3D immersive video map technology that aims to physically connect elders to country.
- Private Message/Call Technology to facilitate a social and community driven connection to country.

The aim of this tool is to empower elders to emotionally reconnect with tradition, physically connect to land and socially connect with community - all integral elements in ensuring that elders continue to maintain and strengthen their connection to Country despite facing mobility challenges.

CORRELATION TO DECISION MATRIX

The first feature, Elder-made learning modules, aligns with the criteria of being culturally appropriate (4/5 weighting) and user-friendly (3/5 weighting). This feature empowers elders to share their knowledge with the younger generation, ensuring the continuation of cultural traditions. It also respects the cultural values of the Yirrganydji community and accommodates their technical literacy.

The second feature, 3D immersive video map technology, aligns with the criteria of low-cost IT tools (5/5 weighting) and interactive (3/5 weighting). This feature allows elders to physically connect with their country, despite potential physical barriers such as mobility issues, as well as making it interactive which increase enjoyment and engagement.

Private message/call technology aligns with the criteria of social connectivity (5/5 weighting). This feature enables elders to communicate with members of the Yirrganydji community, fostering social and community-driven connections to country. It also ensures that the software is relevant and practical in a modern environment.

Overall, this combination of features provides a comprehensive solution that addresses the key criteria identified in the decision matrix weighting. It respects the cultural values of the Yirrganydji community, accommodates their technical literacy and skill, physically connects elders to country, fosters social and community-driven connections, and is relevant and practical in a modern environment.

Implementation Plan

Product longevity and sustainability are imperative in ensuring that the proposed solution is effectively delivered and meets the requirements of stakeholders. To maximise the impact that the design solution holds, encouraging community engagement and utilising local expertise is crucial.

For the product to be successfully implemented, three sub-phases must be executed:

1. Product Development
2. Product Introduction, Management and Maintenance
3. Knowledge Transfer

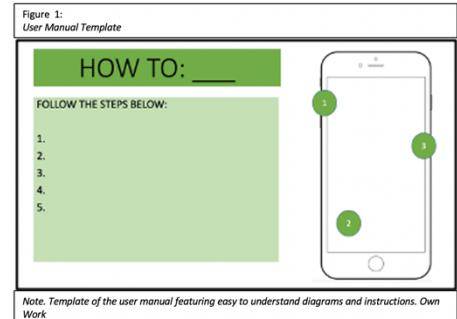
PHASE 1: PRODUCT DEVELOPMENT

- A local app development company within the Queensland region should be contacted to develop the solution. By utilising a local developer, they will be able to connect with the application and truly understand the cultural needs of the community.
- Another option for product development would be contacting the same developers that are creating the Yirrganydji language app mentioned in the summary section of the ICT design brief. This company would be familiar with the stakeholders and understand the cultural requirement of the community thus developing a solution that remains consistent for the Yirrganydji people. Although EWB will have ownership over the app, the local developers will manage the application and incorporate any revisions that are required.

PHASE 2: PRODUCT INTRODUCTION, MANAGEMENT AND MAINTENANCE

- Develop a marketing strategy that educates community members on the application. It is important to advertise this to all members of the community as many Elders will be hesitant to adopt the application. However, if promoted and influenced by family and friends, elders may be more willing.

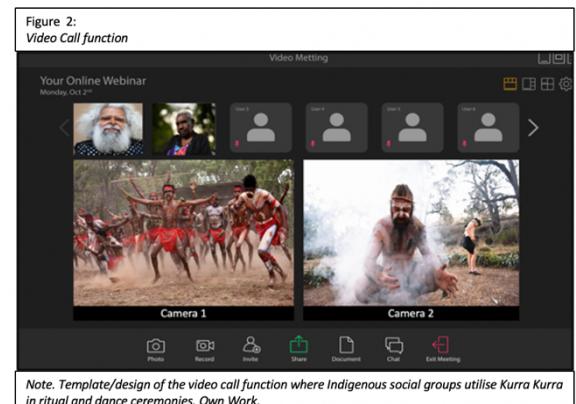
- Due to the key users of the application being Elders a clear and concise user manual needs to be developed. As seen in figure 1, the manual needs to contain many diagrams and steps to ensure Elders understand how to use the application and if any issues occur, they can consult the manual.



- Train local representatives to manage the application and assist users if they are unable to resolve the issue by consulting the user manual.
- Establish a feedback mechanism, so all users can identify any issues or suggest recommendations so they can be implemented in the future; these will then be sent to the local app development team.

PHASE 3: KNOWLEDGE TRANSFER

- Conduct community consultation and training programs/workshops to educate both elders and community members on how to use the application and allow for community involvement.
- Make other community organisations/groups aware of the application so that they can utilise the features and ensure that if any events occur elders can be included through the video call feature (as seen in figure 2), so the application is used as intended.



Design Costing

Elder-Made learning Modules:

- Requires a volunteer to communicate information from the elders to the developers.

3D immersive video map technology:

- Incorporate predesigned VR by the Dawul Wuru corporation as the basis of the operating system.

Private Message/Call Technology:

- A simple extension can be created onto the program redirecting users to a Zoom call.

Evidently the main costs will derive from the programming of the apps interface and the development of learning modules. Minor costs will be the maintenance and upkeep of the app.

TASK	APPROXIMATE COST
DEVELOPER Initial Application Development	According to Oozou (2018) the Kurra Kurra application is estimated to cost approximately \$25,000 - 37,000 AUD. However, this is just an estimate and could be reduced having pre-designed UI utilising 'recycled' VR map technology.
DEVELOPER Maintenance / content updates	According to a report on app development cost by Dogtiev (2023), Maintenance / updates to an IOS application is estimated to cost around 15%-20% of the initial development cost per year (approximately 1.25%-1.7% per month). This is just an estimate and could differ depending on the complexity of the updates.
SERVER / DATA HOSTING Online Server Hosting User Data	Hosting a server and data for an IOS application can range anywhere from \$70 - \$300+ Georgiou. (2023, February 21). Considering this application is only hosting data created by a small community it is fair to assume the monthly cost would be around \$75 AUD.
IT EDUCATION REPRESENTATIVES Monthly Training courses for a 6-month onboarding period	IT educators are estimated to charge around \$30 per hour. Based off 1hr a week for 6 months it would cost roughly \$720 per educator for the entire duration of the onboarding period. Approximately 5 educators would be required which comes to a total cost of \$3600 for IT education.

Design Prototype

Kurra Kurra is a Software Application that connects elders to the cultural, social and physical aspects of Country. Below explains the three main functions of the app, what purpose they serve and how they solve the problem.

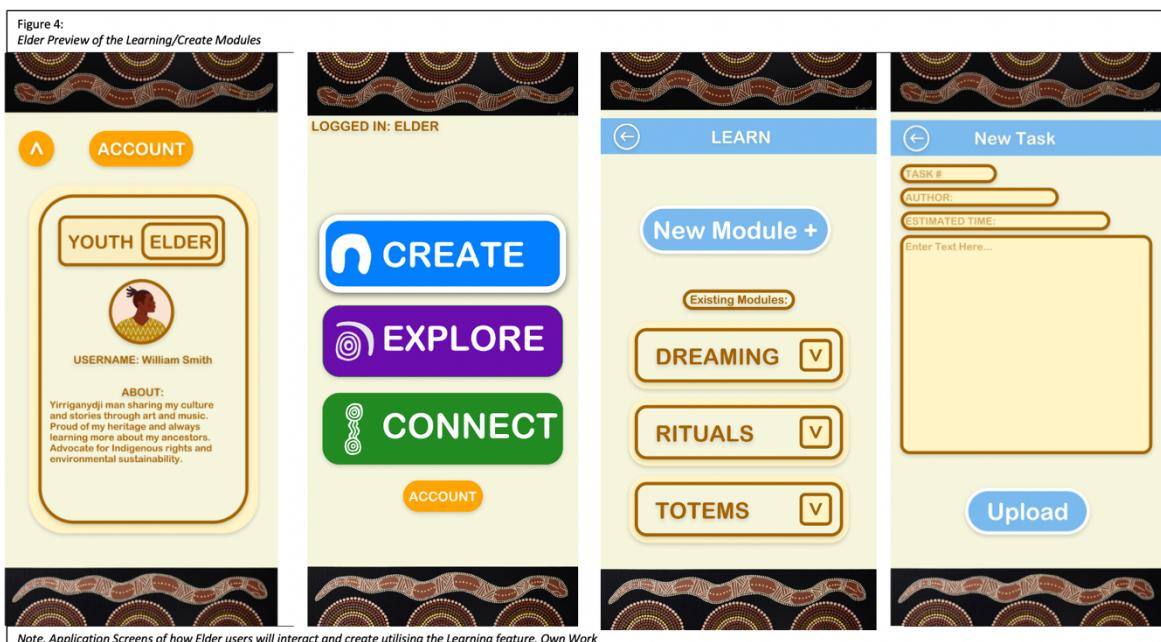
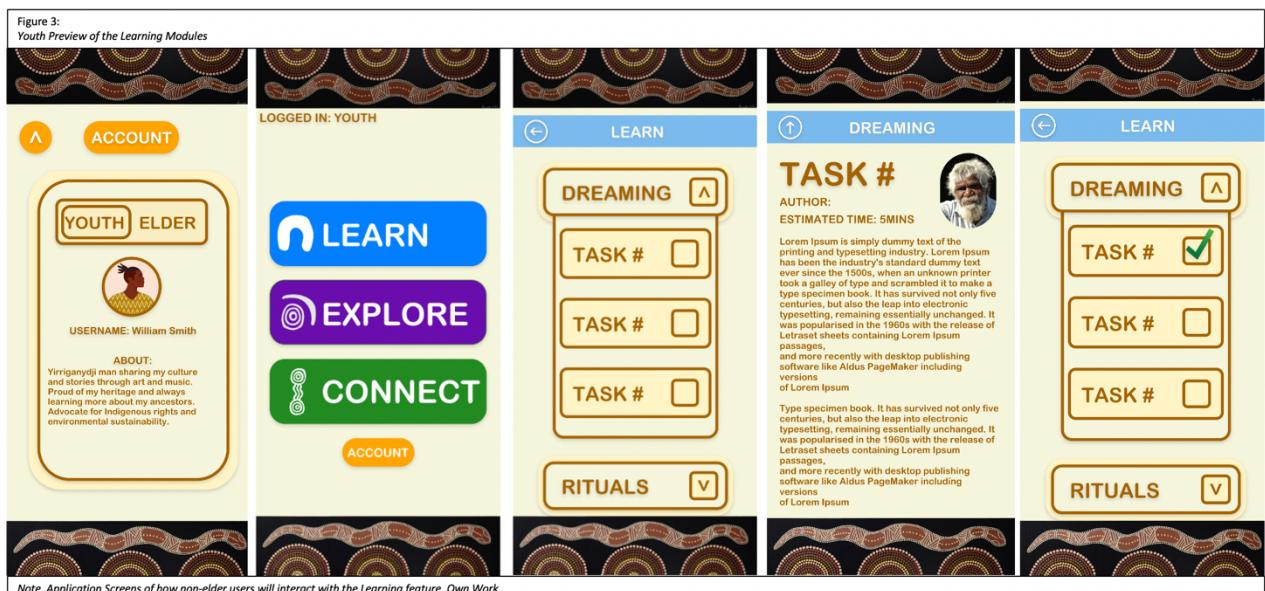
ELDER MADE LEARNING MODULES

The Learning module feature creates a space where elder-made (as seen in figure 4) learning resources explaining the cultural heritage of the community can be accessed by all. These modules include information relating to:

- Dreaming stories
- Cultural Art
- Cultural Ritual

This can be seen in figure 3.

By creating this space Yirrganydji elders can actively participate and interact with the creation of the IT solution (as seen in figure 4) which allows cultural values and traditions to be shared and celebrated by all members of society which is displayed in figure 3.



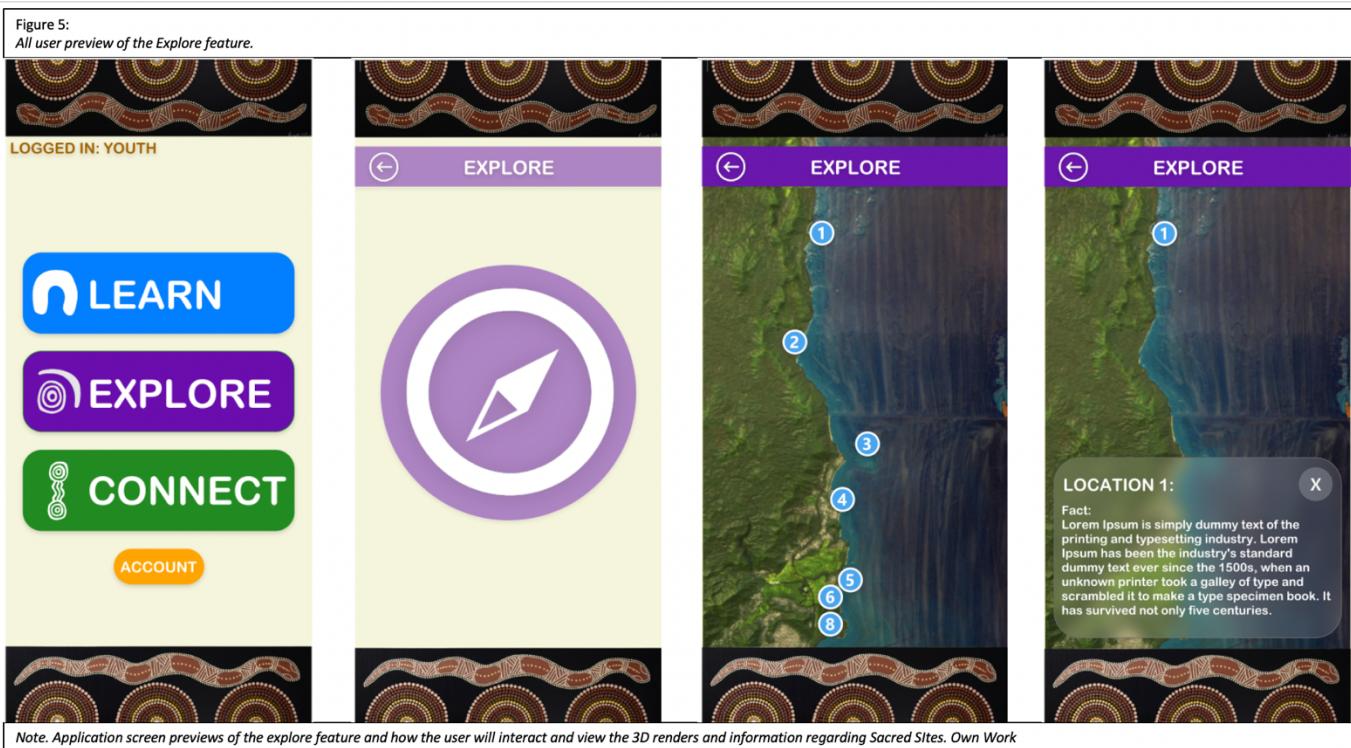
3D IMMERSIVE MAPS

The second feature involves integrating a 3D map and video visuals of country, as seen in figure 5. This feature physically connects users to country, a key cultural need that must be addressed.

It is important to highlight, that in (Year) the Dawul Wuru Aboriginal Corporation in collaboration with Yirrganydji elders implemented Virtual Reality (VR) technology to physically connect elders to country facing mobility challenges. Although successful in the design phase, upon implementation elders highlighted that the individual nature of VR did not align with the collective nature of Country.

In an effort to 'recycle' already established technology, solution 2 will utilise the simulations and immersive videos gathered in this process and incorporate them within the learning modules - as the VR proved successful in physically connecting elders to country, just not socially and emotionally.

Regarding user permissions, all people (Indigenous and non-Indigenous) will be able to access the above features. The modules and maps serve a vital role in spreading, preserving and maintaining the rich cultural truths that the Yirrganydji elders hold. These highly accessible features hold the power to encourage dialogue and foster understanding between communities - establishing a sense of unity as all can connection with Country.

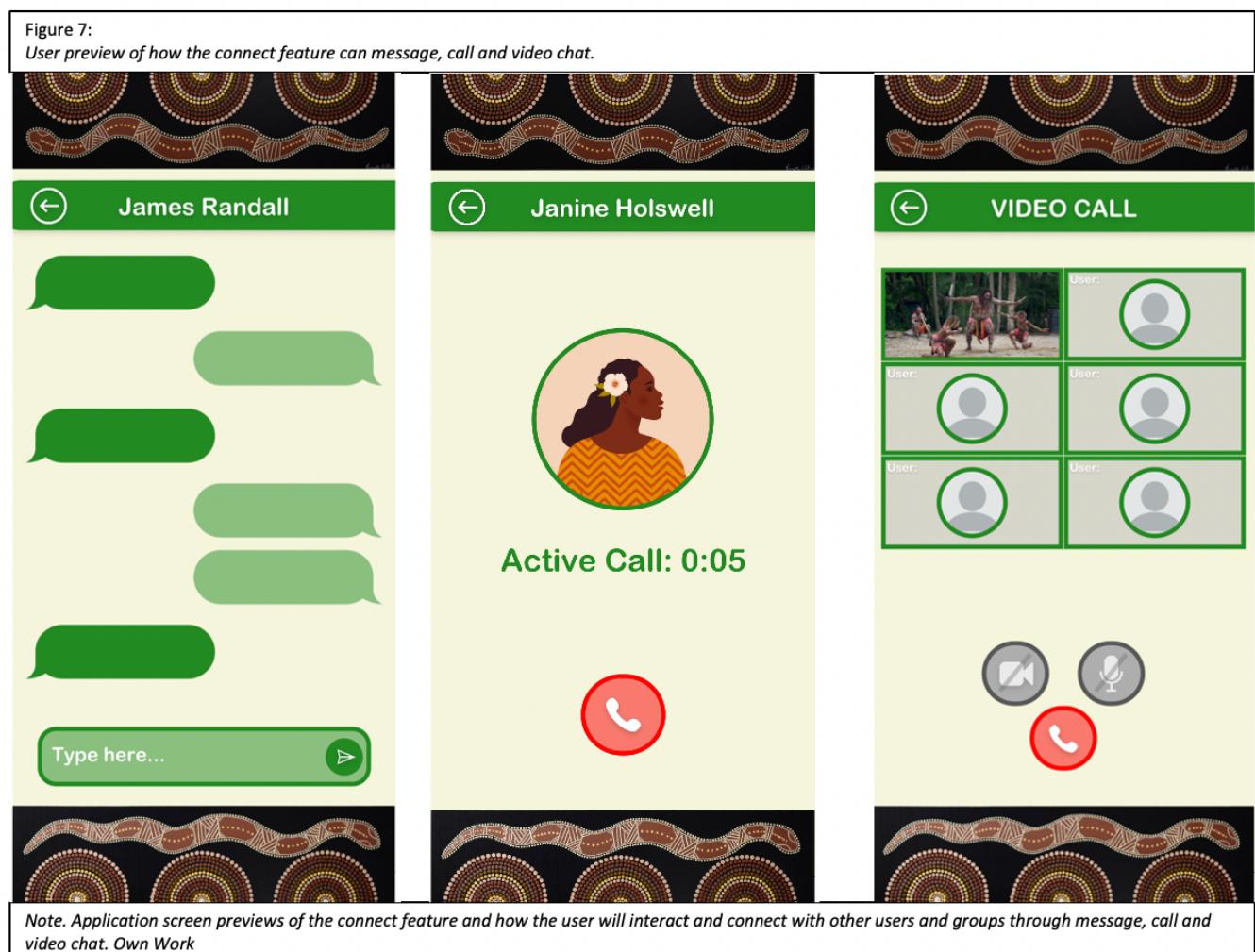
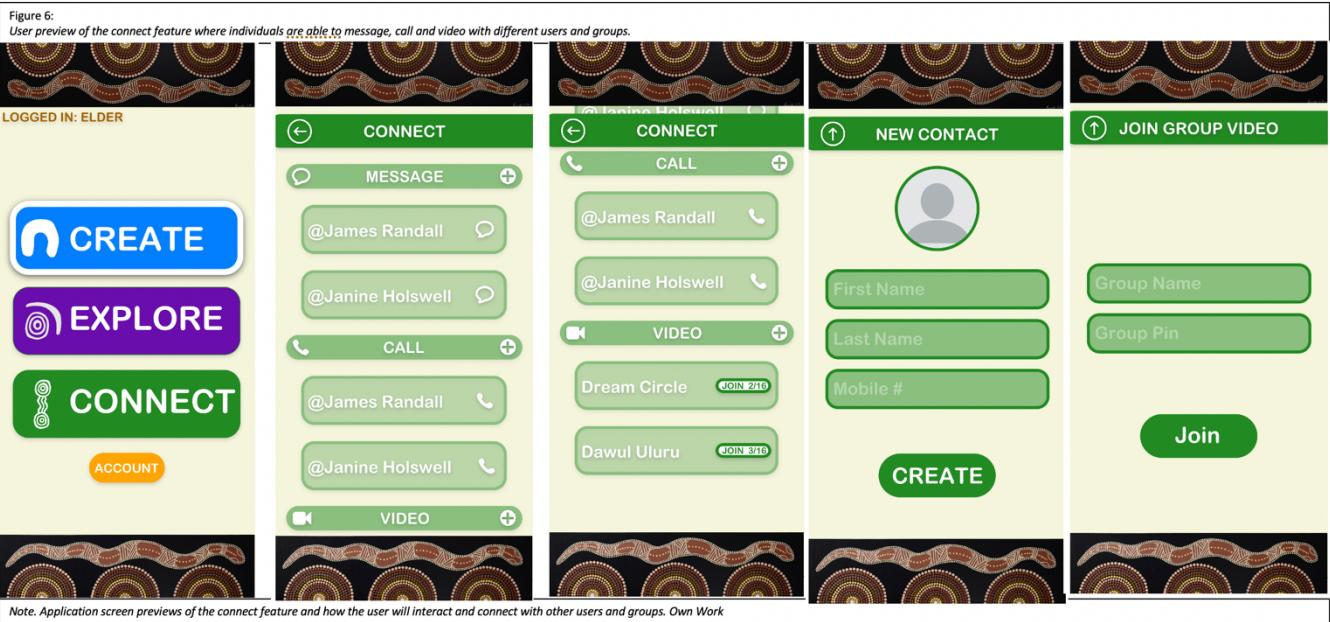


PRIVATE MESSAGE/VIDEO CALL TECHNOLOGY

To facilitate a social connection to Country through private password protected messaging features and video call/audio technology will be utilised to encourage social connectivity, as seen in figure 6 and 7.

This feature will enable:

- Elders to securely discuss culturally sensitive information with one another, free from the limitations of their mobility challenges.
- A remote spiritual connection to country as elders will be able to discuss, collaborate and create the content featured within the learning resources.
- Elders to fulfill their cultural responsibility through the sharing of cultural identity - preserving and advancing a tradition that has stood the test of time.



Design Discussion

For the team to synthesise and implement an appropriate solution, it was important to discuss factors that relate to the long-term sustainability and efficacy of the solution, directly relating to the stakeholders needs.

Community Needs

As the problem statements entails, the final product must enable the client: Yirrganydji elders facing mobility issues, to connect to the physical, social and cultural elements of Country.

To reiterate, option 2 is a Software Application that features:

- Elder-Made learning Modules - which allow elders to spread the cultural heritage of the Yirrganydji community, fulfilling their cultural responsibility and establishing a greater sense of purpose.
- 3D immersive video map technology that aims to physically connect elders to country - allowing elders to remotely connect with sacred sites, ancestors and ritual.
- Private Message/Call Technology to facilitate a social and community driven connection to country.

The aim of this tool is to empower elders to emotionally reconnect with tradition, physically connect to land and socially connect with community - all integral elements in ensuring that elders continue to maintain and strengthen their connection to Country despite facing mobility challenges.

Legislature

It is important to also highlight that this project will be developed and implemented in accordance with the:

- 1988 Privacy Act (Cth)
- 1995 Criminal Code Act (Cth)

which ensures the safe, responsible and lawful use of Information Technology.

Community Involvement

The effectiveness of the solution thrives on community engagement. As understood throughout the empathising design phase, it is important to acknowledge and appreciate that the Indigenous community require complete autonomy and agency over their culture; thus, influencing design choices. Essentially, a human-centered design framework has been implemented to allow their community to utilise the app to strengthen their cultural identity free from outside influence. With this heavy involvement, an effective incentive is offered to both the Elders and other members as the younger generations value this education and thus provide encouragement and support to those writing the learning modules.

Sustainability Analysis

Sector	Impact
Cultural	Positively sustainable! Due to the elders facing mobility challenges they are unable to fulfill their cultural responsibility of sharing the tradition to younger generations, thus unfortunately facing the reality that the cultural tradition may be lost. Therefore, this solution acts as a messenger and a medium in which cultural knowledge and engagement can be communicated and sustained.
Environmental	Little to no environmental footprint is left behind as this app will be accessed through smart devices already made available to Yirrganydji communities across far-North Queensland including Cairns, Yarrabah, and Kuranda. In addition, as cable internet infrastructure is currently in place, there will be no hardware adjustments to be implemented.
Economical	<p>The project is low-cost as minimal maintenance of the app is required. As the 3D interactive map of Yirrganydji Country has already been developed by Dawul Wuru Corporation, this feature will be recycled and introduced as the gateway to virtual Country exploration within the <i>Kurra Kurra</i> app.</p> <p>Volunteers and younger generations will be bringing positive influence to the Elders through training, advertisement, and involvement through the app such as community events and seminars. Therefore, funding may need to be supplied to activities as such but will remain inexpensive. Overall, the project will continue to be economically sustainable post-implementation.</p>
Social	The <i>Kurra Kurra</i> app will leave a lasting positive impact on the social connectivity of the Yirrganydji community. Through learning modules and generation-wide participation, the relationship between the youth and Elders will be strengthened immensely, as well as the Elders' bond with Country – including land and culture. With such heavy involvement, the educational aspect will be sustained due to plentiful stories to be passed down; and the connectivity page will allow for social interaction both virtually and face-to-face. Ultimately, <i>Kurra Kurra</i> allows social connectivity to thrive across all sides of the Yirrganydji community.

Challenges

The dependence on community-wide involvement for successful implementation is crucial. As the app will need to mirror the dynamic culture of the community with content avoiding stagnancy, this can pose to be a challenge. Integrating technology within Indigenous culture is new, many Elders express a deep reservation and hesitancy surrounds technology as this terrain is new and foreign. To tackle this, training will be provided to Elders to improve their technical literacy so that elders are able to independently operate the app. The co-dependent relationships across generational groups will also positively influence the successful adoption of the app, *Kurra Kurra* needs to be embraced by the entire community.

Overall, the *Kurra Kurra* app will ultimately enable Yirrganydji elders to connect to Country through celebrating cultural story, facilitating virtual exploration of land and fostering social connectivity.

Conclusion

In all, this report presents a proposed solution to the EWB challenge which involved enabling elders to remotely visit country through low-cost tools. The need for such a solution arises from the lack of mobility faced by the elders as well as the lower socioeconomic status of many elders. This results in the elders not being able to connect with their culture and pass on their valuable knowledge to the wider community. The proposed solution is a user-friendly app which allows elders to get involved in traditional cultural activities and visit country through a 3D interactive map. The success of our solution will rely on elders getting involved and ensuring that it is effective and culturally appropriate. Further research is needed to ensure accessibility for all users of varying levels of technological proficiency as well as the availability of select hardware. Overall, the proposed solution has the potential to improve the wellbeing of elders and allow them to remotely access country.

Recommendation

It is recommended that elders make use of all interactive features and tools the app provides. Kurra Kurra will help elders stay connected with their culture and identity while also maintaining their independence.

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