TECHNOLOGY CONSULTING
IN THE GLOBAL COMMUNITY

Final Consulting Report
Palau Ministry Of Human Resources,
Culture, Tourism and Development
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Palau Ministry Of Human Resources, Culture, Tourism and Development
Executive Summary

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Community Partner, Ngirai Tmetuchl

I. About the Organization

The Ministry of Human Resources, Culture, Tourism and Development (MHRCTD) in Palau is a "Super Ministry" that was established in 2021 and headed by Minister Ngirai Tmetuchl. Their offices are located at various different buildings in downtown Koror, along with the capitol building in Ngerulmud. Ther mission statement is as follows:

> *We are the Ministry of Human Resources, Culture, Tourism, and Development– also known as MHRCTD. We recognize that our people and culture are our most valuable assets. We aspire to ensure Palauans and the youth of Palau are accorded the best opportunities to succeed in the areas of tourism, the arts and business development. We are here to build a confident and resilient Palau and what that means is a fulfilled and engaged people with a vibrant community living in a cohesive and caring society.*

The MHRCTD's primary objective is to ensure "life enriching opportunities" through human resources, culture, tourism, and economic development for the people of Palau as well as visitors. The MHRCTD consists of many different departments and offices throughout the island, including the Palau Visitors Authority, the Division of Employment Servcies, or the Bureau of Cultural and Historical Preservation.

II. Implementing a New Permitting Software

Going into the project, one of the MHRTCD's largest areas of concern related to how they conduct their permitting processes, which often involves manually delivering physical documents to other offices in order to obtain the necessary signatures or information in order to complete and issue that form. This problem is important to solve because the current situation is characterized by unnecessary wasted time and a strong lack of convenience. By recommending software that would allow for a digitized version to this process, this would ideally allow permits to be issued without having to physically go to different offices for information and signatures. Thus, the primary goal of this engagement was to reduce inefficiency and wasted time that was caused by the previous permitting process through the recommendation of a permit management software.

Activities conducted towards this selection process included:

- Discussions with Ministry employees
- Research
- Development of reports

- Communications with software brand representatives
- Participation in demos
- Using consumer reviews and case studies

Outputs included:

- Project Proposal
- Analysis of Needs report
- Software Candidate report
- Software Recommendation
- Implementation plan
- Risk Analysis
- Change Management plan

Unfortunately, the recommended software was unable to be implemented due to a last-minute restriction on non-US countries from the company itself. The recommendations provided in the wake of this occurrence are detailed below. The strongest recommendation is for the Ministry to pursue a homegrown solution, which is most likely to succeed because it will likely involve more inexpensive software that Ministry employees may already be familiar with (such as Google Workspace or Docusign), and can still serve as an effective digital forms solution that can address most of the Ministry's needs regarding a new permitting system.

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Palau Ministry of Human Resources, Culture, Tourism, and Development Proposal

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I. About the Organization

Organization

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The ministry was formed in 2021 with the purpose of assuming the responsibilities of the former Ministry of Community and Cultural Affairs, including the Bureau of Cultural Affairs and Youth Affairs, and also takes on the Human Resources branch that was previously under the Ministry of Justice as the Labor Division. The new super ministry also added tourism to its responsibilities from the former Bureau of Tourism from the Ministry of Natural Resources, Environment and Tourism, and finally took on development, which had formerly

been under the supervision of the Commerce branch of the Ministry of Public Infrastructures, Industries, and Commerce. Because of the size and scope of the new ministry, its offices are divided into different bureaus and are spread throughout the island.

The MHRCTD's primary objective is to ensure "life enriching opportunities" through human resources, culture, tourism, and economic development for the people of Palau as well as visitors. While tourism is a large facet of the ministry, another important theme is the preservation of ancient Palauan cultures, customs, and traditions, while at the same time striving to promote modernization and inspire youth.

Facilities

The MHRCTD consists of many different departments, and thus the offices within the ministry are spread throughout Koror as well as some being in Ngerulmud, Palau's Capital. Many of the relevant departments within the ministry operate out of the Palau Visitors Authority building, which is located in downtown Koror. The first floor of this building is home to a welcome center as well as a conference room where the ministry's board meetings are commonly held, along with other relevant gatherings. The first floor also houses the offices dedicated towards tourism, while the second floor of the building is used for the PVA's marketing needs. all of the rooms at the previous building have adequate space and lighting as well as PCS that employees use during working hours. The Division of Employment Service is also located in downtown Koror, however it is located at a temporary office space and not an official building. Because of this, the conditions at this office are not quite as good as that of the PVA building, however there are still more than adequate levels of lighting, space, and air conditioning. Finally, the Bureau of Cultural and Historical Preservation is located in Palau's capitol, Ngerulmud. The facilities in the capitol building are similarly adequate to that of the PVA building, with good lighting and workers separated by cubicles. All three facilities have working internet access and accessibility to computers.

Programs

Described below are some of the primary programs run under MHRCTD.

Palau Visitors Authority

The Palau Visitors Authority (PVA) is a semi-autonomous body that acts as "a liaison between the tourism industry and the community" and serves both to aide tourists by helping them access tourism destinations and attractions, as well as encourage the development and marketing of tourism as one of the island's primary economic sectors. PVA is overseen by a board of seven members, whose responsibilities include developing policies and guidelines as a basis for PVA's operation and marketing direction, as well as recommending legislation regarding tourism to Palau's President and Congress. PVA is split into different segments based on their objectives and needs, including branches responsible for assisting in the establishment of potential tourist sites and others for generating awareness about tourism. Computers are used primarily for handling information regarding permitting, marketing, PVA websites, and social media.

Division of Employment Service

The primary objective of the Division of Employment Service regards the issuing of work permits for non-Palauan citizens intending to live and work on the island. These permits are a necessity for travelers to acquire a work visa, and expire every two years, although they can be renewed. Information regarding applications, permits, and people are housed on the office's WebPlus site. In order for permits to be issued, the bureau requires information on the applicant from both Palau's immigration office and the police department, in order to clear the person in question for work.

Bureau of Historical and Cultural Preservation

The Bureau of Cultural and Historical Preservation (BHCP) was established to ensure the preservation of Palau's historic and cultural heritage. To meet this responsibility, the BCHP is divided into five working sections, each engaged in a specific aspect of historic and cultural preservation. The focus of these working sections includes: (1) the administration of overall BCHP operations; (2) the survey and inventory of cultural, historical, and archaeological sites and historic clearance review process; (3) the nomination, registration, and restoration of sites; (4) public education and outreach. Objectives of the BHCP include conducting archaeological survey and inventory, nominating and registering sites to the Palau Register, recording and preserving traditional culture and oral history, and engaging in public education.

Alcohol Beverage License Office

The Alcohol Beverage License Office is responsible for the handling of permits by establishments wishing to distribute alcohol. Many of their processes are relatively straightforward, but the bulk of their work involves the issuing and acceptance of such beverage permits.

Staff

Name	Role	Responsibilities
Ngirai Tmetuchl	Minister, Ministry of Human Resources, Culture, Tourism, and Development	Head of the MHRCTD and Chairman of the Palau Visitors Authority Board
Raymond August	Chief, Division of Employment Service	Works closely with the issuing of work permits for the Division of Employment Service of the ministry. Uses computers to access current

		database system for work permits and individuals who work or have worked in Palau through these permits
Kiblas Soaladaob	Director, Bureau of Cultural and Historical Preservation	Responsible for managing data and files related to culture and ethnography, which includes collecting, categorizing, sorting and storing oral histories and other means of cultural preservation. Uses computers for these purposes, and often only stores files on computers in pdf forms
Ray Marino	Compliance Specialist, Bureau of Tourism	Head of Bureau of Tourism, which deals with the issuing of permits for establishments or businesses who wish to be designated as a tourism spot or use a boat for tourism purposes. Uses computers to input information from physical permits into the Bureau's google drive, often using excel or google sheets

Technology Infrastructure

Below is a summary of the technology infrastructure used across the MHRCTD

Hardware	The majority of hardware within the ministry consists of Dell computers and monitors.
Software Programs	- Google Workspace - Google Drive serves as the primary file sharing storage system for the offices working out of the PVA - Microsoft Access - The Tourism Office within the PVA has a Microsoft Access Database that was implemented by a previous TCinGC consultant, however it is rarely used due to the fact that the employees in the office do not feel comfortable enough using the software, and that their needs are already satisfactorily met using Google Drive - Microsoft Office - Microsoft Excel is commonly used to track

	data, especially information regarding permitting
Internet	Each office has their own internal wifi network through the Palau National Communications Corporation.
Websites	The Division of Employment Service website is a WebPlus system, while the Palau visitor's website managed by the PVA's marketing office was created through WordPress.
Communication	Communication is primarily conducted through calls and through personal emails. Nearly all employees have gmail accounts used for communication purposes.

The largest areas of concern regarding technology infrastructure stem from the Division of Employment Service, where the WebPlus system is outdated and with many flaws for the office's needs. The most pressing issue is that there is no effective way to filter the permit data within the system by differing relevant criteria. The system is configured to show past data, so that data can only be retrieved within a given date range in the past. Because of this, there is no way to view all existing permits, only data regarding the total permits created in a past time frame. Consequently, there is no way to filter by other factors, such as seeing how many permits have expired across a time period, accessing constituent profiles, or viewing any relationships between constituents and permits. Another glaring flaw is that every time a work permit is renewed, instead of recording this for each person, a duplicate person is created in the system. Thus, if a worker searches for a person in the system, they may find multiple duplicates of the same person. An additional concern is that whenever data is searched, it is generated as an excel file, which can be immediately edited. Thus Chief Raymond has expressed concerns about data security.

Technology Management

The offices interviewed at the MHRCTD have limited technology management capacities. Because the ministry is so widespread, not every office necessarily has an IT staff member who is responsible for technical problems. Additionally, IT professionals who aid the ministry are often not permanent, and many previous members of the IT personnel no longer work in Palau. While there is no one person responsible for technology management at the PVA, The Employment Services Office gets IT support from Conrad Ellechel, from the Ministry of Finance. The ministry did hire someone to build the web system used by the Employment Services Office, however this person did not work for the ministry and is currently in Singapore, and is planned to return to update the site in October. In the offices interviewed, any sort of IT tasks are not regularly scheduled.

Communication

Communication is nearly exclusively through email, which is how files are shared internally. Outside of this, communication or sharing of certain files is possible through physical documents, often forms or papers that must be signed. If forms or any other physical documents must be delivered to other offices, employees will simply drive the papers to the necessary office on an ad-hoc basis. The largest problem associated with communication of information done physically by paper is simply that it takes time. Nearly all staff have gmail accounts, and all offices have the capacity to access the web. Generally speaking, the ministry does not have any donors, funders, or clients for whom there is the need to communicate information to. Each of the offices and Bureaus within the ministry have their own page on the ROP website, however some of them have very limited information.

Information Management

The information that is most critical to the organization varies by office, however the common theme across the ministry is that the starting point for most data comes from physical documents. At the PVA office, the bulk of information and data is compiled in excel sheets, and data from tourism or boating permits that is input manually from physical forms. There is some information present in an existing Microsoft Access database, but it is rarely if ever used. The source of most of the information being input into any systems is the permits, as is the case for theDivision of Employment Service. As mentioned previously, the information on work permits is uploaded to a website that serves as the bureau's database, and allows users to view information on permits created within a given time frame. Aside from this, neither office uses any current databases. At the Bureau of Historical and Cultural Preservation, the office does not even use any form of file sharing service, and rely on information management and sharing through saving documents and other files on their work PCs as pdfs and emailing them to other employees when necessary. The introduction of Google Drive to this office would be a very quick and easy yet important and effective first step towards improving information management.

Business Systems

Business systems and accounting within the MHRCTD are not managed by the ministry itself, but rather by the Ministry of Finance. Any changes to the accounting processes or payrolls must be presented to the MOF as a request.

II. Recommend and Implement a More Efficient Permit Management System

Motivation

Borrowing from your scope of work document, describe the problem or opportunity that was addressed. Describe how this problem or opportunity impacts the mission of the organization.

Review the feedback comments you received on your scope of work, and update the justification to make the argument stronger and clearer.

The vision for this project stemmed from a need to address Palau's entirely manual permitting process, as the manner in which the MHRCTD conducts this process is often convoluted and inefficient. This is the case at multiple offices within the ministry, and often involves manually delivering physical documents to other offices in order to obtain the necessary signatures or information. In the Division of Employment Service, the issuing of permits requires information from the police department and Palau's immigration office, which used to be joined with the Division of Employment Service but is no longer at the same location. Thus, in order for the permitting process to be carried out, the office must go to the police department to retrieve the proper clearances for the worker as well as the immigration office for work visa information. Additionally, any forms that must be signed must be delivered physically as well. The goal of this project was to recommend a software alternative that would serve to eliminate all of these more laborious steps and completely digitize the permitting process.

Activities and Outputs

The first major activity that was completed for the progression of the project was the research portion. It was necessary to conduct a thorough research process in order to both determine the largest needs for the Ministry regarding the software, as well as find the option that would best fit these needs. The process began through a phase of online research, after having worked at three primary offices in the Ministry and conducting interviews with relevant members of the office to determine functional requirements. Based on these requirements and the initial research conducted, a brief Analysis of Needs report was compiled, consisting of the features offered by various relevant types of softwares and whether or not they should be categorized as must-haves, nice-to-haves, or unnecessary features. Based on this criteria, more in-depth research was subsequently conducted with the goal of determining a list of software candidates to narrow down and eventually choose from. Following the creation of a legitimate list of options, the next output was an in-depth report on the top five best software candidates, which included an overview of each candidate as well as a detailed description of the features that they offered, as well as a collection of pros, cons, or relevant visuals that could be found by researching the software online. While a decision matrix was originally planned to accompany this report, it was scrapped due to the nature of the selection process, which caused the options to be narrowed down into two distinct categories; permit management softwares and government management softwares. A permit management system would provide primarily only what the Ministry needed for this goal specifically; the ability to create customizable permit workflows and forms, with added capabilities to account for specific needs such as built-in online payments, digital signatures, auto notifications for when permits are issued or completed, custom pdfs, success metrics, and other features. While these services certainly allow for avenues of use in multiple areas of government, their primary purpose is for permit management. Government management softwares generally provide these services in addition to a wide variety of other potential features. Examples of these include GIS maps, property profiles, mobile apps for both government employees and constituents, mobile inspections, instant reporting features, reports and insights into a government, or shift management features. A select number of these softwares were included

in the software report, as many of the services they offered were relevant to the Ministry's activities in addition to their permit management capabilities. After narrowing down the potential candidates to four or five options, the next phase of the selection process involved further research through contacting sales representatives from the companies, and ideally using the software through sales demos to get a feel for how it would be used. Experiences in using the software, communicating with support and sales representatives from the company, and further resources such as videos, tutorials, and case studies would all be weighed under the context of the MHRTCD's vision. After this portion of the process, a brief software recommendation report was compiled, citing ClearGov as the recommended software for the Ministry's optimal alternative for a permitting process. While covered in more depth in the report, the primary reasons for this recommendation included that ClearGov checked all of the boxes for what the Ministry needed for this goal, and was also one of the most user-friendly options with the best customer support based on my interactions with the company.

Following this recommendation and meetings to discuss and confirm a decision with the Ministry, the next step was the implementation process. While awaiting the service order from ClearGov in order to begin using the software, a number of outputs were developed regarding implementation. These included an implementation plan overview with specific recommendations for a successful transition, risk analysis with mitigations for future success with the software, and a brief change management report. Additionally, discussions began with the Ministry regarding the best ways to ensure an easy transition into their current system, as well as talks of specifically appointing a Ministry employee as a designated point person regarding questions about the software. A guide composed of a collection of notes on using ClearGov was also started, however it was never finished and is now irrelevant due to the implementation process being cut short from unforeseen circumstances.

Outcomes

The expected outcome of this engagement was to see increases in efficiency and use for the newly introduced permitting software, however while awaiting the service order from ClearGov an email was received from the ClearGov sales representative who had been the primary point of contact during the process stating that ClearGov would not be able to take on any non-US clients at that point. This restriction was never once indicated as something that may be an area of concern or even a minor issue during communication with the company, and the Ministry was even previously assured that as long as the Ministry was comfortable using their product as-is then they would be permitted to use the software, even if they are outside the US. Although it was tempting to attempt to implement a different option at the last minute, the email was received during the last week of the consultant engagement, and trying to force something of such importance that, in the case of ClearGov, had taken a couple of weeks to arrange, would not have been the correct course of action. Instead, the consultant will leave a comprehensive explanation of possible further actions that may be taken in the wake of this road bump and the consultant's departure from Palau, along with recommendations for the best course of action in the short term. Because of the unfortunate turn of events at the end of the project, no indicators or measurable evidence exist of progress in the Ministry from this engagement, however ideally these indicators may be observed at

some point in the future following the successful implementation of a solution recommended below.

Recommendations

Because of the ambiguous nature of the outcome of the project due to the previously stated unforeseen circumstances, appropriate recommendations may vary depending on what course of action the Ministry chooses as a follow-up to this engagement. Given the research and reports accumulated over the first seven weeks that will serve as outcomes/outputs to this project, the Ministry will still have a solid base of information and resources that they can use towards implementing either a third-party or homegrown software solution, if they choose to continue to pursue this option. Alternatively, if they choose to move on from this goal, there are still a number of additional pain points they could choose to address within the Ministry that would benefit from a software or technology solution, for which recommendations can be provided. Each option below will discuss the pros and cons of taking that route, as well as the consultant's recommendation regarding the option.

1. Option 1: Homegrown Solution

A homegrown solution is likely the best option for a number of reasons. Not only would it likely be the most inexpensive option, it can also utilize software that Ministry employees may already be familiar with, such as Google Workspace. Consequently, users of this solution would have a much easier time becoming accustomed to using this software, as the steep learning curve associated with learning the complexities of a new software would no longer be a concern. This would also in turn minimize the risk of lower adoption rates throughout the Ministry relative to a paid third-party government software solution. The downside to this option is that it would also be the most basic and simple solution, as other government or permitting softwares are much more advanced with more features and the potential for more capabilities. However, if executed properly a homegrown solution can very well be an effective alternative that can provide all the necessities required for this goal, and can likely be the most user friendly option as well. If the Ministry is interested in this option, they can look into the Digital Forms Software report provided by the consultant as a starting point for potential softwares to begin with. An example of what could be an effective homegrown solution could be beginning with Google Workspace and integrating Google Forms with Docusign and Stripe through an integration software such as Zapier.

2. Option 2: Third Party Software Solution

A second option would be to continue using the existing resources provided by the consultant over the course of the project to attempt to implement a different third party government or permitting software. There are a number of potential upsides to this option, however these are accompanied by greater risks. One benefit to this course is that the Ministry would already have a bulk of research and resources at their disposal in order to base a decision off of. Additionally, pursuing a third-party software would likely allow for a more sophisticated solution, as well as more features plus higher levels of functionality that could allow the software to be better tailored to the needs of the Ministry. However the largest concern of this

option would be usability and adoptability. User friendliness is a significant concern, given that more advanced government softwares and even softwares that are primarily used for permitting often require extensive learning and implementation periods, and may prove particularly difficult to use for employees who have a limited technical background or are unaccustomed to using those types of softwares. Ultimately, a software is only as valuable as how it is being used, and if a chosen software is accompanied by too steep of a learning curve resulting in implementation failure, then it will not matter how many features it offers.

Note regarding Options 1 & 2

An important factor to note for both of the previously stated solutions is the absolute necessity of a thoroughly planned implementation process. It is not only important, but essential that there is a specific person or ideally a task force assigned to drive this process, otherwise the Ministry risks implementation failure, as the introduction of a new technology is not a process that should be a secondary responsibility for those involved. The Ministry should establish or designate said team or person to help implement this solution across the various offices of the Ministry. They should practice habits during the process to ensure buy-in and manage expected challenges and risks, and may utilize the existing reports regarding implementation and change management left by the consultant. In the event of a homegrown solution, this group should be responsible for properly researching and developing all facets of the solution, as well as familiarizing themselves with any involved services before assembling the forms. In the event of a third party software solution, this group should ensure an extensive demo period where options are tested through demos and other resources provided by the company, before a decision is made. For both solutions, every software used should have a designated "expert" employee who is responsible for understanding and becoming proficient in using the software. This person should also be responsible for communicating with any representatives from paid softwares.

3. Option 3: Moving on to address a different goal

While moving on from the goal of replacing the Ministry's current permitting processes would leave the Ministry with the fewest number of resources from this previous consulting engagement, it is still a viable option. The next most pressing challenge facing the Ministry is likely its outdated and inefficient database system at the Division of Employment Services. Many of the same recommendations stated in Option 2 would apply to this solution as well, including all recommendations regarding an implementation plan, a designated task force for this plan, risk mitigation, research, communication with companies, demos, and appointed experts. The Ministry could pursue a traditional database software system to solve this problem, or even a constituent-relationship management system, as all of the relevant data in the Division of Employment Service system centers around immigrants seeking work permits in Palau. While this is certainly a solution that would fill an important need for the Ministry if executed successfully, the consultant recommends that the Ministry choose to pursue either a homegrown or different third-party solution instead, as taking on this option from the ground up would be a very challenging task. If the Ministry continues to work with Carnegie Mellon interns in the future, this option would be a good goal to set as the primary objective for a future engagement.

About the Consultant

Jonathan Nottingham is a rising Senior in Information Systems at Carnegie Mellon University. He is originally from Philadelphia, Pennsylvania. He's trying his best.