

TECHNOLOGY CONSULTING

IN THE GLOBAL COMMUNITY

Final Consulting Report

Palau Ministry of Justice

Sean Tavares

August 2022

Carnegie Mellon University



Ministry of Justice

Executive Summary

Student Consultant, Sean Tavares
Global Community Partner, Honorable J. Uduch Sengebau Senior
Global Community Partner, Roxanne Sial Blesam
Global Community Partner, Blekuu Sbal

I. About the Organization

The Ministry of Justice (MOJ) is part of the executive branch in the Republic of Palau, and its mission statement is as follows:

The Ministry of Justice is responsible for providing legal services to the executive branch, and promoting and protecting the safety, resources, security, and peace of the

Republic. The Ministry works to maintain a sustainable labor force, preserve border security, and enforce the laws of the Republic, and does so by working in partnership with the community to provide quality preventative and responsive services.

The Ministry of Justice oversees the police force, fire & rescue, the jail and prison systems, and much more. Currently, the Vice President also serves as the Minister of Justice, and as such, the Office of the Vice President leads the Ministry of Justice.

II. Establish a Process to Track Key Performance Indicators

In order for the MOJ to receive funding from the Ministry of Finance (MOF), it must provide details regarding justification for any funds. Currently, the MOJ has difficulty with this because most of the data used to support these funds are calculated by hand. However, the ministry plans to implement a new database for keeping track of records by the beginning of October, known to them as the BPS system, which stands for Bureau of Public Safety. With this system, it can be much easier to aggregate records together for the purpose of tracking key performance indicators.

To address this, I created Excel templates which can be used to track these KPIs as information is entered into the BPS system. Once a record is entered into the database, it can then be exported at the end of the month and entered into excel sheets to populate visualizations which are easily understandable. Furthermore, a background in analytics is not needed to use the templates or to comprehend the implications shown by graphs and charts. As a result of these templates, it takes much less time to aggregate information regarding key performance indicators within divisions of the MOJ. Additionally,

The biggest risk to sustainability involves the BPS system itself. The MOJ is expecting to fully adopt this system beginning October of this year. If there are any problems with this system, though, then it will negatively impact the usefulness of the Excel templates since they become more or less obsolete without being able to mass export data. They are still usable, but it will take much longer to illustrate the desired trends without having the BPS system to keep track of records.

III. Additional Recommendations

Other than tracking key performance indicators, the MOJ also has other areas which can be improved upon, and most importantly, this involves increasing cybersecurity within the organization. One way of accomplishing this would be to only use software that the MOJ has a legal license for operating, specifically with regards to Microsoft Office. Another solution would be to create employee email addresses specifically for communicating within the organization. Using personal communication tools, like personal email addresses, can put sensitive information at risk. Hence, adopting these new protocols can aid in increasing the overall security at the Ministry of Justice in Palau.

Consulting Partner

Roxanne Blesam
joj@palaugov.org

Ministry of Justice
Palau <https://www.palaugov.pw/executive-branch/ministries/justice/>

About the Consultant

Sean Tavares
stavares@alumni.cmu.edu

Sean is a graduate in Information Systems with an additional Major in Statistics. He will begin pursuing his Masters in Statistical Practice at Carnegie Mellon this fall.

Ministry of Justice

Final Consulting Report

Student Consultant, Sean Tavares
Global Community Partner, Honorable J. Uduch Sengebau Senior
Global Community Partner, Roxanne Sual Blesam
Global Community Partner, Blekuu Sbal

I. About the Organization

Organization

The Ministry of Justice (MOJ) is located in downtown Koror, and this is the most populated part of the state and country. It is a part of the Executive Branch in the Republic of Palau (ROP), and the mission statement of the organization is as follows:

The Ministry of Justice is responsible for providing legal services to the executive branch, and promoting and protecting the safety, resources, security, and peace of the

Republic. The Ministry works to maintain a sustainable labor force, preserve border security, and enforce the laws of the Republic, and does so by working in partnership with the community to provide quality preventative and responsive services.

The entire Ministry of Justice is comprised of 100 - 200 employees, all of which play a role in serving the almost 20,000 citizens of Palau. Although this is not always the case, the current Minister of Justice is also the Vice President of ROP, namely Honorable J. Uduch Sengbau Senior. During her time as Minister, she has also promoted a vision statement throughout the MOJ, which is:

To be widely recognized as a leader in protecting and serving the public through effective law enforcement, sustainable labor services, protection of borders, and proficient legal services.

The Vice President has been the minister since July 2021. Since taking office, she has identified numerous departments within the organization which is operating with highly limited resources. As such, she has been advocating for increased funding. The Ministry of Justice's budget size was under \$7 million for the year 2022. Additional resources are being requested for approval from the Ministry of Finance (MOF) for the year 2023. Statistics in the form of key performance indicators is the most often used tool for laying the groundwork to garner funds from the Ministry of Finance and other national and international grants. The statistics relevant to the MOJ are crime trends. However, given the already limited resources available for completing the organization's obligated services to the public, there exists only a minimal capacity for developing statistics that can be used as motivation for receiving more funding.

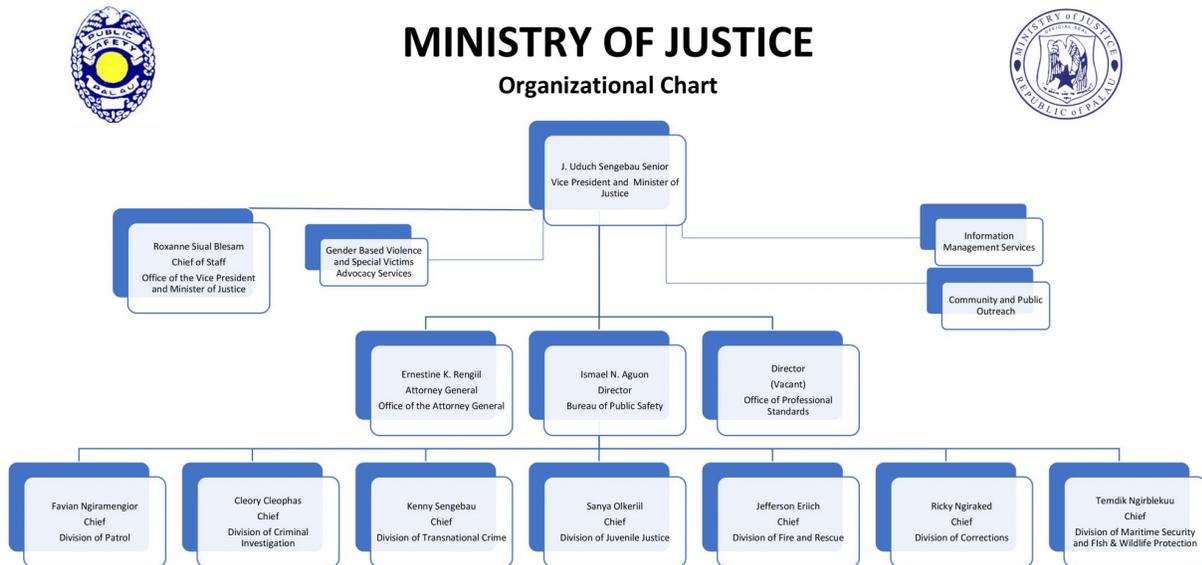
Facilities

The hard drives that store data for the MOJ are located in the police force building. The majority of employees have access to their own personal desktop computers, except police officers. There are air conditioning units and high-speed internet access throughout all the facilities. Although the main facilities are all located in downtown Koror, there are several other substations for patrol, fire and rescue, and maritime security which are distributed throughout the island. The location of these substations is intentionally scattered to maximize response time to any potential emergency.

Programs

The Ministry of Justice, unlike other Ministries in Palau, has only one bureau, and this is the Bureau of Public Safety (BPS). BPS manages the seven divisions within the Ministry of Justice: Division of Patrol, Division of Criminal Investigation, Division of Transnational Crime, Division of Juvenile Justice, Division of Fire and Rescue, Division of Corrections, and Division of Maritime Security and Fish & Wildlife Protection. The picture below is taken from the official website of Palau on the Ministry of Justice page, and it depicts the organizational structure of the Ministry.

As shown in the image, the Ministry of Justice also has departments for Information Management Systems (IMS), Community & Public Outreach, and Gender-Based Violence & Special Victims



1. MOJ organizational chart based on Executive Order No. 462, Signed on Sept. 30, 2021
2. MOJ organizational chart signed by Hon. Vice President and Minister of Justice J. Uduch Sengebau Senior and HE President Surangel S. Whipps, Jr. on Oct. 13, 2021

Advocacy Services. It is important to note that the Division of Immigration used to be part of the MOJ, but it was relocated and is now part of the MOF since 2021. The BPS also has an administrative office that is responsible for vehicle registrations and procurement of driver's licenses. They also provide the public with background checks upon request, although the office is not required to do so by law.

The Division of Patrol (DP) includes the police force, and they are responsible for receiving all incoming 911 calls. All incoming emergency calls are received by the central dispatch center in downtown Koror, and the center then deploys the necessary personnel from the relevant division(s) to handle a given situation. DP also has a traffic unit that handles all traffic citations and traffic accidents.

The Division of Fire and Rescue (DFR) is responsible for responding to fires as well as emergencies involving injury or potential injury. The division is responsible for responding to emergency situations both on-island and off-island.

The Division of Criminal Investigation (CID) handles unresolved incidents from the Division of Patrol and the Division of Fire and Rescue. They also handle all felony cases as well as any deaths under mysterious circumstances, including suicides, drownings, and traffic accidents.

The Division of Juvenile Justice (DJJ) handles certain cases where minors are the perpetrators of a crime. This includes the investigation of cases as well as the management of restorative justice. Lastly, DJJ hosts numerous drug and crime prevention programs, such as sports activities and summer camps.

The Division of Corrections (DOC) handles the jail and prison systems, both of which are located next to the central dispatch station. This division is responsible for monitoring inmates and ensuring that inmates are released at the appropriate times.

The Division of Transnational Crime (NEA) has three parts: human trafficking division, narcotics division, and international crimes division.

The Division of Maritime Security and Fish & Wildlife Protection (DMS) is responsible for supervising the boats that travel in ROP waters. They are also first responders for off-land rescue missions.

The Office of the Attorney General (OAG) handles prosecution for all crimes within the ROP. The office is led by the attorney general, and two assistant attorney generals aid in all processes.

Staff

The Chief of Staff (COS) manages the staff surrounding the VP in the Office of the Vice President. The employees of this office include special assistants to the VP and the VP's legal counsel. Each Division within the Ministry is headed by a Chief, and the bureau that oversees these divisions is headed by a director, currently Ismael N. Aguon. Both the DP and the DFR operate via four shifts, each of which is led by the Officer in Charge (OIC). However, the DP and CID also have lieutenants who assist their chiefs in managing officers within their respective divisions. In the DP, each shift at the central dispatch station is comprised of five officers, while each shift in the mainland substation consists of only one officer. The routine interactions between employees and technology within MOJ are detailed below

Technology Infrastructure

Hardware	Dell monitors and computers, with some exceptions
Software	Microsoft Office, specifically Word and Excel

Internet	Palau National Communications Corporation
Information Management System	Custom-built software, referred to internally as BPS system
Communications	Personal emails, almost exclusively Gmail

All computers within the MOJ use Microsoft Office. The head of IMS, Blekuu Sbal, has a bootleg version of a Microsoft Office 2016 license which he downloaded from the internet, and this is what is used to set up Microsoft Office on new devices within the ministry.

To keep track of records, all divisions use physical log books that record all activities. Some of these records are then transposed to excel files which are managed by OICs and lieutenants. Other employees use excel files exclusively, not physical log books, for keeping track of data, like for staff working hours. Employees are expected to know how to use excel to keep track of information as there is very limited training available, if at all.

The custom-built information management software was finished in 2018, and although it is designed for use by all divisions within the ministry, only certain departments utilize the software on a day-to-day basis. The MOJ only has rights to use the software, but it does not have access to developing any front-end/back-end components. If a new module needs to be created or new authorizations added for a particular role, a request is sent by Blekuu to the third-party vendor. An estimate is then sent back, and then the MOJ decides whether to pay. Other than the hardware distributed throughout the organization, this software is the most expensive component of MOJ's technology infrastructure (at least \$400,000). The software runs on the local server in the IMS office and is only accessible through the WiFi network at the BPS. For other divisions to access the software outside the network connection, they must establish a VPN connection directly to the BPS network. The software can then be accessed directly from the local URL port or via a downloadable desktop application.

Technology Management

The IMS department is responsible for managing all technology infrastructure, hardware and software included. Blekuu Sbal is the only full-time member of this department, although he is also contracted by the Division of Immigration in MOF. He serves as the go-to technical person when there are any issues related to technology in the MOJ. Blekuu is the MOJ employee that's in charge of backing up critical data and updating any software on an ad-hoc basis. With regards to the BPS system, the MOJ has resigned yearly contracts with the builder, WebPlus, for maintenance and 24/7 support since its conception. The yearly contracts are approximately \$45,000.

Technology Planning

During the yearly budget requests that are coordinated with MOF, Blekuu is responsible for drafting a budget for technology. The budget must then be approved by the minister before the request is submitted. The director and chiefs will also have input on the yearly budget request, but they do not have any final say for technology infrastructure decision-making purposes.

Currently, there is no technical plan that the MOJ follows. Buying new hardware or implementing new software is done only as needed. All operations within the ministry use some type of physical

form. As a result, the use of technology to digitize and automate information is often seen as a repetitive task in and of itself. Planning for the use of technology in the future is hardly done since the ministry historically has preferred the use of hard copies over interacting with computers whatsoever. For example, one concern with using digital technology is that typing in information will take too long since most employees are not proficient keyboard users. However, although computers are being used more widely and more often in recent years, planning for future use is not something that is considered entirely. If more computers are needed, then it would be because there are employees who need new computers that don't have them, and it would not be because the ministry is planning for oncoming employees in the future that will need them.

Communication

All information is shared either by the direct transfer of physical forms or by email. When communicating by email, all employees use personal email accounts. Any reports are compiled in Word or Excel, and these are also distributed via email. Most slowdowns in communication are a result of data being contained in physical forms. There is no one central location for storing these forms; each type of physical form has its own storage location.

For example, traffic incident reports and criminal incident reports have their own respective forms, each of which is associated with a specific case. To locate these forms, it must first be determined what stage of the criminal process the case is at, then determine where they are stored, and then the process of looking for them can begin. When divisions want to create monthly or yearly reports, employees must go find all the relevant forms that have been filed away and then transfer the data from physical form to an excel sheet one by one. This process can take hours, days, or weeks.

The MOJ has a webpage on the ROP government website. They have also been creating YouTube videos to showcase the work done by the ministry's employees.

Information Management

The information that is most critical to the ministry is information concerning crimes. As suggested above, essentially all of this information is contained solely in physical forms. The constant use of physical forms greatly restrains the speed at which information can be located, compiled, and transferred. Although some information contained in a physical form may be transferred to an excel sheet or into the BPS system, oftentimes it is only certain pieces of critical information that are transferred and not all of the essential data contained in the entire document. Even in these circumstances, the transfer of data from physical to virtual will occur long after the physical form is filled out. Hence, employees will have to relocate physical forms every time they desire to transcribe the data virtually.

The BPS system itself is an attempt to automate the process of finding and locating information. It is a record management system that makes searching for virtual documents seamless. The system also can export tables to excel. However, the administration office is the only department that consistently uses the database. The employees there utilize it by transcribing information from physical documents onto online forms, which are then recorded and stored in a table. When the system was first completed in 2018, training sessions were held for each division that was meant to teach employees how to use the system in the future. After the training sessions were completed, though, only the administration office continued to actually use it. This is because the process of reentering information is viewed as repetitive and unneeded when the physical forms that capture the information already exist.

The current minister of justice is adamant that all divisions adopt this system for use. As such, training sessions are occurring once again this summer, almost four years later. The goal is to have everyone use the system by October of this year. The training session for each division is scheduled to be one week long, and it involves Blekuu giving a step-by-step walkthrough regarding how a respective division can use the system. The training also includes time for employees to try inputting the information themselves and to ask Blekuu for any help as they do so. So far this summer, DOC has undergone its training and has begun entering old records into the system.

Business Systems

Accounting is managed for the MOJ by MOF. The payroll is determined by the reports provided at the end of each year. These reports contain information regarding the total money spent in that year as well as additional requests that need to be fulfilled for the following year.

II. Establish a Process to Track Key Performance Indicators

Motivation

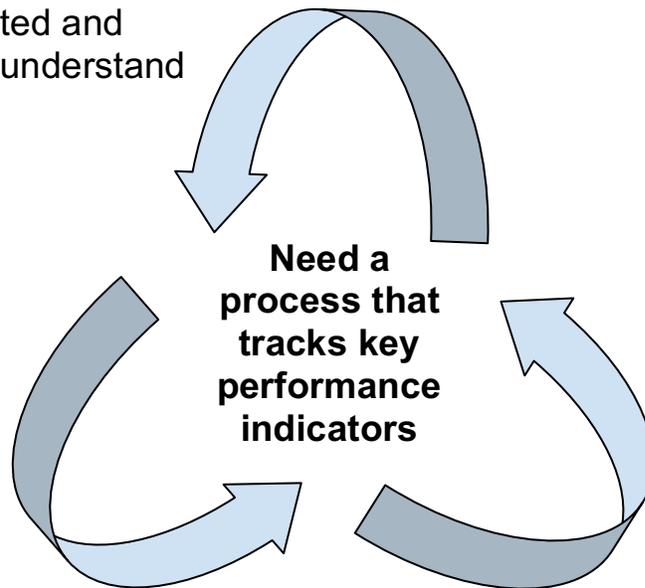
Creating monthly and yearly reports is a demanding, high-effort task since the information is contained almost exclusively on physical papers. Although the reports themselves are completed on excel or word documents, the procurement of these reports is not a continuous process. The task of creating a report is done as needed by relocating all the necessary physical forms and transferring data individually from physical to virtual. In most of these cases, the BPS system already has a virtual form that could be used to automate this process and reduce the time spent developing a report. However, once a physical form is completed, it is immediately filed away, and another task is then pursued. Filling out a respective form on the BPS system after the physical form is completed is seen as a superfluous endeavor by many employees. If a physical paper contains the information, there is no need, in the eyes of employees, to reproduce this information virtually.

On the other hand, this makes generating a report on key indicators an incredibly lengthy process. Compiling these reports is always an added responsibility that has been relegated to a particular employee, and it is not included in the employee's original job description. In most cases, these employees have multiple job titles, so data management is seen as their lowest priority. The reason for these multiple job titles, though, is that there are not enough employees to fulfill all the obligations of the MOJ.

The final reports are often only a table of numbers reflecting the number of different crimes each month. Yearly reports are created, but minimal comparisons are made between the reports of one year to those from previous years. This makes understanding trends over time nearly impossible. Consequently, it is extremely difficult to convey a need for additional funding when the data to support this finding is neither well organized nor managed. Hence, there exists a continuous cycle of there being not enough employees to focus on reports, then not enough information in reports to support additional funding, and then not enough funding to hire additional employees.

By developing a process that tracks key performance indicators, employees can spend more time with their other duties as opposed to spending exorbitant time compiling together information. Furthermore, having a concrete method for tracking key indicators will make it much easier to ascertain the current performance of MOJ as opposed to lists of numbers. Lastly, the ability to convey these performance indicators to other organizations can support the MOJ gain more funds to

Reports are disconnected and difficult to understand



Limited time for employees to manage data

Funding is not enough to meet the needs of MOJ

obligations to the public. So far in the year 2022, approximately 50 cases have been opened in CID, and these include sexual assaults, missing persons, murders, and any case that requires special investigation. There are less than ten employees within CID, and of these 50 cases, they have been able to close two; there are 48 more that are yet to be solved. Unfortunately, the severity of the problem is unknown to other parts of the Executive Branch and even within MOJ itself because of how information is currently managed and communicated.

There are software applications that are built specifically for tracking key performance indicators (KPIs). At the same time, though, the MOJ has already spent thousands of dollars on custom record management software, the majority of which has gone unused for years. Hence, it is very likely that investing in yet another piece of software is impractical. Given this constraint, implementing a solution that utilizes the existing BPS system seems like the ideal way to maximize the MOJ's current resources. One possible solution would be to design a dashboard on the BPS system that keeps track of KPIs automatically. This solution would also require a large budget, and its sustainability would be contingent entirely upon the use of the BPS system.

The BPS system comes with the convenient ability to export tables of records to excel. Many MOJ employees are accustomed to using excel and interact with excel files on a day-to-day basis. My proposed solution to track MOJ's KPIs is to create excel templates that generate dynamic statistical visualizations as data is entered. The data can be entered manually, or it can be copied from another excel file into the template. Manually entering the data into the templates would also be time-consuming, but it provides an alternative for tracking KPIs with visuals while the ministry trains its employees to use the existing BPS system. Once employees begin using this system continuously, the excel templates can dramatically reduce the time it takes to make reports. Although this solution

is not contingent upon the use of the BPS system, it can work hand-in-hand with this software. This can thereby motivate leadership to promote the use of the BPS system and encourage employees to begin using it to reduce their workload in the long term.

Outcomes

With regards to activities performed, the first three weeks I spent interviewing employees, chiefs, and administrators within the MOJ to understand the state of the ministry. Although this process was supposed to be accomplished within two weeks, my contraction of COVID-19 caused this process to take an extra week. It was during this time that the motivation for the project was cemented. The proposed solution was then presented to the Vice president, Director of BPS, and all seven Chiefs of the respective divisions. After receiving positive responses from this presentation, I began developing the Excel templates used to track KPIs for specific divisions.

These Excel templates are designed to work in conjunction with the current BPS record management system. In order to facilitate this, I worked with the Head of IMS, Blekuu Sbal, to add functionality to the BPS system that would allow employees to export data from the system to Excel directly without having to make a request. This is showcased in Appendix A.

In the proposal, Excel templates were defined for four divisions, namely DP, DOC, CID, and DJJ. However, there was only enough time for three to be completed, which were all but that for DJJ. During the design of the Excel templates, it was discovered that different computers at the MOJ have different versions of Excel installed. Since this was not known from the beginning, revisions had to be made to the templates in order to ensure compatibility on all MOJ systems. This caused a slowdown in the creation of the templates, and it was then that the decision was made to only create three templates instead of four given the time constraints.

Once the three templates were complete, training sessions with each of the three divisions took place during the remaining time of the summer, which was approximately three weeks. Each week the training sessions focused on a particular division, and these took place with the members from each division who are responsible for procuring statistics for that division. After first demonstrating how to use the Excel templates, the respective MOJ employee would then attempt to replicate the steps taken during the demonstration. Each day of training would emphasize a slightly different aspect of utilizing the template until the officer was then proficient by the end of the week.

During this training period, I also developed a training manual that included all the relevant information from the training sessions. Specifically, there are short videos that accompany the outlined steps which are meant to serve as a visual guide. The motivation behind the manual is to have a way to teach future employees how to track statistics for a division within the MOJ. This manual was shared with Blekuu and the Chief of Staff at the end of the last week, who then shared the manual with the officers from each division.

By the end of the training, the Division of Patrol found that using the Excel template reduced the amount of time required to procure trends of KPIs by 75%, approximately 45 minutes. In other words, it originally required about one hour to complete this process, and now it only takes 15 minutes, with regard to the monthly reports. Furthermore, the Director of BPS found that the visualizations in the templates are 100% easier to understand than the reports generated before the consulting engagement. Therefore, the Excel templates are improving the comprehensibility of both monthly and yearly reports.

The Excel templates themselves include various charts and graphs to convey KPI trends, depending on the division that the template is designed for. For DP, stacked bar charts, histograms, and line charts are all used (see Appendix B). By unhiding specific columns, these charts dynamically update once the user enters new data. Additionally, print formatting was set up so that only these charts will print when using the print command. Hence, rather than include the tables of numbers in data reports, the reports only include relevant visualizations of the data (with the relevant numbers included).

As stated previously, the Excel templates are to be used conjointly with the BPS system. This is done by exporting all records from certain tables in the system and pasting these records in Excel templates to automatically create dynamic graphs. Although the system has been around for approximately four years, re-training is currently happening this summer in order to fully launch the system by the beginning of October. As such, no records have yet been transitioned from the BPS system to the Excel templates; only example data has been used to work with the Excel templates. This is a risk to sustainability since it is unknown how well the BPS system will work or be used in the future. If adoption of the BPS system does not go as planned, then the Excel templates will likely go unadopted as well.

Despite this, MOJ employees understood that learning how to use the Excel templates would have to be done now even before the BPS system is complete due to the scope of the summer project. As mentioned before, Blekuu and I even worked together with the BPS system vendor to create an “Export to Excel” button within the system. This will not be used until October, but it was created over the summer in order to make the training easily understandable.

Recommendations

Based on these outcomes, I would recommend that the MOJ buy a legal license to use Microsoft software in the very near future. Not only would this ensure that the software on the computers in the ministry is up to date, but it would also increase the security of information. The MOJ deals with some of the most sensitive information in the entire country, including social security numbers and the details of crimes. It is vital that no one be able to access this information other than the employees within the MOJ who are allowed to have access. By using a bootleg version of Microsoft Office, the ministry is putting the sensitive information of its citizens in jeopardy. In order to purchase this license, it would be best to

Also, I would recommend that the MOJ creates employee emails for those who work in the ministry. Currently, all staff use their own personal emails for communication. This is likely to put sensitive information at risk. Furthermore, employees will still have access to this information in their personal emails even after they are no longer employed by the ministry. Almost everyone at the MOJ already has Gmail accounts, so it may be best to register the MOJ as an organization on Google. This would allow the MOJ to create professional email accounts for its employees rather than relying on individuals’ personal emails for communication.

About the Consultant

Sean Tavares is a senior in Information Systems graduate with an additional major in Statistics. He will begin pursuing his Masters in Statistical Practice at Carnegie Mellon this fall.

Appendix

A. Short gif showcasing the “Export to Excel” button in the BPS system.

The screenshot shows the BPS system interface for the Ministry of Justice. The page title is 'CITATION'. The interface includes a navigation menu on the left with categories like Administration, Incident & Citation, Marine Law, DOC, NEA, Classification, and System. The main content area displays a table of citations with columns for Citation Type, Citation#, Violation, Issue By, Issue Date, Court Date, and Issue To. The 'Export to Excel' button is highlighted in the top toolbar of the table.

Citation Type	Citation#	Violation	Issue By	Issue Date	Court Date	Issue To
Traffic	70639	42-512 42-513	JASON BREL	05/24/2021 14:20	06/09/2021	KELULAU NGRAMEKED
Traffic	70643	42-301A 42-401	JASON BREL	05/26/2021 10:00	06/09/2021	EDDIE SELOEL OITERONG
Traffic	70638	42-401 42-802	Abel Kurterbis	05/24/2021 13:08	06/09/2021	ALFONS ROBERTO
Traffic	70643	42-301A 42-401	JASON BREL	05/26/2021 10:40	06/09/2021	EDDIE SELLOEL OITERONG
Criminal	70640	13-1048	JASON BREL	05/24/2021 17:48	06/09/2021	ABDUL HOQUE
Criminal	70642	13-1048	JASON BREL	05/24/2021 17:08	06/09/2021	KAMAL
Criminal	70641	13-1047 13-1048	JASON BREL	05/24/2021 17:08	06/09/2021	ANOWAR HOSSAIN
Traffic	70645	42-802	Abel Kurterbis	05/28/2021 20:10	06/16/2021	JOTHAM BRUNO AUGUST
Traffic	71032	42-903 2A	UCHELRIANG RAMARUI	05/22/2021 09:40	06/09/2021	Tristen Klemei ISAAC
Traffic	71030	13-1047 42-401 42-513	JASON BREL	05/12/2021 20:47	06/02/2021	MOHAMMED HASHEM
Traffic	70632	42-301A 42-802	FREMONT MENGIDAB	05/08/2021 20:48	05/26/2021	RAYNALD F. GARCIA
Traffic	68245	42-506	JASON BREL	05/08/2021 02:40		JAIME KELAOLBAI HILBER STOMI BEQUEBULL

B. Example of bar chart in Excel template.

of Incident Reports by Classification

