# Technical Assistance Project Management Information System (TAPIS)

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**Abstract:**
To respond to widespread and persistent poverty, the Department of Social Welfare and Development (DSWD) intends to improve the delivery of social services to poor and enhance the department's capacity in social protection. DSWD has called for the rapid expansion and strengthening of the core social protection programs, namely Pantawid Pamilyang Pilipino Program, the Kapit-Bisig Laban sa Kahirapan, and the Sustainable Livelihood Program. Immediately, the three core programs have received strong budgetary support from the government. The rapid expansion of programs and increased donor support for reforms called for a mechanism to better manage the growing number of Technical Assistance (TA) projects required and being implemented by DSWD. Generally, the objective of this study is to aid the organization improve its operations by developing a project management information system for it to provide adequate progress reports. To accomplish this objective, the researchers made use of the Agile process in managing IT development projects particularly the Scrum methodology. Scrum methodology was used by the researchers particularly for the whole process of system development which is an iterative and incremental methodology that involves producing project progress through a series of iterations. The developed Information System was named by the researchers as Technical Assistance Project Management Information System (TAPIS). TAPIS incorporates project management processes namely proposal management, project monitoring and project closure. Overall, TAPIS was able to help the organization with their current problems which was verified by the involved users/entities themselves through the User Acceptance Testing (UAT) performed by the researchers. The feedback from the UAT was within the set criteria.

**Key Words:** Technical Assistance, Project Management, Government, Data Visualization

# 1. INRODUCTION

Social welfare is one of the biggest advocacies of the Philippine government today considering that there are 26.3% poverty incidence in the country based from the Family Income and Expenditure Survey conducted in July 2015 (Philippine Statistics Authority, 2016). DSWD is the government agency in the country responsible for addressing such issues. Within DSWD, different Offices, Bureaus, Services and Units (OBSU) are working for the whole department to perform its functions. Specifically, this study focuses on the Technical Assistance Unit (TAU) of DSWD which is responsible for managing the funding for the projects within DSWD. These projects primarily help with the improvement of the DSWD's programs. TAU's main goal is to efficiently and effectively deliver social protection programs through coordinated, harmonized and timely implementation of technical assistance.

## 1.1 Objectives

The specific objectives of the study are as follows:
- To analyze and identify the needs and the issues of the target organization
- To design a solution plan based on the identified needs and issues
- To implement the developed solution for the organization
- To test if the developed solution will close the identified gaps

## 1.2 Scope and Limitation

This study focuses on the main operations of TAU. The processes included are the preparation of proposals, review and endorsement, project implementation and monitoring until the project closure. This includes the updates from the OBSUs to the TAU as well as the reporting from TAU to the funder. Moreover, the study mainly addresses the fund utilization of the TA projects particularly its monitoring and reporting process. The internal entities included are all the OBSUs of DSWD. The external entities included are the funding agencies for the projects.

# 2. STATEMENT OF THE PROBLEM

From what the researchers have gathered, the TAU deals with problems in their reports that are ultimately submitted to the funders of the DSWD being inadequate. One factor that contributes to this problem is that there is an untimely submission of updates from the different OBSUs of DSWD which occurs because of unavailability of key personnel from the OBSUs and deadlines are not being notified to the OBSUs. Another factor is that there are unrecorded project activities that were not executed affecting the project's fund utilization. In terms of the manpower factors that contribute to the main problem, one is that there is only one person from TAU monitoring all the projects and another is that OBSUs are not able to submit the actual expenses of a project. Lastly, for the material factors that contribute to the problem, the progress report produced by TAU does not contain the breakdown of expenses and there is not available centralized data storage and filing system for all the files circulating within the process of their project management.

# 3. METHODOLOGY

Scrum methodology is an agile framework which is an iterative and incremental methodology used mainly for software projects and product or application development (Schwaber & Sutherland, 2013). Scrum involves producing project progress through a series of iterations called sprints. For this study, the researchers made use of the Scrum methodology as a guide for the whole process of system development. The main reason for making use of the Scrum methodology is to enable the researchers to respond to change over following a plan to make sure that the project keeps on track. Throughout the process of system development, it is unavoidable that there will be changes in either the system design or the system functionalities. Nonetheless, following the Scrum process allows the

researchers to make the needed changes without disrupting other parts of the system or being constrained to start over again.

The first phase of the Scrum methodology called the Pre-game phase includes the planning and high level design. This is the initiation and planning process of the study which includes the preliminary investigation. During this phase, all necessary data are gathered to have a thorough description of the company's existing processes. This is done by conducting a series of interviews with various personnel of the TAU that are associated with the current process.

After gathering data and formulating possible solutions for the problem, the Game phase will come next. In the Game phase, the ideas that were formulated to solve the problems will now be used to build the system. The structures of the proposed system were built. From the description of the modules and features, the finished system was built to satisfy the needs of the user. The construction of the proposed solution had undergone the four major processes under the Game phase which are the develop, wrap, review and adjust until it is ensured that all requirements of the solution are satisfied.

The final phase which is the postgame phase is the transition from the old system to the new one. The system that was designed and finished for the user will be turned over and used. Creating the user's manual, technical manual and installation manual were done to help the organization understand the preparations needed to use the new system as well as follow how the system works with the use of less technical terms.

## 4. THE PROPOSED SYSTEM

To solve these problems, the system provides various modules to accommodate the process being done in the TAU. First is the Proposal Management module, which handles how the proposals of the OBSUs are processed from its creation, evaluation, and revisions to become an accepted project. OBSU's proposal creation is assisted by system through an in-system input that simplifies the proposal creation with a shorter way of proposal set-up with the features such as an in-system gantt chart editor and saving your current progress, and with the system keeping track of these submissions they will assist the TAU in simplifying their evaluation process. Next is the Project Monitoring module, which receives inputs from the OBSU of records, changes, conflicts, or complaints that may arise during project implementation and gives tools like notifications and visual data representations to the TAU of all the projects they are handling to assist them in getting insights if project progressions are going smoothly or awry. Third is the Fund Utilization module where the TAU can view the expenditures of projects under their OBSU or Funders through data visualizations of their usage during the projects' implementations based on reports from the OBSU and what expense records the Accounting have validated from the OBSU. Lastly is the Grant Management module, where the TAU can manage the funds that Funders, like the United Children's Fund, have endorsed for them to use in the various projects in the DSWD also Funders is granted some transparency and can view the visual representation of how their allotted funds are being used overall. Figure 1 shows the description of the system as well as screenshots of its main features.
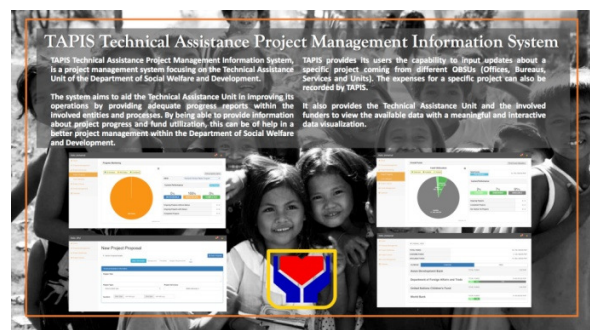


Fig. 1. Product Description

## 5. RESULTS AND DISCUSSION

After finishing the development of the system, significant progress was noticeable in terms of the company's process. First, the Proposal Management module was able to improve the overall management of all the proposals within DSWD. Also, the OBSUs could manage their schedules for their project proposals because of the features provided by the Proposal Management module. For the Project Monitoring module, the notification feature was definitely a big help for TAU. Because of this, the TAU is notified for submissions or changes done by the OBSUs in terms of their projects. Also, since they can see the submissions and changes, they are now able to act immediately. The Fund Utilization module was well received thanks to its data summaries and breakdowns of the many expenditures and general summations of the totality of these expenses that allows the organization to have a better and easier time on checking the status of the various projects and their expenses. Lastly, same as the Fund Utilization module, the Grant Management module was well received thanks to its features especially the feature that allows the organization to keep track of the funds given to them in general or by a specific Funder and allowing the creation of expense reports for the various Funders that the organization handles to give transparency of the fund usages done by the OBSUs.

### 5.1 User Acceptance Testing

The User Acceptance Testing is the part in system development wherein the company will test the final system. The testing is usually made by the researchers. Involved entities from the company will be asked to answer it to give the researchers the confidence that the system they developed have met the requirements.

The UAT was divided into four parts; General, User Interface, Security, and Overall. There are corresponding criteria written as statements under each part and the end users will indicate their opinion for each statement on a scale of 1 to 5, 1 being Strongly Disagree and 5 being Strongly Agree. The is to find out if the system met the criteria as well as the user's requirements.

The IT specialist, Administrative Assistant VI, Administrative Officer V, and the Project Development Officers were the respondents of the UAT since they are the target end users of the system and are knowledgeable of the processes involved.

After collating the results of the survey, the researchers have gathered good results from all four respondents. For each component of the UAT, the average rating per criterion was first calculated which were then averaged out to get the final average rating for the component. The results are as follows: for the General component, the average rating was 4.1; for the User Interface component, the average rating was 4.2; for the Security component, the average rating was 4.5; and for Overall, the average rating was 4.4. The results convey that the target end users agree that the system has fulfill its objectives as well as add value to the organization by solving the current problems of the existing system. Figure 2 shows the averages both per question and per UAT component in a form of a summary table.

| Questions | Average |
|---|---|
| **GENERAL** | **4.1** |
| The system follows the company's business processes. | 4.25 |
| All modules are fit to the role of the employees | 4 |
| Ease in LOGIN and LOGOUT of the system. | 4.5 |
| The system allows me to verify the reports to be submitted. | 4 |
| Provides all the functionalities needed to manage multiple projects. | 4 |
| Information is complete and accurate. | 4 |
| The system's functions and processes are efficient. | 4 |
| **USER INTERFACE** | **4.2** |
| Text Readability | 4.5 |
| Buttons are easy to distinguish. | 4.25 |
| Provides enough space for text inputs, data entries, and positions. | 4.75 |
| Forms and processes are completed easily and efficiently. | 4.25 |
| The color design of the system is aligned with the organization's color. | 3.25 |
| The overall UI is user-friendly and pleasing to the eyes. | 4.25 |
| **SECURITY** | **4.5** |
| Passwords of employees are masked. | 4.75 |
| Prompts if wrong username and password were entered. | 4.5 |
| Employees will only have access on modules based on their respective roles | 4.25 |
| Users can only see projects of their own and within their responsibility. | 4.75 |
| **OVERALL** | **4.4** |
| System solves the current issues and problems from before. | 4.25 |
| System Functions and Features' cater to the needs of the organization. | 4.25 |
| System is accurate and reliable in terms of generating forms and reports. | 4 |
| System is able to connect different users involved in their business processes. | 4.75 |
| The system is helpful to the user overall. | 5 |

Fig. 2. Summary Table of UAT Results

## 6. CONCLUSIONS

Through the developed TAPIS, the problems resulting to the department unit's inadequacy of reports were addressed and solved. Likewise, the information system can be applicable to different organizations which business processes practice the discipline of project management. The study manifested new opportunities for an improved coordination among business units and better insights of all the data being acquired, stored, processed and presented throughout the whole business process. Furthermore, the study does not limit other researchers to administer new studies to further improve the tools and logic used to meet comparable project management challenges.

In the field of IT, this study proves that proper identification of the problems being faced by a company is very crucial. If problems are properly identified, a solution can be constructed. Lastly, if a solution can be constructed, the effect will be evident in a way that the process improves drastically.

## 7. ACKNOWLEDGMENTS

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