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# Project Management Plan: Increasing Enrollment Rate for the Transworld Institute of Technology

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**Abstract**

Because of the seriously decreasing birthrate in Taiwan (1.2% in 2008), most private colleges in Taiwan as well as the Transworld Institute of Technology (TIT) have a problem recruiting new students every year. From 2002 to 2008, the rate of enrolling new students was decreasing about 5% every year. The goal of this project is to have 2430 newly enrolled students in the TIT (90% of the 2700 new student enrollment capacity), compared with the fall 2008 baseline of 2025 new students enrolled ( 75% of the 2700 new student enrollment capacity), an increase of in 15% by September 15, 2010. To achieve the goal of this project, the project manager executed this project by adopting Billows' (2002) 19 steps in five phases: initiation, planning, executing, controlling, and closing by Microsoft software of Project Management, and the concepts are consistent with the PMI philosophy.

**Keywords:** Project management, PMI, TIT

## 1. Introduction

The 21st century is the age of the knowledge economy (Rodd, 2002). In order to promote peoples' abilities, and increase their own competitive abilities, the Ministry of Education in Taiwan is not only doing their best to improve educational resources and environment, but also by encouraging people to establish new colleges.

In 1992, the Transworld Junior College of Commerce (TJCC) was established on the hills next to the famous "Ho-Shang Rock" in Yunlin County, Taiwan. All the software and hardware facilities and teaching materials were equipped under the guidelines of the Board of Trustees and the presidents as well as the faculty and staff of the corporation. With a well-developed administration and education environment, Transworld started planning the construction of its Chia-Tong campus in December 1997. In May 1998, Transworld was approved to be upgraded and renamed as the Transworld Institute of Technology (TIT). In 1992, it had seven departments and 780 students enrolled. Now, as of January 2009, it has about 7800 students enrolled, with two campuses and 5 schools, including 18 departments (Transworld Institute of Technology, 2004).

The pillar concepts of the TIT are wisdom: knowledge that produces social values of innovation; innovation: change that creates a new dimension of performance; and nourishment: competition that increases the capabilities of individuals and institutions. Below is an organization chart of TIT (Transworld Institute of Technology, 2004). Because of the seriously decreasing birthrate in Taiwan (1.2% in 2008), most private colleges in Taiwan as well as the TIT have a problem recruiting new students every year. From 2002 to 2008, the rate of enrolling new students was decreasing about 5% every year. In 2008, it opened with room for 2700 new students, but only 75% (2025) enrolled (Transworld Institute of Technology, 2004).

The objective of the project is to increase in 15% enrolled students in 2010. By September 15, 2010, there will be 2430 newly enrolled students in the TIT (90% of the 2700 new student enrollment capacity), compared with the fall 2008 baseline of 2025 new students enrolled (75% of the 2700 new student enrollment capacity).

## 2. Review of the Literature

In the age of knowledge economy, project management is the necessary management science and technology for organization development (Chang, 2003). PMI (2004) indicated that project management is the application of knowledge, skills, tools and techniques to conduct and meet project requirement, and includes initiating, planning,

executing, monitoring and controlling, and closing processes. Many believe that modern project management was born between the 1940s and 1960s, when massively engineered, complex military and government projects prompted managers to develop management techniques such as the Program Evaluation and Review Technique (PERT) and the Critical Path Method (CPM), and these techniques and others assisted project managers with planning and control aspects of complex projects (Van der Merwe, 1998).

Carton; Adam & Sammon (2008) indicated that the successful rate of project management in enterprise resource planning (ERP) implementations is not high. Effective project management requirements that team of project management understand and conduct knowledge and skills from the five areas as following: 1) the project management body of knowledge; 2) application area knowledge, standards, and regulation; 3) understanding the project environment; 4) general management knowledge and skills; 5) interpersonal skills (PMI, 2004) .

Project management characteristics include temporary, unique products, services or results, and progressive elaboration (PMI, 2004). Billows (2002) indicated that project management includes 19 steps in five phases, and the five phases are initiating, planning, executing, controlling, and closing processes. Projects are different from operations. Projects are temporary and unique, and operations are repetitive and ongoing (PMI, 2004; Zanoni & Audy, 2004), but both of them still share many same characteristics as follows: 1) performed by people; 2) constrained by limited resources; 3) planned, executed and controlled (PMI, 2004).

In 2004, Zanoni & Audys' theoretical literature indicated that the initiation considers the necessary processes to assure that the project will be accomplished. The planning process aims to plan and keep a possible work scheme to reach the objectives of the project, involving scope setting, activities planning, the budget estimates, and the project plans. The execution consists of coordinating people and resources to execute the plan and involves quality guarantee, information distribution, and providers' selection. Monitoring processes aims to assure that project objectives are being reached through monitoring and appraisal of its progress, controlling changes, costs, quality, and risks. Finally, the closing formalizes the project or phase acceptance, ending organized. (P.30)

Increasingly, organizations are adopting and adapting the formalized best practices embodied in the Project Management. A critical task in exploring the firm-level antecedents of organizational scope is the identification of the specific firm-level commitments and capabilities that a firm may exploit through its vertical integration decisions (Leiblein & Miller, 2003). "Force Field Analysis is a useful technique for looking at all the forces for and against a plan. It helps you to weigh the importance of these factors and decide whether a plan is worth implementing. Force field analysis also helps to strengthen facilitators and to minimize the effect of barriers in projects" (Mind, 2004, p. 1).This knowledge structures of project management into five groups of interrelated processes that occur throughout the project lifecycle (Beise & Niederman & Mattord, 2004).

Beise & Niederman & Mattord (2004) indicated that the project managers are also categorized into nine knowledge areas including project integration, scope management, cost management, time management, human resources, communication, quality, risk, and procurement. Each category has formally prescribed inputs, processes, outputs, and tools (Beise & Niederman & Mattord, 2004). Waldron (2005) indicated that "choices companies make for effective change include just in time manufacturing (JIT), flexible manufacturing systems (FMS), total quality management (TQM) and world-class manufacturing (WCM)" (p. 244).

SWOT analysis offers a scan of the internal and external environment of the firm (Wu, 2006). It is an important part of the strategic planning process. Environmental factors internal to the firm can be both a strength and a weakness. Those external to the firm can be opportunities and threats (Quick MBA, 2004). Critical path means the length of a project (Frame, 2002). PERT (program evaluation review technique)/CPM (critical path method) was developed by the U.S Navy and Du Pont Corporation, and both of them were employed in the project management. Frame (2002) indicated that PERT/CPM was the single most famous tool in the project manager's tool box. Billows (2002) indicated that every project team develops a unique culture as the people work together. Sometimes that culture encourages interdepartmental bickering and blaming others for problems and failures. Other times the culture may encourage strict compliance with the rules and discourage creativity and innovation.

## 3. Methodology

The project manager implements this project according to Billows (2002) 19 steps in five phases by Microsoft software of Project Management. The five phases include initiation, planning, executing, controlling, and closing, and are consistent with the PMI (Project Management Institute) philosophy. The 19 steps are as follows: 1) scope initiation and MOS (Measure of Success); 2) scope definition and planning: high-level achievement network (HLA) and communication and collaboration; 3) charter: assumptions, constraints, and risk; 4) charter: authority, resources and change control; 5) broad brush plan approval; 6) summary tasks and sub-tasks; 7) assignments and micro-management avoidance; 8) task sequence; 9) predecessor network: danglers in the network; 10) assigning durations and people; 11) calendars; 12) critical path; 13) final review and approval; 14) team leadership; 15) team culture and conflict; 16)

creating the baseline; 17) status reports; 18) problem-solving and reporting; 19) project closing. Liberatore & Pollack-Johnson (2003) indicated that Microsoft project was conducted by nearly 50% of respondents comparing to other software for project management.

## 4. Analysis of results

### *4.1 Phase 1: Initiation*

4.1.1 Step #1: Scope Initiation and MOS (Measure of Success)

Usually, the students in Taiwan may choose what school they are going to enroll in based on reputation (rank of school), organization of school (public or private) and location (city or village) in turn. The reputation of TIT is about average. However, it is a private school in a county, which means higher tuition and fewer things to offer for entertainment, so for most students, TIT is not a very attractive choice. Hence, how to increase its enrollment rate has become a serious problem for the TIT to deal with (Transworld Institute of Technology, 2004).

To increase the enrollment in TIT, the first step of the project is to form a committee whose members are assigned by the president from every school and department to design recruitment tasks. Second, it needs to identify the key stakeholders, including the president, the leader of the committee, the director of the Office of Academic Affairs and the director of the Office of Student Affairs. During the conducting of this project, each procedure of this project has to be approved by the president. Moreover, the director of the Office Academic Affairs and the director of the Office of Student Affairs need to assist the committee to complete all procedures.

Measure of Success (MOS): The committee assigned all tasks for individuals and departments. All individuals and departments will work collaboratively to increase enrolment. By September 15, 2010, there will be 2430 newly enrolled students in the TIT (90% of the 2700 new student enrollment capacity), compared with the fall 2008 baseline of 2025 new students enrolled ( 75% of the 2700 new student enrollment capacity), an increase in 15%.

4.1.2 Step #2: *Scope Definition and Planning: High-Level Achievement Network and Communication*

HLA 1: Form committee to design the recruitment tasks

1.1: Form a staff and teacher recruitment committee for recruitment tasks design

1.2: Design and plan a recruitment plan

HLA 2: Strategies to attract potential student

2.1: Increase the number of scholarships to attract outstanding students

2.2: Design and implement a survey for students of other student who did not choose to attend TIT to determine reasons and provide a report

HLA 3: Increasing school's reputation

3.1: Develop a promotional program to encourage professors and students to publish their papers

3.2: Design an advertising plan to distribute school information on TV, newspapers and magazines

3.3: Build a website which offers information about recruitment

3.4: Assess, design plan, and improve technology and library resources

HLA4: Track and supervise the effectiveness of recruiting tasks

4.1: Provide monthly reports of potential student inquiries

4.2: Track applications and acceptances monthly

For the project, the following key members have been identified: President: Mei Fu Lin; The leader of the committee: You Si Wu; The director of the Office of Academic Affairs: Chi Mei Cheng; The director of the Office of Student Affairs: Lee Mei Liu. In order to enhance the efficiency of the project, the project manager (Sheng Wen Liu) needs to coordinate the key members as a team. The collaboration among the members determines the success of this project.

4.1.3 Step #3 Charter: *Assumptions, Constraints, and Risk*

"There are always risks associated with a project" (Project Management: Fact Sheet, 2002, p. 1). There are several ways to help manage risks. Following is the force-field analysis and SWOT analysis. The Force-field analysis below illustrates that the driving factors which equal +14 outweigh the restraining barriers, which equal -12, as shown on table 1.

The SWOT analysis for the TIT is completed and listed as follows: Strengths: (1) TIT has two beautiful landscaped campuses with a total of 89 hectare campuses. It is the biggest campus in Taiwan compared to all the private colleges; (2) One of TIT's campuses was just built about two years ago. Everything inside the campus is new and up to date. Weaknesses: (1) TIT is located in a village which is not attractive or convenient compared to cities; (2) The rank of TIT

just average, which is not attractive for potential students to choose. Opportunities: (1) Create a flexible program for people who have jobs, such as holiday courses; (2) Build an online course for potential students who are not able to attend courses because of the distance issue. Threats: (1) Decreasing birthrate in Taiwan every year; (2) More new schools have been established in recent years; (3) Other colleges in Taiwan are threats to TIT, especially public schools in the city.

Every project has its potential risk. Successfully dealing with risk may create a potential opportunity. Having a risk management plan will help project managers to monitor and review risks regularly to lower the possibility of letting those risks run out of hand. There is a risk management plan for increasing the newly enrolled student rate for the project management as follow, shown on table 2.

4.1.4 Step #4 Charter: *Charter - Authority, Resources and Change Control*

Plan for Authority

Because the decreasing birthrate is becoming a very serious issue for every private school in Taiwan, President Lin of TIT has noticed that the decreasing birthrate is becoming the major factor causing a lower enrollment rate in TIT. Hence, President Lin has decided it is necessary to have a project to deal with this issue. He has assigned Sharon Liu to be the project manager to handle and coordinate this project. After Sharon Liu finished the MOS and HLAs of this plan, PM presented and discussed the project with President Lin in the president's office, and has gotten the approval for this project and authority to manage human resources from the president while conducting this project. The president also has arranged the first meeting for the project team to confirm the budget.

Resources

For human resources, all employees (everyone who is working in TIT) and resources are available for this project. The project manager is one member of the committee. The committee not only has responsibility for the recruitment task design, but also has to manage and authorize each team which has different responsibilities for this recruitment task. All teams and assignments are adjustable to meet the plan requirements.

For the financial resources, there is a fund with $ 230,000 for this project. The key budgets for this project are as follows: 1) The budget for human resources; 2) The budget for technology and library source improvement; 3) The budget for advertising, 4) The budget for collecting information.

Change Management

"Managing change is seen as a matter of moving from one state to another, specifically, from the problem state to the solved state" (Nickols, 2004). There is always has an unexpected outcome during the project process because of unexpected external resources and environment. The project manager should always be aware and be prepared to deal with the changes caused by unexpected external factors. In this project, the committee needs to meet at least once a week. They have to reconstruct the steps of this recruitment plan when unexpected issues appear. The committee also needs to review the result of each monthly trace on applications and potential students' inquiries, and to change the project process when needed to achieve project goals. In addition, when changes are to be made, human resources need to be contacted to complete this change.

4.1.5 Step #5: Broadbrush Plan Approval

MOS, HLA, and Charter

The MOS, HLAs and sub-HLAs of this project have been completed by all of the project team and have been approved by the president of TIT. The approval letter and document of this project have passed to every department in TIT. This is also shown on the website of TIT. Everyone in TIT needs to review, and be familiar with every procedure. When this project has made changes, it will also reconstruct the plan and get the approval of President Lin. Every document on the web system will also be updated as necessary.

Quality, Ethics, and Professionalism

The mission of TIT is to produce outstanding students who cherish honesty and practice integrity by offering a learning place with the pillar concept of wisdom (knowledge that produces social values of innovation), innovation (change that creates a new dimension of performance) and nourishment (competition that increases the capabilities of individuals and institutions). In order to meet this mission and successed this project, TIT has set up a stated quality and ethical expectation code for everyone who works in TIT, as follows: 1) To provide an excellent information environment for academic research; 2) To act as the think-tank of the institute and to integrate the school resources for all students; 3) To affiliate with other enterprises for better development and offer professional advice to the small businesses which, as a partner of TIT, can offer a practice place for all students; 4) To fulfill the teaching and research needs of all employees of the school; 5)To provide professional help and guidance to all students on their way to success.

Other Deliverables

Besides the formal deliverables of MOS, HLA networks, charter, risk management, change management and human resource management plan, additional project deliverables are as follows: 1) to provide a training program for people who are working in TIT to get familiar with their recruitment tasks; 2) to improve employees' organizational commitment; 3) to build a good relationship with the community.

*4.2 Phase 2: Planning*

4.2.1 Step #6: Summary Tasks and Sub-tasks

The president of TIT, Mr. Lin, is going to authorize the team leader to carry out its new project, and to formalize a goal for this team at the end of May, 2009 in order to clarify the team position and function. All tasks and sub-tasks entry of HLA1, 2, 3 and 4 could be set at the end of June, 2009.

4.2.2 Step #7: Assignments and Micro-Management Avoidance

Micro-Management needs to be avoided during this project process. The project manager and team members have the responsibility to assist every team with their assignment. They also have to build up the communication channel not only between teams but also with each leader and with President Lin.

The project manger also needs to arrange meetings with each member and committee periodically to announce the task assignments and get reflection from members. To be a back-up for each team, project manager and team members need to be able to support and help each team to deal with assignments and problems.

4.2.3 Step #8: Task Sequence

The HLA 1, 2 and 4 include two WBSs, and HLA 3 include four WBSs. Task sequence and predecessor network for WBS of HLA1, 2, 3 and 4 were ranged before the end of June, 2008.

4.2.4 Step #9: Predecessor Network: *Danglers in the Network*

The recurring tasks located in HLA 4 are reports of potential student inquiries, applications and acceptance of newly enrolled students. It will be tracked and reported monthly from date May 1st to September 15, 2010.

According to the task sequence of step #8, the network diagram of PERT chart is also ran by Microsoft software of project management, and it appear two different color boxes. The red boxes indicate a critical success of the project and the figure should not have any dangler which doesn't have a successor.

4.2.5 Step #10: *Assigning Durations and People*

Every task in this project plan has been identified, and assigned, duration time applied to unadjusted assignment of people to tasks as follows: HLA1 is 11 days; HLA2 is 22 days; HLA3 is 112.5 days; and HLA4 is 324 days.

According to the results, the preliminary plan is scheduled to finish on time. The project manager not only needs to adjust the percentage of every team member's daily working hours, but also needs to solve the conflicts in human resources with the intention of making the project more feasible.

The duration of the task in this project plan has been changed because some of team members' daily working hours have changed. This causes some of the tasks in this project plan to have their finish date extended. However, every task in this project plan is still scheduled to be finished before the date 9/3/2010. According to the change of duration time the each HLA duration time after adjusted assignment of people to tasks as follows: HLA1 is 17.33 days; HLA2 is 71.5 days; HLA3 is 125 days; and HLA4 is 323.5 days.

Two major tasks for this project plan are sub-HLA 1.2 and 3.3. Most tasks can start only sub-HLA 1.2 finished. Therefore, the project manager has assigned an additional human resource, Paul, in order to make this task period shorter. Sub-HLA 3.3 is a task to help TIT build a communication platform with potential students. Hence, the project manager has also assigned an additional human resource, Lee Mei Liu, to make this task period shorter, too.

According to the assignment arrangement, two members in this project plan are over-allocating. After communicating with committee members, the project manager has adjusted human resources assigned and the percentage of working time. The way of leveling resource was employed in order to solve the over-allocation problem.

4.2.6 Step #11: Assignment of Costs

The total cost of the project is $ 29,800.00. The most expensive task is HLA3: Increase school's reputation, costing $20,000.00. The HLA 3 needs the longest working duration, which involves the greatest number of human resources. In this project, there are fixed costs for the following sub-tasks: 1) Sub-HLA 3.3: $ 10,000.00 (Build a website which offers information about recruitment); 2) Sub-HLA 3.4: $ 100,000.00 (Assess, design plan, and improve technology and library resources).

After adding the fixed costs, the total cost of this project became $ 139,800.00. The merging cost and the expense for increasing school's reputation were the main causes of the difference in total costs, $110,000.

The project's total cost went up from $139,800.00 to $ 220,800.00. The material resources increased the projects total cost by $ 81,000.00. The additional cost covers the cost of paper supply and computer with software for task HLA 2.2: Design and advertising plan to distribute school information on TV, newspapers, and magazines in the amount of $ 3000, and HLA 3.4: Assess, design plan, and improve technology and library resources in the amount of $ 78,000.

4.2.7 Step # 12: Critical Path

According to Billows (2002), "the critical path is an important tool for project managers, because we use it to shorten the duration of the project and finish earlier" (p. 54). PERT/CPM is a most valuable scheduling tool for project planning which was rooted in a number of factors: First, a project team needs to engage in a scheduling discipline to create a PERT/CPM net work. Every task in the project needs to be identified, durations estimated, and the relationships of the tasks to each understood. The discipline creates a meaningful PERT/CRM network. Moreover, every member in this project needs to understand every important step. Second, the PERT/CRM network could serve as a mathematical model of the project because computerized PERT/CPM software routines link cost and resource utilization data to the scheduling data once the PERT/CPM network is created. Moreover, by identifying the critical path, a project manager can objectively clarify which tasks need to be monitored strictly in order to avoid project delay and to have a basis for adjusting some important tasks with the intention of accelerating the schedule. Third, the PERT/CPM is the major approach counter to help the project manager estimate and control the duration of projects (Frame, 2002).

Because this project has enough "slack" between each task, the critical path is associated only with the recurring task sub-HLA 4.1: provide monthly reports of potential student inquiries and sub-HLA 4.2: track applications and acceptance monthly. These two tasks are very important tasks which also involve much more time resources than the other sub-tasks. These two tasks are not only tracked monthly, but also offer information for improvement of this project.

4.2.8 Step #13: Final Review and Approval

The project manager has met with the committee on March 15, 2009, and the committee has decided all assignments and durations of tasks. After posting all assignments on the school website, some comments from different teams suggested changed to the schedule. The committee has made some changes on duration that satisfy every team member. The committee also added some material resources such as paper for surveys on information of potential students for school improvement and computer with software to improve technology and library resources.

After the project plan was revised by the committee, the project manager has set up a meeting with all team leaders for final approval. The final plan has also been approved by Present Lin. The total cost of the plan is $ 220,800.00, and is expected to be completed by September 15, 2010.

*4.3 Phase 3: EXECUTING*

4.3.1 Step #14: Team Leadership

For team assessment, there are 22 statements below including the four parts of roles, activities, relationships and environment, provide a score ranging from 1 to 4 using the scale as follows: 1 = not at all; 2 = limited extent; 3 = some extent, and 4 =considerable extent as shown table 3.

Next, total the scores for each area, then calculate the average by dividing the total score by either 7 or 6, depending upon the number of items in each category as shown table 4.

The highest mean score on the team assessment was the "Roles" score, which averaged to 3.71. The main reason why this item gained highest score was that everyone assigned to this project aware of their responsibility and realizes every task is important for completion of this project. To complete this project successfully, each member must play their role successfully.

The lowest mean score on the team assessment was the "environment" score. The main reason why this item gained the lowest score was that all the procedures of this project were decided by the committee and project manager. Every member in this project was to get the same reward, and there is no particular reward system for outstanding performance. Therefore, most members in this project were not willing to provide ideas. They just do the job that the committee has assigned to them.

The area that can realistically be improved is the environment. Although everyone in this project plan is clear about goals, the project manager needs to change PM's leadership style. PM needs to open her door for everyone who gets an idea to make this project better, and collect opinions and ideas from every team member before the committee decides each procedure, and to have a reward system for people with excellent performances, who are willing to offer their ideas.

The best leadership activities to further develop the team would be the project manager to involve every team member in the decision making process that impacts them directly. To encourage new ideas, reflections and opinions from every

member, which may be useful for this project, the project manager needs to have a meeting with each team, so the project manager can make sure each team member is clear about their responsibilities and roles. The project manager also needs to help every team to complete their job and assist them when they have a problem to conduct their job. Moreover, the project manager may build a reward system for excellent performance.

4.3.2. Step #15: *Team Culture and Conflict*

While every member of the team influences the culture, the project manager's style is of paramount importance. Specifically, the way in which the project manager makes assignments and what the project manager rewards have important impact's on the overall team culture (Billows, 2002).

For the project, project manager is going to take some approaches in order to achieve a strong orientation and reach the MOS as follows: (a) respecting everyone's ideas and opinions, (b) promoting consistency and fairness in managing people, (c) creating a consonant working environment, and (d) creating a reward system in order to stimulate their creativity as well as efficiency.

*4.4 Phase 4: CONTROLLING*

4.4.1 Step #16: Creating the Baseline

Each project management team should study the starting position and consider alternative courses of action for meeting the required project completion date. While a complete analysis of the network is not essential at this point, the group should at least identify critical and sub-critical paths, and carefully investigate activities that are likely to be completed during the first decision report period. Once a decision has been made, activities completed during that period cannot be changed.

During the simulation, the player is continuously confronted with a number of valuable concepts used in project scheduling, such as the earliest activity start/finish, the latest activity start/finish, the activity slack, and the deadline slack (Vanhoucke; Vereecke & Gemmel, 2008). Every task in this project plan has been assigned, and the time of all HLAs assignment for the project management are as follows: HLA1 is 17.33 days; HLA2 is 71.5 days; HLA3 is 125 days; and HLA4 is 323.5 days.

4.4.2 Step #17: Status Reports

At great cost in time, money and the work focus of managers and human resource departments, organizations have measured indicators which are suitable for quantification in order to match indicators in other organizations identified as having 'Best practices' (Swain, 1999). To date the overall project is on schedule, and there are no schedule slippages. This is because every task gets plenty time to work on it. Task HAL 1 has been completed 100% on schedule and no additional hours of work remain. The sub-HAL 3.1 has been completed 33% on schedule and has already used 13.33 hours, and 26.6 additional hours of work remain so far. As a result, the project manager is confident that the project will be completed on schedule.

The slack indicated in this view represents the tasks that have not occurred yet. The majority of the slack occurs in recurring task sub-HAL 4.1 and 4.2. Both tasks take the majority of time which is represented as 323.5 days each. The total cost of the project is $ 220,800.00, with a baseline of $ 220,800.00. Tasks 1.1, 1.2 and 3.1 have already begun and costs have accrued in the "actual" column.

The non-analytical approach is a graphical approach and these graphics are an effective communication tool. Using cumulative cost curves and Gantt charts is an effective way to examine schedule variance. These Gantt charts and cumulative cost curves not only can help the project manager to find out what their project status is in one glance, but also to integrated cost and schedule control portrayed. However, these graphs do not offer important information such as the rate of money being spent or the percentage of work completed (Frame, 2002).

Five steps to produce earned value totals-project and task level: 1) Go to Tool menu, click Option, then click Calculation tab; 2)Click Earned Value; 3) On the Default box, Choose % Complete, use the specific status date, May, 24, 2006, then choose corresponding baseline; 4) Go to View menu, then click More view, then click Task Sheet, then click apply; 5) Go to View menu, click Table, choose More Tables, and click "Earn Value Table". The results of BCWS and ACWP are as follows: 1) BCWS was the budget cost of HAL1 and HAL3, $ 2533.33; ACWP was the actual cost of HAL1 and HAL3, $ 2533.33; and BCWP was $ 2533.33; 2) CV and SV was $ 0.00, which means that no HLA exceeded the planned budget; 3) EAC is $ 220,800.00, and VAC is $ 0.00. This means that the project did not exceed the planned budget.

According to the above result, the project did not exceed the planned budget. It is because the project is just at HAL1 and sub-HAL 3.1 sessions and still has more tasks to run. Therefore, the project manager still needs to observe later results and to have good control on every task to avoid expenses that exceed the planned budget. The project manager needs to have a meeting with each team series for the latest process result, to make sure every task is under control.

Step #18: Problem-Solving and Reporting

Management consultants and turnaround specialists have some things in common, most of which probably are obvious. For example, the diagnostic, problem-solving aspect; the need to understand the parts of a business as well as how they fit together; addressing issues of leadership, finance, organization-and so on (Sargeant, 2005). To conduct a project successfully, the project manager ought to think of three scenarios that may happen as follows: 1) Ahead of schedule-cost variance is fine with respect to resources; 2) Slippage in schedule, extending the completion date significantly and over-budgeted in human resources; 3) On schedule, but over budget in human resources.

Both ahead of schedule and slippage in schedule extending the completion date are not good. It does not matter if the cost variance is fine or over-budgeted in human resources, both issues may induce unexpected conflicts in human resources, especially when there is a slippage in schedule, extending the completion date. On the other hand, if the PM and committee are not accurately calculating human resource needs in each task, it may cause the problem of slippage in schedule. In this case, the PM may need to assign more human resources to make every schedule on time, which may also cause over budgeting in human resources.

To avoid those problems decided above, it is important to prepare reports from each team on a timely basis when a project departs from the orbit. The project manager also needs to work with each team to find out the root causes why the project is not on schedule or over budget in human resources. This is a project which needs each team's collaboration. Therefore, to make this project successful, the PM plays a very important role as a coordinator to help each team when the project is not on schedule or is over budget.

*4.5 Phase 5: CLOSING*

4.5.1 Step #19: Project Closing

The purpose of the end-of-project report is to provide data about how well the project has performed (OGC, 2008). From these end-of-project reports, each member who is working in this project may get a valuable lesson to make the next project more successful. In this project, the PM has a print out Project Summary Report, Critical Tasks Report, and Budget Report as the final review report. The PM will also file all the reports as a reference for future projects.

**5. Conclusions**

At the beginning of initiating process, the PM analyzes the project environment and provide a project overview statement, which include organizational background, statement of the problem, project goals and objectives, and determining the measure of success for the project. A cut down the scope meets success and then implements the achievement network. Second step was planning stage, the PM conducts software to start the project, and built a WBS, predecessor relationship, PERT, and recurring tasks. In this phase, the PM also builds up communication channels to help each member and team to understand their responsibility. In addition, the PM also analyzes the critical path of this project in order to propose the final plan for approval and to ensure whole project success.

During the executing process, the PM tries to build a successful team by doing team assessment, and tracking issues. The result was that the PM was able to understand more about the strengths and weaknesses of the teams in order to create the best leadership for building an activity-oriented team culture. The style of transformation leadership was used to the team members. In the controlling process, project manager tracked whole schedule including performed tasks, the percentage and usage of work completed, remaining work, and developed earned value reports at every checking point to know whether the expenditure exceeded the budget and whether or not the project was on schedule in order to ensure the project was in control. The earned value management provides a new perception to see how effective is the project running on schedule and on budget. The final stage of the project cycle is to close the project and provides each member who worked on this project a valuable lesson. The most important thing is to learn the lessons from the project in order to avoid similar mistakes for next project. In addition, recognition of outstanding individuals and the team are also important.

Modern organizations face a very dynamic environment for which it is imperative to re-think unique strategies that are more aligned to stable conditions (Bellamy & Becker & Kuwik, 2003). TIT needs to continue to implement outstanding strategies, and attract more students, well-known faculty and educational resources, as well as upgrade its software capabilities and hardware facilities, with the support of outstanding alumni, whose experiences will help create positive images to virtually allow TIT to a greater number of students. This research limited the case study of TIT. For future study, this research work will need to be extended to other case studied, such as ERP in other industries and organizations.

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Table 1. Force Field Analysis

| Facilitators (Driving Forces) | Strength (+1 to +5) | Strategy |
|---|---|---|
| The decrease in newly enrolled student rate | +5 | Supervising the project and seeking other solutions to increase the newly enrolled student rate |
| Need to improve the reputation of TIT | +5 | Develop a promotional program to encourage teachers and students to publish their papers |
| The opportunity to discover potential students | +4 | Use surveys to gather information on potential students |
| Total Score | +14 | |
| Barriers (Restraining Forces) | Strength (-1 to -5) | Strategy |
| Law birthrate in Taiwan | -5 | Having promotional program to attract students |
| The rank of school | -4 | Need to upgrade school's rank |
| School location | -3 | Provide online course to remove the location drawback |
| Total Score | -12 | |

Table 2. A risk management plan for increasing the newly enrolled student rate

| Risk | Sensor (How /Who) | Who Is Responsible | Risk Management Plan |
|---|---|---|---|
| 1. Recruitment Plan (a high risk) | Monthly trace /committee | Committee | Recruitment plan may be flexible and adjustable when it meets a risk |
| 2. Survey for potential students (a medium risk with an immediate attention of resolving it) | Monthly trace/committee | Committee | Information from the survey will be an important source to decide on a recruitment plan. Therefore, there should be more than a survey. When results are conflicting, one more survey needs to be taken to confirm the results |
| 3. Human Resource (a medium risk with an immediate threat) | Monthly working report/every team leader | Every team leader | Need to have appraised and promotion program to improve and monitor numbers performance |

Table 3. Team Assessment

| Team Assessment | Score (1-4) |
|---|---|
| 1. People are clear about goals for the group. | 4 |
| 2. Unnecessary procedures, policies, and formality are minimized. | 3 |
| 3. Team members feel free to develop and experiment with new ideas and approaches. | 3 |
| 4. The allocation of rewards is perceived to be based on excellent performance. | 3 |
| 5. Recognition and praise outweigh threats and criticism. | 3 |
| 6. Calculated risk taking is encouraged. | 3 |
| 7. People are clear about their responsibilities and expectations for performance. | 4 |
| 8. People are clear about how their roles/responsibilities interrelate with those of others. | 4 |
| 9. People perceive others in the work group to be high performers. | 3 |
| 10. People are clear about what personal characteristics/competencies are necessary in their jobs. | 4 |
| 11. The team produces high quality decisions, products, and/or services. | 4 |
| 12. The team is able to conduct effective meetings. | 4 |
| 13. The team achieves its goals. | 4 |
| 14. The team and its individual members are able to interact effectively with others outside the team. | 4 |
| 15. The team makes decisions and produces output in a timely fashion. | 3 |
| 16. The team members truly support each other in carrying out their respective responsibilities. | 3 |
| 17. Team members are open in their communications with each other. | 4 |
| 18. Team members follow through on their commitments. | 4 |
| 19. Team members trust each other. | 4 |
| 20. All team members are equal contributors to the team process. | 4 |
| 21. The group often evaluates how effectively it is functioning. | 3 |
| 22. Individual members feel committed to the team. | 4 |

Table 4. Team Score

| Roles Item | Score | Activities Item | Score | Relationships Item | Score | Environment Item | Score |
|---|---|---|---|---|---|---|---|
| 7. | 4 | 2. | 3 | 5. | 3 | 1. | 4 |
| 8. | 4 | 3. | 3 | 14. | 4 | 2. | 3 |
| 9. | 3 | 11. | 4 | 16. | 3 | 3. | 3 |
| 10. | 4 | 12. | 4 | 17. | 4 | 4. | 3 |
| 18. | 4 | 13. | 4 | 19. | 4 | 5. | 3 |
| 20. | 4 | 15. | 3 | 22. | 4 | 6. | 3 |
| 21. | 3 | | | | | | |
| Total | 26 | Total | 21 | Total | 22 | Total | 19 |
| Average (Total /7) | 3.71 | Average (Total /6) | 3.5 | Average (Total /6) | 3.67 | Average (Total /6) | 3.17 |