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# Development of an Automated and Integrated Budgeting System

Sarah E. Bury  
*Regis University*

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**Regis University**  
School for Professional Studies Graduate Programs  
**Final Project/Thesis**

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**PROJECT PAPER REVISION/CHANGE HISTORY TRACKING**

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I would like to thank my parents for always believing in me and supporting everything I do. They have provided me with the confidence and ability to know that I can accomplish anything I set my mind to.

**Abstract**

Alpine Health currently uses Microsoft Excel to produce consolidated budget statements each year. These Excel templates have become extremely cumbersome to the accounting department since they must cut and paste all of the templates (over 20) into a 'master' schedule that consolidates the reports into a view that the executives make decisions from. Often times these templates are too large to email back and forth. They are hard to track since several versions of the same budget are sent during the process. Each time a new entity or hospital is added, the accounting department must update several different tabs on the 'master' schedule to make sure it consolidates correctly. The company needs a seamless budget system that would put into place a budget process/workflow as well as a software package to incorporate the consolidation easily.

## **Table of Contents**

CERTIFICATION OF AUTHORSHIP .....	2
ADVISOR APPROVAL.....	3
PROJECT PAPER REVISION/CHANGE HISTORY TRACKING.....	4
1.0 Chapter One - Introduction .....	10
1.1 Company Background .....	10
1.2 Existing Situation.....	11
1.3 Existing Technical Situation.....	15
1.4 Problem Statement.....	17
<b>1.4.1 Rules and Regulations to Keep in Mind</b> .....	17
1.5 Scope of Project .....	18
2.0 Chapter Two – Project Statement .....	19
2.1 Project Statement .....	19
2.2 Technical Application.....	22
2.3 Business Impact .....	23
2.4 Project Timeline.....	23
<b>2.5.1 Adaptive Project Framework Phases</b> .....	25
2.5.1.1 Phase I – Version Scope .....	26
2.5.1.1.1 Determine Scope.....	26
2.5.1.2 Phase II – Cycle Plan .....	27
2.5.1.3 Phase III – Cycle Build.....	27
2.5.1.4 Phase IV – Client Checkpoint/Feedback .....	31
2.5.1.5 Phase V – Post Version Review.....	32

3.0 Chapter Three – Real Life: What Really Happened .....	33
3.1 Assess Phases as Applied in Real Life .....	33
<b>3.1.1 Phase I – Real Life Version Scope</b> .....	33
<b>3.1.2 Phase II – Real Life Cycle Plan</b> .....	34
<b>3.1.3 Phase III – Real Life Cycle Build</b> .....	35
3.1.3.1 Phase III – Step 1 Real Life .....	35
3.1.3.2 Phase III – Step 2 Real Life .....	38
3.1.3.3 Phase III – Next Steps Real Life.....	40
<b>3.1.4 Phase IV – Management Approval Real Life</b> .....	42
<b>3.1.5 Phase V – Post Project Completion Real Life</b> .....	43
4.0 Chapter Four – What Could Have Been Done Differently? .....	45
4.1 Software .....	45
4.2 Analyzing the SDLC.....	48
4.3 Analyzing Reporting Tools.....	51
4.4 What Can Be Done to Fix the Project?.....	53
<b>4.4.1 Overcoming Issues/Barriers</b> .....	54
5.0 Chapter Five – Lessons Learned.....	56
Works Cited .....	58
Appendix A: Work Release Documents.....	60

**Table of Figures**

<i>Figure 1: Print screen of current Excel template .....</i>	<i>11</i>
<i>Figure 2: Quantity of entities that are collected and consolidated .....</i>	<i>12</i>
<i>Figure 3: Example of rolled up statement in one of many views.....</i>	<i>13</i>
<i>Figure 4: Version control problems .....</i>	<i>14</i>
<i>Figure 5: Microsoft Project timeline .....</i>	<i>24</i>
<i>Figure 6: SDSM Gold Crystal Table Combinations.xls .....</i>	<i>29</i>
<i>Figure 7: Crystal combination of tables (entity diagram).....</i>	<i>30</i>
<i>Figure 8: Login screen for users on intranet.....</i>	<i>36</i>
<i>Figure 9: User setup screen.....</i>	<i>37</i>
<i>Figure 10: Import screen from mainframe host .....</i>	<i>38</i>
<i>Figure 11: Budget Cost Center Organization Table .....</i>	<i>39</i>
<i>Figure 12: Input budget for current year .....</i>	<i>40</i>
<i>Figure 13: Example of Crystal report .....</i>	<i>42</i>
<i>Figure 14: Ghostscript readme file.....</i>	<i>50</i>

## 1.0 Chapter One - Introduction

### 1.1 Company Background

The healthcare industry has grown tremendously over the past decade along with competition among peer hospitals. There are set measures of success for all types of businesses. It is often measured by a few key indicators depending upon the industry and whether the company is for profit or non-profit. Alpine Health is a mixture of both private and non-profit.

Usually profit companies measure success by income and by shareholder value. Since this is not the case with Alpine Health, they must develop another factor to measure success. For the most part, this factor has become cost effectiveness, or budget vs. actual expenses and income. In the end it is better to be over budget in income, but under budget in expenses.

These measures are used in order to gather funds from sponsors to build new hospitals and to approve new projects with the board. They are also a key indicator as to whether certain lines of businesses should be shut down due to poor performance. Overall, the main goal is to give as much back to the community and hospitals as possible. In order for the board members and sponsors to do this, they must have accurate numbers to respond to.

This makes the budget process at Alpine Health increasingly important. Not only do over 20 hospitals and clinics need to turn in accurate budgets, but corporate needs to be able to accurately consolidate and produce reports for decision making. Several different cycles (preliminary cuts and final cuts) occur during this budget process, so the

different versions must be archived and the most current should be used for consolidation.

1.2 Existing Situation

Currently, the accounting department at corporate attempts to consolidate all 20 hospitals and clinic budgets into one Excel workbook called the Master Budget. The information is collected on 20 different Excel templates/workbooks in the form of a high level financial statement sent to each director at each hospital/clinic including 2 years prior history and prior year budget as a guide for the current year budget.

	A	B	C	D	E	F	G
			FY 2003	FY 2004	FY 2005	FY 2005	FY 2006
201	<b>Revenues:</b>						
202	Acute inpatient services, net		\$ -	\$ -	\$ -	\$ -	\$ -
203	Outpatient care services, net		-	-	-	-	-
204	Physician services, net		-	-	-	-	-
205	Long-term care services, net		-	-	-	-	-
206	Home-based services, net		-	-	-	-	-
207	Residential services, net		-	-	-	-	-
208	Other services, net		-	-	-	-	-
209	Premium revenues, net		-	-	-	-	-
210	Total patient services revenues, net		-	-	-	-	-
211							
212	Investment income (Non-Operating Income/Expense)						
213	Donations		5,000	5,400	5,600	5,800	
214	Changes in Equity of Unconso Orgs						
215	Changes in Minority Interest						
216	Other revenues (Non-Operating Income/Expense) 490-XXX						
217	Other revenues (Other Operating Revenue)						
218	Total non-patient revenues		5,000	5,400	5,600	5,800	-
219							
220	<b>Total revenues</b>		5,000	5,400	5,600	5,800	-
221							
222	<b>Expenses:</b>						
223	Salaries and wages		20	40	80	60	
224	Contract Labor		20	40	80	60	
225							
226	Benefits		50	50	50	50	
227	Allocated Employee Benefits						
228	Total Benefits		50	50	50	50	-
229	Medical professional fees						
230	Purchased services						
231	CHI service center assessments		20	40	80	60	
232	CHI clinical engineering						
233	CHI miscellaneous services						
234	CHAN internal audit fees						
235	Sponsor Management Fee		500	500	900	1,000	
236	Other purchased services						
237	Total purchased services		520	540	980	1,060	-

Figure 1: Print screen of current Excel template

The directors fill in these templates (based on more detailed information at each of their departments – Surgery, Emergency Room, etc.) and send them back to corporate where corporate cuts and pastes the data into the Master Budget which contains all facilities in a different tab in order to create summary reports in several different views of a consolidated budget financial statement.

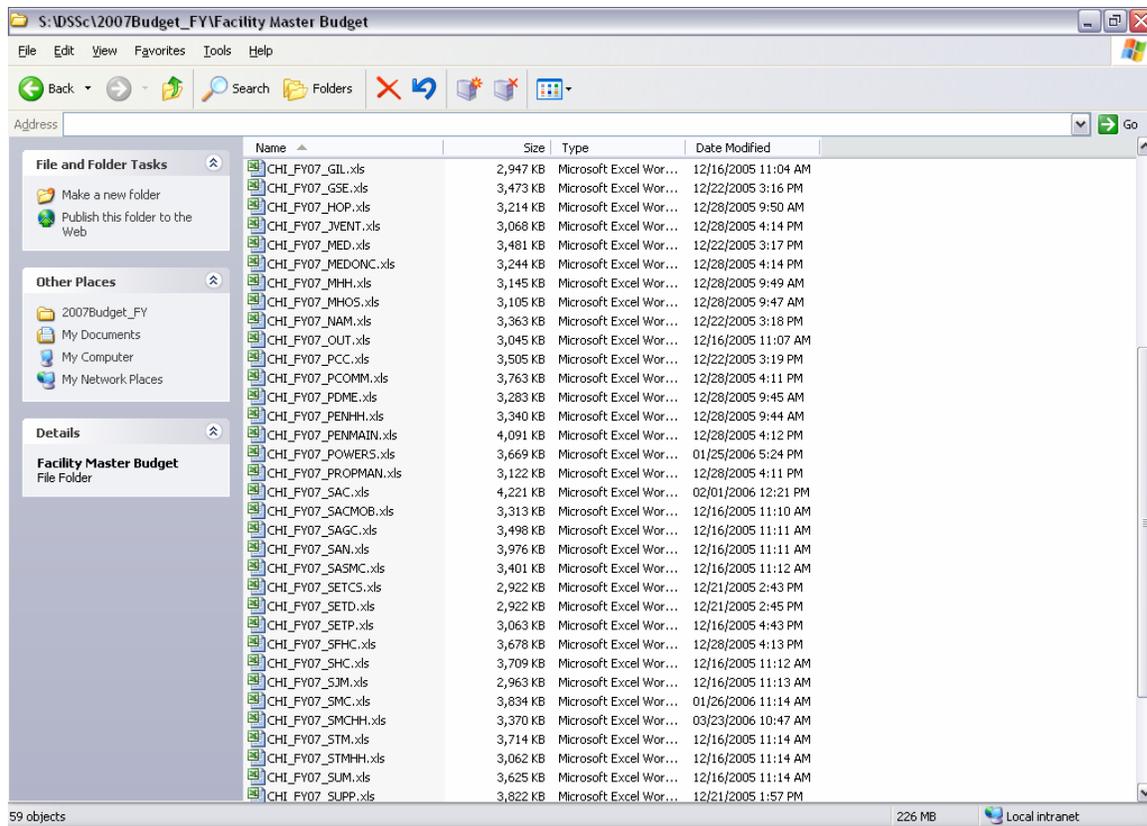
Alpine Master Budget										
Alpine View			Alpine View			Alpine Rollups				
SAC	SACMOB	SAC	SACMOB	HOPDCO	1	First data	SAC	7	SACMOB	7
SAN	SAGC	SAN	SAGC	PENCOM	2	Last data	SAN	7	SAGC	7
SASMC	SVMC	SASMC	SVMC	FDNCO	3		SASMC	7	SVMC	7
SUM	SHC	SUM	SHC	MBDMTN	4		SUM	7	SHC	7
PENMAIN	OPRCCOM	PENMAIN	OPRCCOM	OTHMTN	5		PENMAIN	6	OPRCCOM	11
PENCOM	MEDONC	PENCOM	MEDONC	PSCSCO	6		PENCOM	6	MEDONC	6
SFHC	OUT	SFHC	OUT	SADCO	7		SFHC	6	OUT	7
SMC	EAP	SMC	EAP	SAYDCO	8		SMC	9	EAP	11
STM	FPR	STM	FPR	SMCPCO	9		STM	10	FPR	7
JVENT	GIL	JVENT	GIL	STCCO	10		JVENT	6	GIL	7
POWERS	BRM	POWERS	BRM	THCPCO	11		POWERS	6	BRM	7
PROPMAN	CMC	PROPMAN	CMC	SETDCO	12		PROPMAN	11	CMC	7
HOP	THCCS	HOP	THCCS	CENT	13		HOP	1	THCCS	6
MHOS	THCP	MHOS	THCP	CHIALL	ALL		MHOS	1	THCP	11
CIVF	SETCS	CIVF	SETCS				CIVF	7	SETCS	12
PSFDME	SETD	PSFDME	SETD	CHIALL Stats			PSFDME	6	SETD	12
PSFHH	SETP	PSFHH	SETP				PSFHH	6	SETP	12
MHH	SUPP	MHH	SUPP				MHH	10	SUPP	2
SMCHH	URG	SMCHH	URG				SMCHH	9	URG	5
STMHH	CCORP	STMHH	CCORP				STMHH	10	CCORP	4
CGC	CELIM	CGC	CELIM				CGC	7	CELIM	13
GSE	CFOUND	GSE	CFOUND				GSE	7	CFOUND	3
MED	CHIFOUND	MED	CHIFOUND				MED	8	CHIFOUND	3
NAM	CHICONSOL	NAM	CHICONSOL				NAM	6	CHICONS	4
PCC	CHICORP	PCC	CHICORP				PCC	10	CHICORP	4
SJM	CHITOP	SJM	CHITOP				SJM	10	CHITOP	4
VASA	CPM	VASA	CPM				VASA	8	CPM	5
VPT		VPT					VPT	8		

Figure 2: Quantity of entities that are collected and consolidated

	Actual 2004	Actual 2005	Budget 2006	Proj 2006	Budget 2007	Budget 2008	Budget 2009	Budget 2010	Budget 2011	Var \$ 04 - 05	Var \$ 05 - 06	Var 06 -
<b>Net Operating Revenue</b>	<b>859,802</b>	<b>880,096</b>	<b>936,004</b>	<b>934,334</b>	<b>995,410</b>	<b>1,021,128</b>	<b>1,096,489</b>	<b>1,183,627</b>	<b>1,246,658</b>	<b>20,294</b>	<b>54,238</b>	<b>61</b>
Salaries & Wages	335,600	340,933	356,745	352,776	374,535	382,564	407,325	432,105	461,107	5,332	11,843	
Contract Labor	19,523	22,321	16,547	19,542	16,517	16,706	16,398	16,826	17,287	2,798	(2,779)	
Employee Benefits	112,873	111,658	123,833	121,563	132,087	137,151	152,338	163,950	177,232	(1,214)	9,905	
Allocated Employee Benefits	(17,300)	(18,359)	(19,437)	(21,501)	(18,242)	(26,522)	(34,179)	(37,868)	(41,991)	(1,059)	(3,142)	
Employee Benefits	95,573	93,299	104,396	100,062	113,845	110,628	118,160	126,081	135,241	(2,274)	6,763	
<b>Total Salary, Wage, &amp; Benefits</b>	<b>450,696</b>	<b>456,953</b>	<b>477,688</b>	<b>472,390</b>	<b>504,897</b>	<b>509,898</b>	<b>541,893</b>	<b>575,012</b>	<b>613,635</b>	<b>5,866</b>	<b>15,827</b>	<b>32</b>
Physician Remuneration	335,600	340,933	356,745	352,776	374,535	382,564	407,325	432,105	461,107	(95)	4,376	
Supplies (Medical & Special)	19,523	22,321	16,547	19,542	16,517	16,706	16,398	16,826	17,287	5,573	(118)	
Leases & Rents	112,873	111,658	123,833	121,563	132,087	137,151	152,338	163,950	177,232	221	448	
Consulting/Legal	335,600	340,933	356,745	352,776	374,535	382,564	407,325	432,105	461,107	5,338	1,744	(5,056)
Other Purchased Services	19,523	22,321	16,547	19,542	16,517	16,706	16,398	16,826	17,287	14,900	15,079	8,584
Sponsor Management Fee	112,873	111,658	123,833	121,563	132,087	137,151	152,338	163,950	177,232	699	913	
Utilities	14,165	15,483	16,894	18,033	19,305	20,160	21,518	21,114	22,105	1,318	2,950	
Insurance	12,325	15,086	16,859	17,042	17,862	18,706	20,843	21,684	22,541	2,761	1,956	
All Other	29,930	30,828	32,784	34,447	37,815	40,244	41,360	50,981	52,061	898	3,619	
<b>Operating Expense</b>	<b>775,323</b>	<b>809,449</b>	<b>843,948</b>	<b>842,548</b>	<b>890,461</b>	<b>911,121</b>	<b>971,807</b>	<b>1,026,622</b>	<b>1,089,919</b>	<b>34,116</b>	<b>33,099</b>	<b>41</b>
<b>EBITDA</b>	<b>84,469</b>	<b>70,647</b>	<b>92,056</b>	<b>91,786</b>	<b>104,949</b>	<b>110,006</b>	<b>124,682</b>	<b>157,005</b>	<b>156,739</b>	<b>(13,822)</b>	<b>21,139</b>	<b>15</b>
Depreciation/Amortization	335,600	340,933	356,745	352,776	374,535	382,564	407,325	432,105	461,107	895	2,939	
Interest/Other	19,523	22,321	16,547	19,542	16,517	16,706	16,398	16,826	17,287	(2,495)	333	
Management Fee	112,873	111,658	123,833	121,563	132,087	137,151	152,338	163,950	177,232	(3,912)	(2,188)	
<b>Operating Income</b>	<b>63,603</b>	<b>55,333</b>	<b>75,107</b>	<b>75,387</b>	<b>75,352</b>	<b>76,766</b>	<b>96,025</b>	<b>87,982</b>	<b>89,592</b>	<b>(8,270)</b>	<b>20,055</b>	<b>24</b>
<b>Non-Operating Income</b>	<b>29,977</b>	<b>32,348</b>	<b>19,790</b>	<b>4,875</b>	<b>29,831</b>	<b>31,014</b>	<b>31,781</b>	<b>36,111</b>	<b>44,098</b>	<b>2,371</b>	<b>(27,473)</b>	<b>2</b>
<b>Net Income</b>	<b>93,580</b>	<b>87,681</b>	<b>94,897</b>	<b>80,262</b>	<b>105,183</b>	<b>107,780</b>	<b>127,806</b>	<b>124,093</b>	<b>133,691</b>	<b>(5,899)</b>	<b>(7,419)</b>	<b>24</b>

**Figure 3: Example of rolled up statement in one of many views**

The budget process lasts over a period of three to six months with several versions being submitted at different times. For example, one of Alpine Health's sponsors is Rocky Mountain Healthcare. This sponsor has a fiscal year end of June 30. In order to direct the process, they require a prelim budget to be submitted around early December, a final budget in April, and a spread by month in May. In the end, it is hard to tell which version is the final and where it is saved since every version is a separate workbook. The workbooks also become rather large, over 3MB per worksheet and about 40MB for the Master Budget, making it hard to distribute to the executives without having to print each report the size every time.



**Figure 4: Version control problems**

Using these Excel templates can be cumbersome and they must remain in the same format (rows/columns) in order for them to consolidate correctly when pasted into the consolidation workbook. During the process of cutting and pasting there is always room for human error. When a new hospital or clinic is added, several updates must be made to Master Budget (i.e. adding a tab for the new facility, adding a new rollup report, adding a new line in the rollup, etc.) in order to make sure all facilities are included in the consolidation report. The templates only contain summarized information (no department level or account level information) so there is no way to drill down and data mine on the proposed budget. Often times hospitals will budget a certain dollar amount into one line item (purchased services for example), but they will use the wrong account

when submitting by month. This causes a problem because the budgets will not match by line item in the G/L system when compared to what was submitted to the sponsor.

### 1.3 Existing Technical Situation

Alpine Health has limited resources when it comes to money. Since all of the profits are used to improve and build new hospitals, the amount left over is minimal. Therefore, it is very difficult to get the purchase of new software approved. Most of the time, projects are approached with the idea that they will use resources that have already been paid for and therefore no additional cost will be incurred. For example, instead of buying a custom software package to run internal financials, Alpine Health has opted to create their own financials through Microsoft Access. Although it may not be the best solution in regards to technology, it saves the company money.

The current financial software and systems that are in place at Alpine Health are:

- Lawson – financial G/L system
  - This is where all budgets get loaded once the numbers are final and spread by month. Actual numbers are entered monthly through journal entries.
  - The reporting function within this system is hard to read and not formatted.
- TSI – mainframe cost accounting system
  - The budgets also get loaded here. It acts as a secondary G/L with a copy of the Lawson information uploaded monthly. It contains additional statistics that are not in Lawson. This system is used for a cost accounting basis, not for financial reporting.

- Since this system is a mainframe, the report writing must be done by a few individuals that know the system. Sources are often limited.
- Intranet – website portal
  - This portal is used for employees to access different applications specified by user.
- Microsoft Access – Reporting tool
  - This is the main consolidation/reporting tool for the actual numbers on a monthly basis accessed through Oracle tables from Lawson.
- Crystal – Reporting tool
  - This is another consolidation/reporting tool used more often at the hospital sites.
- Microsoft Excel – Reporting tool
  - This tool is used to create consolidated reports easily by summarizing certain tabs upon request. However, the tool only allows for a certain size of information and growth.
- Microsoft SQL Server – Database
  - Used to store smaller applications and maintained by the IT department.
- Oracle – Database
  - Used to store larger applications such as the Lawson G/L tables.

These systems will be discussed again later, as they apply to the current project.

### 1.4 Problem Statement

The sponsors and executives of Alpine Health need to have accurate budget numbers. These numbers must be entered not only by financial line item, but also by account and sub account so detail is available for support. This information must be stored in a secure database so that corporate can access the information timely and accurately through a reporting tool. Set reports must be created so that executives can view the information in summarized financial statements (similar to the one in Excel). These reports must be easily distributed via email so that the large number of pages do not need to be printed unless absolutely necessary, preferably on a top level.

#### **1.4.1 Rules and Regulations to Keep in Mind**

Some of the regulations to keep in mind during the project and during other operations are those of HIPAA and Sarbanes Oxley (SOX). At this point, private companies like Alpine Health are not required to comply with SOX, but they have adopted the idea in case the time does come. As a recent article in Industry Week stated, “Although the law does not require compliance by private firms, 30% of the CEO’s surveyed say that the legislation, designed to improve corporate governance and disclosure, has had an impact on their companies in the past year or two – or will in the near future” (McClenehan 1). The regulation itself is a way to control the output of data and hold executives liable for the information they report. That is why getting management approval on this project is so important. They need to understand where the data and information is coming from.

HIPAA on the other hand, states that individual health information should be kept private. The U.S. department of Health and Services sums up the regulation in the following:

A major goal of the Privacy Rule is to assure that individuals' health information is properly protected while allowing the flow of health information needed to provide and promote high quality health care and to protect the public's health and well being. The Rule strikes a balance that permits important uses of information, while protecting the privacy of people who seek care and healing. Given that the healthcare marketplace is diverse, the Rule is designed to be flexible and comprehensive to cover the variety of uses and disclosures that need to be addressed. (1)

As discussed later, the reports that are generated with this project or even those of the current budget process, do not contain any personal data such as names, SSN, or even encounter diagnosis, and therefore are not in violation of the HIPAA regulation.

### 1.5 Scope of Project

The scope of this project is to be restricted to the preliminary and final budget process only. The project does not include anything related to spreading budgets by month or the actual loading of the information into the G/L system and TSI system. This will come after the consolidation process and after the budgets have been approved.

## 2.0 Chapter Two – Project Statement

### 2.1 Project Statement

In order to solve the problem, the conclusion of using TSI Gold, a Graphic User Interface (GUI) software, was made. Keep in mind that due to Alpine Health's non-profit status, cost was the number one factor in this decision. In further paragraphs, the methodology for which this project was managed will also be discussed.

Most hospitals seem to use the same types of cost accounting systems, G/L systems and reporting systems. Knowing this, some research was done on what others do for their budgeting process. One of the main cost accounting systems in the health care industry is Eclipsys (TSI).

Alpine Health already uses this mainframe system, TSI, to keep track of general ledger and statistical information on a cost accounting basis. After some research into this system, it was discovered that this mainframe has a web based GUI interface, TSI Gold (currently licensed with TSI but not in use at Alpine Health), that can be used to enter in temporary information, housed in a SQL Server database in order to prepare budgets and projections on a consolidated or detail basis.

With this solution, the project proposed that corporate move away from their current budget practice in Excel. Instead, the software would allow their directors to work with their department heads to fill out department and account level details on the GUI interface, stored on the SQL Server.

The GUI interface provided technical details for versioning and approval by the different levels of management. Once this information was entered in and approved, the

SQL Server tables were used to create any type of report through reporting software such as Crystal or Microsoft Access. The detail was available for drill downs and data mining, while other tables existed for summarizing.

The workflow of the budget process was already in place with TSI Gold. It provided a chance for the directors to work with their departments to form an overall target. As said on the Eclipsys site,

Sunrise Decision Support Manager Web-Based Budget Modeling brings the entire bottom-up budget modeling process online, including developing timelines and charting milestones, preparing and distributing the budget, monitoring progress, and submitting, accepting and exporting the budget. A budget model is developed within the context of a workflow, in which a budget/finance manager specifies a set of temporal, structural, communication and security parameters for the model.

(1)

The pros of this solution are that the software was already licensed to the whole corporation. Since Eclipsys was already in use as TSI (the mainframe cost accounting system), the TSI Gold addition just needed to be loaded by IT. This made the price of new software free. It was also very familiar to the users since they were already using another product from Eclipsys.

The software is a web based tool, so users could access it from home, if needed. The data is real time since the background tables are stored in a SQL Server database. This means that every time an update was made, corporate would just have to refresh their reports. Not only can this software be used by corporate to consolidate, but the hospital directors were able to consolidate their own departments into one hospital budget

by creating their own reports. This allowed the directors to be able to budget bottom up, as opposed to top down as it had been done in the past.

Lastly, the workflow of the budget process was essentially already in place. TSI Gold allowed corporate to set due dates and send out email reminders to all users when the date was nearing. It also had a tracking mechanism so corporate could see what departments had turned in a budget, when it was turned in, and who submitted it. It was a great way to keep track of the departments that were left to complete.

The cons of this solution are that the software had not been tested in the Alpine Health environment. Users were not sure of the glitches the system had or how it would work on the network in place. Another issue was the agreement of all hospital directors. This is always a large problem at Alpine Health seeing that there are 12 large hospitals, each with their own management and agenda. Getting everyone on the same page can often be frustrating. This software was also not supported by the Alpine Health help desk since it is from a third party, Eclipsys. This means that any problems of software issues had to be reported through the software help desk. This help desk is located on the east coast and can be difficult to get a hold of since their business hours are different than the users.

Besides the software issues, there were also the issues of making sure that every entity budgeted for already existed on the TSI host. This was a problem since most top level entities (budgeted by corporate) did not need to be in the host, and therefore did not exist. These entities needed to be added as well as any new hospitals or clinics within the organization.

Lastly, TSI Gold, when used properly, forces the organization to budget bottom-up. As mentioned earlier, Alpine Health currently budgets top-down so this was a large culture change for many directors. They are used to getting a target, making an overall budget while the departments below are creating the detail. At some point, they must meet in the middle. Eliminating this process would be much more efficient.

## 2.2 Technical Application

As discussed earlier, there are several systems already in place that interact with TSI Gold. Below is the list again, but with an explanation of how they apply to TSI Gold:

- Lawson – financial G/L system
  - Lawson was not used for the actual project. This exceeded the scope.
- TSI – mainframe cost accounting system
  - The mainframe was the source of information that got loaded into TSI Gold for history and prior budget information. It also contained all data structures for TSI Gold. This was imported into TSI Gold through the click of a button within the application.
- Intranet – website portal
  - The managers who input the budget were able to access TSI Gold through the intranet by clicking on a button that took them to the software.
- Microsoft Access – Reporting tool
  - This was an option for reporting, but not used during the project.
- Crystal – Reporting tool

- This was the tool the team attempted to use to create reports from TSI Gold.
- Microsoft Excel – Reporting tool
  - During this project, the team removed this as a reporting tool.
- Microsoft SQL Server – Database
  - Used to store all of the tables/relationships for TSI Gold.
- Oracle – Database
  - This database was not used during this project.

### 2.3 Business Impact

The use of this budgeting system will not only make the budget process more efficient, but it will provide more accurate numbers for executives to make decisions. The employees will be freed from the draining job of inputting over 20 hospital budgets into an Excel spreadsheet, allowing them to be more productive with analysis and other high level projects. The consolidation process will become seamless without any human errors and the creation of reports will be done with the click of a button. All this can be accomplished with minimal cost.

### 2.4 Project Timeline

Below was the timeline for the project and its completion. The project began in Jan 2005 and was set for completion in March 2006.

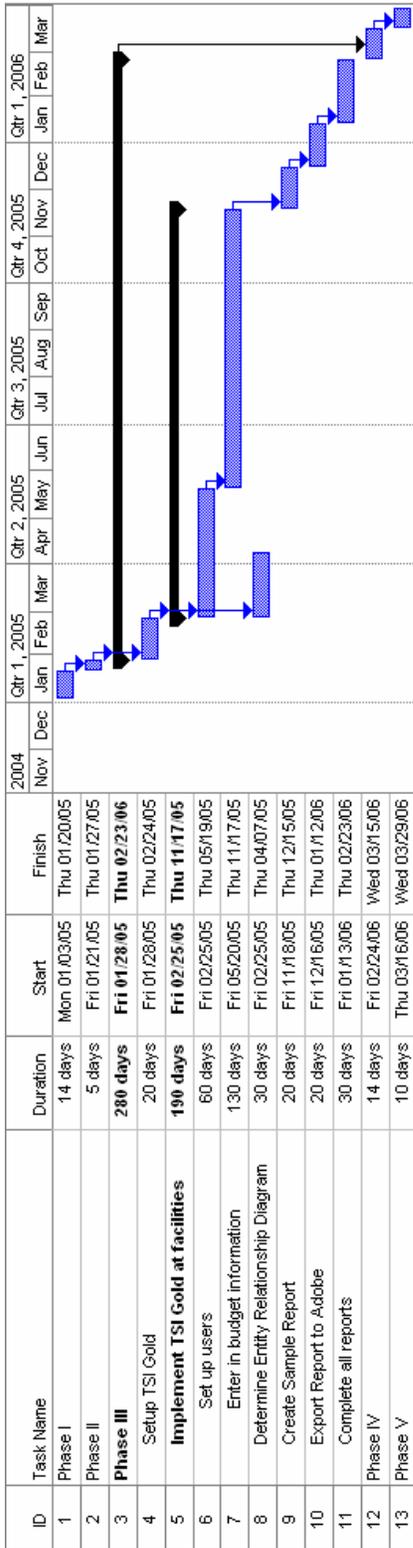


Figure 5: Microsoft Project timeline

### 2.5 Decision on Adaptive Project Framework

The project team decided to adopt an Adaptive Project Framework (APF) for this project. The flexibility and re-iteration was most appealing to a trial system like TSI Gold. A big factor in this setup was that the decision support team worked independent from IT in the beginning and therefore, ran into many unforeseen obstacles. This supports why this type of method was needed. “With traditional approaches, everything is viewed through the prism of control – of change, risk, and, most important, people” (“Agile Project Management” 87). This type of control was not available with this project, hence the decision on APF.

The project took approximately 12-14 months, with adjustments made depending on the number of iterations as the project continued. The project end date was March 2006. There were 5 phases in this project with the possibility of iterations within each one and throughout the whole project. Below is a summary of each phase.

#### **2.5.1 Adaptive Project Framework Phases**

##### Phase I – Version Scope

- Develop conditions of satisfaction
- Write overview statement

##### Phase II – Cycle Plan

- Develop Cycle Plan
- Alter time plan in accordance to iteration

##### Phase III – Cycle Build

- Decide team tasks

- Build cycle functionality
- Monitor/adjust cycle build

#### Phase IV – Client Checkpoint

- Conduct quality review with client
- Start over with Phase II if needed

#### Phase V – Post-version Review

- Review version results
- Implement project

### **2.5.1.1 Phase I – Version Scope**

Phase I – Within this phase, the most important factor was to determine the scope and objective of the project overall. This was crucial because there are several other steps within the budget process that could be automated, but they may require yet another software solution. In order to determine the scope, the APF recommended a Version Scope. This was done through a Conditions of Satisfaction conversation with the end users (Wysocki 269). Such things as surveys and interviews were conducted so that the project team could better understand what was needed.

#### **2.5.1.1.1 Determine Scope**

The scope of this project was to use TSI Gold for consolidation of individual hospital budgets, corporate budgets, and the consolidated Alpine Health budget. The scope did not extend into the spreading of the budget by month or loading the budget into

TSI host or Lawson G/L. The Conditions of Satisfaction information should be reviewed in order to verify that the user's needs are being met.

#### **2.5.1.2 Phase II – Cycle Plan**

The implementation of this project was broken down into 6 different cycle steps. After step 2, 5, and 6, the project proceeded to phase IV for approval and feedback. Otherwise, it continued down the path in order. The 6 different cycle steps were the following:

1. Setup TSI Gold
2. Implement TSI Gold at facilities
3. Determine entity relationship for TSI Gold tables
4. Create sample report
5. Export report to Adobe
6. Reiterate reports until all are complete

#### **2.5.1.3 Phase III – Cycle Build**

During Phase III, the actual work on the project began. This is where teams should be formed and particular tasks should be divided between departments. The different departments are a large factor in the project since it cannot be completed by only one department. They need the support and expertise of IT, decision support, and accounting. The six steps above are actually put into work, with the options to progress to Phase IV after steps 2, 5, and 6.

During step 1, the tasks were divided between the IT department and the decision support department. The IT department was in charge of actually getting TSI Gold setup on the network which meant installing the software and also getting it stored on a SQL Server. The IT department was the only one with secured access to this piece of the project. The SQL Server connection was setup on the decision support user's computers so that they could link to the SQL Server tables.

After the IT department finished the initial setup, it was the job of the decision support team to actually learn the software and read through the manuals. At this time, a representative from Eclipsys came out to hold a brief training for corporate as well as hospital directors on the general layout of the GUI screens. Due to money concerns, the project team relied heavily upon self teaching as well as educating others.

Each director as well as corporate was responsible for the actual setup of all the individual departments and department heads within TSI Gold. They also imported any history and data structures from the host. At this point it was recommended that the information was tied out to the G/L for verification. This part of the setup was decentralized due to time. It would take over 3 months to get each hospital structure setup by corporate only.

During step 2, the department heads as well as corporate decision support were required to train the end users (those inputting the budgets) on all aspects of the software necessary. This included basic steps as to how to get to the software (through the intranet) as well as how to sign in. Some of the more specific instructions included where to enter a budget and how to submit it. Specific examples were used in each case.

This training was mandatory and a question/answer session was held afterward for those who needed help.

At this point, the team progressed to Phase IV, which is the approval of management (to be discussed next). If management does not approve this step, a re-iteration could occur where the directors would have to go back and hold a second training, or meet one on one with a department having trouble.

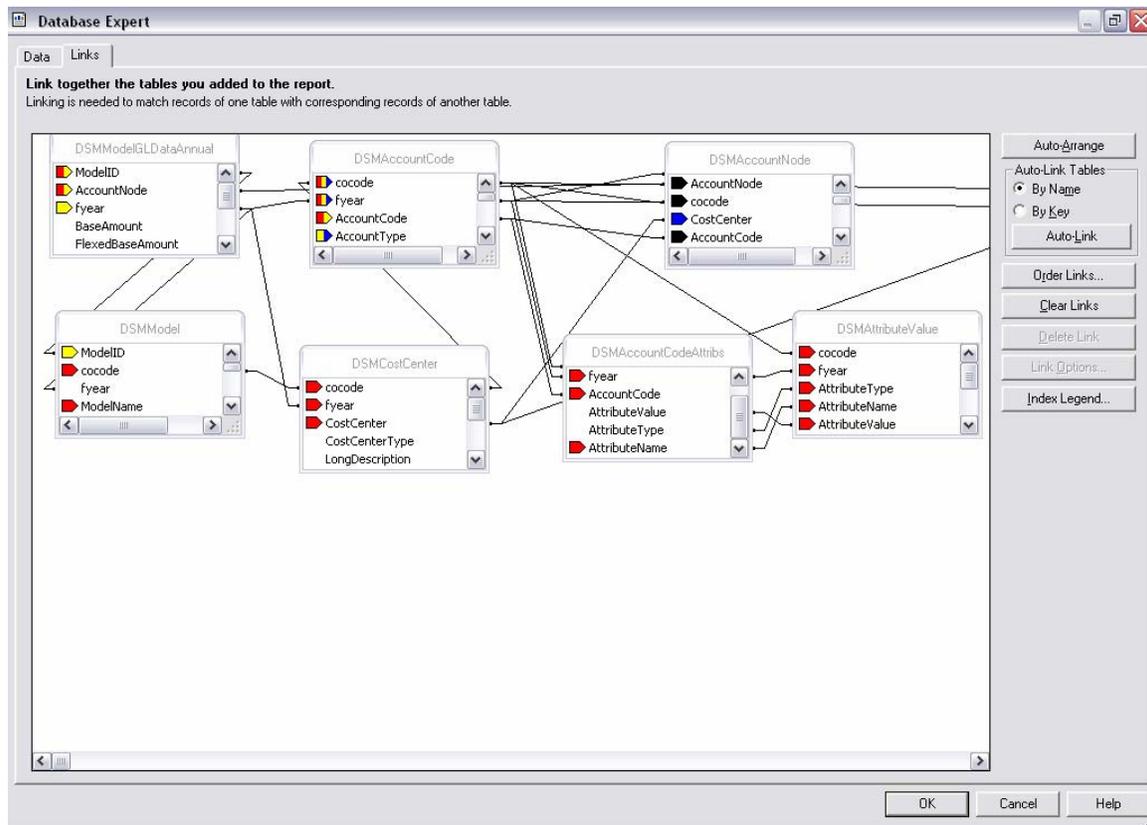
Step 3 included creating an entity diagram of the fields that were necessary in a report. TSI Gold is such a large application that many of the tables/fields do not need to be used. Therefore, only those that are appropriate will be discussed. In order to do this, it was necessary to know which fields to pull in and how to join them. This was done by reviewing the Gold Crystal Table Combinations.xls file provided by Eclipsys during training. This file listed some of the important fields, what table to find them in and what the field described.

<b>Primary</b>	<b>Table_Name</b>	<b>Description</b>
Yes	DSMAccountNode	Cost Center/Account Structure
	DSMModel	Model Id for Qualifications
	DSMModelGLDataAnnual	Base, Flex and Modeled data for specific Model ID
	DSMCostCenter	Cost Center Master (Description File)
	DSMAccountCode	Account Master (Description File)
	DSMAccountCodeAttribs	Attribute Value at the Node Level
	DSMAtributeValue	Attribute Master (Description File)

**Figure 6: SDSM Gold Crystal Table Combinations.xls**

The next step was to connect these tables in Crystal so that a report could be created. Crystal was chosen as the reporting tool since the hospital directors utilize this tool for other reporting purposes. It was also recommended as a tool by Eclipsys

consultants. However, there was no training held regarding this software package due to money and time concerns.



**Figure 7: Crystal combination of tables (entity diagram)**

Based on the diagram created in step 3, it was then possible to develop a standard report. This step really analyzed the information in each table and decided which sections were the most important. A few sample reports were created in order to determine what management would like to see. As mentioned earlier, these reports were supposed to closely resemble those that were in the Excel worksheets. This step in itself had the option of reiteration depending upon how the report turned out. It was a process of trial and error.

After the report was chosen in step 4, step 5 involved getting this report in an email format. Their form of choice for this was an Adobe report. Most of the team had Professional Adobe which means that any file can be printed to Adobe and not to a physical printer. Since the report was created and could be distributed, this step allows a progression to Phase IV for management approval. The reports were emailed to the executives for feedback.

Step 6 was just an iteration of steps 4 and 5. Step 4 was involved because based on the entities included in the rollup of the report, the report had to be altered. It could then be put into production, sent to Adobe and emailed to the appropriate management and executives. This would be repeated until all reports were created and finished.

#### **2.5.1.4 Phase IV – Client Checkpoint/Feedback**

After the build phase was complete, and all reports were ready to be emailed upon demand, Phase IV was used as an approval step as well as a feedback step. As mentioned earlier, during Phase III step 2, 5, and 6 the process moved to Phase IV for approval before moving onto the next step. Once all of Phase III was complete, the process moved to this phase where the end users and management were asked for feedback. The people involved were basically in three groups: the project team, the input end users, and the report reader end users. All of these groups were asked to supply feedback on the system and process as it was finished. This review will be discussed during Chapter 4.

#### **2.5.1.5 Phase V – Post Version Review**

After the reviews were collected and suggestions/complications were taken into account, the team made a list of those issues that needed to be corrected before the next budget cycle. This included sitting down with the list of issues and determining which were the most crucial. Obviously the executive concerns were weighted a bit heavier since they are higher up in management, but the input end user concerns were taken into consideration as well.

To implement correcting these issues or improving the process, the team would have to revisit some of the steps above. This would create another reiteration of the project.

### 3.0 Chapter Three – Real Life: What Really Happened

#### 3.1 Assess Phases as Applied in Real Life

During this section the APF will be discussed as it applied to what actually happened. As things often occur in the workplace, a plan looks great on paper, but is not always followed through. Some steps may be skipped while others are added last minute. This section will also briefly walk through the actual work done during this project. Most of this occurred during Phase III.

##### 3.1.1 Phase I – Real Life Version Scope

Phase I operated as planned during the actual project. In order to kick off this phase, version scope, a meeting was held with the team members. Brainstorming conversations were had as to what this project needed to accomplish. It was decided that some team members should hold conversations with hospital directors and department heads in order to see what they wanted from a budgeting system. Below are the top five concerns from users.

The users want an ease of use to the system. This means knowing exactly where to enter budget information as well as knowing how to submit it without having to repeatedly read through directions. They also want the information available to them as soon as it is ready. As soon as a change is made, they want to be able to see it and not wait a few hours for an update.

Being able to track the budget is another concern to users. Often times budgets will be submitted, but no one can remember which version was the latest one or whether it was approved.

The corporate users and hospital directors want the ability to create rollup summary reports with ease. They do not want to have to use a template, but rather get all of the information from what the department heads are entering.

Lastly, the users at corporate would like to see a defined process for budgeting. They want to move away from the top-down budgeting and use the detail already existing to develop a firm bottom-up budget. This means obtaining the cooperation of all of the hospital directors.

### **3.1.2 Phase II – Real Life Cycle Plan**

After the important steps of Phase I were developed, the team had to come up with the different cycles of the APF or project process. What happened here was that steps 1 and 2 were developed, but nothing was really discussed beyond this point. It was almost as if the team did not want to jump ahead with the project before they actually implemented it and set it up at the facilities. This caused a problem because when TSI Gold was actually setup and implemented, the team was at a standstill since they had to plan of where to go next.

Invariably, the hospitals started using the TSI Gold system, but became very frustrated because they had no way to consolidate the reports. They were left to figure out that section on their own. This caused many hospitals to create very different reports and no standardization was determined.

Not only this, but corporate was unable to use the system to consolidate the whole system due to the lack of knowledge in reporting tools and due to the fact that some of

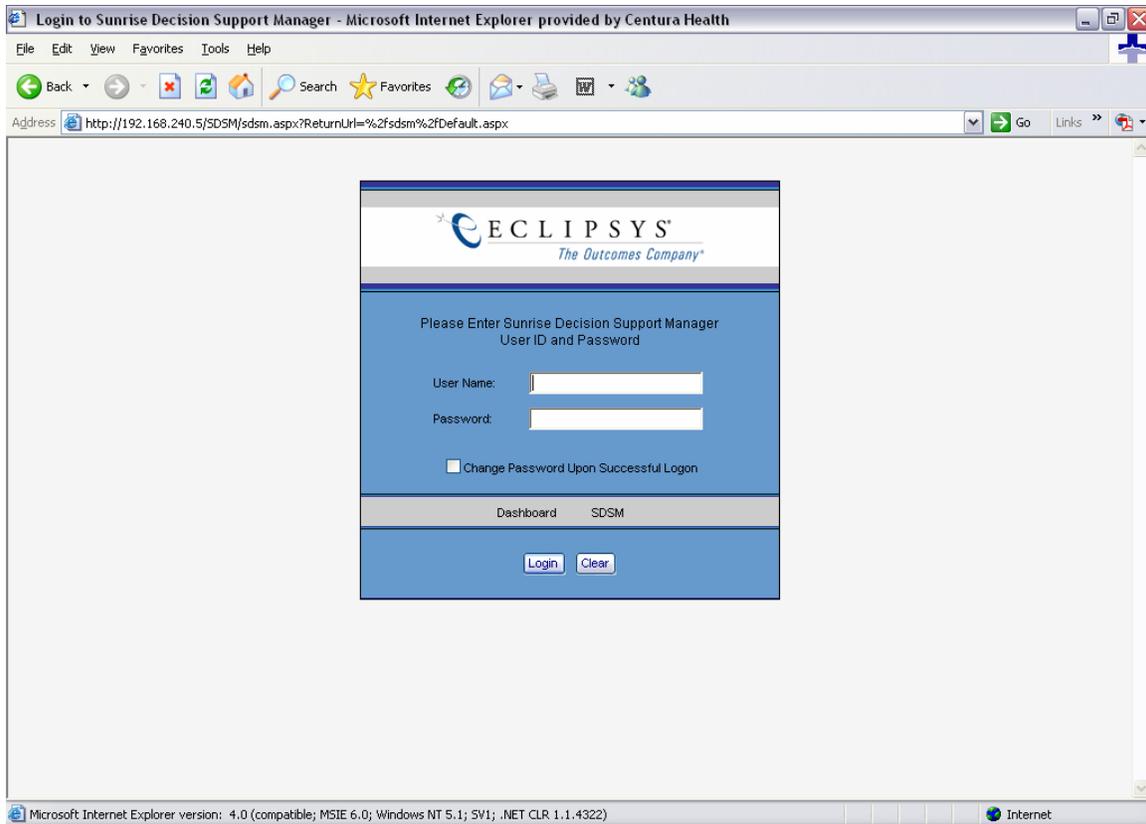
the entities were still missing from the system. The system could have very easily been used had the team come up with the appropriate steps to follow in this phase.

### **3.1.3 Phase III – Real Life Cycle Build**

As noted earlier, the real execution of the project did not exactly follow the steps formulated for Phase III. However, this section will go through each step and what actually happened or did not happen. Even though the team did not develop steps 3-6 in the beginning, they realized that something needed to be done once the system was implemented and they came up with a disorganized way of making something happen. The following paragraphs will discuss this in more detail.

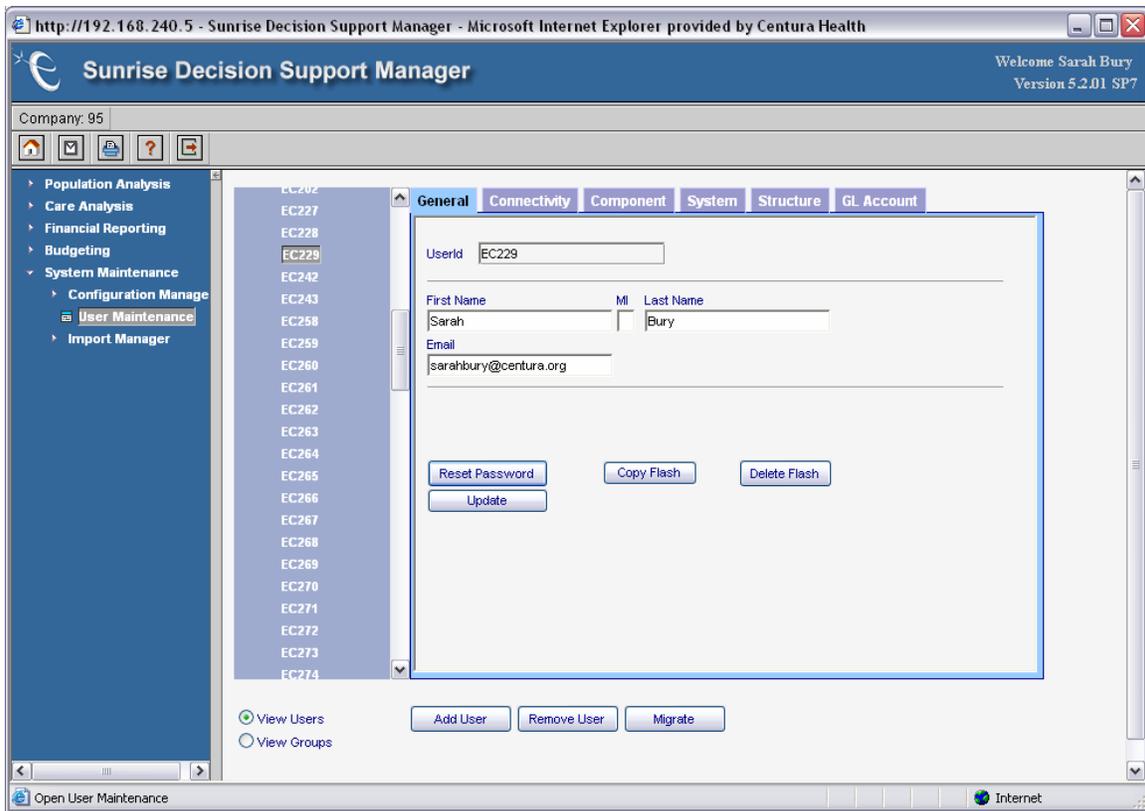
#### **3.1.3.1 Phase III – Step 1 Real Life**

The actual setup of TSI Gold in step 1, as a software component of Alpine Health was done by the IT department. The software was loaded onto a server site: 192.168.240.6 where it could be accessed through the work intranet. The initial ‘super users’ (all of corporate decision support and hospital directors) were setup with a special userid/password in order to setup all of the other users within the system. The super users had the ability to enter in their mainframe userid/password so that information could be downloaded from the mainframe at any point in time.



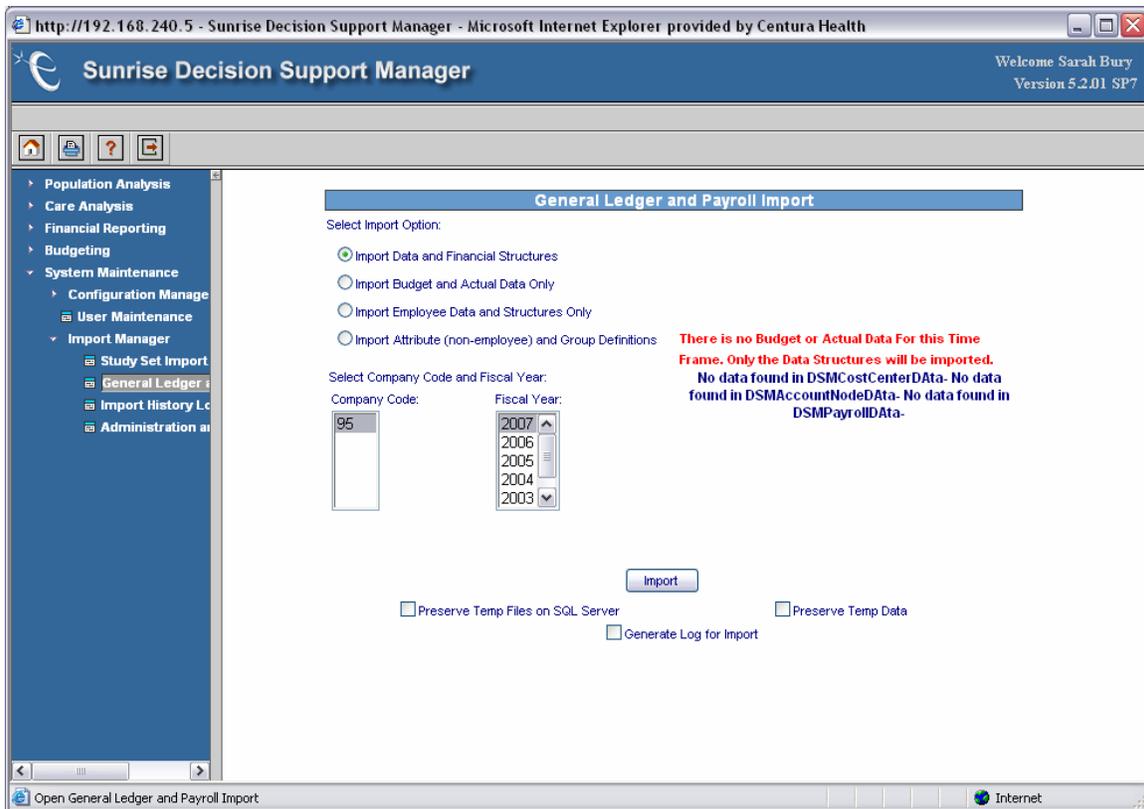
**Figure 8: Login screen for users on intranet**

This is the screen that users enter through for TSI Gold on the intranet. They each have their own usernames that corporate or the hospital directors setup during this step.



**Figure 9: User setup screen**

This is the actual user maintenance screen where the 'super users' can input the user name, email address, and restrictions as to which accounts they can update.



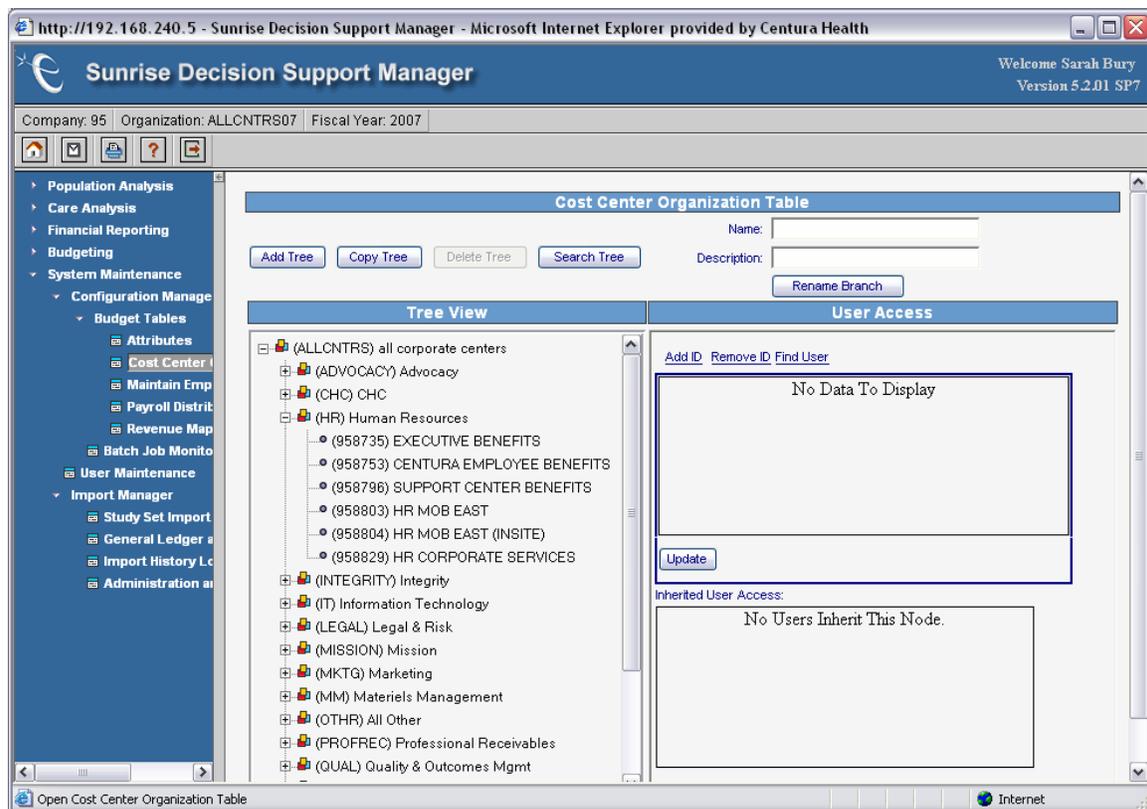
**Figure 10: Import screen from mainframe host**

This screen shows an example of how to import data and financial structures from the TSI mainframe. This brings the accounting units and accounts over into TSI Gold along with any history of actuals and budget for comparison purposes.

### **3.1.3.2 Phase III – Step 2 Real Life**

In order for this to be implemented at the facilities, the hospital directors had to login and begin to setup their users in the user setup screen. They also had to do an import from the mainframe so that all the data structures and prior history/budget information was in the TSI Gold server. Once this was done, they were able to start

grouping cost centers so that one department manager could go in and enter their budget for each cost center reporting to them, shown below.



**Figure 11: Budget Cost Center Organization Table**

The hospital directors met with each of their department heads in order to show them how to access the sign in page and where to go to enter a budget for their cost centers. Once they were logged in, the managers could go to a department work center page where they would enter their budgets by cost center and account. In order to help with this process, additional columns were added that contained 2 prior years of history, prior year budget, and current year actual. They were able to input in the current year budget in the last column.

The screenshot shows the 'Sunrise Decision Support Manager' application running in a Microsoft Internet Explorer browser. The main window is titled 'Work Center Details' and is set to 'Account Level'. The 'Budget Due Date' is 2/10/2006 and the 'Cost Center' is (958729) PHYSICIAN SERVICES. A table displays budget data for various accounts, with columns for 'FY Actual', 'FY 2005 Actual', '1st Half FY 2006 Actual', 'FY 2006 Forecast', 'FY 2006 Budget', 'FY 2007 Budget', and 'Bud 07 vs. Act 06 annualized'. The table contains numerical data for various accounts, with some cells highlighted in blue. The interface includes a navigation menu on the left and a status bar at the bottom.

FY Actual	FY 2005 Actual	1st Half FY 2006 Actual	FY 2006 Forecast	FY 2006 Budget	FY 2007 Budget	Bud 07 vs. Act 06 annualized
0.00	0.00	0.00	0.00	0.00	302,230.00	302,230.00
0.00	0.00	0.00	0.00	0.00	44,025.00	44,025.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	85,632.00	85,632.00
-4,462.59	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	33,581.00	33,581.00
0.00	0.00	0.00	0.00	0.00	4,892.00	4,892.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Figure 12: Input budget for current year**

### **3.1.3.3 Phase III – Next Steps Real Life**

After the software was setup and implemented, this is where the team had no plan to go forward. At this point, the facilities were starting to budget in the software as well as corporate and the team knew that eventually they would need to make a consolidated report.

A consolidated report takes on three different meanings. One is a rollup at the hospital level (all departments and clinics that report up to the hospital), the other is a corporate only rollup (all departments at the corporate level), and the last is a total Alpine Health consolidated (all hospital departments, clinics, plus any top level entities). Obviously the hospital directors are concerned with just the hospital rollup where

corporate is concerned with all three. However, as mentioned above, the missing entities required for a full Alpine Health consolidated budget were never inserted into the host. Therefore a true consolidated report could not be created. All of the departments needed for a hospital rollup and a corporate rollup did exist, so the team decided to start here. If the reports were useful at the hospital and corporate only level, then they would go back and add in the missing top level entities to eventually create a total Alpine Health consolidated report.

At this point, instead of initially, the team began discussions on how to create reports for corporate only and for a hospital view rollup. No discussions were held on showing the facilities how to create reports. They were given a simplified entity diagram and the connection to the SQL Server where the database was held. They were essentially left to figure out what they wanted to do on their own.

At corporate however, the entity diagram, shown earlier, was used to start making sample Crystal reports. If asked, this information was forwarded onto the facilities as well. By linking the appropriate tables and fields, a sample report was created for corporate. Below is a print shot of the report created at corporate.

	FY 07Budget	FY06 12 mo	RevisionDate/Time	RevisionUser
<b>950003 CEN RIS/PACS II</b>				
BENEFITS				
5201010	5,410	15,466	02/15/2006	skuntz
5201015	1,549	3,862	02/15/2006	skuntz
	<b>6,959</b>	<b>19,328</b>		
HOURS/FTEs				
9051010	432	1,872	02/15/2006	skuntz
9051020	880	3,744	02/15/2006	skuntz
9055010	59	208	02/15/2006	skuntz
9055020	93	416	02/15/2006	skuntz
	<b>1,464</b>	<b>6,240</b>		
MANAGEMENT SALARIES				
5051010	22,563	99,974	02/15/2006	skuntz
5055010	3,087	11,108	02/15/2006	skuntz
	<b>25,650</b>	<b>111,082</b>		
OTHER EXPENSES				
5325015	0	0	01/24/2006	sbury
5325050	0	200	02/15/2006	skuntz
5325060	0	3,000	02/15/2006	skuntz
5325220	0	21,000	02/15/2006	skuntz
5400050	0	0	01/24/2006	sbury
5400055	0	2,160	02/15/2006	skuntz

**Figure 13: Example of Crystal report**

This report was useful in the beginning because it summarized by financial line item, account, and contained the budget as well as projected information. On top of this, it also contained two fields for tracking, revision date and revision user. This way corporate could tell who had submitted what budget and which ones were left to complete.

However, after review by management, this report was not sufficient.

### **3.1.4 Phase IV – Management Approval Real Life**

Corporate wanted something that would include past history as well as current budget. They also wanted something that summarized all cost centers by line item. This was not something that the team was familiar with. Since no one on the team was very

familiar with Crystal, changing this report was a difficult task. In fact, it was not done before budgets were complete. Corporate resorted to dumping the data from the TSI Gold tables into an Excel spreadsheet and making income statements from there. There was a slight improvement since the data in Excel now had all the existing detail, but the project was not finished.

Along with Corporate, the facilities were struggling to make a change from their top-down budgeting. Although they had to come up with their own reports in Crystal, the directors were still doing a lot of work on the side to make the budget meet the targets. They would let the managers fill out their budgets in TSI Gold, but meanwhile they would be creating essentially another consolidated budget in Excel to make sure they knew what the end result would be. Maybe if a different reporting tool had been used, as well as enforcement on bottom-up budgeting, the team would have had more success.

### **3.1.5 Phase V – Post Project Completion Real Life**

So, as it stood after the project finished, TSI Gold was setup and implemented at corporate as well as all the facilities. The software was in use and working to its best ability. The missing entities were never created, so the only reports that could be used were individual hospital rollups or corporate only reports. To do this, the team used Crystal as a reporting tool. They pulled in the necessary tables that they thought would create a useful report. After linking these tables through the help of the entity diagram, they created a summarized report. However, after review with management, this report was still not detailed enough with what they could get from using Excel. So, corporate resorted back to using Excel, but with the more detailed information.

Since the consolidated roll up was not created, the hospital directors were still creating top level budgets in the old Excel templates. Alpine Health had to resort back to those for the time being until a report was agreed upon, standardized, and the missing entities were added. Even though this is where the project ended, this is not where the analysis ends. The next section will examine different management methods, different software methods and different reporting tools that could improve this project. There are still steps to finish the ultimate goal of a consolidated report and that can still be accomplished.

## 4.0 Chapter Four – What Could Have Been Done Differently?

### 4.1 Software

The software for this project was based highly on cost and availability. It needed to be something that didn't require a large timeframe to implement since budgets take a long time to develop. However, had the option been given to the team, could Alpine Health have made a better decision under the circumstances? Most likely the issue of money and time would still be the case. Seeing that Alpine Health is non-profit and needs to cut costs as much as possible, it would still be necessary to find something minimal in cost and fast to setup.

Given the option to change direction of TSI Gold, research was done for other solutions. The other option considered during research was the use of a software system used by Alpine Health's sponsor, Rocky Mountain Healthcare. This software is ENUFF Hospital Advisor, a software package created for forecasting hospital statistics and financial data. It basically operates inside an Excel spreadsheet, but uses macros to provide a customized look. It is said to provide "the modeling sophistication and formatting flexibility of a true Excel spreadsheet and the consolidation power, system-wide controls and security of a database" (Kaufmanhall 1).

Since this software is based upon hospital system budgeting, most of the line items used for budgeting are standard and therefore do not need much customization. ENUFF allows the hospital system to create as many spreadsheets as needed for each hospital or entity. These spreadsheets are in financial statement format containing additional information such as statistics, history, and variations between years.

Once the spreadsheets are created for each hospital, they can be distributed via email and in the form of an executable. This allows for the limited use of licenses. Only the people who are creating the spreadsheets really need access to the original software. When the spreadsheets are distributed, they are sent in the form of an executable. Directors can work on their budgets from their hard drive and then return them to corporate via email to be loaded into the consolidation package.

Since these spreadsheets are preformulated, there is no risk of entering in extra columns and rows. Once the spreadsheet is returned, it is loaded into the corporate software where a rolled up financial statement can be viewed.

The pros of this solution are that it is a low cost for the license. Since essentially one department at corporate will need the software, the license price will be limited to those people. There is also a low risk for human error since the reports are loaded into the software program and the system generates the consolidated report itself. There is no need for creating separate formulas.

The most important factor of this software is its ability to 'version control'. Since the templates are 'checked out' by the hospital directors, they cannot be updated by two different people. Plus, corporate will always have the most recent version of the budget. It also allows them to know if a budget has not been turned in by seeing that the budget is checked out.

The cons of this solution are the lack of detail, the budget process being top-down and no live data. First, the lack of detail causes a huge problem. The whole issue with the Excel reports was that executives could never get more detail for support when they

needed it. The information only existed at a financial statement summary. This is the same case with ENUFF.

Second, since it is a high level budget, the top-down budgeting creates more work for the directors. As they are compiling their department budgets, they are also creating an overall budget and have to meet somewhere in the middle.

Third, since the templates are 'checked out', a consolidation report cannot be created with the most recent data if one is missing. Corporate must wait for the hospital to turn in their updated budget before consolidating. This could take up valuable time.

Lastly, the history information must be keyed in by corporate. The software does not link up with any other existing software already at Alpine Health, so there really is not a way to import data. This can take weeks of hand entering information and making sure that it is summarized correctly.

After consideration of both pros and cons for the two different software systems, the conclusion was made that TSI Gold was the most appropriate choice. The cons of ENUFF outweighed the pros of TSI Gold. On top of that, the most important factor that the executives had been stressing was the availability of more details. Even though the ENUFF system fit inside the parameters of low cost and easy setup, it was still basically the same thing as the Excel process. Also, the fact that the system was not linked anywhere else to pull history or even to store data was a bit unnerving. It was not an efficient use of time to have to key in any information other than what was currently being budgeted for. The team made the correct choice to use TSI Gold.

#### 4.2 Analyzing the SDLC

As noted above, the SDLC chosen to manage this project was the APF. At the time, this seemed as though it would suffice because it allowed the team to have flexibility and not hold to a locked timeframe. However, as it became obvious towards the end of the real life Phase III, IV and V of the project, some of the steps were skipped and discarded all together. At times, the project was even pushed aside to work on other last minute projects.

Once the initial setup took place and was pushed out to the facilities during step 2 of Phase III, the team relaxed on their goals. It was left up to the facilities to create their own reports and a standardized report was never agreed upon for everyone to use. Corporate came up with a different report to consolidate, but no one was very familiar with Crystal enough to make the report user friendly.

Another problem with this SDLC is that it needed backup from higher management. This would come from someone well trusted within the organization and who had a vested interest in the project. If the project was a success, it would reflect well upon management. This would cause management to enforce deadlines and require recurring updates.

These issues bring up the question as to whether a different SDLC or project management method would have been more successful. Maybe a more traditional method would have pushed the team to stick to the plan? Let's review some other methods that companies or even Alpine Health's IT department uses.

If one were to look deeper into the specialized techniques, they would begin to notice a trend to a particular method researched by project management publications. As

noted in the Effective Project Management textbook, companies' techniques "on first look, seem to differ from one another. On closer examination, we actually found that there are a number of underlying principles that are present in the more successful methodologies" (Wysocki 22). It is these principles that create the base objective of the project whereby the employees follow and use as guidelines for a successful completion.

As stated earlier, there are many variations of methodologies. Obviously the outcome is the same, to have a successful project. However, how that outcome is approached is where the particular method is derived. There are many documented methods throughout the world. In the next few paragraphs, the methodologies researched for this project will be discussed.

Since the department who lead this project, Alpine Health decision support/accounting, was not directly associated with the IT department at Alpine Health, they did not have to follow the IT protocols of managing a project. They did, however, have the choice to use this method as a tool or compare it to the other methods researched. The Alpine Health methodology, sited on the portal as Section 6-040 Project Methodology, uses the following types of tools to assess the scope of the project ("Section 06 Systems").

- Business Case – Similar to problem statement including a version scope on necessary materials.
- ROI – Return on Investment. What will this cost the company, but more importantly, what will it produce in revenue or save in costs?
- Project Charter – Who will be sponsoring this project? Team lead or management?

- Issue Management – Divide out tasks.
- Quality Management – Setup review processes and management approval.
- Status Management – Feedback and update meetings held regularly.
- Risk Management – What issues are arising as the project continues? Solve them as they arise instead of letting them accumulate.
- Schedule Management – Make sure the project is on time. Adjust resources to ensure this.
- Change Request Management – Manage the changes due to issues or time frame.
- Communications Management – Make sure that everyone contributes during update meetings.

It also requests that these tools and documents be stored online through the intranet so that any employee can access the information if needed. The method takes on a more traditional approach in that it requires a statement or objective, as well as a set date on when completion is expected. If the project exceeds this date, many times there are consequences. The project must also stick within a strict budget regardless of what changes occur along the way (Melymuka 38). As a recent article suggests, “In our experience, project managers invariably fall back on traditional linear approaches, seeking to reign in the increasing volatility of their projects” (“Agile Project Management” 2).

The question arises, should this have been the type of management used on this project? It may have made the team stick to deadlines and take responsibilities for tasks not accomplished. Not only this, but the method already exists as part of the IT department at the same company! A lot of emphasis in this methodology is put upon the

time management and communication. Maybe this would have been the key when the report section was delayed. Team members could have voiced their concerns as to the knowledge of Crystal. At this point, something could have been done to change the reporting tool or hire someone with expertise in the area.

In the end, a more traditional method would have kept the project on task and forced members to look at the issues before they arose. This would have allowed the project to take on a more collaborative effort between the facilities and corporate. Not only would there be consolidation at corporate, but both areas would be operating off of the same reports. Standardization could have occurred much easier, allowing the departments to focus on their actual budgets and not the preparation of a report for their hospital directors. The set deadlines and enforcement would have kept the project on time and given management a secure measure for success. Knowing the deadlines and having consequences when they were not met would give executives a more vested interest in supporting the project.

#### 4.3 Analyzing Reporting Tools

The reporting tool chosen by the team was Crystal. This tool was introduced to Alpine Health this year because of the ease of use and high ability to format. However, the team was still not very adverse in the product. In fact only one or two people really knew how to even setup a report. This, as mentioned before, created problems when management wanted to change the report to include more information. The expertise was not there.

This leads one to think that there may have been another reporting tool that could have worked better. Perhaps one that the team was more familiar with. It is already known that the monthly financials are created in Microsoft Access. Why wasn't this considered as one of the possibilities? The statements could actually be recreated with the budget tables instead of the monthly Lawson G/L tables. The SQL Server already exists and the import of tables into Access along with linking the tables is very similar to Crystal. The next steps would have to be to re-map the already created reports so that they use the information from the TSI Gold tables.

If this was done, there could have been code used in order to export all of the reports (down to cost center level, up to hospital or corporate level, and then up to Alpine Health Consolidated level) to Adobe. Some research was done on this topic as it applies to Microsoft Access. An interesting set of code was found that simplifies the export of multiple reports in Access to Adobe. It creates a dummy printer that holds all of the documents and then saves them out to an Adobe file. This way someone does not have to go into each report and save it as an Adobe file. This could take hours considering there could be up to 50 reports for just the facilities.

Next is a sample of the coding used for this process:

**Installing Ghostscript to output from Access**

1. Download Ghostscript 8.11 from <http://www.cs.wisc.edu/~ghost/>
2. Install Ghostscript and make a note of the install directory.
3. Create a directory in the Ghostscript directory named Output e.g. c:\gs\output
4. Create a new local printer using a postscript driver, my personal choice is the Apple Laserwriter
5. Create a new local printer port as c:\gs\output\tfile.ps
6. Set the spool options on the printer to print directly to the printer and disable Bi-Directional printing.
7. These are important otherwise Ghostscript kicks in before the printer file is output and you end up with an empty pdf file.
8. Rename the printer as 'Postscript'
9. That finishes installing Ghostscript.
10. Import the Access modules supplied into your application. If the Ghostscript version is anything other than version 8.11 then a line in the PDF module will need to be modified: i.e. Public Const GhostscriptDir = "c:\gs\gs8.11\"

**USING IT**

This is a two stage process

**Stage One. Create one or more postscript files**

1. Create two variables
2. Dim ok As Boolean, gsFileList As String
3. If there is only one report to print then follow this with  
gsFileList = gsPrintIt(gsReportName, gsWhereCond, gsOnlyRpt)  
gsReportName = The name of the report you wish to use.  
gsWhereCond = The WHERE condition for the report if required or "" if none.
4. If there are multiple reports to combine into one pdf then use  
gsFileList = gsPrintIt(gsReportName, gsWhereCond, gsFirstRpt)  
gsFileList = gsPrintIt(gsReportName, gsWhereCond, gsNextRpt) - Repeat this until  
the last but one report  
gsFileList = gsPrintIt(gsReportName, gsWhereCond, gsLastRpt)

**Save**

ok = gsSavelt(gsFileList, Optional gsFilePath As String)

There is one optional parameter which is:

gsFilePath = If you do not want the Save dialog box to show then pass the full path and filename (including .pdf) in this parameter.

**Figure 14: Ghost script readme file**

This code can be used in the visual basic background in Microsoft Access. By following the steps above, there are a few setups including the printer, a folder for outputs of reports, changing the code for the report names, and choosing a path for the final product. This way all the reports including facility, corporate, and consolidated are all spooled into on large file for executives to look at and to easily email out.

**4.4 What Can Be Done to Fix the Project?**

After reviewing the analysis above, it is obvious that there are several other directions the project could have taken. Why wasn't this done? As seen above, the project needed a different SDLC in order to better manage it. The software chosen was the best solution the team could have chosen, but since it was managed poorly, the outcome was not as successful as it could have been.

Also, the project could have used a different reporting method and based on research, the option to use Microsoft Access would have provided a much better approach. The project team is more familiar with this tool and could have used this to ensure accuracy.

However, regardless of what was correct and what wasn't, the team can still have the opportunity to go back and revisit their decisions. In order to do this, some of the barriers discussed throughout this project will need to be tackled right away.

#### **4.4.1 Overcoming Issues/Barriers**

Based on the above information it is decided that there are essentially three different steps to accomplish in order to make this project a success. These steps are listed below and then discussed in more detail.

1. Fix the budgeting process – bottom-up budgeting
2. Enter in missing entities to TSI host
3. Create a useful report out of Microsoft Access/implement Adobe code

One of the largest ongoing issues with Alpine Health is the budget process itself. As said before, managers are still doing work on the side to complete a top-down budget. This takes up more time than needed and defeats the whole purpose of having departments enter their own budgets.

In order to change this, Alpine Health needs to strictly enforce the idea that detail department budgets will be used to rollup into a consolidated budget. They can do this simply by setting deadlines as to when corporate will be creating hospital rollup reports. Not only will corporate be using the department level detail to get an overall budget, but

the hospital directors will be forced to do the same rollups with their own information to make sure they are on track for targets. They will not have time to do an overall budget on the side. Plus, it will help them communicate with their departments if a certain line item is off target. They will have to go to the detail in order to fix that information.

The next issue to overcome will be to enter in any non-existing entities into TSI host. This will take about 1 day as there are probably only 3 top-level entities that currently do not exist. However, the more difficult part will be to get history into these entities. This will come from the G/L system, Lawson. The team could make load files from what already exists in Lawson in order to load into the new entities in the TSI host.

Once these have been added in, the team should run a report out of TSI Gold on history information to make sure that everything in there ties out to what is on the G/L. If it does, then it is safe to move forward with creating a useful report in Microsoft Access and use the Adobe code for distribution.

## 5.0 Chapter Five – Lessons Learned

In the next few paragraphs, the lessons learned with this project will be discussed in detail. As with most projects, there are always things to learn and take on to the next project.

During this project, one of the most difficult tasks for the team was to organize all of the directors at the hospitals as well as the managers of all the departments. Obviously not enough emphasis was put on this part of the project and there was not someone with enough authority on the team to make the managers cooperate and want to participate. The fact that during the project the hospital directors were still creating an offline budget in order to keep within their top-down budgeting process was just one example. They also were allowed to create their own reports which strayed from the standardization approach of the whole project. Each hospital has certain items they tend to focus on, but at the end of the project, it is upper management's decision as to what the reports will show.

Another lesson learned was the difficulty in actually completing the project. Once the software was up and running it seemed as though other projects took priority. Management was just concerned about the software working correctly and wasn't interested in getting the consolidation to work. The team ran into many software glitches along the way, so they wanted to get those fixed before beginning to create reports. Once they corrected these issues, the project was at a standstill. There was not a leader in place to push the team along and force them to face the progressing issues.

This leads to the fact that there was not an upper management associate with a vested interest in the project. This allowed deadlines to pass and problems to occur

without immediate consequences. The team needed a leader within the company to help support the project and to enforce deadlines.

Lastly, the biggest lesson learned is that the failures within a project can often make the project better in the end. By using the above suggestions on how to finish the project and alter a few of the assumptions made in the beginning, the end result could be better than what the team originally thought. Projects are not always successful, but it is the way that people learn from them and apply those lessons in the future that matters.

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