

Who Is Your Presenter?

- Business Management and Firm Operations
- Project Management
- Risk Management and Contracts
- Professional Coaching
- American Arbitration Panel of Construction Neutrals
- Job Title Descriptions and Competency Models
- Project Work Planning Workshops
- Project Reviews, Team Performance Evaluations
- Expert Witness







Learning Objectives

- 1. Understand and apply basic accounting terminology used by the industry.
- 2. Understand how rates, profit and multipliers are calculated and apply to financial metrics for monitoring projects and firm financials.
- 3. Know the basics of setting up a budget in accounting along with why and how a budget is updated during the course of a project.
- 4. Understand how progress reports are utilized in the revenue recognition process and project status reports are used for consistent project monitoring.

This is truly a good program for everyone in a firm that promotes a good business culture. Perhaps a "lite" version of this agenda is appropriate for the wider audience but a good understanding and means to communicate with a common language at the project and firm levels is a very good thing.

A Sound Training Program for Project Managers

- 1. Accounting 101 for Project Managers
- Project Work Planning, the Process (the philosophy and "why" of project planning)
- 3. Project Work Planning, the Application (using Deltek, Axium, Newforma or other enterprise accounting software)
- 4. Firm Business and Financial Management Principles

What Is Our Purpose?

- 1. We want Project Managers to have a basic understanding of accounting principles.
- 2. We think it is best that everyone in a firm understands key financial metrics and business indicators.
- 3. We want to have sound business practices supporting architectural, engineering and environmental practices at all levels of the firm.
- 4. We want to provide a resource to help manage projects more successfully.

Accounting 101 Webinar Agenda

- 1. Accounting Terminology
- 2. Rates, Profit and Multipliers
- **3.** The Budget in Accounting
- 4. **Progress Reports**
- 5. Project Status Reports
- 6. Capability Maturity Model Firm & Project Management Practices

ACCOUNTING TERMINOLOGY Section 1

Fee Types

- <u>Lump-Sum Fixed Fees</u> are specified, firm amounts based on a stated Scope of Services.
- <u>Hourly With No Upset</u> is based on hourly billing rates and often used when the Scope of Services is not defined.
- <u>Hourly-Not-To-Exceed Fees</u> are based on hourly billing rates and contain a "ceiling" on hourly services.
- <u>Cost Plus Fixed Fees</u> are based on the actual costs for base salaries, fringes and overhead plus a fixed fee for the firm's profits.
- <u>Unit Cost Pricing</u> is based on a cost per square foot, room, building or other unit.
- <u>Percentage of Actual Construction Cost</u> is tied to the actual construction cost of the project on a percentage basis.
- Reimbursable and Non-Reimbursable Direct Costs are considerations in all options.

The most common fee types used in the AE industry are Lump-Sum, Fixed Fees and Hourly-Not-To-Exceed Fees.

Revenue Recognition

<u>Cash Basis:</u> The determination of income and recognition of revenue rests upon the collection of cash and payment of expenses. <u>Accrual Basis:</u> The recognition of revenue occurs when it is EARNED and when expenses are incurred without regard to the time of receipt or payment of cash.

Professional service firms use accrual based accounting methodology, not cash based and once this is understood everything gets much simpler. The accrual method represents a more accurate means to measure the actual project and firm financial performance. The accrual method asks the question "what is the work in place," earns revenue accordingly and is not based on the collection of cash. All firms use the cash basis for cash flow and income tax purposes.

Earned Revenue vs. Billed Amounts

<u>Billed/Invoiced Amounts</u>: Amounts billed to clients based on contract compensation amounts

and percent complete.

Earned Revenue Amounts: Revenue recognized in the accrual accounting system based on

subjective percent complete times Net Service Revenue.

<u>Billed-Not-Earned (BNE)</u>: Amounts billed to the client but not recognized as earned revenue in the accrual accounting system.

Earned-Not-Billed (ENB): Amounts recognized as earned revenue in the accrual accounting system but not billed to the client.

<u>Gross Fee</u>: Total fee paid to the firm for all services including consultants.

<u>Consultant Fee</u>: Fees paid to other consultants by the A/E of Record.

Net Service Revenue (NSR): Gross Fee - Consultant Fee

<u>Overhead</u>: Fringe benefits, rent, utilities, management (including indirect labor) and marketing expenses.

Profit: Net Service Revenue - Direct Expenses - Overhead

<u>Non-Reimbursable Direct Expenses</u>: These expenses are charged to a project or task and NOT billed directly to the client; the cost of these expenses must be absorbed by the project or task. They include supplies, unreimbursed travel, etc.

<u>Reimbursable Expenses</u>: These expenses are charged to a project or task and billed directly to the client for payment. These are outside the scope of the Gross Fee.

<u>Billed Amounts</u>: Contracted fees billed to clients for cash payment of gross fees.

Earned Not Billed (ENB): Net Service Revenue Earned – Billed Amount

<u>Billed Not Earned (BNE)</u>: Billed Amount – Net Service Revenue Earned

<u>Job-To-Date (JTD)</u>: Labor hours and dollars spent as of the current date.

Estimate-To-Complete (ETC): Labor hours and dollars estimated from the current date to project completion.

Estimate at Completion (EAC): Estimated Total Direct Labor to be incurred by project completion based on Actual Direct Labor to date plus Projected Direct Labor to finish. EAC can also be calculated on Other Direct Expenses, Consultants and Profit.

JTD + ETC = EAC

Direct Labor Rate: Salary expressed as an hourly rate. Calculated by dividing Annual Salary by 2080 hours.

<u>Break-even Multiplier</u>: Calculated by dividing Direct Labor plus Overhead by Direct Labor. If Overhead = \$220 and Direct Labor = \$100, then Multiplier = 3.20

<u>Overhead Multiplier</u>: Calculated by dividing Overhead by Direct Labor If Overhead = \$220 and Direct Labor = \$100, then Multiplier = 2.20

Effective Multiplier: Calculated by dividing Net Service Revenue by Direct Labor If NSR = \$350 and Direct Labor = \$100, the Effective Multiplier = 3.5

RATES, PROFIT & MULTIPLIERS Section 2

Rates, Profit & Multipliers

Direct Labor Rate of \$10.00, Overhead Multiplier of 2.20, Profit of 20%

Direct Labor Rate	\$10.00	\$20,800.00 / 2080	Annual Salary / 2080
Overhead	\$22.00	2.20 X \$10.00	2.20 X Direct Labor Rate
Break-Even Rate	\$32.00	\$10.00 + \$22.00	Direct Labor Rate + Overhead
Break-Even Multiplier	3.2	\$32.00 / \$10.00	Break-Even Rate / Direct Labor Rate
Target \$ Profit	\$8.00	(\$32.00/.80) - \$32.00	(Break-Even Rate / .80) – Break-Even Rate
Target Multiplier Rate	\$40.00	\$32.00 + \$8.00	Break-Even Rate + Profit
Target Multiplier	4	\$40.00 / \$10.00	Target Multiplier Rate / Direct Labor Rate
Target % Profit	20.00%	\$8.00 / \$40.00	Target \$ Profit / Target Multiplier Rate

Rates, Profit & Multipliers

How do you calculate \$ and % Profit?

Target Multiplier Rate – Break-Even Rate				\$ Profit
\$40.00	- \$32.00			\$8.00
	_			
Dollars Profit	/	Target Multiplier Rate	=	% Profit
\$8.00	1	\$40.00	=	20.00%
•	•	•		

THE BUDGET IN ACCOUNTING Section 3

The initial budget set-up in the accounting system includes two important parts: 1) the distribution of the Gross Fee contracted resulting in a Net Service Revenue and Project Labor Budget for the Prime A/E and 2) a "Top-Down" budget by phase of the Project Labor Budget.

The Elements of the Budget are as follows:

- Gross Fee
- Direct Consultant Fees
- Net Service Revenue
- Project Contingency
- Direct Expenses Budget
- Project Labor Budget by Phase of Service
- Actual Percent Complete by Phase of Service

Example

- \$1,000 Gross Fee
- <u>-\$300 Direct Consultant Fees</u>
- \$700 Net Service Revenue
- <u>-\$100 Project Contingency</u>
- \$600 Project Budget
- <u>-\$50 Direct Expense Budget</u>
- \$550 Project Labor Budget (Not Direct Labor)

Contingencies

- Are budgeted at project initiation and subtracted from the Net Service Revenue.
- Are intended to be used (*EARNED*) by the project during project execution as needed for:
 - Unplanned Direct Labor
 - Unplanned Direct Expenses
 - Unplanned Consultant Fees
- Are not intended to be reserved unconditionally for profit at the end of the project.

Initial Project Set-Up in Accounting

Fees	\$ Amount
Gross Fee	\$100,000.00
Consultant Fees	(\$40,000.00)
Net Service Revenue (NSR)	\$60,000.00
Direct Expenses Budget	(\$3,000.00) 5%
NSR Minus Direct Expenses Budget	\$57,000.00
Contingency	(\$3,000.00) 5%
Project Labor Budget (Not Direct Labor)	\$54,000.00

Top-Down Project Budget by Phase Guidelines

Project Budget By Phase	\$ Amount	% Amount
Project Planning	\$1,080.00	2%
Preliminary Design (If needed)	\$1,620.00	3%
Schematic Design	\$3,780.00	7%
Design Development	\$12,420.00	23%
Construction Documents	\$19,980.00	37%
Bidding/Negotiations	\$1,080.00	2%
Contract Administration	\$13,500.00	25%
Post Contract Services (If needed)	\$540.00	1%
Project Budget Earned	\$54,000.00	100%

Gross Fee & NSR Billed Compared to Project Budget Earned

	O/A					
	Contract				Project Budget	
Budget By Phase	%	Gross Fee Billed	NSR Billed	Budget %	Earned	Delta
Project Planning	0%	\$0.00	\$0.00	2%	\$1,080.00	(\$1,080.00)
Preliminary Design (If needed)	3%	\$3,000.00	\$1,800.00	3%	\$1,620.00	\$180.00
Schematic Design	12%	\$12,000.00	\$7,200.00	7%	\$3,780.00	\$3,420.00
Design Development	25%	\$25,000.00	\$15,000.00	23%	\$12,420.00	\$2,580.00
Construction Documents	35%	\$35,000.00	\$21,000.00	37%	\$19,980.00	\$1,020.00
Bidding/Negotiations	5%	\$5,000.00	\$3,000.00	2%	\$1,080.00	\$1,920.00
Contract Administration	19%	\$19,000.00	\$11,400.00	25%	\$13,500.00	(\$2,100.00)
Post Contract Services (If needed)	1%	\$1,000.00	\$600.00	1%	\$540.00	\$60.00
Total	100%	\$100,000.00	\$60,000.00	100%	\$54,000.00	\$6,000.00
Direct Expenses					\$3,000.00	(Earned As Spent)
Contingency					\$3,000.00	(Earned As Appropriate)
Total					\$60,000.00	(Earned = Billed at Completion)

NSR Billed Compared to Project Labor Budget Earned

	O/A	Project		Project Budget	
Budget By Phase	Contract %	Budget %	O/A Cumulative	Cumulative	Delta
Project Planning	0%	2%	0%	2%	-2%
Preliminary Design (If needed)	3%	3%	3%	5%	-2%
Schematic Design (15% Total)	12%	7%	15%	12%	3%
Design Development	25%	23%	40%	35%	5%
Construction Documents	35%	37%	75%	72%	3%
Bidding/Negotiations	5%	2%	80%	74%	6%
Contract Administration	19%	25%	99%	99%	0%
Post Contract Services (If needed)	1%	1%	100%	100%	0%
Total	100%	100%			

When is the Budget in Accounting Updated (Re-budgeted)?

- Scope, fee or schedule adjustments
- Client changes = Additional Services
- Project work plan is updated and revised
- Project circumstances require contingency utilization
- Non-reimbursable Direct Expenses change
- Consultant contract amounts change

Each element of the budget is evaluated in accounting when the project is rebudgeted.

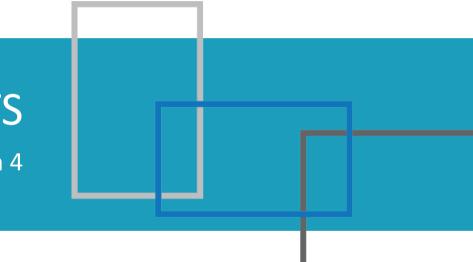
Creating the Budget and Project Plan, Three Basic Approaches

- 1. Top-Down
- 2. Bottom-Up
- 3. Combination of Both

- It is essential to understand the importance of doing BOTH.
- Top-Down planning assumes a given fee value and distributes that fee to consultants, expense budgets and phases based on a predetermined formula.
- Bottom-Up planning makes no assumptions about fees, but builds up costs based on a project's scope and schedule, defining tasks required to achieve the scope and assigning resources and hours to each.

<u>A Top-Down plan will not tell you if the fee value is appropriate for the scope of work, or what the potential profit will be for the project. Top-Down results provide a benchmark against which to test or compare the more detailed results of a Bottom-Up plan.</u>

This is discussed in detail during the upcoming PMKC Webinar on Project Work Planning.



PROGRESS REPORTS

Section 4

Although the format can vary between firms and software used, the Progress Report is used to report <u>Work-In-Place</u> and is often referred to a Subjective Percent Complete. A Subjective Percent Complete is:

- Not determined by dividing the job-to-date hours spent by the planned hours for the project.
- Not determined by dividing the job-to-date labor dollars spent by the planned labor dollars for the project.
- Is determined by a thoughtful analysis of the actual Work-In-Place done by Project Managers and other team members.

The Elements of a Progress Report

- Labor Budget by Phase.
- Reported Percent Complete by Phase Job-To-Date Last Month.
- Reported Percent Complete by Phase Job-To-Date Current Month.
- Report is Submitted to Accounting and Determines:

Earned Value for Each Phase.

Earned Value Project-To-Date.

Financial Measurements on Project Status Report.

Example of a Progress Report For December

Phase	\$ Budgeted	% Complete NOV	% Complete DEC
Project Planning	\$1,080.00	100%	100%
Preliminary Design	\$1,620.00	100%	100%
Schematic Design	\$3,780.00	100%	100%
Design Development	\$12,420.00	90%	100%
Construction Documents	\$19,980.00	22%	35%
Bidding/Negotiations	\$1,080.00	0%	0%
Contract Administration	\$13,500.00	0%	0%
Post Contract Services	\$540.00	0%	0%
Project Budget Earned	\$54,000.00		

Example of Labor Budget Earned During CD Phase, December Job-To-Date

Labor Budget By Phase	\$ Amount	% Complete	Earned Budget
Project Planning	\$1,080.00	100%	\$1,080.00
Preliminary Design	\$1,620.00	100%	\$1,620.00
Schematic Design	\$3,780.00	100%	\$3,780.00
Design Development	\$12,420.00	100%	\$12,420.00
Construction Documents	\$19,980.00	35%	\$11,988.00
Bidding/Negotiations	\$1,080.00	0%	\$0.00
Contract Administration	\$13,500.00	0%	\$0.00
Post Contract Services	\$540.00	0%	\$0.00
Labor Budget Earned	\$54,000.00	57%	\$25,920.00

Earned Value Analysis Chart (EVA)

Current Month December 2012

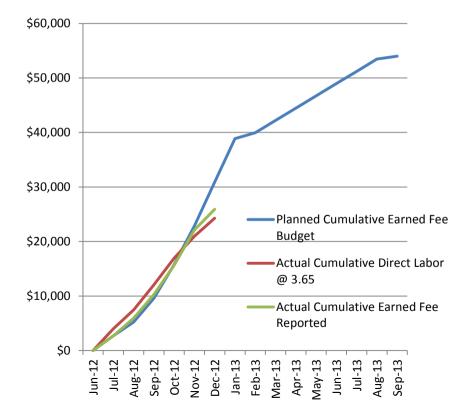


Chart Notes:

- The Planned Cumulative Earned Fee Budget is based on a Top-Down-Budget, not the contract amounts to be billed.
- The graph represents the following:
 - The Planned Earned Fee through December is \$30,888 (57.20%).
 - The Actual Direct Labor through December based on Target Multiplier of 3.65 is \$28,288(52.38%).
 - The Reported Earned Fee through December is \$25,920(48.00%).
- Therefore:
 - The project is about one month behind schedule based on the Reported Earned Fee for December anticipated to be reached in November.
 - The Reported Percent Complete for December is almost 10% behind that anticipated (48.00% vs. 57.20%)

Example of Project Profit Calculation at Completion, Job-To-Date

Targets		Actuals	
Net Service Revenue	\$60,000.00	Project Labor Budget	\$54,000.00
Initial Contingency	\$3,000.00	Contingency Utilized	\$3,000.00
Direct Expenses Budget	\$3,000.00	Direct Expense Balance	\$1,000.00
Project Labor Budget	\$54,000.00	Reconciled NSR	\$58,000.00
Target Direct Labor	\$14,794.52	Actual Direct Labor	\$14,900.00
Target Overhead of 2.20	\$32,547.95	Overhead of 2.20	\$32,780.00
Target \$ Project Profit	\$6,657.53	Actual \$ Project Profit	\$10,320.00
Target % Project Profit	12.33%	Actual % Project Profit	17.80%
Target Multiplier Rate	3.65	Actual Project Effective Multiplier	3.89
		Direct Expenses Spent	\$2,000.00



Project Status Reports

The Project Status Report brings everything discussed above together and in one place. It provides a snapshot of the financial performance of the project and as long as everyone understands the terminology and basic arithmetic used in the calculations, it can be an effective means to communicate in a firm.

Project Status Report

Elements of the Project Status Report

- Project Labor Budget
- Project Labor Budget Percent Complete
- Project Labor Budget \$ Earned & Unearned (Backlog)
- Direct Expenses \$ Earned (Actual Spent) & Unearned
- Direct Labor– Job-To-Date & Current Month
- Estimated Overhead Costs Job-To-Date & Current Month
- \$ and % Profit Job-To-Date & Current Month
- Project Effective Multiplier Job-To-Date & Current Month

Project Status Report Current Month December

Row	Description	Amount	<u>Formula</u>
А	Project Labor Budget	\$54,000	
В	Project Labor Budget Percent Complete	48.00%	C/A
с	Project Labor Budget \$ Earned, Job-To-Date	\$25,920	
D	Project Labor Budget \$ Earned, Current Month	\$3,780	
E	Project Labor Budget \$ Unearned (Backlog)	\$28,080	A - C
F	Direct Labor, Job-To-Date	\$6,650	
G	Direct Labor, Current Month	\$900	
н	Estimated Overhead Costs, Job-To-Date	\$14,630	F * 2.20
I	Estimated Overhead Costs, Current Month	\$1,980	G * 2.20
1	Direct Expenses \$ Budgeted	\$3,000	
к	Direct Expenses \$ Earned (Actual Spent), Job-To-Date	\$1,000	
L	Direct Expenses \$ Earned (Actual Spent), Current Month	\$500	
м	Direct Expenses \$ Unearned	\$2,000	J - K
N	\$ Profit, Job-To-Date	\$3,640	C - F - H - K
0	% Profit, Job-To-Date	14.04%	N / C
Р	\$ Profit, Current Month	\$400	D - G - I - L
Q	% Profit, Current Month	10.58%	P / D
R	Project Effective Multiplier, Job-To-Date	3.39	С / (F + K)
s	Project Effective Multiplier, Current Month	2.70	D / (G + L)

Project Status Report Example

Row	Description	Amount	Formula
A	Project Labor Budget	\$54,000	
В	Project Labor Budget Percent Complete	48.00%	C / A
С	Project Labor Budget \$ Earned, Job-To-Date	\$25,920	
D	Project Labor Budget \$ Earned, Current Month	\$3 <i>,</i> 780	
E	Project Labor Budget \$ Unearned (Backlog)	\$28,080	A - C

Project Status Report Example

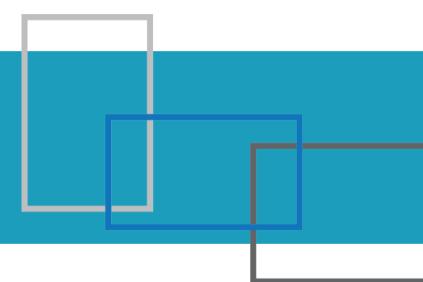
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I	Estimated Overhead Costs, Current Month	\$1,980	G * 2.20
J	Direct Expenses \$ Budgeted	\$3,000	
К	Direct Expenses \$ Earned (Actual Spent), Job-To-Date	\$1,000	
L	Direct Expenses \$ Earned (Actual Spent), Current Month	\$500	
Μ	Direct Expenses \$ Unearned	\$2,000	J - K

Project Status Report Example

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R	Project Effective Multiplier, Job-To-Date	3.39	С / (F + K)
s	Project Effective Multiplier, Current Month	2.70	D / (G + L)



CAPABILITY MATURITY MODEL FIRM AND PROJECT MANAGEMENT PRACTICES Section 6

Capability Maturity Model (CMM)

Level 1 – Initial (Chaotic): processes that are undocumented, in a state of dynamic change, tend to be driven *ad hoc*, uncontrolled and reactive.

Level 2 – Repeatable: some processes are repeatable with consistent results.

Level 3 – Defined: there are sets of defined and documented standard processes subject to some improvement over time.

Level 4 – Managed: using process metrics, management can effectively control project processes.

Level 5 – Optimizing: the focus is on continually improving process performance through both incremental and innovative technological changes/improvements.

CMM is a registered trademark of Carnegie Mellon University

PM Maturity Levels from PSMJ:

- Level 1 Principals perform (and manage) all projects
- Level 2 Principals manage all projects; non-principals do the work.
- Level 3 Non-principals manage small projects and/or tasks on large ones
- Level 4 Principals designate PM's who perform some (but not all) PM duties
- Level 5 Principals turn over all PM duties to PM's
- Level 6 Principals develop a team approach with PM's
- Level 7 The best PM's become a principal-level position

From PSMJ Project Management Bootcamp Manual

<u>www.psmj.com</u>

Which level in the model is your firm?

And what are YOU going to do about it?

Step 1 - Perform an honest assessment to determine your current level:

- Where is your firm in the Capability Maturity Model?
- Where are your principals and managers in the PM Maturity Model?

Step 2 – Obtain FIRM-WIDE commitment to achieve the highest level in both models.

Step 3 – Design a program for improvement that uses real projects as a means for change and limits traditional "training" as much as possible.

Thank You For Your Participation!

Related Publications

- PSMJ Newsletter, February 2013 Show Your PM's the Numbers (other articles on Project Management in PSMJ forthcoming in 2013)
- PSMJ Newsletters, March through June, 2013 Accounting 101 for PM's (series of four articles)
- AIA Practice Management Digest Article Project Planning and Revenue Projections: Where project management connects with firm operations
- AIA Handbook of Professional Practice Project Budgets, Work Planning and Monitoring Chapter (Fifteenth Edition to be published in 2013)

For more detail go to:

http://www.scevansconsulting.com/publications.php





Two Specialty Services

- 1. Firm Operations and Project Management Practices Assessment: An evaluation of both Firm Operations and Project Management practices needs to be done at the same time; one without the other limits the potential for growth and profitability. These two aspects of a firm's practice must be connected in terms of the financial metrics used to monitor firm-wide and project performance. The Assessment is simple and efficient.
- 2. Custom Project Work Planning Workshop: A different approach than seminars by national firms is utilized. The approach is a hands-on sessions including accounting terms/methods, the project work planning process and team-building aspects of process . The Workshop is designed using the software currently used and respects a firm's culture and practices.

Contact For Questions, Further Information: 785-887-6240 Direct <u>steve@scevansconsulting.com</u> <u>www.scevansconsulting.com</u>