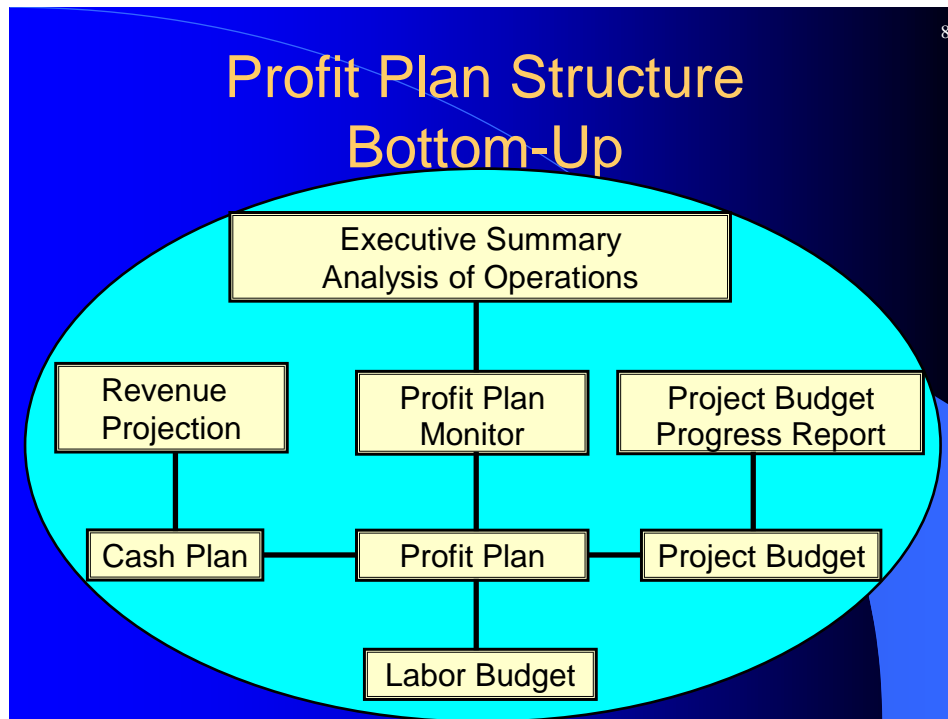


Concepts for CAPP 2012x

***CAPP version 2012x
Computer Aided Profit Plan
for
Design Firm
Financial Planning and Control***

***Developed by John M. Burson
S3PS, Inc.***

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Parkinson's Law...

"Work expands to fill the time available for its completion..."

PARKINSON: THE LAW by C. Northcote Parkinson.

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Financial Planning

Planning and control are the two major factors in the financial success of your firm. Computer spreadsheet programs such as Microsoft Excel® automate the planning and control process. These spreadsheets have powerful 3-D modeling and file linking capabilities. The CAPP spreadsheet models demonstrate the powerful planning and analysis capabilities of these spreadsheet programs.

Graphic charts of important key indicators of financial performance are produced that translate financial data into meaningful information. The CAPP spreadsheet model provides structure for your firm's profit plan. Values in the spreadsheet are linked to a MS-Word.doc file that communicates the analysis of the firm's operations in an Executive Summary Report so that appropriate decisions can be made to keep the firm on target with the profit plan goals.

The first step in the development of a bottom-up Profit Plan is the Labor Budget. The Labor Budget is composed of time and money (hours and dollars). The Labor Budget includes all labor-related mandatory and customary benefits. Total available hours in the labor budget are measured as full-time-equivalents (FTE).

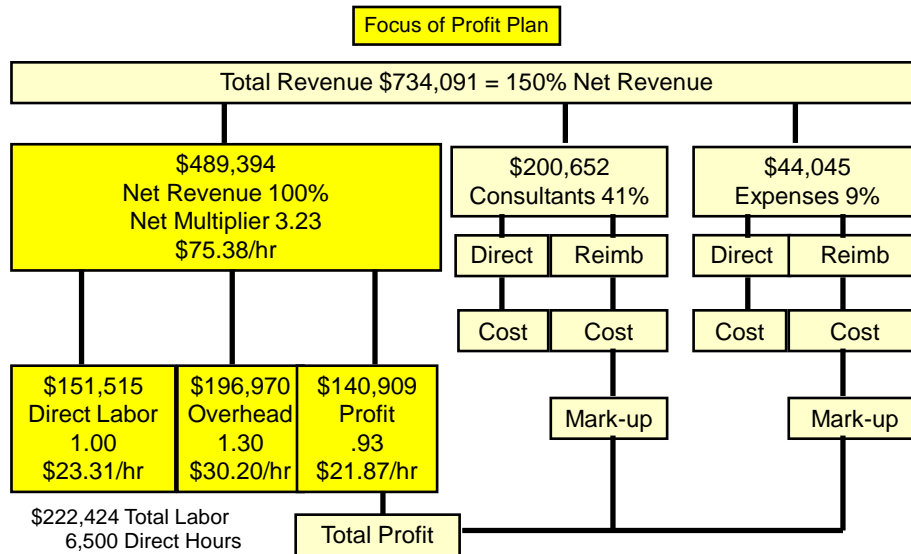
The Executive Summary is an analysis of operations with graphic charts of important key indicators of financial performance. The profit plan key indicators provide the benchmarks to measure and control the progress toward the firm's financial goals and objectives.

Once the profit plan goal is established, progress toward that goal is measured and evaluated. Actual values are compared to planned values and variances are identified and analyzed. The results of analysis are interpreted so that informed decisions can be made on what actions need to be taken to reach the profit plan goal.

The Profit Plan provides the balance between the marketing plan revenue and the personnel plan labor by calculating the revenue required to make the desired profit. The monthly revenue objective is compared to the actual revenue backlog projected over the current profit plan year. If the projected revenue backlog is not enough to support the target utilization rate for the existing labor force, then labor may need to be reduced to keep the profit plan on target. The alternative is to increase revenue by adding new projects to the revenue backlog.

The business of a professional service firm is the provision of an hour of labor. Labor and labor-related expense constitutes 65% to 80% of most professional services firm's expense and is the most readily adjustable item of expense. In a professional service firm, time is money. The unit of service is the direct labor hour. Available direct labor hours determine the capacity of a professional service firm to generate revenue.

Financial Components Profit Plan and Project



Labor-related ratios and multipliers are the key indicators of financial performance and the focus of financial control.

Key Indicators of Financial Performance

Analysis with ratios and multipliers:

- Require comparison and is most useful when relating current experience to prior performance and to a budget.
- Must recognize time so a Time Analysis Report must be available.
- Are more useful when studied over several reporting periods to establish patterns.
- Is meaningful only if the manager understands the basis, limitations and values of each ratio.
- Enhance the meaning and understanding of the values when used on a continuing basis.

These key indicators of financial performance are comparable to firms of various sizes and the same firm from year to year. The labor-related key indicators of financial performance include:

1. **Net Multiplier** (Net Revenue divided by Direct Labor).
2. **Revenue Factor** (Net Revenue divided by Total Labor) or (Utilization Rate times Net Multiplier).
3. **Overhead Rate** (Indirect Expense divided by Direct Labor).
4. **Operating Profit Multiplier** (Operating Profit divided by Direct Labor).
5. **Utilization Rate** (Total Labor Dollars or Hours divided by Direct Labor Dollars or Hours).

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6. Net Revenue per full-time-equivalent.

7. Operating Profit per full-time-equivalent.

1. Net Multiplier: Tab-10

the net multiplier measures the revenue required for each dollar of direct labor spent on projects. A net multiplier of 3.00 means the firm needs \$3.00 of net revenue for each \$1.00 of direct labor spent on project to cover project labor, overhead and profit. The target net multiplier is determined by the profit plan for the coming year. The 'effective net multiplier' is the actual net multiplier achieved. The net multiplier assumes that all project related costs other than labor are reimbursable dollar for dollar including consultants, project travel, printing, reproductions, etc. The net multiplier is composed of:

Direct labor multiplier	1.00
Overhead multiplier	1.50
Break-even multiplier	2.50
Profit multiplier	.50
Net multiplier	3.00

For time and materials projects, the net multiplier is a billing tool that converts direct labor dollars to billable dollars. The net multiplier is in essence the project budget for time and materials projects. For fixed fee contracts, use the net multiplier to determine the maximum amount of direct labor that can be spent on a project without eating into the firm's planned profit. Calculate the maximum number of direct labor hours by dividing the direct labor dollars by the average direct labor rate.

Example:

Total fixed fee	\$ 300,000
Less outside consultants	-100,000
Less other direct expense	-20,000
Net fee	\$ 180,000

Net multiplier	3.0
Net fee divided by net multiplier	\$ 60,000
Average direct labor rate from labor budget	\$20.00
Maximum direct labor hours for project	3,000

2. Revenue Factor: Tab-11

the revenue factor is a labor-related key indicator that is a better indicator of a firm's efficiency than the net multiplier or utilization rate alone. The revenue factor is calculated by dividing net revenue by total labor dollars or by multiplying the net multiplier by the utilization rate. The result is the same. The profit plan revenue factor is used to check the balance between revenue (marketing plan) and labor (personnel plan). In other words, is there enough revenue to support the existing staff? This table shows the relationship between the two methods of calculation of the revenue factor. There is an inverse relationship between Net Multiplier and Utilization Rate.

Net Multiplier x Utilization Rate:

Net Multiplier	3.00	2.80	3.00	3.14
Utilization Rate	0.65	0.70	0.70	0.70
Revenue Factor	1.95	1.95	2.10	2.20

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Net Revenue divided by Total Labor:

Net Revenue	97,500	100,000	110,000
Total Labor	50,000	45,455	50,000
Revenue Factor	1.95	2.20	2.20

Multiplying the firm's total labor expense by the profit plan revenue factor shows what the net revenue should be:

Total labor (actual)	\$ 500,000
Revenue factor (profit plan)	2.20
Net revenue (target)	1,100,000
Net revenue (actual)	1,000,000
Net revenue variance - over/(short)	\$ (100,000)

The above calculation indicates that the marketing plan may need to be evaluated. Are there enough revenue backlogs to support the current staff level or production capacity?

Dividing net revenue by the revenue factor shows how much total labor (not just direct labor) the firm should have to produce that much net revenue:

Net revenue (firm-wide)	\$ 1,000,000
Divided by revenue factor (profit plan)	2.20
Total labor (budget)	\$ 454,545
Total labor (actual)	\$ 500,000
Excessive labor	\$ 45,455

The above calculation indicates that the human resources or personnel plan may need to be evaluated. Is there too much 'capacity' for available revenue? Or has "work expanded to fill the available time...?" or are there too many non-technical overhead staff FTE's in proportion to available technical staff FTE's?

3. Overhead Rate: Tab-10

the overhead rate is a component of net multiplier. Overhead expenses are all costs not chargeable to specific projects such as rent, utilities and insurance. The overhead rate indicates the relationship of all indirect expense to each dollar of direct labor. The overhead rate is used to estimate the overhead expense for fixed-fee projects. The overhead rate is obtained by dividing indirect (overhead) expense by direct labor. An overhead rate of 150% means that for each \$1.00 of direct labor budgeted for a project; \$1.50 needs to be budgeted for overhead costs. If the total direct labor budget for a project is \$1,000, then the overhead budget would be \$1,500 (\$1,000 x 150%). Indirect labor is usually the greatest line-item overhead expense.

The most effective way to lower the overhead rate is to charge all project related labor and expense to the appropriate project. If a project's expense is charged to overhead, then all projects share in the cost of that project thus overstating the profit on that project and understating the profit on all other projects.

Overhead expense is usually allocated to a project in the same proportion as direct labor charged to that project. Another method of overhead allocation is based on revenue. Most firms use Direct Labor rather than Revenue to allocate overhead to projects.

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4. Operating Profit Multiplier: Tab-10

the operating profit target multiple is a component of the net multiplier. The profit plan operating profit target is measured as a multiple of direct labor and as a percentage of net revenue. The multiple is calculated by dividing the operating profit target by the budget direct labor dollars. A multiple of .50 means that for each \$1.00 of direct labor spent on projects, \$0.50 is budgeted for profit before profit sharing distribution and taxes. The profit multiplier is used to estimate the profit for fixed-fee projects based on direct labor dollars. For example, a project budget with \$1,000 of direct labor expense would have \$500 of profit built into the fixed-fee.

5. Utilization Rate: Tab-12

the utilization rate also known as chargeability ratio is the percentage of total labor dollars or hours spent or 'charged' to project production. The utilization rate may be calculated several ways and may be based on dollars or hours. This labor-related key indicator is calculated by dividing total direct labor dollars or hours by total labor dollars or hours. The best measure of firm-wide utilization is based on dollars since the billing net multiplier is applied to direct labor dollars, not hours.

The utilization rate can also be calculated based on standard hours. The concept of standard hours is based on full-time-equivalents (40 hours per week times 52 weeks per year). Calculate the utilization rate based on standard hours by dividing direct labor hours for the period by total standard hours for the period. The utilization rate 'rule of thumb' for technical personnel in design firms is usually around 85%. The utilization rate 'rule of thumb' for total staff is 65% to make a profit. Compare the actual firm-wide standard utilization rate to the labor budget utilization rate to see if the firm is on target.

In the Profit Plan Labor Budget, the individual staff utilization rate is applied to available hours to determine the direct labor hours available to produce billing revenue for each employee. Available hours are defined as standard hours less paid-time-off for sick, vacation and holidays. Standard hours are defined as 40 hours per week time 52 weeks or 2080 hours per year to make one full-time-equivalent. Changes to the Labor Budget staff Utilization Rate change the firm's total revenue capacity. The other variable in determining the firm's revenue capacity is the individual billing rate. The firm's planned revenue capacity is determined in Tab-21 Labor Budget based on the Utilization Rates and the Billing Rates. The firm's required revenue to meet the planned profit target at the planed staffing level is determined in Tab-22 Profit Plan. The variance between revenue capacity and required revenue is shown in Tab-21 Labor Budget. Make changes to Tab-21 Labor Budget Utilization Rates to decrease the variance between required revenue and revenue capacity to see what the required Profit Plan utilization rate needs to be to achieve the Profit Plan profit target.

6. Net Revenue per Full-Time-Equivalent: Tab-8

Profit plan net revenue per full-time-equivalent establishes the target net revenue per staff member. Net revenue per full-time-equivalent is preferred over total revenue per staff since total revenue includes revenue passed through to outside consultants and would not be comparable from firm to firm. Net revenue per FTE is reduced to a common denominator that gives a meaningful basis for comparison of productivity for firms of various sizes. Compute this ratio for total staff and technical staff.

7. Operating Profit per Full-Time-Equivalent (FTE): Tab-8

Operating profit per full-time-equivalent establishes the operating profit target per staff. Operating profit per FTE is profit before deductions for discretionary profit distributions for cash bonus and discretionary contributions to 401k retirement plan and income tax. Operating profit per FTE before deductions is a more comparable basis since discretionary distributions and taxes vary from firm to firm. Operating profit

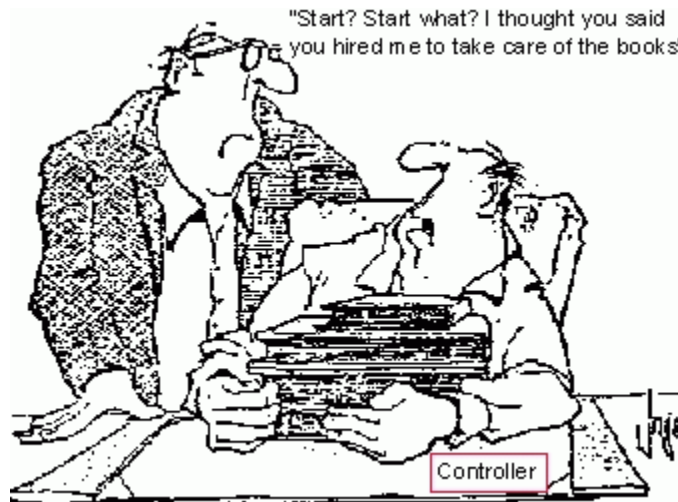
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per FTE is reduced to a common denominator that gives a meaningful basis for comparison of profitability for firms of various sizes. The CAPP spreadsheet model computes the ratio for total staff and technical staff. The Tab-8 Chart of operating profit per FTE compares the ratio to prior years' and the current year's profit plan target.

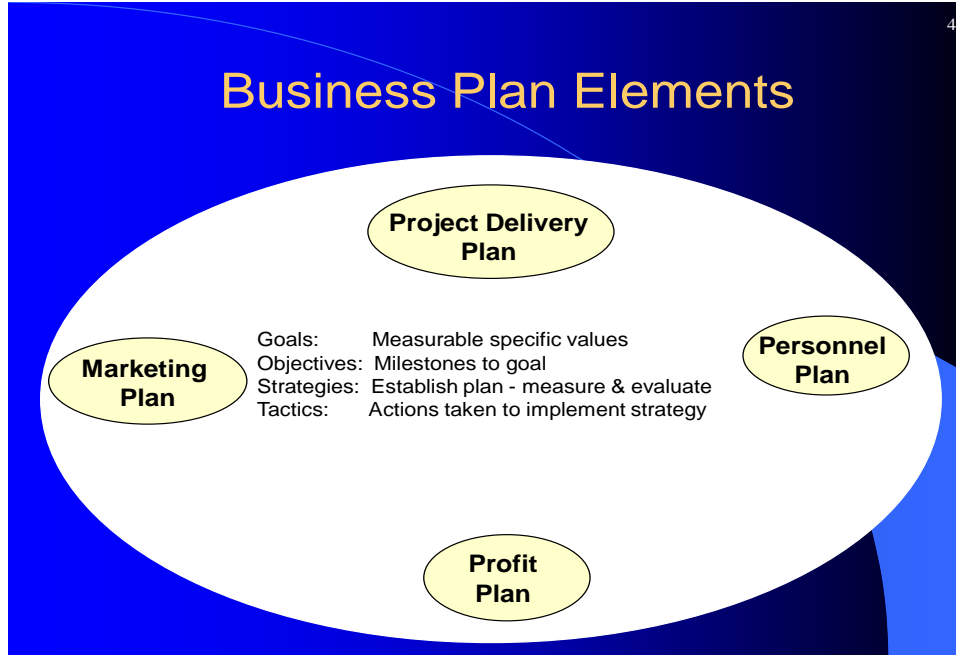
Financial Control

The two approaches to profit planning are top-down and bottom-up. The top-down method begins with projected revenue. Then staffing needs are determined. This approach is useful when revenues are declining and utilization rates are low. The bottom-up method begins with the available labor staff to determine the required revenue to support the current or planned staffing level with a planned profit target.

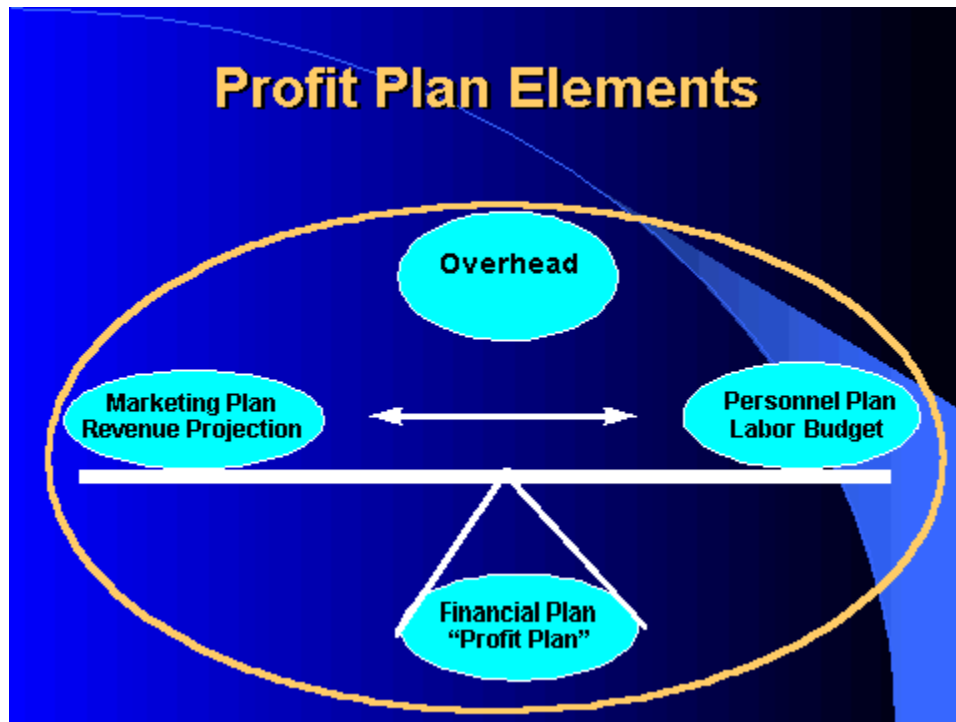
The managing principal of a design firm is often an architect or engineer who is a non-financial manager not trained in accounting. This managing principal is responsible for making decisions that determine the firm's financial success. The Executive Summary Analysis of Operations and Graphic Charts communicate the analysis of the firm's operations in a meaningful way so that appropriate decisions can be made to keep the firm on target with the profit plan goals. This firm manager should have a basic understanding of the key indicators of financial performance and how they relate to the profit plan goal. The profit plan key indicators provide the benchmarks to measure and control the progress toward the firm's financial goals and objectives.



The measuring process begins after the bookkeeping for the period is completed. Once the profit plan goal is established by a profit plan, progress toward that goal is measured and evaluated. Actual values are compared to planned values and variances are identified and analyzed. The results of analysis are interpreted so that informed decisions can be made on what actions need to be taken to reach the profit plan goal.



The profit plan goals and objectives must have specific values. If the profit plan goals and objectives have specific values, they can be measured. If the profit plan goals and objectives can be measured, then the profit plan can be managed and controlled. The Controller's job is to measure the progress toward the Profit Plan goals and objectives.



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To make a profit, there must be a balance between available revenue and available staff that produce the revenue.

Executive Summary Analysis of Operations

The Executive Summary is a one-page quick and meaningful analysis of operations that includes all the important key indicators of financial performance described above. The analysis data comes from the monthly Financial Statements and Time Analyses Reports produced by the firm's general ledger and project cost accounting software. The current year's actual values are compared to the Profit Plan and to actual values for the previous year along with the variance analysis. The Executive Summary along with Graphic Charts of current and prior year's key indicators make the analysis more meaningful, especially when the manager can relate to past events and decisions that improved or hurt the financial picture of the firm.

The Executive Summary Analysis of Operations is produced by linking the values in Tab-16 of the spreadsheet file to the Word.docx file. All values in the Executive Summary.docx file are updated when the values in the spreadsheet are changed or updated. No manual editing of the Executive Summary.docx file is required. Certain words in the Executive Summary.docx file change depending on whether the value is positive or negative. Words such as: more, less, increase, decrease, favorable or unfavorable change depending on the formula value to be consistent with the variance analysis in the spreadsheet file. **IMPORTANT TIP:** Don't open the MS-Word®.docx file and the MS-Excel® spreadsheet file at the same time. When the Executive Summary.docx file is opened, it automatically opens the spreadsheet file to update the linked values from Tab-16 of the spreadsheet file. If the spreadsheet file is already open when you attempt to open the Word.docx file, you will get a message saying that the file is already open and it won't let you open the file. To avoid this complication, close the spreadsheet file before opening the Word.docx file.

The Executive Summary Analysis of Operations has three sections. All of the values in the Executive Summary Word.docx file come from Tab-16 Analysis in the spreadsheet file. The first section calculates the variances in utilization and full-time-equivalents from the Profit Plan for the current year-to-date and for the same period-to-date last year.

The second section is an analysis of variances from the profit plan and for the same period-to-date last year for the condensed Income Statement including key ratios and multipliers from the Profit Plan for the same period-to-date last year including:

- Total Revenue
- Net Revenue
- Revenue Factor
- Direct Labor
- Overhead
- Break-even
- Operating Profit

The third section includes comments about Cash and Accounts Receivable. The current year-to-date balances are compared to last year's year-to-date balances and accounts over ninety days old are compared. Other extraordinary comments could be included in the Executive Summary, but would have to be manually updated or edited each period.

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CAPP Spreadsheet Workbook Tabs for v2012.xlsx:

The CAPP spreadsheet workbook is composed of two sections. The first section is the Executive Summary Graphic Charts with green Tabs 2 through 13. Tab-14 is the data entry area for the current year's data. Tab 15 is the data entry area for prior's year's data. Tab16 is the variance analysis data linked to the Executive Summary Analysis of Operations. All values are calculated so no data entry is required. The second section is the Profit Plan with blue Tabs 17 through 29. The values in the Profit Plan section are linked to Tabs 14, 15 and 16 in the first section.

The CAPP spreadsheet workbook is open and unprotected. Rows and Columns can be added to suite your firm's needs. The account names can be changed to fit your firm's chart-of-accounts. The formulas are unprotected and can be overwritten. The formulas on any spreadsheet page Tab can be displayed by pressing the control (ctrl) and tilde keys on your keyboard at the same time. The tilde key is the key just below the esc (escape) key. Turn the cell formulas on and off to show which cell values are calculated from a formula.

Formulas can be copied to inserted rows using regular spreadsheet techniques. Most of the values in the CAPP workbook are calculated values based on the formula lookup table and data entry area values. Many of the cell values have names. The cell names can be viewed and changed or edited. Cell names help prevent broken formulas when linked cell data is moved by adding rows or columns.

1. Executive Summary Contents
2. Graphic Chart: Revenue and Profit
3. Graphic Chart: Total Labor, Direct and Indirect Labor
4. Graphic Chart: Overhead and Indirect Labor
5. Graphic Chart: Cash flow Plan
6. Graphic Chart: Absolute Values
7. Graphic Chart: Full-Time-Equivalents (FTW) by Technical and Non-technical
8. Graphic Chart: Net Revenue and Operating Profit per FTE
9. Graphic Chart: Components of Net Revenue per Direct Labor Hour
10. Graphic Chart: Components of Net Revenue as Multiple of Direct Labor
11. Graphic Chart: Revenue Factor
12. Graphic Chart: Utilization Rate (Chargeability Ratio)
13. Graphic Chart: Cash, Accounts Receivable and Unbilled Services
14. Data Entry – Current Period and Year-to-date
15. Data Entry – Prior Years
16. Links to Executive Summary Analysis of Operations
17. Profit Plan Contents
18. Plan Rates and Multipliers
19. Formula Variables
20. Profit Target
21. Labor Budget
22. Profit Plan
23. Plan Analysis

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24. Time Analysis
25. Labor Summary
26. Multiple of Direct Personnel Expense (DPE)
27. Prior Year's Key Indicators of Financial Performance
28. Cash Flow Plan
29. Provision for Income Tax (optional)

CAPP Spreadsheet Tab Descriptions

Tab-1 Executive Summary Contents: Page 1. The next twelve tabs are graphic charts to include with the Executive Summary Analysis of Operation. The Graphic Charts should be placed behind the Executive Summary. The first four graphic charts show the progress toward the monthly objectives and Profit Plan goals for the current year. These Graphic Charts include Tab-2 through Tab-5:

Tab-2 Net Revenue and Operating Profit: Page 2 compares budget to actual for the current year's net revenue and operating profit.

Tab-3 Total Labor, Direct and Indirect Labor: Page 3 compares budget to actual for the current year's total labor, direct and indirect labor.

Tab-4 Overhead and Indirect Labor: Page 4 shows how much current year's overhead variance is due to the variance in Indirect Labor which is the most significant overhead line item.

Tab-5 Cash Flow Plan vs. Actual Cash and Accounts Receivable: Page 5 compares actual cash balance and accounts receivable to the Cash Plan for the Profit Plan year. This graphic chart shows the relationship between actual cash and accounts receivable by showing how much of accounts receivable need to be collected to reach the cash plan target.

The other Graphic Charts compare current years' experience to prior year's actual performance and the current year's Profit Plan. These Graphic Charts include Tab-6 through Tab-13:

Tab-6 Absolute Values: Page 6 compares actual year-to-date values to the Profit Plan budget and prior year's actual values for Total Revenue, Net Revenue, Break-even and Direct Labor. The gap between Total Revenue and Net Revenue represents pass-through revenue paid to outside consultants. The gap between Net Revenue and Break-even represents Operating Profit. The gap between Break-even and Direct Labor represents Overhead Expense.

Tab-7 Full-time-equivalents (FTE): Page 7 compares actual year-to-date values to the Profit Plan and prior year's actual values for Technical FTE's and Non-technical FTE's using a stacked bar chart that shows Total FTE's.

Tab-8 Net Revenue and Operating Profit per Full-time-equivalent: Page 8 compares actual year-to-date values to the Profit Plan and prior year's actual values for New Revenue and Operating Profit per Total Staff and Technical Staff. This is comparable to firms of various sizes and the same firm year to year.

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Tab-9 Per Direct Hour: Page 9 compares actual year-to-date values to the Profit Plan and prior year's actual values for net revenue, average direct labor rate, overhead expense, break-even rate and operating profit.

Tab-10 Multiples of Direct Labor: Page 10 compares actual year-to-date values to the Profit Plan and prior year's actual values for net revenue, overhead rate, break-even rate and operating profit.

Tab-11 Revenue Factor: Page 11 compares actual year-to-date values to the Profit Plan and prior year's actual values for labor percentage of net revenue, revenue factor, net multiplier and utilization rate based on dollars.

Tab-12 Utilization Rates: Page 12 compares the current year-to-date actual utilization rates based on firm-wide dollars, firm-wide Standard Hours and Hours for Technical Staff only. The focus here should be on Utilization based on Dollars rather than Hours, since billing is based on dollars rather than hours.

Tab-13 Total Cash, Accounts Receivable and Unbilled Services: Page 13 compares actual cash, accounts receivable and unbilled services to prior year's in a stacked bar graph. This shows the total quick assets for the firm. This graphic chart shows how cash and accounts receivable are managed.

Tab-14 Current Year's Data: Pages 14-17. In the first section, values from the current period's Time Analysis Report and Income Statement are entered. All other values are calculated from formulas. The accounting software Time Analysis Report should be sorted with subtotals for technical and non-technical staff to obtain the data entry values. The year-to-date values are calculated in column O. Update the period number in cell O5. Change the dates in cells O6 and P6 to update the current period for this year and last year. Update the values in column P for the prior year's actual values.

The values in column Q for the current year's Profit Plan are copied by formula from the CAPPv2012.xlsx workbook. The monthly objective values in column R are calculated by a formula that divides the annual plan values in column Q by twelve to get the monthly value.

Update the current period cash balance in Row 48 from the current period's Balance Sheet and copy to column O to update the year-to-date value. Update the Aged Accounts Receivable data from the Aged Accounts Receivable Report for the current period and copy to Column O.

The current year's calculated values for the accumulated graphic chart data begin on row 135 of Tab-14. The first four graphic charts are linked to the values in Tab-14 current data and accumulated for twelve monthly periods. All other values in the Current Data section are calculated from formulas using values from the data entry area. There are only 48 values to enter or update in Tab-14 Current Data to update the Executive Summary and Graphic Charts.

Tab-15 Prior Year's Data: Pages 18-21. The data rows in Tab-15 Prior Year's Data are the same as the Current Year's Data in workbook Tab-14 for the Current Year's Data. Enter actual historical data for the available prior years for Time Analysis, Standard Hours, Overtime, Condensed Income Statement and Cash, Accounts Receivable and Unbilled Services. Enter the most recent prior year data in Column L. Hide any unused columns to the left of Column L so the Graphic Charts appear correctly. Column M year-to-date actual data is from formulas in those cells that are linked to the actual values from Tab-14. The Current Year's Plan values in Column N are linked to Tab-14 Column Q.

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Tab-16 Executive Summary Analysis of Operations: Pages 22-25. All values in Tab-16 Analysis formulas linked to calculated values in Tab-14 Current Data and Tab-15 Prior Data. No data entry update is required in Tab-16 Analysis. The values in Columns G and I are words that change based on the positive or negative value of the data in the cell formulas for over/under, more/less, and increase/decrease. The values in the Executive Summary Word.docx file are linked to the values in the CAPPv2012.xlsx spreadsheet workbook Tab-16 Analysis. When the values in Tab-16 Analysis change, the values in the Executive Summary.docx are updated when the Word.docx file is opened.

Price/Volume Variance Analysis: Page 25. This section of Tab-16 Analysis shows the calculation of the price-volume variance analysis for the categories of the profit plan. The categories are Net Revenue, Direct Labor, Overhead and Operating Profit. The price-volume variance analysis values are linked to the Executive Summary Word.docx file. Price variance is due to the difference actually billed for an hour of direct labor and the planned billing rate. Volume variances are due to the difference in the actual number of direct labor hours charged to projects and the Profit Plan available direct labor hours based on the target utilization rates for technical employees.

Tab-17 Profit Plan Contents: Page 26 (Report Cover Sheet)

Tab-18 Plan Rates and Multipliers: Page 27. The Summary of Budget Rates and Multipliers is given to Principals and Managers for project budgeting and billing use. The values in Column C are linked from Tab-23 Plan Analysis. The values in Column B may be changed if desired billing rates and multipliers differ from the Profit Plan calculations.

Tab-19 Formula Variables: Page 28. The Formula Variables in Tab-19 are linked to the formulas in Tab-21 Labor Budget to change the values for federal and state unemployment taxes, FICA and Medicare taxes, and bonus percentage of base pay, retirement plan contribution and estimate for raises. Any changes to the formula variables update the values in the Labor Budget and Profit Plan spreadsheets. The discretionary contribution to employee's profit sharing plan or 401K is entered as a percentage of total compensation including cash bonus. Standard Hours is 40 hours per week times 52 weeks per year or 2,080 hours. Salary raises during the plan year are estimated as a percentage of total firm labor and prorated to each employee. The number of months the wage raise is effective is entered as a decimal by dividing the effective number of months into twelve months, i.e.(6/12 = .50).

Tab-20 Operating Profit Target: Page 29. The bottom-up Profit Plan begins with the Operating Profit Target before discretionary profit sharing distributions and income tax. The bonus and retirement plan contribution calculated in the labor budget is added to the desired increase in net worth. The bonus and 401K or retirement plan contribution cannot be calculated until the Tab-21 Labor Budget is completed. The Operating Profit Target is composed of:

- increase in net worth
- + income tax provision
- + discretionary cash bonus and retirement plan contribution
- + dividend or principals' bonus or return on investment
- - less non-operating income such as interest and gain on sale of equipment
- = operating profit target

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The Profit Plan provides the balance between the marketing plan revenue and the personnel plan labor by calculating the revenue required to make the desired profit. The monthly revenue objective is compared to the actual revenue backlog projected over the current profit plan year. If the projected revenue backlog is not enough to support the target utilization rate for the existing labor force, then labor may need to be reduced to keep the Profit Plan on target. The alternative is to increase revenue by adding new projects to the revenue backlog.

Tab-21 Labor Budget: Pages 30-34. The first step in the development of a bottom-up Profit Plan is the Labor Budget. The Labor Budget is composed of time and money (hours and dollars). The Labor Budget includes all labor-related mandatory and customary benefits. No overtime is included in the Labor Budget since that would be an undesirable long-term commitment. If overtime were included in the Labor Budget, the firm would be committed a year in advance to work overtime just to meet its profit target.

Total available hours in the Labor Budget are measured as full-time-equivalents (FTE). A full-time-equivalent is based on standard hours of 2080 hours per year (40 hours per week times 52 weeks per year). By using standard hours and full-time-equivalents, the key indicators of financial performance are more comparable among other firms and the same firm from period to period.

Column E Net Revenue Capacity shows the calculated value of Net Revenue per billable staff. The Total Net Revenue Capacity is compared to Required Net Revenue from the Profit Plan in Tab-22. The variance between Net Revenue Capacity and Required Net Revenue from the Profit Plan can be adjusted by changing the staff Billing Rate in Column F and/or The Labor Budget Target Utilization Rate in Column G.

The Tab-21 Labor Budget spreadsheet Columns includes Columns for all payroll and payroll related expenses and other employee benefits. These Columns are grouped in five sections including a Data Entry Area, Time Analysis Hours, Salary and Wage Dollars, Payroll Related Taxes and Expenses and Other Benefits such as Health Insurance and Retirement Plan Contributions and Bonuses. All values except the data entry column values are calculated values using cell formulas.

Column/Description (to be expanded)

- A Employee Number
- B Employee Name
- C Optional Sort Code
- D Labor Category
- E Net Revenue Capacity
- F Current Billing Rate
- G Plan Target Utilization
- H Current Year-to-date Actual Utilization
- I Prior Year Actual Utilization Rate
- J Prior Year Actual Utilization Rate
- K Calculated DPE Billing Rate
- L Hourly Pay Rate
- M Annual Salary
- N Semi-Monthly Salary
- O Hours Worked Per Day (Average)
- P Hours Worked Per Week

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Q Employee Type: 0=Non-Technical 1=Technical
R Annual Standard Hours
S Paid-time-off: Holiday Hours
T Paid-time-off: Vacation Hours
U Paid-time-off: Personal/Sick Hours
V Workers Compensation Insurance Rate
W Monthly Health Insurance Premium
X Employee's Payroll Deduction for Health Insurance (dependent coverage, etc.)
Y Monthly Disability Insurance Premium
Z Employee Cell Phone Benefit
AA Mandatory 401K Retirement Plan Contribution
AB Technical Direct Labor Hours
AC Technical Indirect Labor Hours
AD Total Technical Indirect Paid-time-off
AE Total Technical Hours
AF Non-Technical Indirect Hours
AG Non-Technical Indirect Paid-time-off Hours
AH Total Non-Technical Indirect Hours
AI Total Available Hours
AJ Total Paid-Time-Off Hours
AK Total Available Hours Less Paid-time-off
AL Annual Base Wage Dollars
AM Estimated for Raises to Annual Base Wage Dollars
AN Total Wages Including Raises Dollars
AO Technical Direct Labor Dollars
AP Technical Indirect Labor Dollars
AQ Total Technical Paid-time-off Dollars
AR Non-technical Indirect Labor Dollars
AS Non-technical Paid-time-off Dollars
AT Total-Non-technical Indirect Labor Dollars
AU Paid-time-off: Holiday Dollars
AV Paid-time-off: Vacation Dollars
AW Paid-time-off: Sick/Personal Dollars
AX Total Wages
AY Total Paid-time-off
AZ Total Wages Less Paid-time-off
BA Employer's FICA Tax Expense
BB Employer's Medicare Tax Expense
BC Employer's FICA and Medicare Tax Expense on Bonuses
BD Federal Unemployment Tax Expense
BE State Unemployment Tax Expense
BF Workers Compensation Insurance
BG Annual Health Insurance
BH Employee's Health Insurance Payroll Withholding
BI Long-Term Disability Insurance
BJ Discretionary 401k Retirement Plan Contribution
BK Cash Bonus

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Tab-22 Profit Plan: Page 35-42. The Profit Plan establishes the billing rates and profit multipliers used in the coming year. The key indicators of financial performance and milestones used to measure and control the progress toward the profit plan goal are established for the coming year. This bottom-up budgeting process begins with the Tab-20 Operating Profit Target. The Profit Plan establishes the profit target and required revenue and level of expense necessary to support the labor budget and attain the Profit Plan target. The required profit plan revenue to support the staff included in the Tab-21 Labor Budget is calculated as follows:

- Operating Profit Target (Tab-20)
- + Indirect Expense (includes indirect labor and labor-related benefits from Tab-21)
- + Direct Labor (from Tab-21 Labor Budget)
- = Net Revenue
- + other direct and reimbursable expense (estimated as percentage of net revenue based on prior years' experience from values entered in Tab-22 column E)
- = Required revenue to support current staff level at desired operating profit

Classify revenue by type. This facilitates revenue projection when DPE/Hourly and extra service revenue is estimated as a percentage of fixed-fee revenue. Profit Plan Direct and Reimbursable Revenue are calculated as a percentage of prior year's net revenue using the percentage analysis in Column I.

Typical revenue types are:

- Fixed fee
- DPE, Hourly
- Extra Service (DPE, Hourly)
- Other operating income
- Reimbursable expense revenue
- Unbilled services revenue

Enter the prior year's actual final Income Statement values in the Tab-22 reference budget column E. All Profit Plan labor and labor-related expenses are copied from the Tab-21 Labor Budget with a formula link to those values. The bottom-up Tab-20 Operating Profit target values are copied to the Profit Plan by formulas linked to Tab-20. To complete the Profit Plan, enter the other indirect expense budget values in column C using the prior year's actual values in the budget reference column E as a guide to estimate the value. When the data entry into the Tab-22 Profit Plan is complete, the calculation of the key indicators of financial performance is updated in Tab-23 Profit Plan Analysis below.

Tab-23 Profit Plan Analysis: Page 43. This tab shows a condensed income statement from the Tab-22 Profit Plan subtotals above. The values in the condensed income statement are used to calculate the key indicators of financial performance. The Tab-23 Profit Plan Analysis table calculates the condensed income statement values for:

- Monthly target objective
- Values Per direct hour
- Multiples of direct labor
- Multiples of direct personnel expense
- Percentage of net revenue

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- Percentage of total revenue.

The Profit Plan key indicators calculated in Tab-23 are compared to the actual values in the Executive Summary Analysis of Operations. These target key indicators are:

- Net Revenue per Direct Hour-D15
- Average Direct Labor Rate-D16
- Break-even Rate-D15
- Net Multiplier-E15
- Overhead Rate-E17
- Operating Profit Percentage of Net Revenue-G20
- Operating Profit Percentage of Total Revenue-H20

Tab-24 Time Analysis: Page 44. This tab is a summary of the totals copied from Tab-21 Labor Budget for technical and non-technical total labor dollars and total labor hours. The annual values are divided by twelve to calculate the monthly objectives for dollars and hours. Full-time-equivalents are calculated by dividing the total annual hours by 2080 standard hours (52 weeks X 40 hours per week). Utilization rates are calculated for both dollars and hours. The utilization rate based on dollars is the most significant since billing is based on dollars rather than hours. The ratio of technical to non-technical is calculated. The old rule of thumb for this ratio is 4 to 1. The values on this page are compared to the actual values in the Tab-16 Executive Summary Analysis of Operations section in the spreadsheet workbook.

Tab-25 Labor Summary: Page 45. The calculated values on this tab are copied from the labor budget spreadsheet with a formula. Tab-25 shows the analysis of labor dollars and hours by principal and employee with the average labor rates and average direct labor rates for each category and firm-wide average labor rate. The Labor Summary can have as many categories as desired depending on how the staff in the Labor Budget is classified. There are only two categories in this model, Principal and Employee.

Tab-26 Benefits Factor for Multiple of Direct Personnel Expense (DPE): Page 46. The values in Tab-26 are copied from Tab-21 Labor Budget. The values are updated with any change in the Labor Budget values. No data entry is required in Tab-26. All values are calculated. The benefits target multiple of direct personnel expense is calculated by dividing the Benefits Factor into the Profit Plan target net multiplier. This DPE benefits factor is copied to Tab-23 Profit Plan Analysis to calculate the values in Column F22 for the Multiples of Direct Personnel Expense.

The Multiple of DPE is calculated for certain projects where the Benefits Factor is used to calculate the Labor Billing Rate used for Time and Materials billing method.

Billing Rate Methods Dir. Pers. Exp. Vs Dir. Sal. Exp.

Total benefits / Total wages for hours worked = Benefits factor
 $\$1,264,062 / \$3,364,113 = .3757$

Labor	1.0000
Plus benefits factor	0.3757
Labor + Benefits	1.3757

Net Revenue Multiplier / Benefits Factor = Multiple of DPE
 $3.23 / 1.3757 = 2.3478$ Mult. of DPE

Raw labor \$23.31 x 1.3757 = \$32.06756 Direct Personnel Expense
DPE \$32.06756 x Multiple of DPE 2.3478 = Billing Rate \$75.38
Raw labor \$23.31 x Net Multiplier 3.23 = Billing Rate \$75.38

Tab-27 Prior Year's Key Indicators of Financial Performance: Pages 47-65. Tab-27 includes columns for actual line item details for income and expense for year's Income Statements and compares the current year's Profit Plan to Prior Years Actual. You can include as many prior years as you have available data. Time Analysis utilization data is required for the formulas to calculate the key indicators of financial performance. This includes the Time Analysis detail for prior years and calculation of the key indicators of financial performance showing full-time-equivalents, utilization rates, multiples of direct labor, and values per direct hour. The Graphic Charts are linked to the data in Tab-27.

Tab-28 Cash Flow Plan: Page 66. Tab-28 is a cash flow plan that begins with the Tab-20 Operating Profit Target. The operating profit is spread equally over twelve periods. The other increases and decreases to cash are spread over the appropriate periods. The net increase or decrease to the beginning cash balance is accumulated over the twelve periods to calculate the ending cash balance for each period. The monthly ending cash values are used to create the CAPPv2012.xlsx Tab-5 Graphic Chart for the Cash Flow Plan. The actual cash and accounts receivable balance shown on the chart are copied from Tab-14 Rows 47, 48 for Cash and Accounts Receivable Data

The cash flow plan graphic chart shows the progress toward the cash target for the plan year. The CAPP Tab-5 Cash Flow Plan graphic chart compares profit plan cash projection to actual cash-in-bank and accounts receivable for the year-to-date.

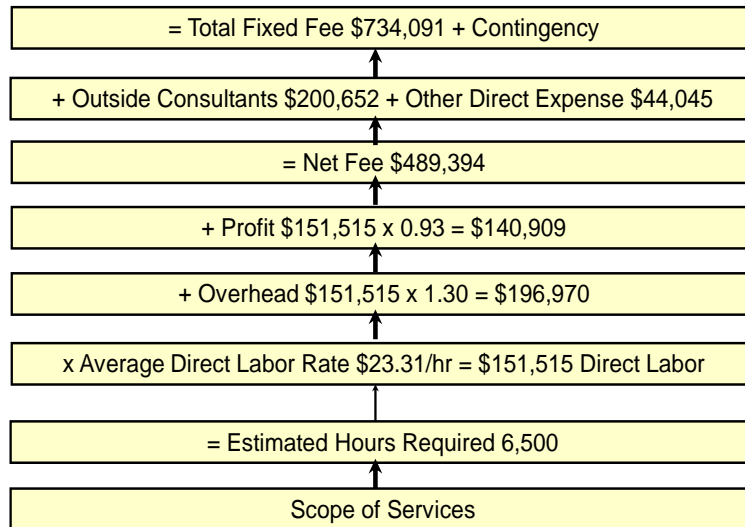
Tab-29 Computation of Federal and State Income Tax Provision: Page 67. The tax values calculated in Tab-29 are optional. This calculation shows the estimated federal and state income tax provision for a regular C Corp. on the accrual basis. The actual cash-basis tax could be more or less depending on how cash receipts are managed at year-end. This tax computation is based on the desired increase in net worth plus any dividend distribution to shareholders. The calculated tax provision is copied to Tab-20 Profit Target for the estimated Corporation Income Tax Provision (for the accrual basis).

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The format for Tab-20 Operating Profit Target and Partner's Increase in Capital Accounts for Sub Chapter-S Corporations or LLC may be modified to accommodate that type of organization.

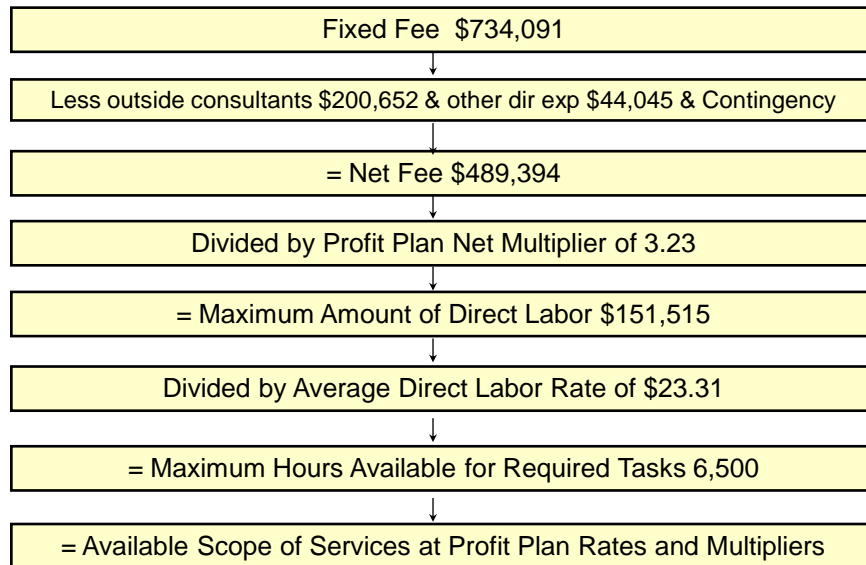
Project Budget Fee Methods

Project Budget: Bottom-Up (Scope First - Fee Last)



- In this model, the fee is based on the desired scope of services and the total estimated hours to complete the tasks.
- Multiply the estimated hours by the profit plan average direct labor rate to get the total direct labor for the project.
- Multiply the direct labor times the overhead rate to determine the overhead budget for the project.
- Multiply the direct labor times the profit plan profit multiplier to calculate the profit.
- Add direct labor plus overhead plus profit to get net fee.
- Add direct consultant lump sum fee and other estimated direct expense to the net fee.
- Make an estimate for contingencies to add to the fee.

Project Budget: Top-down (Fee First - Scope Last)



- Use the net multiplier to determine the maximum amount of direct labor that can be spent on a project without eating into the firm's planned profit.
- Calculate the maximum number of direct labor hours by dividing the direct labor dollars by the average direct labor rate.

S3PS

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To obtain a **free** copy of the *CAPP * Computer Aided Profit Plan for Design Firm Financial Planning and Control* version 2012.xlsx MS-Excel® spreadsheet template, contact John M. Burson at the email address above. CAPP2004 can be downloaded from www.s3psinc.com website. The password to unzip the file is **s3ps**.