

MANAGEMENT ACCOUNTING BEST PRACTICES

**A Guide for the Professional
Accountant**

STEVEN M. BRAGG



John Wiley & Sons, Inc.

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Published by John Wiley & Sons, Inc., Hoboken, New Jersey.

Published simultaneously in Canada.

Wiley Bicentennial Logo: Richard J. Pacifico

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Library of Congress Cataloging-in-Publication Data:

ISBN: 978-0471-74347-7

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

***To the crew at Wiley, with whom I have
worked since the previous century:
Sheck, John, Judy, Natasha,
Helen, and Brandon.***

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Preface

The typical accountant receives a thorough grounding in accounting standards in school, but then arrives on the job and asks—*What do I do now?* The unfortunate realization strikes that only a small proportion of the accounting job involves that painfully acquired knowledge of accounting standards. Instead, many other questions arise, with no obvious answers:

- How do I create a budget?
- What is a bottleneck asset, and should I invest in it?
- Should I approve a request for a capital expenditure?
- How do I grant credit to customers?
- How do I accelerate cash collections?
- Which controls should I set up?
- How do I conduct a throughput analysis?
- Should we outsource work?
- How do I collect payroll information?
- How do I achieve accurate inventory records?
- How do I allocate costs?
- What kinds of responsibility reports should I use?
- Should I set up a target costing system to assist the development of a new product?
- How do I set product prices?
- Where do I place quality review stations to improve profitability?

Management Accounting Best Practices provides the answers to all of these questions (and over 100 more) that show both the aspiring and seasoned accountant how to set up and manage an accounting department. Furthermore, when other members of the management team come calling with questions, the answers now lie on the accountant's bookshelf.

The information in this book is culled from eight of the author's best-selling books: *Accounting Control Best Practices*, *Billing and Collections Best Practices*, *Cost Accounting*, *Financial Analysis*, *Inventory Accounting*, *Payroll Best Practices*, *Throughput Accounting*, and the *Ultimate Accountants' Reference*. The new question-and-answer format in which this information is presented makes it easier to locate information on key accounting topics, and should make *Management Accounting Best Practices* a well-thumbed addition to any accountant's library.

STEVEN M. BRAGG
Centennial, Colorado
February 2007

About the Author

Steven Bragg, CPA, CMA, CIA, CPIM, has been the chief financial officer or controller of four companies, as well as a consulting manager at Ernst & Young and auditor at Deloitte & Touche. He received a Master's degree in Finance from Bentley College, an MBA from Babson College, and a Bachelor's degree in Economics from the University of Maine. He has been the two-time President of the Colorado Mountain Club, and is an avid alpine skier, mountain biker, and certified master diver. Mr. Bragg resides in Centennial, Colorado. He has written the following books through John Wiley & Sons:

Accounting and Finance for Your Small Business
Accounting Best Practices
Accounting Control Best Practices
Accounting Reference Desktop
Billing and Collections Best Practices
Business Ratios and Formulas
Controller's Guide to Costing
Controller's Guide to Planning and Controlling Operations
Controller's Guide: Roles and Responsibilities for the New Controller
Controllorship
Cost Accounting
Design and Maintenance of Accounting Manuals
Essentials of Payroll
Fast Close
Financial Analysis
GAAP Guide
GAAP Implementation Guide
Inventory Accounting
Inventory Best Practices
Just-in-Time Accounting
Management Accounting Best Practices
Managing Explosive Corporate Growth
Outsourcing
Payroll Accounting
Payroll Best Practices
Revenue Recognition
Sales and Operations for Your Small Business
The Controller's Function

The New CFO Financial Leadership Manual

*The Ultimate Accountants' Reference
Throughput Accounting*

Also:

Advanced Accounting Systems (Institute of Internal Auditors)
Run the Rockies (CMC Press)

Free Online Resources by Steve Bragg

Steve issues a free accounting best practices newsletter and an accounting best practices podcast. You can sign up for both at www.stevebragg.com, or access the podcast through iTunes.

Budgeting Decisions

The most common method for creating a budget is to simply print out the financial statements, adjust historical expenses for inflationary increases, add some projected revenue adjustments, and *voila*—instant budget. Unfortunately, this rough method ignores a massive number of interlocking factors that would probably have resulted in a very different budget. Without a carefully compiled budget, there is a strong chance that a company will find itself acting on budget assumptions that are so incorrect that it may find itself in serious financial straits in short order.

To avoid these problems, the accountant must determine the proper format of a budget, find the best way to adjust it when revenue volumes change, ensure that the budgeting process is efficient, factor bottleneck operations into the budget, and use it to improve company control systems. This chapter provides answers to all of these key questions. The following table itemizes the section number in which the answers to each question can be found:

Section	Decision
1-1	How does the system of interlocking budgets work?
1-2	What does a sample budget look like?
1-3	How does flex budgeting work?
1-4	What best practices can I apply to the budgeting process?
1-5	How can I integrate the budget into the corporate control system?
1-6	How do throughput concepts impact the budget?

1-1 HOW DOES THE SYSTEM OF INTERLOCKING BUDGETS WORK?

A properly designed budget is a complex web of spreadsheets that account for the activities of virtually all areas within a company. As noted in Exhibit 1.1, the budget begins in two places, with both the revenue budget and research and development (R&D) budget. The revenue budget contains the revenue figures that the company believes it can achieve for each upcoming reporting period. These estimates come partially from the sales staff, which is responsible for estimates of sales levels for existing products within their current territories. Estimates for the sales of new products that have not yet been released, and for existing products in new markets, will come from a combination of the sales and marketing staffs, who will use their experience with related product sales to derive estimates. The greatest fallacy in any budget is to impose a revenue budget from the top management level without any input from the

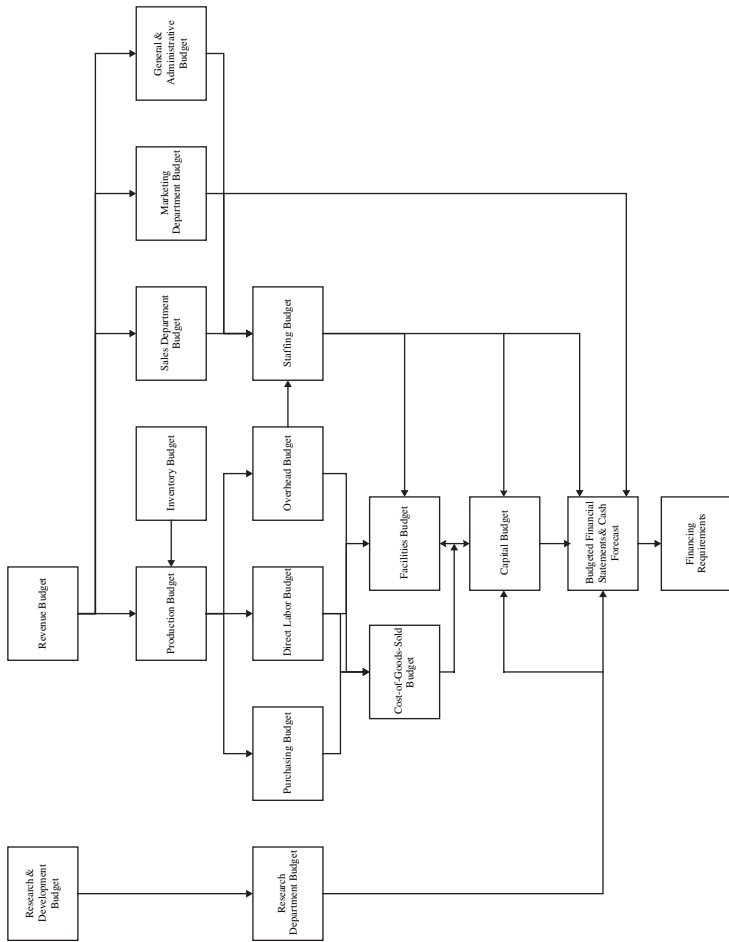


Exhibit 1.1 The System of Budgets

sales staff, since this can result in a companywide budget that is geared toward a sales level that is most unlikely to be reached.

A revenue budget requires prior consideration of a number of issues. For example, a general market share target will drive several other items within the budget, since greater market share may come at the cost of lower unit prices or higher credit costs. Another issue is the compensation strategy for the sales staff, since a shift to higher or lower commissions for specific products or regions will be a strong incentive for the sales staff to alter their selling behavior, resulting in some changes in estimated sales levels. Yet another consideration is which sales territories are to be entered during the budget period—those with high target populations may yield very high sales per hour of sales effort, while the reverse will be true if the remaining untapped regions have smaller target populations. It is also necessary to review the price points that will be offered during the budget period, especially in relation to the pricing strategies that are anticipated from competitors. If there is a strategy to increase market share as well as to raise unit prices, then the budget may fail due to conflicting activities. Another major factor is the terms of sale, which can be extended, along with easy credit, to attract more marginal customers; conversely, they can be retracted in order to reduce credit costs and focus company resources on a few key customers. A final point is that the budget should address any changes in the type of customer to whom sales will be made. If an entirely new type of customer will be added to the range of sales targets during the budget period, then the revenue budget should reflect a gradual ramp-up that will be required for the sales staff to work through the sales cycle of the new customers.

Once all of these factors have been ruminated upon and combined to create a preliminary budget, the sales staff should also compare the budgeted sales level per person to the actual sales level that has been experienced in the recent past to see if the company has the existing capability to make the budgeted sales. If not, the revenue budget should be ramped up to reflect the time it will take to hire and train additional sales staff. The same cross-check can be conducted for the amount of sales budgeted per customer, to see if historical experience validates the sales levels noted in the new budget.

Another budget that initiates other activities within the system of budgets is the research and development budget. This is not related to the sales level at all (as opposed to most other budgets), but instead is a discretionary budget that is based on the company's strategy to derive new or improved products. The decision to fund a certain amount of project-related activity in this area will drive a departmental staffing and capital budget that is, for the most part, completely unrelated to the activity conducted by the rest of the company. However, there can be a feedback loop between this budget and the cash budget, since financing limitations may require management to prune some projects from this area. If so, the management team must work with the R&D manager to determine the correct mix of projects with both short-range and long-range payoffs that will still be funded.

The production budget is largely driven by the sales estimates contained within the revenue budget. However, it is also driven by the inventory-level assumptions in

the inventory budget. The inventory budget contains estimates by the materials management supervisor regarding the inventory levels that will be required for the upcoming budget period. For example, a new goal may be to reduce the level of finished goods inventory from 10 turns per year to 15. If so, some of the products required by the revenue budget can be bled off from the existing finished goods inventory stock, yielding smaller production requirements during the budget period. Alternatively, if there is a strong focus on improving the level of customer service, then it may be necessary to keep more finished goods in stock, which will require more production than is strictly called for by the revenue budget. This concept can also be extended to work-in-process (WIP) inventory, where the installation of advanced production planning systems, such as manufacturing resources planning or just-in-time, can be used to reduce the level of required inventory. Also, just-in-time purchasing techniques can be used to reduce the amount of raw materials inventory that is kept on hand. All of these assumptions should be clearly delineated in the inventory budget, so that the management team is clear about what systemic changes will be required in order to effect altered inventory turnover levels. Also, be aware that any advanced production planning system takes a considerable amount of time to install and tune, so it is best if the inventory budget contains a gradual ramp-up to different planned levels of inventory.

Given this input from the inventory budget, the production budget is used to derive the unit quantity of required products that must be manufactured in order to meet revenue targets for each budget period. This involves a number of interrelated factors, such as the availability of sufficient capacity for production needs. Of particular concern should be the amount of capacity at the bottleneck operation. Since this tends to be the most expensive capital item, it is important to budget a sufficient quantity of funding to ensure that this operation includes enough equipment to meet the targeted production goals. If the bottleneck operation involves skilled labor, rather than equipment, then the human resources staff should be consulted regarding its ability to bring in the necessary personnel in time to improve the bottleneck capacity in a timely manner.

Another factor that drives the budgeted costs contained within the production budget is the anticipated size of production batches. If the batch size is expected to decrease, then more overhead costs should be budgeted in the production scheduling, materials handling, and machine setup staffing areas. If longer batch sizes are planned then there may be a possibility of proportionally reducing overhead costs in these areas. This is a key consideration that is frequently overlooked, but which can have an outsized impact on overhead costs. If management attempts to contain overhead costs in this area while still using smaller batch sizes, then it will likely run into larger scrap quantities and quality issues that are caused by rushed batch setups and the allocation of incorrect materials to production jobs.

Step costing is also an important consideration when creating the production budget. Costs will increase in large increments when certain capacity levels are reached. The management team should be fully aware of when these capacity levels will be reached, so that it can plan appropriately for the incurrence of added costs. For example, the addition of a second shift to the production area will call for added costs

in the areas of supervisory staff, an increased pay rate, and higher maintenance costs. The inverse of this condition can also occur, where step costs can decline suddenly if capacity levels fall below a specific point.

Production levels may also be impacted by any lengthy tooling setups or changeovers to replacement equipment. These changes may halt all production for extended periods, and so must be carefully planned for. This is the responsibility of the industrial engineering staff. The accountant would do well to review the company's past history of actual equipment setup times to see whether the current engineering estimates are sufficiently lengthy.

The expense items included in the production budget should be driven by a set of subsidiary budgets, which are the purchasing, direct labor, and overhead budgets. These budgets can be simply included in the production budget, but they typically involve such a large proportion of company costs that it is best to lay them out separately in greater detail in separate budgets. Comments on these budgets are as follows:

- *Purchasing budget.* The purchasing budget is driven by several factors, first of which is the bill of materials that comprises the products that are planned for production during the budget period. These bills must be accurate, or else the purchasing budget can include seriously incorrect information. In addition, there should be a plan for controlling material costs, perhaps through the use of concentrated buying through few suppliers, or perhaps through the use of long-term contracts. If materials are highly subject to market pressures, comprise a large proportion of total product costs, and have a history of sharp price swings, then best-case and worst-case costing scenarios should be added to the budget so that managers can review the impact of costing issues in this area. If a just-in-time delivery system from suppliers is contemplated, then the purchasing budget should reflect a possible increase in material costs caused by the increased number of deliveries from suppliers. It is also worthwhile to budget for a raw material scrap and obsolescence expense; there should be a history of costs in these areas that can be extrapolated based on projected purchasing volumes.
- *Direct labor budget.* Do not make the mistake of budgeting for direct labor as a fully variable cost. The production volume from day to day tends to be relatively fixed, and requires a set number of direct labor personnel on a continuing basis to operate production equipment and manually assemble products. Further, the production manager will realize much greater production efficiencies by holding onto an experienced production staff, rather than by letting them go as soon as production volumes make small incremental drops. Accordingly, it is better to budget based on reality, which is that direct labor personnel are usually retained, even if there are ongoing fluctuations in the level of production. Thus, direct labor should be shown in the budget as a fixed cost of production, within certain production volume parameters.

Also, this budget should describe staffing levels by type of direct labor position; this is driven by labor routings, which are documents that describe the

exact type and quantity of staffing needed to produce a product. When multiplied by the unit volumes located in the production budget, this results in an expected level of staffing by direct labor position. This information is most useful for the human resources staff, which is responsible for staffing the positions.

The direct labor budget should also account for any contractually mandated changes in hourly rates, which may be itemized in a union agreement. Such an agreement may also have restrictions on layoffs, which should be accounted for in the budget if this will keep labor levels from dropping in proportion with budgeted reductions in production levels. Such an agreement may also require that layoffs be conducted in order of seniority, which may force higher-paid employees into positions that would normally be budgeted for less expensive laborers. Thus, the presence of a union contract can result in a much more complex direct labor budget than would normally be the case.

The direct labor budget may also contain features related to changes in the efficiency of employees, and any resulting changes in pay. For example, one possible pay arrangement is to pay employees based on a piece rate, which directly ties their performance to the level of production achieved. If so, this will probably apply only to portions of the workforce, so the direct labor budget may involve pay rates based on both piece rates and hourly pay. Another issue is that any drastic increases in the budgeted level of direct labor personnel will likely result in some initial declines in labor efficiency, since it takes time for new employees to learn their tasks. If this is the case, the budget should reflect a low level of initial efficiency, with a ramp-up over time to higher levels that will result in greater initial direct labor costs. Finally, efficiency improvements may be rewarded with staff bonuses from time to time; if so, these bonuses should be included in the budget.

- *Overhead budget.* The overhead budget can be a simple one to create if there are no significant changes in production volume from the preceding year, because this involves a large quantity of static costs that will not vary much over time. Included in this category are machine maintenance, utilities, supervisory salaries, wages for the materials management, production scheduling, quality assurance personnel, facilities maintenance, and depreciation expenses. Under the no-change scenario, the most likely budgetary alterations will be to machinery or facilities maintenance, which are dependent on the condition and level of usage of company property.

If there is a significant change in the expected level of production volume, or if new production lines are to be added, then one should examine this budget in great detail, for the underlying production volumes may cause a ripple effect that results in wholesale changes to many areas of the overhead budget. Of particular concern is the number of overhead-related personnel who must be either laid off or added when capacity levels reach certain critical points, such as the addition or subtraction of extra work shifts. Costs also tend to rise substantially when a facility is operating at very close to 100 percent capacity, since this tends to call for an inordinate amount of effort to maintain on an ongoing basis.

The purchasing, direct labor, and overhead budgets can then be summarized into a cost-of-goods-sold budget. This budget should incorporate, as a single line item, the total amount of revenue, so that all manufacturing costs can be deducted from it to yield a gross profit margin on the same document. This budget is referred to constantly during the budget creation process, since it tells management whether its budgeting assumptions are yielding an acceptable gross margin result. Since it is a summary-level budget for the production side of the budgeting process, this is also a good place to itemize any production-related statistics, such as the average hourly cost of direct labor, inventory turnover rates, and the amount of revenue dollars per production person.

Thus far, we have reviewed the series of budgets that descend in turn from the revenue budget and then through the production budget. However, there are other expenses that are unrelated to production. These are categories in a separate set of budgets. The first is the sales department budget. This includes the expenses that the sales staff must incur in order to achieve the revenue budget, such as travel and entertainment, as well as sales training. Of particular concern in this budget is the amount of budgeted headcount that is required to meet the sales target. It is essential that the actual sales per salesperson from the most recent completed year of operations be compared with the same calculation in the budget to ensure that there is a sufficiently large budget available for an adequate number of sales personnel. This is a common problem, for companies will make the false assumption that the existing sales staff can make heroic efforts to wildly exceed its previous-year sales efforts. Furthermore, the budget must account for a sufficient time period in which new sales personnel can be trained and form an adequate base of customer contacts to create a meaningful stream of revenue for the company. In some industries, this learning curve may be only a few days, but it can be the better part of a year if considerable technical knowledge is required to make a sale. If the latter situation is the case, it is likely that the procurement and retention of qualified sales staff is the key element of success for a company, which makes the sales department budget one of the most important elements of the entire budget.

The marketing budget is also closely tied to the revenue budget, for it contains all of the funding required to roll out new products, merchandise them properly, advertise for them, test new products, and so on. A key issue here is to ensure that the marketing budget is fully funded to support any increases in sales noted in the revenue budget. It may be necessary to increase this budget by a disproportionate amount if one is trying to create a new brand, issue a new product, or distribute an existing product in a new market. These costs can easily exceed any associated revenues for some time. A common budgeting problem is not to provide sufficient funding in these instances, leading to a significant drop in expected revenues.

Another nonproduction budget that is integral to the success of the corporation is the general and administrative budget. This contains the cost of the corporate management staff, plus all accounting, finance, and human resources personnel. Since this is a cost center, the general inclination is to reduce these costs to the bare minimum. However, in order to do so, there must be a significant investment in

technology in order to achieve reductions in the manual labor usually required to process transactions; thus, there must be some provision in the capital budget for this area.

There is a feedback loop between the staffing and direct labor budgets and the general and administrative budget, because the human resources department must staff itself based on the amount of hiring or layoffs that are anticipated elsewhere in the company. Similarly, a major change in the revenue volume will alter the budget for the accounting department, since many of the activities in this area are driven by the volume of sales transactions. Thus, the general and administrative budget generally requires a number of iterations in response to changes in many other parts of the budget.

Though salaries and wages should be listed in each of the departmental budgets, it is useful to list the total headcount for each position through all budget periods in a separate staffing budget. By doing so, the human resources staff can tell when specific positions must be filled, so that they can time their recruiting efforts most appropriately. This budget also provides good information for the person responsible for the facilities budget, since he or she can use it to determine the timing and amount of square footage requirements for office space. Rather than being a standalone budget, the staffing budget tends to be one whose formulas are closely intertwined with those of all other departmental budgets, so that a change in headcount information on this budget will automatically translate into a change in the salaries expense on other budgets. It is also a good place to store the average pay rates, overtime percentages, and average benefit costs for all positions. By centralizing this cost information, the human resources staff can more easily update budget information. Since salary-related costs tend to comprise the highest proportion of costs in a company (excluding materials costs), this tends to be a heavily used budget.

The facilities budget is based on the level of activity that is estimated in many of the budgets just described. For this reason, it is one of the last budgets to be completed. This budget is closely linked to the capital budget, since expenditures for additional facilities will require more maintenance expenses in the facilities budget. This budget typically contains expense line items for building insurance, maintenance, repairs, janitorial services, utilities, and the salaries of the maintenance personnel employed in this function. It is crucial to estimate the need for any upcoming major repairs to facilities when constructing this budget, since these can greatly amplify the total budgeted expense.

Another budget that includes input from virtually all areas of a company is the capital budget. This should comprise either a summary listing of all main fixed asset categories for which purchases are anticipated, or else a detailed listing of the same information; the latter case is recommended only if there are comparatively few items to be purchased. The capital budget is of great importance to the calculation of corporate financing requirements, since it can involve the expenditure of sums far beyond those that are normally encountered through daily cash flows. This topic is addressed in greater detail in Chapter 2, Capital Budgeting Decisions.

The end result of all the budgets just described is a set of financial statements that reflect the impact on the company of the upcoming budget. At a minimum, these statements should include the income statement and cash flow statement, since these are the best evidence of fiscal health during the budget period. The balance sheet is less necessary, since the key factors upon which it reports are related to cash, and that information is already contained within the cash flow statement. These reports should be directly linked to all the other budgets, so that any changes to the budgets will immediately appear in the financial statements. The management team will closely examine these statements and make numerous adjustments to the budgets in order to arrive at a satisfactory financial result.

The budget-linked financial statements are also a good place to store related operational and financial ratios, so that the management team can review this information and revise the budgets in order to alter the ratios to match benchmarking or industry standards that may have been set as goals. Typical measurements in this area can include revenue and income per person, inventory turnover ratios, and gross margin percentages. This type of information is also useful for lenders, who may have required minimum financial performance results as part of loan agreements, such as a minimum current ratio or debt-to-equity ratio.

The cash forecast is of exceptional importance, for it tells company managers whether the proposed budget model will be feasible. If cash projects result in major cash needs that cannot be met by any possible financing, then the model must be changed. The assumptions that go into the cash forecast should be based on strict historical fact, rather than the wishes of managers. This stricture is particularly important in the case of cash receipts from accounts receivable. If the assumptions are changed in the model to reflect an advanced rate of cash receipts that exceeds anything that the company has heretofore experienced, then it is very unlikely that it will be achieved during the budget period. Instead, it is better to use proven collection periods as assumptions and alter other parts of the budget to ensure that cash flows remain positive.

The cash forecast is a particularly good area in which to spot the impact of changes in credit policy. For example, if a company wishes to expand its share of the market by allowing easy credit to marginal customers, then it should lengthen the assumed collection period in the cash forecast to see if there is a significant downgrading of the resulting cash flows.

The other key factor in the cash forecast is the use of delays in budgeted accounts payable payments. It is common for managers to budget for extended payment terms in order to fund other cash flow needs, but there are several problems that can result from this policy. One is the possible loss of key suppliers who will not tolerate late payments. Another is the risk of being charged interest on late payments to suppliers. A third problem is that suppliers may relegate a company to a lower level on their lists of shipment priorities, since they are being paid late. Finally, suppliers may simply raise their prices in order to absorb the cost of the late payments. Consequently, the late payment strategy must be followed with great care, using it only on those suppliers who do not appear to notice, and otherwise doing it only after prior

negotiation with targeted suppliers to make the changed terms part of the standard buying agreement.

The last document in the system of budgets is the discussion of financing alternatives. This is not strictly a budget, though it will contain a single line item, derived from the cash forecast, which itemizes funding needs during each period itemized in the budget. In all other respects, it is simply a discussion of financing alternatives, which can be quite varied. This may involve a mix of debt, supplier financing, preferred stock, common stock, or some other, more innovative approach. The document should contain a discussion of the cost of each form of financing, the ability of the company to obtain it, and when it can be obtained. Managers may find that there are so few financing alternatives available, or that the cost of financing is so high, that the entire budget must be restructured in order to avoid the negative cash flow that calls for the financing. There may also be a need for feedback from this document back into the budgeted financial statements in order to account for the cost of obtaining the funding, as well as any related interest costs.

1-2 WHAT DOES A SAMPLE BUDGET LOOK LIKE?

In response to this question, we will review several variations on how a budget can be constructed, using a number of examples. The first budget covered is the revenue budget, which is shown in Exhibit 1.2. The exhibit uses quarterly revenue figures for a budget year rather than monthly, in order to conserve space. It contains revenue estimates for three different product lines that are designated as Alpha, Beta, and Charlie.

The Alpha product line uses a budgeting format that identifies the specific quantities that are expected to be sold in each quarter, as well as the average price per unit sold. This format is most useful when there are not so many products that such a detailed delineation would create an excessively lengthy budget. It is a very useful format, for the sales staff can go into the budget model and alter unit volumes and prices quite easily. An alternative format is to reveal this level of detail for only the most important products, and to lump the revenue from other products into a single line item, as is the case for the Beta product line.

The most common budgeting format is used for the Beta product line, where we avoid the use of detailed unit volumes and prices in favor of a single lump-sum revenue total for each reporting period. This format is used when there are multiple products within each product line, making it cumbersome to create a detailed list of individual products. However, this format is the least informative and gives no easy way to update the supporting information.

Yet another budgeting format is shown for the Charlie product line, where projected sales are grouped by region. This format is most useful when there are many sales personnel, each of whom has been assigned a specific territory in which to operate. This budget can then be used to judge the ongoing performance of each salesperson.

Exhibit 1.2 Revenue Budget for the Fiscal Year Ended xx/xx/07

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Totals
<i>Product Line Alpha:</i>					
Unit Price	\$15.00	\$14.85	\$14.80	\$14.75	—
Unit Volume	14,000	21,000	25,000	31,000	91,000
Revenue Subtotal	\$210,000	\$311,850	\$370,000	\$457,250	\$1,349,100
<i>Product Line Beta:</i>					
Revenue Subtotal	\$1,048,000	\$1,057,000	\$1,061,000	\$1,053,000	\$4,219,000
<i>Product Line Charlie:</i>					
Region 1	\$123,000	\$95,000	\$82,000	\$70,000	\$370,000
Region 2	\$80,000	\$89,000	\$95,000	\$101,000	\$365,000
Region 3	\$95,000	\$95,000	\$65,000	\$16,000	\$271,000
Region 4	\$265,000	\$265,000	\$320,000	\$375,000	\$1,225,000
Revenue Subtotal	\$563,000	\$544,000	\$562,000	\$562,000	\$2,231,000
Revenue Grand Total	\$1,821,000	\$1,912,850	\$1,993,000	\$2,072,250	\$7,799,100
Quarterly Revenue Proportion	23.3%	24.5%	25.6%	26.6%	100.0%
<i>Statistics:</i>					
Product Line Proportion:					
Alpha	11.5%	16.3%	18.6%	22.1%	17.3%
Beta	57.6%	55.3%	53.2%	50.8%	54.1%
Charlie	30.9%	28.4%	28.2%	27.1%	28.6%
Product Line Total	100.0%	100.0%	100.0%	100.0%	100.0%

Exhibit 1.3 Production & Inventory Budget for the Fiscal Year Ended xx/xx/07

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Totals
<i>Inventory Turnover Goals:</i>					
Raw Materials Turnover	4.0	4.5	5.0	5.5	4.8
W-I-P Turnover	12.0	15.0	18.0	21.0	16.5
Finished Goods Turnover	6.0	6.0	9.0	9.0	7.5
<i>Product Line Alpha Production:</i>					
Beginning Inventory Units	15,000	21,000	20,000	15,000	—
Unit Sales Budget	14,000	21,000	25,000	31,000	91,000
Planned Production	20,000	20,000	20,000	27,375	87,375
Ending Inventory Units	21,000	20,000	15,000	11,375	←
Bottleneck Unit Capacity	20,000	20,000	20,000	40,000	
Bottleneck Utilization	100%	100%	100%	68%	
Planned Finished Goods Turnover	15,167	15,167	11,375	11,375	←

These revenue reporting formats can also be combined, so that the product line detail for the Alpha product can be used as underlying detail for the sales regions used for the Charlie product line—though this will result in a very lengthy budget document.

There is also a statistics section at the bottom of the revenue budget that itemizes the proportion of total sales that occurs in each quarter, plus the proportion of product line sales within each quarter. Though it is not necessary to use these exact measurements, it is useful to include some type of measure that informs the reader of any variations in sales from period to period.

Both the production and inventory budgets are shown in Exhibit 1.3. The inventory budget is itemized at the top of the exhibit, where we itemize the amount of planned inventory turnover in all three inventory categories. There is a considerable ramp-up in work-in-process inventory turnover, indicating the planned installation of a manufacturing planning system of some kind that will control the flow of materials through the facility.

The production budget for just the Alpha product line is shown directly below the inventory goals. This budget is not concerned with the cost of production, but rather with the number of units that will be produced. In this instance, we begin with an on-hand inventory of 15,000 units, and try to keep enough units on hand through the remainder of the budget year to meet both the finished goods inventory goal at the top of the exhibit and the number of required units to be sold, which is referenced from the revenue budget. The main problem is that the maximum capacity of the bottleneck operation is 20,000 units per quarter. In order to meet the revenue target, we must run