

Chapter 8 Managing Cost

8.0 Understanding the cost of doing business

Everyone has to be somewhere. So Does Cost.

Effective cost management is everybody's business in a successful Enterprise. The principles of integral management call for contracts between peer managers whose activities are interdependent, between managers and subordinates to whom they have delegated responsibilities, and to whom they have committed the resources and support necessary to discharge those responsibilities.

Many CFO's fail to grasp this concept, and therefore consider financial accounting to be a policing and control organization that assures budget compliance. This is a fallacy of major import. To be sure, the financial accounting organization has an important fiduciary responsibility to the governance of the Enterprise. But finance's proper role recognizes that their organization does not and cannot control anything. For that matter, neither does general management. What they collectively can and must do is incentivize task managers to do what is needed, **and** to provide the tools, data, and visibility to the doing levels of management to enable *them* to manage cost.

Finance can and should integrate and analyze what is happening across the Enterprise providing accurate forecasts so that general management can adjust policies and call attention to problems that may affect the task managers and their costs. If general management is unsatisfied with how a task manager is performing or controlling costs against commitments, they should replace the manager, rather than try to edict some result.

It is not the intent of this book to discuss the principles of accounting systems. Instead I will examine some of the issues that influence the classification and management of cost, and the systems for providing visibility to this data, which can profoundly affect the success of projects and an Enterprise.

8.1 Purpose of the cost management information system

The cost management system function in today's business Enterprise is much more than an accounting system. It must fulfill several functions, including planning, forecasting, visibility at all levels of the enterprise, accurate cost accumulation, and proper distribution. The first is to provide a structure for accurately forecasting and recording the resources expended in **every activity** of the Enterprise. This includes not only the direct activities -- those labor and material costs expended directly on the products of the Enterprise, but also the effort expended in managing, marketing, keeping track of cost, the cost of acquiring and maintaining plant buildings, equipment and tools, travel, utilities, and even service to the community. Ideally, all of this data should reside in an integrated n-dimensional relational database that can be sorted through in any of the dimensions. This methodology will be discussed further in Section 8.3 of this chapter.

In our concept of integral management, the management of *all* costs is delegated to the level at which the associated work is delegated. We want the managers who are responsible for tasks to make cost tradeoff decisions to get their tasks done efficiently, and to be accountable for the results. For this to happen, first-line managers responsible for tasks must be able to create and negotiate time-phased resource expenditure plans for performing those tasks. When agreement has been reached, they must input the plans into the cost management data-base, authorize work-orders for proper accounting of the costs incurred, evaluate progress against those plans and re-plan the work when necessary. This requires on demand access to the resource expenditure plans and actual expenditures. It also requires the ability to modify the to go plan in a controlled manner. At the same time this access must not corrupt the integrity and the security of the database.

Attributes of an effective cost information management system include the following:

- It must provide a structure for estimating the cost of each product or service. Only then can the Enterprise set the price of those products or services
- It must provide for the accurate accumulation and display of actual costs to those responsible for meeting the budget, preferably with capability to generate earned-value data for evaluating progress against the

planned schedule and cost.

- It must accurately distribute the costs of products, goods and services provided to customers to bill and collect in accordance with the terms and conditions of the sales agreement or contract..
- It should provide an integrated database of personnel and payroll data, maintain records of accounts receivable and payable, and provide for current and projected cash management.
- It must provide a database of all income and expenses by product line, and for statutory purposes such as sales, payroll, property and income taxes, and reports to the shareholders etc. The historical database is especially useful in looking at trends and estimating for new products or services.

8.2 Classes of cost

The cost of doing business can be described in terms of the direct cost of creating products, goods and services, and indirect costs that are not directly relatable to the creation of the product, but are necessary in order to have the ability to make the products. Typical indirect costs include management, cost of money, facility costs (such as rent, furnishings, utilities and insurance,) and support personnel such as accounting, purchasing, janitorial, and maintenance personnel, employee services and benefits. These costs must be allocated in some fashion to each of the products, goods and services. Good accounting practice demands that these indirect costs be allocated to the products on the basis of how much they use or benefit from these Enterprise functions. Direct and indirect costs are also broken down by applicable resource type, e.g. labor of different classifications, subcontracted effort, material, computers, tools, facility and equipment costs, utilities, insurance and travel.

8.3 Cost/benefit correlation

The people who we would like to control costs in an Enterprise are not in charge of overhead cost, which can often be equal to or greater than direct cost. Many of the people who determine the overhead or indirect cost neither control it nor understand it. Moreover, their primary interest is in allocating those costs to those who control the direct cost. Some of the issues in managing indirect cost are seen in the examples below:

- A product division manager has little incentive to avoid spending overhead, thereby increasing the risk that they will fail in their assigned job, when that avoidance results in no cost saving to them. This is a fundamental reality, which undermines the premise that those who control the direct cost can reduce the indirect cost over which they have little control.
- A Company that classifies much of its cost as overhead and deals with government entities on cost reimbursable contracts is at a disadvantage with other companies who have placed more costs in the direct category. In the former, management spends inordinate amounts of time on this subject.
- If we are to control total cost, we must broaden the cost accountability of our management and ensure that actions are in place to minimize costs.

8.4 Effective Control of Cost

To effectively control cost we must put the true control of as much cost as possible in the hands of those who manage the direct base. The way to do that is first to maximize the functions that are direct and then to maximize the assignment of remaining indirect cost to the direct activity that benefits from it. If an individual is to be held accountable for controlling costs, four criteria must be met.

First, the individual must have the authority to make decisions that affect those costs. Second, that individual must have accurate visibility about the incurring of those costs. Third, no one else can have the ability to authorize changes to that commitment without renegotiating the basis with that accountable individual. Finally, the commitments made between that individual and his or her manager must be bilateral, not imposed.

Overhead costs have historically been a particular management problem, because in a sense, while everybody has them, nobody owns them. And while a single overhead rate has many advantages, it is improper if it prevents the majority of costs from being controlled, or properly allocated to benefiting activities. One favorite mistake of general management is to mandate overhead cost budgets when overhead expenses are too high for the direct base. This violates the concept of a contract, and is also ineffective in the long run. Smart managers know how to follow orders. Costs may meet the edict, but some critical function may be stopped in order to

meet it, and general management will find this out later when some unpleasant manifestation of that decision shows up.

Another ineffective tactic in trying to control overhead cost is to focus on the salary and fringe benefit component of overhead. The result of this tactic is that these cuts are on the backs of the employees, and the resulting perception undermines trust. The reality is that employee fringe benefits *should* be the largest contributor to overhead and everything else should be minimized.

Overhead costs that are too high are a sign of a management failure at the top -- failure to assign responsibility and set reasonable expectations for those costs to someone who can do something about them. General management should develop guidelines based on valid bench marking of high performance parts of the Enterprise, get buy in from the rest of the management team, and then let them manage to those guidelines. Typically these guidelines should be ratios of supervision to total employees, floor space per employee, etc. They may be set arbitrarily at first, but should be adjustable with experience to assure that they are realistic.

8.5 Knowing the Cost Influences and Delegating Them Down

8.5.1 Direct versus Indirect Cost

The determination of whether an activity should be direct or indirect has only three tests:

A. The cost of incurring the activity can be accurately and reasonably traced or assigned to the benefiting activity.

B. The activity that incurs the cost is one that the company is willing to have controlled by the benefiting organization or customer. An activity incurring cost sometimes needs to be indirect because it is a common administrative expense associated with the fiduciary responsibility to the shareholders/investors, or to all customers as a group, and the decision as to whether or not it will be an incurred cost cannot be left to any single customer relationship.

C. The volatility of the activity when fractionated to the benefiting activity level is acceptable to individual customers.

The following functions are strong candidates for direct charging:

- Program/product management
- Contract estimating/control systems
- Contracts
- Program-dedicated procurement/materiel
- Media services (reproduction and publishing)
- Program-related organizational training/development
- Program-specific marketing
- Program-dedicated facilities/equipment
- Computer service centers (CAD/CAM, scientific, etc.)

The following functions are candidates for direct charging through some sort of pooled work order or allocated prime cost:

- Functional management
- Central industrial accounting functions (financial analysis and support)
- Divisional subcontracts/materiel
- Operations/HR
- Divisional administration
- Divisional legal counsel
- Divisional business operations and marketing staff

The following are true indirect functions and overhead costs:

- Executive management
- Central finance
- General Procurement

- Small machines, desks, partitions, PCs under \$10K, heat, light, power, water
- Employee fringe benefits
- Other

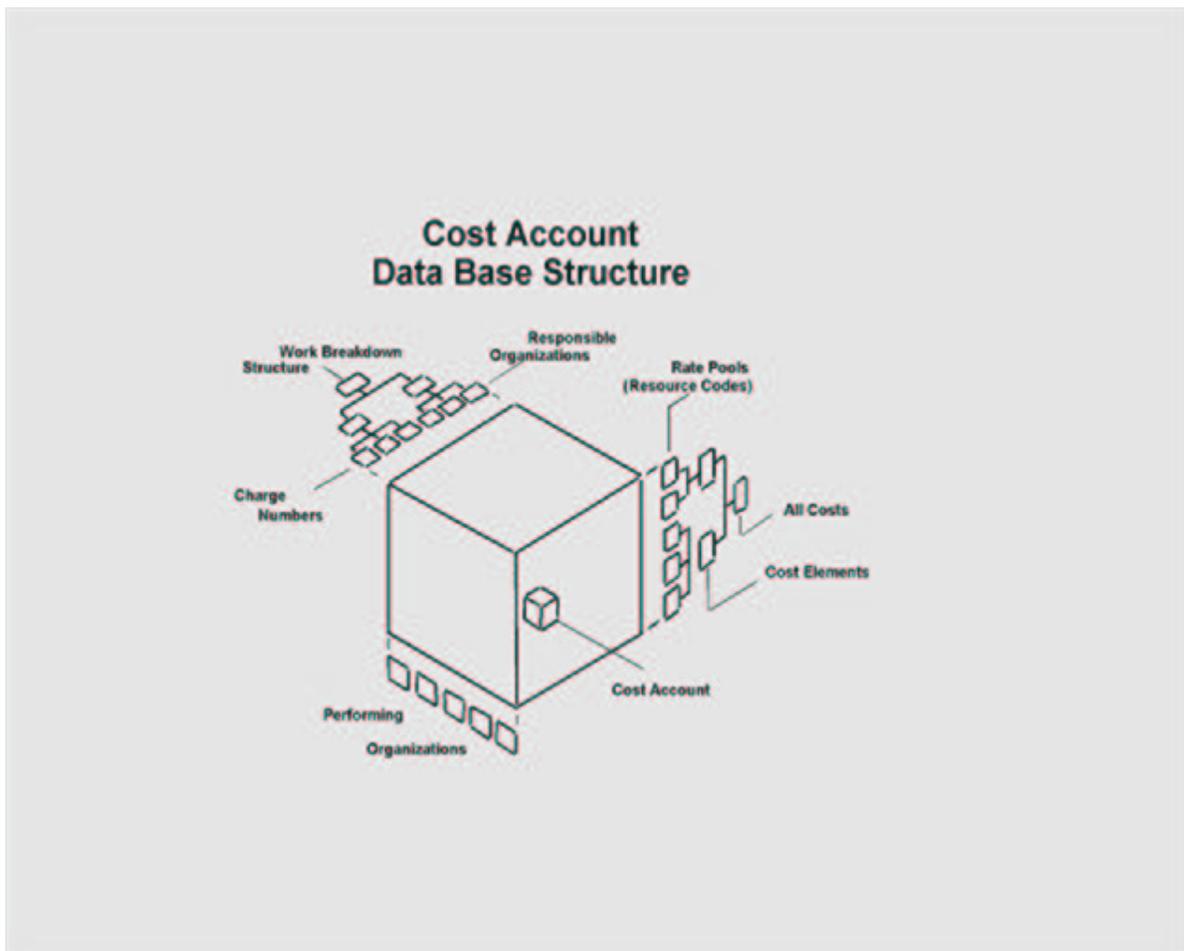
8.6 Managing Project Cost

Managing project cost includes planning the expenditure of resources to accomplish the project work activities, measuring the actual resource expenditures, and the accomplishments those resources have produced, and taking corrective actions when and where needed. The key to doing this is a proper time phased database of the plan and a compatible and timely cost accumulation system. This data base is also used in combination with those of all other activities planned to occur in the Enterprise to forecast the pricing of those planned resources and identify the strategies needed to realize those pricing assumptions.

Chapters 3 and 4 discussed the project planning process and the management roles and responsibilities for creating and negotiating the planned resources. It also discussed ownership by responsible managers for all the work to execute the plan. Here, we are concerned with providing the visibility into what is occurring during that execution to all levels of management in order to help them do their job.

8.6.1 The N-dimensional Resource Data Base

A key tool for managing project costs is a relational database in which data can be viewed by any relevant set of categories. The database begins with a work breakdown structure that includes a box for every task required for that activity. First the plan is loaded into the data base. In each WBS box, the time-phased resources for that element of work are described by performing organization and by resource classification. These resources may be hours of various labor classifications, computer hours of various types, machine tools, material, subcontractor effort, support services, office or shop space, special facilities use, and so on. Figure 8-1 illustrates the multidimensional nature of this database. The following discussion describes how this data is used with the project cost performance measurement system.



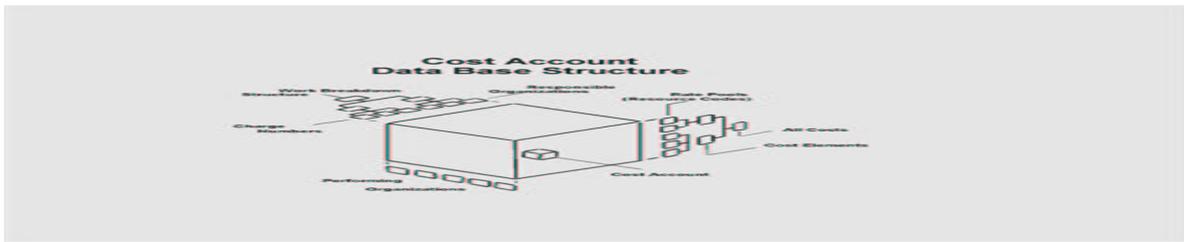


Fig. 8-1 The N-dimensional Cost Account Data

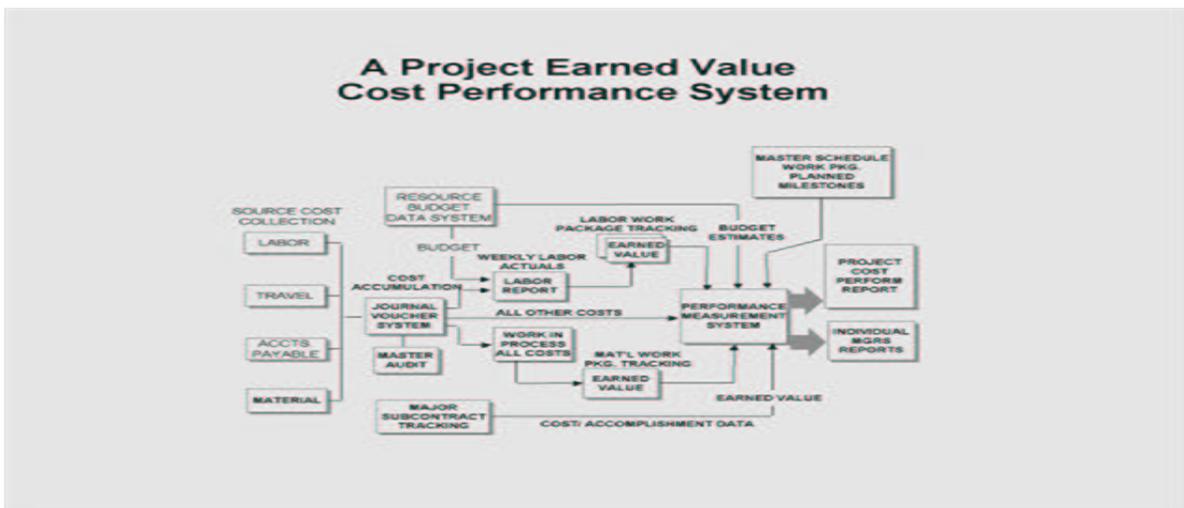
Forecast direct rates and burden are applied using applicable rate tables. Forward pricing is important to forecasting these rates and burdens that, while a closely related subject, is discussed separately in Section 8.7. Actual expenditures are accumulated each day or week, and the data base is updated weekly for labor, using actual payroll labor rates, and monthly for all other resources and burdens. Block change control must be maintained over the time phased plan, with authority for change requiring multi level security access keys to prevent unauthorized use or modification.

8.6.2 Earned Value Performance Measurement

I am a firm believer in the use of earned value measurement in the management of projects. There are those who argue that by monitoring schedule milestones, the need for an earned value system is obviated. I have found this is simply not true. Moreover, by simply structuring the tasks to relate to meaningful and measurable milestones during the creation of the project plan, it is possible to use the resulting accomplishment measures to foresee problems long before the milestones themselves are missed and in time to take corrective action or to plan contingent action. This requires truly using the earned value system as the primary status and measurement tool to manage the project, not just as an adjunct.

One of the objections to earned value systems is that there are lots of bells and whistles in a formal CSCSC system which are time consuming and of questionable value -- the most onerous being the requirement for detailed written variance analyses for any task at any level that exceeds some variance threshold. Since I have found that information of little value, I would forego all of that. The other argument is usually that the Enterprise accounting system will not support earned value measurement. Today, with powerful personal computer spread sheet programs, this is no longer a valid argument, if the initial inputs are properly organized as we will see.

An example of an earned value performance measurement system is illustrated in figure 8-2. A project cost and schedule management system is an integrated set of tools consisting of a central data processing system which operates on inputs from five resource data bases to generate all information necessary for monthly Cost Performance Reports and their supporting data. This data processing system integrates, sorts, computes, formats and summarizes the status of every work package, and sums to create reports at any level of the Work Breakdown Structure for both internal and external management reports. A journal voucher cost accounting system accumulates the current Actual Cost of Work Performed (ACWP).



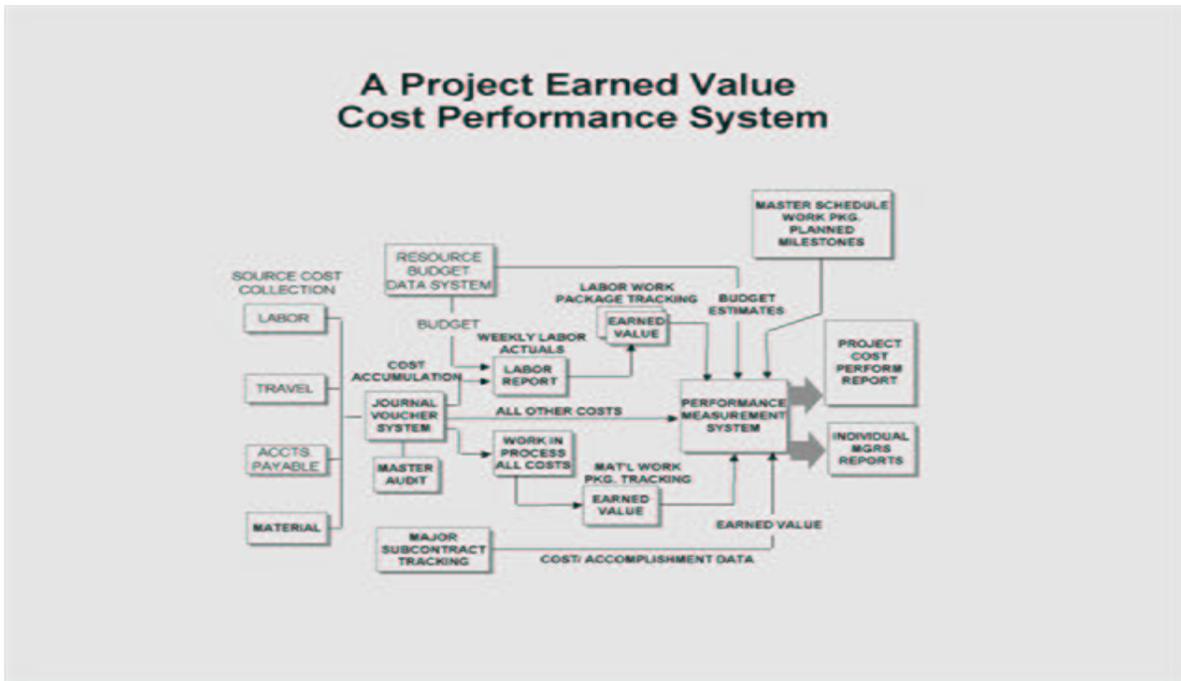


Figure 8-2 Example of an Earned Value Project

Cost and Schedule System

for all direct cost elements -- labor, accounts payable, travel, data processing, and material. The cost element sources are time charges from timecards, purchase orders, billings, etc. These time charges are expressed in terms of hours or dollars, and are identified by charge numbers and performing organization.

The charge number contains a contract or customer identifier, work authorization, a work package keyed to the work breakdown structure location, resource type code, and identifies the responsible cost account manager. Figure 8-1 illustrates the n- dimensional database that results. The information must be sortable by any of the dimensions. A work package is defined as a measurable unit of work identified at least one level below the lowest WBS level with a measurable start and end event. Each work package has a time phased plan tied to measurable master schedule milestones. A resource ledger contains the time phased resource plan with the same n-dimensions against which actuals are measured. This database is the Budgeted Cost of Work Scheduled, (BCWS). The budgeted cost of the effort actually accomplished is called Budgeted Cost of Work Performed (BCWP).

An earned value system can actually be implemented off line even when the accounting system is not designed for it. An example of such an implementation using spread sheets is illustrated in figure 8-3 and 8-4 though not filled out. The spread sheet is shown in two parts. They are little more than typical three T charts (Task, Time, Talent) that are required in some form for planning and inputting expenditure plans to accomplish the tasks with time. This chart is for a single work package or set of tasks that support a project milestone, in this case two design review milestones, and shows the number of people needed each month and what type they are at least in terms of their rate of pay and overhead burden rate. It also has provisions for other resources required such as materials computers, etc. The time phased resource plan is the budgeted cost of work scheduled or BCWS.

The chart also provides for filling in the actual expenditures or actual cost of work performed(ACWP) by resource type as they occur and are recorded in the accounting system. Figure 8-4 is a continuation of the spread sheet that provides for the read out of accomplishment.

Budgeting 3T Work Sheet

WBS Element _____ Task & Resource	FY 00											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Program Milestones				▲ PDR								CDR ▲
Task Description & Milestone supported												
Time Phased Budget (BCWS)												
Equivalent Headcount												
Cum Equiv. Headcount			0	0	0	0	0	0	0	0	0	0
Labor Dollars												
Cum Labor Dollars			0	0	0	0	0	0	0	0	0	0
Subcontract Dollars												
Cum Subcontract Dollars			0	0	0	0	0	0	0	0	0	0
Materials												
Cum Material Dollars			0	0	0	0	0	0	0	0	0	0
Other Direct Charges												
Cum Other Direct Charges			0	0	0	0	0	0	0	0	0	0
Total Dollar Budget	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Budget	0	0	0	0	0	0	0	0	0	0	0	0
Actuals (ACWP)												
Equivalent Headcount (hrs/160)												
Cum Equiv. Headcount												
Actual Labor Dollars												
Cum Labor Dollars												
Subcontract Dollars												
Cum Subcontract Dollars												
Material Dollars												
Cum Material Dollars												
Other Direct Charges												
Cum Other Direct Charges												
Total Dollar Actuals												
Cum Total Dollar Actuals												

Figure 8-3 An Earned Value Spread Sheet

Figure 8-4 captures the budgeted cost of work performed (BCWP) which is simply the planned resources for that task or set of tasks, but which can only be claimed when the meaningful and measurable event has occurred. Algorithms can be established for intermediate measures of accomplishment between measurable events, such as design documents released into the configuration management system as a percentage of the current total estimated documents required. However, since these algorithms are surrogate for the meaningful measure which in the example shown is satisfactory completion of the critical design review for example, I personally would not allow more than 75% of the total accomplishment to be claimed until the actual completion milestone was met.

Earned Value Determination

WBS Element _____ Task & Resource	FY 00											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Program Milestones				▲ PDR								CDR ▲
Task Description & Milestone supported												
Work Accomished(BCWP)												
Budgeted Equivalent Heads Claimed												
Cum Labor Hrs. Claimed												
Budgeted Labor Dollars Claimed												
Cum Labor Dollars Claimed												
Budgeted Subcontract Dollars Claimed												
Cum Subcontract Dollars Claimed												
Budgeted Material Dollars Claimed												
Cum Material Dollars Claimed												
Budgeted Other Direct Charges Claimed												
Cum Other Direct Charges Claimed												
Total Work Earned This Month												
Cum Total Work Earned to Date												
Cost Variance (BCWP-ACWP)												
Labor Variance												
Sub Contract Variance												
Material Variance												
Total Cost Variance Cum to Date												
Schedule Variance (BCWS-BCWP)												
Labor												
Subcontract												
Material												
Other Direct Charge												
Total Sched. Variance Cum to Date												
Basis of Measurement of Accomplish												

Figure 8-4 Second Part of Earned Value Spread Sheet

Figure 8-5 shows one typical output from the earned value cost performance measurement system at any level of the WBS. The difference between BCWS and BCWP is the schedule variance, which can be measured either in time or dollars and the difference between BCWP and ACWP is cost variance.

There are three things to be noticed in examining this chart. First, if you were to look just at Budget (BCWS) compared to actual cost (ACWP) as a simple cost accounting system would, you would conclude that the activity shown was \$180K over budget at the end of October. Second, by including the actual accomplishment (BCWP), it becomes quickly obvious that the real variance is worse by almost a factor of two (\$330K).

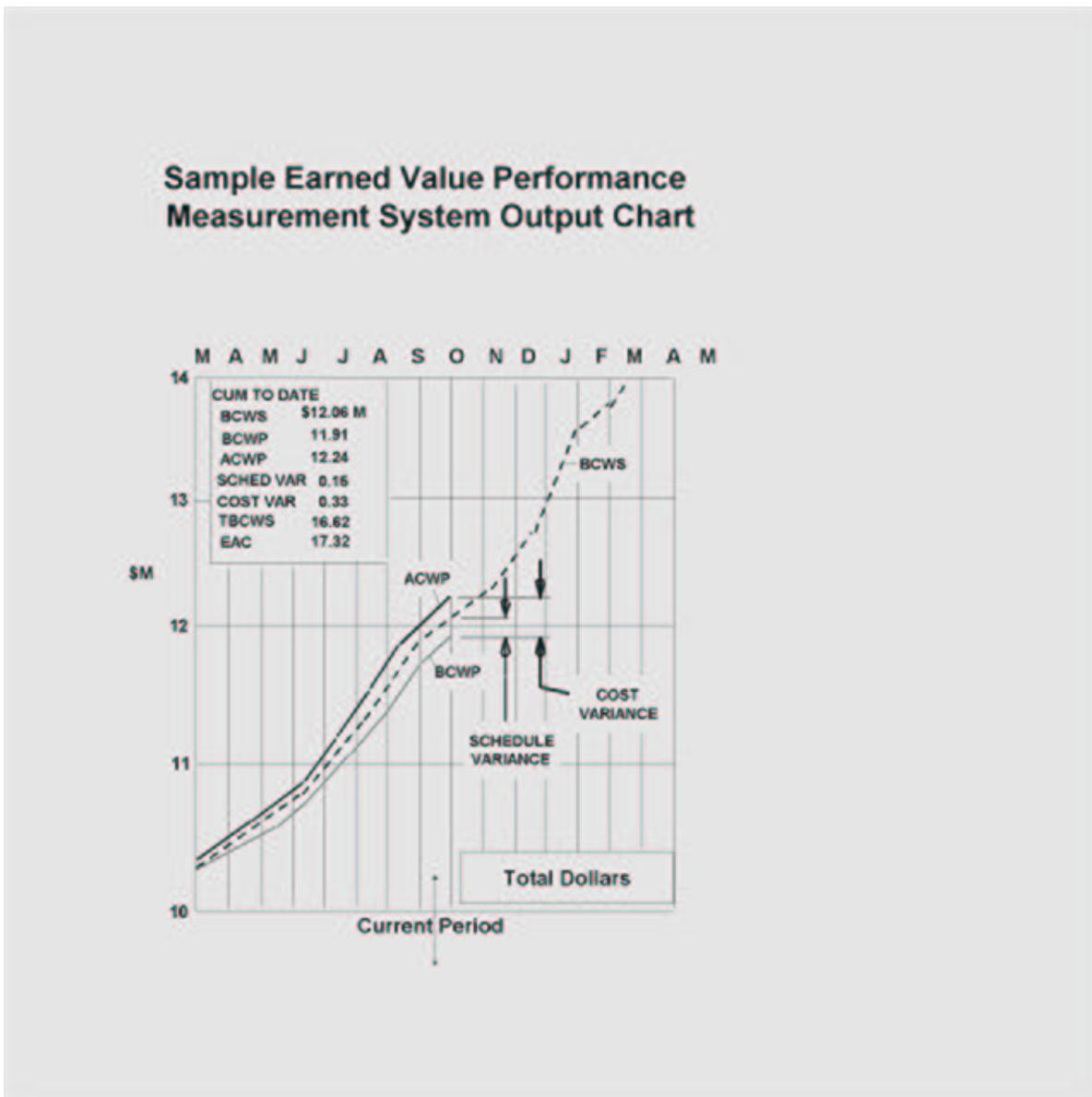


Fig. 8-5 Earned Value System Output Example

The third point is that while the total budget (TBCWS) for this activity -- which ends beyond the time window of this chart -- is \$16.62 Million, the responsible manager is projecting that the actual cost at completion (his estimate at completion or EAC) is \$17.32M for a variance of \$700K. What that manager is saying is that he or she expects that no corrective action will improve either the cost or schedule performance between the current period and completion.

Accountants seem to like this data displayed in tabular form for the current period only. I prefer to see the data in graphical form as illustrated in these figures so that recent history and trends are readily visible. This is accomplished by providing visibility to prior data for at least the last six months and future plans for the next six months. In projects with which I was associated, these data were reviewed in a monthly program cost status review, summarized by responsible segment or WBS manager. The boxes contain the digital data for precision, and the analog data gives a feel for what is happening with time.

Figures 8-6 through 8-8, also available from the data break down the overall cost data of figure 8-5 into labor and non-labor components. We can see in figure 8-4 that while the labor expenditures are right on plan, the work accomplished is a month or \$250K behind schedule. The responsible manager is not expecting this condition to worsen.

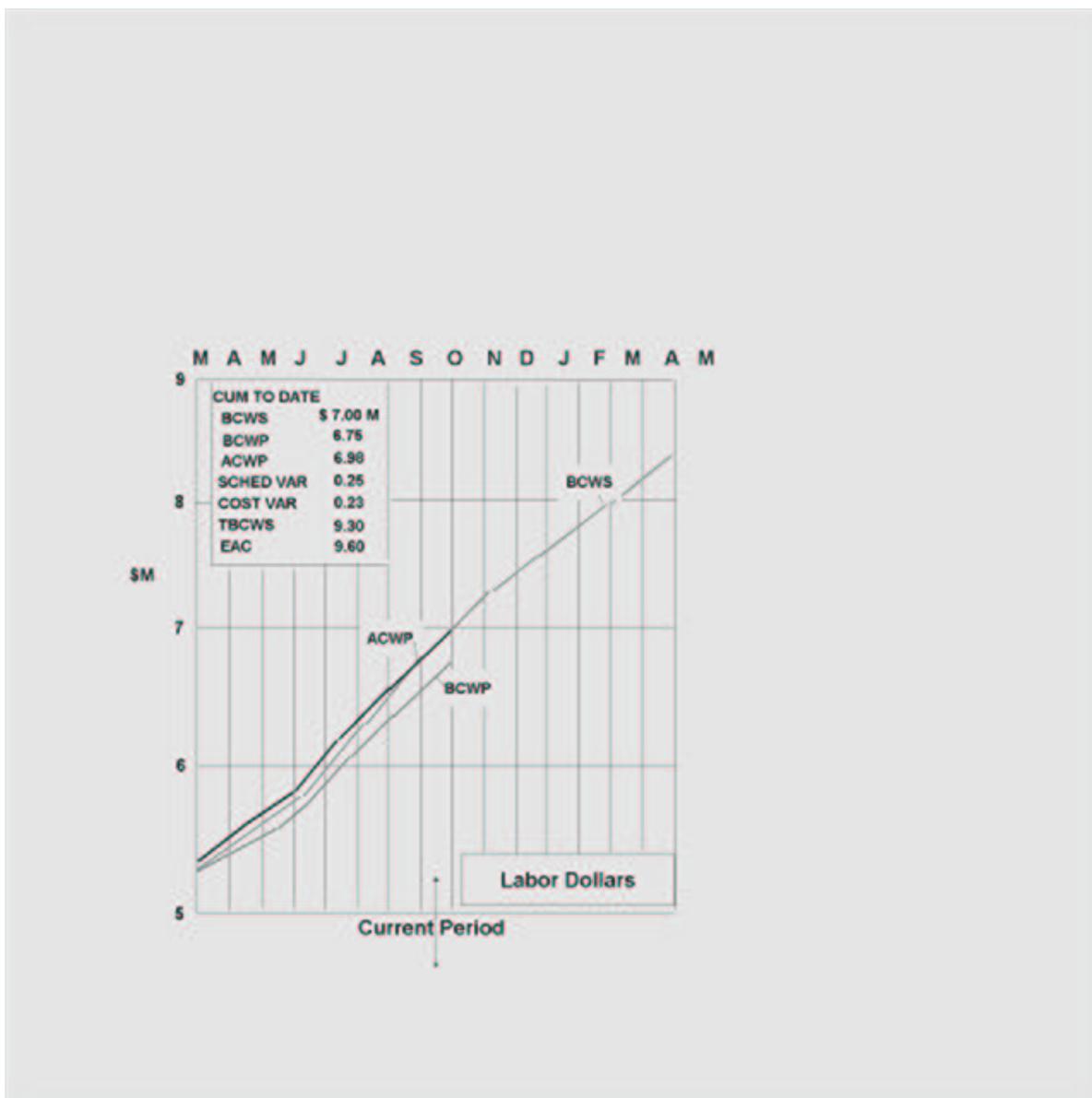


Figure 8-6 Labor Report

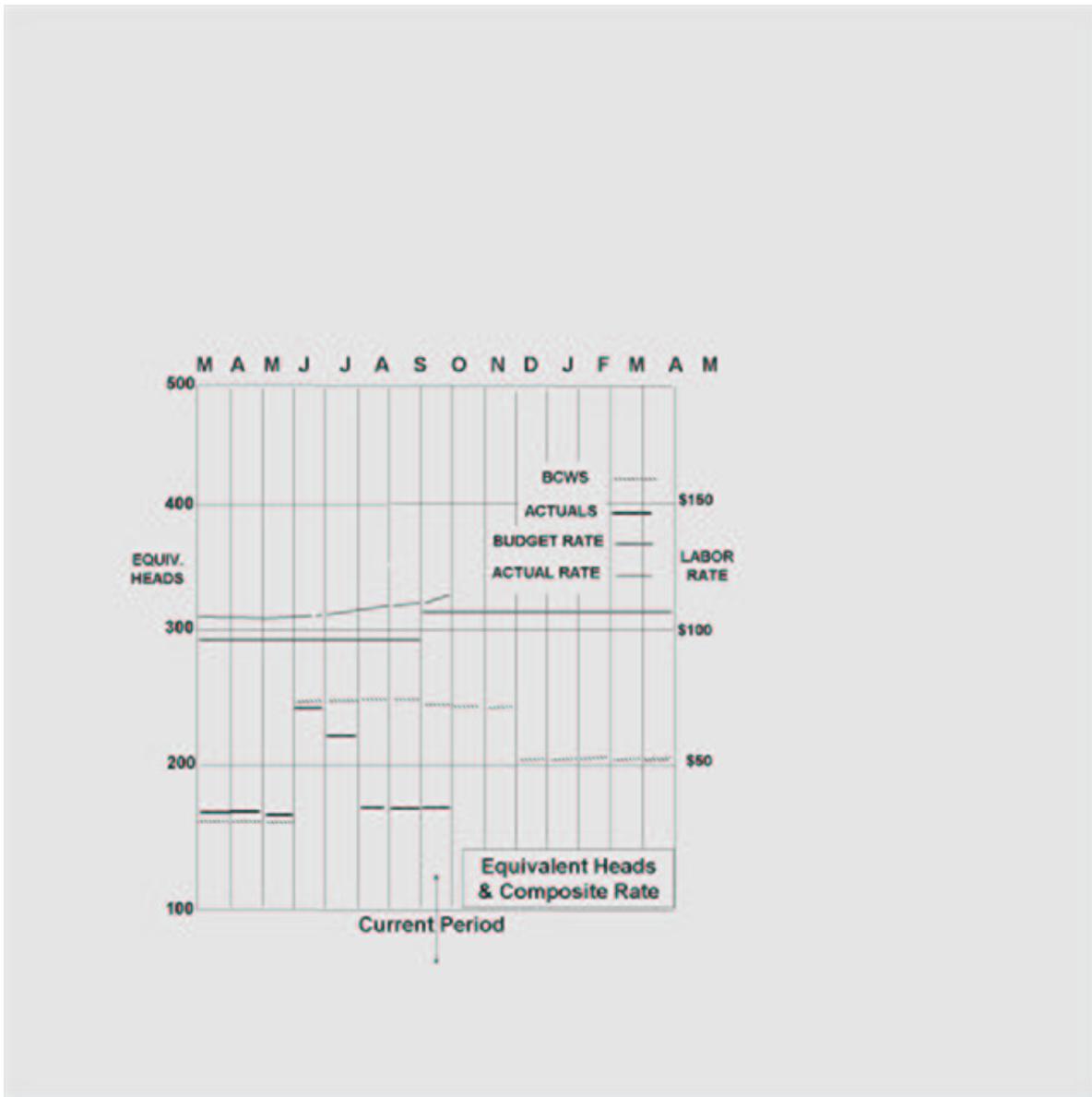
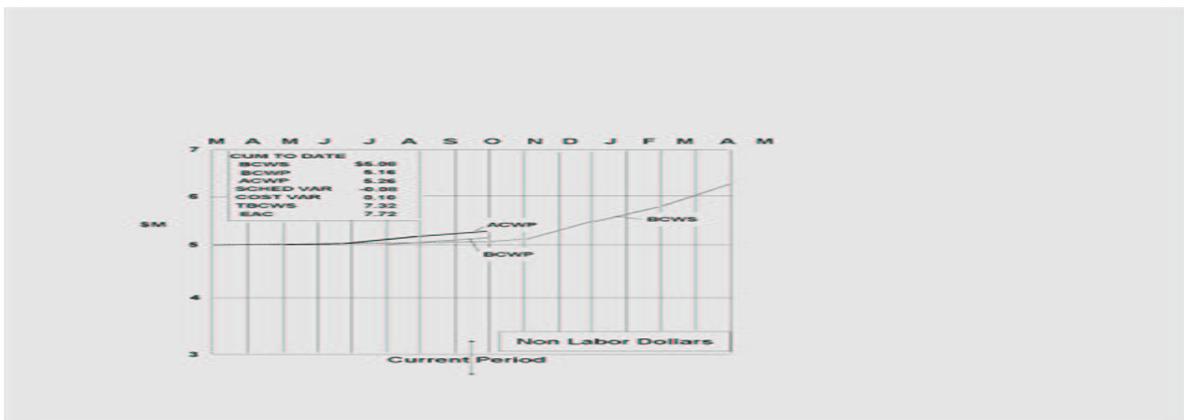


Figure 8-7 Equivalent Heads and Composite Rates

Figure 8-7 provides the data that shows where the labor problem has been. In fact the number of people working in the activity is less than planned, but the composite labor rate -- the actual direct labor rate plus burdens -- has been consistently higher than planned.



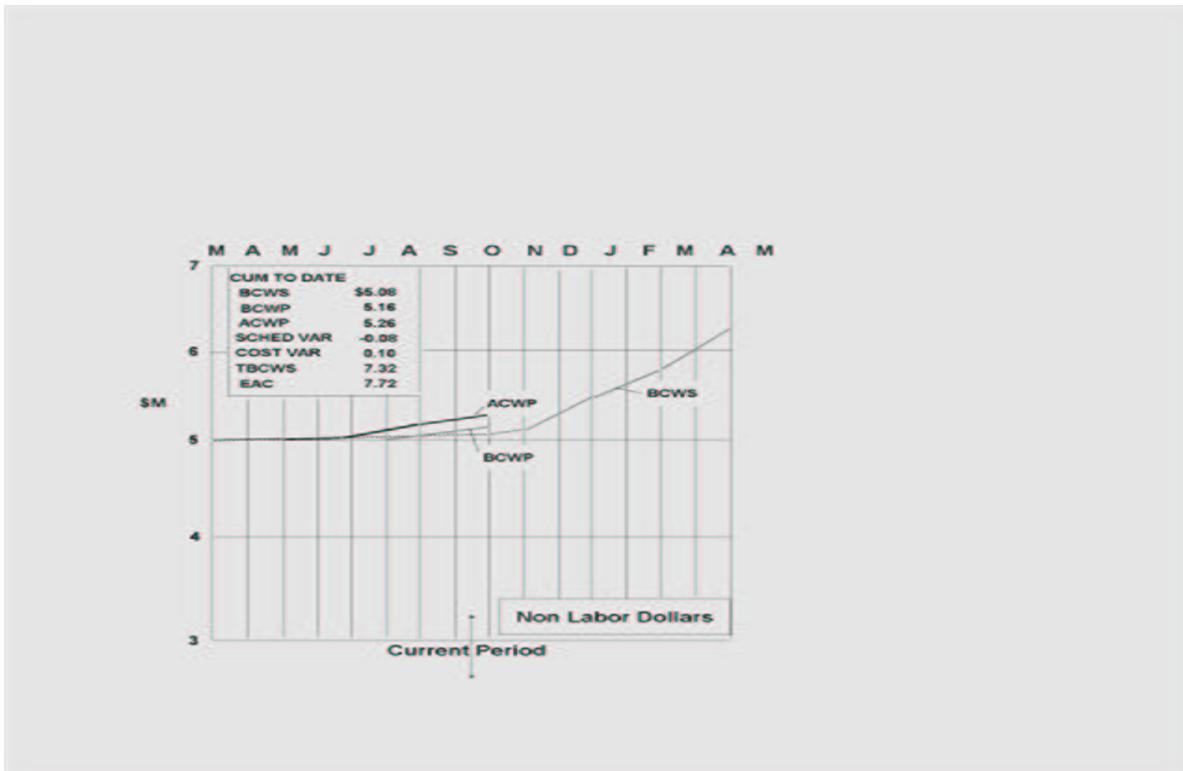


Figure 8-8 Non Labor Report

Looking then at figure 8-8, we can see that the non-labor costs of this activity are higher than planned, but the accomplishment is actually ahead of schedule.

8.7 Forecasts and accountability

It should be clear that care in the planning and estimating of the resources needed to do a set of tasks that make up each work package is an important ingredient in the project budgeting process. Similarly, it is important to be able to forecast labor and overhead rates, considering business volume, and its effects on those rates. This forecasting relies on the soundness of all the project plans in the Enterprise, but integrates them as part of the Enterprise governance as a whole.

8.8 Computers, Buildings and Machines

Computing equipment and software cost is another area that has for some reason confounded management. No one can do anything without a computer anymore. Computers of various types and capacity have become so ubiquitous that it is hard to imagine productivity without them.

8.8.1 New Technology Distorts Traditional Equipment Accounting

I worked for a company that structured its accounting system many years ago with the direct labor as the unit of work to be burdened to equitably distribute overhead cost. This made eminent sense in that the largest elements of overhead cost were in fact labor related. Employee benefits, workspace, human resources cost, general and administrative expense such as the cost of management are primarily related to the cost of labor. At the same time, the cost of fixed asset equipment such as machine tools, office machines for reproduction and data processing were purchased or leased and their amortized cost was treated as a part of overhead cost and distributed across the direct labor base that used them. This also generally made sense since all these devices were operated by people who charged their time to some work authorization.

But then came the microprocessor, and with it came computer-controlled machine tools, automated processes for manufacturing, testing, and even design, CAD/CAM and flexible machining centers. These items cost more and more and did more and more with less and less direct human participation. Often the machinist's main role is to program the machine and set up the work pieces, and sometimes not even that. There are probably more

labor hours spent on equipment maintenance than on producing product.

The same thing has taken place in the fabrication and assembly of electronics. Surface mount technology is largely automated from the circuit layout to final assembly. This includes, not only the multi-layer printed wire boards that components are mounted to, but also the very highly integrated circuit devices that can be made by a foundry to your design with only a set of design rules.

8.8.2 Implications on Costing of Equipment

Now if we take this trend to its extreme, we have a very expensive machine shop with many grand computer controlled multi-axis machines with automated raw stock delivery and loading and one machinist who mainly checks to see if things are working properly. In the electronics shop, the same thing is going on, as the design is directly translated from computer aided design data to printed wire boards with all steps automated including test. Then the parts are placed directly from tape fed inventory and wave soldered or bonded again without human intervention. One electronics technician watches to see that nothing is going amok. Does it now make any sense that the machines are an overhead cost spread against the labor hours of that single machinist or technician? Of course not! First of all, we would have an infinite overhead rate. Second there would be little relationship of cost to benefiting job. In fact the traditional roles have now been reversed. It is the machines that are doing the direct job, and the technician is spread over all jobs in the shop and should be overhead.

What happens if these expensive beauties sit idle? If you bought them, you can't just get rid of them. To dismantle and sell them you might get 10 cents on the dollar even if they are brand new. Unless you can sell their use to outside buyers, they get charged to overhead where they may take five years to write off.

The decision to buy these kinds of facilities must be connected to the specific business need that will use them. More over the execution of the job that requires them must be planned to account for the lead-time of acquiring and bringing these facilities on line *after the job is in hand*. The amortization plan and the return on investment of those specific facilities must be accountable by the project manager to that job and not spread over all of the rest of the business unless actually used by the rest of the business.

This was not the case in my company at the time. Over-optimistic managers convinced general management to make these investments on the come, and the work never materialized or disappeared. The result was an unmitigated disaster -- not once, but repeated several times. It also happened with large mainframe computers. These acquisitions which were now on the books sat idle, saddling the rest of the decreased business with an overhead cost that could not be eliminated. *And no one was held accountable*. Ironically, these same managers later complained that the cost of manufacturing in house was too expensive and non-competitive, and all manufacturing should be out-sourced.

What are the implications here? The productivity of machines and equipment has become a dominant cost element of the product and must be part of the direct cost base, not an allocated cost. This has led to the concept of "activity based accounting".

8.9 Activity Based Accounting

This approach requires a performing activity to account for all its costs including equipment and apply them only to the work going through that activity. In other words, it requires treating machines and facilities costs just as labor costs have traditionally been treated. This method can be applied to the investment in machine tools and special use facilities. It should connect investment strategy directly to new projects. Just as you don't hire workers before you have the work for them to do, you shouldn't invest in specialized equipment and facilities until the work is in hand. Using this approach, you plan the initial phases of new work that will require new equipment or facilities in order to recognize the lead time to procure and bring them on line, and to plan for interim solutions at the time the project is approved.

Just over 10 years ago, the Harvard Business School Press published an important book entitled *Cost Management for Today's Advanced Manufacturing*.⁶ This book presented a conceptual design for a new cost management system -- the work of a consortium of successful industrial corporations, academia, professional accounting firms, and government agencies. This group was created to develop a new cost management paradigm to address the needs of the computer integrated manufacturing techniques coming into wide use. One of the strong themes of this international group was that Activity-based Accounting was a crucial part of any cost management system in the contemporary manufacturing environment. The idea is that costs are incurred

by activities that are naturally and easily identified by all members of the organization. Activities are easy to relate cost and performance to, if one identifies *all* the resources used in the activity. Activity-based accounting also minimizes the amount of and mysteries associated with allocated costs such as overhead. Since investment in facilities and capital equipment can also be related to the activities that require them, management can establish a clear cost benefit relationship and measurement system. In short, activity-based accounting is responsive to the problems we have discussed in this chapter, and yet, ten years later, many Enterprises have yet to implement this type of cost management approach. Read the book.

8.10 Stability, Instability, and Unanticipated Events

One of the vagaries of the financial vernacular is the idea of fixed or uncontrollable costs. There are really few if any fixed costs. Debt service and certain vested employee benefits such as retirement plans are fixed costs because a long term obligation exists, but even here, their actual annual cost may vary with investment yields and interest rates. Some costs are more difficult and take longer to affect than others, but very few are fixed. The equipment we discussed earlier in Section 8.8.2 is an example of what some would call a fixed cost at least until those facilities were fully depreciated, or written off against profit.

When people or facilities are not being used for direct work, they must charge to something often called lost productive time or idle time. Some level of idle time is required to avoid the cost of firing and hiring, but if that level is exceeded for any length of time in an area of the Enterprise, it raises a red flag that requires corrective action. Jobs do get cancelled unexpectedly, and business that was anticipated may not materialize. Prompt response to these events is imperative, and it is a function of the management control system to provide visibility to these effects quickly.

8.10.1 A Case of What You See Ain't Necessarily What You Get (WYSANWYG)

One of the fads of the 1990's has been "outsourcing" of many functions -- most often services, and in some cases entire manufacturing functions. In the period starting about 1990, several large companies, plagued with rising and seemingly uncontrollable costs of data processing, were lured into out-sourcing this function in its entirety.

Corporate directors of information services seduced by this siren song espoused by management consultants sold all their information systems equipment and software for management information systems and the large host main frames used for technical data processing to a firm that specialized in providing data processing services. These providers, had built up a market and reputation doing this work for small and medium sized businesses that lacked the expertise to build their own management information systems. They were ready, willing, and able to expand their markets.

These service providers would provide the same services to companies who wanted to rid themselves of this "problem". They would handle payroll, cost accounting and mainframe technical host computing while shouldering the additional procurements, maintenance costs and so on. This would all be done on a fixed price 10-year basis. According to the numbers run by the consultants this was cost-effective compared to what these companies were spending to perform the function in-house.

What They Got

Several of these companies, on the recommendation of their IMS directors and consultants, took this step without considering the ramifications of a downturn in business. That down-turn in business in fact occurred across a large segment of industry and they found themselves saddled with a multi-year fixed cost for computational services that they could not use and still had to pay for. Now *that's* a fixed cost! More important to us is that it surely wasn't effective cost management. The decision-makers violated one of our principles of project management. Frequently ask "what if?"

Changes in market conditions and other effects on business volume must be considered when making cost decisions. This is just one example of how business volume instabilities can affect cost management decisions. Since computing is such a fun cost management subject, I thought it worth a chapter devoted to managing this particular resource. Chapter 9 explores some observations and ideas on this subject.

8.11 Contract Roles and Forms

In any business transaction, there is explicitly or implicitly a contract. Whether you are buying or selling, you

will be party to a purchase or sales contract. The nature of that agreement may have a lot to do with how your cost accounting system will be used for that work and what the implications are of costs exceeding estimates. Chapter 12 discusses contract forms and their applications, but it should be noted once again that in the concept of integral management, even transactions between organizations within the Enterprise deserve contracts. Therefore contract types should be of interest to every manager, not just those who are responsible for sales or buying from suppliers.

References

9. *Cost Management for Today's Advanced Manufacturing: The CAM-1 Conceptual Design* Ed. by Callie, Berliner, and James Brimson, Harvard Business School Press, 1988

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