

In other words, the comparison verifies that the correct standards were selected, and that they are properly used. The second purpose of control is that of decision making. Three useful reports are required by management in order to make effective and timely decisions:

- The project plan, schedule, and budget prepared during the planning phase.
- A detailed comparison between resources expended to date and those predetermined. This includes an estimate of the work remaining and the impact on activity completion.
- A projection of resources to be expended through program completion.

Afterwards, these reports are then supplied to both the managers and the doers. Three useful results arise through the use of these three reports, generated during a thorough decision-making stage of control:

- Feedback to management, the planners, and the doers.
- Identification of any major deviations from the current program plan, schedule, or budget.
- The opportunity to initiate contingency planning early enough that cost, performance, and time requirements can undergo corrected action without loss of resources.
- These reports, if properly prepared, provide management with the opportunity to minimize downstream changes by making proper corrections here and now. As shown in Figures 40.2 and 40.3, possible cost reductions are usually available more readily in the early project phases, but are reduced as we go further into the project life-cycle phases. Downstream the cost for changes could easily exceed the original cost of the project. This is an example of the "iceberg" syndrome, where problems become evident too late in the project to be solved easily, resulting in a very high cost to correct them.

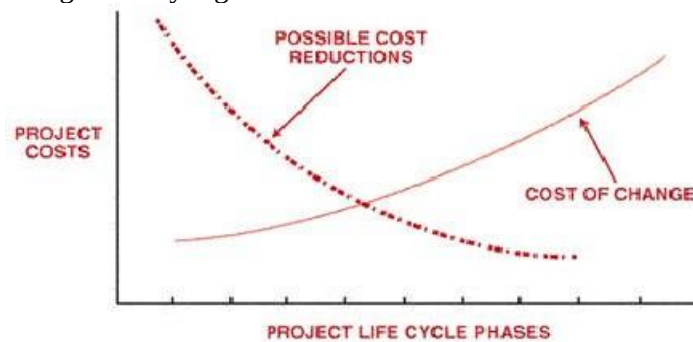


Figure 40.2: Cost Reduction Analysis

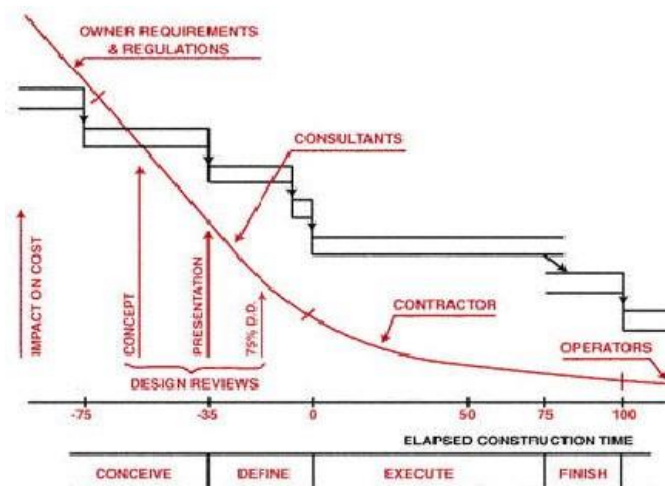


Figure 40.3: Ability to Influence Cost

40.5 Operating Cycle:

The Management Cost and Control System (MCCS) takes on paramount importance during the operating cycle of the project. The operating cycle is composed of four phases:

- Work authorization and release (phase II)
- Cost data collection and reporting (phase III)
- Cost analysis (phase IV)
- Reporting: customer and management (phase V)

These four phases, when combined with the planning cycle (**phase I**), constitute a closed system network that forms the basis for the management cost and control system.

Phase II is considered as work release. After planning is completed and a contract is received, work is authorized via a work description document. The work description, or project work authorization form, is a contract that contains the narrative description, organization, and time frame for *each* Work Breakdown Structure (WBS) level. This multipurpose form is used to release the contract, authorize planning, record detail description of the work outlined in the Work Breakdown Structure (WBS), and release work to the functional departments.

Note that the contract services may require a work description form to release the contract. The contractual work description form sets forth general contractual requirements and authorizes program management to proceed.

Program management may then issue a subdivided work description form to the functional units so that work can begin. The subdivided work description may also be issued through the combined efforts of the project team, and may be revised or amended when either the scope of time frame changes. The subdivided work description generally is not used for efforts longer than ninety days and must be "tracked" as if a project in itself. This subdivided work description form sets forth contractual requirements and planning guidelines for the applicable performing organizations.

Also, the subdivided work description package established during the proposal and updated after negotiations by the program team is incrementally released by program management to the work control centers in manufacturing engineering, publications, and program management as the authority for release of work orders to the performing organizations. The subdivided work description specifies how contractual requirements are to be accomplished, the functional organizations involved, and their specific responsibilities, and authorizes the expenditure of resources within a particular time frame.

The work control center assigns a work order number to the subdivided work description form, if no additional instructions are required, and releases the document to the performing organizations. If additional instructions are required, the work control center can prepare a more detailed work release document (shop traveler, tool order, work order release), assign the applicable work order number, and release it to the performing organization.

In addition to this, a work order number is required for all in-house direct and indirect charging. The work order number also serves as a cross-reference number for automatic assignment of the indented work breakdown structure number to labor and material data records in the computer.

In case of small companies, they can avoid this additional paperwork cost by going directly from an awarded contract to a single work order, which may be the only work order needed for the entire contract.

40.6 Cost Account Codes:

It must be noted that since project managers control resources through the line managers rather than directly, project managers end up controlling direct labor costs by opening and closing work orders. Work orders define the charge numbers for each cost account. By definition, a cost account is an identified level at a natural intersection point of the work breakdown structure and the *Organizational Breakdown Structure (OBS)* at which functional responsibility for the work is assigned, and actual direct labor, material, and other direct costs are compared with actual work performed for management control purposes.

Cost accounts are the focal point of the Management Cost and Control System (MCCS) and may comprise several work packages, as shown in Figure 40.4. Work packages are detailed short –span job or material items identified for the accomplishment of required work. To illustrate this, consider the cost account code breakdown shown in Figure 40.5 and the work authorization form shown in Figure 40.6. The work authorization form specifically identifies the cost centers that are "open" for this charge number, the man-hours available for each cost center, and the operational time period for the charge number. Because the exact dates of operation are completely defined, the charge number can be assigned perhaps as much as a year in advance of the work-begin date. This can be shown pictorially, as in Figure 40.7.

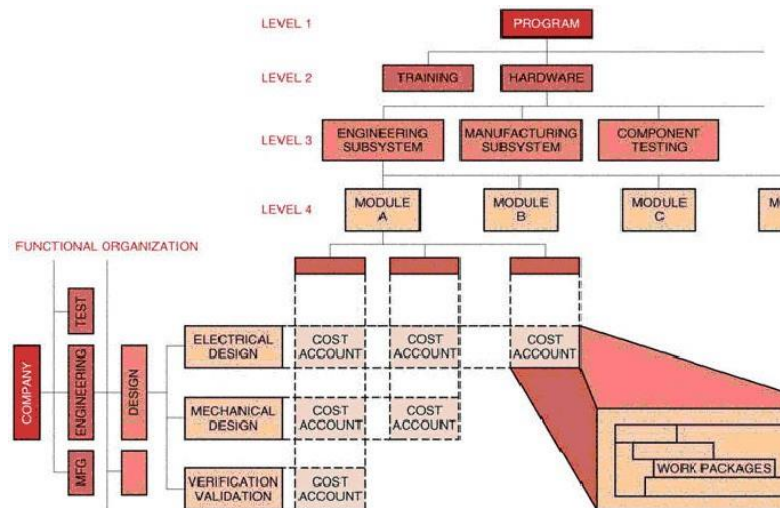


Figure 40.4: Cost Account Intersection

If the man-hours are assigned to cost center 2400, then any 24xx cost center can use this charge number. If the work authorization form specifies cost center 2610, then any 261x cost center can use the charge number.

However, if cost center 2623 is specified, then no lower cost accounts exist, and this is the only cost center that can use this work order charge number. In other words, if a charge number is opened up at the department level, then the department manager has the right to subdivide the assigned man-hours among the various sections and subsections.

Company policy usually identifies the permissible cost center levels that can be assigned in the work authorization form. These permissible levels are related to the work breakdown structure level. For example, cost center 5000 (i.e., divisional) can be assigned at the project level of the work breakdown structure, but only department, sectional, or sub-sectional cost accounts can be assigned at the task level of the work breakdown structure.

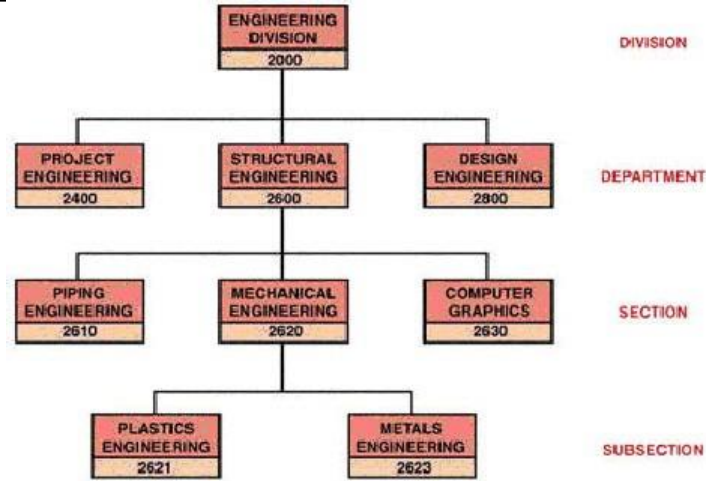


Figure 40.5: Cost Account Code Breakdown

WORK AUTHORIZATION FORM				
WBS NO: 31-03-02		WORK ORDER NO: D1385		
DATE OF ORIGINAL RELEASE: 3 FEB 93				
DATE OF REVISION: 18 MAR 93				
REVISION NUMBER: C				
DESCRIPTION	COST CENTERS	HOURS	WORK BEGINS	WORK ENDS
TEST MATERIAL VB-2 IN ACCORDANCE WITH THE PROGRAM PLAN AND MIL STANDARD G1483-52. THIS TASK INCLUDES A WRITTEN REPORT.	2400	150	1 AUG 93 ↓	15 SEPT 93 ↓
	2610	160		
	2621	140		
	2623	46		
	5000*	600		
PROJECT OFFICE AUTHORIZATION SIGNATURE _____				
*NOTE: SOME COMPANIES DO NOT PERMIT DIVISION COST CENTERS TO CHARGE AT LEVEL 3 OF THE WBS				

Figure 40.6: Work Authorization Form

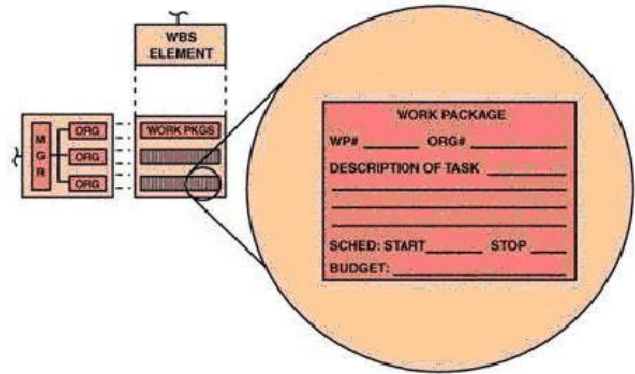


Figure 40.7: Planning and Budgeting Describe, Plan, and Schedule the Work

If a cost center needs additional time or additional man-hours, then a cost account change notice form must be initiated, usually by the requesting cost center, and approved by the project office.

The following Figure 40.8 shows a typical cost account change notice form.

CACN No. _____	Revision to Cost Account No. _____	Date _____
----------------	------------------------------------	------------

DESCRIPTION OF CHANGE:

REASON FOR CHANGE:

Requested Budget	Authorized Budget	
Labor Hours _____	_____	Period of Performance:
Material \$ _____	_____	From _____
Indirect \$ _____	_____	To _____

BUDGET SOURCE:

☐ Funded Contract Change

☐ Management Reserve

☐ Undistributed Budget

☐ Other _____

INITIATED BY: _____

APPROVALS: Program Mgr. _____

Proj. Control _____

Figure 40.8: Cost Account Change Notice (CACN)

Almost all large companies have computerized cost control and reporting systems. Small companies have manual or partially computerized systems. The major difficulty in using the cost account code breakdown and the work authorization form (shown in Figures 40.5 and 40.6) is related to whether the employees fill out time cards, and frequency with which the time cards are filled out.

Project-driven organizations fill out time cards at least once a week, and the cards are inputted to a computerized system. Non-project-driven organizations fill out time cards on a monthly basis, with computerization depending on the size of the company.

Cost data collection and reporting constitute the second phase of the operating cycle of the Management Cost and Control System (MCCS). *Actual cost for work performed (ACWP)* and the *budgeted cost for work performed (BCWP)* for each contract or in-house project are accumulated in detailed cost accounts by cost center and cost element, and reported in accordance with the flow charts shown in Figure 40.9. These detailed elements, for both actual costs incurred and the budgeted cost for work performed, are usually printed out monthly for all levels of the work breakdown structure. In addition, weekly supplemental direct labor reports can be printed showing the actual labor charge incurred, and can be compared to the predicted efforts.

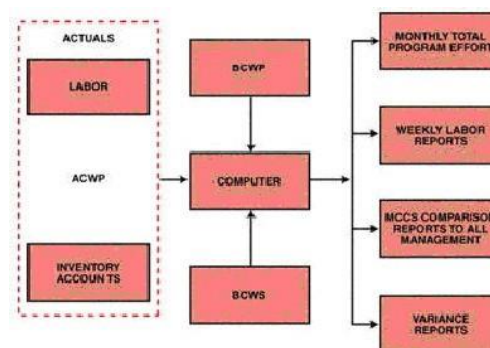


Figure 40.9: Cost Data Collection and Reporting Flow Chart

The following Table 40.1 shows a typical weekly labor report. The first column identifies the Work Breakdown Structure (WBS) number. If more than one work order were assigned to this Work Breakdown Structure (WBS) element, then the work order number would appear under the WBS number. This procedure would be repeated for all work orders under the same WBS number. The second column contains the cost centers charging to this WBS element (and possibly work order numbers). Cost Center 41xx represents department 41 and is a rollup of Cost Centers 4110, 4115, and 4118. Cost Center 4xxx represents the entire division and is a

rollup of all 4000-level departments. Cost Center xxxx represents the total for all divisions charging to this Work Breakdown Structure (WBS) element. The weekly labor reports must list all cost centers authorized to charge to this WBS element, whether or not they have incurred any costs over the last reporting period.

WBS No:	Cost Center	H \$	Weekly Actual	Current Month Subtotal	Previous Month		Year to Date		
					ACWP	BCWP	ACWP	BCWP	BC
01-03-06	4110	H	200	300	300	300	1000	1000	1
		S	1000	1500	1500	1500	5000	5000	5
	4115	H	200	300	300	300	1000	1000	1
		S	1000	1500	1500	1500	5000	5000	5
	4118	H	200	300	300	300	1000	1000	1
		S	1000	1500	1500	1500	5000	5000	5
	41XX	H	600	900	900	900	900	900	1
		S	3000	4500	4500	4500	4500	4500	4
	4443	H	100	200	400	360	800	700	1
		S	600	1200	2400	2260	4800	4200	8
	4446	H	200	400	1000	1200	2000	2000	2
		S	800	1600	4000	4800	8000	8000	9
	4448	H	300	600	1000	1200	2000	2000	2
		S	1500	3000	5000	6000	10000	10000	11
	44XX	H	600	1200	2400	2760	4800	4700	6
		S	2900	5800	11400	13060	22800	22200	29
	4XXX	H	1200	2100	3300	3660	5700	5600	6
		S	5900	10300	15900	17560	27300	26700	33
	XXXX	H	8000	18000	20000	19000	50000	48000	47
		S	56000	126000	140000	133000	350000	336000	329

Table 40.1: Weekly Labor Report

Note that most weekly labor reports provide current month subtotals and previous month totals. Although these also appear on the detailed monthly report, they are included in the weekly report for a quick and dirty comparison. Year-to-date totals are usually not on the weekly report unless the users request them for an immediate comparison to the *estimate at completion (EAC)* and the work order release.

Weekly labor output is a vital tool for members of the program office in that these reports can indicate trends in cost and performance in sufficient time for contingency plans to be established and implemented. If these reports are not available, then cost and labor overruns would not be apparent until the following month when the detailed monthly labor, cost, and materials output was obtained. In Table 40.1, Cost Center 4110 has spent its entire budget. The work appears to be completed on schedule. The responsible program office team may wish to eliminate this cost center's authority to continue charging to this Work Breakdown Structure (WBS) element by issuing a new SWD or work order canceling this department's efforts. Cost Center 4115 appears to be only halfway through.

If time is becoming short, then Cost Center 4115 must add resources in order to meet requirements. Cost Center 4443 appears to be heading for an overrun. This could also indicate a management reserve. In this case the responsible program team member feels that the work can be accomplished in fewer hours.

Work order releases are used to authorize certain cost centers to begin charging their time to a specific cost reporting element. Work orders specify hours, not dollars. The hours indicate the "targets" that the program office would like to have the department shoot for. If the program office wished to be more specific and "compel" the departments to live within these hours, then the *budgeted cost for work scheduled (BCWS)* should be changed to reflect the reduced hours.

Four categories of cost data are normally accumulated:

- Labor
- Material
- Other direct charges
- Overhead

We know that the project managers can maintain reasonable control over labor, material, and other direct charges.

On the other hand, overhead costs are calculated yearly or monthly and applied retroactively to all applicable programs. Management reserves are often used to counterbalance the effects of adverse changes in overhead rates.

40.7 **Budgets:**

The project budget, which is the final result of the planning cycle of the Management Cost and Control System (MCCS), must be **reasonable**, **attainable**, and based on:

- Contractually negotiated costs, and
- The statement of work

The basis for the budget is:

- Historical cost,
- Best estimates, or
- Industrial engineering standards

The budget must identify:

- Planned manpower requirements,
- Contract allocated funds, and
- Management reserve.

All budgets must be traceable through the budget "log," which includes:

- Distributed budget
- Management reserve
- Undistributed budget
- Contract changes

It is important to note that the management reserve is the dollar amount established by the project office to budget for all categories of unforeseen problems and contingencies resulting in out-of-scope work to the performers. Management reserve should be used for tasks or dollars, such as rate changes, and not to cover up bad planning estimates or budget overruns. When a significant change occurs in the rate structure, the total performance budget should be adjusted.

In addition to the "normal" performance budget and the management reserve budget, there also exists the following:

- **Undistributed budget**, which is that budget associated with contract changes where time constraints prevent the necessary planning to incorporate the change into the performance budget. (This effort may be time-constrained.)
- **Unallocated budget**, which represents a logical grouping of contract tasks that have not yet been identified and/or authorized.

Variance:

A variance is defined as any schedule, technical performance, or cost deviation from a specific plan. Variances are used by all levels of management to verify the budgeting system and the scheduling system. The budgeting and scheduling system variance must be compared together because:

- The cost variance compares deviations only from the budget and does not provide a measure of comparison between work scheduled and work accomplished.

- The scheduling variance provides a comparison between planned and actual performance but does not include costs.

There are two primary methods of measurement:

- **Measurable efforts:** Discrete increments of work with a definable schedule for accomplishment, whose completion produces tangible results.
- **Level of effort:** Work that does not lend itself to subdivision into discrete scheduled increments of work, such as project support and project control.

Variances are used on both types of measurement:

In order to calculate variances we must define the three basic variances for budgeting and actual costs for work scheduled and performed. Archibald defines these variables:

- Budgeted cost for work scheduled (BCWS) is the budgeted amount of cost for work scheduled to be accomplished plus the amount or level of effort or apportioned effort scheduled to be accomplished in a given time period.
- Budget cost for work performed (BCWP) is the budgeted amount of cost for completed work, plus budgeted for level of effort or apportioned effort activity completed within a given time period. This is sometimes referred to as "earned value."
- Actual cost for work performed (ACWP) is the amount reported as actually expended in completing the work accomplished within a given time period.

COST MANAGEMENT AND CONTROL IN PROJECTS**BROAD CONTENTS**

Budget
Variances & Earned Value
ACWP, BCWS, BCWP
Cost & Schedule Variance
CPI, SPI
Variance Analysis (V/A)
Depreciation & Ethics

41.1 Budgets

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- Contractually Negotiated Costs And
- The Statement of Work.

The basis for the budget is:

- Historical Cost,
- Best Estimates, Or
- Industrial Engineering Standards.

The budget must identify:

- Planned Manpower Requirements,
- Contract Allocated Funds, And
- Management Reserve.

All budgets must be traceable through the budget "log," which includes:

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- Management reserve
- Undistributed budget
- Contract changes

Management reserve is the dollar amount established by the project office to budget for all categories of unforeseen problems and contingencies resulting in out-of-scope work to the performers. Management reserve should be used for tasks or dollars, such as rate changes, and not to cover up bad planning estimates or budget overruns. When a significant change occurs in the rate structure, the total performance budget should be adjusted.

In addition to the "normal" performance budget and the management reserve budget, there also exists the following: Undistributed budget, which is that budget associated with contract changes where time constraints prevent the necessary planning to incorporate the change into the performance budget. (This effort may be time-constrained.) Unallocated budget, which represents a logical grouping of contract tasks that have not yet been identified and/or authorized.

41.2 Variance

Variance is defined as any schedule, technical performance, or cost deviation from a specific plan. Variances are used by all levels of management to verify the budgeting system and the scheduling system. The budgeting and scheduling system variance must be compared together because:

The cost variance compares deviations only from the budget and does not provide a measure of comparison between work scheduled and work accomplished.

The scheduling variance provides a comparison between planned and actual performance but does not include costs.

There are two primary methods of measurement:

Measurable efforts: discrete increments of work with a definable schedule for accomplishment, whose completion produces tangible results.

Level of effort: work that does not lend itself to subdivision into discrete scheduled increments of work, such as project support and project control.

41.2.1 Variances are used on both types of measurement. In order to calculate variances we must define the three basic variances for budgeting and actual costs for work scheduled and performed. Archibald defines these variables:

Budgeted cost for work scheduled (BCWS) is the budgeted amount of cost for work scheduled to be accomplished plus the amount or level of effort or apportioned effort scheduled to be accomplished in a given time period.

Budget cost for work performed (BCWP) is the budgeted amount of cost for completed work, plus budgeted for level of effort or apportioned effort activity completed within a given time period. This is sometimes referred to as "earned value."

Actual cost for work performed (ACWP) is the amount reported as actually expended in completing the work accomplished within a given time period.

Planned Value (PV) What Plan should be worth at this point in "Schedule". Also BCWS: Budgeted amount of "Cost for work Schedule" to be accomplished Plus "Amount or level of effort for "Schedule" to be Accomplished at a given time period.

Earned Value (EV) Physical work completed to date & with in authorized "Budget" for that.

The budget at completion is the sum of all budgets (BCWS) allocated to the project. This is often synonymous with the project baseline. This is what the total effort should cost. The estimate at completion identifies either the dollars or hours that represent a realistic appraisal of the work when performed. It is the sum of all direct and indirect costs to date plus the estimate of all authorized work remaining ($EAC = \text{cumulative actuals} + \text{the estimate-to-complete}$).

Using the above definitions, we can calculate the variance at completion (VAC):

$$VAC = BAC - EAC$$

The estimate at completion (EAC) is the best estimate of the total cost at the completion of the project. The EAC is a periodic evaluation of the project status, usually on a monthly basis or until a significant change has been identified. It is usually the responsibility of the performing organization to prepare the EAC.

These costs can then be applied to any level of the work breakdown structure (i.e., program, project, task, subtask, work package) for work that is completed, in-program, or anticipated. Using these definitions, the following variance definitions are obtained:

Cost variance (CV) calculation:

$$CV = BCWP - ACWP$$

A negative variance indicates a cost-overflow condition.

Schedule variance (SV) calculation:

$$SV = BCWP - BCWS$$

A negative variance indicates a behind-schedule condition.

In the analysis of both cost and schedule, costs are used as the lowest common denominator. In other words, the schedule variance is given as a function of cost. To alleviate this problem, the variances are usually converted to percentages:

$$\text{Cost variance \% (CVP)} = \frac{CV}{BCWP}$$

$$\text{Schedule variance \% (SVP)} = \frac{SV}{BCWS}$$

The schedule variance may be represented by hours, days, weeks, or even dollars.

As an example, consider a project that is scheduled to spend \$100K for each of the first four weeks of the project. The actual expenditures at the end of week four are \$325K. Therefore, BCWS = \$400K and ACWP = \$325K. From these two parameters alone, there are several possible explanations as to project status. However, if BCWP is now known, say \$300K, and then the project is behind schedule and overrunning costs.

Variances are almost always identified as critical items and are reported to all organizational levels. Critical variances are established for each level of the organization in accordance with management policies.

Not all companies have a uniform methodology for variance thresholds. Permitted variances may be dependent on such factors as:

- Life-cycle phase
- Length of life-cycle phase
- Length of project
- Type of estimate
- Accuracy of estimate

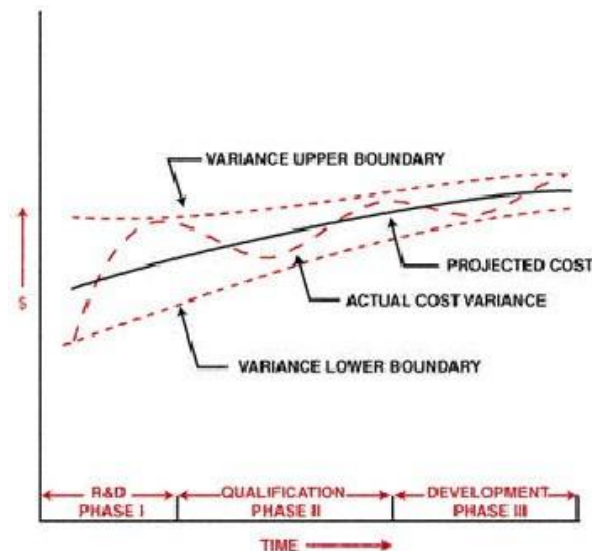


Figure 41.1: Project variance projections

Figure 41.1 shows time-phased cost variances for a program requiring research and development, qualification, and production phases. Since the risk should decrease as time goes on, the variance boundaries are reduced. Figure 41.2 shows that the variance envelope in such a case may be dependent on the type of estimate.

LIFE CYCLE PHASE	MANPOWER REQUIRED	\$ REQUIRED	TIME DURATION	TYPE OF ESTIMATE	ACCURACY	PERMITTED VARIANCE
MAIN	16,000 HRS.	1,285,600	6 MOS	HISTORY	±5%	±2%

Figure 41.2: Methodology to variance

By using both cost and schedule variance, we can develop an integrated cost/schedule reporting system that provides the basis for variance analysis by measuring cost performance in relation to work

accomplished. This system ensures that both cost budgeting and performance scheduling are constructed on the same database.

COST PERFORMANCE INDEX (CPI)

41.2.2 In addition to calculating the cost and schedule variances in terms of dollars or percentages, we also want to know how efficiently the work has been accomplished. The formulas used to calculate the performance efficiency as a percentage of BCWP are:

$$\text{Cost performance index (CPI)} = \frac{\text{BCWP}}{\text{ACWP}}$$

$$\text{Schedule performance index (SPI)} = \frac{\text{BCWP}}{\text{BCWS}}$$

If CPI = 1.0, we have perfect performance. If CPI > 1.0, we have exceptional performance. If CPI < 1.0, we have poor performance. The same analysis can be applied to the SPI.

Variance Analysis

41.2.3 The cost and schedule performance index is most often used for trend analysis as shown in Figure 41.3. Companies use either three-month, four-month, or six-month moving averages to predict trends. The usefulness of trend analysis is to take corrective action to alleviate unfavorable trends by having an early warning system. Unfortunately, effective use of trend analysis may be restricted to long-term projects because of the time needed to correct the situation.

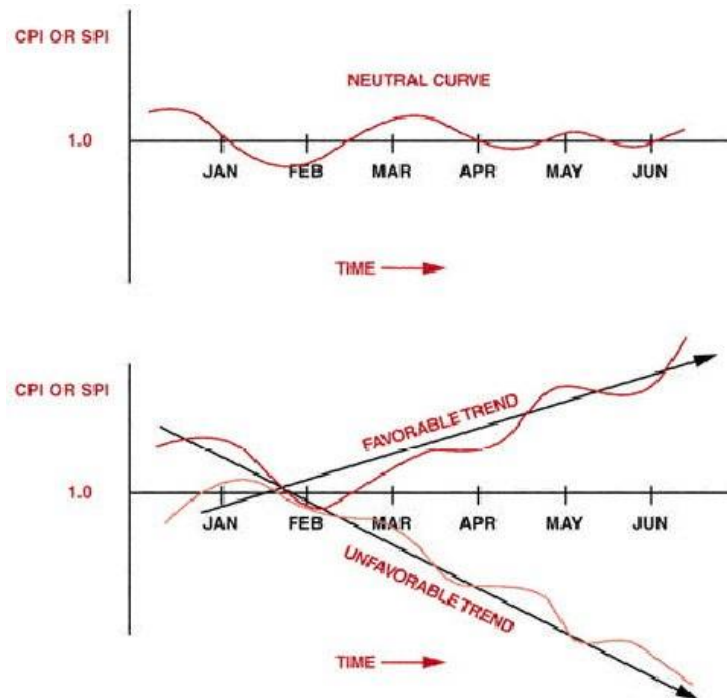


Figure 41.3: The performance index

Figure 41.4 shows an integrated cost/schedule system. The figure identifies a performance slippage to date. This might not be a bad situation if the costs are proportionately under-run. However, from the upper portion of Figure 41.4, we find that costs are overrun (in comparison to budget costs), thus adding to the severity of the situation.

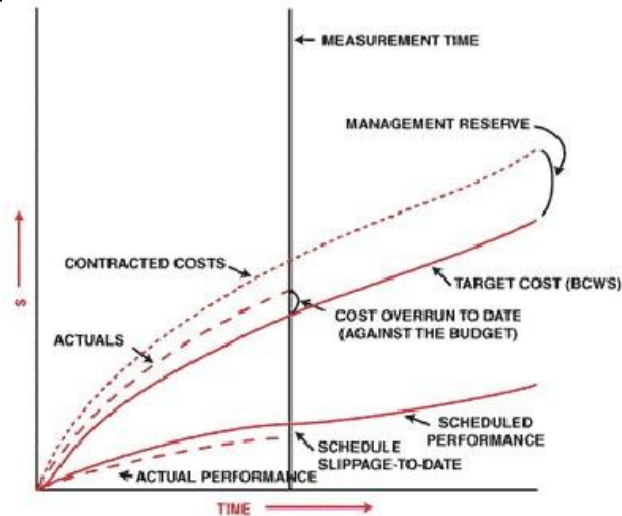


Figure 41.4: Integrated cost/schedule system

Also shown in Figure 41.4 is the management reserve. This is identified as the difference between the contracted cost for projected performance to date and the budgeted cost. Management reserves are the contingency funds established by the program manager to counteract unavoidable delays that can affect the project's critical path.

For variance analysis, goal of cost account Manager To take action that will correct problem within original budget or justify a new estimation.

Five Questions must be addressed during variance analysis:

- What is the problem causing the variance?
- What is the impact on time, cost, and performance?
- What is the impact on other efforts, if any?
- What corrective action is planned or under way?
- What are the expected results of the corrective action?

One of the key parameters used in variance analysis is the "earned value" concept, which is the same as BCWP. Earned value is a forecasting variable used to predict whether the project will finish over or under the budget. As an example, on June 1, the budget showed that 800 hours should have been expended for a given task. However, only 600 hours appeared on the labor report. Therefore, the performance is $(800/600) \times 100$, or 133 percent, and the task is under running in performance. If the actual hours were 1,000, the performance would be 80 percent, and an overrun would be occurring.

The difficulty in performing variance analysis is the calculation of BCWP because one must predict the percent complete. To eliminate this problem, many companies use standard dollar expenditures for the project, regardless of percent complete. For example, we could say that 10 percent of the costs are to be "booked" for each 10 percent of the time interval. Another technique, and perhaps the most common, is the 50/50 rule:

50/50 rule

Half of the budget for each element is recorded at the time that the work is scheduled to begin, and the other half at the time that the work is scheduled to be completed. For a project with a large number of elements, the amount of distortion from such a procedure is minimal. 50/50 rule eliminate the necessity for the continuous determination of percent complete.

41.3 Depreciation

41.3.1 Depreciation is the technique used to compute "Estimated value" of any object after few years. Some types are:

1. Straight line depreciation same amount depreciated (reduced) from cost each year.
2. Double-declining balance First year - high “Deduction in value” Twice amount of straight line. Each year after that deduction 40% less than previous year.
3. Sum of year depreciation If life - 5 years. Total of 1-5 is 15 first year deduce 5/15 from cost, in 2nd year Deduce 4/15, & so on.

41.3.2 Parametric Modeling Estimation

This is the use of mathematical model to make estimation. Following are the two types of PME.

Regression Analysis: Mathematical model based upon historical information.

Learning Curve: Model based upon principal Cost/unit describes as more work, Gets completed.

41.3.3 Analogous Estimating

Estimation technique with characteristics Estimation based on past Project (historical information) less accurate compared to bottom-up estimation Top-down approach Takes less time compared to bottom-up estimation Form of an expert judgment.

41.3.4 Ethics

Ethics are standards of right & wrong that influence behavior. Right behavior is considered ethical & wrong behavior is considered unethical. Major concern to both managers & employee.

A set of beliefs about right & wrong principles of conduct governing an individual or a group behavior that is fair & just, over & above obedience to laws & regulations

Ethics guide people in dealings with stock holders & others, to determine appropriate actions. Project Manager often must choose between the conflicting interests of stakeholders.

PROJECT MANAGEMENT THROUGH LEADERSHIP**BROAD CONTENTS**

Leadership
Transformational leadership
Vision
Leadership grid & managerial grid

42.1 Leadership

Leadership is a process of getting things done through people. The quarterback moves the team toward a touchdown. The senior patrol leader guides the troop to a high rating at the camporee. The mayor gets the people to support new policies to make the city better. These leaders are getting things done by working through people -- football players, Scouts, and ordinary citizens. They have used the process of leadership to reach certain goals.

Leadership is not a science. So being a leader is an adventure because you can never be sure whether you will reach your goal -- at least this time. The touchdown drive may end in a fumble. The troop may have a bad weekend during the camporee. Or the city's citizens may not be convinced that the mayor's policies are right. So these leaders have to try again, using other methods. But they still use the same *process* the process of good leadership.

Leadership means responsibility. It's adventure and often fun, but it always means responsibility. The leader is the guy the others look to to get the job done. So don't think your job as a troop leader or a staff member will be just an honor. It's more than that. It means that the other Scouts expect you to take the responsibility of getting the job done. If you lead, they will do the job. If you don't, they may expect you to do the job all by yourself.

That's why it's important that you begin right now to learn what leadership is all about.

Wear your badge of office proudly. It does not automatically make you a good leader. But it identifies you as a Scout who others want to follow -- if you'll let them by showing leadership.

You are not a finished leader. No one ever is, not even a president or prime minister. But you are an explorer of the human mind because now you are going to try to learn how to get things done through people. This is one of the keys to leadership.

You are searching for the secrets of leadership. Many of them lie locked inside you. As you discover them and practice them, you will join a special group of people-skilled leaders.

Good exploring -- both in this handbook and with the groups you will have a chance to lead.

The Tasks of Leadership

In this section, we will consider several common statements about the people who serve in leadership positions throughout our world. After you have read the statement, decide for yourself whether you feel it is true or false and why you think it is.

Here is the first one. True or false?

The only people who lead have some kind of leadership job, such as chairman, coach, or king.

Do you think that's true? Don't you believe it. It's true that chairmen, coaches, and kings lead, but people who hold no leadership position also lead. And you can find some people who have a leader's title and ought to lead. But they don't.

In other words, you are not a leader because you wear the leader's hat or because you wear the patrol leader's insignia on your uniform. You are a leader only when you are getting things done through other people.

Leadership, then, is something people do. Some people inherit leadership positions, such as kings, or nobles, or heads of family businesses. Some are elected: chairman, governor, patrol leader. Some are appointed, such as a coach, a city manager, or a den chief. Or they may just happen to be there when a situation arises that demands leadership. A disaster occurs, or a teacher doesn't show up when class begins, or a patrol leader becomes sick on a campout.

Try this statement. Is it true or false?

Leadership is a gift. If you are born with it, you can lead. If you are not, you can't.

Some people will tell you that. Some really believe it. But it's not so.

Leadership does take skill. Not everyone can learn all the skills of leadership as well as anyone else. But most people can learn some of them -- and thus develop their own potential.

You don't have to be born with leadership. Chances are, you weren't. But you were born with a brain. If you can learn to swim or play checkers or do math, you can learn leadership skills.

How about this statement. True or false?

"Leader" is another word for "boss."

Well, what do you mean by "boss"? A guy who pushes and orders other people around? No, a leader is not one of those. (But some people try to lead this way.)

Or do you mean a boss is somebody who has a job to do and works with other people to get it done?

This is true. A leader is a boss in that sense.

True or false?

Being a leader in a Scout troop is like being a leader anywhere else.

This one is true. When you lead in a Scout troop, you will do many of the same things as any leader anywhere.

The important thing now is Scouting gives you a chance to lead. You can learn *how* to lead in Scouting. You can practice leadership in Scouting. Then you can lead other groups, too. The skills you will need are very much the same.

What does a leader deal with?

Every leader deals with just two things. Here they are: the **job** and the **group**.

The job is what's to be done. The "job" doesn't necessarily mean work. It could be playing a game. It could be building a skyscraper. It could be getting across an idea.

A leader is needed to get the job done. If there were no job, there would be no need for a leader.

The group, such as a patrol, is the people who do the job. And in many cases, the group continues after the job is done. This is where leading gets tough, as you'll see later.

Think about this situation. Mark has a lot of firewood to split. There he is, all alone with his ax. He's got a job to do. Is he a leader?

We have to say in this situation that Mark won't be leading. Why? No group. There's nobody on the job but Mark.

Here's another example. Danny and three of his friends are on their bikes. They have no place to go. They're just riding slowly, seeing how close they can get to each other.

Is Danny -- or any one of the others -- a leader?

From what we know, we have to say no. Why? No job. There's a group of friends, but nothing special to be done. You don't need a leader for that. (You don't need a group, either.)

The Job of a Leader

A leader works with two things: a job and a group. You can always tell when a leader succeeds, because:

1. The job gets done.
2. The group holds together.

Let's see why it takes both.

Frank was elected patrol leader. That same week, the patrol had a job cleaning up an old cemetery.

It was Frank's first leadership position, and he wanted it to go right. In his daydream he could see the Scoutmaster praising him for the great cleanup job. So, when Saturday morning came, Frank and the patrol went over to the cemetery, and Frank started to get the job done.

He hollered. He yelled. He threatened. He called them names. He worked like a tiger himself. It was a rough day, but the cemetery got cleaned up.

Frank went home sort of proud, sort of mad, and very tired.

"How'd things go, Frank?" the Scoutmaster asked a few days later.

"Good."

"No problems?"

"No." Frank wondered what he meant by that.

"Oh! Well, a couple of the boys in your patrol asked me if they could change to another patrol. I thought maybe something had gone wrong. "

And that was how Frank learned that getting the job done isn't all there is to leadership. He had really given the group a hard time, and now they wanted to break up.

Almost anybody with a whip and a mean temper can get a job done. But in doing it, they usually destroy the group. And that's not leadership. The group must go on.

Another new patrol leader called a meeting at his house. Everybody seemed to be hungry when they came. So they got some snacks from the kitchen. Then they tossed a football around. It began to get dark, and one by one they went home. Everybody had fun. But the patrol meeting -- the job -- never started.

One of the following statements is the message of this section. Which one?

- a. Nice guys finish last.
- b. Mean guys finish last.
- c. Leaders get the job done and keep the group going.
- d. Leaders have a special title or badge that makes others like to follow.

We'll take the third one. Will you?

What affects leadership?

Leadership is not magic that comes out of a leader's head. It's skill. The leader learns how to get the job done and still keep the group together.

Does this mean that the leader does the same things in every situation? No. Here's why.

Leadership differs with the *leader*, the *group*, and the *situation*.

Leaders -- like other people are all different. No leader can take over another leader's job and do it the same way.

Groups are different, too. A great football coach might have difficulty leading an orchestra. A good sergeant might be a poor Scoutmaster. So when a leader changes groups, he changes the way he leads.

Situations differ, too. The same leader with the same group must change with conditions. A fellow leading a group discussion needs to change his style of leadership when a fire breaks out. As a Scout leader, you probably can't lead the group in the rain the same as you do in the sunshine.

An effective leader, then, must be alert at all times to the reaction of the members of the group; the conditions in which he may find himself; and be aware of his own abilities and reactions.

Leadership Develops

Picture a long scale like a yardstick. On the low end, there are no leadership skills. On the other end, there is a complete set of leadership skills.

Everyone is somewhere between those ends!

Where do you find yourself at this time? Unknowingly, you may be further up the scale than you realize. As a staff member you'll now have the opportunity to find out.

Ten Characteristics of a Leader

After some years of carefully considering Greenleaf's original writings, I have identified a set of ten characteristics of the leader that I view as being of critical importance--central to the development of leaders. My own work currently involves a deepening understanding of the following characteristics and how they contribute to the meaningful practice of leadership. These ten characteristics include:

Listening: Leaders have traditionally been valued for their communication and decisionmaking skills. Although these are also important skills for the leader, they need to be reinforced by a deep commitment to listening intently to others. The leader seeks to identify the will of a group and helps to clarify that will. He or she listens receptively to what is being said and unsaid. Listening also encompasses getting in touch with one's own inner voice. Listening, coupled with periods of reflection, are essential to the growth and well-being of the leader.

Empathy: The leader strives to understand and empathize with others. People need to be accepted and recognized for their special and unique spirits. One assumes the good intentions of co-workers and colleagues and does not reject them as people, even when one may be forced to refuse to accept certain behaviors or performance. The most successful leaders are those who have become skilled empathetic listeners.

Healing: The healing of relationships is a powerful force for transformation and integration. One of the great strengths of leadership is the potential for healing one's self and one's relationship to others. Many people have broken spirits and have suffered from a variety of emotional hurts. Although this is a part of being human, leaders recognize that they have an opportunity *to help make whole* those with whom they come in contact. In his essay, *The Servant as Leader*, Greenleaf writes, "There is something subtle communicated to one who is being served and led if, implicit in the compact between leader and led, is the understanding that the search for wholeness is something they share."

Awareness: General awareness, and especially self-awareness, strengthens the leader. Awareness helps one in understanding issues involving ethics, power and values. It lends itself to being able to view most situations from a more integrated, holistic position. As Greenleaf observed: "Awareness is not a giver of solace--it is just the opposite. It is a disturber and an awakener. Able leaders are usually sharply awake and reasonably disturbed. They are not seekers after solace. They have their own inner serenity."

Persuasion: Another characteristic of leaders is a reliance on persuasion, rather than on one's positional authority, in making decisions within an organization. The leader seeks to convince others, rather than coerce compliance. This particular element offers one of the clearest distinctions between the traditional authoritarian model and that of leadership. The leader is effective at building consensus within groups. This emphasis on persuasion over coercion finds its roots in the beliefs of the Religious Society of Friends (Quakers)--the denominational body to which Robert Greenleaf belonged.

Conceptualization: Leaders seek to nurture their abilities to *dream great dreams*. The ability to look at a problem or an organization from a conceptualizing perspective means that one must think beyond day-to-day realities. For many leaders, this is a characteristic that requires discipline and practice. The traditional leader is consumed by the need to achieve short-term operational goals. The leader who wishes to also be a leader must stretch his or her thinking to encompass broader-based conceptual thinking. Within organizations, conceptualization is, by its very nature, the proper role of boards of trustees or directors. Unfortunately, boards can sometimes become involved in the day-to-day operations--something that should always be discouraged--and, thus, fail to provide the visionary concept for an institution. Trustees need to be mostly conceptual in their orientation, staffs need to be mostly operational in their perspective, and the most effective executive leaders probably need to develop both perspectives within themselves. Leaders are called to seek a delicate balance between conceptual thinking and a day-to-day operational approach.

Foresight: Closely related to conceptualization, the ability to foresee the likely outcome of a situation is hard to define, but easier to identify. One knows foresight when one experiences it. Foresight is a characteristic that enables the leader to understand the lessons from the past, the realities of the present, and the likely consequence of a decision for the future. It is also deeply rooted within the intuitive mind. Foresight remains a largely unexplored area in leadership studies, but one most deserving of careful attention.

Stewardship: Peter Block (author of *Stewardship* and *The Empowered Manager*) has defined stewardship as "holding something in trust for another." Robert Greenleaf's view of all institutions was one in which CEO's, staffs, and trustees all played significant roles in holding their institutions in trust for the greater good of society. Leadership, like stewardship, assumes first and foremost a commitment to serving the needs of others. It also emphasizes the use of openness and persuasion, rather than control.

Commitment to the growth of people: Leaders believe that people have an intrinsic value beyond their tangible contributions as workers. As such, the leader is deeply committed to the growth of each and every individual within his or her organization. The leader recognizes the tremendous responsibility to do everything in his or her power to nurture the personal and professional growth of employees and colleagues. In practice, this can include (but is not limited to) concrete actions such as making funds available for personal and professional development, taking a personal interest in the ideas and suggestions from everyone, encouraging worker involvement in decisionmaking, and actively assisting laid-off employees to find other positions.

Building community: The leader senses that much has been lost in recent human history as a result of the shift from local communities to large institutions as the primary shaper of human lives. This awareness causes the leader to seek to identify some means for building community among those who work within a given institution. Leadership suggests that true community can be created among those who work in businesses and other institutions. Greenleaf said, "All that is needed to rebuild community as a viable life form for large numbers of people is for enough leaders to show the way, not by mass movements, but by each leader demonstrating his or her unlimited liability for a quite specific community-related group."

These ten characteristics of leadership are by no means exhaustive. However, they do serve to communicate the power and promise that this concept offers to those who are open to its invitation and challenge.

Interest in the meaning and practice of leadership continues to grow. Hundreds of books, articles, and papers on the subject have now been published. Many of the companies named to *Fortune* magazine's annual listing of "The 100 Best Companies to Work For" espouse leadership and have integrated it into their corporate cultures. As more and more organizations and people have sought to put leadership into

practice, the work of The Greenleaf Center for Leadership, now in its 36th year, continues to expand in order to help meet that need.

Leadership characteristics often occur naturally within many individuals; and, like many natural tendencies, they can be enhanced through learning and practice. Leadership offers great hope for the future in creating better, more caring, institutions.

Leadership vs. Management

What is the difference between management and leadership? It is a question that has been asked more than once and also answered in different ways. The biggest difference between managers and leaders is the way they motivate the people who work or follow them, and this sets the tone for most other aspects of what they do.

Many people, by the way, are both. They have management jobs, but they realize that you cannot buy hearts, especially to follow them down a difficult path, and so act as leaders too.

Managers have subordinates

By definition, managers have subordinates - unless their title is honorary and given as a mark of seniority, in which case the title is a misnomer and their power over others is other than formal authority.

Authoritarian, transactional style

Managers have a position of authority vested in them by the company, and their subordinates work for them and largely do as they are told. Management style is transactional, in that the manager tells the subordinate what to do, and the subordinate does this not because they are a blind robot, but because they have been promised a reward (at minimum their salary) for doing so.

Work focus

Managers are paid to get things done (they are subordinates too), often within tight constraints of time and money. They thus naturally pass on this work focus to their subordinates.

Seek comfort

An interesting research finding about managers is that they tend to come from stable home backgrounds and led relatively normal and comfortable lives. This leads them to be relatively risk-averse and they will seek to avoid conflict where possible. In terms of people, they generally like to run a 'happy ship'.

Leaders have followers

Leaders do not have subordinates - at least not when they are leading. Many organizational leaders do have subordinates, but only because they are also managers. But when they want to lead, they have to give up formal authoritarian control, because to lead is to have followers, and following is always a voluntary activity.

Charismatic, transformational style

Telling people what to do does not inspire them to follow you. You have to appeal to them, showing how following them will lead to their hearts' desire. They must want to follow you enough to stop what they are doing and perhaps walk into danger and situations that they would not normally consider risking.

Leaders with a stronger charisma find it easier to attract people to their cause. As a part of their persuasion they typically promise transformational benefits, such that their followers will not just receive extrinsic rewards but will somehow become better people.

People focus

Although many leaders have a charismatic style to some extent, this does not require a loud personality. They are always good with people, and quiet styles that give credit to others (and takes blame on themselves) are very effective at creating the loyalty that great leaders engender.

Although leaders are good with people, this does not mean they are friendly with them. In order to keep the mystique of leadership, they often retain a degree of separation and aloofness.

This does not mean that leaders do not pay attention to tasks - in fact they are often very achievement-focused. What they do realize, however, is the importance of enthusing others to work towards their vision.

Seek risk

In the same study that showed managers as risk-averse, leaders appeared as risk-seeking, although they are not blind thrill-seekers. When pursuing their vision, they consider it natural to encounter problems and hurdles that must be overcome along the way. They are thus comfortable with risk and will see routes that others avoid as potential opportunities for advantage and will happily break rules in order to get things done.

A surprising number of these leaders had some form of handicap in their lives which they had to overcome. Some had traumatic childhoods, some had problems such as dyslexia, others were shorter than average. This perhaps taught them the independence of mind that is needed to go out on a limb and not worry about what others are thinking about you

Manager versus Leader

Both a manager and a leader may know the business well. But the leader must know it better and in a different way. S/he must grasp the essential facts and the underlying forces that determine the past and present trends in the business, so that s/he can generate a vision and a strategy to bring about its future. One telling sign of a good leader is an honest attitude towards the facts, towards objective truth. A subjective leader obscures the facts for the sake of narrow self-interest, partisan interest or prejudice.

Effective leaders continually ask questions, probing all levels of the organization for information, testing their own perceptions, and rechecking the facts. They talk to their constituents. They want to know what is working and what is not. They keep an open mind for serendipity to bring them the knowledge they need to know what is true. An important source of information for this sort of leader is knowledge of the failures and mistakes that are being made in their organization.

To survive in the twenty-first century, we are going to need a new generation of leaders — leaders, not managers. The distinction is an important one. Leaders conquer the context — the turbulent, ambiguous surroundings that sometimes seem to conspire against us and will surely suffocate us if we let them — while managers surrender to it.

Leaders investigate reality, taking in the pertinent factors and analyzing them carefully. On this basis they produce visions, concepts, plans, and programs. Managers adopt the truth from others and implement it without probing for the facts that reveal reality.

There is profound difference — a chasm — between leaders and managers. A *good manager does things right*. A *leader does the right things*. Doing the right things implies a goal, a direction, an objective, a vision, a dream, a path, a reach.

Lots of people spend their lives climbing a ladder — and then they get to the top of the wrong wall. Most losing organizations are over-managed and under-led. Their managers accomplish the wrong things beautifully and efficiently. They climb the wrong wall.

Managing is about efficiency. Leading is about effectiveness. Managing is about how. Leading is about what and why. Management is about systems, controls, procedures, policies, and structure. Leadership is about trust — about people.

Leadership is about innovating and initiating. Management is about copying, about managing the status quo. Leadership is creative, adaptive, and agile. Leadership looks at the horizon, not just the bottom line.

Leaders base their vision, their appeal to others, and their integrity on reality, on the facts, on a careful estimate of the forces at play, and on the trends and contradictions. They develop the means for changing the original balance of forces so that their vision can be realized.

A leader is someone who has the capacity to create a compelling vision that takes people to a new place, and to translate that vision into action. Leaders draw other people to them by enrolling them in their vision. What leaders do is inspire people, empower them.

They pull rather than push. This "pull" style of leadership attracts and energizes people to enroll in a vision of the future. It motivates people by helping them identify with the task and the goal rather than by rewarding or punishing them.

There is a profound difference between management and leadership, and both are important "To manage" means "to bring about, to accomplish, to have charge of or responsibility for, to conduct." "Leading" is "influencing, guiding in direction, course, action, opinion." The distinction is crucial.

Management is....

Coping with complexity
Planning and Budgeting
Organizing and Staffing
Controlling and Problem Solving
Effective Action

Leadership is....

Coping with and promoting change
Setting a Direction
Aligning People
Motivating and Inspiring People
Meaningful Action

Both are necessary and important.

Managers are people who do things right and leaders are people who do the right thing. The difference may be summarized as activities of vision and judgment — *effectiveness* —versus activities of mastering routines — *efficiency*. The chart below indicates key words that further make the distinction between the two functions:

- The manager administers; the leader innovates.
- The manager is a copy; the leader is an original.
- The manager maintains; the leader develops.
- The manager accepts reality; the leader investigates it.
- The manager focuses on systems and structure; the leader focuses on people.
- The manager relies on control; the leader inspires trust.
- The manager has a short-range view; the leader has a long-range perspective.
- The manager asks how and when; the leader asks what and why.
- The manager has his or her eye always on the bottom line; the leader has his or her eye on the horizon.
- The manager imitates; the leader originates.
- The manager accepts the status quo; the leader challenges it.
- The manager is the classic good soldier; the leader is his or her own person.
- The manager does things right; the leader does the right thing.

The most dramatic differences between leaders and managers are found at the extremes: poor leaders are despots, while poor managers are bureaucrats in the worst sense of the word. Whilst leadership is a human process and management is a process of resource allocation, both have their place and managers must also perform as leaders. All first-class managers turn out to have quite a lot of leadership ability.

Top Ten Characteristics of a Great Manager

1. Time Management

Supervisory positions can be very stressful and overwhelming when specific deadlines need to be met. Leaders need to be able to handle tasks and assignments in a timely manner. Time is similar to finances and both need to be budgeted wisely.

2. Communication Skills

Communication is fundamental in any aspect of life, especially for management teams and among employee relations. Supervisors need to be capable of communicating clearly with fellow managers, employees, other businesses, and customers. Confidence and personality plays a major role in a manager's ability to communicate. Managers should be experienced with speaking both to groups and individuals.

3. Conflict Resolution

Conflict occurs just about everyday in personal and career based environments. Managers need to be able to listen, identify an issue, agree on the issue, discuss solutions, agree on the solution, and follow up. Conflict between employees may cause awkward tension within the office which can result in slacking or bitterness. Employees should feel comfortable approaching managers regarding conflict and confident that a resolution will be found. Managers will also need to be able to resolve conflict with customers when the time arises. Often clients will become frustrated if something goes wrong and managers need to be able to handle the situation appropriately. It's also important for a follow up check to ensure there are no further problems.

4. Personal Traits

The business industry expects a lot from managers and personality traits are a major aspect. Managers need to be creative, adaptable, charismatic, understanding, confident, mentally stable, tolerate stress well, great listener, and willingness to learn. Management positions are not easy to fill because of all the key qualities necessary and not everyone will possess all of them. I firmly believe certain personality traits are one of the most important aspects required to run a successful organization.

5. Experience

Let's face it, not every manager has previous supervisory experience. Generally each manager wasn't immediately promoted to their position and had to climb their way up the totem pole. Many companies overlook potential managers because they don't have previous leadership experience. Experience should be based off their knowledge of their job title, how many years they have worked in their field, and performance appraisals. Experience is something every employer looks at regardless of what position and it's important for people to realize sometimes they have to start lower than expected in order to earn their position.

6. Goal Setting

Goal setting goes hand-in-hand with time management. Managers need to manage their time wisely and focus on specific goals. Managers also need to be able to assign certain tasks to employees by giving them a goal as well.

7. Responsibility

Being responsible in the workplace is very important. Managers need to ensure assignments, tasks, and deadlines are met. It's also the responsibility of a manager to hire appropriate people for specific positions. Managers are expected to be able to handle a lot and being responsible about every situation will be beneficial in the end.

8. Organization

Managers need to be well organized for many different reasons and in many different areas. Keeping a clean and well organized office will impress others and also make it easier to work. Managers need to encourage employees to also keep their personal space clean and neat. Organizing projects, assignments, and documents is a great way to find them quickly and with ease.

9. Leadership Skills

Managers are leaders in the workplace and need to possess the basic skills. Generally managers were once leaders in other aspects of their life. They might have led youth groups, school projects, plays, and other groups. Being able to handle a group of people and lead them in the right direction is very important.

10. Objective Views

Managers need to remain objective towards their employees, fellow managers, customers, and their own personal work. A manager should not be biased towards a certain group or person. He/she should always remain non-judgmental and give everyone a chance to prove themselves. Having a "favorite" employee should not happen because it's not fair to other employees. Managers should also be able to remember that you should view staff members and customers in a professional manner rather than as a close personal friend.

Seven personal qualities found in a good leader

A good leader has an exemplary character. It is of utmost importance that a leader is trustworthy to lead others. A leader needs to be trusted and be known to live their life with honesty and integrity. A good leader "walks the talk" and in doing so earns the right to have responsibility for others. True authority is born from respect for the good character and trustworthiness of the person who leads.

A good leader is enthusiastic about their work or cause and also about their role as leader. People will respond more openly to a person of passion and dedication. Leaders need to be able to be a source of inspiration, and be a motivator towards the required action or cause. Although the responsibilities and roles of a leader may be different, the leader needs to be seen to be part of the team working towards the goal. This kind of leader will not be afraid to roll up their sleeves and get dirty.

A good leader is confident. In order to lead and set direction a leader needs to appear confident as a person and in the leadership role. Such a person inspires confidence in others and draws out the trust and best efforts of the team to complete the task well. A leader who conveys confidence towards the proposed objective inspires the best effort from team members.

A leader also needs to function in an orderly and purposeful manner in situations of uncertainty. People look to the leader during times of uncertainty and unfamiliarity and find reassurance and security when the leader portrays confidence and a positive demeanor.

Good leaders are tolerant of ambiguity and remain calm, composed and steadfast to the main purpose. Storms, emotions, and crises come and go and a good leader takes these as part of the journey and keeps a cool head.

A good leader, as well as keeping the main goal in focus, is able to think analytically. Not only does a good leader view a situation as a whole, but is able to break it down into sub parts for closer inspection. While keeping the goal in view, a good leader can break it down into manageable steps and make progress towards it.

A good leader is committed to excellence. Second best does not lead to success. The good leader not only maintains high standards, but also is proactive in raising the bar in order to achieve excellence in all areas.

These seven personal characteristics are foundational to good leadership. Some characteristics may be more naturally present in the personality of a leader. However, each of these characteristics can also be developed and strengthened. A good leader whether they naturally possess these qualities or not, will be diligent to consistently develop and strengthen them in their leadership role.

42.2 Transformational Leadership

Views of school leadership are changing largely because of current restructuring initiatives and the demands of the 90s. Advocates for school reform also usually advocate altering power relationships.

The problem, explain Douglas Mitchell and Sharon Tucker (1992), is that we have tended to think of leadership as the capacity to take charge and get things done. This view keeps us from focusing on the importance of teamwork and comprehensive school improvement. Perhaps it is time, they say, to stop

thinking of leadership as aggressive action and more as a way of thinking--about ourselves, our jobs, and the nature of the educational process. Thus, "instructional leadership" is "out" and "transformational leadership" is "in."

How has the term "transformational leadership" evolved and what does it mean?

The idea of transformational leadership was first developed by James McGregor Burns in 1978 and later extended by Bernard Bass as well as others. Neither Burns nor Bass studied schools but rather based their work on political leaders, Army officers, or business executives.

For example, there has been a shift in businesses away from Type A to Type Z organizations. Type Z organizations reduce differences in status between workers and managers, emphasize participative decision-making, and are based on a form of "consensual" or "facilitative" power that is manifested through other people instead of over other people (Kenneth Leithwood 1992).

Although there have been few studies of such leadership in schools and the definition of transformational leadership is still vague, evidence shows that there are similarities in transformational leadership whether it is in a school setting or a business environment (Nancy Hoover and others 1991, Kenneth Leithwood and Doris Jantzi 1990, Leithwood). "The issue is more than simply who makes which decisions," says Richard Sagor (1992). "Rather it is finding a way to be successful in collaboratively defining the essential purpose of teaching and learning and then empowering the entire school community to become energized and focused. In schools where such a focus has been achieved, we found that teaching and learning became transformative for everyone."

How does this differ from other school leadership styles?

Instructional leadership

Instructional leadership encompasses hierarchies and top-down leadership, where the leader is supposed to know the best form of instruction and closely monitors teachers' and students' work. One of the problems with this, says Mary Poplin (1992), is that great administrators aren't always great classroom leaders and vice versa. Another difficulty is that this form of leadership concentrates on the growth of students but rarely looks at the growth of teachers. Since she believes that education now calls on administrators to be "the servants of collective vision," as well as "editors, cheerleaders, problem solvers, and resource finders," instructional leadership, she declares, has outlived its usefulness.

Transactional leadership

Transactional leadership is sometimes called bartering. It is based on an exchange of services (from a teacher, for instance) for various kinds of rewards (such as a salary) that the leader controls, at least in part.

Transactional leadership is often viewed as being complementary with transformational leadership. Thomas Sergiovanni (1990) considers transformational leadership a first stage and central to getting day-to-day routines carried out. However, Leithwood says it doesn't stimulate improvement. Mitchell and Tucker add that transactional leadership works only when both leaders and followers understand and are in agreement about which tasks are important.

What are the goals of transformational leadership?

Leithwood finds that transformational leaders pursue three fundamental goals:

Helping staff develop and maintain a collaborative, professional school culture: This means staff members often talk, observe, critique, and plan together. Norms of collective responsibility and continuous improvement encourage them to teach each other how to teach better. Transformational leaders involve staff in collaborative goal setting, reduce teacher isolation, use bureaucratic mechanisms to support cultural changes, share leadership with others by delegating power, and actively communicate the school's norms and beliefs.

Fostering teacher development

One of Leithwood's studies suggests that teachers' motivation for development is enhanced when they internalize goals for professional growth. This process, Leithwood found, is facilitated when they are strongly committed to a school mission. When leaders give staff a role in solving nonroutine school improvement problems, they should make sure goals are explicit and ambitious but not unrealistic.

Helping teachers solve problems more effectively

Transformational leadership is valued by some, says Leithwood, because it stimulates teachers to engage in new activities and put forth that "extra effort" (see also Hoover and others, Sergiovanni, Sagor). Leithwood found that transformational leaders use practices primarily to help staff members work smarter, not harder. "These leaders shared a genuine belief that their staff members as a group could develop better solutions than the principal could alone," concludes Leithwood.

What strategies do transformational leaders use?

Here are specific ideas, culled from several sources on transformational leadership (Sagor, Leithwood, Leithwood and Jantzi, Poplin):

- Visit each classroom every day; assist in classrooms; encourage teachers to visit one another's classes.
- Involve the whole staff in deliberating on school goals, beliefs, and visions at the beginning of the year.
- Help teachers work smarter by actively seeking different interpretations and checking out assumptions; place individual problems in the larger perspective of the whole school; avoid commitment to preconceived solutions; clarify and summarize at key points during meetings; and keep the group on task but do not impose your own perspective.
- Use action research teams or school improvement teams as a way of sharing power. Give everyone responsibilities and involve staff in governance functions. For those not participating, ask them to be in charge of a committee.
- Find the good things that are happening and publicly recognize the work of staff and students who have contributed to school improvement. Write private notes to teachers expressing appreciation for special efforts.
- Survey the staff often about their wants and needs. Be receptive to teachers' attitudes and philosophies. Use active listening and show people you truly care about them.
- Let teachers experiment with new ideas. Share and discuss research with them. Propose questions for people to think about.
- Bring workshops to your school where it's comfortable for staff to participate. Get teachers to share their talents with one another. Give a workshop yourself and share information with staff on conferences that you attend.
- When hiring new staff, let them know you want them actively involved in school decision-making; hire teachers with a commitment to collaboration. Give teachers the option to transfer if they can't wholly commit themselves to the school's purposes.
- Have high expectations for teachers and students, but don't expect 100 percent if you aren't also willing to give the same. Tell teachers you want them to be the best teachers they possibly can be.
- Use bureaucratic mechanisms to support teachers, such as finding money for a project or providing time for collaborative planning during the workday. Protect teachers from the problems of limited time, excessive paperwork, and demands from other agencies.
- Let teachers know they are responsible for all students, not just their own classes.

What are the results of this kind of leadership?

Evidence of the effects of transformational leadership, according to Leithwood, is "uniformly positive." He cites two findings from his own studies:

- Transformational leadership practices have a sizable influence on teacher collaboration, and
- Significant relationships exist between aspects of transformational leadership and teachers' own reports of changes in both attitudes toward school improvement and altered instructional behavior.

Sergiovanni suggests that student achievement can be "remarkably improved" by such leadership. Finally, Sagor found that schools where teachers and students reported a culture conducive to school success had a transformational leader as its principal.

However, Mitchell and Tucker conclude that transformational leadership should be seen as only one part of a balanced approach to creating high performance in schools. Leithwood agrees: "While most schools rely on both top-down and facilitative forms of power, finding the right balance is the problem. For schools that are restructuring, moving closer to the facilitative end of the power continuum will usually solve the problem."

42.3 VISION

A good Vision serves three important purposes.

- Clarifying "General direction for Change"
- Motivates People to take action in right direction, even if initial steps are personally painful.
- Helps coordinate action of different people, even thousand & thousands of individuals, in a remarkably fast & efficient way.

Characteristics of Effective Vision

Imaginable: It conveys a picture of what the future could look like. The vision must be ambitious enough to force people out of their comfort zones. The God we serve created the universe; He can do great things!

Desirable: It appeals to the long-term interests of most of the organization's stakeholders. In contrast, poor visions tend to ignore the legitimate interests of some groups, or to exploit other groups.

Realistic: Good visions are not "pie-in-the-sky" fantasies with no chance of realization. Christian leaders must be careful not to let a cavalier "all things are possible with God" attitude to substitute for a legitimate vision that is, at once, faith-filled yet realistic. Moreover, good visions will take advantage of fundamental trends. Finally, to be realistic, the vision should be linked to the core competencies of the organization.

Focused: Good visions are clear enough to motivate action. They should not be vague or ambiguous.

Flexible: Good visions must be flexible enough to allow initiative. Bad visions are sometimes too specific or do not allow for modification. As the change proceeds, the vision itself will often change! So it must be flexible to begin with.

Communicable: An effective vision can be explained successfully within five minutes. Unintelligible visions are ineffective. The trumpet must sound a clear and compelling call. Vision articulates what is important, unique & exciting about what organization do. It guides for decision rules employees make about behavior.

Vision Statement

Vision Statement Encompasses the desired future for your company. A Vision Statement provides a basis on which you & your team members can focus & work towards. Some vision statements look ahead only a year or two, while other vision statements may look ahead ten years. Whatever time frame, a vision statement is essential for giving drives to every employee in your company. A good vision should draw up a 'picture' of what an individual or a group has in mind & cause those that read it to 'see' the intended outcome.

42.4 The Leadership Grid & the Managerial Grid

Leadership model that focuses on task (production) & employee (people) orientations of Managers as well as combinations of concerns between two extremes. Developed by Robert R. Blake and Jane S. Mouton, The Leadership Grid provides a framework for understanding types of leadership. The grid consists of two behavioral dimensions:

- Concern for production
- Concern for people

Blake and Mouton characterize five different leadership styles according to the varying emphasis on each of these two dimensions (with a range of 1 to 9 on each continuum), as illustrated in the table below. They suggest that most effective leadership is characterized by the combination of high concern for production with high concern for people.

Developed by the founders of our company, Drs. Robert R. Blake and Jane S. Mouton, **The Managerial Grid** graphic below is a very simple framework that elegantly defines seven basic styles that characterize workplace behavior and the resulting relationships. The seven managerial Grid styles are based on how two fundamental concerns (concern for people and concern for results) are manifested at varying levels whenever people interact.

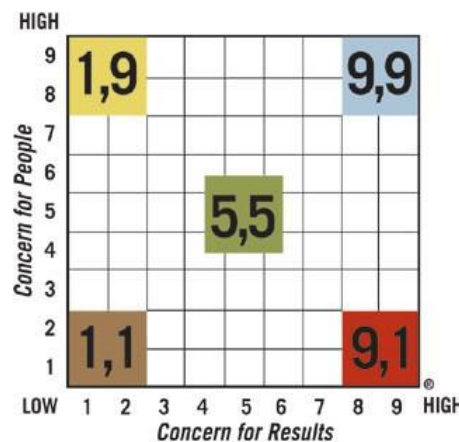


Figure 42.1: Managerial Grid

The Seven Managerial Grid Styles:

9,1 Controlling (Direct & Dominate)

I expect results and take control by clearly stating a course of action. I enforce rules that sustain high results and do not permit deviation.

1,9 Accommodating (Yield & Comply)

I support results that establish and reinforce harmony. I generate enthusiasm by focusing on positive and pleasing aspects of work.

5,5 Status Quo (Balance & Compromise)

I endorse results that are popular but caution against taking unnecessary risk. I test my opinions with others involved to assure ongoing acceptability.

1,1 Indifferent (Evade & Elude)

I distance myself from taking active responsibility for results to avoid getting entangled in problems. If forced, I take a passive or supportive position.

PAT Paternalistic (Prescribe and Guide)

I provide leadership by defining initiatives for myself and others. I offer praise and appreciation for support, and discourage challenges to my thinking.

OPP Opportunistic (Exploit & Manipulate)

I persuade others to support results that offer me private benefit. If they also benefit, that's even better in gaining support. I rely on whatever approach is needed to secure an advantage

9,9 Sound (Contribute and Commit)

I initiate team action in a way that invites involvement and commitment. I explore all facts and alternative views to reach a shared understanding of the best solution

Grid Relationship Skills

The Grid theory translates into practical use through Grid style relationship skills that people experience day in and day out when they work together. These relationship skills depict the typical and vital behaviors for each style that make relationships effective or ineffective. Some behaviors strengthen and motivate teams while others obstruct progress.

Critique - Learning from experience by anticipating and examining how behavior and actions affect results

Initiative - Taking action to exercise shared effort, drive, and support for specific activities

Inquiry - Questioning, seeking information, and testing for understanding

Advocacy - Expressing attitudes, opinions, ideas, and convictions

Decision-Making - Evaluating resources, criteria, and consequences to reach a decision

Conflict Resolution - Confronting and working through disagreements with others toward resolution

Resilience - Reacting to problems, setbacks, and failure, and understanding how these factors influence the ability to move forward

Grid theory makes behaviors as tangible and objective as any other corporate commodity. By studying each of the seven Leadership Grid styles and the resulting relationship skill behaviors, teams can examine, in objective terms, how behaviors help or hurt them. They can explore types of critique that work best for them and why. They can openly discuss how to improve decision-making and conflict resolution skills. These and other subjects usually considered "off limits" in terms of productivity are the very subjects that usually impede productivity. The Grid approach makes these subjects not only "discussable" but measurable in objective terms that generate empathy, motivation to improve, and creativity.

Leaders may be concerned for their people and they also must also have some concern for the work to be done. The question is, how much attention to they pay to one or the other? This is a model defined by

Concern for People	<i>High</i>	Country Club management		Team management
	<i>Medium</i>		Middle of the road management	
	<i>Low</i>	Impoverished management		Authority-compliance
		<i>Low</i>	<i>Medium</i>	<i>High</i>
		Concern for Production (Task)		

Blake and Mouton in the early 1960s.

Figure 42.2: Leadership Grid

Impoverished management

Minimum effort to get the work done. A basically lazy approach that avoids as much work as possible.

Authority-compliance

Strong focus on task, but with little concern for people. Focus on efficiency, including the elimination of people wherever possible.

Country Club management

Care and concern for the people, with a comfortable and friendly environment and collegial style. But a low focus on task may give questionable results.

Middle of the road management

A weak balance of focus on both people and the work. Doing enough to get things done, but not pushing the boundaries of what may be possible.

Team management

Firing on all cylinders: people are committed to task and leader is committed to people (as well as task).

COMMUNICATION IN THE PROJECT MANAGEMENT**BROAD CONTENTS**

Communication

Interpersonal Communication

Barriers in Interpersonal Communication and Importance of Barrier Removal

Writing Skills

Letter Writing

Active Listening

Presentations

Conducting Project Meetings

43.1 Communication

The purpose of communication is to get your message across to others clearly and unambiguously. Doing this involves effort from both the sender of the message and the receiver. And it's a process that can be fraught with error, with messages often misinterpreted by the recipient. When this isn't detected, it can cause tremendous confusion, wasted effort and missed opportunity. In fact, communication is only successful when both the sender and the receiver understand the same information as a result of the communication. By successfully getting your message across, you convey your thoughts and ideas effectively. When not successful, the thoughts and ideas that you send do not necessarily reflect your own, causing a communications breakdown and creating roadblocks that stand in the way of your goals – both personally and professionally.

In a recent survey of recruiters from companies with more than 50,000 employees, communication skills were cited as the single more important decisive factor in choosing managers. The survey, conducted by the University of Pittsburgh's Katz Business School, points out that communication skills, including written and oral presentations, as well as an ability to work with others, are the main factor contributing to job success.

In spite of the increasing importance placed on communication skills, many individuals continue to struggle, unable to communicate their thoughts and ideas effectively – whether in verbal or written format. This inability makes it nearly impossible for them to compete effectively in the workplace, and stands in the way of career progression.

Getting your message across is paramount to progressing. To do this, you must understand what your message is, what audience you are sending it to, and how it will be perceived. You must also weigh-in the circumstances surrounding your communications, such as situational and cultural context.

Communication In the context of Project Manager

Project Communication Management provides a critical link between “people, ideas, & information” at all stages in Project Life Cycle. Communication in Project Management is a formal process aid in “decision making” & help to achieve a successful project. Approximately 70-90% of a typical Project Manager's time is spent in Communication according to the following proportion:

- Approximately 45% - Listening.
- Another ~30%- Talking.
- PM's spend ~ 50% of time in meetings.

Communication Management Plan defines how & when various stakeholder receive information & communicate with each other. Memos, emails etc. are non-formal communication types. Total number of communication channels between stakeholders is given by the following relationship.

$N(N - 1)/2$ (where N is the number of stakeholders)

It means that if there are 10 stakeholder in a project, that project will have 45 channels of communication.

Cost of Correspondence

One page business letter that took 10 min to dictate cost between \$13.60 & \$20.52 in 1996. one can imagine its cost today. poor writing costs even more since it wastes time, wastes effort and jeopardizes goodwill.

Characteristics of Effective Communication

Following are some of the characteristics of effective communication.

- Fostering an “Open Communication Climate.
- Committing to “Ethical Communication.
- Understanding–”Dynamics of Intercultural Communication”.
- Becoming Proficient in Communication Technology.
- Using an “Audience Centered Approach”.
- Creating & Processing Messages Efficiently”.

In series of transmission from one person to next, message becomes less & less accurate. Poor retention of information is another serious problem. It necessitates repeating message & using several channels. It will obviously require use more than one channel to Communication same message.

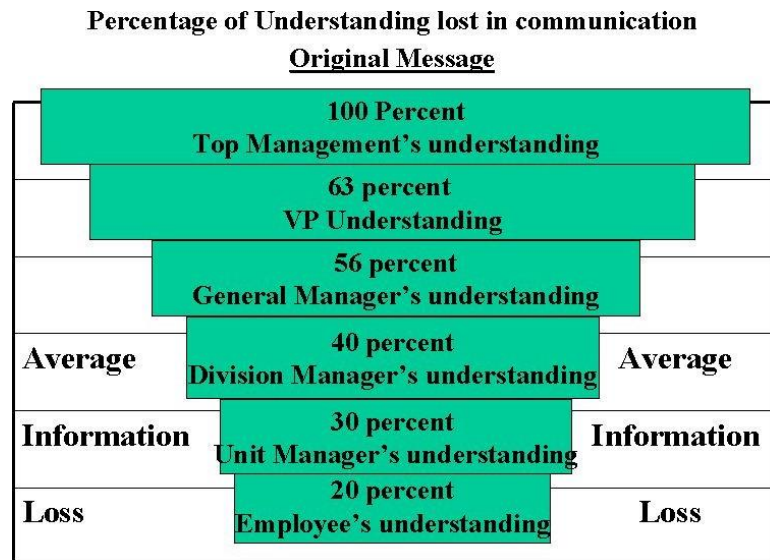


Figure 43.1: Percentage of Understanding Lost in Communication

Information Loss in Downward Communication

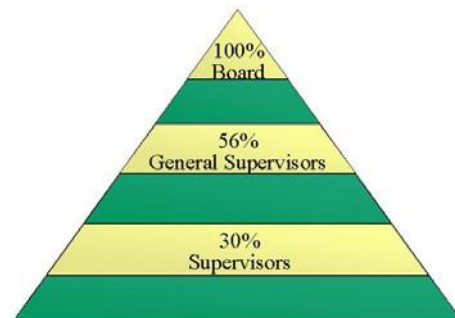


Figure 43.2: Information Loss in Downward Communication

Techniques to Improve Organization Communication

Following are some of the techniques, or process improvements that can improve the communication in any organization.

- Emphasis on Teamwork
- Improve Reporting System
- Focus on Employees Participation & Involvement
- Improve Management System
- Change Organizational Culture
- Flatter Hierarchy
- Cross Functional Teams
- Fewer Control

The function of communication is to provide form in which ideas & purposes can be expressed as Message. Vocabulary, language, & knowledge play important role in sender's ability to encode.

43.2 Interpersonal Communication

Interpersonal communication is the process of sending and receiving information between two or more people. Communication is interpersonal when the people involved are contacting each other as persons, on a personal level.

Effective Communication is much more than simply transmitting information to employees. It requires face-to-face contact in environment of "Openness & Trust". Several aspects of Interpersonal communication include Talking, Listening, Reading, Writing and the more formalized aspects such as conducting meetings, interviews etc. and so on.

Elements of Good Talking

- Voice Quality
- Talking Style
- Word Choice and Vocabulary

Three Broad Types of Interpersonal Communication:

- Oral
- Written
- Nonverbal

Oral Communication consists of all forms of spoken Information & Most preferred type of Communication used by Managers. Managers prefer face-to-face & Tele Communication to written Communication because it permits immediate feedback.

Written Communication Letters, memos, policy manuals, reports, forms, & other documents are used to share Information in Organization.

Types of Nonverbal Communication

- Body Language
- Space
- Time
- Para language
- Color
- Layout and Design

43.3 Barriers against Effective Interpersonal Communication

Emotions Sometimes when people communicate an idea or matter across, the receiver can feel how the sender perceives the subject matter. Often messages are interpreted differently for different people. Extreme emotions are most likely to hinder effective communication because the idea or message

maybe misinterpreted. It's always best to avoid responding or reacting to the subject matter when you're upset or angry because most of the time, you'll not be able to think in a clear manner.

Filtering This is where the sender manipulates the information that he communicates to the receiver. The purpose of this is because sometimes people would shape and reform the message so that it appears and sounds favorable to the receiver. Filtering information may mislead the receiver into thinking into something favorable and the let down may be upsetting if it's found out that information has been filtered.

Overloaded with Information Too much information about the same subject matter may be confusing. For example, you have 50 e-mails on the same subject matter, each e-mail contains a little part of the subject matter. It would be better to have one e-mail from the sender which includes all the information in clear and simple form with only the information you want that you asked for. Normally, the human brain can only take in so much information to process, overloading it with information will exceed our human processing capacity, and the receiver would often misunderstand or not understand at all what the sender is telling them.

Defensiveness Humans tend to refuse for a mutual understanding when they feel that they are being threatened or are put in a position which they are at a disadvantage. Defensiveness normally consists of attacking what the sender tells you, putting out sarcastic remarks, questioning their motives or being overly judgmental about the subject matter.

Cultural Difference Sometimes our culture may be a huge hindrance for effective interpersonal communication. When two people with different cultures communicate, they often do not understand each other's cultures and may misunderstand the true meaning of what each other's trying to convey through such a sense. For example, Japanese people would say 'ha-i' and Americans may misunderstand that they are saying "hi". This makes the intentions unclear between both people.

Jargon Not everyone understands each other's jargon words. Jargon should be avoided when talking to someone who isn't familiar with you personally or within your organization.

43.3.1 The importance of removing barriers

Problems with communication can pop-up at every stage of the communication process (which consists of **sender, encoding, channel, decoding, receiver, feedback and context** - see the diagram below) and have the potential to create misunderstanding and confusion.

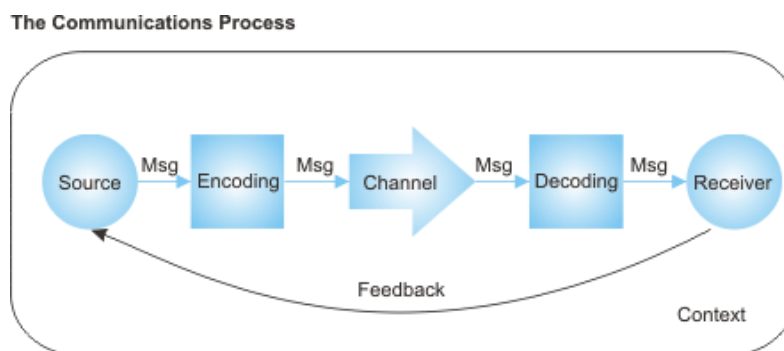


Figure 43.3: The Communication Process

To be an effective communicator and to get your point across without misunderstanding and confusion, your goal should be to lessen the frequency of these problems at each stage of this process with clear, concise, accurate, well-planned communications. We follow the process through below:

SOURCE

As the source of the message, you need to be clear about why you're communicating, and what you want to communicate. You also need to be confident that the information you're communicating is useful and accurate.

MESSAGE

The message is the information that you want to communicate.

ENCODING

This is the process of transferring the information you want to communicate into a form that can be sent and correctly decoded at the other end. Your success in encoding depends partly on your ability to convey information clearly and simply, but also on your ability to anticipate and eliminate sources of confusion (for example, cultural issues, mistaken assumptions, and missing information.) A key part of this is knowing your audience: Failure to understand who you are communicating with will result in delivering messages that are misunderstood.

CHANNEL

Messages are conveyed through channels, with verbal including face-to-face meetings, telephone and videoconferencing; and written including letters, emails, memos and reports.

Different channels have different strengths and weaknesses. For example, it's not particularly effective to give a long list of directions verbally, while you'll quickly cause problems if you criticize someone strongly by email.

DECODING

Just as successful encoding is a skill, so is successful decoding (involving, for example, taking the time to read a message carefully, or listen actively to it.) Just as confusion can arise from errors in encoding, it can also arise from decoding errors. This is particularly the case if the decoder doesn't have enough knowledge to understand the message.

RECEIVER

Your message is delivered to individual members of your audience. No doubt, you have in mind the actions or reactions you hope your message will get from this audience. Keep in mind, though, that each of these individuals enters into the communication process with ideas and feelings that will undoubtedly influence their understanding of your message, and their response. To be a successful communicator, you should consider these before delivering your message, and act appropriately.

FEEDBACK

Your audience will provide you with feedback, verbal and nonverbal reactions to your communicated message. Pay close attention to this feedback as it is the only thing that allows you to be confident that your audience has understood your message. If you find that there has been a misunderstanding, at least you have the opportunity to send the message a second time.

CONTEXT

The situation in which your message is delivered is the context. This may include the surrounding environment or broader culture (i.e. corporate culture, international cultures, etc.).

43.4 WRITING SKILLS

Many people are intimidated by writing. Even so, there are times when writing is the best way to communicate, and often the only way to get your message across.

Write With Necessary Caution

When writing, remember that once something is in written form, it cannot be taken back. Communicating this way is concrete than verbal communications, with less room for error and even less

room for mistakes. This presents written communicators with additional challenges, including spelling, grammar, punctuation, even writing style and actual wording.

Thankfully, today's technology makes memo, letter and proposal writing much easier by providing reliable tools that check and even correct misspelled words and incorrect grammar use. Unfortunately, these tools are not foolproof and will require your support, making your knowledge in this area important.

The Importance of "Style"

Some of the most basic tips to remember when writing include:

- Avoid slang words
- Try not to use abbreviations (unless appropriately defined)
- Steer away from the symbols (such as ampersands [&])
- Clichés should be avoided, or at the very least, used with caution
- Brackets are used to play down words or phrases
- Dashes are generally used for emphasis
- Great care should ALWAYS be taken to spell the names of people and companies correctly
- Numbers should be expressed as words when the number is less than 10 or is used to start a sentence (example: Ten years ago, my brother and I...). The number 10, or anything greater than 10, should be expressed as a figure (example: My brother has 13 Matchbox cars.)
- Quotation marks should be placed around any directly quoted speech or text and around titles of publications
- Keep sentences short

While these tips cover the most common mistakes made when writing letters, memos and reports, they in no way cover everything you need to know to ensure your written communications are accurate and understood.

While this takes some practice, there are many sources available to assist with writing style, including "The Elements of Style", by Strunk and White. One glance in any newsroom or on the desk of even the most accomplished writers and you are sure to find this small, easy-to-understand, no-nonsense guide to writing. It is clear, concise and perhaps the best book of its kind. If you plan on writing a great deal of letters or even proposals, it is strongly recommended that you pick up this nifty guide, which by the way, will fit in your shirt pocket.

43.5 Letter Writing

When writing letters, it is best to address the letter to an individual. And, when beginning the letter with a personal name, be sure to end it with an appropriate closing, such as 'Sincerely yours'. If you cannot obtain an individual's name, consider ending it with a more generic (less personal) closing, such as 'With kindest regards'.

For normal business letters, your letter should start with an overall summary, showing in the first paragraph why the letter is relevant to the reader. It's not a good practice to make the reader go past the first paragraph to find out why the letter was sent to them.

The body of the letter needs to explain the reason for the correspondence, including any relevant background and current information. Make sure the information flows logically, ensuring you are making your points effectively.

The closing of the letter is the final impression you leave with the reader. End with an action point, such as 'I will call you later this week to discuss this further'.

The Importance of Careful Proofing

Perhaps the most important thing to remember when writing a letter is to check it thoroughly when it is completed. Even when you think it is exactly what you want, read it one more time. This "unwritten" rule holds true for everything you write – memos, letters, proposals, etc.

Use both the grammar and spell check on your computer, paying very, very close attention to every word highlighted. Do not place total faith on your computer here. Instead, you should have both a dictionary and thesaurus (printed or online) to hand to double-check everything your computer's editing tools highlight, as these tools are certainly not always reliable, for a variety of reasons.

When checking your written communications, make sure the document is clear and concise. Is there anything in the written communication that could be misinterpreted? Does it raise unanswered questions or fail to make the point you need to get across?

Can you cut down on the number of words used? For instance, don't use 20 words when you can use 10. While you do not want to be curt or abrupt, you do not want to waste the reader's time with unnecessary words or phrases.

Is your written communication well organized? Does each idea proceed logically to the next? Would some additional headings help? Make sure your written communications are easy to read and contain the necessary information, using facts where needed and avoiding information that is not relevant. Again, outline the course of action you expect, such as a return call or visit.

Close appropriately, making sure to include your contact information. While this may seem obvious, it is sometimes overlooked and can make your written communications look amateurish. This can diminish your chances of meeting your written communication's goals.

43.6 Active Listening

It is obvious to say that if you have poor interpersonal communications skills (which include active listening), your productivity will suffer simply because you do not have the tools needed to influence, persuade and negotiate – all necessary for workplace success. Lines of communications must be open between people who rely on one another to get work done.

Considering this, you must be able to listen attentively if you are to perform to expectations, avoid conflicts and misunderstandings, and to succeed - in any arena. Following are a few short tips to help you enhance your communications skills and to ensure you are an active listener:

1. Start by Understanding Your Own Communication Style

Good communication skills require a high level of self-awareness. Understanding your personal style of communicating will go a long way toward helping you to create good and lasting impressions on others. By becoming more aware of how others perceive you, you can adapt more readily to their styles of communicating. This does not mean you have to be a chameleon, changing with every personality you meet. Instead, you can make another person more comfortable with you by selecting and emphasizing certain behaviors that fit within your personality and resonate with another. In doing this, you will prepare yourself to become an active listener.

2. Be an Active Listener

People speak at 100 to 175 words per minute (WPM), but they can listen intelligently at up to 300 words per minute. Since only a part of our mind is paying attention, it is easy to go into mind drift - thinking about other things while listening to someone. The cure for this is active listening - which involves listening with a purpose. It may be to gain information, obtain directions, understand others, solve problems, share interest, see how another person feels, show support, etc.

If you're finding it particularly difficult to concentrate on what someone is saying, try repeating their words mentally as they say it - this will reinforce their message and help you control mind drift.

3. Use Nonverbal Communication

Use nonverbal behaviors to raise the channel of interpersonal communication. Nonverbal communication is facial expressions like smiles, gestures, eye contact, and even your posture. This shows the person you are communicating with that you are indeed listening actively and will prompt further communications while keeping costly, time-consuming misunderstandings at a minimum.

4. Give Feedback

Remember that what someone says and what we hear can be amazingly different! Our personal filters, assumptions, judgments, and beliefs can distort what we hear. Repeat back or summarize to ensure that you understand. Restate what you think you heard and ask, "Have I understood you correctly?" If you find yourself responding emotionally to what someone said, say so, and ask for more information: "I may not understand you correctly, and I find myself taking what you said personally. What I thought you just said is XXX; is that what you meant?"

Feedback is a verbal communications means used to clearly demonstrate you are actively listening and to confirm the communications between you and others. Obviously, this serves to further ensure the communications are understood and is a great tool to use to verify everything you heard while actively listening.

43.7 Presentation Planning Checklist

This presentation checklist will help you deliver successful presentation. This is adapted in part from “Business Communications: A Cultural and Strategic Approach” by Michael J. Rouse and Sandra Rouse.

Presentation:

Does your introduction grab participant’s attention and explain your objectives?

Do you follow this by clearly defining the points of the presentation?

Are these main points in logical sequence?

Do these flow well?

Do the main points need support from visual aids?

Does your closing summarize the presentation clearly and concisely?

Is the conclusion strong?

Have you tied the conclusion to the introduction?

Delivery:

Are you knowledgeable about the topic covered in your presentation?

Do you have your notes in order?

Where and how will you present (indoors, outdoors, standing, sitting, etc.)?

Have you visited the presentation site?

Have you checked your visual aids to ensure they are working and you know how to use them?

Appearance:

Make sure you are dressed and groomed appropriately and in keeping with the audience’s expectations.

Practice your speech standing (or sitting, if applicable), paying close attention to your body language, even your posture, both of which will be assessed by the audience.

Visual Aids:

Are the visual aids easy to read and easy to understand?

Are they tied into the points you are trying to communicate?

Can they be easily seen from all areas of the room?

43.8 Running Effective Project Meetings

Meetings are wonderful tools for generating ideas, expanding on thoughts and managing group activity. But this face-to-face contact with team members and colleagues can easily fail without adequate preparation and leadership.

The Importance of Preparation

To ensure everyone involved has the opportunity to provide their input, start your meeting off on the right foot by designating a meeting time that allows all participants the time needed to adequately prepare.

Once a meeting time and place has been chosen, make yourself available for questions that may arise as participants prepare for the meeting. If you are the meeting leader, make a meeting agenda, complete with detailed notes.

Managing a Meeting

Choosing the right participants is key to the success of any meeting. Make sure all participants can contribute and choose good decision-makers and problem-solvers. Try to keep the number of participants to a maximum of 12, preferably fewer. Make sure the people with the necessary information for the items listed in the meeting agenda are the ones that are invited.

When an agenda item is resolved or action is agreed upon, make it clear who in the meeting will be responsible for this. In an effort to bypass confusion and misunderstandings, summarize the action to be taken and include this in the meeting's minutes.

Time Keeping

Meetings are notorious for eating up people's time. Here are some ways of ensuring that time is not wasted in meetings:

- Start on time.
- Don't recap what you've covered if someone comes in late: doing so sends the message that it is OK to be late for meetings, and it wastes everyone else's valuable time.
- State a finish time for the meeting and don't over-run.
- To help stick to the stated finish time, arrange your agenda in order of importance so that if you have to omit or rush items at the end to make the finish time, you don't omit or skimp on important items.
- Finish the meeting before the stated finish time if you have achieved everything you need to.

Issuing Minutes

Minutes record the decisions of the meeting and the actions agreed. They provide a record of the meeting and, importantly, they provide a review document for use at the next meeting so that progress can be measured - this makes them a useful disciplining technique as individuals' performance and non-performance of agreed actions is given high visibility.

PROJECT RISK MANAGEMENT**BROAD CONTENTS**

What is Risk?
Primary Components
Tolerance of Risk
Risk Management
Categories of Risk
Risk Planning
Risk Identification
Risk Assessment (identification and analysis)
Risk Handling

In the early days of project management on many commercial programs, the majority of project decisions heavily favored cost and schedule. This favoritism occurred because we knew more about cost and scheduling than we did about technical risks. Technology forecasting was very rarely performed other than by extrapolating past technical knowledge into the present.

Today, the state of the art of technology forecasting is being pushed to the limits. For projects with time duration of less than one year, we normally assume that the environment is known and stable, particularly the technological environment. For projects over a year or so in length, technology forecasting must be considered. Computer technology doubles in performance about every two years. Engineering technology is said to double every three or so years. How can a project manager accurately define and plan the scope of a three- or four-year project without expecting engineering changes resulting from technology improvements?

44.1 What are the Risks?

A Midwest manufacturing company embarked on an eight-year project to design the manufacturing factory of the future. The plant is scheduled to go into the construction phase in the year 2000. How do we design the factory of the future without forecasting the technology? What computer technology will exist? What types of materials will exist and what types of components will our customers require? What production rate will we need and will technology exist to support this production level?

Economists and financial institutions forecast interest rates. The forecasts appear in public newspapers and journals. Yet, every company involved in high tech does some form of technology forecasting, but appears very reluctant to publish the data. Technology forecasting is regarded as company proprietary information and may be part of the company's strategic planning process.

We read in the newspaper about cost overruns and schedule slips on a wide variety of large-scale development projects. Several issues within the control of the buyer, seller, or major stakeholders can lead to cost growth and schedule slippage on development projects. These causes include, but are not limited to:

- Starting a project with a budget and/or schedule that is inadequate for the desired level of performance or scope (e.g., integration complexity).
- Having an overall development process (or key parts of that process) that favors performance (or scope) over cost and schedule.
- Establishing a design that is near the feasible limit of achievable performance or integration complexity at a given point in time.
- Making major project design decisions before the relationships between cost, performance, schedule, and risk are understood.

These four causes will contribute to uncertainty in forecasting technology and the associated design needed to meet performance requirements. And the inability to perfectly forecast technology and the associated design will contribute to a project's technical risk, and can also lead to cost and schedule risk.

Today, the competition for technical achievement has become fierce. Companies have gone through life-cycle phases of centralizing all activities, especially management functions, but are decentralizing technical expertise. By the mid 1980s, many companies recognized the need to integrate technical risks with cost and schedule risks, and other activities (e.g., quality). Risk management processes were developed and implemented where risk information was made available to key decision-makers.

The risk management process, however, should be designed to do more than just identify the risk.

The process must also include: a formal *planning* activity, *analysis* to quantify the likelihood and predict the impact on the project, a *handling* strategy for selected risks, and the ability to *monitor* the progress in reducing these selected risks to the desired level.

A project, by definition, is something that we have not done previously and will not do again in the future. Because of this uniqueness, we have developed a "live with it" attitude on risk and attribute it as part of doing business. If risk management is set up as a continuous, disciplined process of planning, assessment (identification and analysis), handling, and monitoring, then the system will easily supplement other systems as organization, planning and budgeting, and cost control. Surprises that become problems will be diminished because emphasis will now be on proactive rather than reactive management.

Risk management can be justified on almost all projects. The level of implementation can vary from project to project, depending on such factors as size, type of project, who the customer is, relationship to the corporate strategic plan, and corporate culture. Risk management is particularly important when the overall stakes are high and a great deal of uncertainty exists. In the past, we treated risk as a "let's live with it." Today, risk management is a key part of overall project management. It forces us to focus on the future where uncertainty exists and develop suitable plans of action to prevent potential issues from adversely impacting the project.

Risk is a measure of the probability and consequence of not achieving a defined project goal. Most people agree that risk involves the notion of uncertainty. Can the specified aircraft range be achieved? Can the computer be produced within budgeted cost? Can the new product launch date be met? A probability measure can be used for such questions; for example, the probability of not meeting the new product launch date is 0.15. However, when risk is considered, the consequences or damage associated with occurrence must also be considered.

Goal A, with a probability of occurrence of only 0.05, may present a much more serious (risky) situation than goal B, with a probability of occurrence of 0.20, if the consequences of not meeting goal A are, in this case, more than four times more severe than failure to meet goal B. Risk is not always easy to assess, since the probability of occurrence and the consequence of occurrence are usually not directly measurable parameters and must be estimated by statistical or other procedures.

44.2 Components of Risk

Risk has two primary components for a given event:

- A probability of occurrence of that event
- Impact of the event occurring (amount at stake)

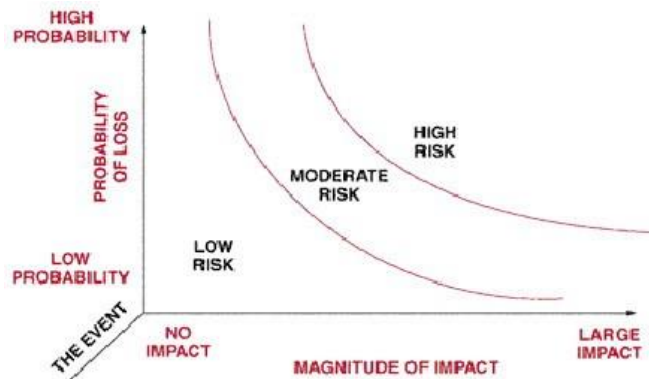


Figure 44.1: Overall risk is a function of its components.

Figure 44.1 shows the components of risk.

Conceptually, risk for each event can be defined as a function of likelihood and impact; that is,

$$\text{Risk} = f(\text{Likelihood, impact})$$

In general, as either the likelihood or impact increases, so does the risk. Both the likelihood and impact must be considered in risk management.

Risk constitutes a lack of knowledge of future events. Typically, future events (or outcomes) that are favorable are called opportunities, whereas unfavorable events are called risks.

Another element of risk is the cause of risk. Something, or the lack of something, can induce a risky situation. We denote this source of danger as the hazard. Certain hazards can be overcome to a great extent by knowing them and taking action to overcome them. For example, a large hole in a road is a much greater danger to a driver who is unaware of it than to one who travels the road frequently and knows enough to slow down and go around the hole. This leads to the second representation of risk:

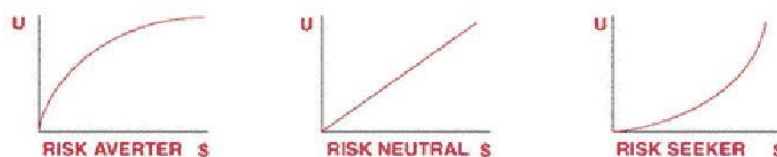
$$\text{Risk} = f(\text{Hazard, safeguard})$$

Risk increases with hazard but decreases with safeguard. The implication of this equation is that good project management should be structured to identify hazards and to allow safeguards to be developed to overcome them. If enough safeguards are available, then the risk can be reduced to an acceptable level.

44.3 Tolerance of Risk

There is no single textbook answer on how to manage risk. The project manager must rely upon sound judgment and the use of the appropriate tools in dealing with risk. The ultimate decision on how to deal with risk is based in part upon the project manager's tolerance for risk.

The three commonly used classifications of tolerance for risk appear in Figure 44.2. They include the risk averter or avoider, the neutral risk taker, and the risk seeker or lover. The Y axis in Figure 44.2 represents "utility," which can be defined as the amount of satisfaction or pleasure that the individual receives from a payoff. (This is also called the project manager's tolerance for risk.) The X axis in this case is the amount of money at stake.



The shape of a given decision maker's curve is derived from comparing response to alternative decision acts.

Figure 44.2: Risk preference & utility function

With the risk averter, utility rises at a *decreasing* rate. In other words, when more money is at stake, the project manager's satisfaction or tolerance diminishes. With the risk lover, the project manager's satisfaction increases when more money is at stake (i.e., an increasing slope to the curve). A risk averter prefers a more certain outcome and will demand a premium to accept risk.

A risk lover prefers the more uncertain outcome and may be willing to pay a penalty to take a risk.

44.4 Risk Management

Risk management is the act or practice of dealing with risk. It includes *planning* for risk, *assessing* (*identifying and analyzing*) risk issues, developing *risk handling* options, and *monitoring* risks to determine how risks have changed.

Risk management is not a separate project office activity assigned to a risk management department, but rather is one aspect of sound project management. Risk management should be closely coupled with key project processes, including but not limited to: overall project management, systems engineering, cost, scope, quality, and schedule.

Proper risk management is proactive rather than reactive. As an example, an activity in a network requires that a new technology be developed. The schedule indicates six months for this activity, but project engineers think that nine months is closer to the truth. If the project manager is proactive, he might develop a Risk Handling Plan right *now*. If the project manager is reactive (e.g., a "problem solver"), then he will do nothing until the problem actually occurs. At that time the project manager must react rapidly to the crisis, and may have lost valuable time when contingencies could have been developed. Hence, proper risk management will attempt to reduce the likelihood of an event occurring and/or the magnitude of its impact.

44.5 Categories of Risk

The Project Management Institute **categorizes risks** as follows: **External–unpredictable:** Government regulations, natural hazards, and acts of God **External–predictable:** Cost of money, borrowing rates, raw material availability

The external risks are outside of the project manager's control but may affect the direction of the project.

Internal (nontechnical): Labor stoppages, cash flow problems, safety issues, health and benefit plans.

The internal risks may be within the control of the project manager and present uncertainty that may affect the project.

Technical: Changes in technology, changes in state of the art, design issues, operations/maintenance issues. Technical risks relate to the utilization of technology and the impact it has on the direction of the project.

Legal: Licenses, patent rights, lawsuits, subcontractor performance, contractual failure

To identify risk issues, evaluators should break down program elements to a level where they can perform valid assessments. The information necessary to do this varies according to the phase of the program. During the early phases, requirement and scope documents, and acquisition plans may be the only program-specific data available. They should be evaluated to identify issues that may have adverse consequences.

Another method of decomposition is to create a Work Breakdown Structure (WBS) as early as possible in a program, and use this in a structured approach to evaluate candidate risk categories against candidate system or lower level designs. To use this approach, each element at level three of the WBS is further broken down to the fourth or fifth level and is subjected to a risk analysis. Items at system, segment or group, or subsystem levels, as well as management items, are assessed using attributes such as maturity and complexity of hardware and software items or the dependency of the item on existing systems, facilities, or contractors to evaluate their risk levels.

Another approach is to evaluate risk associated with some key processes (e.g., design and manufacturing) that will exist on a project. Information on this approach is contained in the government DoD directive 4245.7-M, which provides a standard structure for identifying technical risk areas in the transition from development to production. The structure is geared toward programs that are mid-to-late in the development phase but, with modifications, could be used for other projects. The directive identifies a *template* for each major technical activity. Each template identifies potential areas of risk. Overlaying each template on a project allows identification of mismatched areas, which are then identified as "at risk." Having used all applicable templates, the program manager will have created a "watch list" of production transition risk areas and can prioritize control actions— many of which will be the responsibility of systems engineering. DoD Directive 4245.7-M describes technical methods for reducing the risk in each identified area.

High-risk areas may reflect missing capabilities in the project manager's organization or in supporting organizations. They may also reflect technical difficulties in the design or development process. In either case, "management" of risk involves using project management assets to reduce the identified risks.

The value in each of these approaches to risk identification lies in the methodical nature of the approach, which forces disciplined, consistent treatment of risk. However, using any method in a "cookbook" manner may cause unique risk aspects of the project to be overlooked. Before acting on the outcome of any assessment, the project manager must review the strengths and weaknesses of the approach and identify other factors that may introduce technical, schedule, cost, program, or other risks.

Certainty, Risk, and Uncertainty

Decision-making falls into three categories: certainty, risk, and uncertainty. Decision-making under certainty is the easiest case to work with. With certainty, we assume that all of the necessary information is available to assist us in making the right decision, and we can predict the outcome with a high level of confidence.

Decision-Making under Certainty

Decision-making under certainty implies that we know with 100 percent accuracy what the states of nature will be and what the expected payoffs will be for each state of nature. Mathematically, this can be shown with payoff tables.

To construct a payoff matrix, we must identify (or select) the states of nature over which *we have no control*. We then select our own action to be taken for each of the states of nature. Our actions are called strategies. The elements in the payoff table are the outcomes for each strategy.

A payoff matrix based on decision-making under certainty has two controlling features.

- Regardless of which state of nature exists, there will be one dominant strategy that will produce larger gains or smaller losses than any other strategy for all the states of nature.
- There are no probabilities assigned to each state of nature.

Decision-Making under Risk

In most cases, there usually does not exist one dominant strategy for all states of nature. In a realistic situation, higher profits are usually accompanied by higher risks and therefore higher probable losses. When there does not exist a dominant strategy, a probability must be assigned to the occurrence of each state of nature.

Risk can be viewed as outcomes (i.e., states of nature) that can be described within established confidence limits (i.e., probability distributions). These probability distributions are obtained from well-defined experimental distributions.

Decision-making under Uncertainty

The difference between risk and uncertainty is that under risk there are assigned probabilities, and under uncertainty meaningful assignments of probabilities are not possible. As with decision making under

risk, uncertainty also implies that there may exist no single dominant strategy. The decision-maker, however, does have at his disposal four basic criteria from which to make a management decision. The decision about which criterion to use will depend on the type of project as well as the project manager's tolerance to risk.

Risk Management Process

It is important that a risk management strategy is established early in a project and that risk is continually addressed throughout the project life cycle. Risk management includes several related actions involving risk: planning, assessment (identification and analysis), handling, and monitoring:

- **Risk planning:** This is the process of developing and documenting an organized, comprehensive, and interactive strategy and methods for identifying and tracking risk issues, developing risk handling plans, performing continuous risk assessments to determine how risks have changed, and assigning adequate resources.
- **Risk assessment:** This process involves identifying and analyzing program areas and critical technical process risks to increase the likelihood of meeting cost, performance, and schedule objectives.
- **Risk identification** is the process of examining the program areas and each critical technical process to identify and document the associated risk. *Risk analysis* is the process of examining each identified risk issue or process to refine the description of the risk, isolate the cause, and determine the effects.
- **Risk handling:** This is the process that identifies, evaluates, selects, and implements options in order to set risk at acceptable levels given program constraints and objectives. This includes the specifics on what should be done, when it should be accomplished, who is responsible, and associated cost and schedule. Risk handling options include assumption, avoidance, control (also known as mitigation), and transfer. The most desirable handling option is selected, and a specific approach is then developed for this option.
- **Risk monitoring:** This is the process that systematically tracks and evaluates the performance of risk handling actions against established metrics throughout the acquisition process and provides inputs to updating risk handling strategies, as appropriate.

44.6 Risk Planning

Risk planning is the detailed formulation of a program of action for the management of risk. It is the process to:

- Develop and document an organized, comprehensive, and interactive risk management strategy.
- Determine the methods to be used to execute a program's risk management strategy.
- Plan for adequate resources.

Risk planning is iterative and includes the entire risk management process, with activities to assess (identify and analyze), handle, monitor (and document) the risk associated with a program. The result is often the risk management plan (RMP).

Planning begins by developing and documenting a risk management strategy. Early efforts establish the purpose and objective, assign responsibilities for specific areas, identify additional technical expertise needed, describe the assessment process and areas to consider, define a risk rating approach, delineate procedures for consideration of handling options, establish monitoring metrics (where possible), and define the reporting, documentation, and communication needs.

The RMP is the roadmap that tells the project team how to get from where the program is today to where the program manager wants it to be in the future. The key to writing a good RMP is to provide the necessary information so the program team knows the objectives, goals, and the risk management process. Since it is a roadmap, it may be specific in some areas, such as the assignment of responsibilities for project personnel and definitions, and general in other areas to allow users to choose the most efficient way to proceed. For example, a description of techniques that suggests several methods for evaluators to use to assess risk is appropriate, since every technique has advantages and disadvantages depending on the situation.

44.7 Risk Assessment

Risk assessment is the *problem definition* stage of risk management, the stage that identifies, analyzes, and quantifies program issues in terms of probability and consequences, and possibly other considerations (e.g., the time to impact). The results are a key input to many subsequent risk management actions. It is often a difficult and time-consuming part of the risk management process.

There are no quick answers or shortcuts. Tools are available to assist evaluators in assessing risk, but none are totally suitable for any program and are often highly misleading if the user does not understand how to apply them or interpret the results. Despite its complexity, risk assessment is one of the most important phases of the risk management process because the caliber and quality of assessments can have a large impact on program outcomes.

The components of assessment— identification and analysis— are performed sequentially with identification being the first step.

Risk identification begins by compiling the program's risk issues. Project issues should be examined and identified by reducing them to a level of detail that permits an evaluator to understand the significance of any risk and its causes (e.g., risk issues). This is a practical way of addressing the large and diverse number of potential risks that often occur in moderate- to large-scale programs.

For example, a WBS level 4 or 5 element may be made up of several risk issues associated with a specification or function.

Risk analysis is a technical and systematic process to examine identified risks, isolate causes, determine the relationship to other risks, and express the impact in terms of probability and consequence of occurrence.

44.8 Risk Identification

The second step in risk management is to identify all potential risk issues. This may include a survey of the program, customer, and users for concerns and problems.

Some degree of risk always exists in project, technical, test, logistics, production, and engineering areas. Project risks include cost, funding, schedule, contract relationships, and political risks. (Cost and schedule risks are often so fundamental to a project that they may be treated as stand-alone risk categories.) Technical risks, such as related to engineering and technology, may involve the risk of meeting a performance requirement, but may also involve risks in the feasibility of a design concept or the risks associated with using state-of-the-art equipment or software. Production risk includes concerns over packaging, manufacturing, lead times, and material availability. Support risks include maintainability, operability, and trainability concerns. The understanding of risks in these and other areas evolves over time.

Consequently, risk identification must continue through all project phases.

The methods for identifying risk are numerous. Common practice is to classify project risk according to its source. Most sources are either objective or subjective.

Objective sources: Recorded experience from past projects and the current project as it proceeds

- Lessons learned files
- Program documentation evaluations
- Current performance data

Subjective sources: Experiences based upon knowledgeable experts

- Interviews and other data from subject matter experts

Risks can also be identified according to life-cycle phases, as shown in Figure 44.3. In the early life-cycle phases, the total project risk is high because of lack of information. In the later life-cycle phases, the financial risk is the greatest.

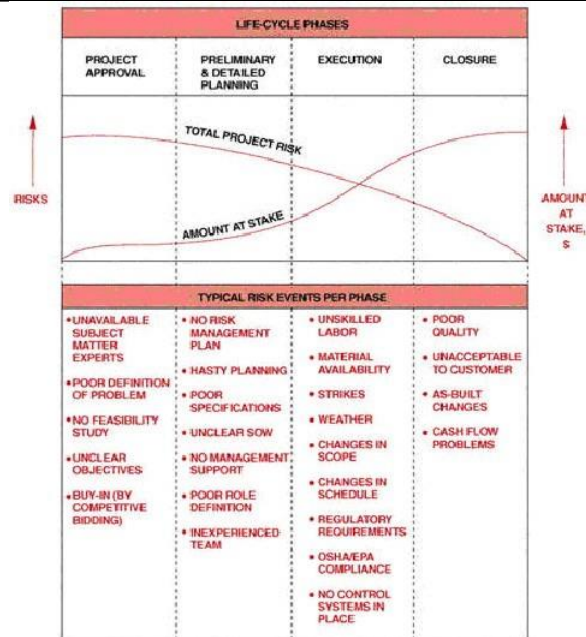


Figure 44.3: Life-cycle risk analysis

Any source of information that allows recognition of a potential problem can be used for risk identification. These include:

- Systems engineering documentation
- Life-cycle cost analysis
- Plan/WBS decomposition
- Schedule analysis
- Baseline cost estimates
- Requirements documents
- Lessons learned files
- Assumption analysis
- Trade studies/analyses
- Technical performance measurement (TPM) planning/analysis
- Models (influence diagrams)
- Decision drivers
- Brainstorming
- Expert judgment

Expert judgment techniques are applicable not only for risk identification, but also for forecasting and decision-making. Two expert judgment techniques are the Delphi method and the nominal group technique. The Delphi method has the following general steps:

- Step 1:** A panel of experts is selected from both inside and outside the organization. The experts do not interact on a face-to-face basis and may not even know who else sits on the panel.
- Step 2:** Each expert is asked to make an anonymous prediction on a particular subject.
- Step 3:** Each expert receives a composite feedback of the entire panel's answers and is asked to make new predictions based upon the feedback. The process is then repeated as necessary.

Closely related to the Delphi method is the nominal group technique, which allows for face-to-face contact and direct communication. The steps in the nominal group technique are as follows:

- Step 1:** A panel is convened and asked to generate ideas in writing.
- Step 2:** The ideas are listed on a board or a flip chart. Each idea is discussed among the panelists.
- Step 3:** Each panelist prioritizes the ideas, which are then ranked mathematically. Steps 2 and 3 may be repeated as necessary.

Expert judgment techniques have the potential for bias in risk identification and analysis. Factors affecting the bias include:

- Overconfidence in one's ability
- Insensitivity to the problem or risk
- Proximity to project
- Motivation
- Recent event recall
- Availability of time
- Relationship with other experts

There exist numerous ways to classify risks. In a simple business context, risk can be defined as:

- Business risk
- Insurable risk

Business risks provide us with opportunities of profit and loss. Examples of business risk would be competitor activities, bad weather, inflation, recession, customer response, and availability of resources. Insurable risks provide us with only a chance for a loss. Insurable risks include such elements as:

Direct property damage: This includes insurance for assets such as fire insurance, collision insurance, and insurance for project materials, equipment, and properties.

Indirect consequential loss: This includes protection for contractors for indirect losses due to third party actions, such as equipment replacement and debris removal.

Legal liability: This is protection for legal liability resulting from poor product design, design errors, product liability, and project performance failure. This does not include protection from loss of goodwill.

Personnel: This provides protection resulting from employee bodily injury (worker's compensation), loss of key employees, replacement cost of key employees, and several other types of business losses due to employee actions.

On construction projects, the owner/customer usually provides "wrap-up" or "bundle" insurance, which bundles the owner, contractor, and subcontractors into one insurable package. The contractor may be given the responsibility to provide the bundled package, but it is still paid for by the owner/customer.

44.9 Risk Handling

Risk handling includes specific methods and techniques to deal with known risks, identifies who is responsible for the risk issue, and provides an estimate of the cost and schedule associated with reducing the risk, if any. It involves planning and execution with the objective of reducing risks to an acceptable level. The evaluators who assess risk should begin the process by identifying risks and developing handling options and approaches to propose to the program manager, who selects the appropriate one(s) for implementation. There are several factors that can influence our response to a risk, including but not limited to:

- Amount and quality of information on the actual hazards that caused the risk (descriptive uncertainty)
- Amount and quality of information on the magnitude of the damage (measurement uncertainty)
- Amount and quality of information on probability of occurrence
- Personal benefit to project manager for accepting the risk (voluntary risk)
- Risk forced upon project manager (involuntary risk)
- Confusion and avoidability of the risk
- The existence of cost-effective alternatives (equitable risks)
- The existence of high-cost alternatives or possibly lack of options (inequitable risks)
- Length of exposure to the risk

Risk handling must be compatible with the RMP and any additional guidance the program manager provides. A critical part of risk handling involves refining and selecting the most appropriate handling

option(s) and specific approach (es) for selected risk issues (often those with medium or higher risk levels).

Personnel who evaluate candidate risk handling options may use the following criteria as starting points for evaluation:

- Can the option be feasibly implemented and still meet the user's needs?
- What is the expected effectiveness of the handling option in reducing program risk to an acceptable level?
- Is the option affordable in terms of dollars and other resources (e.g., use of critical materials, and test facilities)?
- Is time available to develop and implement the option, and what effect does that have on the overall program schedule?
- What effect does the option have on the system's technical performance?

Risk handling options include: risk assumption, risk avoidance, risk control, and risk transfer.

Although the control option (often called mitigation) is commonly used in many high technology programs, it should not automatically be chosen. All four options should be evaluated, and the best one chosen for each risk issue.

The options for handling risk fall into the following categories:

Risk assumption (i.e., retention): The project manager says, "I know the risk exists and am aware of the possible consequences. I am willing to wait and see what happens. I accept the risk and its impact should it occur."

Risk avoidance: The project manager says, "I will not accept this option because of the potentially unfavorable results."

Risk control (i.e., prevention or mitigation): The project manager says, "I will take the necessary measures required to control this risk by continuously reevaluating it and developing contingency plans or fall-back positions. I will do what is expected."

Risk transfer: The project manager says, "I will share this risk with others through insurance or a warranty, or transfer the entire risk to them. Perhaps I can convert the risk into an opportunity."

PROJECT PROCUREMENT, CONTRACT MANAGEMENT, AND ETHICS IN PROJECT MANAGEMENT

BROAD CONTENTS

Procurement
Procurement Cycles
Type of contract
Categories of Contract
Ethics in Project Management

45.1. Procurement

Procurement can be defined as the acquisition of goods or services. Procurement (and contracting) is a process that involves two parties with different objectives who interact in a given market segment. Good procurement practices can increase corporate profitability by taking advantage of quantity discounts, minimizing cash flow problems, and seeking out quality suppliers. Because procurement contributes to profitability, procurement is often centralized, which results in standardized practices and lower paperwork costs.

All procurement strategies are frameworks by which an organization attains its objectives. There are two basic procurement strategies:

Corporate procurement strategy: the relationship of specific procurement actions to the corporate strategy

Project procurement strategy: the relationship of specific procurement actions to the operating environment of the project

Project procurement strategies can differ from corporate procurement strategies because of constraints, availability of critical resources, and specific customer requirements. Corporate strategies might promote purchasing small quantities from several qualified vendors, whereas project strategies may dictate sole source procurement.

Procurement planning usually involves the selection of one of the following as the primary objective:

- Procure all goods/services from a single source.
- Procure all goods/services from multiple sources.
- Procure only a small portion of the goods/services.
- Procure none.

Another critical factor is the environment in which procurement must take place. There are two environments: macro and micro. The macro environment includes the general external variables that can influence how and when we do procurement. These include recessions, inflation, cost of borrowing money, and unemployment. As an example, a foreign corporation had undertaken a large project that involved the hiring of several contractors. Because of the country's high unemployment rate, the decision was made to use only domestic suppliers/contractors and to give first preference to contractors in cities where unemployment was the greatest, even though there were other more qualified suppliers/contractors.

The microenvironment is the internal environment of the firm, especially the policies and procedures imposed by the firm, project, or client in the way that procurement will take place.

This includes the procurement/contracting system, which contains five cycles:

Requirement cycle: definition of the boundaries of the project

Requisition cycle: analysis of sources

Solicitation cycle: the bidding process

Award cycle: contractor selection and contract award

Contract administration cycle: managing the subcontractor until completion of the contract

There are several activities that are part of the procurement process and that overlap several of the cycles. These cycles can be conducted in parallel, especially requisition and solicitation.

45.2. Procurement Cycles

The first step in the procurement process is the definition of project, specifically the requirement.

This is referred to as the requirement cycle and includes the following:

Defining the need for the project

Development of the statement of work, specifications, and work breakdown structure

Performing a make or buy analysis

Laying out the major milestones and the timing/schedule

Cost estimating, including life-cycle costing

Obtaining authorization and approval to proceed

The SOW is a narrative description of the work to be accomplished and/or the resources to be supplied. The identification of resources to be supplied has taken on paramount importance during the last ten years or so. During the 1970s and 1980s, small companies were bidding on mega jobs only to subcontract out more than 99% of all of the work. Lawsuits were abundant and the solution was to put clauses in the SOW requiring that the contractor identify the names and resumes of the talented internal resources that would be committed to the project, including the percentage of their time on the project. Specifications are written, pictorial, or graphic information that describe, define, or specify the services or items to be procured. There are three types of specifications:

Design specifications: These detail what is to be done in terms of physical characteristics. The risk of performance is on the buyer.

Performance specifications: These specify measurable capabilities the end product must achieve in terms of operational characteristics. The risk of performance is on the contractor.

Functional specifications: This is when the seller describes the end use of the item to stimulate competition among commercial items, at a lower overall cost. This is a subset of the performance specification, and the risk of performance is on the contractor.

There are always options in the way the end item can be obtained. Feasible procurement alternatives include make or buy, lease or buy, buy or rent, and lease or rent. Buying domestic or international is also of critical importance, especially to the United Auto Workers Union. Factors involving the make or buy analysis is shown below:

- The make decision
- Less costly (but not always!!)
- Easy integration of operations
- Utilize existing capacity that is idle
- Maintain direct control
- Maintain design/production secrecy
- Avoid unreliable supplier base
- Stabilize existing workforce
- The buy decision

- Less costly (but not always!!)
- Utilize skills of suppliers
- Small volume requirement (not cost effective to produce)
- Having limited capacity or capability
- Augment existing labor force
- Maintain multiple sources (qualified vendor list)
- Indirect control

The lease or rent decision is usually a financial endeavor. Leases are usually longer term than renting. Consider the following example. A company is willing to rent you a piece of equipment at a cost of \$100 per day. You can lease the equipment for \$60 per day plus a one-time cost of \$5000.

What is the breakeven point, in days, where leasing and renting are the same?

Let X be the number of days.

$$\$100X = \$5000 + \$60X$$

$\uparrow$ $\uparrow$
 renting leasing

Solving, X = 125 days

Therefore, if the firm wishes to use this equipment for more than 125 days, it would be more cost effective to sign a lease agreement rather than a rental agreement.

Requisition Cycle

Once the requirements are identified, a requisition form is sent to procurement to begin the requisition process. The requisition cycle includes:

Evaluating/confirming specifications (are they current?)

Confirming sources

Reviewing past performance of sources

Producing solicitation package

The solicitation package is prepared during the requisition cycle but utilized during the solicitation cycle. In most situations, the same solicitation package must be sent to each possible supplier so that the playing field is level. A typical solicitation package would include:

Bid documents (usually standardized)

Listing of qualified vendors (expected to bid)

Proposal evaluation criteria

Bidder conferences

How change requests will be managed

Supplier payment plan

Standardized bid documents usually include standard forms for compliance with EEO, affirmative action, OSHA/EPA, minority hiring, etc. A listing of qualified vendors appears in order to drive down the cost. Quite often, one vendor will not bid on the job because it knows that it cannot submit a lower bid than one of the other vendors. The cost of bidding on a job is an expensive process.

Bidder conferences are used so that no single bidder has more knowledge than others. If a potential bidder has a question concerning the solicitation package, then it must wait for the bidders' conference to ask the question so that all bidders will be privileged to the same information. This is particularly important in government contracting. There may be several bidders' conferences between solicitation and award. Project management may or may not be involved in the bidders' conferences, either from the customer's side or the contractor's side.

Solicitation Cycle

Selection of the acquisition method is the critical element in the solicitation cycle. There are three common methods for acquisition:

- Advertising
- Negotiation
- Small purchases (i.e., office supplies)

Advertising is when a company goes out for sealed bids. There are no negotiations. Competitive market forces determine the price and the award goes to the lowest bidder.

Negotiation is when the price is determined through a bargaining process. In such a situation, the customer may go out for a:

- Request for information (RFI)
- Request for quotation (RFQ)
- Request for proposal (RFP)

The RFP is the most costly endeavor for the vendor. Large proposals contain separate volumes for cost, technical performance, management history, quality, facilities, subcontractor management, and others. The negotiation process can be competitive or noncompetitive. Noncompetitive processes are called sole-source procurement.

On large contracts, the negotiation process goes well beyond negotiation of the bottom line.

Separate negotiations can be made on price, quantity, quality, and timing. Vendor relations are critical during contract negotiations. The integrity of the relationship and previous history can shorten the negotiation process. The three major factors of negotiations are:

- Compromise ability
- Adaptability
- Good faith

Negotiations should be planned for. A typical list of activities would include:

- Develop objectives (i.e., min-max positions)
- Evaluate your opponent
- Define your strategy and tactics
- Gather the facts
- Perform a complete price/cost analysis
- Arrange "hygiene" factors

If you are the buyer, what is the maximum you will be willing to pay? If you are the seller, what is the minimum you are willing to accept? You must determine what motivates your opponent. Is your opponent interested in profitability, keeping people employed, developing a new technology, or using your name as a reference? This knowledge could certainly affect your strategy and tactics.

Hygiene factors include where the negotiations will take place. In a restaurant? Hotel? Office? Square table or round tables? Morning or afternoon? Who faces the windows and who faces the walls? There should be a postnegotiation critique in order to review what was learned. The first type of postnegotiation critique is internal to your firm. The second type of postnegotiation critique is with all of the losing bidders to explain why they did not win the contract. Losing bidders may submit a "bid protest" where the customer may have to prepare a detailed report as to why this bidder did not win the contract. Bid protests are most common on government contracts.

Award Cycle

The award cycle results in a signed contract. Unfortunately, there are several types of contracts. The negotiation process also includes the selection of the type of contract.

There are certain basic elements of most contracts.

Mutual agreement: There must be an offer and acceptance.

Consideration: There must be a down payment.

Contract capability: The contract is binding only if the contractor has the capability to perform the work.

The objective of the award cycle is to negotiate a contract type and price that will result in reasonable contractor risk and provide the contractor with the greatest incentive for efficient and economic performance.

Legal purpose: The contract must be for a legal purpose.

Form provided by law: The contract must reflect the contractor's legal obligation, or lack of obligation, to deliver end products.

The two most common contract forms are completion contracts and term contracts.

Completion contract: The contractor is required to deliver a definitive end product. Upon delivery and formal acceptance by the customer, the contract is considered complete, and final payment can be made.

Term contract: The contract is required to deliver a specific "level of effort," not an end product.

The effort is expressed in woman/man-days (months or years) over a specific period of time using specified personnel skill levels and facilities. When the contracted effort is performed, the contractor is under no further obligation. Final payment is made, irrespective of what is actually accomplished technically.

The final contract is usually referred to as a definitive contract, which follows normal contracting procedures such as the negotiation of all contractual terms, conditions, cost, and schedule prior to initiation of performance. Unfortunately, negotiating the contract and preparing it for signatures may require months of preparation. If the customer needs the work to begin immediately or if long-lead procurement is necessary, then the customer may provide the contractor with a letter contract or letter of intent. The letter contract is a preliminary written instrument authorizing the contractor to begin immediately the manufacture of supplies or the performance of services. The final contract price may be negotiated after performance begins, but the contractor may not exceed the "not to exceed" face value of the contract. The definitive contract must still be negotiated.

- The type of contract selected is based upon the following:
- Overall degree of cost and schedule risk
- Type and complexity of requirement (technical risk)
- Extent of price competition
- Cost/price analysis
- Urgency of the requirements
- Performance period
- Contractor's responsibility (and risk)
- Contractor's accounting system (is it capable of earned value reporting?)
- Concurrent contracts (will my contract take a back seat to existing work?)
- Extent of subcontracting (how much work will the contractor outsource?)

45.3. Types of Contracts

Before analyzing the various types of contracts, one should be familiar with the terminology found in them.

The target cost or estimated cost is the level of cost that the contractor will most likely obtain under normal performance conditions. The target cost serves as a basis for measuring the true cost at the end of production or development. The target cost may vary for different types of contracts even though the contract objectives are the same. The target cost is the most important variable affecting research and development.

Target or expected profit is the profit value that is negotiated for, and set forth, in the contract. The expected profit is usually the largest portion of the total profit.

Profit ceiling and profit floor are the maximum and minimum values, respectively, of the total profit. These quantities are often included in contract negotiations.

Price ceiling or ceiling price is the amount of money for which the government is responsible. It is usually measured as a given percentage of the target cost, and is generally greater than the target cost.

Maximum and minimum fees are percentages of the target cost and establish the outside limits of the contractor's profit.

The sharing arrangement or formula gives the cost responsibility of the customer to the cost responsibility of the contractor for each dollar spent. Whether that dollar is an overrun or an under-run dollar, the sharing arrangement has the same impact on the contractor. This sharing arrangement may vary depending on whether the contractor is operating above or below target costs.

The production point is usually that level of production above which the sharing arrangement commences.

Point of total assumption is the point (cost or price) where the contractor assumes all liability for additional costs.

At one end of the range is the cost-plus, a fixed-fee type of contract where the company's profit, rather than price, is fixed and the company's responsibility, except for its own negligence, is minimal. At the other end of the range is the lump sum or turnkey type of contract under which the company has assumed full responsibility, in the form of profit or losses, for timely performance and for all costs under or over the fixed contract price. In between are various types of contracts, such as the guaranteed maximum, incentive types of contracts, and the bonus-penalty type of contract.

These contracts provide for varying degrees of cost responsibility and profit depending on the level of performance. Contracts that cover the furnishing of consulting services are generally on a per diem basis at one end of the range and on a fixed-price basis at the other end of the range.

Because no single form of contract agreement fits every situation or project, companies normally perform work in the United States under a wide variety of contractual arrangements, such as:

- Cost-plus percentage fee
- Cost-plus fixed fee
- Cost-plus guaranteed maximum
- Cost-plus guaranteed maximum and shared savings
- Cost-plus incentive (award fee)
- Cost and cost sharing
- Fixed price or lump sum
- Fixed price with re-determination
- Fixed price incentive fee
- Fixed price with economic price adjustment
- Fixed price incentive with successive targets
- Fixed price for services, material, and labor at cost (purchase orders, blanket agreements)
- Time and material/labor hours only
- Bonus-penalty
- Combinations
- Joint venture

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There are generally five types of contracts to consider:

- Fixed-Price (FP),
- Cost -Plus-Fixed-Fee (CPFF), Or Cost-Plus-Percentage-Fee (CPPF),
- Guaranteed Maximum-Shared Savings (GMSS),
- Fixed-Price-Incentive-Fee (FPIF), And
- Cost-Plus-Incentive-Fee (CPIF) Contracts.

Each type is discussed separately.

Fixed-Price (FP)

Under a fixed-price or lump-sum contract, the contractor must carefully estimate the target cost. The contractor is required to perform the work at the negotiated contract value. If the estimated target cost was low, the total profit is reduced and may even vanish. The contractor may not be able to underbid the competitors if the expected cost is overestimated. Thus, the contractor assumes a large risk.

This contract provides maximum protection to the owner for the ultimate cost of the project, but has the disadvantage of requiring a long period for preparation and adjudications of bids. Also, there is the possibility that because of a lack of knowledge of local conditions, all contractors may necessarily include an excessive amount of contingency. This form of contract should never be considered by the owner unless, at the time bid invitations are issued, the building requirements are known exactly. Changes requested by the owner after award of a contract on a lump sum basis lead to troublesome and sometimes costly extras.

Cost -Plus-Fixed-Fee (CPFF), Or Cost-Plus-Percentage-Fee (CPPF)

Traditionally, the cost-plus-fixed-fee contract has been employed when it was believed that accurate pricing could not be achieved any other way. In the CPFF contract, the cost may vary but the fee remains firm. Because, in a cost-plus contract, the contractor agrees only to use his best efforts to perform the work, good performance and poor performance are, in effect, rewarded equally. The total dollar profit tends to produce low rates of return, reflecting the small amount of risk that the contractor assumes. The fixed fee is usually a small percentage of the total or true cost.

The cost-plus contract requires that the company books be audited. With this form of contract the engineering-construction contractor bids a fixed dollar fee or profit for the services to be supplied by the contractor, with engineering, materials, and field labor costs to be reimbursed at actual cost. This form of bid can be prepared quickly at a minimal expense to contractor and is a simple bid for the owner to evaluate. Additionally, it has the advantage of establishing incentive to the contractor for quick completion of the job.

If it is a cost-plus-percentage -fee contract, it provides maximum flexibility to the owner and permits owner and contractor to work together cooperatively on all technical, commercial, and financial problems. However, it does not provide financial assurance of ultimate cost. Higher building cost may result, although not necessarily so, because of lack of financial incentive to the contractor compared with other forms. The only meaningful incentive that is evident today is the increased competition and prospects for follow-on contracts.

Guaranteed Maximum-Shared Savings (GMSS)

Under the guaranteed maximum-share savings contract, the contractor is paid a fixed fee for his profit and reimbursed for the actual cost of engineering, materials, construction labor, and all other job costs, but only up to the ceiling figure established as the "guaranteed maximum." Savings below the guaranteed maximum are shared between owner and contractor, whereas contractor assumes the responsibility for any overrun beyond the guaranteed maximum price.

This contract form essentially combines the advantages as well as a few of the disadvantages of both lump sum and cost-plus contracts. This is the best form for a negotiated contract because it establishes a maximum price at the earliest possible date and protects the owner against being overcharged, even though the contract is awarded without competitive tenders. The guaranteed maximum-share savings contract is unique in that the owner and contractor share the financial risk and both have a real incentive to complete the project at lowest possible cost.

Fixed-Price-Incentive-Fee (FPIF)

Fixed-price-incentive-fee contracts are the same as fixed-price contracts except that they have a provision for adjustment of the total profit by a formula that depends on the final total cost at completion of the project and that has been agreed to in advance by both the owner and the contractor. To use this type of contract, the project or contract requirements must be firmly established. This contract provides an incentive to the contractor to reduce costs and therefore increase profit. Both the owner and contractor share in the risk and savings.

Cost-Plus-Incentive-Fee (CPIF) Contracts

Cost-plus-incentive-fee contracts are the same as cost plus contracts except that they have a provision for adjustment of the fee as determined by a formula that compares the total project costs to the target cost. This formula is agreed to in advance by both the owner and contractor. This contract is usually used for long-duration or R&D type projects. The company places more risk on the contractor and forces him to plan ahead carefully and strive to keep costs down.

Contract Type	Advantages	Disadvantages
Cost-plus-fee	• Provides maximum flexibility to owner • Minimizes contractor profits • Minimizes negotiations and preliminary specification costs • Permits quicker start, earlier completion • Permits choice of best-qualified, not lowest-bidding, contractor • Permits use of same contractor from consultation to completion, usually increasing quality and efficiency	• No assurance of actual final cost • No financial incentive to minimize time and cost • Permits specification of high-cost features by owner's staff • Permits excessive design changes by owner's staff increasing time and costs
Guaranteed maximum-share savings	• Provides firm assurance of ultimate cost at earliest possible date • Insures prompt advice to owner of delays and extra costs resulting from changes • Provides incentive for quickest completion • Owner and contractor share financial risk and have mutual incentive for possible savings • Ideal contract to establish owner-contractor cooperation throughout execution of project	• Requires complete auditing by owner's staff • Requires completion of definitive engineering before negotiation of contract
Fixed price/lump sum	• Provides firm assurance of ultimate cost • Insures prompt advice to owner of delays and extra costs resulting from changes • Requires minimum owner follow-up on work • Provides maximum incentive for quickest completion at lowest costs • Involves minimal auditing by owner's staff	• Requires exact knowledge of what is wanted before contract award • Requires substantial time and cost to develop inquiry specs, solicit, and evaluate bids. Delays completion 3–4 months • High bidding costs and risks may reduce qualified bidders • Cost may be increased by excessive contingencies in bids to cover high-risk work

Contract Type	Advantages	Disadvantages
Fixed price for services, material and labor	• Essentially same as cost-plus-fee contract • Fixes slightly higher percentage of total cost • Eliminates checking and verifying contractor's services	• May encourage reduction of economic studies and detailing of drawing: produce higher costs for operation, construction, maintenance • Other same disadvantages as cost-plus-fee contract
Fixed price for imported goods and services, local costs reimbursable	• Maximum price assured for high percentage of plant costs • Avoids excessive contingencies in bids for unpredictable and highly variable local costs • Permits selection of local suppliers and subcontractors by owner	• Same extended time required for inquiry specs, quotations, and evaluation as fixed lump-sum for complete project • Requires careful definition of items supplied locally to insure comparable bids • No financial incentive to minimize field and local costs

45.4. ETHICS

Ethical Origins

Societal Ethics: Standards of Members of Society use when dealing with each other Based on "Values & standards"

Societal Ethics: Found in Society's Legal Rules, Norm, & Mores. Codified in the "Form of Law" & Society Customer.

Norms dictate how people should behave. Societal ethics vary based on a given Society. Strong beliefs in one country differ elsewhere.

Professional Ethics: Professional Ethics are the Values & standards used by Group of Managers in workplace. They are applied when decision not "Clear-Cut Ethically". Some examples are the practices of Physicians/Lawyers Professional Associates (PMA, Bar Council)

Values: are an individual's basic convictions of what is "Right & Wrong". They are the basic beliefs about what one should or should not do? & what is & is not important?

Individual Ethics: are the values of an individual resulting from their family & upbringing.

Ethics codes & policies provide sign of top management's desires in project based organizational culture. Project manager should behave ethically to avoid harming others. Managers responsible for "protecting & nurturing resources" in their charge. Leadership, Culture and Incentive Compensation Plans help Shape "Individual Ethical behavior" in project management promoting ethics. There is strong evidence showing that ethical managers benefit in the longer run. Firms increasingly seek to make good ethics part of norm & organizational culture. Ethical decisions involve normative judgment implies "something is good or bad, right or wrong, better or worse." Some examples are: Should you pay compensation pay to lay off workers? Should you buy goods from overseas firms that hire children? (If you don't Children may not earn enough money to eat)

Views of Ethical Decision-Making



Figure 45.1: Views of Ethical Decision Making

Code of Ethics:

Professional organizations such as the Project Management Institute are taking a serious look at developing the requirements for a professional project manager. In a paper by Ireland, Pike, and Schrock, this subject was described by an ethics obligation matrix and a code of ethics.

OBLIGATIONS	TO WHOM OWNED						
	EMPLOYER	CLIENT/ CUSTOMER	TEAM MEMBERS	STUDENT APPRENTICE	PROFESSIONAL SOCIETY	PUBLIC IN GENERAL	GOVERNMENT
1. Support Code of Ethics					X		
2. Support P-ofessional Society					X		
3. Guard Privileged Information	X	X					
4. Accept Responsibility for Actions	X	X	X	X	X	X	X
5. Proper Use of Authority	X		X	X			
6. Maintain Expertise in State-of-Art	X	X	X	X	X		
7. Build and Maintain Public Confidence					X		
8. Support, Respect and Abide by Laws						X	X
9. Avoid Gift Exchange	X	X					
10. Conservation of Resources (Productivity)	X	X				X	
11. Avoid Conflict of Interest	X	X					
12. Equal Opportunity Employment						X	
13. Health and Safety			X			X	
14. Promote Project Management Profession					X		
15. Honesty in Dealing With Employer and Client	X	X					
16. Professional Interface	X	X	X	X	X	X	

Figure 45.2: Ethics Obligation Matrix

Code of Ethics for Project Managers

Project Managers, in the pursuit of their profession, affect the quality of life for all people in our society. Therefore, it is vital that Project Managers conduct their work in an ethical manner to earn and maintain the confidence of team members, colleagues, employees, clients and the public.

Article I: Project Managers shall

- Maintain high standards of personal and professional conduct.
- Accept responsibility for their actions.
- Undertake projects and accept responsibility only if qualified by training or experience, or after full disclosure to their employers or clients of pertinent qualifications.
- Maintain their professional skills at the state -of-the-art and recognize the importance of continued personal development and education.
- Advance the integrity and prestige of the profession by practicing in a dignified manner.
- Support this code and encourage colleagues and co-workers to act in accordance with this code.
- Support the professional society by actively participating and encouraging colleagues and

coworkers to participate.

- Obey the laws of the country in which work is being performed.

Article II: *Project Managers shall, in their work:*

- Provide the necessary project leadership to promote maximum productivity while striving to minimize costs.
- Apply state-of-the-art management tools and techniques to ensure schedules are met and the project is appropriately planned and coordinated.
- Treat fairly all project team members, colleagues and co-workers, regardless of race, religion, sex, age or national origin.
- Protect project team members from physical and mental harm.
- Provide suitable working conditions and opportunities for project team members.
- Seek, accept and offer honest criticism of work, and properly credit the contribution of others.
- Assist project team members, colleagues and co-workers in their professional development.
-

Article III: *Project Managers shall, in their relations with employers and clients:*

- Act as faithful agents or trustees for their employers or clients in professional or business matters.
- Keep information on the business affairs or technical processes of an employer or client in confidence while employed, and later, until such information is properly released.
- Inform their employers, clients, professional societies or public agencies of which they are members or to which they may make any presentations, of any circumstances that could lead to a conflict of interest.
- Neither give nor accept, directly or indirectly, any gift, payment or service of more than nominal value to or from those having business relationships with their employers or clients.
- Be honest and realistic in reporting project cost, schedule and performance.
-

ARTICLE IV: *Project Managers shall, in fulfilling their responsibilities to the community:*

- Protect the safety, health and welfare of the public and speak out against abuses in those areas affecting the public interest.
- Seek to extend public knowledge and appreciation of the project management profession and its achievements.
-

How Firms Can Improve Their Social Responsiveness (Ethical Performance)

- Establish and publish their own Code of Ethics
- Ombudsmen - (committee, task force) to review the corporate past behavior
- Protect whistle-blowing - when an employee discloses an illegal, immoral, or unethical action committed by a member of the organization
- Training programs - ethical sensitivity training
- Controlling compliance - corporate social audit (or ethics audit)
- Leadership - demonstrate commitment from leaders
- Involve personnel at all levels