



PROJECT-SPECIFIC EMPLOYEE INCENTIVES

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Research Report 140-11
December 1999

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Printed in the United States of America.

ABSTRACT

Increased competition and the constant push to improve capital productivity within the engineering and construction industry has led many organizations to seek innovative solutions to capture additional market share, decrease cost and schedule, or better use new technology.

In support of this effort to optimize project performance, one successful management method focuses on the use of employee incentives to encourage desirable employee behavior and performance. This method of providing an extrinsic form of motivation to employees has resulted in many noteworthy results on capital projects.

The objective of this research was to establish a process to assist in the implementation of project-specific employee incentives. To achieve this objective, the following activities were undertaken:

1. identify performance benchmarks achieved through employee incentives,
2. identify key success factors for and barriers to the implementation of project-specific employee incentives, and
3. develop a guide to assist in the selection, development, implementation, and management of a project-specific employee incentive program.

These activities were supported by gathering information in the following manner:

1. surveying published literature on subjects related to employee incentives,
2. conducting 20 interviews with representatives from projects incorporating employee incentives,
3. analyzing 972 employee incentive surveys for preferred incentive award options, and
4. incorporating suggestions from members of the Construction Industry Institute research team.

The research led to the creation of the Employee Incentive Process, which identifies a three-phase process for developing and managing employee incentives. The process begins with an assessment phase, focused on the development of project objectives. This assessment leads to the identification of specific “opportunities for improvement” that, if addressed, can lead to successful project outcomes. The next phase of the process includes an analysis of the management approaches available to project management, and the selection of the one best approach. This selection phase incorporates an appraisal of project leadership, company culture, task relationships, and benchmarks which are then compared with the environment. If the selected approach includes the use of employee incentives, the process continues on to phase three, the development, implementation, evaluation, and revision of the employee incentive program.

The employee incentive process is a tool to be used by those either considering or already involved in incentive use to understand the principles that lead to an effective employee incentive program. The process suggests adherence to a step-by-step procedure to develop, implement, and manage employee incentives within the context of a single project. This process recognizes that employee incentives are dependent upon characteristics of the project environment, project personnel, and company processes. Should such characteristics not support incentive use, alternative management approaches should be utilized.

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CHAPTER I

INTRODUCTION

Incentives have been used in the engineering and construction industry for many years, in a variety of forms. Project managers receive a financial award when the project achieves a profit. Construction craftsmen are rewarded when safe work behavior prevents accidents. Incentives are designed to reward employee behavior or results achieved through their efforts, in the hopes of sustaining such effort over time.

While incentive use has occurred throughout the years, recent years have witnessed a significant increase in their use. Following a 20-year decline in construction productivity, companies increasingly began to incorporate incentive clauses into construction contracts in the late 1980s and early 1990s (Howard, Bell, and McCormick 1997). Project owners, frustrated with adversarial relationships and legal maneuverings, recognized that the efforts of another could be directed by tying financial payments to performance. A common early incentive focused on schedule performance by providing a bonus for early completion, or a liquidated damage for delay. Following success with project schedules, the use of incentives spread at the corporate level, as owners sought to improve performance across all aspects of a project, such as safety, quality, cost and schedule. As the extent of incentive use widened, companies began to cooperatively manage risk and reward through the provision of incentives. In such arrangements, the contractor placed a greater portion of the fee “at risk” in exchange for the opportunity to earn incentives if performance met or exceeded incentive goals. This risk sharing

through corporate incentives encouraged many companies to embrace a collaborative style of work and common direction of effort in support of obtaining project objectives.

Following application at the corporate level, the natural progression involved a continuation of this philosophy to progressively lower levels within an organization. Within a single project, this entailed providing compensation to project leaders in return for demonstrated levels of performance. Project managers, construction superintendents and other project leaders received compensation in the form of a financial bonus in exchange for obtaining desirable project results. As the efforts of these individuals were perceived to exert the greatest influence on project results (and thus impact the likelihood of earning a corporate incentive), executive management sought to encourage and reward achievement through sharing a portion of the proceeds. Following successes achieved through offering incentives to project leaders, application of incentives was extended to successively lower management levels, construction crafts and engineering disciplines. This provision of incentives to lower levels was believed to result in increased commitment to project goals, resulting in improved work focus, effort and attitude (Gibson, Ivancevich and Donnelly 1991; Reeve 1997, Steers and Porter 1991; Darling, Arn and Gatlin 1997).

This arrangement—where established corporate incentives encourage project performance, and project participants are rewarded for their contribution—has led to successful results across many projects. Significant increases in productivity throughout engineering and construction in recent years is due at least in part to the introduction of incentives at both the corporate and employee level (Ibbs and Abu-Hijleh 1988, Howard et al 1997).

In the 1990s, companies have extended the use of incentives into a variety of new areas. Incentives to exhibit a desired behavior—such as reduced absenteeism or continued attendance through project completion—have addressed the issue of labor shortages. Incentives focused on customer service and satisfaction have relied on subjective evaluation by the client to determine incentive award. And, incentives directed at improving employee morale and job satisfaction have been provided to address personnel concerns and enhance on-the-job performance.

This use of incentives has also impacted contractual negotiations to a large extent. Whereas construction contracts in the 1980s were commonly lump sum or cost-plus agreements, innovative compensation methods in recent years have utilized incentives to obtain project objectives (Howard et al 1997). Such agreements have frequently focused on the sharing of risk across multiple parties through cooperative management of capital project funds.

As the use of corporate incentives has developed and matured, the incentives themselves have become increasingly sophisticated and complex. And, as successes have been achieved through their use, companies have increased the role of incentives in total project compensation. Indeed, some companies have signed incentive-only contracts that provide no compensation if incentive criteria are not met (case study #18). This “upping the ante” (tying ever-larger portions of a contract to incentive results) has led management to seek increased levels of efficiency, productivity, creativity and responsibility from the entire project team.

The preferred solution to this challenge appears to be through the introduction of employee incentives that support the corporate incentive program. By linking employee

incentive criteria to corporate incentives, improved employee performance directly impacts project results. Company officials are encouraged to develop complementary incentive programs to achieve overall corporate objectives. Employees are encouraged to improve various facets of their workplace in exchange for desired recognition and rewards.

Problem Statement

Previous research has identified that competition between companies—for work opportunities and for limited resources—has led to innovative contracting strategies, including the use of corporate incentives (Howard et al 1997). Research has identified that corporate incentives, if managed properly, can effectively support company objectives and result in noteworthy accomplishments (Ibbs and Abu-Hijleh 1988). However, this research effort has been limited to the role of corporate-level incentives, not addressing the effect a workforce might have on obtaining company objectives if specific incentives were provided.

Employee-level incentives consist of the criteria against which individual, group, or team performance is measured, as well as the rewards and/or recognition exchanged for such performance. Research activities on employee incentives have been primarily concentrated in the manufacturing and service industries (Gibson et al 1991, Reeve 1997, Cascio 1992, Steers and Porter 1991, Darling et al 1997, Caggiano 1997, Johnson 1996, Semler 1998, Hale and Bailey 1998, Walletson 1998, Flynn 1995). To date, there has been little research completed on the use of project-specific employee incentives within the engineering and construction industry. Research is thus needed to identify results achieved through application of incentives at the employee level for engineering and

construction projects, and to identify a process to guide organizations through the selection, development, implementation, and management of a project-specific employee incentive program.

Statement of Objectives

The objective of this research is to establish a process to assist in the implementation of employee incentives at the project level. To achieve this objective, the following activities were undertaken:

1. identify performance benchmarks achieved through employee incentives,
2. identify key success factors and barriers to the implementation of employee incentives at the project level, and
3. develop a guide to assist in the selection, development, implementation, and management of a project-specific employee incentive program.

Due to the variability among projects researched, it was not possible to evaluate all aspects of the employee incentive process for effectiveness. Rather, this guide is designed to combine aspects of successful incentive programs utilized by various companies. It summarizes “best practices” and provide a process to follow based upon examples of the “best of the best” incentive program approaches.

Work leading up to the completion of this dissertation was conducted both separate from, and in conjunction with, the 15-member Construction Industry Institute (CII) Employee Incentives Research Team. This process was used to evaluate research findings in light of extensive professional experience.

Scope

This effort is limited in scope to the implementation of employee incentives at the project level.

Research conducted on employee incentives is restricted to programs designed for a single project, with eligibility limited to project participants alone. In this manner, evaluation of incentives received by personnel not assigned to a particular project is excluded from consideration. This research effort specifically excludes incentive programs focused on company bonuses and profit-sharing, except where such programs exist within the confines of on-going partnering relationships where the entire workload for the company is assigned to a single owner.

CHAPTER II

LITERATURE REVIEW

Employee incentives focus on achieving desirable outcomes through individual effort and teamwork. As such, the study of incentives covers such topics as employee motivation, management strategies, productivity and performance, recognition and rewards, and employee compensation. Employee incentives operate within a complex environment where the unique qualities of an individual are addressed within the larger context of the organization. While the volume of research on these subjects is substantial, information regarding the specific application of employee incentives within the engineering and construction industry is much more limited.

A literature review was performed to obtain an understanding regarding the current state of employee incentive research. This survey of relevant literature utilized subject and key word searches covering topics such as “incentives”, “compensation”, “motivation”, “goal setting”, “productivity”, “rewards” and “recognition”. Initial efforts were broad and extensive, including published findings by managers, leaders, coaches, psychologists, sociologists, engineers and motivational experts. Following these efforts, attention was directed towards categories of literature covering the use of incentives to impact performance of companies, teams, groups, and individuals. Finally, literature on the specific area of employee incentives within the business setting was reviewed.

The results of the literature review are summarized in the following topics:

1. Compensation Programs,
2. Corporate-Level Incentives in the Engineering and Construction Industry,
3. Employee Motivation,
4. Communication, Goal Setting, Teamwork and Incentives,
5. Incentive Program Features,
6. Incentive Program Management,
7. Incentive Offerings,
8. Incentive Program Results, and
9. Incentive Program Examples.

Topics one and two—Compensation Programs, and Corporate-Level Incentives—were researched to determine the impact that government, company processes, and individual risk-tolerance might have on prospective employee incentive programs. Topic three—Employee Motivation—explores the multi-faceted topic of individual motivation, recognizing that success through incentive use depends largely upon a workforce motivated to pursue promised rewards.

Throughout the literature review process, the interconnectedness between incentives and management practices was continually stressed, leading to reviews of related topics. Topic four—Communication, Goal Setting, Teamwork and Incentives—covers this relationship between incentives and management practices. Topics five through nine incorporate findings from documented employee incentive programs, including the impact of incentives on employee compensation as well as the legal, administrative, and psychological implications of a particular pay system.

Compensation Programs

Traditional Compensation Programs

Traditional compensation programs have focused on the payment of wages, whether hourly or salaried. Wages are defined (Cascio 1992) as “payment for labor or services” and are conceived to be in direct relationship to the “work” performed. Most companies provide compensation through hourly wages or annual salary.

Hourly wages compensate the employee based on a measurement of time. This traditional form of compensation provides an established wage rate regardless of the amount of work performed. Labor laws have further modified this form of compensation through the awarding of “premium rates” for hours worked in excess of 40 per week or during state or national holidays. Premium rates are developed through use of a multiplier—applying a multiplier (such as 1.5 or 2.0) to a “base rate” to arrive at the overtime pay rate. The hourly pay form of compensation receives widespread use throughout the “blue collar” sector—the non-management and non-professional positions in Western Societies.

The use of salaries to compensate employees serves three functions (Cascio 1992, LeBlanc, Gonzalez and Oxman 1998):

1. to simplify the management of employee compensation (reduced monitoring of employees and simplicity of pay calculation),
2. to maintain consistency in compensation pay while hours of work performed may vary, and
3. to provide an incentive to complete tasks as efficiently as possible.

The salaried pay form receives widespread use throughout the “white collar” sector—the management and professional positions in Western societies.

Whether traditional compensation systems incorporate the use of hourly wages or salaries, the wage rate offered typically consists of two components (Cascio 1992):

1. base pay, and
2. experience pay

Base pay relates to the entry-level worth of a specific job classification within a company. This is the compensation that an employee newly hired into a position would receive. Experience pay consists of adjustments to the base pay amount in relation to years of service, additional education or training that an employee possesses or has received. Whereas base pay assigns worth to a position, experience pay assigns worth to an individual. These two components—base pay and experience pay—are added together to arrive at the compensation provided to a particular individual within a job classification.

Variable-Pay Compensation Programs

To address the issues of achievement and productivity within organizations, many companies within the United States have incorporated the use of variable-pay compensation programs into their overall compensation plan (Sperling and Hicks 1998, Heneman 1992, Brenner 1995). Variable-pay compensation programs are methods of sharing company profits with employees and are generally either results-based or behavior-based (Johnson 1996, Pascarella 1997).

Results-based programs are quantitative and provide incentive rewards following documentation of results achieved. For specific results achieved, an incentive is earned and some form of a payment follows. Incentives may be “all or none”—where the incentive is either earned or not earned, or according to a sliding scale—where varying

percentages of a maximum value may be earned. In behavior-based programs, incentive rewards follow demonstration of a desired behavior. Typically, behavior-based programs are more subjective and rely on a personal evaluation of individuals or groups to determine if awards should be provided for demonstrated behavior.

The use of variable pay as a form of compensation has increased significantly in recent years. As shown in Figure 1, use of variable pay programs for entry-level professionals have grown from 48% of surveyed organizations to 59% in just three years (Sperling and Hicks 1998). On a separate survey of 1,244 companies by Hewitt Associates, 65% now use variable compensation programs to reward employees who exceed performance standards or meet business goals (Brotherton 1998). According to Robert Heneman in his book, *Merit Pay* (1992), fully 80% of U.S. companies report using some form of merit pay.

Moreover, the amount of pay that is being leveraged through variable programs is increasing. During the next 20 years, experts predict it will be common for 40% of pay to be contingent on achieving specified results, with only 60% of total pay provided as base salaries and benefits (Sperling and Hicks 1998). Figures 1, 2 and 3 show results from a 1997 study conducted by the Hay Group regarding incentive reward program prevalence, external business issues and the comparison between reward program prevalence and results achieved. Figure 2 shows the critical issues the business must address. These findings—that increasing cost pressures and scarce talent are the two most significant external business issues facing companies—require the development of innovative solutions. Increasing pay, the traditional response to labor shortages, does not

work in an environment characterized by increasing cost pressures. Variable-pay compensation offers an effective alternative solution.

In Figure 3, the term “one-time spot” refers to cash or prizes handed out in recognition of a specific activity or behavior exhibited. The term “lump sums” refers to discretionary cash distributions. In this study, cost pressure and scarce talent were reported as the top issues companies face, while the use of non-cash recognition was the most common reward program.

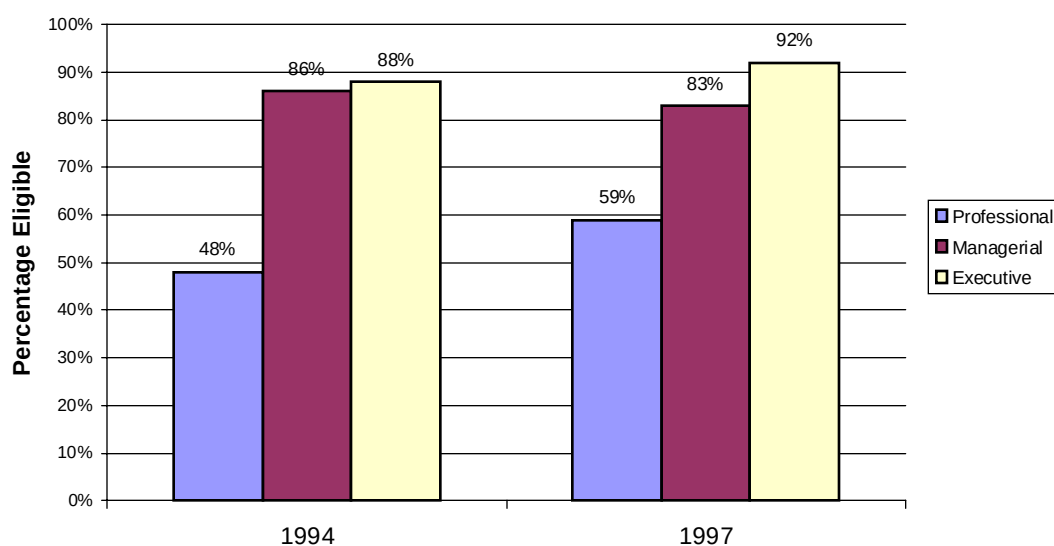


Figure 1. The growing use of variable pay (Sperling and Hicks 1998).

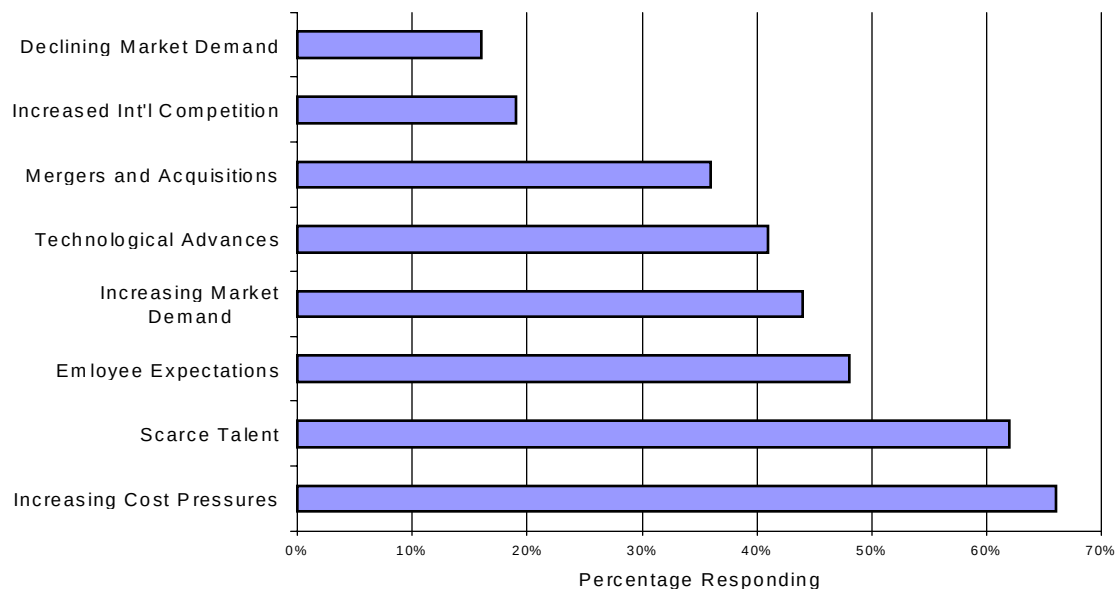


Figure 2. Significant external business issues (Sperling and Hicks 1998).

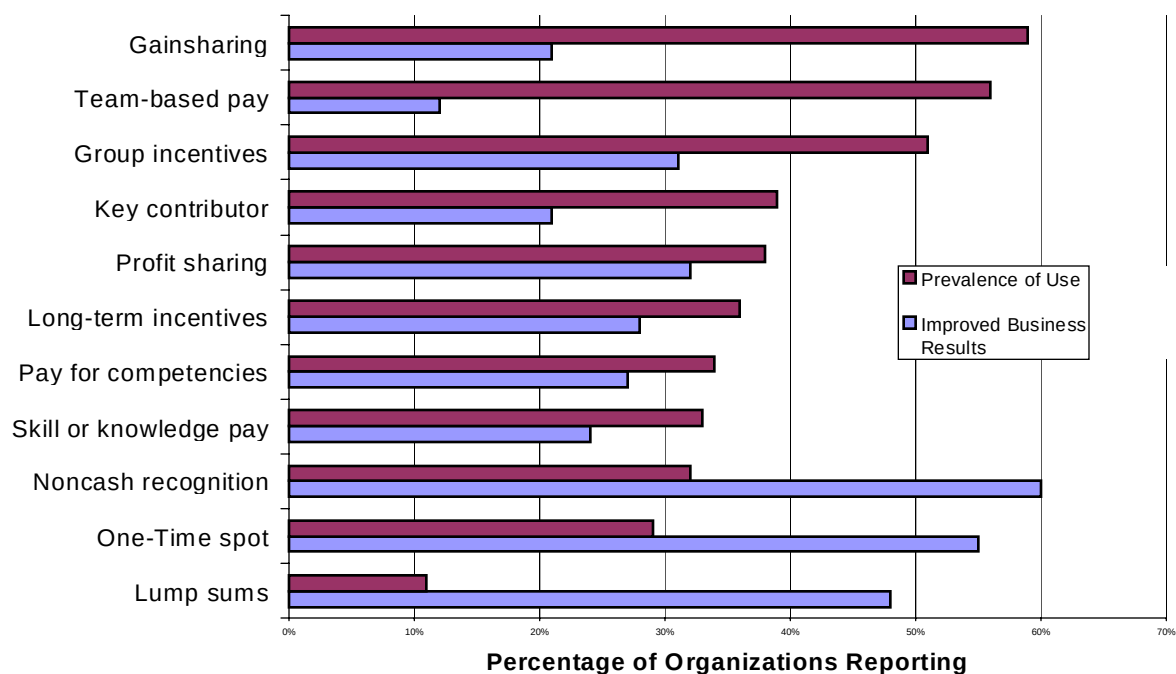


Figure 3. Program prevalence compared with results (Sperling and Hicks 1998).

In the study by the Hay Group (Sperling and Hicks 1998), although gainsharing and team-based incentive pay programs were most frequently used, non-cash recognition and one-time spot awards were found to be most effective in achieving improved business results. This result should encourage business leaders, as it suggests that personal forms of compensation (recognition and one-time spots awards) are closely correlated with improved results, and offer a less expensive alternative to variable-pay compensation.

Variable-pay compensation programs focus on corporate performance, group performance, individual performance or some combination of the three. The most-common forms of variable-pay compensation are (Cascio 1992):

1. merit pay,
2. profit sharing,
3. gain sharing, and
4. employee stock ownership programs.

Characteristics of variable-pay compensation programs are included in Tables 1 and 2.

Merit pay programs focus on individual-based pay for performance. The program links individual performance to merit-pay increases that are typically administered on an annual basis. In a merit pay program, a job analysis is conducted to capture the work behaviors and results expected of an individual in a particular job classification. Then, a pay range is established for each class of jobs. A midpoint of this pay range is then designated as a proper rate of pay for an experienced worker performing satisfactorily, and is used as the basis for comparing employees in terms of their pay levels. Within this pay range, satisfactory performers may progress from their starting rates to the midpoints;

Table 1. Variable Pay Objectives (Hale and Bailey 1998)

VARIABLE PAY PLANS		
Plan Type	What is it?	Why
Cash Profit Sharing	• Award based on organizational profitability • Oldest approach • Shares a percentage of profits (typically above a target level of profitability) • Usually an annual payout • Can be cash or deferred 401(k) • Generally, all employees share (equally as a percentage of base pay)	• To educate employees about business operations • To share company profits • To foster teamwork or “one-for-all” environment • To cover a majority of the workforce • Payouts occur only when performance goals are met
Stock or Ownership Options	• Award of stock shares or options • Award pool is approved by Board of Directors • The new darling of many companies for variable pay	• To recruit top quality employment when organization has highly uncertain future; (i.e. startups, high-tech, or biotech industries) • To address employee retention concerns • To focus employees on need to increase shareholder value • To reward employees when cashflow is a major concern
Business Incentives	• Awards that combine financial and operating measures for organization, business unit, and/or individual performance • Award pool based on achieving performance targets • Multiple performance measures may include: 1. Nonfinancial/Operating: quality improvements, productivity gains, customer service improvements 2. Financial: EPS, POE, ROA, Revenues	• To focus employees on organization division, and/ or individual goals • To link payouts to a specific financial and/or operational target
Productivity/ Gainsharing	• Awards that share economic benefits of improved productivity, quality, or other measurable results • Focus on group, plant, department, or division results • Encourages employee involvement • Designed to capitalize on untapped knowledge of employees • Used primarily in manufacturing environments • 78% of gainsharing plans are less than five years old	• To support a major productivity/ quality initiative (such as TQM or reengineering) • To foster teamwork environment • To reward employees for improvements in activities that they control
Team/Group Incentives	• Awards determined based on team/group performance goals or objectives • Payout can be more frequent than annual and can also extend beyond the life of the team • Payout may be more uniform for team/group members	• To demonstrate an organizational commitment to teams • To reinforce the need for employees to work together to achieve results
Individual Performance Awards	• Payouts based on individual performance • Typically annual payout • Managers/supervisors recommend payout based on individual objectives or performance ratings	• To reward individual goals that can be measured objectively • To hold employees accountable for individual performance results
Special Recognition Awards	• Discretionary awards distributed close to the event in order to recognize/reward individual team • Usually a budgeted expense	• To enable managers to provide immediate rewards • To provide recognition when there are limited funds available for salary increases • To cover a broad group of employees

Table 2. Advantages and Disadvantages of Variable Pay
(Hale and Bailey 1998)

VARIABLE PAY PLANS		
Plan Type	Advantages	Disadvantages
Cash Profit Sharing	• Simple, easily understood • Symbolic importance • Low administrative cost	• Profit influenced by many factors beyond employees control • “Line-of-sight” – weak pay-for-performance link • May be viewed as an entitlement • Limited motivational impact
Stock or Ownership Options	• Option awards have minimal impact on the financial statements of the company at the time they are granted • If properly communicated, can have powerful impact on employee behavior • Tax deferral to employee	• Indirect pay/ performance link • Many factors outside individual influence affect stock price • Employees often prefer cash to stock • Employees may be required to put up money to exercise grants
Business Incentives	• Communicates organizational priorities • Builds understanding of business • Can be tied to organization, division, or individual performance	• Can be complex • “Line-of-sight” link is weak • Performance criteria may be met, but if financial targets are <i>not</i> met, there may be a reduced payout or no payout at all
Productivity/ Gainsharing	• Clear performance-reward links • Productivity and quality improvements • Employee’s knowledge of business increases • Fosters teamwork, cooperation	• Can be administratively complicated • Productivity improvements tend to level out after first few years • Market must be able to absorb productivity gains • Unintended effects, like drop-off in quality • Adjustments for change in business, capital, and technological improvements • Management must “open the books” • Payouts can occur even if company’s financial performance is poor
Team/Group Incentives	• Reinforces teamwork and team identity/ results • Effective in stimulating ideas and problem-solving • Minimizes distinctions between team members • May better reflect how work is performed	• May be difficult to isolate impact of team • Not all employees can be placed on a team • Can be administratively complex • May create team competition • Difficult to set equitable targets for all teams • 8 out of 9 team incentive plans reported they had not met their plan objectives, yet 90% of eligible employees receive an award • Big departure from traditional culture of rewarding individual performance
Individual Performance Awards	• Simple, easily understood • Administratively efficient • Profiles managerial flexibility in allocating rewards • Clear line-of-sight	• Manager/supervisor discretion may not be viewed positively • Less connection to financial performance • May reinforce biases already observed in merit pay decisions • May discourage teamwork
Special Recognition Awards	• Rewards individual performers • Provides immediate recognition • Rewards individual on team performance • High perceived value of recognition • Generally a low cost program	• Can be viewed as subjective • No link to division, business unit, or company goals • Must be managed well so the awards are not simply rotated

above-average performers may progress to a level midway (75th percentile) between the midpoint and the maximum; superior performers may progress to the maximum of the pay range. Typically, classification of workers according to “satisfactory”, “above-average” or “superior” is through performance appraisals conducted by supervisors.

Some companies have used merit pay to achieve higher levels of performance by closely tying performance to rewards and providing a wide range of possible rewards. IBM increased labor productivity in the manufacturing of typewriters by nearly 200% over a 10-year period (Vough 1975) and attributed at least half of this increase to their merit pay program. Typical merit pay ranges used in successful systems include (addition to base pay): Digital Equipment, 0% to 30%; Xerox, 0% to 13%; and Westinghouse, 0% to 19% (Kopelman 1983).

Profit sharing is the most common method that companies in the United States use to provide retirement income for their employees (Cascio 1992). Firms use it for any one of the following reasons (Florkowski 1990):

1. to provide a group incentive for increased productivity,
2. to institute a flexible reward structure that reflects a company's actual economic position,
3. to enhance employees' security and identification with the company,
4. to more easily attract and retain workers, and
5. to educate individuals about the factors that underlie business success and the capitalistic system.

In profit sharing programs, employees receive a bonus that is normally based on some percentage (e.g., 10% to 30%) of the company's profits beyond some minimum level. Profits may be paid directly to employees at the end of the fiscal year, but more

often they are deferred through placement in an investment vehicle such as a managed stock and bond fund.

Gain sharing, a formal reward system that has existed in a variety of forms for over 50 years, is comprised of three elements (Graham-Moore 1996):

1. a philosophy of cooperation,
2. an involvement system, and
3. a financial bonus.

The financial bonus is determined by a calculation that measures the difference between expected and actual costs during a bonus period. Gainsharing focuses on developing an organizational climate characterized by high levels of trust, two-way communication, participation, and harmonious industrial relations. High levels of cooperation lead to information sharing, which in turn leads to employee involvement, which leads to new behaviors such as offering suggestions to improve organizational productivity. The increase in productivity then results in a financial bonus, which rewards and reinforces the philosophy of cooperation.

Gainsharing programs have achieved notable results throughout many companies. AmeriSteel corporation implemented a gainsharing program on January 1, 1995 to address three successive years of company losses (Gross and Duncan 1998). In this program, base pay for every employee was initially reduced 15% with the opportunity to earn back that 15% if productivity reached 100% of the prior year's (1994) productivity. Employees also had the opportunity to earn an additional 1.5% of their base pay for each 1% improvement over 100%. Over a four-year period, this company saw an improvement of 33% (8% annually) in steel production, while profits rose from \$4

million to \$38 million. As a result, employees earned an average of 46% of their base compensation in additional variable pay in 1998.

Profit sharing and gain sharing differ in three important ways (Florkowski 1990):

1. Gain sharing is based on a measure of productivity. Profit sharing is based on a global profitability measure.
2. Gain sharing, productivity measurement, and bonus payments are frequent events, distributed monthly or quarterly, in contrast to the annual measures and rewards of profit sharing programs.
3. Gain-sharing programs are current distribution programs, in contrast to most profit sharing programs, which have deferred payments. Hence, gain-sharing programs are true incentive programs, rather than employee benefits. As such, they are more directly related to individual behavior, and therefore can motivate worker productivity.

In the 1998-1999 Total Salary Increase Budget Survey of 2,776 U.S. firms by American Compensation Association (Dolmat-Connell 1999), 63% of U.S. companies offer stock-based programs. Employee stock ownership programs (ESOPs) are established to influence employee motivation, satisfaction, and commitment through stock ownership. Whereas stock ownership alone has not been shown to improve employee motivation and satisfaction (Rosen 1988, Clements 1998), when certain additional conditions are met, employee-owned firms have been shown to be extremely successful. Employee-owned firms have been shown to be 150% as profitable, to have twice the productivity growth, and to generate three times more new jobs than their competitors when they (Rosen 1986):

1. make relatively large annual contributions to the program,
2. are committed to employee ownership, and
3. extensively communicate program details and results.

High-tech companies that share ownership widely grow two to four times as fast as those that do not. Publicly held companies that are at least 10% employee-owned outperform 62% to 75% of their competitors, depending on the measure used (Rosen 1986). ESOPs were also found to positively influence employee absenteeism (Clements 1998). In a study of 127 French firms over the years 1981-91, ESOPs were associated with a reduction in employee absence of approximately 14%, while profit sharing alone only reduced absence by about 7% (Florkowski 1991).

Three of the most common types of variable-pay compensation programs are (Flynn 1997):

- discretionary,
- fixed figure, and
- formula-based.

Discretionary incentive programs are based upon evaluations, either by a supervisor or company official. Payments through such a program might be predicted in advance, but the actual amount is subject to adjustment on the part of an individual. With such a program, a company official might say, "We can't tell you what to expect with this particular bonus. Depending on what you do in the company and how happy we are with you, you may get zero bonus or you may get a tremendous amount. It is at our total discretion." Such programs bring the worst pitfalls, since they do not have any of the basic ingredients of healthy employment relations.

In a fixed figure program, for example, an employee is hired and told the base salary is \$50,000, with a bonus of \$10,000 or \$15,000. This stated level of the bonus is at

a guaranteed minimum amount. Frequently, depending on the industry, the bonus is far in excess of the salary.

Formula-based programs are increasingly common. For example, if an employee's sales amounts for the year are a certain figure, he or she will get, say 2% of that. If the employee's sales exceed a certain figure over that previous figure, he or she will get 3% of that. There are a variety of formulas. Sometimes they are tied to the stock price; sometimes they are tied to the individual's performance. But they are basically something mathematical. Formula-based programs can be the best motivator as long as they are well-defined and based on objective criteria, since they encourage favorable results as well as harmonious working relationships.

Corporate-Level Incentives in the Engineering and Construction Industry

The use of employee incentives within the engineering and construction industry has followed demonstrated success with corporate-level incentives. Early research on “construction contract incentive plans” acknowledged their ability to positively influence project performance, and also the potential for additional improvements through the extension of incentives beyond the corporate level. “Contractor sharing of bonus with key project personnel (bonus flow-down) can have a significant motivational effect” (Ibbs and Abu-Hijleh 1988).

Since employee incentive programs within the engineering and construction industry are typically an extension of construction contract incentive plans, it is helpful to first develop a full understanding of corporate-level incentives. Construction contract incentive plans have been implemented for three primary reasons (Ibbs and Abu-Hijleh 1988):

- to provide the potential for additional monetary reward (resulting in enhanced motivation which influences performance),
- to increase the level of management attention (resulting in the assignment of key personnel to the incentive project), and
- to provide a method for achieving closer relationship between owner's and contractor's objectives (resulting in more clearly defined and more effectively communicated objectives).

Owner and contractor objectives (Howard et al 1997) include:

Owner-specific objectives

- meet return on investment (ROI) goal for project,
- minimize plant operating and maintenance costs,
- minimize plant downtime and outages,
- achieve high product quality,
- achieve product throughput capacity goals,
- provide design flexibility to meet future needs,
- minimize disruptions to existing operations,
- avoid negative impact on environment and community,
- reduce project cycle time, and
- exceed internal customer's expectations.

Contractor-specific objectives

- achieve profit and other financial goals,
- satisfy client and generate repeat business,
- manage cash flow,
- limit long-term liability,
- develop employees and create satisfaction, and
- optimize employment level within contractor organization.

Shared objectives (owner and contractor)

- complete project within budget,
- complete project within schedule,
- maintain a high level of quality,
- execute the project safely, without lost time accidents, and
- minimize claims and litigation.

Since conflicts between objectives generate many of the problems in contracting for construction services, incentive contracts seek to align interests of the contractor with those of the owner by basing compensation, to some degree, on results that are important to the owner. By basing pay on performance, the owner is also able to transfer some risk onto the contractor.

Specific areas on which corporate-level incentives have focused include (Howard et al 1997, Ehrenburg 1990, Ibbs and Abu-Hijleh 1988, Stukhart 1982):

Improving focus

- focusing contractor work effort on obtaining specified results, and
- directing attention to those areas where proper execution will make the project successful.

Improving links

- improving links between incentive programs,
- improving links between resources and performance,
- providing links to site (project) objectives, and
- improving links between strategic plan, site-specific long-term and annual work plans, and performance-based incentives.

Improving motivation

- encouraging creative and innovative pursuits aimed at value engineering, and

- providing all team members with a stake in project success.

Establishing goals

- conducting an educational effort to assist with a full understanding of a corporation's objectives,
- requiring a team to fully analyze a corporation's objectives and to develop a strategy on how to achieve them,
- promoting detailed tracking of project results by project team and project partners in order to measure performance and goal achievement, and
- providing "stretch" provisions, under which the contractor can earn additional fee if able to accomplish additional work within a specified level of funding during a period.

Successful construction contract incentive arrangements have been utilized across a broad spectrum of project sizes and work scopes. Such arrangements include the following components (Howard et al 1997, Ehrenburg 1990, Ibbs and Abu-Hijleh 1988, Stukhart 1982):

Incentive Plan Features

Incentive plan simplicity

- providing few (preferably five or less) performance-based incentives, and
- utilizing existing project control and information systems when possible.

Incentive plan clarity and focus

- providing quantitative targets,
- defining key terms in the performance criteria, and
- emphasizing end-of-project results over intermediate sub-goals.

Incentive plan equity

- incorporating fair and equitable targets, and

- avoiding major imbalances among incentive criteria (overemphasis on certain project outcomes at expense of others).

Incentive plan flexibility

- matching degree of incentive flexibility to work scope definition.

Incentive desirability

- providing opportunity to earn desirable rewards.

Incentive delivery timeliness

- minimizing time lag between evaluation and delivery of incentive award.

Incentive Plan Development and Administration

Relationship among incentive plan participants

- maintaining trust and integrity in owner-contractor relationship,
- possessing a good prior working relationship,
- maintaining open lines of communication,
- obtaining owner commitment to incentive plan success, and
- obtaining voluntary participation in the incentive plan.

Participation in incentive plan design

- assigning the development task to qualified in-house personnel when possible (only hire outside experts if necessary), and
- ensuring participation of all key personnel in incentive plan development.

Education of program developers

- creating an interdisciplinary training course to provide an overview of performance-based incentive development, and
- presenting this overview to headquarters and field office personnel to:
 - encourage a belief in the value of incentive plans in general, and
 - encourage a belief in the positive role of the specific incentive plan in use.

Incentive Plan Application and Administration

Tailored application of incentive program

- structuring a process to develop performance-based incentives for a specific project, and
- identifying ways to ensure the adequate monitoring and verification of a contractor's performance in light of these incentives.

Administration of incentive program

- utilizing owner management team to conduct incentive plan evaluations,
- administering the incentive plan in a fair and even-handed manner, and
- assuring that the contractor perceives administration as fair and equitable.

While corporate-level incentive use has been found to contribute to successful project outcomes, previous research (Ibbs and Abu-Hijleh 1988, Howard et al 1997) has encouraged plan developers to exhibit caution, noting that:

- incentives are not a substitute for strong project management, and
- incentives do not by themselves deliver a better project.

Corporate-level incentives contribute to desirable project outcomes primarily through the establishment of links between project objectives and specific incentive criteria. Project success or failure is largely a result of the management effort that accompanies incentive plan development and implementation. Maintenance of the incentive plan requires increased emphasis on program management, resulting in an improved focus on task accomplishment to obtain desired results.

The use of corporate-level incentives has resulted in numerous success stories. However, incentive use has also led to negative results. These undesirable consequences of incentive use include (Ehrenburg 1990, Ibbs and Abu-Hijleh 1988, Stukhart 1982):

- difficulty in focusing effort on key results (use of too many incentives),
- increased administrative burden (use of too many incentives),
- inability to quantify performance achieved (use of subjective evaluations),
- confusion regarding incentive details (poor definition of key terms),
- failure to incorporate diverse perspectives within incentive program (not developed by an interdisciplinary team of technical, financial, and contracting personnel),
- failure to incorporate reliable baseline data (not including effective guidance on the development and administration of incentives),
- failure to appropriately allocate or “weigh” incentive criteria when determining fee amounts (not including effective guidance on the development and administration of incentives), and
- failure to tailor incentive program to specific project requirements (project objectives and needs during the development, administration, and evaluation of performance-based incentives).

Employee Motivation

Much of the appeal of motivation study is its potential to show us how to motivate others. Efforts at promoting effort, achievement, challenge seeking and excellence in others, incorporates this element of motivation. Additionally, improved motivation can support efforts to reverse or overcome pessimistic expectations, anxiety and doubt, apathy and helplessness.

People are motivated to perform when the following three conditions are met (Deci and Ryan 1985):

1. they believe effort will lead to improved performance (I can do it if I try),
2. they believe outcomes are tied to performance, and
3. they believe the outcome will be satisfying.

Motivation is primarily concerned with (Steers and Porter 1991):

1. what energizes human behavior,
2. what directs or channels such behavior, and
3. how this behavior is maintained or sustained.

In this way, motivation incorporates the characteristics of the individual, the behavioral implications of the required job tasks, and the impact of the larger organization.

Attempts to motivate others are typically within relationships characterized by an interpersonal power differential between motivator and motivatee (Deci and Ryan 1985). Whether it is parents motivating children, coaches motivating players, or employers motivating employees, the first person has some influence over the second. Within the business setting, this power differential may be in the form of expertise, rewards, force, status or position. Consequently, the subordinate is vulnerable to being controlled by the supervisor.

Powerful people sometimes motivate others in a way that simply produces compliance (the desired behavior). To achieve compliance, the superior simply directs the subordinate to think, feel, or behave by providing relevant information and extrinsic incentives (Reeve 1997). This approach serves to guide a subordinate towards desirable (and away from undesirable) outcomes. This authoritarian manner is assumed by individuals who believe that others (subordinates) can be externally regulated, and will work hard to obtain approval or rewards.

A second approach to motivating others is through seeking to support their motivation from within. This approach encourages individuals to move away from dependence on authority figures and experts, and towards self-regulation and personal

responsibility for generating motivation from within (Reeve 1997, Steers and Porter 1991). The relationship between different sources of motivation is depicted in Figure 4.

The terminology used to express the two primary forms of motivation are:

1. intrinsic (source of motivation from within an individual), and
2. extrinsic (source of motivation from outside of an individual).

Intrinsic motivation is that source of energy from within an individual causing him or her to want to do something. The desires to achieve, perform competently, and pursue interesting and enjoyable activities are examples of intrinsic motivation. The fundamental rationale for motivating others is to cultivate in them inner motivational resources that allow them the greatest opportunity possible to develop, grow, and regulate their own behavior (Reeve 1997). These inner motivational resources are needed to cope with stress, overcome doubt, maintain positive emotionality, initiate and direct behavior, and maintain effort and purpose over time.

However, when employing methods to motivate employees, managers frequently revert to strategies that work, and work in a hurry. To this end, external motivational resources such as attractive rewards and incentives are employed. Extrinsic motivation is that source of energy from the environment that entices an individual to want to do something. Extrinsic motivation refers to behavior where the reason for doing it is something other than an interest in the activity itself. Financial rewards, prizes, gifts, vacations, celebrations, and public and private recognition are all examples of extrinsic motivation—items exchanged for services performed.

While extrinsic forms of motivation obtain desired short-term results (workers arrive on time, complete their projects, and act as requested), they also produce a number

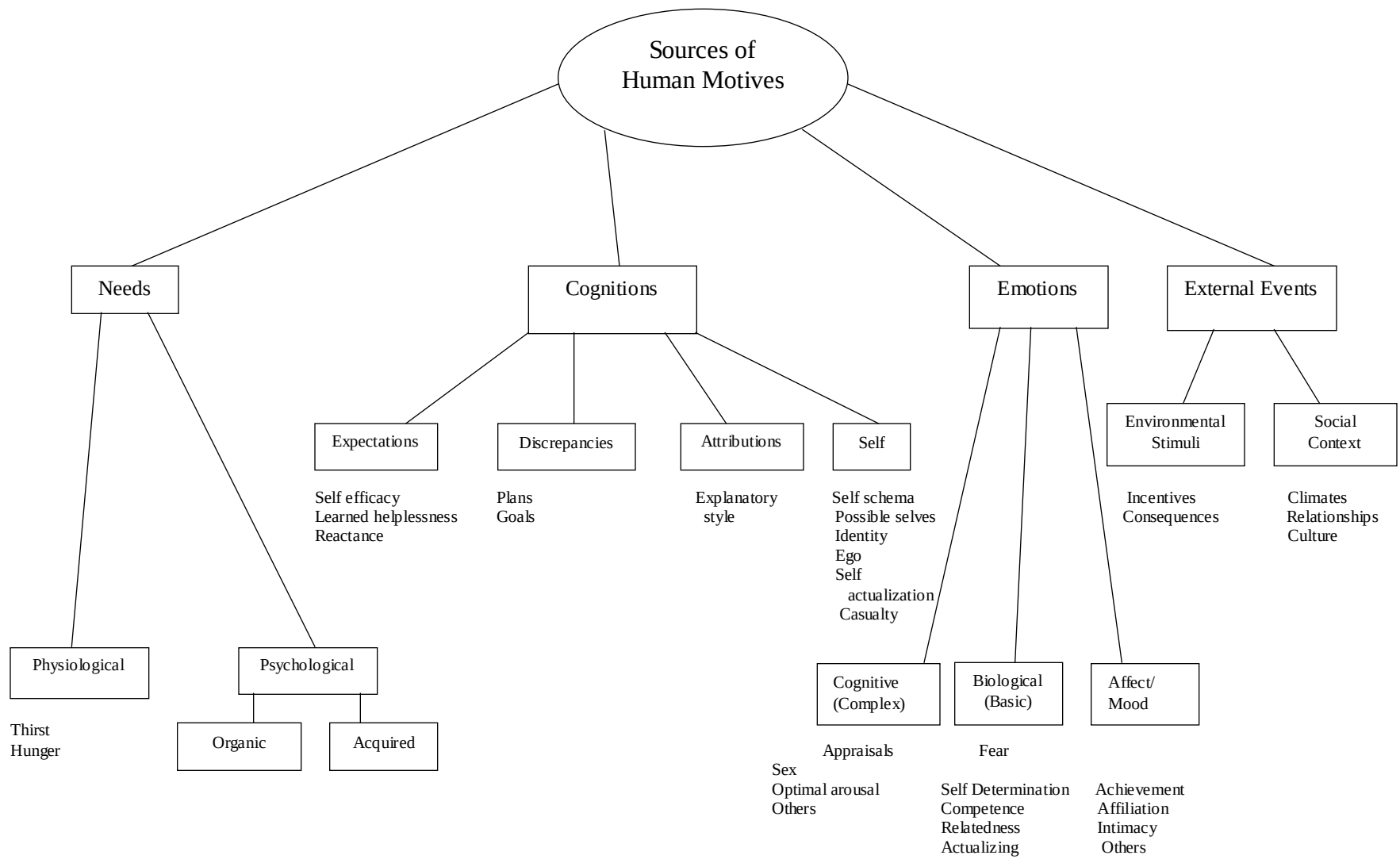


Figure 4. Sources of human motivation (Reeve 1997).

of side effects that undermine performance over time. External motivation sources sometimes undermine intrinsic motivation, and leave the employee motivationally empty following their removal (Reeve 1997). Compared with those who pursue intrinsic goals such as personal growth, people who pursue extrinsic goals such as money, fame, and image have significantly less vitality and self-actualization and significantly more narcissism, negative emotionality, and physical distress (Deci and Ryan 1996).

Effective organizational practices seek to identify and cultivate such inner motivational resources as interest, curiosity, autonomy, and self-efficacy (Reeve 1997). This is accomplished through training, empowerment, and job design—providing interesting and challenging work opportunities to the individuals assigned. In well-designed job settings, knowledgeable and skillful workers are able to effectively perform tasks. Empowered employees are released from managerial interference and expected to take responsibility for their performance.

However, it is rarely possible to reach a state where an employee is continually interested in the work itself and motivated through intrinsic means. Some jobs are simply boring, dirty, or require endless repetition of a task. Some individuals elect to accept positions involving work that is not of interest to them. Most work involves some undesirable element, and most employees are not perfectly suited for their current job (Gibson et al 1991).

Employee incentive programs are conceived to address this discrepancy between the current and ideal states. Employee incentives recognize that, although intrinsic forms of motivation are preferred, extrinsic forms may often be successful substitutes. Numerous publications (Reeve 1997, Steers and Porter 1991, Gupta and Shaw 1998)

have addressed this need for extrinsic motivation, and have suggested management strategies for their use. Table 3 provides a “to do” list of activities to pursue when seeking to motivate individuals through extrinsic means.

Table 3. Motivational Activities (Nelson 1996)

Top Ten Things to Do to Motivate Today's Employees	
1	Personally thank employees for doing a good job - one on one - verbally, in writing or both. Do it in a timely manner, often and sincerely.
2	Be willing to take the time to meet with and listen to employees - as much as they need or want.
3	Provide specific feedback about the performance of the person, the department and the organization.
4	Strive to create a work environment that is open, trusting and fun. Encourage new ideas and initiative.
5	Provide information about how the company makes and loses money, upcoming products, strategies for competing in the marketplace and how the person fits in with the overall plan.
6	Involve employees in decisions, especially when those decisions affect them.
7	Provide employees with a sense of ownership in their work and the work environment.
8	Recognize, reward and promote people based on their performance. Deal with low and marginal performers so they either improve or leave.
9	Give people a chance to grow and learn new skills. Show them how you can help them meet their goals within the context of meeting the organization's goals. Create a partnership with each employee.
10	Celebrate successes - of the company, of the department and of individuals in it. Take time for team- and morale-building meetings and activities.

Communication, Goal Setting, Teamwork and Incentives

To maintain continued employment within a firm, most employees are dependent upon successful business performance. To obtain desired results, the workforce must work efficiently and effectively as a team. An effective communication process is essential for supporting coordinated efforts within a group, team, or corporation. Properly established goals, and the achievement of them, are necessary intermediate steps that support overall business performance as well (Johnson, Maruyama, Johnson and Nelson 1981, Steers and Porter 1991, Reeve 1997). Teamwork—the ability to coordinate the efforts of separate individuals towards the attainment of goals—is a further requirement for success (Johnson 1996, Pascarella 1997). Finally, the use of incentives to recognize and reward serves to energize and direct employees, leading to improved performance.

Employee incentives are dependent upon a properly constructed management approach incorporating communication, goal setting, and teamwork. In their study of the implementation of feedback (communication), goal setting and incentive systems (Pritchard, Jones, Roth, Stuebing and Ekeberg 1988), the researchers made the following statement regarding the implementation of incentives:

The recommended sequence for implementing these programs is to start with feedback and operate it until no more revisions are needed. Next, add goal setting. Operate goal setting until productivity is no longer increasing. If that level of productivity is near the maximum possible, do not institute incentives. If greater gains in productivity seem possible, consider adding incentives.

Guidelines to follow regarding the use of feedback, goal setting, and incentives include (Pritchard et al 1988, Gibson et al 1991, Cascio 1992):

Feedback

1. Involve both supervisors and incumbents in the team established to design the feedback system.
2. Select a facilitator successful in working with groups to
 - a) make sure the development process proceeds in a timely manner,
 - b) see that all the essential people are included in the process,
 - c) make sure the design personnel get the information they need, and
 - d) serve as a moderator/discussion leader.
3. Should be with the smallest unit possible that does not separate teams that must work together.
4. Measures should be designed to coincide with the unit's objectives and must be under the control of the unit. The best measures are generally objective in nature.
5. Should include both "how much" and "how good" information. Include an overall index of productivity, as well as sub-indices for all the important functions.
6. The timing of feedback should be determined by the job cycle and delivered in written feedback reports. All levels of involved management should receive copies of the feedback report and the report should be posted in a common area where all may see it.
7. Review of feedback reports should be conducted as a fact finding exercise, not a search for excuses.

Goal Setting

1. Must first have a feedback system.
2. The principles identified in feedback apply to goal setting as well.
3. The measurement system, the feedback system, and the goal setting system must be consistent.
4. Goals must be set on all important aspects of the work (targeted goal setting and overall effectiveness).
5. The incumbents and supervisors should be heavily involved in setting the goals.
6. Goals should be set so that they are difficult, but attainable.

7. Goals should be public if the goal system is designed to be the minimum acceptable productivity type (expected that results will be achieved).
8. Goals should be private if the goal system is designed to be the challenging goal type (a challenge to shoot for).
9. The time period for goal setting should be based upon the job cycle and feasibility considerations.
10. Goals and level of goal difficulty should be reviewed each period.
11. Employees should be accountable for their productivity, NOT what goals are set or whether they are achieved.

Incentives

1. Issues for designing measurement and feedback systems apply equally well to designing incentive systems.
2. Use a single index (overall productivity).
3. Incorporate two to three productivity levels with increasing incentives.
4. Incumbents and supervisors should heavily influence the setting of productivity levels necessary to earn the incentives.
5. Use higher-level management and/or individuals chosen as facilitators to discuss openly the problems of setting equitable levels.
6. Incentives must be attractive to unit members.
7. Rules for awarding incentives must be clear and understood by all. These rules must be followed consistently.
8. The greatest threat involves increasing the levels of productivity needed to get incentives after the system is implemented.
9. Incentives and forms of recognition are very different:
 - Incentives are repeatable and can be given to everyone.
 - Incentives will increase motivation.
 - Incentives change behavior.
 - Recognition is personal, and should be sincere. Recognition reinforces that high productivity is appreciated; may generate a feeling of pride, and can be a positive influence on morale.

- Recognition might not increase motivation.
- Recognition changes attitude.

10. If individual productivity is being measured and fed back, use individual incentives. If group productivity is being measured and fed back, use group incentives.

The choice to use employee incentives should follow a substantial evaluation process. To evaluate a program properly, three features are highly desirable (Pritchard et al 1988):

1. baselines (productivity measured for a period of three to four months where no feedback is given),
2. comparison groups (units which are similar to the units receiving enhancements, but receive no enhancements themselves), and
3. available manpower (keep track of available manpower for each unit).

A fourth desirable feature is to supplement the program evaluation with data on attitudes concerning the system. With such a framework in place, the effectiveness of any subsequent incentive program can be measured.

The role of teamwork, in addition to feedback and goal setting, exerts a significant influence on the performance of an employee incentive program. In the absence of teamwork, feedback and goal setting meet resistance through pursuit of selfish agendas. With effective teamwork, individual contributions are combined to approach tasks with wisdom while incorporating each into the larger context of working towards a common goal. However, teams can possess varying states of effectiveness (Table 4).

Often a primary objective of employee incentive programs is to encourage personal accountability and responsibility. Incentives frequently support such behavior

Table 4. States of Team Effectiveness (Cohen, Fink, Gadon and Willits 1995)

Characteristic	States of Team Effectiveness				
	Chaotic	Formative	Functional	Productive	Creative
Standards	No defined or agreed upon standards for behavior and actions.	The state where standards for roles, behaviors, and actions must be defined to accomplish anything.	Doing what needs to be done by following established rules, policies and procedures. Taking direction from above.	Challenging systems and procedures—looking for new, more efficient, and better ways of doing things. Takes initiative by recommending changes to established rules, policies, and procedures.	Inventing and creating new ideas, systems, procedures, products, or services. Takes initiative by making changes as needed.
Leadership	The team is in chaos.	The team must be directed.	The team is externally managed.	The team is shifting from externally led to internally led.	The team is self-directed, self-managed, and self-led.
Communication	Nonexistent communication	Communication is argumentative; focused on defining values, vision, mission, and goals	Communication is smooth within the specific boundaries the team has set up for itself; focused on getting the work done.	Communication is lively and heated; relevant information is shared within the team; focused on doing things better.	Communication is free flowing and open; unconditional information sharing, even outside the team; focused on achieving team vision.

and lead to an environment where management consults and coaches rather than dictates or forces compliance. On such projects, teams in the “productive” and “creative” states of effectiveness are desired and are more likely to achieve optimum results. Employee incentives are supported through efficient and effective means of communication, relying on timely updates regarding performance and the feedback process to incorporate changes. Communication efforts rely on teams in the “functional”, “productive” and “creative” states of effectiveness, where free flow of information is encouraged.

When employee incentives were implemented across teams, results achieved were dependent upon (Hansen 1997):

1. group size,
2. incentive desirability, and
3. peer influence.

In many groups, the smaller the group size, the greater the impact of incentives; the more desirable the incentive, the greater the impact of incentives; the stronger the peer influence, the more likely that behavior will converge to a standard (Weiss 1987, Hansen 1997, Akerlof 1986). The lessened effect of incentives on large groups, however, can be counteracted in the following ways (Hansen 1997):

1. obtain employee involvement in decision making and goal setting,
2. establish specific and easily-understood goals, and
3. involve employees in program evaluation.

From research conducted, employee participation in program design led to desirable results (Strauss 1990, Schuster 1984, Hansen 1997). These same researchers discovered that the level of involvement in design and implementation of the program, and not group size, influenced outcomes.

Incentive Program Characteristics

Cascio (1992) states that effective incentive systems must (Figure 5):

- be simple (rules should be brief, clear, and understandable),
- be specific (precisely define what behavior and results are required),
- be attainable (employees should have a reasonable chance to gain something), and
- be measurable (relate specific accomplishments to dollars spent).

In the study conducted by Laufer and Borcharding (1981), 37 specialists of various interrelated professions (engineering and construction industry), including contractors, owners, union officials, university professors, and productivity consultants,