

# Human Resources Economics, Principles, and Actuarial Concepts Applicable to Benefits

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There are a number of incentives, tax policy considerations,<sup>1</sup> microeconomic principles and theories, as well as human resources strategy issues that affect the employer's decision to offer benefits. These factors also impact how the benefits should be designed and funded. In this chapter we will see how the employer might use them to make optimal choices in his benefit decision-making process. In addition, we will introduce briefly the actuarial principles that determine how benefit plans should be funded and how certain plan designs affect the rate at which benefits are distributed.

## Total Rewards

Two entrepreneurs are starting a new airline to provide service to three cities situated about 400 miles from each other. Their strategy is to fill a void that currently exists for business travelers who are looking for a low-cost, no-frills, and dependable commuter airline. One of the first issues the owners confront is how to compensate their workforce, especially the pilots. They cannot afford to match the high salaries and rich benefit levels of the large airlines, they have no stock or equity benefits to offer at this point, they will not be profitable for several years, and a cash-based profit sharing plan is not feasible. How will they attract pilots? The answer is that they must look at total rewards, not just salaries and benefits.

1. As we pointed out in Chapter 1, the U.S. government's policy supports the offering of employer-sponsored benefits by making many benefits tax deductible to the employer and tax deferred or even tax-exempt to the beneficiary.

Long-term retention is not a priority. If they can find competent pilots who need flight hours and are excited about working for a new airline, the company will succeed. By offering flight hours in the cockpit, the company provides new pilots with a valuable opportunity and the possibility of moving on to a bigger airline in the near future. So, while the new airline is limited in what it can pay in terms of salaries, it can offer a bonus based on company results, the promise of future equity when the company goes public, moderate retirement and health care benefits, and plenty of flight hours. The benefit package might include a defined contribution plan (DCP) funded by tax-deferred employee contributions and a high deductible health care plan that imposes significant cost sharing on the employee but extends protection in the case of serious and costly medical occurrences. The salary and benefits would be well below that of the major airlines, but would allow the company to compete effectively in its markets. Its total compensation would be both affordable for the company and attractive to its particular workforce.

One of many decisions an employer must make is how much he can pay his employees. The decision is based on profitability, cash flows, labor intensity of the business, and the price elasticity of a company's products and services. If the product or service is price sensitive, then the employer must control his labor costs carefully or run the risk of losing customers and sales. Business operations that are labor intensive will affect profitability adversely if they allow labor costs to be excessive. How an employer divides up his total compensation is based on other factors.

With respect to the pilots, the total rewards include the opportunity to increase flight hours. In other employment venues, the employer must assess how to define and allocate his total rewards within his financial limits so as to attract productive employees. In many instances, this will be determined by the demographics of the employer's prospective workforce and which rewards would be the most important and valuable at their particular stage of life or circumstances.

The total rewards package can include an infinite number of features such as salary or wages, bonuses, health care, pensions, profit or gain sharing, equity awards, paid time off, favorable working conditions, telecommuting, flexible schedules, time off during summer months, education and tuition assistance, training and development opportunities, internal promotion policies, free parking, and casual dress. As we consider the total rewards package, we should examine the monetary value of benefits.

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## Monetary Value of Benefits

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All elements of compensation and benefits have a monetary value.<sup>2</sup> Take flextime, for example. What is its precise monetary value?<sup>3</sup> It depends, in part, on what workers are willing to give up in exchange. In the case of the pilots, the reward of flight hours compensates for the lower salary and benefit costs they are willing to accept. With flextime, if workers are willing to accept a lower wage in order to have flexible hours, its value to the employer is the difference between the external market wage rates the employer would otherwise pay and the wages actually paid minus the transactional costs of flextime.

We hear schoolteachers remark that their salaries are low, but their benefits are great. Apparently, schoolteachers and, for that matter, many public employees are willing to accept more generous benefits over higher wages and bonuses that are available in business sector jobs.<sup>4</sup> These benefits would include employer-funded pension and health care plans with minimal risks and cost sharing to the participants. The value to the employer is the opportunity to pay lower cash compensation offset by the higher costs of the benefit plans. The employer can limit his total labor costs to affordable levels. The particular mix of total rewards in the educational sector creates acceptable rewards and costs for both teachers and their employers. They are not, however, necessarily equal.

A fairly common question with respect to benefits is why not just give employees cash and let them buy their own? The answer is an employer can use his size and expertise as leverage to purchase or provide benefits at a lower cost than what an individual employee would pay.<sup>5</sup> For example,

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2. Lazear, E. (1998). *Personnel economics for managers* (pp. 377–407). New York: John Wiley & Sons, Inc. Professor Lazear's text is an innovative and relevant textbook in human resources economics. He explores a variety of principles involving compensation, health and pension plans, the use of teams, training, equity awards, output-based pay, worker-owned firms, and outsourcing.

3. Using activity-based costing, an employer can determine the economic value or cost of flextime versus traditionally scheduled work time. See <http://www.valuebasedmanagement.net/methods/>.

4. There are a variety of attributed reasons why this situation exists, including the fact that teacher pay is usually set, in part, by public officials who find it more expedient to agree to long-term benefit rewards than immediate and liberal salary increases. Public officials are very sensitive to taxpayer reactions that are likely to occur when more obvious incremental labor expenses are incurred.

5. There is an additional value to the employer in offering a benefit instead of cash. With an employer-sponsored benefit such as health care or a "wellness program," the employer can control how the money will be spent and can better ensure improved health and productivity of its workforce than if it simply gave its employees the cash to buy the benefit. See Lazear (1998), p. 391.

assume an employer's actual monthly cost for health care per employee is \$600, whereas an employee would pay \$1,200 in after-tax dollars to buy the same benefit, further increasing the cost of the purchase.<sup>6</sup> The monetary value of the employer-sponsored health care is \$1,200 and, under the tax law, it is not imputed income to the employee.

Not all benefits are perceived to have value. Younger employees, for example, may place very little value in an employer's pension plan. Unless the employer is able to effectively communicate the terms, conditions, and value of his benefit offerings, it might be difficult to rationalize a trade-off of pension plan in lieu of higher cash compensation. Targeted communication can enable employees to better understand and appreciate the employer's sponsored benefits.

There is a finite amount of total compensation an employer can offer. How does the employer allocate total rewards and present choices to his workers? Moreover, when the costs of the benefit are rapidly rising, the employer has the choice to either absorb the costs or pass them along to the employees in the form of lower wages or higher benefit contributions. This scenario is playing out more often as employers develop their total rewards program or negotiate with a union over wages and benefits.<sup>7</sup>

From an economic standpoint, the employer should be neutral with respect to how total compensation is allocated. But it is not always so easy. For example, rapid inflation in health care costs is not easily offset by lower wages if the employer's labor competitors continue to offer generous health care plans or if there is a labor contract and an obligation to bargain wages and benefits collectively. Often the employer must find ways to increase the limit on affordable labor costs. This can be achieved through increasing sales and profits, increasing profit margins by changing the mix of products or services sold, reducing operating costs, or taking labor out of the business by replacing it with technology or cheaper substitutes. The employer also can search for new benefit designs that will mitigate the inflation, but this usually involves a reduction in both the cost and value of the benefit and could have an unintended result of diminished

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6. This represents the underlying rationale why employers offer benefits versus simply giving the employees the cash to buy them. For an interesting exploration concerning under what circumstances employees would be willing to buy their own insurance, see Fronstin, P. (2006, June). *The tax treatment of health insurance and employment-based health benefits*. Employee Benefit Research Institute, Issue Brief No. 294.

7. This is called the Principle of Compensating Differentials and is attributed to early writings by Adam Smith. Today, economists argue that employees pay for the full costs of all their benefits because the employer must allocate a limited amount of labor expense in order to remain competitive and profitable, and must trade off all costs against wages and salaries. See Butrica, B., Johnson, R., Smith, K., & Steuerle, E. (2004, November). *Does work pay at older ages?* (p. 4). Center for Retirement Research at Boston College, <http://www.bc.edu/crr/>.

Internal Fairness	External Competition
Positive Impact on Behavior	Cost-Effective, Efficient Administration

**Figure 2.1** Benefits Model

employee commitment, lower productivity, or difficulty in recruiting and retaining the workforce.

As in the case of our start-up airline, the employer must adjust his compensation and benefit strategy and find a way to remain competitive in his labor market. This requires a disciplined approach and an application of an important analytical template called the benefits model.

## The Benefits Model

The benefits model is an analytical template that can be used to design and evaluate a benefit plan. It comprises four elements that, if followed, ensure the efficacy and affordability of a benefit and enhance its potential to create value. They are: internal fairness, external competitiveness, positive impact on participant behavior, and cost-effective and efficient administration.<sup>8</sup>

### *INTERNAL FAIRNESS*

The benefit plan must adhere to the principle of internal fairness and not favor one group of employees over another. For instance, an employer provides life insurance only to employees with two or more dependents, perhaps in the belief that this group needs life insurance more than persons with fewer or no dependents. The excluded group would conclude that persons with two or more dependents are being paid more. Their

8. The author has adapted the benefits model from the pay model developed by Milkovich, G., & Newman, J. (2005). *Compensation*. New York: Irwin McGraw-Hill. The pay model has similar components but is applicable to cash compensation.

conclusion is justified because life insurance has monetary value and, therefore, it would be unfair to offer it to a selected group.

On the other hand, if the employer offers life insurance to employees who wish to purchase it, there is less chance that employees would regard the offering as unfair. This is true even though the employer is offering something of value, because the employer has the ability to purchase insurance at lower costs and on a tax-favored basis. Let's say the employer offers a life insurance benefit to all employees who have worked more than one year. The employees would probably perceive this as internally fair since the benefit is available to all who have completed the required year of service, and job tenure has some rationale as an eligibility requirement.

The issue of internal fairness becomes more apparent when one looks at exclusive benefits being offered to select employees. For example, the employer's human resources strategy is to use his benefit plans to sort<sup>9</sup> a certain demographic group in order to better ensure the selection of highly productive workers. Many young university graduates searching for jobs will look favorably on firms that offer tuition subsidies for postgraduate education such as an MBA. This benefit can have the effect of sorting highly motivated candidates who are attracted to the idea of an employer-financed MBA. The problem with this strategy could be the older workers who have no interest in pursuing a degree. Because the tuition subsidy only has significant monetary value to a limited group of employees, the employer's argument that such a benefit enhances recruitment and the overall productivity of the workforce<sup>10</sup> would not satisfy older employees who see it as inequitable. Some adjustment in the benefit offerings should be made in order to ensure that the plan does not collide with this important principle.

Internal fairness is intertwined with other benefits such as health care. When one considers the age of the workforce, it is generally true that older workers utilize more health care resources and, as a result, cost the employer sponsor more than younger workers. Similarly, younger workers with more dependents, all of whom are enrolled in the employer's

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9. We use this term in its labor economic context. Employers choose a particular compensation or benefit plan that has the effect of attracting a certain type of worker. Essentially, the workers self-select the employer because a certain benefit has a different value to them. Lazear, E., & Shaw, K. (2007, Fall). Personnel economics: The economist's view of human resources. *The Journal of Economic Perspectives*, 21(4), 100, 103.

10. The theory of Efficiency Wage holds that employers with more generous wages and rewards can effectively recruit better and more productive workers. Neilson, W. (2007). *Personnel economics* (p. 127). Upper Saddle River, NJ: Pearson Prentice Hall. Recent research on the theory can be found in Uwe, J. (2006, July). A note on efficiency wage theory and principal/agent theory. *Bulletin of Economic Research*, 58(3), 235–252.

health care plan, receive a higher benefit value than those single employees who have no dependents. The disparate value of benefits between young and old employees, with dependents and without, creates an internal fairness issue.<sup>11</sup> Should the employer apportion and reduce the wages of those employees who are receiving the higher valued benefits, or should these favored employees pay more to receive the benefit?

There are several approaches to consider. One is to calculate the additional cost or value that an employee is receiving and allocate all or a significant portion of that cost to the employee. Thus, the employee with more dependents incurs a higher deductible or pays a higher premium for the benefit. Those participating in the tuition plan for advanced degrees can either pay for the education or be given a loan by the company to pursue the degree. This solution has some negative consequences, however, and might reduce the desired impact of certain benefits on recruitment, retention, and productivity.

Another approach is that the employer can offer his employees a choice. If the employer wishes to take advantage of tax-favored benefits treatment, then the employee or employer can deposit pretax dollars in an account. Typically, this is called a cafeteria benefit plan, wherein the employee can choose the type of benefit to be funded—health care, dependent care, or life insurance.<sup>12</sup> Similar tax-preferred treatment can include tuition reimbursement but, in this instance, it must be established in a separate plan and not be part of an assortment of benefits from which an employee can choose.<sup>13</sup> If the employer wishes to forgo tax-favored treatment, he can designate a maximum monthly cost for several benefits other than health, dependent care, or life insurance. The benefits would be considered

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11. Since the employer is paying more for the one group's benefits without any apparent additional productivity from this group, it is essentially giving away incremental value and receiving nothing in return. See Lazear (1998), p. 412. However, there are some legal restraints applicable which would make it difficult for employers to charge older employees more for health care or to reduce the pension benefits of women employees because they live longer. See *Erie County Retirees Assn. v. County of Erie*, 220 F. 3d 193 (2000). This was an Age Discrimination in Employment (ADEA) action against an employer who had reduced retiree benefits for those who were eligible to receive Medicare. The court ruled the employer's action was unlawful. The EEOC, however, has approved and ruled specifically authorizing retiree health benefit plans to coordinate plan benefits with Medicare or comparable state-sponsored health benefits without violating the Age Discrimination in Employment Act (ADEA). The U.S. Circuit Court of Appeals for the 3d Circuit upheld the EEOC's position. *AARP v. EEOC*, 489 F.3d 558 (3d Cir. 2007).

12. §125, the Internal Revenue Code (IRC).

13. §127 et seq., educational assistance plans (EAPs). The IRC includes a dollar cap on the total amount of reimbursement and also prohibits the plan from favoring highly compensated employees.

**Table 2.1** Cafeteria Plan

<b>Total Monthly Allowance: \$400</b>	
<i>Benefit</i>	<i>Monthly Costs</i>
High deductible health care plan with health savings account	\$220
Traditional (PPO) health care plan (single coverage)	\$360
Pre-school day care allowance (per child)	\$280
Life insurance for spouse or dependent (1x salary of \$100,000)	\$30
Long-term disability – 70% salary	\$120
Dental insurance (single coverage)	\$35

NOTE: The employer's contribution probably would be made to a tax-favored flexible spending account (FSA) and not be taxable to the employee, provided it is spent on the specified benefit. See §125, IRC. The health care plan involves single, not family, coverage.

taxable income to the employee. In either case, pretax or taxable plan, the employee is given the opportunity to choose and the employer provides the most value to the employee for a fixed amount of benefit dollars.<sup>14</sup> The company is indifferent about which benefit is chosen.

Suppose a company offers its executives special benefits such as company cars, additional life insurance, paid country club dues, and security systems for their homes to protect against kidnapping or extortion. In addition, they are awarded large numbers of stock options, paid a supplemental pension, given special life insurance plans, and allowed to defer their compensation and the concomitant taxes beyond the limits imposed on other employees who are participating in the company's defined contribution plan. On top of all that, they get a corner office. Does the lure of such benefits help drive the internal job market and increase the productivity of the lower-level employee who aspires to climb the corporate ladder and become an executive? Some would argue that it does.

The concept is called the tournament theory<sup>15</sup> and the analogy is to a tennis tournament. If the winner gets \$400,000, second place \$395,000,

14. Lazear (1998), p. 414.

15. Lazear (2007), p. 94. See also DeVaro, J. (2006, Fall). Internal promotion competitions in firms. *Rand Journal of Economics*, 37(3), 521–542. This author conducted a study validating the connection between wage spreads and optimal performance levels.



third place \$390,000, and the loser \$300,000, what is the likelihood of having a highly competitive and aggressively contested tournament? The answer is, probably not likely. If, on the other hand, there were big differences in the prizes, there might be more intense competition among the players.

The tournament theory would imply the same holds true for total rewards in the business enterprise.<sup>16</sup> It justifies an apparent infraction of the principle of internal fairness because it stimulates increased competition for career advancement that results in higher productivity.<sup>17</sup> There are factors, however, that might warrant extra benefits for certain executives.

First, a ranking of jobs (internal job evaluation system) within the enterprise merits differences in salaries and bonus potentials.<sup>18</sup> Should there be a difference with respect to benefits? It depends. If certain benefits are available because of the unique status of the executive and have no appeal or relevance to nonexecutives, perhaps they might be justified. For

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16. The author has some anecdotal experience with the tournament theory. While serving as senior officer and chief human resources executive of a Fortune 26 company, he eliminated company cars, country club memberships, and other executive perquisites, arguing that such benefits serve no purpose, cost too much money, and help to widen the gulf between lower-level employees and the executive group. Executives called him a populist, and managers pointed out how much they had looked forward to the day they became executives and would have the cars and club memberships. They were willing to put in long hours and hard work to attain this status. This is not exactly empirical research, but it does bear credence to the tournament theory. The author, however, was unmoved by the comments and the perks were eliminated.

17. Compensation and benefit managers who endorse the concepts of the tournament theory might want to validate its effectiveness by using metrics as set forth in Chapter 10, Employee Benefits and Metrics.

18. Most employers have some type of internal job evaluation system that ranks positions (not people) within the company on the basis of certain relevant factors that are important to the overall business strategy. For example, positions can be evaluated based on such factors as skill, effort, responsibility, and working conditions. The Equal Pay Act uses these criteria in evaluating claims of pay discrimination. 29 USC §206(d). Another scheme ranks and evaluates management positions based on accountability, know-how, and problem solving. This is the Hay System. See <http://www.haygroup.com/>. Still others, like The Kroger Co., use financial impact, customer service, and leadership as criteria to evaluate and rank jobs in their companies. Whatever factors are used, if the system works, so that employees perceive there is a rationale or fairness underlying the ranking of jobs and that pay levels are based on such differentiations, then the employer will have achieved the objective of having an internally equitable compensation system.

**Table 2.2** Tournament Theory

By increasing reward differentials (RD) among various levels within the organization, one can increase aspiration levels of employees resulting in higher productivity (P).

<i>Level</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<b>Total Reward</b>	<b>\$100,000</b>	<b>\$150,000</b>	<b>\$220,000</b>	<b>\$290,000</b>	<b>\$410,000</b>

example, it is doubtful an hourly employee would defer his entire salary to a non-tax-qualified executive salary deferral plan where the deferred salary is not protected against creditors.<sup>19</sup>

Second, performance-based bonus plans and stock option plans are often used in place of higher fixed executive compensation. As managers move up the corporate ladder, often more of their compensation is dependent on the achievement of corporate results. Thus, the executive's potential to enhance his overall compensation is at risk. This assignment of risk at higher levels ordinarily is not compatible with the lower-level employee group where total compensation is less, and placing a large portion of total compensation and benefits at risk would be unacceptable.

Third, as we will see in Chapter 4, Retirement Plans—Evolution and Design, some supplemental pension plans available to executives involve a restoration of the pension amount attributable to the plan formula. The Internal Revenue Code (IRC) precludes payments of pensions from defined benefit plans (DBPs) that exceed certain amounts,<sup>20</sup> so the company pays the difference between the benefit calculated and the benefit allowed by way of a supplemental, non-tax-qualified plan.

There are competing theories that must be considered as employers wrestle with the principle of internal fairness. Compensation and benefits are, in part, based on what the competition in the employer's product or service market is doing for its employees. Similarly, external competition becomes very relevant in determining which benefits an employer should include in his total reward plan.

19. See 29 USC §1056 (d)(1), and the 2005 amendments to the Bankruptcy Act that extended the protections to additional types of retirement plans. See 541(c)(2) of the Act.

20. See IRC §415.

## EXTERNAL COMPETITIVE REWARDS

While internal fairness helps determine which jobs get the highest pay and benefits, the actual salaries, bonuses, and benefits associated with those jobs are determined, in large part, by examining external competitive compensation and benefit practices. When comparisons are obtained from the employer's own product or service market, assumptions can be made that the comparators have similar cost structures and margins and compete in the same labor market. Thus, their compensation and benefit levels are relevant.<sup>21</sup>

After the employer determines what others in his market are including in their total reward package, he must choose a compensation and benefit strategy that is linked to his business and overall human resources strategy. Does he want to meet, lag, or exceed competitors' levels? Benefits can be an important element in making this determination and can have a significant impact on the employer's ability to attract and retain the right employees.<sup>22</sup>

Going back to our new commuter airline, the two entrepreneurs will survey the external competition. Since the new company cannot compete in total rewards with the big airlines, their compensation and benefits strategy will be to lag behind the competition and offer other rewards that will attract good employees. Their total rewards package will include the opportunity to accumulate flight hours, maybe some flexible work opportunities, and the challenge and excitement of starting up a new airline.

By getting data on the total rewards plans of his competitors and establishing a compensation and benefits strategy, the employer can design a set of benefits that are affordable and, based on the probable demographics of the prospective workforce, enable him to attract energized and committed employees. Since their strategy will not guarantee retention, they must deal with the eventual turnover that will occur as the pilots amass flight hours and experience and leave to work at the bigger airlines.<sup>23</sup>

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21. The maturity of the company, the industry, the state of unionization, size, and location, as well as cost structure and price sensitivity of the industry also are relevant to the process of understanding and analyzing a comparator's reward package.

22. For example, Lazear (2007), p. 103, points out that by offering a pension plan, the employer can attract those who are more likely to remain in service for a longer period of time. So, if the firm values loyalty, it can offer a pension plan.

23. There are benefit designs that can have a positive effect on turnover; we will discuss them in this chapter. In this case, however, the value to the employer of offering rewards below labor market levels might be offset by the increased costs of higher turnover.

Through benefit offerings, the employer has the opportunity to attract employees whose demographics and characteristics fit his business and human resources strategy. A carefully planned benefits package can attract the desired workforce and actually cause individuals with the relevant competencies to self-select or sort themselves to work for this particular employer, as illustrated in the following.

An upscale coffee bar chain decides that it wants to hire a more mature workforce. The company wants to send a clear signal to prospective applicants that it is looking for mature, responsible people who understand and appreciate good customer service. It faces a number of challenges: (1) Entry-level positions usually do not require any special skills, experience, or education. (2) Customer flow indicates that most positions should be part-time; with more flexible labor, varying customer service levels can be met. (3) Part-time employees usually are not offered any significant benefits. So, what is the signal?

The company decides to offer health care to part-time workers, a 401(k) plan, and stock options. In addition, hourly rates will be slightly above competition. Clearly, the benefit package far exceeds that offered by the competition. The anticipated result is the benefits will attract a significant number of the targeted audience, including single mothers who need health care and a part-time job for the next five to six years. The part-time status is attractive to them because of family and, particularly, child care obligations. And most in this unique group will appreciate the importance of customer service in light of their own life experiences. The stock options and 401(k) plan serve to underscore the employer's interest in a committed, aligned, and longer-term employment relationship, as opposed to a weekend job for a high school student. Overall, the employer's benefit offering serves to preselect or sort workers with the desired characteristics, causing them to self-select themselves for the coffee bar.

Where does one find competitive data that includes detailed benefit descriptions of the comparators in a specific market?<sup>24</sup> It is not enough to

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24. Some surveys are available at the Bureau of Labor Statistics, U.S. Department of Labor Web site at <http://www.bls.gov/>. One also can find comparative compensation and benefits data in publications of the Employee Benefits Research Institute at <http://www.ebri.org/>. Management consulting firms publish various compensation and benefit surveys and will custom design a survey for a particular industry; for example, see the Web sites of Towers Perrin (<http://www.towersperrin.com/>) and Mercer (<http://www.mercerhr.com/>).

learn that your competitors have a pension or a health care plan. The employer needs to know the design details to determine where he wants to be on the competitive scale—meet, exceed, or lag the levels of his competitors' plans. Examples of some of the information the employer needs are: Does the competition offer a 401(k)? Do they offer a match in their 401(k) and, if so, how much? Do they offer health care and, if so, what are the eligibility requirements, cost sharing arrangements, and premiums? Many surveys simply do not provide these kinds of details even though benefits can have significant cost impact and possibly affect recruitment of a productive workforce. Thus, very detailed comparative data is absolutely necessary as an employer develops his compensation and benefit strategy.<sup>25</sup>

Can benefits help to retain workers? Can they be designed to positively affect behavior in the workplace? Can they be an important factor in executing the business strategy? This brings us to the third element of the benefits model.

### *POSITIVELY AFFECTS EMPLOYEE BEHAVIORS*

A very important element of the benefits model is how a benefits plan can cause certain positive behaviors among participants. For example, a woman covered by her employer-sponsored health care plan visits the pharmacy with a prescription. The pharmacist informs her that if she chooses a generic drug instead of the prescribed patented drug, her co-pay will be only \$5 instead of 20 percent of the cost (\$25) of the patented drug. Assured by the pharmacist that the generic has the same chemical content and effect as the patented drug, she chooses the generic and saves \$20 of her own money. Here, the design of the prescription plan changes the behavior of the participant to make more cost-effective choices for herself and her employer sponsor.

As we will see in Chapter 6, Health Care, many plans utilize participant co-pays for doctor visits, deductibles, and even plan premiums to affect the utilization of health care resources in a positive manner. The ultimate plan design, the health savings account (HSA), uses a high deductible to cause participants to behave more like consumers in a real health care market. The benefit plan sponsor should design plans with incentives that cause employees to make choices consistent with their company's business and human resources strategies. Do these incentives really work?

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25. As we will discuss in Chapter 13, Global Benefits, it is important for employers who trade in global markets to obtain international, external, competitive total reward data so they can understand the competitive cost advantage or disadvantage it might have in such markets, and appreciate the consequences of locating its operations in such venues.

Some plans depend on the achievement of certain results in order to trigger an entitlement. These include profit sharing plans, employer profit matches for participants in a defined contribution plan such as a 401(k), stock plans that are contingent upon the attainment of certain performance results, and gain sharing plans where employees share in the financial gains attributable to certain operational targets such as reductions in lost-time accidents. When properly designed, these plans can generate positive employee behaviors.<sup>26</sup> In the case of a 401(k) profit match,<sup>27</sup> employees are motivated to take action to lower operating costs, improve productivity, and enhance customer service and sales. Similarly, equity plans where stock options or restricted stock are awarded can create an alignment between the workforce and the shareholders. One possible obstacle that could prevent employees from thinking and behaving like owners is the lack of a connection between what the worker does and how it impacts the intended result. The principle is called “The Line of Sight.”<sup>28</sup>

For example, can an employee stocking grocery shelves see any connection between his work and the price of the company’s stock? If not, should the employer reward him with stock options that provide increasing benefit value as the stock price increases? One could argue the line of sight is too long and that options are more appropriately granted to executives. By

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26. Even, W. E., & MacPherson, D. A. (2005, July). The effects of employer matches in 401(k) plans. *Industrial Relations*, 44(3), 525–549. Research indicates that the size of the employer’s match does affect the rate of participation among employees in a 401(k). Also, there is some evidence that participation in a 401(k) does affect productivity positively. Do co-pays and employee cost sharing features in health care plans really reduce health care resource utilization? Yes. Do they adversely affect the health care for the average person? The research says no. See Gruber, J. (2006, October). *The role of consumer copayments for health care: Lessons from the Rand health insurance experiment and beyond*. Kaiser Family Foundation, Publication No. 7566, <http://www.kff.org/insurance>.

27. A profit sharing retirement plan works in a similar manner and requires effective employee communication if the employer expects to affect employee behaviors positively. A Web site devoted to profit sharing issues and design, as well as related DCPs, is <http://www.pzca.org/>.

28. Milkovich, G., & Newman, J. (2005), p. 63. The Line of Sight is an important consideration in designing plan features intended to cause positive employee behaviors among participants. See also Colvin, A., & Boswell, W. (2007, March). The problem of action and interest alignment: Beyond job requirements and incentive compensation, *Human Resource Management Review*, 17(1), 38–51. The authors studied the issues of employee line of sight to organizational strategy and shared mind-sets within the organization.

shortening the line of sight, however, an employer can offer a variety of broad-based benefits that can result in positive employee behaviors. When properly designed and effectively communicated, there are a variety of performance-based benefits that can reduce the gap between management and hourly employees, support the principle of internal fairness, and promote productivity improvements.

Take the stock option plan. Combined with a comprehensive communication program, a stock option plan can help employees recognize and appreciate the connection between their work and the price of the stock. PepsiCo had such a program.<sup>29</sup> It offered stock options to a broad spectrum of its workforce. Employees were regularly reminded which activities at their work stations could have an impact on reducing costs, enhancing sales, and improving profits. They informed employees that sales and profit improvements frequently have a positive impact on the stock price. Management pointed out that reducing waste, turning off lights, adhering to quality outputs, saving on packaging expense, and improving customer perceptions of service could all add value to their stock option plan. As a result, the offering of stock options had the desired effect of positively motivating employees at all levels to enhance productivity. Similarly, a company's comprehensive communication effort on its matching contribution to the 401(k) plan, based on achieving targeted profit or sales levels, can have a positive effect on the behavior of employees at the executive, management, and hourly levels.

Since all benefits involve costs to the employer sponsors, they should test the presumed behavioral impacts of their benefit plans. This can be done with a variety of metrics tools, as discussed in Chapter 10, Employee Benefits and Metrics. For now, suffice it to say, a stock option plan generally creates an interest in the stock price among its participants. If these same participants can be shown how they can influence the drivers of

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29. PepsiCo called its program "Share Power." Employees at all levels were eligible to receive stock options. There were signs and posters everywhere in the plants and distribution centers reminding employees which activities impacted costs and sales. PepsiCo was shortening the line of sight between the work activity of its employees and the stock price. They saw the link, realized the potential value of their benefit, and changed their behaviors. PepsiCo continues Share Power, but has modified it slightly to account for higher employer matches to the company 401(k) and to respond to the new accounting changes with respect to the expensing of options. See PepsiCo press release (2004, December 2). This is discussed in Chapter 11, Equity Benefits. Other companies, mirroring the PepsiCo approach, have successfully communicated the links between stock value and employee behaviors. Covell, S. (2008, February 7). How to get workers to think and act like owners. *The Wall Street Journal*, B6.

higher stock prices—namely, good operational results—then the benefit will have achieved a positive change in employee behavior.<sup>30</sup>

While some might argue that gain sharing plans are not benefits, their design can provide important insight with respect to affecting employee behaviors positively with benefits. The typical gain sharing plan can include a number of performance measures such as reducing lost time due to accidents, improving customer service levels, reducing downtime on the production line, improving the ratio of labor costs to sales, and achieving high production or predictable yields from raw materials in a manufacturing plant. In most cases, employees see and appreciate the connection between what they do and these operational measures. Further, the measures are inextricably linked to sales, or cash flow, or earnings before interest, taxes, depreciation, and amortization (EBITDA),<sup>31</sup> or profits. When specific goals are met, the employee team, department, or entire workforce receives a share of the gain. It is usually paid in cash and on a quarterly or semiannual basis.<sup>32</sup> When an employer pays a benefit based on financial results, it is the improved performance that is funding the benefit. The lessons here are obvious. In order to capitalize on the opportunity to affect employee behavior positively with benefits, one must shorten the line of sight, require financially based performance achievements, and

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30. The author's experience is that, at the very least, profit- or output-based benefits, or a broad-based stock option plan, give the employer an opportunity to communicate with lower-level employee participants about the competitive challenges of the company and its external market threats, and share with them the opportunities for improvements. The communication can enhance better alignment between the workforce and the business strategy, as well as employee motivation. The stock option plan is also a less expensive form of reward because it involves variable, noncash compensation. Even with the new Financial Accounting Standards Board (FASB) accounting changes for options that must be reported on the employer's financial statements, there is considerable savings to the employer. This savings is represented in the time value of money because option exercises or payouts are deferred pending vesting and market developments and because, in many cases, the employer pays less cash compensation when options are granted. See Chapter 11, Equity Benefits. See Pfeffer, J., & Dee, T. (2007). *Hard facts, dangerous half-truths, and total nonsense: Profiting from evidence-based management*. Boston: Harvard Business School Press. They argue there is no evidence to support that stock options positively affect employee behavior.

31. EBITDA is a more practical way to measure profits without consideration to certain accounting and financing issues.

32. The payoff must be sufficiently generous to motivate, and frequent to maintain focus among the workforce. A powerful complement to the gain sharing plan is a problem-solving process in which employees' views, ideas, and contributions are solicited in order to improve work processes that will better ensure gain sharing results. With the possibility of significant reward, these employee activities can be galvanized and effective.



effectively communicate the program, making it an integral part of the company's culture. Let's see how this might apply to other benefit plans.

Results-based employer contributions could be included in a variety of benefit plans such as defined contribution retirement plans, supplemental health care plans that expand coverage or benefit levels, added life insurance coverage, employee medical or dependent care accounts, and vacation entitlements. The results-based approach can serve as a catalyst to stimulate employee behavioral changes that result in improved business results. Making sure there is a short or shortened line of sight is important in designing plans that affect employee behaviors. This is the challenge of the plan designer.

Some retirement designs can have positive effects on participant behavior. Most plans include vesting requirements that obligate the employee to remain in the sponsor's employment for a given period of time before he has a nonforfeitable interest in the benefit. When the full vesting requirements are met, the employee will be considered to be 100 percent vested in the benefit, and his accrued benefits will not be subject to forfeiture. These requirements have the intended effect of enhancing employee retention and rewarding longer service. The link to the business strategy is to support an objective of enhancing employee loyalty.

Retirement plans that use pay (particularly final average pay) and years of service in the formula to calculate one's pension also encourage longer service and motivate employees to seek progressive career moves that will enhance their earnings. When bonuses are included in the earnings portion of the pension calculation, there is an added incentive on the part of the employees who are nearing retirement to perform well, achieve a high bonus payout, and increase their pension.

Years ago, most defined benefit plans made retirement at age 65 compulsory. Changes in the law, however, made this practice illegal and now most employees can continue to earn pension credits as long as they are working, and they can work as long as they want. Does the typical defined benefit plan begin to discourage retention after certain ages? The answer is, probably yes, and here is why.

A defined benefit plan prescribes a benefit to the retiree as long as he lives. In some cases, there are survivor benefits paid during the life of certain spouse or contingent beneficiaries. For the participant, however, the shorter the life expectancy, the less benefits he receives. In other words, the present value of the retirement income under a defined benefit plan declines as the participant ages, or remains working at the company, or defers receipt of his pension. This is so even though the participant continues to accrue years of service credit. At a certain point, this becomes reality and the participant will terminate his service because of the pension plan. This is explained in some detail in Chapter 4.

Conversely, when one compares the present value of a defined contribution plan (DCP) to a defined benefit plan (DBP), the former increases

in value as the participant gets older. The participant's continued contributions to a DCP result in an increase in the present value regardless of his age or life expectancy. This is because the benefits in the DCP do not expire with the death of the participant. The benefits comprise the participant's aggregated retirement contributions and employer matches, and they continue to earn interest on a compounded and tax-deferred basis until the participant elects to begin receiving payments from the fund. Thus, while a defined benefit plan encourages longer service, at some point based on the pending mortality of the participant, it also encourages retirement, whereas the defined contribution plan does not lead to retirements because of pending mortality.

DBPs generally are not portable, while DCPs are. When a benefit is not portable and an employee does not remain at one company, the net effect is a reduction in retirement income from the defined benefit plans. This is discussed further in Chapter 4. Including portability as a design feature facilitates movement and turnover of employees among firms.<sup>33</sup> Employers who offer such features, however, must understand there is a cost<sup>34</sup> involved and they should measure that cost against the returns such features have on improved recruiting and productivity of the workforce. Let's continue to explore retirement plan design features that can impact participant behavior.

In some cases the employer uses the retirement plan as an incentive to reduce the size of the workforce. Early retirement incentives take the form of artificially adding years of service to the formula, giving large amounts of separation pay, or agreeing not to actuarially reduce the benefit because of the participant's early retirement.<sup>35</sup> Usually, there are age and service requirements that determine eligibility for the program.

The incentives may work if the added benefits included in the package are significant. Typically, the employer will predict how many will take the plan and what the labor cost savings in reduced wages will be. This must be contrasted against the real cost of the plan, including the added benefits as well

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33. There is some interesting research pending publication that indicates workers who actively participate in 401(k) plans have a greater propensity for saving for the future and tend to have higher goals and render superior performance. The conclusion is that a 401(k) plan can result in higher productivity among participant workers. Burham, K. (2007). *401(k) as strategic compensation: Align pay with productivity and enable optimal separation*. Doctoral dissertation, Notre Dame University, Department of Economics.

34. Defined contribution plans and hybrid plans such as cash balance plans typically permit portability and, thus, do not encourage long service.

35. There are some ERISA and IRC restrictions on the employer's ability to modify the pension by adding such incentives. In general, employer sponsors must comply with the specific terms of their plan documents. The funding of supplemental benefits, therefore, often comes from financial sources outside the plan.

as the temporary loss of productivity that will occur due to the loss of experienced employees. Essentially, the employer is modifying a number of retirement plan features that were designed to encourage employee retention, and using the plan to encourage separation. Obviously, careful attention must be paid to legal issues, but the employer must carefully examine the return on the investment or payback period of its retirement incentive. This is discussed in some detail in Chapter 10, Employee Benefits and Metrics.

A related issue involves enhanced utilization of older workers and the concept of phased retirement. This has become an important issue as we experience worker shortages and new perspectives among employees on what activities they wish to pursue when they retire.<sup>36</sup> Here again, incentives and resultant behaviors can be observed. For instance, Employee A is approaching 65 and wants to retire, but would like to remain with the company on a part-time basis. The company wants to retain his experience and knowledge for several years and offers a possible solution: phased retirement. It is a win-win proposition; however, there are several considerations:

- Should the employee receive the entire pension amount when he goes on part-time, semiretired status, or should the benefit be proportionately reduced and, if so, by what amount?
- Should the employee, where he is a participant in a defined benefit plan, continue to accrue service credits during semiretirement?<sup>37</sup>
- When he finally retires completely, should a new pension calculation be made using his lower, part-time earnings?

What reasonable and fair incentives can the employer make that would encourage an older worker to remain employed on a semiretirement basis? How would you design such a program? The Pension Protection Act of 2006, discussed in Chapter 9, Benefit Legal Compliance, has relaxed some barriers that made it difficult for employers to offer phased retirement. The above questions are discussed in Chapter 9.<sup>38</sup>

In addition to coordinating the pension issues, are there special benefits the employer can design to induce employment of older workers who are

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36. See Peterson, S., & Spiker, B. (2005). Establishing the positive contributory value of older workers: A positive psychology perspective. *Organization Dynamic*, 34(2), 153–167.

37. In the Social Security system, persons seeking benefits at age 62 or before the prescribed normal retirement date are subject to benefit reductions if they earn money in a postretirement position. Similarly, portions of the Social Security benefit are subject to ordinary income tax if the person earns wages above certain levels. See Chapter 3, Lifecycle Events.

38. There are new legal issues here. The Pension Protection Act of 2006 has provided some relief to this dilemma by allowing some pension distribution during a phased retirement. See §905 of the Act and Sammer, J. (2006). Pension law makes way for phased retirement. *HR Magazine*, 51(11), 28.

already participating in Medicare and, perhaps, receiving Social Security retirement benefits? The ordinary package of employer-sponsored benefits may not be particularly relevant to their needs. This worker does not need health care or a pension plan. Should the employer tailor a benefit program that will enhance his ability to recruit and retain older workers? Would they be more interested in financial counseling, contributions to a college education fund for their grandchildren, long-term care insurance, longer vacations, or flexible schedules? With some research and innovation, and by offering choices to workers, special benefit designs can assist employers who want to improve utilization of older workers.<sup>39</sup>

In some cases, employers design output-based benefit plans to foster cooperation among a number of departments within the company. For example, a company offers a special restricted stock benefit to its employees provided certain corporate objectives are achieved. The expressed intent is to encourage a unified effort throughout the company to find ways to reduce overhead and to develop effective, efficient management systems. The expectation is improved corporate profits. The cost of the restricted stock benefit is projected to be far less than the potential return. This type of plan can be very effective in changing a company's smokestack mentality<sup>40</sup> and, indeed, positively affecting the behavior of its participants. When merging companies look for ways to better integrate their operations, they often will resort to using benefit plans to encourage cooperation.

Some benefits by design have built-in incentives that produce counterproductive results. For example, paid time off, sick pay, and other similar programs generate significant costs to the employer and often produce incentives for workers to take full advantage of the benefit. When paid time off is offered on a "use it or lose it" basis, which normally covers a one-year period, the employee will take it. If they are permitted to carry it over into the next year and accumulate their sick days, they will do that. Finally, the employee is permitted to take the paid time off as part of his retirement benefit or add the income value of the benefit to his retirement calculation.

The question is, do we have the right incentives? Does the worker really value the paid time off? In cases where it is accumulated, the intended value is not apparent. From an economic standpoint, it might be better to simply pay the worker the extra sick pay each year and encourage him to work instead of taking the time off.<sup>41</sup> Employees can decide whether to be absent or to work and receive extra pay. The latter arrangement would be

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39. There are IRC and other legal issues here, but there are practical approaches that could be effective. See Peterson, S., & Spiker, B. (2005).

40. Smokestack is a common term used to describe a company that recognizes business unit performance without regard to the success of the enterprise as a whole.

41. Lazear (1998), p. 436. A similar analysis could be applied to vacation or holiday pay.

**Table 2.3** Example of Performance Criteria Applicable to the Vesting of 1,000 Shares of Restricted Stock

<i>1,000 Share RS Grant</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>
Percentage of shares vesting if annual profit goals are achieved	20%	20%	30%	30%
Shares received after restrictions lapse on percentage of shares vested	200	200	300	300
<b>Total number of shares received over four-year period</b>				<b>1,000</b>

better for the employer since no replacement workers or overtime costs would be incurred. It also would appear to be better for the employee who receives the extra pay. Using this approach is more economical to the employer than including unused sick pay in the pension calculation, because the added income would be multiplied by years of service and the pension replacement percentage and incremental amount would be paid for the life of the annuitant.

As the employer sponsor of a benefit plan, one must be aware of the importance of the third element of the benefits model—does it positively affect employees' behavior? How do you determine this? There are some behavioral theories that might be helpful in assessing the issue of functionality of benefit plan incentives.

The agency theory assumes that certain compensation designs can cause an executive to think and behave like an owner. Absent this design, the interests of the executives and owners may diverge.<sup>42</sup> For example, executives may want to acquire companies in order to create a corporate empire, while owners may be interested more in the anticipated financial returns of strategic relationships. Risk perceptions also may be different. Owners often have diverse portfolios of company stocks, while executives have most of their eggs in one basket and, therefore, may be more risk averse with respect to company strategies and ventures. Finally, executives are employees and have a shorter time horizon than owners. They may work for several companies during their career and, in order to maximize

42. For a basic description of the agency theory, see Milkovich, G., & Newman, J. (2005), pp. 264–265.

the return on their current employment relationship, may take too much of a short-term perspective with regard to business activities. Owners, on the other hand, are invested for the long term.

It is incumbent on a well-managed company to design compensation and benefit plans that align the interests of the executives and their subordinates with those of the owners. A common perception is that equity benefits, such as stock options or restricted stock,<sup>43</sup> can achieve this objective because owners would have a shared interest with executives—both would own company stock. In the case of a stock option plan, however, what risk is the executive taking when he accepts a tranche of options priced on the date of grant?

Unlike the owner, he has not invested any of his own money, though he accepts stock options as a substitute for additional cash compensation. He is risking the value of a higher salary or bonus in exchange for the potential gain in the value of his options. The value to the option holder, unlike the real shareholder, is the time value of money. The option recipient does not have to invest his money initially to purchase the stock.<sup>44</sup> If the options turn out to be worthless, the executive's risk, unlike the owner's, is the value of additional cash compensation he would have received in lieu of the options. The benefit plan design challenge is apparent. Can the stock option plan include sufficient risk to the executive so that he will share risks similar to those of the owner and, thus, behave like an owner?<sup>45</sup>

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43. The design features of stock options and restricted stock can be found in Chapter 11, Equity Benefits. Basically, however, stock options involve rights of option holders to purchase the company stock at the price applicable on the date the option was granted, while restricted stock confers ownership rights on the grantees as soon as the restrictions, such as the passage of time, lapse.

44. From an economic standpoint, since one does not know whether the price of the stock will increase at the time of the grant, the real value to the agent is that it allows him to invest in the stock without advancing any money to buy the stock. The value is essentially the time value of money. Some would argue the agent could exercise his options when they are vested and as soon as a spread between the price at the time of the grant and the current market price occurs. This is true. But the principal can sell his stock when there is an available short- or long-term gain as well.

45. A number of institutional shareholder groups have long complained about excessive grants of options to executives that generate the large accumulation of wealth with only modest stock price appreciations. Unlike shareholders whose total shareholder returns might fall far below the alternative investments in the market, the executive with a very large tranche of options whose price has only appreciated negligibly still enjoys a risk-free and quite sizable return. With the latest scandal over the backdating of options by executives, institutional shareholders have asked for full disclosure. See Testimony of Russell Read, California Public Employees Retirement System, Senate Banking Committee, U.S. Senate, September 6, 2006.

The best approach is to attach performance-based incentives to the option award that align with the interests of the owners.<sup>46</sup> For example, the options do not vest unless certain business results are achieved, or do not vest until the market price of the stock increases above industry levels or above analysts' expectations. This would place the option recipient closer to the risk status of an owner. Positive behaviors of owners would be encouraged, resulting in improved operating results that drive stock price increases.

A large manufacturing company wants to improve profits, grow sales on a global basis, and provide shareholders with a competitive total return. The company's total reward plan is designed to include base salaries pegged at about the 50th percentile of its external competitors. It offers a short-term annual bonus to its executives that will be payable depending on the return on operating assets. It also provides for a long-term bonus that is payable based on the attainment of certain economic value-added requirements similar to shareholder value propositions. Finally, it awards participants with traditional, nonqualified stock options. Overall, the plan puts important compensation features at risk and blends short-term and long-term perspectives among executives. The design of the plan places the agents on par with the owners and achieves alignment within the various units of the organization.

As we see in this vignette, the short-term perspective of the executive and his subordinates is a problem that can be addressed through a thoughtful, total reward design. Profit sharing retirement plans have long-term perspectives, since the value accrues to the executive and other participants when there is a consistent, long-term record of profit making by the enterprise. Similarly, setting profit, free cash flow, or operating cash flow goals<sup>47</sup> that require consistent, year-by-year attainment of aggressive

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46. These could include stock options, restricted stock, stock appreciation rights plans (SARs), long-term bonuses, and other benefits that are dependent on real business results.

47. Many corporations use earnings before Interest, Taxes, Depreciation, and Amortization (EBITDA) as a better indication of their performance than accounting-based profits. EBITDA is different from free cash flows or cash flows because it does not include the cash requirements for replacing capital assets. See Higgins, R. (2001). *Analysis for financial management* (pp. 5–6, 44–45). New York: Irwin McGraw-Hill.

performance targets can trigger the vesting of a variety of benefit entitlements among executives and their subordinates. This achieves better alignment and drives positive behaviors.<sup>48</sup>

Sometimes incentives encourage negative motivation, as in adverse selection. Suppose a firm has a contingent beneficiary provision in its defined benefit plan that allows employees, prior to retirement, to select one or more beneficiaries should the employee die while receiving benefits. The beneficiaries would receive a percentage of the employee's benefit for their lives, but the cost of this choice is an actuarial reduction of the benefit for the employee. Now, suppose this employee is about to retire and discovers that he has an incurable disease and will die within two months. Just before retiring, he decides to choose the contingent beneficiary option so his children will get his benefit. The employee's decision is adverse to the financial interests of the employer, since it will cost the employer more to pay pension benefits to his beneficiaries. Because his death is so near, he will not incur the actuarial cost normally associated with choosing this option. How does an employer address this issue? Are there plan provisions that might mitigate the impact on the employer? Yes. Typically, they involve time limits for making certain benefits choices. For example, the plan may require that a participant must choose his beneficiaries one or more months before retirement. In a health care plan, adverse selection might arise when an employee learns that he has a serious illness and, as a result, wants to choose a more generous health care plan. Most plans limit plan changes to specific annual enrollment dates.

For instance, Company A has a rich health care plan and Company B pays higher wages but has no health care for its employees. Suppose a job applicant has two children and one has an acute health care problem. Which firm is he most likely to choose for employment? Obviously, Company A, which would raise its health care costs significantly. This

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48. Other theories that are relevant to considering behavioral implications of compensation and benefit plans include the reinforcement and expectancy theories. The reinforcement theory holds that superior performance followed by special rewards will reinforce future high performance levels. Could this apply to a wellness program, for example, where the attainment of certain weight reduction goals results in a financial reward from the employer? The expectancy theory focuses on the effects of compensation as an incentive to increase employee motivation. In this case, the employee perception of the link between behavior and compensation is an important consideration. See Gerhart, B., & Milkovich, G. (1990). Organizational differences in managerial compensation and financial performance. *Academy of Management Journal*, 33, 663–691.



is adverse selection,<sup>49</sup> and it requires employers to be mindful of their plan designs.

There are a number of principles that relate to employee incentives and total rewards; however, the overriding consideration in effective plan design is to make sure that it conforms to the four elements of the benefits model. The employer should never lose sight of the important opportunity it has to affect employee-participant behavior positively. An effective and efficient benefits plan can generate real value instead of just another cost that must be assumed. Let's examine the fourth and final element of the benefits model.

### *COST-EFFECTIVE AND EFFICIENTLY ADMINISTERED*

Perhaps you have seen periodic articles on the best places to work, saluting companies that offer the best to their employees in terms of benefits, working conditions, amenities, and so forth. They often enjoy a brief moment of glory and, thereafter, disappear only to surface in the business section some time later as having experienced financial difficulty and, perhaps, even destruction. Benefits should be regarded as strategic elements of a total reward plan that helps to achieve the business strategy. They must be cost-effective and efficiently administered.

As with the start-up airline mentioned earlier, some benefits are simply too costly for the employer to fund and sponsor. One must look for other solutions and determine their efficacy. Do they really support the human resources and business strategy and will the predicted outcomes occur? Does the investment in benefit costs produce quantifiable results? Are there alternative designs? Should the employer shift some of the cost and risk elements of the plan to the participants?

If benefits are perceived as investments with the potential of generating real and positive financial returns instead of levying costs, the employer will be in a better position to assess their cost-effectiveness. The employer sponsor must challenge and ask himself a number of revealing questions. For example, does a retirement plan really provide adequate retirement income, positively impact productivity, improve recruitment and retention, and encourage employee savings? Does a health care plan reduce absenteeism, improve productivity, and deliver a healthier workforce?

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49. Lazear (1998), p. 418. See also Nelson, W. (2007), pp. 189–201. Nelson points out that among the uninsured persons who believe the cost of the health care plan is far less than the cost of a known health care risk will buy health insurance. Since the insurance company is unaware of the risk, the decision to buy the insurance amounts to adverse selection.

Does an employer-sponsored fitness center enhance the overall health of the workforce and improve productivity? Can these and other benefit plans really improve sales, profits, and total shareholder return?

A benefit cannot be cost-effective if it is not effective.<sup>50</sup> Employers spend a lot of time looking for the right health care bargain from third-party administrators (TPAs) and examining requests for proposals submitted by vendors seeking to manage their 401(k) plans. They also must be sure they invest as much time in research to determine whether the plan supports the overall objective of keeping employees healthier, reducing illness-related absenteeism, and detecting early medical conditions that could create catastrophic health care problems later. Furthermore, they must examine the hidden costs of administration, looking closely at the returns of the investment choices included in the vendor's package, and analyze how the benefit plan helps to achieve the business strategy.

In general, employer sponsors need to be sure they are offering the most cost-effective benefit plans<sup>51</sup> that are designed to be efficiently administered. Selecting simple and easy-to-understand benefit designs is a first step. Then employers must look for ways to achieve efficiencies. For example, they could introduce electronic, system-based benefit information, which facilitates and tracks enrollment and other participant activities; or they could place a large portion of the administrative work on the participant and then follow up on a regular basis to evaluate the system's effectiveness. Do employees understand the benefit? Do they value it? Are they making the right decisions? There are quality and consistency programs such as Six Sigma the employer can utilize to achieve an efficient benefit system.

One more resource with which we should become familiar before launching into the specific benefits is actuarial principles. How does the employer sponsor know how to fund his benefits, and what factors might be relevant to adjusting certain benefits?

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## Actuarial Principles

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What does an actuary do? Some time ago I organized a conference for our company's benefit managers. I decided they should know a little about actuarial principles and invited an actuary from a leading benefits consulting firm to speak. She described her job by talking about saving for college.

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50. When the benefit design includes output-based incentives, the employer should require operating results that drive sales and profits and not simply reward activities. Activity does not fund benefits; results do. Whatever benefit design is chosen, the output must involve drivers that directly contribute to sales and profits.

51. The administration of benefit plans is discussed in Chapter 16, Convenience and Accommodation Benefits, Benefits Administration.

John and Mary recently married and Mary is pregnant with their first child. In the United States, a major concern of parents is how they will pay for the university education of their children. John and Mary sit down to discuss the issue and agree they must start saving now. The question is, how much should they put aside each month in order to adequately finance their child's education? After doing some research on their own and speaking with their financial consultant, they came to realize the answer depends on several factors:

- How much they can afford to save
- The age of their child (or children) and how many years they have to save
- How much interest they can earn on their savings
- An estimate of how much the education will cost when their child is ready to go to university
- What the duration of their child's university education will be—four years for a baccalaureate, five years for a master's degree, or seven or eight years for a doctorate

These same factors come into play when an employer sponsor is deciding how much should be put aside in order to fund the defined benefit retirement plan.

- How much can the employer afford to put aside in a trust to fund a defined benefit plan?
- When will employees under the plan begin to retire? How many years of savings can be anticipated?
- By investing the funds in stocks and bonds, what are the expected earnings of the fund account?
- What will the value of the benefits be, as employees retire over the years? If benefits are based in part on final pay, what rate of income inflation can the actuary expect over the next years?
- Since defined benefit plans are paid for the life of the participant, what are the various life expectancies of the participants? Longevity is, of course, the underlying driver of retirement risk and, in the case of a DBP, the risk is on the employer.<sup>52</sup>

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52. See *Key findings and issues, longevity: The underlying driver of retirement risk*. (2006, July). Society of Actuaries. It should be noted that longevity is the major risk for retirees who are saving for retirement and wondering about the adequacy of their accumulated accounts. Will they outlive their retirement? The report finds that in the face of increasing longevity, retirees may prematurely deplete their assets if they do not plan properly.

As you can see, the actuary uses the same factors as parents, but also looks at employee turnover rates to determine how many employees will work long enough to be entitled to pensions. He works with investment advisors on how expected versus actual returns can affect funding obligations of the employer and constantly assesses the adequacy of funding for accrued vested benefits.

Let's look at a few scenarios. Suppose the employer has been overestimating the investment returns of his retirement assets. In actuality, they have been somewhat disappointing. The employer will examine new investment strategies to shore up his returns and avoid facing a funding shortage requiring a large, one-time contribution to the plan. Worst-case scenario, the disappointing returns could lead to a termination of the plan altogether, or cause the employer to reduce benefits on a prospective basis to better align earnings with benefits.

In another example, the employer's DBP fund is producing exceptional investment returns far above those expected, leading to an overfunding of the plan. Because investment returns in the plan are not taxed, the employer could decide to do nothing with the overfunding and simply realize the extra gains earned from the tax-deferred investments. Or he could decide to forgo additional contributions to the plan and allow the market to fund it for the next several years, thereby saving cash and actual pension expense. In some cases the employer might decide to terminate the plan, use the excess funds to finance new capital projects, and reestablish the pension fund with the remaining plan assets.

Pension actuaries who use mortality tables must accurately assess life expectancies of the DBP participants so the proper funding rates of the plan can be achieved. People are living longer and some have a desire to retire earlier. The actuary must consider these trends and constantly assess funding rates for the plan.

Actuaries also consider how to reduce a benefit based on a participant's choice to elect certain options in the plan. For example, suppose a participant decides to take advantage of the defined benefit plan's option to retire at 55 instead of the normal retirement age of 65. Should the retiree receive a full benefit, or should it be reduced based on the fact that he will receive the benefit for ten additional years? The answer is, the benefit will be actuarially reduced based on the additional ten years. Similarly, suppose a participant in the same plan chooses to name a beneficiary who would receive a portion of his benefit in the event he dies after retiring. Again, the benefit would be reduced based on the age of the beneficiary and the amount of benefit to be received. The younger the beneficiary, the longer the benefits will have to be paid out, so the initial benefit to the participant is actuarially reduced to reflect this potential obligation on the part of the plan sponsor.

Inflation is another key component of the actuarial process. For defined benefit plans, which base the pension calculation on final average pay,

wage inflation is a critical part of the anticipated pension-funding obligation. Inflation after retirement also becomes relevant in order to assess the adequacy of either the defined benefit plan or the defined contribution plan. How much of final pay does the company's plan replace at retirement? Should the employer consider changing the benefit formula or offering additional plans? What is the inflation rate after retirement and can retirees cope with the added expenses? Will employees have enough to pay for higher medical expenses, housing, fuel, and energy utilities?<sup>53</sup>

Similar factors apply to other benefits such as health care plans, where the employer sponsor tries to determine future health care risks, the adequacy of its reserves to pay for higher unanticipated health care utilization, and the future rate of health care inflation. All of these assessments may lead, for example, to the introduction of more cost-effective health care plan design, increased contributions to the plan, or more effective wellness programs. There is a demographic development that weighs heavily on the actuary's perspective—the aging population.

In the United States in 1950, the ratio of persons aged 25–60 to 65 and older was seven. In the year 2020, it will be about four; and in 2050, less than three. In Europe, the situation is graver. In 1950, the same ratio was six to one; in 2020, it will be under three; and in 2050, under two.<sup>54</sup> This means there will be fewer workers paying payroll taxes and funding public benefits, and more retirees needing health care and employer-sponsored benefits. Some estimate that retirement will have to be delayed significantly in order to accommodate this new gray world, and there will be even more reliance on individually funded benefits.

This comes at a time when the ratio of work years to retirement years is declining.<sup>55</sup> When people used to work 47 years, retired at 65, and had five years' life expectancy, the ratio was over nine to one. Today, prospective workers spend more years getting an education, consequently delaying their entry into the workforce, and also have a significantly higher life expectancy.

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53. See *Consumer spending by older Americans, 1985–2005*. (2007, September 24). Congressional Research Service Report to Congress.

54. Siegel, J. (2006, September 20). Gray world. *The Wall Street Journal*, A26. See also Webb, A. (2005). *The dependency ratio*. International Longevity Center—USA, <http://www.ilcusa.org>. This ratio measures the ratio of persons under 18 and over 65 who are presumably out of the workforce to those between the same ages. In most developed countries, including the United States, the ratio is increasing due to a demographic transition caused by increased population over the age of 65, increased longevity, and lower birth rates. It portends problems for retirement plans, particularly those funded on a pay-as-you-go basis. More of this issue will be discussed in Chapter 12, Government-Sponsored and Mandated Benefits.

55. Pollock, A. (2006, September). *Retirement finance: Old ideas, new reality*, American Enterprise Institute for Public Policy Research, <http://www.aei.org>.

**Table 2.4** Dependency Ratio

The Ratio of those younger than 18 and older than 65 compared to those between the ages of 18 and 65.

<i>Country</i>	<i>2000</i>	<i>2025</i>
Italy	.267	.406
Japan	.252	.490
Germany	.241	.390
United Kingdom	.244	.328
United States	.186	.293
France	.245	.328

SOURCE: Webb, A. (2005). *The Dependency Ratio*. International Longevity Center—USA, <http://www.ilcusa.org>.

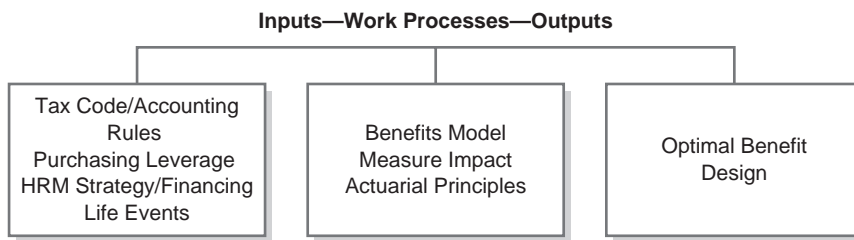
Therefore, a college graduate may not begin full-time work until age 25, and would like to retire at age 55, when his life expectancy is perhaps 27 years. As a result, the work to retirement years ratio is 1.1 to 1.

It is important to note that the number of employers in the United States who offer defined benefit plans is declining. More are offering defined contribution plans, placing the risks and saving obligations on employees.<sup>56</sup> If an employee's retirement income is based in substantial part on his contributions to a pension plan, the prospect of saving sufficient funds to retire early will be less likely. This could mean that retirement would be delayed to a point where the remaining retirement years would outpace the increase in life expectancy. Employees might find they cannot afford to retire until there are only a few years remaining in their lives. There are ideas circulating that purport to address this global issue.<sup>57</sup> They range from totally redesigning publicly and privately sponsored benefits to changing the capital flows between developed and developing countries where populations are increasing.<sup>58</sup> It is a serious issue that

56. See *Trends in retirement plans*. (2007). Employee Benefits Research Institute, Chapter 10, Data Book, <http://www.ebri.org/>.

57. Milken, M. (2006, September 19). The boom generation, seventh decade. *The Wall Street Journal*, A26, <http://webreprints.djreprints.com/1552621259811.html>. The author argues that with increased life expectancy persons in their sixties will change careers, but continue to earn money instead of selling their assets to survive.

58. *Ibid.*



**Figure 2.2** Workflow of Benefits

deserves worldwide focus, creative public policy changes, and a great deal of actuarial attention.

## Conclusion

On a microeconomic level, as employers assess the demographics and characteristics of their employees and choose which benefit plan is the most responsive to the lifecycle needs of their workforce, it is important for them to pay close attention to the benefits model. Does the plan provide internal fairness, and how does it measure up to that offered by external competitors seeking to recruit and retain from the same market? Does it contain design features that motivate employees to behave in a manner consistent with the employer's business and human resources strategies? Is the plan cost-effective, based on the employer's ability to fund, and does it produce its intended effect? Does the employer sponsor understand the behavioral theories and principles that underlie the incentives included in the plan? What are the actuarial concepts relevant to the employer's obligation to fund the benefit? The answers to all of these questions are necessary, as the employer searches for the optimal plan design that best fits his needs and better ensures the selection, retention, and motivation of a highly productive workforce. Figure 2.2 is a workflow of benefits table that shows how and when certain factors apply to the offering and design of benefits.

## Chapter Exercises

The following will help to enhance your understanding of the underlying concepts in this chapter. You will be required to do some independent research to answer the questions.

1. Go to <http://www.savingforcollege.com/>. Using the calculator, see how much you need to save to finance a child's college

education. What are the relevant factors in the calculation? Check out a §529 Plan. How does it work? What would be an ideal investment strategy for a newborn whose parents are saving for college?

2. Go to Northwestern Mutual Insurance at <http://www.nmfn.com/> and click on “Learning Center” and then “Calculators.” There are many interesting calculators on this site, including saving for college, doubling your money (Rule of 72), power of tax deferral, and the longevity game. Explore each one and draw some conclusions about their relevance to some of the principles concerning retirement plans. Also, make sure to determine your life expectancy, making special note of the variables that can affect your life span.
3. What would the consequences be if the U.S. Congress changed the current tax treatment of health care plans by making all employer-sponsored benefits taxable to the employee but allowing the employee to deduct all of his nonreimbursed health care expenses? Explain the possible changes and impacts in the employer-sponsored benefit system.
4. Go to <http://www.payscale.com/> and select a job and region to compare total rewards. What elements of compensation are included in total rewards? How would you use this information to develop your pay and benefit strategy?
5. Cafeteria plans often are used to overcome problems with internal fairness. Check the IRS Web site and review the IRS rules with respect to cafeteria plans. Which benefits are excluded from these plans? For example, can an employer include financial assistance to join a health club? How about educational assistance? Are some benefits taxable as income to the recipient? Are there limits to the amounts that can be offered in a cafeteria plan? See <http://www.irs.gov/publications/>, Publication 15-B.
6. Suppose a health care plan pays the first \$3,000 of a participant’s health care expenses, and the participant pays the next \$2,500 of covered health care expenses. Thereafter, the plan covers 100 percent of any additional medical expenses incurred during the year. What impact, if any, do you think this delayed deductible will have on the participant’s behavior?
7. Go to the U.S. Department of Labor’s Bureau of Labor Statistics at <http://www.bls.gov>, and identify the current percentage of labor costs attributed to benefits in a given industry or region. How would you use this information in operating your own business?



8. Check Peterson, S., and Spiker, B. (2005). Establishing the positive contributory value of older workers: A positive psychology perspective, *Organization Dynamics*, 34(2), 153–167, as well as recent legislation in the Pension Protection Act of 2006 dealing with phased retirement, and determine whether there are sufficient incentives to accomplish the goal of higher utilization of older workers. What barriers have been adjusted or removed? Also, what are the tax consequences to persons over 65 who continue working? Read Butrica, B., et al., (2004, November). *Does work pay at older ages?* Center for Retirement Research at Boston College, <http://www.bc.edu/crr/>
9. Can you reconcile the tournament theory with the agency theory? Are there some relevant lessons in the headlines where, allegedly, excessive compensation has been awarded to certain chief executives? Do some research and organize a discussion of this issue.
10. With respect to external competition, how might an employer inadvertently distort his labor expense by comparing his total rewards to a labor competitor instead of his product or service competitor?
11. Some economists argue that mandated benefits required by the Family and Medical Leave Act (FMLA), such as unpaid leaves, are paid for by employees. This is based on the principle of compensating differentials. Check the principle and be prepared to discuss the claim.