

Structuring and Valuing Contingent Payments in M&A

OVERVIEW AND SUMMARY

This chapter explores the use and analysis of *contingent payments* in M&A deal design. Contingent forms of payment to the seller are pegged to the future performance of the target firm. They are “contingent” because the size of the payment *depends* on uncertain future performance. Much of the discussion in M&A presumes that the payment to the seller is fixed and known with certainty. This chapter and the next relax that assumption and explore its implications for the practitioner.

“Contingent payment” covers a variety of payment arrangements to the seller, including *earnouts*, *escrow funds*, stock options, and *holdback allowances*. But for simplicity and because of its widespread recognition among practitioners, this chapter will focus particularly on the earnout, an arrangement under which a portion of the purchase price in an acquisition is contingent on achievement of financial or other performance targets after the deal closes. Economically, the earnout is a legally binding financial agreement among two or more parties and is a claim on future value—it is described variously as an “instrument,” “agreement,” or “contract.” Escrows and holdbacks are economically similar to earnouts. Stock options are also similar, but because of their tradability they are covered in Chapter 10. What distinguishes these kinds of payments is that they *resolve disagreement about an optimistic future* and *create incentives* for the target company management. For simplicity, I will use “earnout” generically to refer to contingent payments that create incentives. The technicalities of contingent payments, however, should not obscure five points that are important to the practitioner:

1. *Contingent payment plans are options.* This implies that earnouts are more valuable the longer the term of the instrument, and the greater the uncertainty about the underlying asset. Indeed, it is this uncertainty that can make an earnout so valuable and useful.
2. *The right way to value a contingent payment instrument is to account for its optionality.* The approach recommended here is to model, and value, the earnout using Monte Carlo simulation. The wrong way to value an earnout is to project a “most likely” stream of expected cash flows and discount it to the present. The latter approach is a widespread practice that probably *underestimates* the value of the earnout instrument.

3. *Earnouts are challenging instruments to structure.* They raise daunting issues of performance measurement and can create unintended consequences in human behavior. Ultimately, they require a fair amount of trust among honorable parties to the agreement.
4. *The contingent payment plan can be an extremely useful device for breaking deadlocks in deal negotiations.* The same instrument can be worth very different amounts to an optimistic seller and a pessimistic buyer.
5. *The earnout can be an important device for retaining and motivating talent.* People who hold special know-how, such as researchers, artists, and operational managers, may have a more optimistic view about the prospects of the target firm and thus may be willing to accept payment tied to that view. This enables the buyer to retain talent more successfully. Also, the prospect of an attractive future payment can motivate the target company management to bring the optimistic future to fruition.

CONTINGENT PAYMENTS IN M&A

Contingent payments are elements in many M&A transactions and can take many forms, including these:

- **Bonus payments to sellers** (especially if the sellers are managers who stay on with the target firm).
- **Escrow funds.** Part of the total payment is set aside in an escrow account, and released to the seller when the target firm satisfies some condition, such as completion of a new product.
- **Holdback allowance.** Part of the total payment is allowed to be withheld at closing and paid later upon satisfaction of some condition in the buyer. With holdback allowances, no escrow account is involved.
- **Stock options.** These are rights to acquire shares in the buyer. The exercise price is usually set at a level above the buyer's share price at closing, and is aimed at reflecting the value the target will hopefully bring to the buyer.
- **Targeted stock.** The buyer can issue to the target's shareholders or managers shares of stock whose dividends are pegged to the performance of the target. This can minimize accounting dilution imposed on the buyer's shareholders. Esty (2001) argues that targeted stock creates value by facilitating acquisitions.
- **Earnout plan.** The previous plans involve simple triggers on payments to the seller. In the case of earnouts, the triggers may be determined by complicated formulas and agreements for measuring progress. The earnout plan takes the form of a legally binding contract.

In common usage, "earnout" often refers to all of these types of contingent payments.

Several notable deals have included contingent features:

- In 1998, Seagate Technology completed an earnout deal in its acquisition of Quinta Corporation, a small technology company. The deal was structured such that Seagate paid Quinta \$230 million at closing and could potentially

pay an additional \$95 million over the next three years. The portion, if any, of the \$95 million that will be paid in the future is contingent upon Quinta achieving certain technological milestones.

- In December 1996, Unocal sold its subsidiary, 76 Products Company, to Tosco for \$2.05 billion in cash, common stock, and an earnout.
- In November 1996, Resort Condominiums International was acquired by HFS Corporation for \$550 million in cash, \$75 million in common stock, and an earnout worth about \$200 million.
- In June 1996, Rouse Company acquired Hughes Corporation for \$176 million in stock and an earnout.
- In 1996, Inco won a bidding contest against Falconbridge to acquire Diamond Fields Resources. Inco paid Diamond Fields shareholders a package of cash, Inco common stock, and shares of stock that tracked Diamond Fields and stock that tracked a nickel-mining project in which Inco and Diamond Fields had been co-owners. One observer wrote, "Traditional corporate finance valuation techniques are difficult to apply to exploration potential, so a separate security allows stockholders of the target company to share in any upside gained from the exploration rights it owned."¹
- In August 1996, Atlantic Energy of New Jersey and Delmarva Power of Delaware announced a merger in which Atlantic shareholders would receive a class of stock in Newco that would track Atlantic's performance. "No deal would ever have been announced had the targeted stock technique not been applied; the differences in expectations of how Atlantic Electric would perform—the valuation gap was too wide," said an observer.²

Notwithstanding these public-company deals, earnouts have been used predominantly in small, private company acquisitions. The targets in these deals typically have a short and/or volatile operating history and substantial uncertainty about future performance.

Exhibit 22.1 summarizes the trend and volume of earnout deals. Several insights emerge from the data:

- Earnouts are featured in a small portion of all publicly announced deals. Depending on how the volume of earnouts is measured, they vary from 0.4 to 2.5 percent (based on dollar volume) or 1.1 to 3.5 percent (based on deal volume) of the total flow of deals.
- The absolute volume of earnout deals has risen. This increase probably is due to the buoyancy in M&A activity, but also to the acceptability of the earnout structure in larger deals.
- In deals where they occur, earnouts are a material portion of the consideration reported by the parties to the deal. The rightmost column in Exhibit 22.1 shows that earnouts account for between 19 and 88 percent of total consideration paid in the deals in which they are used.

Kohers and Ang (2000) studied 938 acquisitions using earnouts from 1984 to 1996, and concluded that the use of earnouts was consistent with two explanations. First, earnouts may help to manage the buyer's risk. And second, earnouts

EXHIBIT 22.1 Volume of Deals Involving Earnouts by Year, and in Comparison to All Deals

Year	Earnout Deals				% Payment Due to Earnout
	Total Value (\$ Mil)	% All Deals	Number	% All Deals	
1985	\$ 447.4	0.4%	8	1.3%	51%
1986	\$ 2,081.6	0.9%	15	1.2%	26%
1987	\$ 1,697.3	0.9%	15	1.1%	44%
1988	\$ 1,795.3	0.7%	26	1.5%	54%
1989	\$ 2,774.9	0.9%	52	2.4%	24%
1990	\$ 1,438.5	0.8%	53	2.6%	21%
1991	\$ 2,254.4	1.8%	55	2.8%	30%
1992	\$ 1,272.6	1.1%	61	2.7%	40%
1993	\$ 4,332.0	2.5%	89	3.4%	21%
1994	\$ 1,990.1	0.7%	92	2.7%	88%
1995	\$ 7,150.4	1.8%	86	2.3%	27%
1996	\$ 8,831.7	1.5%	85	2.0%	19%
1997	\$11,711.1	1.7%	144	3.1%	29%
1998	\$ 9,845.1	0.8%	167	3.5%	28%
1999	\$13,562.4	0.9%	163	1.7%	21%
2000	\$26,028.3	1.6%	174	1.9%	23%
2001	\$15,644.7	2.2%	151	2.4%	27%
2002	\$ 8,089.3	2.1%	150	2.6%	29%

Source of data: Securities Data Company, Merger & Acquisition database.

help to retain management. Also, their study offered a profile of the use and impact of earnouts:

- **Types of targets.** Earnouts are used predominantly in two kinds of deal situations: divestitures of corporate divisions and acquisitions of privately held targets. Two-thirds of the sample consisted of deals with privately held targets. Thirty percent of the deals consisted of acquisitions of divested subsidiaries. Tests show that the use of earnouts is more likely for private targets. About a fourth of the private company acquisitions emanate from high-tech industries. Statistical tests show that high-tech deals have a significantly greater tendency to use earnout structures. Service industries are another arena in which use of earnouts is significantly more likely. Earnouts are more likely the smaller the stockholder group of the target firm.
- **Types of buyers.** Smaller acquirers are more likely to use earnouts than larger acquirers. Foreign buyers from countries with common law traditions (similar to the United States) are more likely to use earnouts than foreign buyers from countries with civil code traditions (e.g., France). Kohers and Ang point out that the similarity in legal traditions underscores the importance of the enforcement of earnout contracts, an argument advanced in La Porta et al. (1997).
- **Pairing of buyers and targets.** Earnouts are more likely to be used where the buyer and target are from different industries.
- **Portion of total payment.** As a percentage of total consideration paid, the earnout component is larger in private transactions (45 percent of total) as

compared to the divested subsidiary acquisitions (33 percent of total). The size of the earnout payment in deals is driven by many of the same elements that drive the likelihood of using an earnout.

- **Acquisition premium.** The acquisition premiums were larger in earnout deals than in straight cash or stock deals. The premiums in earnout deals tend to be higher for private targets than for divested subsidiaries.
- **Returns to the buyer.** The abnormal returns to buyers at the announcement of earnout transactions are significantly positive, 1.4 percent. The returns are significantly higher than for straight cash or stock deals for private firms and where there is evidence of large information asymmetry between the buyer and target. Also, the buyer's returns are significantly more positive where management stays and where a payout is actually made under the earnout. Most of the gains from these acquisitions appear to be captured at the announcement, since over the three to five years after the deal the buyers' share prices perform in line with the market.
- **Structure.** The average performance horizon for earnout contracts is between two and five years. The earnouts tend to be structured around the profits of the target firms. And the targets of earnout deals usually exist as subsidiaries of the buyer, which facilitates performance measurement against the terms of the earnout.
- **Payout.** In 91 percent of the cases, some payment was made under the earnout arrangement. In half the cases, the full payment was made. On average across all cases, about 62 percent of the stated earnout amounts were actually received by target shareholders.
- **Retention of managers.** In about two-thirds of the cases, target managers stayed with the buying firm after the earnout period ended. The retention of management was highly correlated with the size of the actual earnout payment.

Datar, Frankel, and Wolfson (1998) reported similar profiles and conclusions for a sample of earnouts.

EARNOUTS CAN BE USEFUL; BUT IF SO, WHY AREN'T THEY UBIQUITOUS?

The relative rarity of earnouts questions their relevance. The advantages and disadvantages of earnouts create trade-offs that mean the deal designer should be selective in the application of this form of payment.

Potential Benefits of Using Earnouts

An earnout can provide a number of benefits to both parties if it is properly structured. For the seller, an earnout can provide additional payments if the acquired business does as well as expected. For the buyer, the earnout is acceptable because additional payments will be necessary only if the business does significantly better than expected. Three typical reasons explain the use of earnouts in merger and acquisition transactions.

1. **Bridging the valuation gap.** The most common reason for using an earnout is to bridge the gap between the buyer's and seller's evaluations of the intrinsic value of the target. When both parties agree that a higher valuation would be justified if the target met future performance goals, then the parties can make the differential between their valuations subject to an earnout.
2. **Retention of shareholder/managers.** Earnouts can also allow the buyer to induce key managers of the target, who are also shareholders, to remain with the target after the sale. If a portion of the purchase price is subject to performance goals after the closing, the target's shareholder/managers have an incentive to remain with the target in order to participate in the potential future payments.
3. **Motivation of shareholder/managers.** A third reason to use earnouts is to motivate the target's shareholder/managers to continue the target's aggressive growth after closing the sale. Earnouts are most effective for this purpose if the target can substantially increase its sales price by achieving its performance goals.

Potential Disadvantages of Earnouts

Despite the economic attractiveness of earnouts, they carry a variety of complications that must be considered before the negotiating parties decide to use an earnout deal structure. As the growing number of public deals that include earnouts suggests, these complications can be resolved through diligent attention to details by both parties. When problems occur from using earnouts, they generally fall into one or more of the following categories:

- **Postacquisition integration.** Earnouts are least likely to be effective when the target is totally integrated into the buyer. The more the target's operations are integrated into the buyer's, the less control the target's management will have over achieving performance goals. In an integrated company, revenue, expense, and profit decisions may be made to benefit the combined entity instead of the target, which could demotivate the target management. To avoid this problem, it is important to choose performance goals that will not be adversely affected by integration or to assure the target's operating independence during the earnout period.
- **Complexity of definition.** It is difficult to create effective earnout formulas. While the earnout concept may be simple, objective numerical definitions can easily become complex. It is important that the parties agree on simple performance goals that are unambiguous and easy to measure.
- **Overly aggressive performance goals.** In order to get the highest target valuation, the target's management may be tempted to base the earnout on overly aggressive performance goals. Most companies rarely predict their future performance with any accuracy. Earnouts can demotivate the target's management if it becomes likely that the target will miss its performance goals. The best way to ensure the continued motivation of the target management is to choose realistic performance goals, make progress payments for partial performance, and provide a fair mechanism to adjust performance goals to reflect changing business circumstances.

- **Managers don't own a significant earnout claim.** Earnouts may not sufficiently motivate target management if they do not receive a sizable earnout claim on future performance. For instance, suppose that the target is a large publicly held corporation in which management owns 1 percent of the shares, and that the earnout instruments are distributed pro rata to shareholders. Because of their small claim on the total earnout benefits, the payoff to management of exceeding the earnout targets might be small. To avoid this problem, it may be necessary to provide additional incentive compensation for the target's key managers.

Given the practical difficulties of earnouts, the parties may conclude that it is preferable not to use them. Even if negotiations lead to a nonearnout structure, consideration of an earnout is still valuable. Negotiations about earnouts frequently bring the parties closer together on price, performance expectations, and operating philosophies.

EARNOUTS ARE OPTIONS ON FUTURE PERFORMANCE

The key to understanding how earnouts can be structured and valued lies in seeing them as a type of financial option. An option is the right, not the obligation, to do something; for instance, a call option traded on the Chicago Board Options Exchange (CBOE) is the right to buy shares of the underlying common stock. The only circumstance in which a rational person would exercise the call option is if the value of the underlying stock exceeds the exercise price of the call option. In other words, the value that the investor receives from an option is contingent on the performance of an underlying asset; the option value derives from the value of another asset—hence, the name “derivative security.”

Earnout provisions are a type of call option on the benefits of future performance by the target firm. Like the more straightforward CBOE call option, the earnout can be described in terms of some of its key value drivers shown in Exhibit 22.2—it hints at the possible application of option pricing techniques to the valuation of earnouts. However, earnouts are more complicated than financial options. And unlike financial options, earnouts are not standardized or exchange traded. But even if the analogy is imperfect, the options perspective still yields a number of extremely important implications for deal doers:

- **Earnouts are likely to be valuable, even if they are out of the money today.** The key question about all options is not whether it would be profitable to exercise them right now, but rather, how likely it is that the option will become in the money sometime in its remaining life?
- **Earnouts are not free to the buyer; they are costly.** Quite often, the buyer structures an earnout so that it is out of the money today. Thus, the buyer might assume that the earnout is a costless trinket, given away to placate the seller in the negotiations. But if out-of-the-money options (i.e., with some time remaining) are generally valuable, then the earnout is costly to the buyer and may convey value to the seller.
- **Earnouts are tailor-made for situations of great uncertainty.** Remember that options are more valuable the greater the uncertainty or volatility of the underlying

EXHIBIT 22.2 Comparison of Earnouts and Call Options on Common Stock

	Call Options on Common Stock	Earnouts	Implications for Value of the Earnout
Underlying asset	Shares of common stock.	Some index or measure of financial or operating performance; whatever the earnout is pegged to: revenues, earnings, cash flow, even market share or product introductions.	The earnout is a derivative security.
Exercise price	The stated strike price of the options contract.	Any benchmark, hurdle, or triggering event, beyond which the earnout provision starts paying off.	The lower the levels of performance of the benchmark or target, the greater the value of the earnout.
Price of the underlying asset	Share price of the underlying common stock.	The level of the index or measure of performance: revenues, earnings, cash flow, and so on to which the earnout is tied.	The higher the performance of the underlying index to which the earnout is pegged, the greater the value of the earnout.
Interim payouts	Dividends.	Any interim cash flows associated with the earnout.	The higher the interim payout, the lower the value of the earnout after payment.
Term of the option	At original issue, contracts are for three, six, or nine months.	Typically as long as five years.	The longer the remaining life of the earnout, the more valuable. This is generally the second most important driver of option value.
Uncertainty	Volatility of returns on the underlying asset.	Uncertainty about the performance of the underlying index to which the earnout is pegged.	The greater the uncertainty (or volatility), the more valuable the earnout. This is generally the most important driver of option value.

asset. In other words, earnouts will be seen as conveying material value if there is uncertainty about the target company. How much value and uncertainty remains for the analyst to determine. But in general, one should instinctively consider using earnouts in settings such as high technology, rapid growth, and/or sharp turbulence in the economic environment. In contrast, earnouts may not help much in settings involving mature firms and industries and a quiet economic environment.

- *Earnouts will be helpful in bridging the differences in outlook between an optimistic seller and a pessimistic buyer.* Highly disparate outlooks are simply an-

other form of uncertainty. Indeed, it is the existence of pessimists and optimists that makes the options market. Options investors are said to “trade on risk” (i.e., on the differences in beliefs about future volatility)—both the buyer and seller of options willingly enter into the transaction in the belief that they will gain as their view of the world unfolds. So it is with parties to an M&A transaction: earnouts can be structured in ways that will favor each side if that side’s view of the future actually occurs. Thus, at the time when the transaction is consummated, both parties are likely to be satisfied.³

STRUCTURING AN EARNOUT

The following section looks at each of the key elements to consider when structuring an effective earnout. In addition, this section outlines the negotiating positions that the buyer and the target are likely to take and suggests mechanisms to bridge potential conflicts.

Earnout Amount

The parties must determine what portion of the target’s purchase price will be paid to its shareholders at closing and what portion will be subject to the earnout. Each will attempt to reduce its risk in the acquisition: the buyer by trying to increase the earnout ratio,⁴ the target by trying to get more cash at closing.

The earnout percentage is usually a function of the negotiation price gap. That is, there is usually some portion of the purchase price on which both parties can agree. This becomes the noncontingent or fixed portion of the purchase price. The difference between the fixed portion and what the seller desires to receive is the “price gap” and is the basis for the earnout. When determining the earnout percentage, both parties need to consider that any earnout payments are contingent in nature and will not be paid until a later date. The contingent nature of the payments makes valuing an earnout more complicated than merely discounting the future earnout payments. Rather, the earnout is comparable to an option where the value of the earnout increases with additional uncertainty about future cash flows.

It is important that the parties strike an appropriate balance between the payments at closing and the amount of the earnout. The proper balance will depend on how strong the target’s position is, the total risk in the earnout, and the parties’ objectives. There may be little incentive effect if the earnout ratio is small (such as less than 20 percent). In contrast, if the earnout ratio is large (such as more than 70 percent), the target may be assuming too much risk in the transaction. Most earnouts range from 20 to 70 percent of the total purchase price.

Earnout Period

Earnouts typically run for a period of between one and five years, with an average of three years. The earnout period is usually determined by the earnout ratio (the percent of total payment derived from the earnout). In general, the larger the earnout ratio, the longer the earnout period.

Some managers might conclude that since “time is money,” the seller will want

shorter earnout periods to increase the present value of an expected payment. In contrast, the buyer would want to stretch the earnout payments over a longer period in order to reduce the present value of these payments. Also, a longer earnout will extend the period that the target's shareholder/managers will be retained and motivated.

The options analogy produces a rather different conclusion about earnout periods. Quite simply, longer-lived options are more valuable since with more time the likelihood is greater that the option will pay off. Thus, option theory would suggest that the seller would want longer-running earnouts, all else equal. In contrast, the buyer would want shorter earnout periods. The conventional wisdom makes the mistake of viewing the earnout as a sure thing when in reality it is highly uncertain. Given the uncertainty, the options perspective on the earnout period is more appropriate.

Performance Goals

Earnout payments can be based on any number of measurable performance criteria. To be effective, performance goals must be clearly defined, mutually understood, attainable, and easily measurable. Common performance criteria used in earnouts raise numerous issues that both parties should consider when evaluating the appropriateness of those criteria for its earnout:

■ **Revenues.** Revenue-based earnouts are seen in situations in which the buyer wishes to integrate the operations of the two companies. When the target is fully integrated into the buyer, it becomes difficult to measure future results other than revenues from the former target products. Using revenue-based earnouts also appears in those situations where the target management does not intend to remain with the company after the deal. In these cases, the earnout provides both parties with a way to value the brand equity that the former managers of the target built.

The main risk to the buyer in using a revenue-based earnout is that the target will sell product on liberal credit terms in order to boost revenues. The buyer can mitigate this risk by directly managing credit extension to customers. On the other hand, the target may be concerned that the buyer's manufacturing or distribution capacity will not be sufficient to meet customer demand for the target's products. To avoid this problem, the target will want the earnout formula to specify what resources the buyer must dedicate to support the target's revenue goals.

■ **Gross margin.** The buyer may prefer to base the earnout on the target's gross margin because it forces the target to be profitable. However, if the target is subject to the buyer's control, the target's management may worry that the buyer will dictate its expenses to the detriment of the earnout. To address this concern, the earnout formula should specify how the parties would determine overhead, burden rate, purchasing requirements, and similar factors affecting gross margin.

■ **Pretax profit.** Using pretax profit as the earnout measure requires the target's business to perform well in all respects. It also prevents any meaningful operating integration of the target into the buyer during the earnout period. To ensure that the target has a fair opportunity to achieve its earnout objectives, an earnout based on pretax profit needs to provide the target with adequate operating freedom.

- **Cash flow or EBITDA.** When parties have used an EBITDA multiple to value the target at closing, it can be useful to base the earnout formula on a similar measure to highlight the importance of providing future cash, and hence future value, to the buyer. A cash flow type metric is also particularly useful if the buyer is cash-short or if the buyer wants to impose discipline on a target that has historically been a large cash consumer.
- **Milestones.** Earnout payments can also be contingent upon attaining nonfinancial milestones, such as completion of some specified critical product development, product shipment, or contract execution. These types of performance criteria are particularly common in the technology sector where a new product development can greatly enhance the value of the target.

It is also not uncommon to incorporate more than one of these performance criteria into the earnout formula by assigning each criterion a separate weight, allowing the goals to be achieved independently. For example, each year's earnout payment could be based 50 percent on revenues and 50 percent on EBITDA.

After determining which goals to use in the earnout, the parties must decide how the payout will be computed. In the majority of transactions, performance goals are measured on an annual basis. A mathematical formula should be developed that determines the exact amount of cash or shares to be distributed to the target's shareholders.

Payment Schedule

There are a number of ways to structure the payment schedule in an earnout. To balance risk and reward, the earnout should provide rewards for significant partial performance by the target, even if it does not completely meet its performance goals. For example, a sliding scale could be used whereby the target would receive some partial payment if it attains at least 50 percent of the performance goal. The payment amount would then increase linearly thereafter up to the performance goal.

The payment schedule must also account for instances in which the target exceeds its performance goal. In some cases, earnout formulas pay bonuses if the target exceeds its performance goals. Another way to treat excess performance is to allow the target to use any excess performance in a given year to offset any periods in which it fails to meet its goals. To eliminate the annual volatility of the earnout payment, some companies prefer to structure one lump-sum payment at the end of the earnout that accounts for the cumulative performance of the target relative to the annual performance goals.

Due to the unpredictability of future performance, buyers almost always cap the payments that can be earned in an earnout. If the buyer caps the total payments that can be earned, the target could seek minimum annual payments and the right to bonus payments if it exceeds its performance goals.

Operational Integration

Another issue that impacts the potential effectiveness of an earnout is the extent to which the buyer intends to integrate the operations of the target. The earnout contract must clearly define the business unit being measured in the earnout and establish who will control the target's major corporate decisions. Earnouts frequently

require that the target cooperate with the buyer's operations or integrate products. The target needs to evaluate its control over those integrated factors and determine what impact they will have on the design and payout of the earnout. For example, if the buyer intends to provide the target with additional products to manage, will those revenues be included in the earnout? If the buyer is to be the target's major customer, will the target attain the same level of profitability that it would if it were selling its products to third parties?

If the target retains operating control, it is less likely to claim that the buyer has interfered with its attainment of its earnout performance goals. Since acquisitions with low operating integration after the closing generally produce the most effective earnouts, the target should negotiate to retain its operating independence during the earnout. Since the buyer frequently acquires the target to accomplish operating integration, this issue must be carefully handled. One possibility is to choose the target performance goals that allow necessary integration. Alternatively, a shorter earnout period may permit the parties to be integrated after the earnout, but within a reasonable period. The earnout must be structured to allow attainment of the strategic as well as the financial and earnout objectives of the acquisition.

Accounting Rules and Performance Measurement

Earnouts require a clear understanding of the applicable financial accounting policies by which performance will be measured. The buyer and the target may have different financial reporting policies before the acquisition; the target generally will be required to conform its accounting system to the buyer's after the closing. The earnout agreement should specify the accounting policies that will be followed when measuring the target's performance. An agreement that requires numbers to be computed according to generally accepted accounting principles (GAAP) is not sufficient because of the variety of accounting treatments that are within the range of GAAP.

Items to be deducted from the target's financial statements to obtain performance results should be clearly specified. Of particular importance is the way the buyer treats interest, goodwill or other intangibles, earnout payments, and corporate allocations and expenses related to the transaction. These items normally should not be treated as the target operating expenses in determining its performance.

The acquisition contract needs to incorporate accurate and timely ways to monitor performance goal results. It should require an independent annual audit of the target and provide a method to resolve numerical disputes. A subcommittee of the target's former board of directors, representing the target's shareholders, frequently will be asked to negotiate any disputes with the buyer during the earnout period. If this subcommittee and the buyer are unable to reach accord, the contract should provide for arbitration or determination by some independent accounting firm.

Additional Issues

In addition to the issues previously addressed, several other issues should be kept in mind when negotiating an earnout:

- **Availability of financing.** The target will want to ensure that the buyer can and will provide the capital the target will need to achieve its performance goals. On the other hand, the buyer will be concerned that the target could become a cash drain. When the target is not in a position to fund its growth internally, it is common for the buyer to provide capital and charge the target's income statement for the buyer's cost of capital. If the buyer will not commit to providing necessary capital, the target needs authority to obtain funds from outside sources.
- **Management process.** Both parties must agree on how the target will conduct business after the closing. The parties must establish an approval process for the target's annual operating plans. While this process generally will mirror the buyer's own business planning process, it is important to structure a planning process for the earnout period that will not adversely affect the target's ability to achieve its performance goals.
- **Change in control.** There is always a risk that the buyer may sell the acquired business in the future or that the buyer will itself be bought by another entity. The seller should ensure that any future changes in control do not adversely affect the target's ability to obtain its future earnout payments. Some earnout agreements will provide for any acquiring company to pay the target the maximum amount due under the earnout as part of the purchase.
- **Liquidity.** Some earnout agreements will permit the earnout instrument to be sold, assigned, or transferred. Generally, this is a feature that should add some value to the earnout, as it confers greater liquidity on the investment value latent in the earnout. Some earnout instruments may be detached from the common shares of public firms and/or listed separately for trading on a stock exchange—in this instance, the deal designer should prepare for lengthy discussions with securities regulators on even the most fundamental question of whether the instrument is a debt security or an equity security.
- **Impact on the buyer's financial structure.** Earnouts, like other contingent liabilities, have historically been presented in footnotes to the buyer's financial statements. The accounting profession is debating their possible presentation directly on the balance sheet, as a contra-equity account or an outright liability. Economically speaking, earnouts are claims that are senior to the common shareholders. Therefore, earnouts will tend to increase the financial leverage of the buyer (in comparison with payment in shares of common stock) and should be assessed for their possible impact on the debt rating and general creditworthiness of the buyer.

TAX AND ACCOUNTING CONSIDERATIONS

An earnout is just the payment mechanism for some portion of the purchase price in an acquisition. The parties still need to decide how they want to structure the acquisition given the legal and accounting implications of using an earnout. Earnouts are complex and must be carefully crafted to reduce future friction between the parties. Both parties need to thoroughly read and understand the documentation that will govern their working relationship and profits during the earnout period. The following legal and accounting considerations are the most

common and critical issues that must be considered. Earnout proposals should be evaluated with the counsel of competent tax and accounting advisers.

Tax Implications of Earnout Structures

Use of an earnout does not limit flexibility in structuring acquisitions. Earnouts can be included in tax-free and taxable transactions and in mergers, stock-for-stock acquisitions, or asset acquisitions. The earnout can be paid in stock or in cash.

Both parties must carefully consider the tax implication of using stock versus cash to make earnout payments. Any cash will, of course, be taxable, so the target may want stock from the buyer because taxes can be deferred. It is worth noting that the target generally can defer the tax due on cash payments until the payments are received by reporting the earnout payments on an installment sale basis. The buyer also has an incentive to use stock because it may want to conserve cash and/or provide the shareholder/managers of the target with a continuing interest in the growth and prosperity of the buyer after the closing of the transaction.

When structuring an earnout as a tax-free transaction, the tax rules regarding the allowable form of payment vary depending on the type of transaction chosen by the parties. If the purchase transaction is structured as a merger-type reorganization, cash earnout payments will be fully taxable and, if large enough, may defeat tax-free reorganization treatment. Specifically, a straight or forward triangular tax-free merger must have at least 50 percent of the total consideration paid in stock, while a reverse triangular tax-free merger must have at least 80 percent of the total consideration paid in stock. If the transaction is a tax-free stock-for-stock acquisition, all of the consideration paid must be in stock. In a tax-free stock-for-assets acquisition, consideration in the form of cash or the assumption of liabilities must be less than 20 percent of the total consideration.

Currently, in a tax-free acquisition, the earnout ratio should not be more than 50 percent and the earnout period should not exceed five years. The IRS will impute interest on deferred payments, whether stock or cash, unless the agreement specifically provides for adequate interest.

Financial Accounting

Under purchase accounting for M&A, the earnout must be included as part of the total consideration paid to acquire the target. Some portion of the purchase price will be contingent upon the target's meeting its performance goals after the closing. As a result, any excess of the purchase price over the fair market value of the target's assets at closing will be treated as goodwill. Since earnout payments are part of the purchase price, they may create or increase the amount of goodwill in the transaction.

GENERIC APPROACH TO VALUING EARNOUT INSTRUMENTS

In order to design effective earnouts, it is important to understand how to value them and their possible alternative structures. Some practitioners believe that the

appropriate way to value these instruments is to forecast a “most likely” stream of cash flows, and discount them to the present. Unfortunately, this ignores the uncertainty of the underlying index and the optionality of the instrument itself. This approach will often *underestimate* the value of the earnout instrument. The correct approach to valuing earnouts is to recognize their optionality—that is, to value them as instruments with contingent payments rather than as fairly certain streams of cash.

Although it may be possible to design a theoretical model to value earnouts, there is a simpler and equally effective numerical valuation approach: Monte Carlo simulation. Numerical simulations can be designed that allow users to change the key drivers of future value and estimate today’s value of the target. The buyer and seller will have different distributions for the key value drivers and this will lead to different valuations of the same earnout structure for the two parties. Monte Carlo simulation yields useful negotiating and structuring insights from a review of the payout distributions. For example, the buyer can determine the probability that the earnout has no value as well as the maximum earnout amount and the likelihood of that payment.

A template model for valuing earnouts, “Earnout.xls,” is contained in the CD-ROM. The user must have installed Microsoft Excel and Crystal Ball or similar compatible software to execute a simulation using this model.

Valuing an Earnout with Monte Carlo Simulation

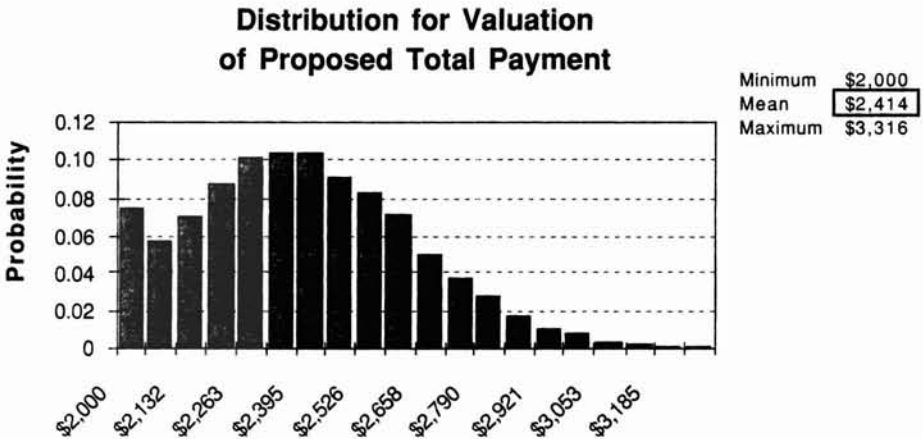
The following example illustrates a Monte Carlo simulation of the present value of the earnout payment based on variations of sales growth and profit margins. For the purposes of this example, let’s assume that the buyer plans to acquire the target that has \$10 million in sales. The buyer has completed a DCF analysis that yielded an enterprise value of \$3 million for the target, while the target values itself at \$5 million. The parties decide to use an earnout to bridge this valuation gap. The earnout will last for five years and will have earnout targets starting at \$250 thousand and increasing by that amount each year. The consideration paid at closing should not exceed the buyer’s enterprise valuation of the target. A price of \$2 million is agreed upon for this transaction—the key question is whether this is a fair price.

A Monte Carlo simulation valuing this earnout is based on models given in Exhibits 22.3 and 22.4, presenting a separate model for the buyer and the seller. This permits us to value the identical earnout from the perspective of both parties. An earnout that is valuable to one side may not be valuable to the other.

The first step in creating a Monte Carlo simulation to value this earnout is to determine the probability distribution of key forecast assumptions. These are probability distributions of the assumptions that drive the forecast. In this simple example, we will focus only on sales growth and profit margins. These must be determined for both the buyer and the seller points of view. The analyst can choose among a variety of possible distributions: normal, uniform, and triangular, to name three common forms. In this example, we will focus on the triangular distribution for simplicity. The amounts chosen as the minimum, maximum, and most likely will be used as the basis to create a triangular distribution of future values for the key drivers from the perspective of each party. In this case, the buyer expects values

EXHIBIT 22.3 Buyer's Forecast and Valuation Model: Generic Evaluation of an Earnout

	Year 1	Year 2	Year 3	Year 4	Year 5
Base year sales	\$10,000				
Earnout period, in years	5				
Sales growth rate	\$10,500	\$11,025	\$11,576	\$12,155	\$12,763
Minimum	0%				
Most likely	5%	5%	5%	5%	5%
Maximum	10%				
Operating income profit margin	\$ 525	\$ 551	\$ 579	\$ 608	\$ 638
Minimum	0%				
Most likely	5%	5%	5%	5%	5%
Maximum	10%				
Earnout target	\$ 250	\$ 500	\$ 750	\$ 1,000	\$ 1,250
Annual earnout value	\$ 275	\$ 51	\$ —	\$ —	\$ —
Present value of earnout, discounted at 5%	\$ 308				
Dollars at closing	\$ 2,000				
Valuation of proposed total payment	\$ 2,308				

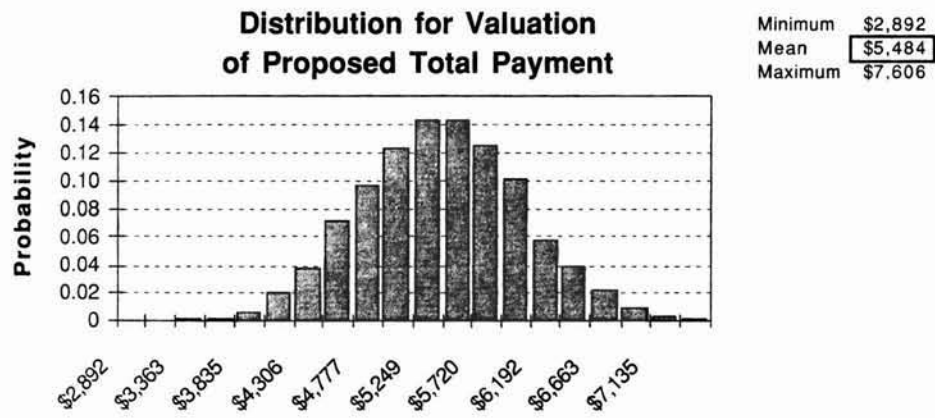


ranging from 0 percent to 10 percent for both sales growth and profit margins (with a “most likely” estimate of 5 percent for each), while the seller has higher and more volatile expectations for these values.

After the expected distributions for the key value drivers are entered into the respective buyer and seller portions of the valuation model, the following steps should be taken to complete the valuation of the proposed earnout using the model “Earnout.xls,” found on the CD-ROM.

EXHIBIT 22.4 Seller's Forecast and Valuation Model: Generic Evaluation of an Earnout

		Year 1	Year 2	Year 3	Year 4	Year 5
Base year sales	\$10,000					
Earnout period, in years	5					
Sales growth rate		\$11,500	\$13,225	\$15,209	\$17,490	\$20,114
Minimum	10%					
Most likely	15%	15%	15%	15%	15%	15%
Maximum	20%					
Operating income		\$ 1,150	\$1,323	\$1,521	\$ 1,749	\$ 2,011
profit margin						
Minimum	5%					
Most likely	10%	10%	10%	10%	10%	10%
Maximum	15%					
Earnout target		\$ 250	\$ 500	\$ 750	\$ 1,000	\$ 1,250
Annual earnout value		\$ 900	\$ 823	\$ 771	\$ 749	\$ 761
Present value of earnout, discounted at 5%		\$ 3,482				
Dollars at closing		\$ 2,000				
Valuation of proposed total payment		\$ 5,482				



1. Enter the current sales figure of \$10 million for the target company into the appropriate cell on the spreadsheet. This amount serves as the basis from which future sales and profits will be derived.
2. Input the earnout period as five years.
3. Enter the earnout targets for each year starting with \$250,000 and increasing by that amount each year. The model is designed to compare these annual earnout targets to the annual operating income that results after each iteration of the simulation. Any excess of the projected operating income over and above the earnout target will result in a positive amount in the annual earnout value

line. It is also important to note that the annual earnout line will never be less than zero because the call option nature of an earnout prohibits a negative value. The annual payments expected from the earnout are discounted to account for the time value of money at the risk-free rate of return.⁵

4. Enter the fixed amount of dollars that will be paid out at closing, \$2 million in this case. The model adds this figure to the present value of the earnout to arrive at an enterprise valuation of the proposed earnout structure.
5. Select the enterprise valuation cells on both the buyer and the target portion of the model as the outputs of a Monte Carlo simulation and run a simulation to determine the distribution of payouts that can be expected.

Valuation Results of the Hypothetical Example

Monte Carlo simulation offers insights about the value of the earnout to both the buyer and the target. An acceptable earnout will satisfy both sides. To the buyer, the acceptable earnout and fixed payment will be *equal to or less than* the value of the target to the buyer. To the seller, the acceptable earnout and fixed payment will be *equal to or greater than* the target's value. A satisfactory deal should meet both equations simultaneously:

Enterprise value according to buyer \geq Dollars at closing + Buyer valuation of earnout
 Enterprise value according to seller \leq Dollars at closing + Seller valuation of earnout

A review of the distributions of expected values for this proposed deal shows that the buyer (see Exhibit 22.3) expects a mean total cost of \$2.4 million (versus an enterprise value of \$3 million), while the target (see Exhibit 22.4) expects to receive a mean total value of \$5.5 million for the same proposed earnout (versus the target's self-valuation of \$5 million). Thus, the two equations for an acceptable earnout are satisfied for the mean expected values. A review of the probability distributions in these exhibits can yield the likelihood that the equations will be satisfied for both parties. The simulation of earnout values is a useful foundation for negotiation and deal design.

The particular earnout described in this example is able to satisfy both parties because of the differences in expected volatility used in the model for the two parties. These differences are exactly why earnouts are such a valuable business tool for mergers and acquisitions and why earnouts can enable a win-win situation to be negotiated.

CASE EXAMPLE: ELI LILLY'S CONTINGENT PAYMENT UNITS

In September 1985, Eli Lilly announced its intention to acquire Hybritech Inc.⁶ Lilly, a leading manufacturer of pharmaceuticals and therapeutics, was founded in 1901. Hybritech, founded in 1978, was a biotechnology research boutique leading the field in the development and marketing of new products in monoclonal antibody (MoAb) research. The acquisition announcement signaled a serious move by Lilly into biotechnology. Between the first announcement of the acquisition and the final announcement of the detailed terms of acquisition, Lilly's share price rose 36 percent (compared to 17 percent for the S&P 500 index). Plainly, investors applauded Lilly's new strategic direction.

The Challenge of Differing Outlooks and Its Solution

Hybritech and Lilly had been discussing a possible combination for over a year. In 1984, Hybritech's shares had traded at prices ranging from \$11.00 to \$22.75. In February 1985, Hybritech's CEO, Ted Greene, believed that the market had been undervaluing Hybritech, which he believed was worth about \$30 per share. Lilly's negotiators disagreed, suggesting that \$20 per share was more appropriate. Negotiations broke off, but on friendly terms. Then, from February to September, the market value of most biotechnology and pharmaceutical companies, including Hybritech and Lilly, rose.

When negotiations commenced again in late summer, discussions quickly moved to price and form of payment. Though the two firms had similar expectations about profit margins and sales growth in two product lines, Hybritech and Lilly differed substantially over the likelihood that the target would successfully introduce major new therapeutic drugs. Hybritech believed that it would receive Food and Drug Administration (FDA) approval to launch new drugs in 1988, while Lilly believed it would be 1991. But Lilly believed that once the new drugs were launched, their revenues would grow faster than Hybritech believed they would grow.

When the two sides agreed to a payment of \$32 per share in mid-September 1985, the deal reflected the belief of Lilly that Hybritech was worth \$29, and the belief of Hybritech that it was worth \$32. The form of payment was structured in a way to allow each side to meet its expectations. The payment of \$32 per share was comprised of:

- Twenty-two dollars per share to be paid in cash, or at the choice of the shareholder, in \$22 of Lilly convertible notes bearing interest of 6.75 percent and a conversion price of \$66.31 per share one year after the date of merger. Lilly could call the notes after March 31, 1989, at a premium that would decrease to par by the maturity date, March 31, 1996. The Hybritech shareholder could elect to receive any combination of cash and convertible notes equal to \$22 per share.
- Seven dollars in 1.4 warrants to purchase Lilly stock at an exercise price of \$75.98 until March 31, 1991. The warrants would be listed for trading on the New York Stock Exchange. Lilly believed that each warrant would have an initial trading value of \$5, thus producing a value of \$7 for the package of 1.4 warrants.
- Three dollars in value attributed to the *contingent payment units (CPUs)* issued by Lilly. In a private fairness opinion, Hybritech's investment bankers estimated the value of the CPU to be \$3. The units would be listed for trading on the American Stock Exchange.

The principal Lilly negotiator of this deal told me that the three components corresponded roughly to Lilly's valuation of Hybritech's three business segments. Hybritech produced diagnostic test kits, a mature product line that would fit easily into Lilly's product line. The diagnostics business was the most valuable component to Lilly, and was worth the equivalent of \$22 per Hybritech share to Lilly. A second segment, based on imaging technology, was worth \$7 per share to Lilly—this was a more speculative business with a less immediate payoff. The third segment was Hybritech's therapeutics research effort. It was possible that Hybritech would make

a dramatic breakthrough in product development, though the prospect of this was highly uncertain to Lilly. Hybritech's staff seemed confident that such a breakthrough would occur.

The contingent payment units (CPUs) offered a means of bridging the expectations of the two sides. The CPUs provided for annual cash payments based on the operating results of Hybritech as a wholly owned subsidiary of Lilly for each of the 12-month periods ending December 31, 1986, through December 31, 1995. The cash payments with respect to each CPU for each calendar year would be equal to:

- Six percent of Hybritech's sales,
- Plus 20 percent of Hybritech's gross profits,
- Minus a deductible amount that was to be \$11 million for 1986 and which would increase at a compound rate of 35 percent annually for each of the calendar years 1987 through 1995;
- This total divided by 12,933,894, which was the number of Hybritech shares, fully diluted.

The maximum amount that Lilly offered to pay with respect to each CPU was \$22. The CPUs would be canceled when dividends paid per unit had accumulated to \$22, or on March 31, 1996, whichever occurred first.

The CPUs would be issued under an indenture as unsecured obligations of Lilly and would rank equally with all other unsecured indebtedness of Lilly. In addition, Lilly would not be obligated to support Hybritech as an operating subsidiary in order to generate payments on the CPUs. Holders of CPUs would have no equity interest in Lilly or Hybritech, and would not derive any economic benefit from Lilly's general business activities.

Lilly had made two acquisitions using some form of contingent payments in the two previous years. On May 31, 1984, it purchased Advanced Cardiovascular Systems for 2.8 million shares with a possibility of issuing up to 1.25 million more to ACS's shareholders. By December 31, 1984, Lilly had issued 41,000 more shares as a result of ACS's performance, and by December 31, 1985, it had issued 160,000 more. Also, Lilly acquired Intec Systems in May 1985 for \$47.7 million in cash and \$500,000 in convertible debentures, with the possibility of paying up to \$85 million more. By early 1985, no such contingency payments had been made.

Valuation of the Contingent Payment Units

It is straightforward to construct a model that will forecast Hybritech's revenues and gross profit. Exhibits 22.5 and 22.6 present the spreadsheets of forecasts from Hybritech and Lilly's standpoints.⁷ The forecasts recognize that Hybritech would derive uncertain revenues from three business segments:

1. *Diagnostics products.* These were test kits that could diagnose diseases quickly, cheaply, and in the doctor's office. The FDA had approved these kits for sale, so there was little uncertainty about their commercial possibilities. Lilly foresaw that the diagnostic products would fit easily into their broad product line.

EXHIBIT 22.6 Model Used for the Valuation of the Contingent Payment Units: Lilly's Perspective

	Base Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Sales growth rate, diagnostic tests kits	\$ 15,000	\$ 21,750	\$ 31,538	\$ 45,729	\$ 66,308	\$ 96,146	\$ 139,412	\$ 202,147	\$ 293,113	\$ 425,014	\$ 616,270
Minimum											
30%											
45%											
Most likely											
Maximum											
60%											
Sales growth rate, imaging products	\$ —	\$1	\$ 1,000	\$ 1,833	\$ 3,361	\$ 6,162	\$ 11,297	\$ 20,711	\$ 37,971	\$ 69,613	\$ 127,624
Minimum											
62%											
75%											
Most likely											
Maximum											
113%											
Sales growth rate, therapeutic products	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 8,000	\$ 17,280	\$ 37,325	\$ 80,622
Minimum											
65%											
Most likely											
Maximum											
185%											
Contract revenues											
Minimum		\$ 16,000	\$ 21,000	\$ 23,000	\$ 15,000	\$ 12,000	\$ 4,000	\$ 3,000	\$ 3,000	\$ 3,000	\$ 3,000
Most likely		\$ 37,751	\$ 53,538	\$ 70,563	\$ 84,669	\$ 114,308	\$ 154,709	\$ 233,858	\$ 351,364	\$ 534,952	\$ 827,516
Maximum		\$ 29,949	\$ 42,473	\$ 55,980	\$ 67,171	\$ 90,684	\$ 122,736	\$ 183,528	\$ 278,749	\$ 424,395	\$ 656,496
Gross profit margin											
Minimum											
65%											
Most likely											
78%											
Maximum											
95%											
Six percent of total revenues		\$ 2,265	\$ 3,212	\$ 4,234	\$ 5,080	\$ 6,858	\$ 9,283	\$ 14,031	\$ 21,082	\$ 32,097	\$ 49,651
20 percent of gross profits		\$ 5,990	\$ 8,495	\$ 11,196	\$ 13,434	\$ 18,137	\$ 24,547	\$ 37,106	\$ 55,750	\$ 84,879	\$ 131,299
Hurdle											
Minimum		\$ (14,850)	\$ (20,048)	\$ (27,064)	\$ (36,537)	\$ (49,324)	\$ (66,588)	\$ (89,894)	\$ (121,356)	\$ (163,831)	\$ (221,172)
Most likely		\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Maximum		\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Total annual payment of CPU											
Present value of the CPU payments, discounted at 9%		\$ 0.00									
Value of cash and warrants		\$ 29.00									
Value of Lilly's offer		\$ 29.00									

EXHIBIT 22.6 Model Used for the Valuation of the Contingent Payment Units: Hybritech's Perspective

	Base Year											
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994		
Sales growth rate, diagnostic test kits	\$ 15,000	\$ 28,000	\$ 38,873	\$ 53,969	\$ 74,927	\$ 104,024	\$ 144,420	\$ 200,503	\$ 278,365	\$ 386,463	\$ 536,540	
Minimum												30%
Most likely												38%
Maximum												49%
Sales growth rate, imaging products	—	\$ 2,000	\$ 3,593	\$ 6,456	\$ 11,599	\$ 20,840	\$ 37,443	\$ 67,272	\$ 120,866	\$ 217,155		39%
Minimum												62%
Most likely												75%
Maximum												102%
Sales growth rate, therapeutic products	\$ —	\$ —	\$ —	\$ 8,000	\$ 14,853	\$ 27,578	\$ 51,203	\$ 95,066	\$ 176,506	\$ 327,713		80%
Minimum												70%
Most likely												88%
Maximum												99%
Contract revenues	\$ 16,000	\$ 21,000	\$ 23,000	\$ 15,000	\$ 12,000	\$ 4,000	\$ 3,000	\$ 3,000	\$ 3,000	\$ 3,000	\$ 3,000	
Total revenues	\$ 44,000	\$ 61,873	\$ 80,562	\$ 104,383	\$ 142,477	\$ 196,838	\$ 292,148	\$ 443,703	\$ 686,835	\$ 1,084,408		

2. *Imaging products.* These products used radioisotopes to form a clearer photographic image of an internal site than might be available through more conventional means such as X-rays. These products were in development, but were relatively close to commercialization. As a result, the imaging segment was riskier than the diagnostic segment, but not regarded as being totally speculative.
3. *Therapeutic products.* These products represented the cures for major diseases, and were years from release into the marketplace. If, however, a discovery occurred, it was likely to be major and highly successful.

Lilly and Hybritech held approximately similar expectations for margins and growth rates for the diagnostics and imaging products. They differed substantially in their outlook for therapeutics. Hybritech expected that new therapeutic products would launch in 1988 and grow at 86 percent annually. Lilly expected delays; the launch would occur in 1991, and the new products would grow at 116 percent. Lilly believed that the difficult FDA drug approval process in the United States could slow the launch of therapeutics.

The revenue growth and gross margin assumptions were modeled as triangular distributions, notable for their ease of use (one merely needs to specify a "high," "low," and "most likely" value). There are numerous other distributions one can choose from (such as the normal distribution), but in the absence of information that would justify using another distribution, good practice probably dictates that one should use the simplest form.

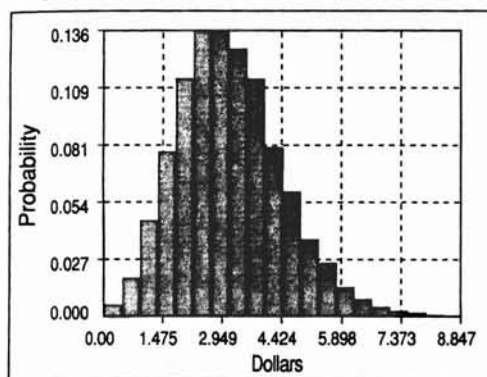
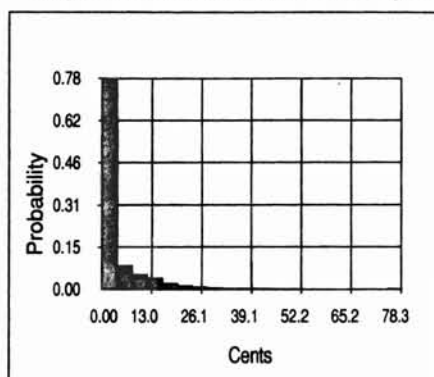
From the forecasts of revenues and gross margin, the model calculated the total CPU dividend each year using the formula expressed in the acquisition agreement. These annual payments were discounted to the present using the yield on 10-year U.S. Treasury securities. Two rationales for using a 10-year risk-free rate of return are that (1) it matches the life of the earnout instrument and (2) if the risk has already been accounted for in the cash flow, it would be inappropriate to double-count it by also using a higher, risk-adjusted discount rate.⁸ The resulting present value was divided by the number of Hybritech shares to give an estimate of the value of one CPU. The chief analytical question was whether the CPU was worth \$3 as advertised.

The model used 10,000 draws to simulate the distribution of the value per CPU. Exhibit 22.7 presents the distribution of CPU value simulated from the Hybritech and Lilly perspectives. The mean of the Hybritech distribution (what statisticians call the "expected value") was \$3.10 per share, consistent with the fairness opinion of the investment banker. The Hybritech graph reveals nearly a 99 percent probability that the CPU would payoff. Regarding the simulation from the Eli Lilly perspective, the mean was \$0.26, and there was only a 21 percent likelihood that the CPU would payoff.

The disparity in results between the two perspectives is arresting, but it illustrates the economic role that earnouts can play in resolving disagreements about the future. Hybritech was optimistic; its shareholders wanted to be paid for value derived from future uncertain growth. Lilly was much less optimistic and less willing to pay for potential future value. From Lilly's perspective, the CPU would protect Lilly from overpaying.

EXHIBIT 22.7 Probability Distribution of CPU Values from the Perspectives of Hybritech and Lilly

	Hybritech's View	Lilly's View
Minimum value	\$0.00	\$0.00
Maximum value	\$8.84	\$7.83
Mean value	\$3.10	\$0.26
Standard deviation	\$1.28	\$0.55
Probability of \$ > 0	99%	21%

Hybritech's View of the Likelihood of Payoff**Lilly's View of the Likelihood of Payoff**

Epilogue

At the end of the first month (March 1986) the CPUs traded for \$4.50 each, suggesting that investors leaned toward (indeed, beyond) the outlook of Hybritech's management, rather than Lilly's. But by the end of 1986, the CPUs traded at \$2.375; at the end of 1987, they traded at \$0.50. The CPUs never paid a dividend. In 1995, Lilly sold Hybritech for \$10 million, well below the \$374 million in cash, debt, and warrants that it paid to acquire Hybritech.

Postmortems⁹ on Lilly's acquisition of Hybritech note a variety of problems. The medicine based on monoclonal antibody technology had material side effects. Abbott Labs introduced a superior competing product in the diagnostic test kit line. Employee morale at Hybritech plummeted. Lilly hesitated to increase its funding for Hybritech research, and abandoned a number of research projects. Senior management at Hybritech quit, to be replaced by middle managers from Indianapolis. On the other hand, Lilly managers told me that Lilly benefited in ways that the financial performance does not reflect, such as the successful application of process and research technologies elsewhere within Lilly.

With benefit of hindsight, the CPU was a very successful application of an earnout structure. It bridged a value gap in the negotiations and enabled the parties to agree on a total price that was generally consistent with other transactions of the day and with internal valuation analyses of the two sides. Ultimately, the CPU was a form of insurance that protected Lilly from overpayment when Hybritech's optimistic outlook for the future did not occur. The CPU performed its function.

CONCLUSION: PROPOSING AND NEGOTIATING EARNOUTS AND OTHER CONTINGENT PAYMENTS

This chapter has argued that contingent forms of payment are highly useful to deal designers. They allocate risk to those most willing to bear it and provide incentives to retain and motivate managers. Yet contingent payments are complex to structure and challenging to value. The key idea to doing both is to remember that *earnouts are options*. As discussed in Chapters 10, 14, 15, and 23, the option framework offers a powerful conceptual approach to deal structuring. The option analogy highlights two important design aspects that are worth careful attention by the negotiators: the time period and triggers (exercise prices) for the earnout. Longer terms and lower triggers imply more value in the earnout instrument; shorter terms and higher triggers imply less value. Exactly how time period and trigger values trade off in the resulting earnout value is a matter for an analyst to determine. Thus, a great deal hinges upon the ability to assess the value of an earnout instrument rigorously and quickly. The technique described in this chapter affords perhaps the best route for the analyst.

The complexity of these schemes probably explains why they are not seen in more deals. A well-designed earnout must take into consideration a wide range of issues and concerns for each party involved. There are three paramount considerations when designing an earnout proposal.

1. **Keep it simple.** Whether or not an earnout becomes part of the final deal, negotiating a *simple* earnout structure is the most productive use of time. If negotiations shift toward a nonearnout transaction, the effort to develop complex formulas will have been wasted. If the earnout formula is retained, the seller will want it to be clearly defined, mutually understood, and easily measurable.
2. **Focus on key issues.** Many earnout negotiations fail because both sides press their positions on all points. Each party should save its design efforts for its performance value issues.
3. **Be realistic.** To maximize the earnout's chance of success, the seller must be realistic and have a detailed understanding of how the target will operate within the buyer. Performance several years into the future is always difficult to forecast, and it is useful to consider both upside and downside scenarios. The main focus of discussion should be on near-term performance since it is the most predictable.

Given an earnout's inherent complexity, attention to detail is required by both parties to avoid future disputes. Although the parties will never be able to foresee every future issue, the written earnout agreements must address at a minimum the issues discussed in this chapter. Despite the potential headaches, a successful earnout can bring parties together on value, provide incentives for management, and generally create a win-win situation for the parties involved.

NOTES

1. Matthew Ball, "Equity Tailored to Suit the Strategy," *Corporate Finance*, October 1996, page 20.

2. Quoted in *ibid.* See also Esty et al. (1998) for a detailed discussion of the use of tracking stock in this deal.
3. Obviously, in a zero-sum world one party's gain must come at the expense of another. The joint satisfaction is probably temporary, as suggested by the operative phrase here, "at the time when the transaction is consummated."
4. The earnout ratio is defined as the percentage of the total maximum payout that is attributed to the earnout rather than the fixed portion of the purchase price.
5. In theory, the risk-free rate of return (the yield on a U.S. Treasury bond of a term equal to the life of the earnout) is the appropriate discount rate because risk has been already recognized in the probability distributions of the forecast assumptions. One does not want to double-compensate for risk. But the practitioner should be warned that simply using the risk-free rate assumes that *all* risk has been accounted for in the analysis. This assumption should be scrutinized carefully since uncertainty permeates business forecasts and may be difficult to reflect completely in the probability distributions of the forecast assumptions.
6. This case example draws upon Bruner and Opitz (1988).
7. The analysis derives from field research and forecasts provided with the cooperation of Eli Lilly & Company. Some of the simulation parameters, such as the variance of growth rates and margins, are assumed from general knowledge rather than estimated from detailed analysis.
8. Generally one needs to reflect on whether indeed all of the risks in the cash flows have been modeled with uncertain distributions. If not, it is necessary to include a risk premium in the discount rate that would account for these remaining unaccounted risks.
9. See, for instance, Burton and Rundle (1995).