

Product Development

2.1 Introduction

Companies are largely defined by the markets they serve and the products they offer. In financial services, companies are further defined by how they develop, distribute, and service their products.

By and large, successful companies target specific markets and develop products that enable them to best serve those markets. Unsuccessful companies, although they may be unsuccessful for other reasons as well, often do not clearly define whom they are trying to serve, nor do they develop products that are tied to a cohesive marketing strategy.

This chapter will explore the following topics:

- *Product strategy*: The most important product development decisions relate to which products to develop. These decisions should be tied to the company's purpose, vision of the future, and other strategies.
- *Product development organization*: How the company organizes its product development efforts relates directly to the success of the products developed, as well as the time and expense of product

development. Possible structures for organizing the product development function are presented.

- *Pricing strategy:* With financial products, product development and pricing are intimately related. To set prices intelligently, one should understand the different types of competitive environments, product life cycles, and pricing strategies that may apply.
- *Product development process:* Each of the major stages of the product development process is discussed: market research, preliminary design, final design, implementation, and product management.

2.2 Product Strategy

Before a company can articulate a product strategy, it needs to clearly understand its purpose and possess a vision of what the company will be in the future. These are often referred to as having a mission and a vision of the future. The company should be focused on serving identified needs of target markets. These market needs will help define which products the company should offer. The company's strategy will guide how it will evolve to better serve its target markets.

In the end, there needs to be alignment between the company's mission, vision, strategy, culture, core competencies, target markets, and products. The greater the alignment, the more successful the company tends to be. Significant misalignment is a formula for failure. A comparison of two hypothetical companies will help illustrate these points:

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<i>Company A</i>	<i>Company B</i>
Operations: Individual life insurance	Operations: Individual life, group life, health, and annuities
Policyowner Focus: Upper-income customers	Policyowner Focus: Mainly upper-income customers, but considers a wide range of opportunities
Vision: Dominate target market, growing business even as others struggle to grow	Vision: Become a large, all-purpose insurance organization
Strategy: Focus on individual life insurance sold through captive agents while maintaining reputation of providing the best long-term value for customers	Strategy: Offer a variety of products sold through a variety of distribution channels and operating units, aimed at many different target markets
Tactics: Increase recruitment and retention of agents; offer a small number of high-value products; further lower unit costs through automation and economies of scale; pursue a number of initiatives to enhance persistency, mortality, and investment results	Tactics: Win agents' business through competitive, innovative products and excellent supporting services

Company A would seem to be the company with the better likelihood of success. By being better focused, Company A is likely to (1) maintain a high level of employee and agent loyalty to the company, (2) have a commitment throughout the organization to improve customer value, and (3) maintain competitive advantages in the areas that affect long-term customer value, such as mortality, persistency, and expenses.

Company B has a vision statement that is not as narrowly focused. By trying to provide a variety of products through a variety of distribution channels, Company B will probably have a more difficult time achieving success. Supporting a variety of target markets and products means that company resources will be stretched thin and expenses will be increased. Computer systems for marketing, administration, and agency support will be more complex. It will be difficult to achieve economies of scale with numerous markets and products. This may make it difficult to maintain innovative product development and competitive pricing.

At the close of the twentieth century, one of the most respected life insurance companies in the U.S. was Northwestern Mutual Life,

headed by James D. Ericson, CEO and Chairman. Northwestern Mutual's focus has contributed to its success, as explained by Mr. Ericson:

For more than a century, our mission at Northwestern Mutual has been to deliver the greatest possible value to our policyowners. This is still our mission today. We operate as a true mutual company, run for the benefit of *all* policyowners.

This mission helps us stay focused on what we do best. We have long emphasized the importance of life insurance fundamentals. Our industry leadership has been built on performance—low mortality, tight expense control, high persistency, and consistently strong investment results. As a result, in 1999, we paid more life insurance dividends than any other company. Consistent with this focus on quality, we continue to distribute our products exclusively through a career agency force of more than 7,500 Northwestern Mutual agents.

Even though we have not changed our historical emphasis on quality, we have experienced tremendous growth in recent years. We sold about \$74 billion of individual life insurance in 1999, or about 50 percent more than four years earlier. We now have more individual life insurance in force than any other U.S. company, with well over \$500 billion in force.

2.2.1 Target Markets

It is often helpful for a company to define one or more target markets that it wishes to serve. With a particular market in mind, the company can much more effectively organize its efforts to understand and serve that market. There is no hard and fast definition of what is and what is not a target market. However, for a target market to be a useful tool, it helps if it has these attributes:

- Precise definition or characterization of the target market
- Clear method of reaching those in the target market
- Members of the target market have a number of buying habits, insurance needs, or other useful characteristics in common
- Sufficiently large to make it worth targeting.

Here are some examples of possible target markets:

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- Middle-income, single parents with children under the age of 18
- Upper-income people who need life insurance and seek tax-deferred savings
- Married professionals between the ages of 30 and 50
- Middle- or upper-income couples over age 50, with at least one spouse who is still employed.

Once you have identified a target market, you need to learn everything you can about its buying habits, preferences, insurance needs, and attitudes. This will help you develop products that fit the needs and desires of the target market. The alternative is to guess at the need and how to serve it, which some actuaries do. The result can be a product that is unwittingly designed for a very small target market—actuaries!

With a good understanding of the target market, the company should be able to identify in advance a product with only limited potential. This will help the company avoid the costs of developing products that will fail, because of lack of demand or interest. However, in some cases the company may consciously develop a product that it knows will not sell much. This may be done to bolster the company's image by showing that it has a complete line of products.

A company should avoid developing a product that is out of synch with the needs or desires of the target market. Often, a strong advocate in management or the distribution system will sponsor a new product that is not appropriate for the target market. A company with the discipline to stick to serving its target markets will reject such a product. Exercising such discipline is much easier said than done.

2.2.2 Core Competencies

A product should not only fit the target market, but also build on the company's strengths and core competencies, which might include some of the following:

- Low cost of capital (able to leverage results using debt or reinsurance; see Chapter 16)
- Financial strength (high ratings, high capital ratios, strong earnings)

Operational efficiency (low acquisition and maintenance costs)

Underwriting expertise and discipline (excellent mortality results)

High persistency (high customer value, quality sales and service efforts)

Investment management (superior returns, low investment expenses)

Speed, flexibility, adaptability (ability to pounce on opportunities)

Quality of distribution (high-quality sales and service)

Control of distribution (ability to shift focus, products, and prices)

Low-cost distribution (efficient, no frills, or agents not used)

Sophisticated distribution (able to sell complex products)

Sophisticated home office staff (able to develop and support complex products).

For example, a product to be sold to corporations might require the following competencies:

- Financial strength, with the highest ratings from outside rating agencies
- Sophisticated home office support for illustrations and insurance plan design (sometimes referred to as *advanced underwriting*)
- Experience and comfort with simplified or guaranteed issue underwriting, which will be explained in Chapter 3.

A product to be sold through employer sponsorship may require the company to have the following:

- Trained enrollment teams that can visit employers' worksites to market and efficiently enroll a large number of people in a short period
- Administration and billing systems that can electronically communicate with employers' payroll systems to automatically handle premium payments made through payroll deduction
- Home office support and easy access for policyowner inquiries.

It is rare that a company possesses strength in every area for a given product. When that happens, the company should be able to dominate its target market for that product. Often, a company will make do with

what skills and strengths it has. Increasingly, companies are looking outside the organization for ways to bolster their strengths, in order to compete more effectively and profitably. For example,

- The company might outsource its administration or investment management to lower costs or improve service and performance. By using outside resources, a company hopes to immediately tap into expertise instead of developing that expertise on its own.
- The company might reinsure the business to use the reinsurer's expertise and capital, or to "outsource" the mortality cost to the reinsurer, as described in Chapter 7.
- The company might use consultants to help design and price products, providing expertise or resources that are needed. Consultants may also be used to improve operational efficiency or underwriting discipline.

2.2.3 Risk Profile

Deciding which markets to serve and which products to offer are key decisions that have an enormous effect on the company. Adding a new market or a new product should be viewed as a major decision with significant long-term commitments required. The new market or new product should be consistent with the company's mission, vision, and strategy, rather than a diversion.

The product's risk profile—the size and type of risks inherent in the product—should fit the company's goals for stability of financial results. While Berkshire Hathaway's Warren Buffett may be willing to risk a billion dollars on a single catastrophic risk, most companies try to limit their risk exposure to a few million dollars or less. Care should be taken with certain products that produce a large concentration of risk. For example, a product that guarantees current interest rates well beyond the duration of available assets is dangerous, unless sales are held to a modest level. Companies have become insolvent when interest rates fell after they sold too much of these kinds of products. Variable products that guarantee return of principal pose a similar risk. Many

risks (not just mortality risk) can be managed using reinsurance, as explained in Chapter 7.

2.2.4 New Markets

Successful companies tend to be those who build on their strengths and stick to what they know best. However, in the end, all markets and products change or disappear. A company that does not change will certainly disappear. Some experimentation outside of the company's mission, vision, and strategy can create new markets for the future, making the company more apt to be a survivor. On the other hand, too much experimentation can be a major distraction.

Some new products may not fit the company's current strategy. If the investment in such new products can be kept to a minimum, the company may learn some inexpensive lessons that could eventually lead it to important new markets or new products.

Experimentation on too grand a scale can lead to financial disaster. For example, over the last two decades, a number of major life insurance companies have rapidly built or acquired some very large new businesses that were outside of their historical expertise (such as health insurance, general insurance, or securities). When large losses emerged after a few years, many of these new businesses were sold. Had the new businesses been launched on a smaller scale, the same lessons could have been learned much less expensively.

It takes strong discipline for a company to design and maintain a rational product portfolio that plays to its strengths, fits its target markets, and aligns with its mission, vision, strategy, and goals. Experimentation can be exciting. It is human nature to want to try new ideas and ventures. However, experimentation can go too far, resulting in a company trying to be all things to all people.

2.3 Product Development Organization

Developing a new product can require support from almost all areas of a life insurance company. The support required for a particular product

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is a function of what is new about the product. For example, the underwriting area would be involved if there were any new risk classes or underwriting standards. The investment area would be involved if credited interest rates are key or if any new investment strategies or types of investments are needed. The policyowner service area would be involved if the product offers new features or services.

Many, if not most, new products contain nothing that is new to the company. The underwriting, investments, features, and services for a new product may all be the same as existing products. In that case, the main support required from various areas of the company is that they gain an understanding of the new product in order to support it.

Three important skill sets are needed for product development: marketing, actuarial, and implementation. When these skill sets are integrated into one cohesive team, the results can be outstanding. By cooperating fully, the team can develop products that best serve the market and contribute to company goals, while making product implementation as easy as possible.

On the other hand, when marketing, actuarial, and implementation responsibilities are spread out among several areas, cooperation can evaporate. For example, marketing personnel may push for the most competitive product and the highest agent compensation, with little regard for profitability. The actuaries may push for full profitability or high consumer value without regard for either the competitiveness of the product or adequate agent compensation. Both marketing and actuarial personnel may be unaware of or unconcerned with the effect of their decisions on implementation of the new product.

2.3.1 Product Development Team

Unfortunately, the kinds of problems listed above are all too common. A team approach can help overcome many of these problems:

- The team should be comprised of highly competent and knowledgeable people who collectively possess all the needed skills and knowledge.

- The members of the team should develop a close working relationship, learn from each other, and make decisions that reflect their collective wisdom, rather than the wisdom of the strongest personality.
- The team should be led by someone who moves the team along quickly, overcomes obstacles with other areas of the company, and does not dominate the decision-making process.
- The team should have the authority, responsibility and accountability to make product-related decisions within broadly defined parameters. If the team is no more than a committee that makes suggestions to senior management, there is a danger that the team will be ineffective. The team may try to anticipate senior management's biases rather than develop the best product.

A team might include people with marketing, actuarial, implementation, and legal abilities. A lack of strength in any of the four areas could worsen the results. In addition, each member of the team should have more than a rudimentary knowledge of the tasks and skill sets of the other team members. For example,

- The actuary should understand systems constraints and processes.
- The marketing person should understand pricing and how different pricing assumptions might affect the results.
- The implementation person on the team should understand the marketing department's needs.
- The legal person should understand and be able to communicate any limitations with regards to regulatory constraints on pricing, marketing, and issuing the product.

2.3.2 Senior Management Input

Senior management's primary role should be to give guidance by clarifying how the company's mission, vision, strategy, and goals relate to the product being developed. Ideally, senior management should intervene only when the team has deviated from guiding principles and should not second-guess the team's decisions. This can be very difficult

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for senior management with prior product experience or marketing insights.

It is key that senior management has the confidence to let the team lead the way. The product development team should seek senior management input early in the product development process. Ideally, such input will be used as valuable background information rather than as a mandate for what must be done. This will give the team the freedom to design the best product for the company.

2.3.3 Product Development Staff

Product development can be highly seasonal work. While some companies introduce new products many times a year, many companies do so only once every year or two. Many companies have full-time staff devoted to product development year-round, even when they introduce new products only once a year. Some companies form teams on an as needed or ad hoc basis, while others make use of outside expertise.

The use of full-time staff, ad hoc teams, or outside expertise will vary widely from company to company, and even within a company. Different approaches may be taken by different lines of business within the same company. The approach taken may be independent of the size of the company.

2.3.3.1 Full-Time Product Development Staff

A full-time product development staff can create two problems:

1. With staff devoted to product development, the tendency over time is to develop too many products. The company's product portfolio may become bloated and hard to comprehend. There may be no rhyme or reason to the many product offerings.
2. Work expands to fill available time. If few new products are developed, the time frame needed for product development may stretch out to six months, 12 months, or even longer. The product development staff will find ways to stay busy, often by doing a number of tasks that add little value.

2.3.3.2 Ad Hoc Product Development Efforts

As mentioned, some companies do not have a full-time product development staff. They form teams as needed to develop a new product. While this may overcome the disadvantages of a full-time product development staff, ad hoc efforts have their own disadvantages:

- There may be no continuity in product development, since the people involved tend to change from product to product.
- The company might not build product development experts, especially ones with insights into several key areas of knowledge such as marketing, actuarial, and implementation.
- Without full-time focus, the product development process tends to be reinvented for each new product. There is little process improvement. The same mistakes tend to be repeated.
- There is a strong tendency toward interdepartmental conflict, as noted earlier in this section.

2.3.3.3 Outside Expertise

When developing a product that is new to the company in some fundamental way (such as new underwriting, new investment strategy, or new features), it is often helpful to bring in outside talent with relevant experience. Actuarial consultants are often used to provide pricing support and expertise.

For certain products, especially large-amount term insurance, reinsurers may possess relevant experience. In some cases, reinsurers have designed products in return for reinsurance of a significant share of the mortality risk, allowing the company to lock in a major share of its profit. In essence, the reinsurer advises the company and then guarantees its advice by taking a big share of the mortality risk.

2.3.3.4 Sample Structure

One possible structure might be as follows: A small, full-time product development staff would consist of three to six people from various disciplines. The smaller the staff, the faster products would be

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developed—necessity *is* the mother of invention. This staff would be formed and supported by senior management, which would also define the parameters for operation of the unit. To minimize time wasted due to the involvement of multiple layers of management and conflicts between various departments, the product development staff would make all product-related decisions, but only after working closely with other departments to gain their input, understanding, and support.

During slow periods, the staff would shift their efforts to market research, process improvement, and reviews and updates of existing products. During busy periods the staff would borrow people from other areas or use outside expertise as needed.

Continuity of staff and cross-training of staff would be essential. The goal would be to give all staff a deep understanding of marketing, actuarial, and implementation aspects. To be successful in such a role would require gaining cooperation from many departments and acquiring a well-rounded knowledge of the business. This kind of success would create good candidates for leadership roles in other areas of the company.

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Many of the pricing strategies that apply to nonfinancial products can be adapted to life insurance. However, there are two important differences between life insurance and most nonfinancial products that result in fundamentally different buyer behavior:

1. Life insurance is not well understood by most consumers. Except for term insurance, most products are very difficult to compare, even for insurance professionals. Permanent life insurance policies have so many elements that can differ (such as premiums, cash values, dividends, and death benefits) that it is impossible to rank them.
2. Life insurance is often sold, not bought. In other words, many buyers of insurance are convinced to buy life insurance by an agent calling on them. Without the agent forcing the issue, the person would not purchase life insurance. In this situation, the buyer usually does not

seek information from other sources on prices and features. The person either buys from the agent or does not buy at all.

Because of these two differences, most life insurance purchase decisions are based on trust. The buyer trusts the agent to select the product that will best meet the buyer's needs. From this, you might conclude that life insurance companies are not subject to competition. This is far from true.

2.4.1 Competition among Life Insurers

Life insurance companies track each other's products. Most adjust their prices (usually downward) when they find they are significantly out of line with the competition. Many companies make these kinds of price adjustments even when the new prices have no measurable effect on sales. This is because most insurance company employees and agents like to feel that their company's products are priced fairly in relation to the competition. In contrast, most other industries would pay closer attention to the effect of price changes on sales levels and try to maximize total profit.

The small percentage of buyers who do shop around and compare products from different companies exert influence well beyond their numbers. The occasional case an agent loses to competition is vividly remembered and frequently shared with company management. Agents hate to lose sales because their company's products are not competitive. The company often hears about such losses loudly and clearly. This keeps pressure on even the most competitive companies to further lower their prices.

Insurance companies generally compete on two different kinds of prices: the price to the consumer and the commission to the agent. When the company sells directly to the consumer, there is only one kind of price competition. In situations where the agent has no competition (such as insurance sold through a loan officer to insure the amount of the loan), the insurance company may compete by charging high premiums and paying high commissions.

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In the rest of this section, we will define pricing strategies at two levels: (1) buyer-oriented pricing strategies, which ignore competition, and (2) competitor-oriented pricing strategies. We will then apply these pricing strategies to the product life cycle.

2.4.2 Buyer-Oriented Pricing Strategies

Four main pricing strategies describe how most companies use prices with buyers or consumers:

Penetration pricing involves setting prices low enough to generate a much higher level of sales. An example of this is the pricing of CD players in 1990 at a price equal to that of record players. Because of the higher quality sound of CD players, sales of CD players skyrocketed while sales of record players essentially stopped.

Even though the profit margin may be reduced with penetration pricing, the increased volume of sales may produce a greater total profit. This strategy can help build economies of scale. For insurance products, penetration pricing works best with commodity-like products, like term insurance, where premium outlay is the major factor.

For companies that sell through independent agents, commissions can also be used as part of a penetration pricing strategy. By paying relatively high commissions on a product that is otherwise the same as a competitor's products, the company may induce independent agents to sell much more of its product.

Neutral pricing involves setting prices at a level that most buyers would consider reasonable. In other words, the price would be set at a level that would neither attract nor discourage many buyers. This would normally mean setting prices and commissions at levels not too far from the industry average. Neutral pricing is very common in life insurance.

Segmented pricing involves setting different price levels for different kinds of buyers with different behaviors. For example, in the airline industry, it is common to charge low fares for personal travel booked weeks in advance with a Saturday night stay-over. This helps fill

airplanes with consumers who would not travel as much without the low fares. At the same time, the airlines will hold back a number of seats in order to charge high fares to business travelers who book flights at the last minute. Business travelers often have no choice as to whether to travel and must pay the higher fares.

In life insurance, prices routinely vary by age, gender, and risk class. These price differences are mainly intended to balance premiums with expected benefits, rather than to exploit different buyer behaviors. Price discounts are often available on larger policies. These discounts may reflect both expense savings on larger policies (per thousand of insurance purchased) and the increased sophistication and cost-consciousness of large policy buyers. Some products are specially designed for the corporate market. Pricing of these products often reflects lower commissions and a more favorable cost-benefit relationship for the buyer.

Skim pricing involves setting a high price that maximizes a company's profit margins. A good example of this is the initial pricing of large, flat-screen televisions at levels five to ten times the price of similarly sized, traditional cathode ray tube (CRT) televisions. Skim pricing is usually done with products that are in short supply and high demand, which is very rare in life insurance.

2.4.3 Competitor-Oriented Pricing Strategies

Independent pricing is done by a company with no real competitors in its target market. The company sets a price that is independent of prices charged by any other companies. This is most common with specialized market niches dominated by one company. For example, a company might have a custom participating whole life product sold to city employees through cooperative savings associations. Independent pricing is rarely found in larger market segments, which typically attract more competition.

Cooperative pricing is common when a few companies dominate a market segment. From experience, the companies may have learned that

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each of the other companies will match any price change they make. The companies may not charge the same price, but changes in price will be made in parallel. The companies may settle into a pattern of stable prices, stable commissions, and stable profits.

Cooperative pricing is most likely to occur in the insurance arena where there is a large or expensive barrier to entry, relative to the profits to be made. For example, a barrier to entry might be the high cost of building the infrastructure needed to support a particularly complex product in a market that demands high levels of automation and service. For potential new players, the investment required may not make economic sense in terms of the expected profits. However, if the existing players raise the profit margins high enough, they will attract new competitors.

Adaptive pricing is probably the most common form of competitive pricing behavior. Companies review the prices of other companies and then determine where to set their price. They tend to set their prices higher than the price leaders, reasoning that the extra profit margin gained by charging a higher price outweighs any loss in sales. Their theory is that, as long as their prices and commissions are reasonable in relation to the price leaders, they will not lose many sales. Instead of competing mainly on price, companies using adaptive pricing try to compete based on image, quality, and service.

Adaptive pricing is often the only strategy open to companies that are not strong competitors. While such companies may profess that they are competing on image, quality, or service, the truth may be that they possess no advantage in any of those three areas. They may be forced to charge a higher price merely because they are inefficient. As Jacques DuBois, CEO of Swiss Re in the U.S., likes to say, "Service is the refuge of the inefficient." Over the long haul, many such companies can be expected to gradually lose market share and become even more inefficient. Eventually, most companies in this category will exit the business or be acquired.

Opportunistic pricing uses price as a competitive weapon. The most efficient companies can be expected to use this strategy. By driving

prices down to a level where only the most efficient can survive, they can gain market share or force less efficient competitors that match their prices to earn poor returns and eventually exit the business. This is natural selection, or survival of the fittest. Long term, this strategy can only be supported by an unwavering focus on improving productivity, efficiency, and results in the areas of mortality, persistency, and investment returns.

This is the pricing strategy used by Wal-Mart to achieve domination in its business. Some of the largest writers of term insurance use this strategy. When more than a few companies are using opportunistic pricing for the same product and market, prices will change more rapidly and profit margins will be thinner.

Predatory pricing involves charging a price that is below the cost of the product. A company can use such prices to drive competitors out of business, often at a financial loss to the predator. With the competition gone, the company can raise prices and recoup its losses. This was one of several unsavory practices employed by Standard Oil to achieve domination of the U.S. oil industry early in the twentieth century.

In many countries, predatory pricing is illegal. Companies are not allowed to charge less than their costs to gain long-term competitive advantage. In the financial services industry, predatory pricing can mean financial suicide, as the company is literally giving money away.

The insurance industry tends to be highly regulated. Regulators will usually not allow predatory pricing to take place, since it reduces a company's financial strength. Even if a company were successful in driving its competitors out of business, there are few barriers to keep out new players. If one company is perceived as earning high profit margins in a sizable market, competition will return.

2.4.4 Product Life Cycle

Most products go through predictable stages, with a life cycle that runs from birth to death. These stages have a huge effect on competitive

conditions. A product's life cycle stage should be carefully considered when setting pricing strategy. Figure 2.4.1 illustrates the four stages of a typical product's life cycle.

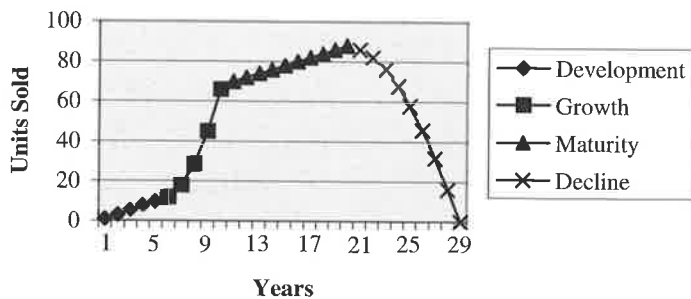
2.4.4.1 Development Stage

A product starts its life in the development stage. The product is new and unfamiliar to customers and agents. A substantial effort is required to teach the market about the advantages and features of the product. Because most people learn about new products from the experiences of others, it can take years for a new product to become widely accepted.

Initially, the lack of familiarity with the product will be the biggest obstacle to sales. Price will be a secondary consideration. Therefore, it may make sense to introduce the product with a higher price than the company expects to ultimately charge. Because sales will be low, the company might as well make an extra margin. However, care should be taken not to set the prices so high or the commissions so low that the product's growth is stunted. In addition, sufficiently high prices may encourage competitors to introduce their own versions of the product more quickly.

Another approach is to introduce the product with the prices the company expects to charge long term. While this approach may help the product grow faster, it may also discourage some competition because of the lower profit margins available.

Figure 2.4.1



2.4.4.2 Growth Stage

In the growth stage, the product experiences its most rapid growth. Agents and consumers become much more aware of the product. As the product grows, new competitors fuel the growth by entering the market and offering their own version of the product, often with new, improved features or lower prices. The companies that developed the product face increasing competition and need to adapt or exit the business.

The growth stage is usually the most crucial time for competitors to establish their positions in the market. This is the time when large market shares can be built, quality images can be honed, and low-cost, efficient production can be created. Once these competitive advantages have been established, they can be very difficult for competitors to overcome. IBM is a great example of this. They did not develop the first computers. However, by investing \$5 billion to create and introduce the System/360 in 1960, they exponentially expanded the market for computers, built a commanding market share, and created an image of quality, reliability, and service that no competitor could touch for decades.

2.4.4.3 Maturity Stage

The maturity stage is a time when sales become more or less static. Companies can grow significantly only by taking market share from competitors. Since sales are static, the strain of writing new business is more than offset by profits being earned on sales from prior years. The product leaders are typically harvesting significant profits while the marginal players are earning enough to get by. In most developed countries, the insurance industry is in the maturity stage, although particular products or markets may be in other stages.

In the maturity stage, companies try to make the best of the competitive advantages they may possess. A company with a well-known brand name may try to increase sales while holding the line on prices. A low-cost provider may pursue a penetration pricing strategy in an effort to grow market share. In any case, there will be a tendency for

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prices to decline, as companies become more efficient and write off the costs of developing the product and its supporting systems.

To maintain profitability in the face of declining prices, all companies need to find ways to improve their pricing effectiveness. The solutions for life insurance companies may include streamlining and automating operations, altering the product line to more effectively target customers, eliminating unappreciated features and services, revamping distribution, and adding more efficient forms of distribution.

2.4.4.4 Decline Stage

Products and industries eventually decline and disappear or change so fundamentally that they have little in common with their former selves. Nothing lasts forever. When a product enters the decline stage, most companies will experience a decrease in sales, although a few may continue to increase their market share and grow. As sales decrease at a life insurance company, the company's fixed or overhead costs become increasingly significant. For example, if sales drop by 50%, it is unlikely that a company can reduce all of its costs by 50%. As the market shrinks, many companies will reach a point where their fixed costs force them to sell their business to a larger, more efficient company.

Compounding this expense problem, some companies in the decline stage try to stimulate sales growth by cutting prices. This is only a temporary help to sales, as competitors react and cut their own prices to rebalance the competitive field. However, declining sales do tend to drive prices down throughout the decline stage.

There are two basic strategies for survival in the decline stage:

1. *Retrenchment* involves pulling out of market segments where the company is weak in order to focus all efforts on market segments where the company is strong. In other words, the company shifts its attention to its most profitable and defensible market niches.
2. *Consolidation* involves buying other players in order to gain a stronger position. This is only viable for a company in a strong financial position. By buying less efficient competitors and streamlining their operations, a consolidator can create value and earnings, allowing it to continue acquiring other companies.

An alternative to survival is an exit strategy called *harvesting*. This involves the company recognizing that it will not be a long-term survivor and deciding to make the best of the situation. Harvesting starts with a retrenchment to focus on the most profitable segments of the business. This is followed by phased withdrawal from each segment as it becomes unattractive. The pricing strategy attempts to maximize the company's profits, not defend its market share. Compared with the results of a failed survival strategy, a harvesting strategy may create more value for the company's owners, especially if the company is acquired.

2.4.5 Distribution System Life Cycle

In life insurance, product variations and features come and go, but truly new products are rare. The product life cycle may be more applicable to product variations and features, but these typically have only a minor effect on a company's success.

Distribution methods also have life cycles. Understanding these distribution life cycles may be very important to a company's future. For example, in certain life insurance markets today, some would say that distribution methods are generally in the following life cycle stages:

Development stage: Internet, direct response, fee-for-service

Growth stage: bank, employer-sponsored, telemarketing

Maturity: direct mail

Decline: captive agents, independent agents, debit agents.

The same pricing strategies that apply to product life cycles can be applied to distribution life cycles. For example, Internet distribution may be a much lower cost alternative to agent distribution. However, during the development stage, companies may share only a small portion of the cost savings with the consumer. Once companies develop more experience with selling through the Internet and competition increases, you can expect prices to drop, sales to climb, and market leaders to emerge during the growth stage.

At some point, sales growth will drop to modest levels as Internet distribution approaches its maximum penetration and enters the

2.5 Market Research

maturity stage. With low barriers to entry and the ability to quickly copy the success of others, you can expect most companies to sell through the Internet. However, a few brand names that consumers remember and trust may dominate sales. Finally, at some time in the future, you can expect new developments to force Internet distribution into the decline stage. Those with well-known brand names, large market shares, and efficient operations will survive the longest as other companies gradually close down or sell off their Internet distribution arm.

Sections 2.5 through 2.9 discuss each of the major stages of product development: market research, preliminary product design, final product design, product implementation, and product management. All these steps must have seemed like too much bother to a certain company. As Ross Morton, a life insurance executive from Toronto, tells it:

In the mid-1980s in Canada, Transamerica Life had just introduced a new, trend-setting term product that was taking the market by storm. The product offered very low, competitive premium rates for seven years, after which premiums increased steeply. It quickly became the fastest-selling term product in the Canadian market.

A company that will go unnamed (and that, in fact, no longer exists) decided to copy this product, literally. They went as far as to send Transamerica Life's sales brochures to their printer, substituting their name for Transamerica's and reducing all the rates by 0.01 per thousand. While the plagiarism would have been obvious to most of the industry anyway, they made the embarrassing mistake of leaving Transamerica's name, address and phone number on the back of the brochure!

While shortcuts can be taken, we recommend a more original and thorough approach.

2.5 Market Research

Market research can indicate the need for a new product. It can also identify when an existing product's competitiveness has slipped. When this happens, the product's competitiveness can sometimes be restored without having to resort to redeveloping or repricing the product.

Market research is the first step in developing a new product or adjusting an existing product. A company may conduct market research for a number of reasons:

- To better understand the needs of the company's target markets, with the hope of identifying unfulfilled needs that can be satisfied by new products or modifications to existing products
- To track the movements of competitors operating in the company's target markets, so that the company can react quickly to changes in products, practices, prices, and services
- To investigate other potential target markets, with the hope of identifying markets that are currently underserved and consistent with the company's mission, vision, strategy, and culture.

Timely market research can help a company identify

- Market pressure to change prices such as premium rates, cost of insurance rates, credited interest rates, or dividend rates.
- Competitors who have changed their underwriting requirements. In some cases, existing products can support the changed underwriting requirements with no other change needed.
- Competitors who have introduced new or improved sales tools. The company may be able to improve its own sales tools with no change to its products.

2.5.1 Understanding Customers

The best way to develop an understanding of the company's target markets is to talk to current customers, potential customers, and lost customers. By interviewing current customers, you can find out what they like and dislike about the company and its products. By conducting interviews with potential customers from the company's target markets, you can find out more about their preferences, decision making, and unmet needs. By talking to lost customers, you can find out why they canceled their insurance and what the company could have done to hold on to their business.

A special category of lost customers are those who were approved for insurance but who opted not to buy from the company. By

interviewing them, you can find out if there were any problems in the buying process. In addition, for those who ended up purchasing insurance from a competitor, you can find out who the competitor was and what they offered that made the difference to the buyer.

A company could also study the demographics of these three groups to gain a better understanding of each. How do current, potential, and lost customers differ in terms of income level, age group, risk class, and other characteristics? What can be learned from such differences to better position the company and its products?

2.5.2 Tracking Competitors

Tracking the movements of competitors can be a daunting task. To narrow the scope of market research, the company should focus on only the major competitors in its target markets. Major competitors can be determined in a number of ways:

- By interviewing customers and asking them which other companies they seriously considered for life insurance.
- By tracking other companies that are involved with similar target markets and distribution systems. Find out which of these competitors are most successful in garnering sales from the company's agents.
- By talking to agents and employees from other companies. Many companies are very open about their target markets.

Major competitors can be tracked continuously or sporadically, depending on how often the information is used. For example, if the company insists on updating its products only every two years, it may not make sense to track competitors continuously.

Competitor information can be gathered in many ways. Company employees may build information-trading relationships with employees at other companies. Many companies are happy to give information as long as they receive as much information in return. Industry trade groups, industry meetings, industry databases, and industry publications

are often good sources of information. Agents and others involved in distribution are always a good source of what is new and appealing to them. In fact, they often volunteer such information.

The company will want to organize competitor information into some form of database or spreadsheet. Several categories of information should be collected:

- Prices, including premium rates and commission rates. For some products, items such as cash values, credited interest rates, cost of insurance rates, expense charges, or dividends should also be collected and compared. Rather than collect every possible rate, the company will probably want to focus on a few selected issue ages, one gender, one or two risk classes, and one or two size categories.
- Underwriting requirements, such as issue age and amount limits for medical exams, blood tests, and urine samples.
- Product features, such as partial withdrawal provisions, policy loan interest rates, and the guarantee period for premiums or benefits.
- Sales tools, such as illustrations, brochures, and advertisements.

Data should be collected only for similarly designed products sold to similar markets. For example, a company that sells primarily whole life products with low average sizes and large first-year commissions should not collect information on a product designed for the corporate-owned marketplace, since corporate-owned products are often sold in large amounts and are often designed with low, levelized commissions.

2.6 Preliminary Product Design

Once market research has identified the need for a new product or a revision to an existing product, the next step is preliminary product design. Preliminary product design has four stages, all of which reduce the amount of wasted time and effort spent on product development:

1. Develop consensus on as many aspects of the product as possible
2. Determine the feasibility of the product
3. Perform preliminary pricing and develop estimates of sales and profits

2.6 Preliminary Product Design

4. Perform a cost/benefit analysis and decide whether to proceed to final product design.

For a minor product revision, it may be possible to skip this step and proceed directly to final product design. However, it may be worth spending some time on preliminary product design to ensure that there is consensus on the details of the product revision.

2.6.1 Develop Consensus

Before trying to determine feasibility, it is helpful to pin down how the product will look to consumers. You should try to develop consensus on the customer needs that will be satisfied by the product, how the product will be marketed and sold, what variations or features will be included, and what risk classes will be used. Market research should provide guidance to help answer many of the following questions.

Customer needs: To what kind of customer is this product meant to appeal? What customer needs will this product satisfy? How well does the initial design satisfy these needs?

Distribution needs: What forms of distribution will be used? Does the product fit the needs of these distributors? Will it pay adequate compensation? Are there any special education or training needs for distributors?

Marketing and selling strategies: How will the product be marketed? Is the product designed to reach a new or a current target market? How will that target market be reached? How will the product be sold? In other words, why will consumers buy it? Is having the lowest or close-to-the-lowest price important? Or will a fair price or average price be sufficient? Will special features help sell the product? If so, which features will make a significant difference to the consumer? Is the company's reputation or image a major factor? Are certain measures of financial strength needed for success with this product? At what level should commissions be set to encourage (or not discourage) sales of the product?

Product features and riders: Many common product features and riders were discussed in Chapter 1. Preliminary consensus building should include product features and riders. What standard features will the product include? What optional features will the consumer be able to add to the product? How will these features differ from similar features previously offered by the company or by competitors? How important is each of these features, in case some features have to be eliminated to improve the cost of the product? Which are the most important and least important features? What patterns or formulas will apply to premiums, death benefits, cash values, dividends, or other important product parameters? How will these compare to values contained in current products and competitors' products that are comparable to this product? For products with a significant investment component, such as whole life, endowments, and universal life, it may be necessary to map out an investment strategy. An investment strategy can be designed that will enable the product to credit competitive interest rates while managing the company's investment risk.

Risk classes: How will insureds be classified for premium rate or mortality risk purposes? Will rates vary by issue age and policy year, by attained (current) age, or simply by issue age? Will there be separate rates for males and females? Will female ages be converted to equivalent male ages using an age setback? (For example, a five-year age setback would convert an age 45 female to an age 40 male, for rate purposes.) Will rates vary between smokers and nonsmokers? Will one or more preferred categories be offered?

2.6.2 Determine Feasibility

In order to determine whether a product is feasible, it is necessary to examine a number of areas. Here are some of the questions that usually need to be answered:

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- Does the product fit the company?
- Are there any regulatory barriers?
- Are there any implementation barriers?
- What effect will this product have on sales of the company's other products?

2.6.2.1 Product and Company Fit

The product should first be reviewed to see how it fits with the company's mission, vision, goals, strategy, culture, target markets, core competencies, and distribution systems. In some ways, this is one of the simplest steps. However, it is easy to be carried away with enthusiasm for developing a new, appealing product that does not fit the company. It is much more difficult to maintain a rational, disciplined approach and cancel the development of a product that does not fit.

2.6.2.2 Regulatory Barriers

How difficult or expensive will it be to gain regulatory approval for this product? Is it uncertain whether the product will be approved? Will new or different accounting or reserving requirements apply to the product? If the product will be offered in more than one jurisdiction, how many versions of the product will be needed for different jurisdictions? (For example, it is rare that the same product can be used in all 50 U.S. states. Some modifications are usually required to conform to nonstandard regulations in several states.) Are there any special licensing requirements for this kind of product, for either the company or its agents? Are there any special ongoing reporting requirements for this product? Are there any special tax implications or requirements?

2.6.2.3 Implementation Barriers

When a company develops a product unlike any it has offered before, it is normal to encounter some implementation difficulties. These difficulties can range in severity from annoyances to insurmountable obstacles. A truly new product will require new administrative processes and procedures to be developed and implemented, to support the product's features. New or enhanced software will often be required. Training for company staff and agents will usually be required.

For example, suppose a company's existing products are all of the pre-scheduled variety, with premiums, commissions, death benefits, cash values, and dividends known well in advance. To implement universal life, the company will need software that will support flexible premiums and dynamically calculate commissions, death benefits, and cash values for each policy. Modifying the company's existing software to support universal life may be too expensive and possibly disruptive to the company's existing business. On the other hand, buying new software for universal life can also be expensive. Not only does the software have to be paid for and installed, but it also has to be integrated with the company's other software and maintained for many years into the future.

Besides tracking flexible premiums and calculating dynamic values, software changes can be required for other product features, sales illustrations, and policy issuance, and to satisfy regulatory, accounting, and tax requirements. In some companies, something as simple as a rate change may require software changes or other computer-related support.

There are a number of factors to consider related to software changes:

- Does the company have the expertise and resources available to develop the needed software? If not, can software be purchased or can outside resources be hired?

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- Whether software is developed or purchased, how long will it take to be ready?
- What will the software cost, including initial expenses (both internal and external) and long-term maintenance expenses? These costs should be considered in the final stage of determining feasibility.

While the major implementation obstacles may be software-related, you should not overlook other potentially important costs, such as

- The costs of instituting new administrative procedures and processes
- The costs of training company staff and agents, and
- The costs of introducing the product to the distribution system, including presentations to explain the product, new sales and marketing materials, and any advertising required for the product.

2.6.2.4 Effect on the Company's Existing Products

Every new product has an effect on the company's existing products. A new product may replace an existing product, reduce sales of other products, trigger upgrades to existing policies, or encourage customers and agents to trade in old policies for the new product.

In many cases, a new product is developed to replace an older product. Sometimes, however, the older product continues to be sold long after the new product is introduced, perhaps as a concession to certain agents. The company's intentions should be clear regarding what is to happen to the older product being replaced. While the costs of continuing one older product may seem small, it is hard to hold exceptions to one product. Over the years, the company may find that many products that were supposedly replaced by new products continue to be sold. The cost of continuing many older products is not small, and they add complexity and take away from the company's sense of direction.

Occasionally, a company is surprised when a new product hurts sales of some older products that it was *not* intended to replace. For example, a new term product could hurt sales of existing permanent products. In such a case, the company may find that customers switching from high-premium, high-profit products to low-premium, low-profit products have unexpectedly cut its overall profits.

If the new product is a better value than the product it is replacing, consideration should be given to upgrading the buyers of the old product. Some companies have a policy of always improving the terms of existing policies to match the improved terms of any new product. Other companies upgrade only recent buyers of the old product.

If the new product is better because the company's results have improved (because of lower mortality, better persistency, or lower expenses), then the cost of upgrading old policies may be insignificant. However, if the company is lowering its rates to be more competitive and is accepting lower profit margins, upgrading old policies could be very expensive.

The effect of an upgrade on recoverability of the old product's acquisition costs should be considered. At the same time, upgrades send a powerful message about the company's belief in treating customers fairly. This can contribute greatly to customer and agent loyalty. In the end, the goodwill generated by fair treatment may benefit the company through increased sales and superior persistency.

A company that does not upgrade old policies will face persistency problems. The company's agents will want to serve their customers and earn another commission by selling them a new, improved product. If the company does not allow this, the agent may take the business to another company. Alternatively, the policyowner may take the initiative to buy a newer, better product.

2.6.3 Preliminary Pricing

Perhaps the most difficult aspect of product development is predicting the future sales and profit margins of the product. Much of the rest of this book is focused on pricing techniques that help predict future profit margins. However, predicting future sales is just as important, since sales times profit margins equals profits.

2.6.3.1 Expected Profit Margins

We will use *profit margin* to mean a measure of the additional profit resulting from an additional unit of sales. The profit margin will take into account only the costs that vary with sales levels. In other words, it will not include the expenses of developing the product or the company's fixed costs. It will reflect all future profits resulting from a unit sold. For example, the profit margin may be the present value of all future profits, expressed as a percentage of the present value of all premiums.

For preliminary pricing, it is necessary to develop pricing assumptions and perform profit margin calculations for a small number of pricing cells. These pricing cells might consist of a few representative issue ages for the gender, risk class, and size of policy with the highest expected sales.

By focusing on a few pricing cells, you can more quickly test the effect of changes in premiums, commissions, cash values, underwriting criteria, investment strategies, product features, and other design factors. By varying one factor at a time, you can measure the effect on profit margins. In addition, you could calculate the premium change or other change necessary to offset the effect on profit margins. Often, varying one factor at a time provides enough information for the company to decide on each design factor independently. Sometimes, however, two or more factors must be considered at once, as in the following example.

Example 2.6.1 Varying Two Factors at Once

The company has asked its Agents Council for help in deciding whether to maintain their liberal underwriting criteria and high first-year commission structure or change to stricter underwriting criteria or a level commission structure. The following table shows the twentieth-year cash values per unit needed to maintain the same premiums and profit margins for two sets of underwriting criteria combined with two sets of commission structures.

*Twentieth-Year Cash Value Per Unit
(needed to maintain premiums and profit margins)*

	<i>High First-Year Commission Structure</i>	<i>Level Commission Structure</i>
Strict Underwriting Criteria	200.00	225.00
Liberal Underwriting Criteria	180.00	195.00

Clearly, either change would help the company be more competitive, which could help the agents sell more business. However, the agents may prefer the status quo, which may result in higher total commissions.

The speed of the preliminary pricing process is often determined by how the company makes decisions regarding the many design factors. If decisions are made by a small, cohesive group that is focused on product development, the process may be very fast. If decisions are made by a large group that often disagrees and rarely meets, the process may be very slow. Companies often involve representatives from a number of areas of the company, such as sales and marketing, the distribution system, finance, and product development.

For some design factors, a number of iterations may be necessary before agreement can be reached. For example, to obtain sufficiently

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competitive premium rates, the company might vary the underwriting criteria, commission rates, and cash values per unit, looking for the most acceptable combination.

Sometimes a competitive problem has its roots in overly conservative assumptions. This can be explored by solving for the value of a key assumption needed to make the product competitive. For example, you could solve for the mortality assumption needed to make a term product competitive. The required mortality assumption could be compared to recent mortality experience and trends, to see if the company can be more competitive.

Once most of the design factors have been agreed upon, profit margins should be estimated for the range of price levels that the company is considering. The company may have a good idea from its market research as to what price level it would like to offer. Profit margin estimates could be calculated for the desired price level and for prices 5% higher and 5% lower.

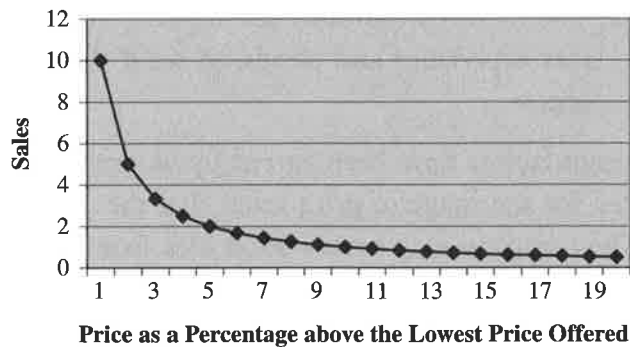
2.6.3.2 Price Sensitivity

Most life insurance products are at least a little price sensitive. In other words, the lower the price, the higher the resulting sales. However, the degree of price sensitivity can vary widely by type of product, target market, and even price level. For example, term products may be more price-sensitive than permanent products. Large-amount buyers may be more price-sensitive than buyers of small amounts.

By studying company experience and the sales results of competitors, you may be able to develop some relationships between sales levels and price levels. This information about price sensitivity is extremely important. It is perhaps the least available and yet the most useful information to have when setting price levels for a product. If you can predict the effect on sales of, say, a 1% increase in price, you can then determine the effect on profits, since profits equal profit margin times sales. This allows you to hone in on the price level that will maximize profits.

Even when a product is very price-sensitive, you may find that sales are fairly insensitive to changes in price at the noncompetitive end of the price range. At the same time, sales may skyrocket as the price drops toward the most competitive price offered. Figure 2.6.1 below illustrates a hypothetical relationship between sales and price level.

Figure 2.6.1 Price Sensitivity Varies with Price Level



Looking at the figure, there is a natural temptation to try to match or beat the lowest price offered, in order to maximize sales. There are two problems with this strategy:

1. The lower the price, the lower the profit margin. At some point, the company cannot afford to lower the price further without earning inadequate returns, in spite of increased sales.
2. You can expect competitors to react and lower their prices to maintain their competitive positions and their sales levels. Your increased sales will only be temporary. You will have to lower prices repeatedly to hold on to an increased level of sales. This squeezes profit margins for all the companies who wish to be price leaders. In the end, few companies, if any, will earn an adequate return on sales of the product. A low price strategy works best for the lowest cost producer.

2.6.3.3 Expected Sales

Sales of a new product come from three sources:

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1. *Taking sales from another product:* The company's distribution system sells the new product instead of one of the company's older products.
2. *Taking sales from competitors:* The company's distribution system sells the new product instead of competitors' products.
3. *Creating new sales:* The product may create new sales by attracting customers (or distribution) that would not otherwise have purchased (or sold) life insurance.

Taking sales from another product is predictable. Sales levels of the product being replaced can be used to estimate sales of the new product.

Taking sales from competitors is where most companies pin their hopes of increased sales. Sometimes their hopes are exceeded. More often, emotions and sales goals get in the way of objective estimation of sales from this source, so the resulting sales levels are disappointing. *Taking sales from competitors* may become *giving sales to competitors*, if competitors have improved their products more than the company has. Few companies forecast decreases in sales, but decreases are common.

Creating new sales is usually not a significant factor. However, if the product pushes prices to a level that creates substantial value in the eyes of customers, people may purchase much more life insurance. Occasionally, new product features or streamlined buying or selling procedures can generate increased sales. For example, bank employees may be more apt to sell life insurance if the sales process is simple and short.

2.6.3.4 Combining Expected Sales and Profit Margins

Expected sales should be estimated for the same range of price levels for which profitability was estimated. Expected sales and expected profit margins can then be combined to determine profits for a range of price levels, as in the following example.

Example 2.6.1 Combining Expected Sales and Profit Margins

<i>Price Level</i>	<i>0.95</i>	<i>1.00</i>	<i>1.05</i>	<i>1.10</i>
Sales (in thousands)	150	100	70	50
Profit Margin (per thousand)	0.50	1.00	1.50	2.00
Expected Profit	75	100	105	100

If the company's overriding goal were to maximize profits, it would choose a price level close to 1.05. However, if the company valued growth in addition to profits, it might choose a price level of 1.00. Compared to a price level of 1.05, this would involve sacrificing 5% of profits for an additional 42% of sales.

The foregoing discussion assumed price levels could be reduced to a single factor. In reality, price levels are often a combination of many factors such as premium rates, interest rates, cash values, and product features. In addition, commission levels can be considered one of the factors, because of their large effect on sales, profit margins, and profits. As a result, it may be necessary to develop a multidimensional grid of the many factors that make up the price levels. This would result in a corresponding multidimensional grid of expected sales, expected profit margins, and expected profits.

When a number of factors are being considered at the same time, this kind of analysis becomes difficult and the results are questionable. Expected sales are hard to estimate when just one factor is varied. With multiple factors varying, expected sales become pure guesswork, as does this kind of analysis.

2.6.4 Cost/Benefit Analysis

Once all the preliminary design work has been done, you must make a decision as to whether to go forward with development of the product. It is helpful to take an objective look at all the costs and benefits of

2.6 Preliminary Product Design

developing the product. Here is a list of some of the costs and benefits that may apply.

2.6.4.1 Costs

The costs of product development include all the costs listed under *Implementation Barriers* in Section 2.6.2:

- Purchase or development of software
- Maintenance of software
- New administrative procedures and processes
- Training company staff and agents
- Introduction of the product to the distribution system.

In addition, there is the cost to finish developing the product, the cost to manage the product over its lifetime, and the cost of developing this product instead of devoting resources to another opportunity. Finally, you should consider the lost sales and lost profits on the older products that will be replaced by this product, particularly if the older products have higher profit margins than the new product.

2.6.4.2 Benefits

The benefits of the new product may include increased profits (from expected sales times expected profit margin) and increased sales. Increases in profits or sales may be only temporary, as competitors react and introduce improved products of their own. This is especially true if the company sells through independent agents. However, the effect of the new product will be longer lasting if the company has captive agents.

The new product may give the company the ability to develop and sell similar products in the future. If the costs of developing and implementing this product are high, they could be spread over a number of future products of similar design. For example, once a company has implemented its first variable universal life product, subsequent VUL products may incur much smaller implementation costs.

The new product may enhance the company's image as an innovative or leading edge company, making it easier to recruit and retain agents, employees, and customers. The product may be part of a broader company strategy or a key contributor to the company's vision of the future.

2.6.4.3 Analysis

Many of the costs and benefits can be reduced to numbers and compared. However, some of the costs and benefits are intangible and must be weighed using human judgment. Insights from a number of people with different backgrounds and perceptions can help in weighing the intangible costs and benefits.

If the decision is made to cancel the product, it is useful to document the reason behind such a decision, so that all involved understand and learn from the experience. For example, a company's high expenses, high cost of capital, or high profit goal may make it noncompetitive for certain types of products. As another example, the company may decide not to pursue the development of a product if its initial work found that the market was underpricing the product.

2.7 Final Product Design

Depending on the decisions made during preliminary design, final product design can be relatively straightforward or enormously complicated. At one extreme, all of the important decisions may have already been made. In that case, final product design may be no more than extending the decisions already made for selected pricing cells to the rest of the product, with some further refinement and more elaborate profit testing.

At the other extreme, preliminary design may have asked more questions than it answered. For example, price levels, commissions, product features, and risk classes may all be undecided. Final design

2.7 Final Product Design

would then include a search for the best possible combination of all the undecided variables. There may be an infinite number of combinations to test, with no clear way to judge whether one combination is better than another. In this case, preliminary product design continues into the final product design stage. At a minimum, final product design would normally include the following steps:

- A careful review of the preliminary design, looking for and correcting any inconsistencies, errors, and omissions.
- An attempt to reach agreement on as many unanswered questions and design factors as possible before pricing begins, to reduce the combinations of factors to be tested.
- Development of pricing assumptions for all issue ages, genders, risk classes, policy sizes, and product variations. Usually, only a fraction of the pricing assumptions is developed during preliminary design. Final pricing assumptions are more detailed and complete and reflect the latest information available.
- Profit testing (that is, calculation of profit margins) for the selected pricing cells used in preliminary design, to see whether there have been any significant changes to profit margins due to new or more refined assumptions. If so, it may be necessary to redo some of the preliminary design.
- Profit testing for every fifth or tenth issue age for every combination of gender, risk class, policy size group, and product variation that will have different premiums, death benefits, cash values, or other product factors.
- Profit testing for selected pricing cells to measure the sensitivity of profit margins to changes in key assumptions. If profit margins are found to be very sensitive in certain areas, product design or product management may be fine-tuned to minimize the effect of variations in future experience.

2.7.1 Pricing Pitfalls

Over the years pricing mistakes have been made by virtually everyone who has ever priced a product. Some mistakes are more serious than others. To help you avoid them, here are some of the more common and serious mistakes that are made.

2.7.1.1 Inappropriate Pricing Assumptions

All pricing assumptions are estimates, and all are wrong to some extent. Here are some areas where pricing assumptions can be so far off that expected profits become expected losses:

- Developing a product using no more than educated guesses for key assumptions that will make or break the product. For example, because of major changes in underwriting criteria, it may be necessary to estimate the mortality assumption for a new term insurance product.
- Not accounting for the effect on pricing assumptions of a new target market, a new distribution system, or changes in economic conditions. For example, if a company has historically focused on the upper-income market and has decided to expand into the middle-income market, it must be careful to adjust its mortality assumptions upward and persistency assumptions downward, as will be explained in Chapter 3.
- Not accounting for rational buyer or seller behavior. For example, if a term product has very high percentage increases in premium each year, you should expect very low persistency.
- Offering a product with first-year commissions and first-year cash values that together exceed first-year premiums. In this situation, watch out for agents buying large policies for themselves or their families and lapsing them after one year. A disreputable agent can also sell large amounts of insurance by sharing part of the commission with the policyowner or by paying all or part of the first-year premium for the policyowner, allowing the policies to lapse after one year.

- Offering a product with a very low level premium and little or no cash values, where profits depend on policyowners lapsing their policies. When this is the case, as it often is for Term to 100, you can expect that policyowners will persist in droves.
- Pricing a product so that most cells subsidize certain high-profile cells. Although it may appear that the overall product is meeting profit objectives based on an assumed distribution of sales, there may be a “distribution of sales” risk. When sales are more concentrated in the cells that are being subsidized, profitability may be far lower than originally assumed.
- Not clearly understanding the cost of options that certain product features give the policyowner. Policyowners may exercise these options in ways that are harmful to the company. Every guarantee in a policy has an expected cost, unless there is no chance that the guarantee will make a difference. For example, guaranteed cash surrender values can be costly when interest rates rapidly rise.

2.7.1.2 Not Understanding Your Environment

Laws, regulations, and guidelines change. It is important to understand where things stand and where they are heading when the product is developed. Pricing should reflect the environment that the company will be subject to in the years ahead. Here are some common mistakes:

- Not accurately reflecting the effect of accounting guidelines, reserve standards, capital requirements, and tax regulations. For example, accounting guidelines and reserve standards can have a major effect on the timing of profits. Capital requirements can have a huge bearing on the product’s rate of return. Complex tax regulations can result in larger and earlier taxes than expected.
- Pricing using terminal reserves that ignore the conservatism in mean reserves; see Chapter 6, Section 6.5.2.
- Not accurately reflecting the timing of cash flows. For example, death benefits and taxes may be paid, on the average, at the middle of the policy year rather than at the end of the policy year.

- Assuming tax advantages for the policyowner are never taken away. If tax advantages *are* taken away, you can hope for “grandfathering,” where policies receive the tax treatment originally planned. If there is no grandfathering, policies may lapse en masse.

2.7.1.3 Technical Mistakes

Pricing is a complex process. It is easy to get a little confused and calculate or interpret results incorrectly. Here are some of the more common mistakes:

- Calculating investment income on prior year profits and counting it as part of current year profits. Once profits have been earned and counted, they should be removed. Interest on past profits should *not* be included as part of current profits.
- Discounting using an inappropriate rate. In the financial world, discount rates are tied to the riskiness of the investment. When a company discounts future profits using the interest rate earned on high-quality investments, it is saying that an investment in its insurance business is no more risky than a high-quality investment. In actual practice, the owners of most insurance companies demand a rate of return quite a bit higher than that earned on a high-quality investment.
- Discounting future losses using a high discount rate; see the discussion of generalized ROI in Chapter 11, Section 11.6.2. For example, if future losses are discounted using a 15% discount rate, the company is actually *paying* 15% interest to the policyowner for a period of time.

2.7.2 Pricing Software

Certain pricing software packages are great pricing aids. They accelerate the pricing process by calculating policy values and performing profit testing. These packages typically have preprogrammed calculations that reproduce the effect of accounting guidelines, reserve standards, capital requirements, and tax regulations. In addition, these packages usually

have calculations with enough flexibility to allow a company to calculate cash values and other policy values for all the common products in a variety of ways.

Some companies create and maintain their own pricing software. This enables a company to support features or methods that are unique to the company. A number of companies have developed pricing software or related tools built on spreadsheets, at least for some of their more unusual products. In addition, many companies create software to interpolate rates for every age (from the rates for every fifth or tenth age developed in pricing) and to load the resulting rates into their administrative system.

2.7.3 The Pricing Process

Pricing is a process that attempts to find the best combination of many variables. The minimum goal is to develop a product that will generate at least adequate sales and adequate profits. Other companies may wish to maximize sales while producing adequate profits. Some other companies wish to maximize profits while producing adequate sales. Still other companies try to strike more of a balance between sales and profits.

When many variables are to be solved for, a plan of attack is needed:

- Can some variables be determined first, without knowing all of the other variables? For example, is there an absolute profit goal that must be met?
- Are there some good starting points that can be used for certain variables, such as values from a similar product? For example, UL expense charges could be set close to the industry average.
- What relationships should exist between variables? For example, surrender charges could be designed to match the product's cumulative loss, so the company does not lose money on surrenders.

Example 2.7.1 Sample Plan of Attack

Suppose a product has premiums, commissions, and profit margins that are variables that must be solved for. Here is an example of a possible plan of attack:

1. Set premium rates at a level that will beat 75% of competitors' premium rates, set commissions at the greater of the company's normal commission level and the average level of competitors' commissions, and then solve for profit margin.
2. If the resulting profit margin is unacceptable, raise premium rates until profit margin is acceptable, but not beyond a level that will beat less than 45% of competitors' premium rates.
3. If the resulting profit margin is unacceptable, lower commissions until profit margin is acceptable, but not below the lower of the company's normal commission level and the average level of competitors' commissions.
4. If the resulting profit margin is still unacceptable, devise a new plan of attack.

Even when a reasonable plan of attack has been devised, the results of pricing may not produce an acceptable product. It may be necessary to devise and try a number of different plans of attack before the product is finalized. While this can be frustrating for the person doing the pricing, this is the nature of research and development. Success is not guaranteed.

Pricing software is essential to the pricing process. Pricing software should allow you to load all of your pricing assumptions in advance, to efficiently enter or generate your variables, and to automatically solve for variables such as premiums, commissions, interest margins, and cost of insurance rates. The software should be able to handle a number of pricing cells at once and solve for variables based on a weighted average of many pricing cells.

The pricing process differs dramatically between pre-scheduled and dynamic products. However, a few variables apply to all products:

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- Most products have *death benefit patterns* that are an integral part of the product. The product defines the death benefit. For example, decreasing term products have a pre-scheduled decreasing pattern of death benefits. Level term products have a level death benefit. Pre-scheduled permanent products usually have a level death benefit, as do certain forms of UL and VUL.
- Most products have *commission rates* that are either agreed to in advance of pricing or determined during the pricing process. Commission rates are usually high in the first policy year and low thereafter, although some companies use level commission rates. For some companies, commission rates must be split between general agents and agents. Companies may have vesting schedules that govern whether the agent receives future commissions after leaving the company. Agent bonuses, pensions, and other agent-related expenses might be tied to commissions. Commission rates can have a big effect on sales. High commission rates may help a product sell better, depending on the level of consumer scrutiny. Low commission rates can effectively kill a product. Then again, a high commission rate adds significantly to the price of the product and can make the product less competitive.
- If the product has preferred or other *underwriting criteria* that are not governed by industry standards, then the details of the underwriting criteria can become a variable for pricing purposes. By tightening underwriting standards, the company can lower its expected mortality and thereby lower the product's price. By loosening underwriting standards, the product may appeal to a wider audience, although its price will usually have to be increased.

2.7.3.1 Pricing Pre-Scheduled Products

We will consider just two categories of pre-scheduled products for pricing discussions: term insurance and permanent participating insurance. Permanent non-par insurance can be priced as par insurance with no dividends. With-profits products can be priced much like par insurance, although additional testing may be necessary if assets and liabilities are mismatched. Mismatched assets and liabilities are addressed in Chapters 14 and 15.

For *term insurance*, the major variables solved for are premiums, commissions, and profit margins. However, a number of other product features could also be pricing variables, such as

- Cash values: While most term products do not offer cash values, they are required by some countries in some situations.
- Number of years for which premiums will be guaranteed.
- Guaranteed maximum premiums, if different from the current level of premiums.
- Benefit period: For how many years or to what age will premiums and benefits be payable?
- Specifics of any conversion option: Will conversion credits be offered? For how many years or until what age will conversion be allowed?
- If premium rates will be lower for insureds more recently underwritten (that is, select and ultimate premium rates), will the insured have a right to be reunderwritten in order to requalify for lower premium rates? If so, how often may the insured be reunderwritten and who will pay the expenses of underwriting? What premium rates will be charged for those who do not requalify for lower premium rates, since these insureds are likely to be worse-than-average risks?

Premiums can have a number of different aspects. Rarely do term products have only one premium for the lifetime of the term policy. Instead, premium rates may vary by policy year. Annually renewable term has annual increases in premium rates. Ten-year term products often have premium increases after ten years. When premiums vary by policy year, the slope of the premium is very important. The steeper the premium increase, the more policyowners will cancel their insurance, with healthy insureds more apt to cancel their policies than unhealthy insureds. With steep premium increases, the company may experience higher mortality than expected, as the average persisting insured becomes increasingly unhealthy.

The premium pattern usually has a major effect on the reserves built into the pricing; see Chapter 6. This can complicate the pricing process, forcing you to recalculate reserves every time you change the premium pattern.

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For *participating permanent insurance*, the major variables solved for are premiums, commissions, cash values, dividends, and profit margins. Solving for all of these variables at once is not possible. It is essential to decide on some of these variables in advance, such as commission rates and profit margins.

At the very least, commission rates should be narrowed to a few choices. Mutual companies sometimes set the profit margin in advance and try to maximize policyowner value. Stock companies would be more apt to aim for a certain competitive position while trying to maximize profit margin, but subject to a minimum profit margin.

Cash values and dividends are usually determined by complex formulas. Cash values may be a function of premiums, interest rates, and mortality rates, such as those used for reserves or guaranteed by the product. Dividends are often based on the difference between assumptions used for reserves and the assumptions used for pricing. For example, the interest rate for reserves might be 3% while the interest rate used for pricing might be 7%. Dividends would pay the policyowner most of the difference between 7% and 3% interest.

If cash values and dividends are not formula-driven or if the formulas are not automatically handled in the pricing software, the pricing process can become extremely labor intensive, with reams of numbers having to be manually input for each iteration. This will likely force a quick decision on cash values and dividends.

Term insurance price comparisons are straightforward, usually involving a simple comparison of premiums. Permanent products are much harder to compare. When pricing to achieve a certain competitive position, it may be difficult to determine which competitive measure to use. Here are some of the more common choices:

1. Net cost, equal to premiums less dividends less cash values after 10 or 20 years
2. Same as (1), but adjusted for the time value of money
3. Same as (2), but adjusted for the cost of expected death benefits.

Consumers and agents will want to know about the aggressiveness of the assumptions on which dividends are based, so that they can assess

the likelihood of projected dividends being paid. When comparing your product to other companies' products, you should consider the same question. One company may seem to have a more competitive product only because they have projected the future more aggressively. This makes competitive comparisons of par products very difficult.

2.7.3.2 Pricing Dynamic Products

Development of a dynamic product is part art, part science. The art is finding the best combination of several key components: cost of insurance charges, expense charges, surrender charges, and investment spread. Together, the components must provide both acceptable profitability and a product that will sell. Competitive pressures may drive the choice of a particular component, but proper pricing should emphasize the combined performance of all the components, not the profit margin for each individual component.

We will consider three categories of dynamic products for pricing discussions: fixed premium UL, flexible premium UL, and VUL.

The design of *fixed premium UL* products can be similar to the design of participating permanent products. The premium is important, but projected cash values, in relation to the premium, determine the overall competitiveness of the product. The premium is set by balancing several considerations:

1. The lower the premium, the more competitive the product.
2. The company may want to set the premium to target a certain market or need. For example, the premium might be set to minimize or maximize the cash values, or to match a competitor's product.
3. The higher the premium, the greater the likelihood the policy will mature if interest rates decline or COI charges increase.

UL cash values are calculated as premiums plus credited interest less expense charges, cost of insurance charges (to cover the cost of death benefits), surrender charges (charged only upon surrender), and withdrawals.

Pricing should determine each of the above components of cash values. Competition usually has a major effect on the credited interest

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rate, which is perhaps the most visible and best understood feature of a UL policy. The product should have a credited interest rate that seems reasonable to both the agent and the customer.

Expense charges often have several components and are harder for the customer to understand and compare. For example, a single product may have expense charges that are a percentage of premium, a flat amount per month, a flat amount per thousand of death benefit, and a percentage of account value. Agents are likely to discern expense charges that are higher than the competition. If the difference is significant, you can expect pressure from agents to bring the expense charges more in line with the competition.

Cost of insurance charges are usually based on a mortality table. They are very hard for people to understand and compare. However, both the agent and customer can compare the cash values that result from all of the components, including COI charges. If the resulting cash values are not competitive, there will be pressure to improve one or more components of cash value.

You will want to test a number of possible future patterns of credited interest rates and COI charges, to ensure the product performs adequately in terms of consumer value and profitably for the company. This is especially important when premiums have been set relatively low, such that there is a fair chance that the policy will not mature if interest rates decline or COI charges increase. In this case, some scenarios may result in the product terminating prematurely, making it difficult for the company to recoup its acquisitions costs. This problem can be overcome by giving the company the right to change the premium from time to time to offset the effect of decreases in credited interest rates or increases in COI charges. However, you can expect that an unplanned increase in premium will result in poorer persistency and some customer dissatisfaction.

Flexible premium universal life: Flexible premiums add an extra layer of complexity. Assumptions are needed for the pattern of premiums and the effect of various premium patterns on persistency. A number of different premium patterns should be tested to ensure that

certain patterns do not result in unacceptably low or high profit margins. Profit margins that are too high for certain premium patterns may mean the product is not competitive. Premium patterns with profit margins that are too low are apt to be discovered and exploited by customers or agents.

For example, you may develop what seems to be an adequately priced product, using some general assumptions as to the overall premium pattern. However, the premium pattern that maximizes commissions as a percentage of premiums may be the most popular and unprofitable pattern.

One of the first steps in pricing flexible premium UL is to determine target premiums. Most flexible premium UL products pay a high commission on first-year premium up to the amount of a target premium. Target premiums have a big effect on the overall price of the product. They are often set to reinforce a desirable premium level or to match the competition.

Testing should be done to set minimum and maximum premiums. Minimum premiums are needed to ensure the policy persists long enough to recoup acquisitions costs. Recall that a dynamic product's cash value is usually equal to an account value less a surrender charge. UL products with large surrender charges may have positive account values but negative cash values in the early policy years. However, as long as a minimum premium is paid, the company will usually allow the policy to continue. Failure to pay the minimum premium will cause the policy to terminate if its cash value is less than zero. Without a minimum premium requirement, coverage could continue for a number of years until the account value is exhausted, thereby circumventing the surrender charge.

In some UL products a very large premium can trigger an automatic increase in the death benefit well in excess of the additional premium. In other words, if the insured were dying, the policyowner could increase the death benefit by "dumping in" the maximum premium possible. To minimize such behavior, some UL products have limits as to how much premium can be paid without additional

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underwriting being required. In addition, if one of the least profitable premium patterns is one in which the largest premiums are paid, the company can protect its profitability by placing upper limits on premiums paid.

Besides testing different patterns of premiums, credited interest rates, and COI charges, you may also need to test different partial withdrawal patterns. However, if partial withdrawals incur a reasonable surrender charge, they may have little effect on profit margins.

Variable universal life: Most of the issues that apply to UL also apply to VUL. The major difference between the two products is in the investment risk. Because VUL passes much of the investment risk to the buyer, VUL products often have lower capital requirements than UL products have. As a result, a VUL product can often be priced with a lower profit margin than an otherwise similar UL product.

In some countries, VUL products are subject to securities regulations, much like stocks and bonds. Securities regulations may govern the licensing of agents, the maximum allowable commissions and expense charges, and disclosure of relevant information.

VUL products charge a fee as a percentage of assets. This fee has various names, such as a mortality and expense (M&E) charge, risk charge, or asset charge. The insurance company charges this fee in addition to the percentage-of-assets fee typically charged by fund managers. This fee often pays for a good share of the product's expenses and profit margin. This means the company's results will fluctuate with the market value of assets under management. For example, if the funds under management grow quickly in value because of escalating stock prices, the company may end up collecting a much higher level of fees than expected, resulting in higher-than-expected profit margins. Conversely, if the financial markets take a dive, the company may collect lower fees and suffer lower profit margins or even incur a loss.

2.8 Product Implementation

Product implementation actually starts early in the product design process, in connection with the determination of feasibility. During the product development process, discussions are held with representatives from a number of areas of the company. These discussions and supporting documentation serve to keep people throughout the company up to date on the product's design. This communication helps the company identify and resolve the numerous issues and problems that can be created by a new product. For example, a new product feature may require software changes and changes to administrative procedures that affect a number of areas. People from the areas affected will need to be involved to both design the changes and implement them.

Product implementation requires a cooperative effort from a number of areas in the company. The effort may involve people responsible for computer systems, illustrations, investments, policyowner service, underwriting, policy issue, policy filing, legal issues, marketing, and sales. It is important that most, if not all, areas understand the new product. In addition, those responsible for product development need to understand the role and value of each of these areas and involve them early in the process; otherwise, there is the danger of a problem surfacing late in the process. This may require substantial reworking of the product at the last minute. Another possibility is that the product will be left unchanged, with the company adversely affected. For example, a relatively inconsequential and unimportant product feature may be added to a new product, to differentiate it from the previous product. Once that feature is announced to the field force, it may be difficult to remove it from the product. Suppose substantial changes to the company's computer systems are required to support this feature. Had this been known initially, the unimportant feature never would have been included, but once it was announced, it was too late.

Most of the details of product implementation are designed and planned during the final design stage. Once the product design is finalized, product implementation begins in earnest. Rates and values

2.8 Product Implementation

for all issue ages are calculated and loaded into computer systems, product are filed with regulators (where required), sales material and sales illustrations are created, and introduction of the product is planned and executed.

2.8.1 Calculation of Rates for Every Issue Age

During product design and pricing, rates and values are typically created only for every fifth or tenth issue age. We will refer to these as *pivotal issue ages*. The rates associated with pivotal issue ages will be referred to as *pivotal rates*. Once the design is finalized, the next step is to calculate rates and values for every issue age, using interpolation or other formulas. For pre-scheduled products, it may be necessary to calculate premium rates, death benefits, cash values, and dividends for every issue age. For dynamic products, it may be necessary to calculate cost of insurance rates, target premiums, and other rates for every issue age.

A common goal is a smooth progression of rates by issue age. However, discontinuities may sometimes be desirable. For example, the first issue age with separate smoker and nonsmoker rates may have a smoker premium rate that is significantly greater than the rate for the preceding age, as well as a nonsmoker rate that is significantly less. As another example, if the first-year commission rate drops 10% at a certain issue age, you may wish to have a discontinuity in the premium rates that reflects this drop.

Interpolation is the usual method for avoiding discontinuities. The interpolation can be applied to the pivotal rates to produce rates for every issue age. Another approach is to calculate ratios of the pivotal rates to some other set of rates, such as a mortality table. The ratios can be interpolated, and the interpolated ratios can then be multiplied by the other set of rates to determine the rates for each issue age. This more complicated procedure can be helpful when you wish to monitor the relationship between the rates being interpolated and the other set of rates. For example, when interpolating cost of insurance rates, you may wish to interpolate the ratio of COI rates to mortality rates. In the process, you could then ensure that COI rates are never less than mortality rates by allowing no ratios less than one.

When choosing an interpolation formula, you will probably want one that involves second or higher differences. You may also need an extrapolation formula to extend your pivotal rates to the highest and lowest issue ages.

Once you have interpolated rates for all issue ages, genders, risk classes, and policy sizes, the next step is to check for consistency. You may find inconsistencies that are due to data errors or incorrect calculations. A good check for consistency is to calculate first differences of the rates and see how they vary by issue age. You should be able to rationalize increases and decreases in these differences.

It is also helpful to compare different sets of rates to check for consistency. For example, to check a set of female preferred nonsmoker rates for the 250,000 to 999,999 size range, you could compare the rates to any of the following:

- The female preferred nonsmoker rates for the next lower size range
- The female preferred nonsmoker rates for the next higher size range
- The male preferred nonsmoker rates for the 250,000 size range
- The female standard nonsmoker rates for the 250,000 size range
- The corresponding rates for a similar product.

You may also want to compare differences between different sets of rates. For example, the differences from one size range to the next higher size range will usually be about the same for males and females, preferred and standard risks, and smokers and nonsmokers. Similarly, the differences between male preferred nonsmoker and male standard nonsmoker rates should be fairly independent of size range. Sometimes you can check for consistency between products. For example, life paid-up at 65 and 20-pay life should probably share the same rates at issue age 45.

Once rates have been calculated for all issue ages and checked for consistency, they are then loaded into the appropriate computer systems. Testing is needed to ensure that all rates and values have been loaded into the company's computer systems correctly and completely. There is often room for significant process improvement in this area.

2.8 Product Implementation

Ideally, the process can be automated to use the pivotal rates developed in pricing to calculate and load the rates for all issue ages into the company's computer systems. This can lead to great improvements in the speed and accuracy of product implementation, as well as cost savings and less need for testing.

2.8.2 New Product Filings

Some jurisdictions require that a new life insurance product be filed with insurance regulators before it can be sold. Some go a step further and require regulatory approval before the product can be sold. In the U.S., each of the 50 states has different requirements that make this a long, slow, and difficult process. Not only must different materials be filed with each state, but also the policy form (insurance contract) must be changed for certain states. For some products, it can require more than a year to gain approval from the more difficult states.

In some countries, certain types of products may require approval from a financial regulator other than the insurance regulator. For example, in the U.S., variable products must be filed with and approved by the Securities and Exchange Commission, which regulates the U.S. stock markets.

2.8.3 Sales and Marketing

Deciding how the product will be marketed and sold is an important part of the design process. Early in the implementation phase, the marketing plan should be finalized. As part of implementation, the company may create tools to help the sales force find and contact prospective buyers. For example, by advertising, the company may make potential customers more receptive to buying. In some cases, advertising may motivate customers to contact agents or the company.

At a minimum, sales material will be produced to explain the product to the sales force and customers. This sales material will usually include descriptions of the product and all of its features, rates for all issue ages and risk classes, underwriting requirements, and application

forms. Increasingly, this material is given to the sales force in electronic form.

Software is usually provided to enable the agent to illustrate the financial results of buying the product. Because of past abuses, a number of countries have introduced regulations that require full disclosure of the product and, sometimes, the agent's commission. For example, if the company illustrates values it expects or hopes to pay, regulations may require the company to also illustrate the absolute minimum values it guarantees.

Some companies provide software to allow agents to illustrate more sophisticated sales concepts. For example, it may be possible for the employer and employee to split premiums and benefits as follows: The employee pays a small part of the premium, equal to each year's cost of insurance or mortality cost. The employer pays the remainder of the premium, which builds the policy's cash value. The employer is ultimately reimbursed for its portion of the premiums, through either death benefits or cash values. The employee receives the rest of the death benefit and any excess cash value, often at a very attractive price with favorable tax treatment. This is called a *split dollar* plan. There are many specialized sales concepts, such as endowments used to repay mortgages that don't amortize and life insurance used to fund children's education.

How a product is introduced to the sales force may have a lot to do with how well the product sells. For example, if an agent learns about a new product by receiving a package of boring material, it may be hard to get very enthusiastic. The company may be able to improve results by carefully designing the package to catch the agent's interest. Better results are often achieved by personally introducing the product, through agent meetings or one-on-one visits from agent management or company employees. Some companies time new product introductions to coincide with agency conferences. Some go to great lengths to professionally produce video or audio presentations to introduce new products to the sales force.

2.9 Product Management

Product work does not end with the introduction of the product. Managing the product can be just as important to the product's success as the product design. Most manufacturers never again see consumer goods after they are shipped. In contrast, life insurance products never leave the manufacturer. The company must provide administration, accounting, and policyowner service and be subject to insurance risk throughout the product's lifetime. Many consumer goods, such as food, last for days, while some, such as cars, last for years. However, few consumer goods last as long as a life insurance product's lifetime. A whole life product that insures a newborn baby may have a product lifetime of over a century! There are few longer-term commitments than life insurance product management.

Companies organize their product management resources in a number of ways. Product management may be part of the marketing area or the product development area. It may be a part of corporate finance. There are four main purposes behind product management:

1. Manage sales of the product, usually with a goal of maximizing sales or profits
2. Ensure the product is performing as planned, especially in the area of profit margins
3. Develop pricing data that will help in the design of the next generation of products
4. Make ongoing adjustments to keep the product in line with profit goals or commitments made to policyowners.

2.9.1 Manage Sales

Many consumer goods manufacturers have product managers who control all marketing aspects of a product, by managing its design, packaging, advertising, and pricing. One person is responsible for the product's sales and profits. This person carefully tracks the sales of the product and constantly looks for ways to increase sales and profits.

Competitors are also tracked, and their moves are countered by swift reactions.

In contrast, some life insurance companies introduce a product with great fanfare and then seem to forget about it. However, the more successful companies actively manage their products to get the most sales out of them. New sales ideas may be shared with agents to remind them of the product. Special promotions or incentives may feature products the company wishes to emphasize. Product features or underwriting requirements may be fine-tuned to make products more attractive. This kind of active management can stretch the lifetime of a product and delay the need for a replacement.

In some countries, there are strict regulations that guide how products can be sold. The company may need to ensure that proper sales processes are being followed. There may be strict requirements related to sales illustrations. Regulations may also require that adequate disclosure and explanations are given to customers.

2.9.2 Ensure Adequacy of Profits

When a product is developed, many assumptions are made. If actual experience differs from assumptions in a significant way, sales of the product may have to be suspended or a new product may have to be quickly developed as a replacement. For example, if mortality, persistency, or interest margins are materially different from assumptions, the product may be inadequately priced. In some cases, the product can be easily adjusted to reflect actual experience. For example, credited interest rates and cost of insurance rates can usually be adjusted for universal life. This is discussed in Section 2.9.4.

Often, the differences between actual experience and assumptions are not material. For example, a difference in distribution by issue age may not be important if all the issue ages have about the same profit margin. Actual experience is not always credible, such as poor mortality experience resulting from one large death claim.

2.9.3 Develop Pricing Data

A company's existing products are often the best source of information for pricing future products. A company's past mortality and persistency experience is usually a good predictor of future experience for similar products. Underwriting characteristics, such as cholesterol levels and blood pressure, can be studied and used to refine future mortality assumptions and risk classes. The distribution of business between smokers and nonsmokers, males and females, issue age groups, and the percentage of business reinsured for recent products may apply to similar products to be developed in the future.

2.9.4 Make Ongoing Product Adjustments

Many products have features that allow the company to adjust to changes in interest rates, mortality levels, and other factors. Adjustments may be needed to meet the original profit goals or to honor commitments made to policyowners.

Participating products have dividends that are routinely adjusted to reflect changes in interest rates, mortality experience, and expense levels. Universal life products have credited interest rates and cost of insurance rates that can be adjusted. Some products have nonguaranteed elements, such as premiums, cash values, and death benefits that can be adjusted as conditions change.

When faced with adjustments that will negatively affect the policyowner, the company should carefully consider the effect on persistency. For example, when credited interest rates are decreased, many policyowners may decide to terminate their insurance. If this happens in the early policy years, the company may lose the opportunity to recoup its acquisition costs in the future. Because of this, the company may sometimes be better off by not decreasing interest rates.

2.10 Exercises

Exercise 2.1

Using the target market attributes discussed in Section 2.2.1, explain why each of the following would not be considered good target markets:

1. Sales to be made through a variety of distribution channels, including telemarketing, the Internet, and agent solicitation
2. Persons belonging to and employed by a specific religious order
3. Frequent visitors to the Internet site *www.HangGlidein20Minutes.com*
4. Persons residing in the northeastern section of the country of Fredonia.

Exercise 2.2

What core competencies would be most important for the following products or markets?

1. Level term insurance
2. Debit or home insurance sales
3. High-income market
4. Universal life insurance.

Exercise 2.3

How would you organize the product development function? Why would you organize that way?

Exercise 2.4

Explain the buyer-oriented pricing strategy employed by each of the following companies:

1. Company A carefully sells products under a well-recognized name to people with incomes in the top 10%. Similar products, with prices roughly 20% to 25% higher, are sold to a lower-income market by a different distribution system and under a less-recognized name.

2. Company B constantly researches new, emerging trends in the market and is able to design and introduce products with new features, always staying one step ahead of the rest of the market. When competitors catch up and introduce similar products, their prices are always lower.
3. Company C sets its term insurance premiums so that its prices are about average, when compared to other, comparable products.
4. Company D is started from scratch by a wealthy agent. Term products have the lowest price in the market and are fully guaranteed. Investment products have the highest crediting rates in the market and illustrate the best cash values.

Exercise 2.5

Name the competitor-oriented pricing strategy employed in the following situations:

1. Company A is absolutely committed to having the lowest-cost term product on the market. Monitoring of the competition is constant. Changes in price can be made within a matter of weeks. Fifty percent market share is desired.
2. Company B is government-owned and the sole provider of reinsurance to the companies licensed in the country.
3. Country C strictly controls all products and rates. As a result, all companies in Country C offer the same products at the same rates.
4. Company D has spent millions to develop the best and most-efficient underwriting, policy issue, and administration systems. In order to fully utilize the investment in infrastructure it has made, prices are lowered to generate a large increase in sales.
5. Market E is dominated by a small number of companies. They monitor each other's products and rates. Employees of these companies know each other and frequently discuss product and pricing strategies. A move by one company is usually immediately matched by the others.

Exercise 2.6

What types of market research do you think are the most essential? Why?

Exercise 2.7

You are the actuary for a medium-sized company, with sales distribution concentrated in the Northwest. Your company primarily sells term insurance, concentrating on middle-income workers. Your underwriting process is very efficient, and mortality results and profits have been excellent for several years.

Your chief of marketing has noticed an article in the national newspaper. The government desires to spur personal savings in the Northeast, where savings rates have historically been low. A law has been passed that enables those living in the northeastern part of the country to deduct from their taxable income any premiums paid into whole life and universal life insurance programs. The marketing chief sees an opportunity and wants to go after it.

Discuss the feasibility of following the chief of marketing's recommendation.

Exercise 2.8

You have worked with the marketing and sales staff to develop the following grid of premium levels and profit margins. The company has been growing premiums at 15% per year and would like to continue to do so. The company will collect 350 million of total premiums this year. Examine the effect of the three price levels on premium growth and future profits. Which price level would you recommend? Why?

Assume the following:

1. The new product will be the only product sold next year. It will be responsible for all new premiums.
2. Next year's total premium will equal 90% of 350 million (assuming 10% of the current policies will terminate) plus the new premiums shown in the following table.

3. The contribution of the new product to future profit is equal to “PV of premium over product lifetime” times the profit margin shown in the following table.

<i>Price Level</i>	<i>Estimate of New Premium (in millions)</i>	<i>PV of Premium over Product Lifetime (in millions)</i>	<i>Profit Margin</i>
High	80.0	1,000.0	7.0%
Moderate	87.5	1,180.0	5.0
Low	95.0	1,400.0	3.5

Exercise 2.9

Assume that you are the product manager for your company’s universal life line of business. One of your junior actuaries has recommended that the cost of insurance charges for a block of UL policies that have been in force for five years be increased 10%. You ask for reasons why they should be increased. You are told that since these policies have been in force a long period of time, the policyowners will not notice the increase, so why not take additional profit. What is your response?

2.11 Answers

Answer 2.1

1. Distribution channels do not define a target market.
2. Although such persons may be a good population to insure, the target market may not be large enough to make it worthwhile. However, those who follow a specific religion may constitute a large enough target market.
3. Although one could argue that these people have the insurance need and a way to be reached (that is, through the web site), people who are interested in dangerous sports may not be a good target market for life insurance.

4. Although concentrating in a specific region may make it easier to serve a target market, this definition is too broad; those living in this region will exhibit a wide range of income levels, education, and insurance needs.

Answer 2.2

The following core competencies would be advantageous for the following products or markets.

1. Level term insurance: operational efficiency, underwriting expertise and discipline, and low-cost distribution
2. Debit or home insurance sales: control of distribution
3. High-income market: financial strength, sophisticated product design, sophisticated distribution, sophisticated home office support, underwriting expertise, superior investment management, and superior service
4. Universal life insurance: efficient and sophisticated home office staff and administration systems, and investment management.

Answer 2.3

There is no single correct answer. There are many valid ways to organize the product development function. The answer will depend on the resources available, the time frame required, the culture and priorities of the company, and the complexity of the product.

Answer 2.4

1. Company A is using segmented pricing for its products. Different brands and approaches are used for different markets.
2. Company B believes it can use skim pricing to maintain profit margins. By always being the first on the street with a new design or feature, it can charge a high price for these features before the competition catches up. Once the competition catches up, the company moves on to a new, more profitable feature or product.
3. Company C is using neutral pricing, since it does not want to be on either extreme of the competitive spectrum.

4. Company D is using penetration pricing, since the profit margins on its products are probably small. This company wants to have an immediate effect and create name recognition by offering extremely competitive products.

Answer 2.5

Market research in the life insurance industry tends to be overly focused on the distribution system and tracking competitors, which may be a result of the perception that “insurance is sold, not bought.” More insights and value may be gained by polling the ultimate buyers of life insurance.

Answer 2.6

1. Predatory
2. Independent
3. Cooperative
4. Opportunistic
5. Adaptive

Answer 2.7

An analysis should begin by answering the questions posed under Section 2.6.2.

Does the product fit the company? Your company has had success with term insurance. Although whole life and universal life may be offered, it may not be practical to implement a strong push for products that the company has not had to expend much time to manage in the past. The company seems to pride itself on the underwriting process. When selling cash value life insurance with favorable tax treatment, there may be pressure in the marketplace to issue the business with lower underwriting standards, under the assumption that the buyers are buying primarily to receive the tax benefit and not the insurance protection. Is the company prepared to loosen its underwriting standards in order to meet the demands of the marketplace?

Are there any regulatory barriers? At first glance, there does not seem to be any such barriers. However, the company may not be licensed to do business in all the particular jurisdictions that may exist in the Northeast.

Are there any implementation barriers? Does the company have administration systems for whole life and universal life that are capable of handling a strong push into cash value life insurance? Does the company have adequate, knowledgeable staff to support the additional cash value business? Does the company have the investment expertise necessary to earn competitive investment returns? With its emphasis on term insurance, this may not be an area of strength for the company. The sales distribution has been concentrated in the Northwest, not the Northeast. This implies a small number of sales associates in the Northeast. Is the company ready to invest in developing sales staff there?

What effect will this product have on sales of the company's other products? The new product will probably not hurt the sales of the existing term business. Since the new product's market focus will be the Northeast, sales there should not cut too much into the sales of the term product, since those sales are concentrated in the Northwest. In fact, sales of the term product might actually increase as the sales force is expanded in the Northeast.

How will the company fare against the likely competition? You can expect that a number of companies will pounce on this opportunity. Those already entrenched in the Northeast and already specializing in cash value life insurance will have a significant competitive advantage over the company. As a result, the company could invest significantly to expand into the Northeast and to strengthen its cash value life insurance capabilities, only to find it is too late and has wasted time, effort, and substantial money. On the other hand, the Northeast cash value life insurance market could be the long-term key to the company's success. To ignore it might result in the company becoming a smaller, less-effective player in the insurance industry and unable to survive long term. This could be a crucial decision for the company. The right answer is unclear.

Answer 2.8

The company can expect the following total premiums, premium growth rates, and present value of future profits for the three different price levels:

<i>Price Level</i>	<i>Total Premium (in millions)</i>	<i>Premium Growth Rate</i>	<i>Present Value of Future Profits (in millions)</i>
High	$(350)(0.9) + 80.0 = 395.0$	12.86%	$(1,000.0)(0.070) = 70.0$
Moderate	$(350)(0.9) + 87.5 = 402.5$	15.00	$(1,180.0)(0.050) = 59.0$
Low	$(350)(0.9) + 95.0 = 410.0$	17.14	$(1,400.0)(0.035) = 49.0$

The company has an interesting choice to make:

1. By choosing high prices, the company could achieve the best present value of profits, but it would slow its growth rate. Slower growth could erode the company's stock price and long-term viability.
2. By choosing moderate prices, the company could achieve premium growth consistent with its recent experience, but with a much-less-than-optimal present value of profits.
3. By choosing low prices, the company could accelerate its premium growth without sacrificing too much in long-term profits, although its profit margin would be low. While this choice may look attractive, the profit margin may be insufficient in light of the risks associated with the product.

Companies are continually faced with decisions like these. Different companies make different choices, depending on their analysis of the conditions and what is valued the most by their owners.

Answer 2.9

For a product sold through an agency sales force, you should never underestimate the ability of the field force to identify unexpected changes in policy values. Agencies and their staffs monitor the performance of their companies' products. An unexpected increase in cost of insurance charges will most certainly be noticed.

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Therefore, policyowners, with encouragement from their agents, will be more likely to surrender their policies. Some of the increased profits that may emerge because of higher cost of insurance charges will be offset by higher surrenders, and hence lower profits. In fact, surrender rates could increase high enough to offset the higher profit margins from the increased cost of insurance rates.

If the increase in cost of insurance rates is justifiable and explainable to the agency force, then increased surrenders may be minimized. However, a certain amount of dissatisfaction will occur, so some increased lapses should be expected.