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# Annual Meeting Session: Hidden Cost of Product Complexity

*Editor's Note: The following three articles are based on a Product Development Section-sponsored session at the 2003 Annual Meeting on the Hidden Costs of Product Complexity. These three speakers have all graciously agreed to write up their presentations for Product Matters.*

## Hidden Costs of Product Complexity

by Vincent J. Granieri

### Introduction

**T**here was a time when product-driven companies at the cutting edge of insurance innovation were the envy of their peers. Early entry brought brand recognition and respect in the marketplace. Competitors would scramble to develop their version of the innovative product, but this took significant time. The world has changed somewhat since then, which is not to say that it is *disadvantageous* to be an early entrant. However, clearly there are more things to consider when pursuing a first-to-market strategy. One of the issues that arises in these circumstances is the effects of the increased complexity of some of today's new products on profitability. Complexity can be defined in many ways, but for purposes of this article, we define it as being different than what is currently done. More and more, companies are recognizing that there are hidden costs of product complexity

and are reacting to limit their exposure in this regard. This article will outline some of the sources of these hidden costs.

### People

People-related costs, principally salaries and benefits, remain the biggest single expense category for life and annuity writers. It may be surprising then that people costs are listed among the hidden costs of product complexity. While it is clear that people cost money, it is less obvious how people costs can skyrocket when bringing complex products to market.

Companies can incur hidden people costs if there is an **expertise** gap between the company's skill set and that needed to launch the product successfully. For example, a company wishes to introduce a multi-bucket variable annuity product but lacks the necessary modeling expertise to price the product. The company may choose to utilize its own resources and allow them to learn to model the product's complexities on the job. Alternatively, the company may decide to enlist the aid of a consultant. Under both of these circumstances, the eventual costs are likely hard to know in advance or to quantify after the fact and thus are hidden in assessing the success of the new product.

Similar gaps could exist in the acquisition and/or administration of the product. Buying or renting expertise may be the correct solution or the only solution, but it tends to be costly in the short run.

Another hidden people cost is the **opportunity cost** of a given decision. In today's competitive environment, most, if not all, of a company's resources are constantly at work in one form or another. There is little slack



designed into the system. Therefore, the decision to commit resources to Project A means that some other project will likely lose resources. Since product issues are at the forefront of a company's strategic focus, it is most likely that the lion's share of a company's resources will be committed to product development at the expense of other areas. This suggests that prioritization is a key determinant of success.

Year after year of decisions favoring product development and customer acquisition over other less visible areas will eventually lead to a backlog of **deferred maintenance projects** that threatens the organization's efficiency. When a product is first introduced, it's easy to push aside programming product features that commence in year five because "we have plenty of time to deal with so-called Day Two Issues." Sooner or later, the time comes to support those features. We often find that we still don't have time to lay aside the glamorous new product development initiatives and work on the more mundane maintenance projects. The hidden costs still exist, whether manifested as an inability to bring new products to market or the extra costs of manual workarounds and the occasional error due to manual intervention.

## Communication

Complex products may require extra time and effort to communicate and explain them sufficiently to the home office, the field and regulators. Home office associates in virtually every functional area—new business, IT, policyholder service and legal to name a few—need to be familiar with the product to carry out their duties. At times, even the other side of the actuarial house, the valuation, cash-flow testing and reporting actuaries is overlooked. The field force must also comprehend the product's features and gain comfort with them to successfully sell the product and avoid market conduct problems. Regulators must also understand the product to ensure swift passage through the approval process.

Each of these situations potentially adds costs to the product development process. **Training** costs escalate with increasing complexity. It is shortsighted yet tempting to cut corners in this area. Most companies find these dollars to be well spent when compared to the cost of cleaning up a problem that arises out of lack of training. **Market conduct** issues are less likely to occur if proper communication and training

is implemented to the field force. Again, prevention is preferable but this adds to costs. Complex products may also lead to more **state variations** and/or an **extended product approval process**.

## Scale

It is more difficult to achieve **critical mass** in a complex product because of its unique nature. Being unique has advantages but it also means that the product shares fewer elements with other product offerings. New processes, separate administrative platforms and the like contribute to higher levels of fixed costs or initial costs that will produce high unit costs for the product. Eventually, it is expected that sufficient sales are achieved to bring these costs back in line with pricing. In the meantime, hidden costs of small scale are experienced.

Particular issues arise when products are dependent on derivative **investment products** to achieve success. Huge scale is a prerequisite to a cost-effective hedging program, for example. The same can be said about unique administrative platforms to support complex product features or strategies, but that is the subject of a companion article (see Van Beach's article on page 32).

## Features

Complex product features may be difficult to properly price, even in an uncompetitive environment. Today's insurance market is efficient in exploiting any weaknesses through **antiselection**. Disproportionate sales at certain ages or of certain coverages, once overlooked in the euphoria of a new product's introduction, are now scrutinized. Still, the immediate cost of the design flaw and the cost to correct it through redesign are typically unanticipated.

## Conclusion

In this article, we explored the hidden costs of product complexity. To some degree, these hidden costs are similar to those encountered in developing any product. However, as complexity increases, each layer of costs becomes more likely to be incurred and more likely to be substantial. This suggests that companies will increasingly consider ways to protect their innovative ideas from being copied to ensure that these hidden costs can be recouped (see Tom Bakos's article on page 30). □

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Vincent J. Granieri, FSA, MAAA, is president of Integrated Advantage Consultants, Inc. in Cincinnati, OH. He can be reached at Vince@integratedadvantage.com.