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Pricing Wealth Products in Competitive Markets

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Pricing Wealth Products in Competitive Markets

Abstract

This paper challenges the idea that I believe is embedded in actuarial training and thinking namely that products make profits.

One outworking of this orthodox thinking is the common practice among pricing actuaries to apply the cost-plus paradigm (explicitly or implicitly, modified or not), to allow for a share of company's overheads in pricing, and to measure and rank products according to their profit performance on a full cost allocation basis.

While actuaries would not dispute the proposition that the market must be taken into account in pricing products, I've always had a sense that it is often done grudgingly: "Cost-plus is basically sound although it usually requires 'calibration to the market' when implemented." Certainly any proposal that smells like the actuarial sin of 'marginal pricing' is resisted strongly on the grounds that "It'll roon us".

The paper concludes that such arguments do not stand up well to close scrutiny and that the considerations for pricing wealth management products to maximise shareholder wealth are fundamentally no different to pricing of any other commercial products with the same aim.

In reaching this conclusion, the paper does not suggest, as some fear, that marginal pricing is being proposed but rather something much more attuned to the reality and dynamics of markets and competitors—and much more interesting for that matter—namely competitive pricing.

Competitive pricing does not mean overheads are ignored or not controlled or managed. It does mean however that the management and control of overheads must be done at a portfolio level rather than at a product level.

Keywords: pricing; competitive pricing; strategic pricing; macro pricing; marginal pricing; cost-plus pricing; throughput; product contribution; product profit; overhead expenses; fixed expenses; expense apportionment

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1. Begin at the end

*“Advances are made by answering questions.
Discoveries are made by questioning answers.” --
Bernhard Haisch, astrophysicist*

Let's get right to the heart of this paper:

Products do not make profits; only firms do.¹

This seemingly innocuous proposition actually has a number of important implications and challenges for how we as actuaries approach pricing and, in particular, how we incorporate expenses into our pricing assumptions, specifically:

- (a) Product pricing has everything to do with supporting a marketing program to maximise the product's contribution to the company's overheads and profit. It has little or nothing to do with notions of covering overheads or, equivalently, satisfying minimum product profit targets after overhead allowances—and it probably never did. Cost-plus pricing which builds on assumptions about unit overhead costs is the wrong starting point². *Action point: Abandon cost-plus pricing!*
- (b) Following on from (a), apportionment of a company's overhead expenses to products, accounts or policies does not provide any useful decision-making information for product pricing—or product performance measurement for that matter. *Action point: Focus only on attributing to products those costs which have a clear nexus to the product, via product activities and decisions.*

My experience when talking to many actuaries about these ideas is varied: some seem to be at ease with them and already live them in their daily work, some understand the ideas well enough but contend that practical considerations override them (particularly in the context of life insurance and wealth management business), while a few others are strong in their view that I am just plain wrong and perhaps perplexed that I seem to be challenging fundamental actuarial paradigms that have worked well for us.

At times I've felt like a heretic but I would be very surprised if any of the general ideas in this paper were considered heretical in areas of general commerce as any reading of contemporary pricing and marketing texts would show. But what of actuarial texts?

The Institute's life insurance text book acknowledges to students that an actuary must, on occasion, allow the market to have its way through 'marginal pricing, expense overruns and short term losses' (pp284-285). It seems to support the notion that actuaries can move away from the traditional cost-plus paradigm *if pressured to do so and subject to some caveats*. By implication the cost-plus paradigm is seen as essentially sound and appropriate albeit it may need modification on occasions. But you might be gathering already that I think this is the wrong way around to think about the pricing problem.

In my view the cost-plus pricing paradigm is fundamentally flawed in competitive environments and I posit that the dynamics of competition and markets have changed so much over recent years that the traditional pricing paradigm that actuaries having been using needs more than revision, more than turning on its head, but should be abandoned. Would it not be simpler to adopt a model for pricing, which is better aligned with the market changes and is robust enough to move with them and at the same time still controls and manages the overhead expenses of the firm?

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The focus of the paper is on retail wealth management products but I believe the principles in this paper have a wider application..

The paper is structured as follows

- Section 2 consider the basis of my hypothesis through illustration and draws a number of general conclusions. I then draw the conclusion in section 3 on the need for a change in focus in the way actuarial students are taught to think about pricing and in section 4 on the two myths about expenses which need to be confronted head on if change is to occur.
- Sections 5 comments on the evolution of the competitive environment faced by wealth management companies and life insurers which I believe is the driving force for change. In sections 6 and 7 I compare the cost-plus and competitive pricing paradigms in more depth and in section 8 I assert that our industry, while it clearly has some different traits compared to manufacturing industry, say, still follows the same forces and demands of competitive pricing.
- In Sections 9 and 10 I spend some time addressing the most common concerns or counterarguments that I have encountered when the hypothesis is proposed. Section 11 is devoted to the very important issue of sales and expense management control.
- I briefly consider the important matter of pricing for risk and uncertainty in section 12 and how it is accommodated in a competitive pricing paradigm.
- Section 13 gives a brief introduction to strategic pricing which builds on the competitive pricing paradigm. While not the core of the paper, it aims to illustrate the potential for actuaries to think more commercially about how the company's goal of profit maximisation can be met and to climb out of the narrow confines of the cost-plus paradigm.
- Section 14 wraps up and the final two sections provide thanks to those who provided feedback and a list of key references.

2. Cost-plus pricing in action

The aim of this illustration is to expose the flaws or weaknesses of the cost plus paradigm more often than not and dispel the key myths surrounding it³.

Consider ACME Inc which sells 1,000 Widgets per year. It has overhead costs of \$8,000 or \$8 per unit, no direct product manufacturing or selling costs⁴, and a mark-up of 25%. The cost-plus price works out to \$10 per unit. Coincidentally this happens to be the same price asked by competitors selling their version of the same product. ACME's P&L looks like this:

	Widgets
Units sold	1,000
Unit price	\$10
Revenue	\$10,000
Expenses	<u>(\$8,000)</u>
Profit	\$2,000

ACME's recently appointed president, Mr Wile (having risen from being its head of product testing), decides that he should look for new revenue streams and believes Woggles could be the future. His consulting actuary, Mr Mac (from Mac & Tosh Inc, 'Consulting Actuaries ') advises him that the market price for Woggles is \$5 per unit and he could expect to sell

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around 1,000 units each year without any impact on overhead costs. At first, Mr Wile suggests this looks insufficient to cover the unit overhead cost of \$8 and provide a suitable profit (if price unchanged). But Mr Mac points out that overheads can now be spread across increased volume and so the unit cost reduces to \$4 ($= \$8,000 / 2,000$) which also means that the profitability of Widgets will also increase. This seems reasonable to Mr Wile and, with the target mark-up of 25% applied, discovers again that the cost-plus price neatly equates to the market price.

But just to be sure, Mr Mac consults with his junior partner, Ms Tosh for her opinion. She points out that the reduction in unit cost is based on a critical assumption, namely that the company will continue to sell Widgets at the same volumes. If this were to change for the worse, ACME's price for Woggles may prove insufficient to make up the shortfall. This will certainly be the case should Widgets be taken off the market for some unanticipated reason. Mr Mac thanks her but patiently points out that this is unrealistic:

- (a) There would be no reason to take Widgets off the market unless it could be replaced with an alternate product, which delivers higher gross revenues (whether through higher volumes or prices or both).
- (b) If the full allowance of \$8 were used in the pricing, even if they did not add any profit margin, ACME could not sell any of the Woggles and so it would be academic. One has to acknowledge market realities.
- (c) ACME could partially reduce the allowance somewhere between the two and came up with a lower price (but still higher than \$5), but there does not seem any sound rationale for that or a method for deciding what it might be. Further the business planning, budgeting and experience analyses of each product would become ad hoc and artificial and therefore lose credibility or usefulness to guide decision making. They both agree they do not want to go there.
- (d) If ACME had started selling Widgets and Woggles at the same time, they would have used the lower unit cost from the beginning. Why should the timing of the launches have any impact?

At this point, Mr Mac, while satisfied his approach is sound, starts to reflect that evening about what bearing ACME's own unit costs should have on prices. For example, if one believes unit overhead costs need to be incorporated, perhaps it's not ACME's own unit costs which are relevant but rather those of the most efficient competitor in the market. After all, sustainable profits will accrue to the company, which has the sustainable competitive advantage with a lower cost base. But granting this point does not really help since such information is rarely available or discernible from published accounts. So we're back to where we started from.

But Mr Mac also wonders why the decision to introduce a new product should affect the profitability of an existing product. While having niggling doubts, he decides that he is prepared to accept for now that this is a real and meaningful effect. Even though ACME's decision had nothing to do with Widgets, even though nothing had changed in the marketing, management and sales of Widgets, the positive message implied by its increased profitability is sound and they should be pleased with it.

Anyhow, while not quite getting to the bottom of it all, Mr Wile is happy to accept that, since the cost-plus pricing analysis of Woggles had only good messages, the increased profitability of Widgets can be considered a bonus.

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The projected P&L presented by Mr Mac now looks like this:

	Widgets	Woggles	Total
Units sold	1,000	1,000	
Unit price	\$10	\$5	
Revenue	\$10,000	\$5,000	\$15,000
Expenses	(\$4,000)	(\$4,000)	(\$8,000)
Profit	\$6,000	\$1,000	\$7,000

Mr Wile, while pleased with the analysis, comments to Mr Mac that:

- the increased profit of the company of \$5,000 (= \$7,000 – \$2,000) could have been more easily determined merely by noting that it is the same as the additional revenue delivered by Woggles. No measure of unit costs was required nor consideration of the profits of both Widgets and Woggles. The new product line clearly adds to the bottom line.
- Widget profit is 6 times Woggle profit even though its revenue is only 2 times that of Woggles. Why this huge difference in product performance measurement should be is not all that apparent since this is about as simple a company as one could devise. Which one really matters?

Anyhow, the decision to proceed is made and the subsequent results bear out the soundness of the decision.

Flushed with the success of this initiative, Mr Wile now plans to produce and sell Woozles which again has no impact on overheads⁵. He expects ACME will sell 2,000 units per year at the market price of \$1 per unit. He is surprised then to learn from Mr Mac that the calculated unit cost, while falling to \$2 per unit (\$8,000 / 4,000) across all products will not be covered by the price of Woozles. In fact Woozles appear to lose \$1 per unit. Mr Wile is not sure how ACME can justify proceeding until he is reminded by Mr Mac that, just like before, because the unit costs will reduce for all products, the profitability of Widgets and Woggles will increase by more than enough to warrant the launch of Woozles. “Show us the money,” Mr Wile quips. Mr Mac draws up a revised projected P&L for them:

	Widgets	Woggles	Woozles	Total
Units sold	1,000	1,000	2,000	
Unit price	\$10	\$5	\$1	
Revenue	\$10,000	\$5,000	\$2,000	\$17,000
Expenses	(\$2,000)	(\$2,000)	(\$4,000)	(\$8,000)
Profit	\$8,000	\$3,000	(\$2,000)	\$9,000

Before presenting this to ACME, Mr Mac consults again with Ms Tosh. She points out that this is much worse than before; this initiative amounts to the actuarial sin of ‘marginal pricing’ of Woozles and that the earlier concern expressed about withdrawal from sale of the other products is even more critical. Nonetheless Mr Mac convinces her and himself that his original responses to her concern remain valid. After all, surely it is better to have Woozles than not. Ms Tosh politely responds *but only if there are no better alternatives*. If there are better alternatives they should be chosen first and, if production capacity still permits,

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Woozles could still be sold. She also politely suggests that the guiding principles that can be applied are:

- (a) a company should seek to maximise its revenues (after direct costs) from all sources within the constraints imposed by its production capacity and the market itself.
- (b) a company should diversify its interests as far as practicable to avoid relying on a single dominant revenue source to ensure its future.

Mr Mac agrees with her but, looking for a way to have the last word, suggests that she has forgotten that, while overhead expenses may not factor directly into the prices to be charged, the company still needs to keep a lid on and drive down overhead expenses, not only to make a profit at the end of the day, but so as to retain a competitive pricing leverage, ie flexibility and options to drive or follow markets as it wishes.

On receiving the P&L, Mr Wile comments to Mr Mac again that the increased profit of the company of \$2,000 (= \$9,000 – \$7,000) could have been more easily determined merely by noting that it is the same as the revenue delivered by Woozles. No measure of unit costs was required nor consideration of the profits of all the products. Anyhow, despite the initial reservations and that Woozles looks unprofitable, Mr Wile accepts that the bottom line looks better than before and that launching Woozles is a sound business decision.

Mr Wile also notes again that, not only have the product profits changed in absolute terms, they have also changed in relative terms: Widget profit has changed to 8/3 of Woggle profit although Woggle revenue remains unchanged at 2 times Widget revenue. Interesting, he muses—perhaps there really is something wrong here. While this was not unexpected, he begins to wonder whether the way Mr Mac is presenting ACME’s product profitability confuses product prices and performance with company overhead expenses and profit. If there is a relationship, what is it? If there isn’t why does he pretend there is? Does it make for better decision making? Importantly, how can ACME hope to get quick and reliable information about what products can deliver to their bottom line if it always has to ask Mr Mac to rework the impacts for existing products? This is especially so if the product profitability on a cost-plus approach looks poor. Wouldn’t it be simpler and more transparent to take the market price as is and focus on the company-wide incremental impacts of a product initiative (both to revenue and expenses)? Even so, the current process looks overly convoluted and round-about but, *if done properly*, seems to arrive at the same result.

Mr Mac assures him that the approach used is sound and well accepted and so Woozles is launched.

Sometime a little later, a new competitor, Road Runner Inc, enters the market with a revolutionary innovation that makes Widgets immediately obsolete. Mr Wile, in dismay, asks Mr Mac to quickly draw up a revised P&L and provide his advice:

	Woggles	Woozles	Total
Units sold	1,000	2,000	
Unit price	\$5	\$1	
Revenue	\$5,000	\$2,000	\$7,000
Expenses	(\$2,667)	(\$5,333)	(\$8,000)
Profit	\$2,333	(\$3,333)	(\$1,000)

Mr Mac explains that with the loss of Widgets, its share of the overheads (\$2,000) will now need to be recovered by the other products. Without changes, the effect is ACME’s

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profitability is reduced as shown. It is clear that the remaining products together cannot sustain the company.

While noting again that the profit impact could have been more easily understood as the loss of revenue of the Widgets ($-\$1,000 = \$9,000 - \$10,000$), Mr Wile is even more agitated to see that Woozles appear to have gone into the red without any changes to the product or its market. Putting that temporarily to the side, Mr Wile (and his board by this time) start asking Mr Mac some serious questions:

- Could prices of Woggles and Woozles be increased? No, they are already at-the-market. ACME would need to increase prices by 142% to get it back to the same level of profitability but this ignores the obvious fact that the company could not sell anything at such prices. Perhaps some increase might be possible to at least return the company back into the black. For example, an increase in prices of 14% with no fall off in sales will make the company break-even. But Mr Mac (sighing) remarks that this still looks difficult.
- Perhaps reducing prices of Woggles and Woozles will increase volumes more than sufficient to increase the return to the bottom line? This may be possible, but why didn't ACME do this earlier? Whatever the reason, Mr Mac advises not to overstate what is achievable. For example, if ACME reduced prices by 20% with a corresponding increase of 50% in volumes (a very brave assumption), aggregate revenue would still only increase by \$1,400. That all aside, price reductions risk immediate responses from competitors (price is the easiest thing to copy) and potentially a price war which nobody can win. Finally, ACME does not have sufficient market dominance or product differentiation to be confident that this could work. It also requires capital resources to withstand the strains and pressures on cash flow.
- Should Woozles be withdrawn from sale since the product is clearly unprofitable on any measure? No, it makes a contribution to overheads. Without it, Woggles would become unprofitable itself. (Mr Wile notes again his bafflement that the number work implies a nexus between product and company profitability. It makes even less sense now.)

Mr Mac advises Mr Wile that really the only ways to rectify the situation is to find new sources of revenue and/or see if there are ways to make serious reductions to the expense base and probably even the scale of ACME. If this cannot be done quickly, the 'R' word may need to be seriously considered. Maybe sale of the company may become an attractive alternative to receivership but speed is essential before the company haemorrhages entirely or other products are picked off.

Now the questions I ask readers to ponder are:

- (a) How has the cost-plus paradigm (product profitability) helped at any stage in understanding the machinations of this story? Was there always more direct, reliable and pertinent information available to achieve the understanding?
- (b) Has the cost-plus paradigm *directly* led to the 'right' pricing and product decisions in all cases? If it has, was this achieved by the shortest analytical route? Was it luck? If not, has it required management and the actuary to 'explain away' or reinterpret its superficial results?
- (c) Has it provided relevant information to enable the decision? Could the same (or better) decisions about prices and products have been made without regard to unit costs? Could cost-plus have led to wrong decisions?
- (d) If not 'product profit on a fully allocated basis', was there a product measure which *was* important and reliable for making the right decision?

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- (e) Does correct (optimal) pricing in any way depend on a company's overhead cost base? If not, why do we put up with the convoluted cost-plus paradigm? Why do we go through the mental gyrations required to explain away this convoluted approach?
- (f) Does the cost-plus paradigm provide a robust or scientific method for pricing which optimises profit or otherwise reduces the likelihood reduced profits or indeed a company's ultimate demise in the face of competition? Is it all smoke and mirrors hiding the real truth of what drives the success or failure of a company?
- (g) If we know the cost-plus answer is 'wrong', why don't we make life simpler for ourselves and management by producing simple, reliable and transparent numbers that properly guide rational decisions and align with how management really think about the company and its pricing strategies and tactics?

Most of the rest of the paper explores the answers to these types of questions about pricing in general and others related to them.

3. Time for a paradigm shift

With the above illustration I hope it is becoming clearer that:

- (a) Product profitability is a nebulous concept and one peppered with convoluted logic, paradoxes and inconsistencies. A more robust concept is that only *companies* make profits while products make *contributions* to the company's overhead expenses. A company's profit is a residual, ie a variable to be optimised. How? By maximising each product's contribution to the company's overheads and profit, and by minimising the company's overhead expenses.
- (b) There is no meaningful link between prices and overhead expenses; nor is it useful to pretend that there is one. Prices built up from an allocation of all expenses and required to deliver a minimum target profit or return is not a useful concept.

Looking a little more closely at point (a), products generate revenue streams which have to cover:

- costs directly associated with each sale (eg commissions, stamp duty etc)
- costs directly associated with the promotion of the product (eg disclosure materials)
- costs directly associated with the servicing and general management of the product (eg IT)

To the extent that a product shares resources with other products eg call centre, then the product revenue needs to also cover an attribution of those costs in so far as those costs relate directly to product activities. The net revenue remaining is referred to as the product's contribution or throughput⁶ to the company's overhead and profit.

Ferris et al (1995) comments:

“In reality, the pricing process moves from a theoretical ‘cost plus’ approach to a ‘competition’ based approach and often becomes a process of negotiation between sales and marketing and the actuaries.”

This actually makes life simpler for everyone. The pay-offs are a more straightforward and reliable analysis, transparency about what products are really delivering, more effective communications and, more likely, better decisions that take the company closer to maximising shareholder wealth.

Further, on point (b), the assumption behind an apportionment of overhead expenses to products is that for each and every expense item there is a nexus to a single product activity

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(eg sale, setup, service, claim, redemption) which is direct, continuous, and linear. But the reality is that overhead expenses are by definition those which do not have a direct, continuous or linear nexus to any product activity. Refer to definition in side bar.

Overhead expenses have, by definition, no nexus with activities except a fabricated one which, at best, can be described as weak and ill-defined. In practical terms, they generally do not exist. Any linkages that may be capable of some definition are—at best—characterised as fuzzy step functions. They are very unlikely to be linear, even for short periods. Any linkages between activities and expenses that may be postulated to exist will generally be only poorly understood.

So it is really an illusion that product profit means anything at all or that profit maximising decisions can be made which are based on such a measurement—except perhaps fortuitously. Product pricing has little or nothing to do with overhead expenses. Nor, it follows, does product performance measurement.

Overhead expenses

An expense is considered overhead, if in the context of a particular decision with reference to a particular time frame it does not vary with the decision. All other expenses for the particular decision are considered incremental or direct.

Apply this test: If the product did not exist, which expenses would not be impacted? These are the overheads for this product.

Typically such expenses would include finance, HR, IT, or legal but even they could be affected by a product initiative.

Some expenses are directly related to product volume eg commissions as % of premium, or investment management fees as % of FUM are assumed to be taken directly to the product. They would never be overheads.

There is grey area of expenses though which will require some form of expense attribution to product and overheads. Typical of these are service centres and systems.

But before I can move on, I need to address early the two most often heard criticisms. I find they are usually the biggest stumbling blocks to acceptance of the ideas presented but I believe that they are misplaced.

4. Mythbusters about expenses

“The great enemy of the truth is very often not the lie—deliberate, contrived and dishonest—but the myth—persistent, persuasive and unrealistic” – John F. Kennedy

Myth: “We must price to cover overheads.”

Nagle & Holden (2002), in their highly regarded and authoritative book, have this to say:

*“How, then, should managers deal with the problem of pricing to cover costs and achieve profit objectives? They shouldn’t. The question itself reflects an erroneous perception of the role of pricing, a perception based on the belief that one can first determine sales levels, then calculate unit cost and profit objectives, and then set a price. Once managers realize that sales volume (the beginning assumption) depends on price (the end of the process) the flawed circularity of cost-based pricing is obvious. The only way to ensure profitable pricing is to let anticipated pricing determine the costs incurred rather than the other way around. Value-based pricing must begin *before* investments are made.*

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Hogan & Zale (2005) make a similar comment:

“The goal of pricing is not to cover total costs.

Our clients often struggle with this challenge because the concept is counter-intuitive and the mistake so pervasive in companies. Instead, the goal of pricing is to maximize total contribution (ie unit price minus unit variable costs). Why? Because the portion of price that affects profitability is contribution margin. *Whether that contribution exceeds or falls short of profit objectives is not a pricing issue.*

In other words, allocating fixed costs within the price does not help make better pricing decisions because those costs are not actually incurred when making additional sales.”

Chalke (1991), a US actuary, discusses this at some length (pp156-161) proposing and then answering a similar question:

“How can we be sure that all company expenses are met (covering the overhead)? In short, we cannot be sure. The most that can be accomplished through the pricing process is to attempt to cover as much expense as possible—in other words, to maximise expected marginal profit.”

We can define an optimally priced product as one which at a point in time any change in price, up or down, will reduce total net revenues. Chalke notes that a product which has been priced optimally but which does not ‘cover overhead’ would seem to lead an uninformed decision maker with three unattractive options (considering the product alone):

- (a) *increase the price* - which reduces volume to a level which reduces product throughput and company profits
- (b) *decrease the price* - which increases volume but insufficient to avoid reducing product throughput and company profits, or
- (c) *abandon the product* - which leaves other products to pick up the overhead.

Unless another product alternative or initiative can be found that can make a higher contribution to overheads, or unless if overheads can be reduced (in which case they were probably not absolute overheads in the first place) the optimal decision Chalke states is to nurture or tweak the product to the maximum⁷. He goes on to conclude, without any equivocation, that the matter of ‘covering overheads’ is irrelevant for pricing actuaries⁸:

“[It] cannot be answered except at the decision level for which such overhead becomes marginal... Many frustrations in product development stem from an assumption that analysis used in the determination of price can also answer the question of overall company health or the ability to meet overhead expenses. *In fact no such analysis exists. The pricing actuary cannot simultaneously optimize the price of a product and the overhead question. Only at the top-level decision can the overhead question be fully answered.*”

In other words, pricing actuaries (and their managers) must be wary of the trap of thinking they can manage the company and its profit target by micro managing expenses at product level as if they each have profit targets in their own right.⁹

All pricing analyses and recommendations must be framed in the context of considering alternatives by weighing them up against various benchmarks related to profit and capital. Decisions ultimately become exercises in ranking initiatives against each other, including (whether explicitly or implicitly, a ‘do nothing’ scenario. Overheads are irrelevant to that ranking. If it is argued they are because they will be affected by the decision, then they are not overhead (refer to earlier definition). As noted in the discussion of Shuttleworth (1988), who first introduced some of these ideas to actuaries in Australia:

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“No matter what your fixed costs may be, every unit of production that brings you a dollar more than marginal cost adds a dollar to the bottom line.”

But there’s another way to look at this. If we undertake an evaluation of a product initiative which uses full cost allocations then, to be fair, we should also measure the increased profitability that will flow onto existing products as the current product picks up a share of the costs already being picked up. This is generally not done but instead is usually acknowledged in the actuary’s advice that it provides an element of conservatism. For decisions which are no-brainers, this might not matter. In fact in such situations, analytical work often does no more than provide the paper trail. Many product initiatives though come with inherent and significant uncertainty about likely outcomes. For example, we cannot easily predict adviser, customer or competitor responses. Sensitivity and scenario testing could therefore reveal potentially very widely differing outcomes. These situations are exactly where more robust work and realistic estimation is required—not ad hoc and opaque conservatism¹⁰. A competitive pricing approach captures the profits that would otherwise remain unidentified¹¹.

Apportionment of overhead expenses can lead to some perverse product pricing outcomes. For example:

- A company prices a new product allowing for expense allowances that make the product look unprofitable while ignoring the impact of the introduction of the product on the allocation of overheads to all products and their increased profitability.
- A company prices a new product allowing for overhead allowances and ends up building in more allowances than the company needs to live by, effectively ‘double counting’ allowances:

A blind adherence to the myth inevitably often leads to a merry-go-round of discussions with product management and marketing and ‘refinement’ of assumptions. Consider this: When was the last time marketing did not get their price? When was the last time they asked for a price increase to meet market conditions?

What this should mean is that, in practice, all product initiatives and pricing decisions should be evaluated as if they were projects, ie using cost-benefit analyses, often base-lined against the alternative of doing nothing, and importantly by consideration of only *incremental* costs and benefits. Company profit becomes a variable to be optimised (through the measure of product throughput = incremental benefits and costs) rather than a goal. Product initiatives expected to deliver positive throughput should not necessarily be implemented if more attractive alternatives are known to exist. R&D and implementation costs are irrelevant to the determination of a competitive price¹² although relevant to the go-no-go decision (via discounted cashflow analysis). Once implemented even such costs become ‘sunk’ and irrelevant to any subsequent stop-continue decision.

Project-based analysis also has the important advantage compared to a unit-cost approach that one can directly and transparently allow for the nexus between price and volume, particularly when trying to undertake an evaluation of the product over part or all of its expected life cycle. Rather than trying to classify expenses as fixed or variable, direct or indirect, or overhead or marginal, the perspective changes to one where all we are interested in is understanding the incremental impacts of a decision on revenues and expenses—whatever their nature or frequency. Incremental expenses can be explicitly and transparently modelled and the effect on the whole company, including return on equity capital, presented without having to rely upon arbitrary divisions of expenses or equity.

In section 9 I will address more specific questions and examples that are often used to support the contention that overheads must be covered in pricing.

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Myth: “Only through an apportionment of all expenses will we obtain a complete understanding of product performance.”

The reality is that apportionments of all expenses to products can lead to perverse product performance measurement results. For example:

- Sales of a ‘profitable’ product increase (or a new product is launched) → Unit average costs reduce for all products → Measured profit of all products increase. *Reality check:* Product performance is not affected.
- An ‘unprofitable’ product is discontinued → Presumption is that this will improve overall company profits. *Reality check:* Company profits are more likely to reduce (without countervailing actions)!

We often produce financial information about products that suggests the opposite and gives misleading signals, for example removing an unprofitable product will improve the company position.

If the range of products of the organisation increases 100% and general management support costs increase by 20%, which products contributed to the extra costs: the last lot, the first lot, or all of them together?

Is it more accurate to apportion more overhead cost to products which take up more floor space or more activity? How would we know? What does expense apportionment tell us about the optimum product mix?¹³

‘[T]ranslating expenses into unit costs is both tricky and dangerous’¹⁴. A process of expense *apportionment* implies all costs are allocated to one product or more with nothing left over. In the context of competitive pricing, I believe the term ‘expense *attribution*’ may better suggest that the process should only allocate those expenses to a product or products for which there is a clear enough nexus to the product itself, ie if the product did not exist, then neither would the relevant expense. This would probably require a deeper and more granular understanding of expenses in some areas of activity than which probably already exists.

5. Competitive environments and expenses

The dynamics of increasingly competitive markets are (or should be) forcing a long overdue readjustment of the traditional pricing paradigm used by wealth management and life companies. The pressures are coming from many directions: customers, ‘commercial deals’ for advisers, end of transitional tax relief, competitor cherrypicking, new disclosure requirements for fees, and increased risk and compliance costs. The result is that manufacturers’ margins are being ever squeezed. Our product information is often left wanting in response to the questions that business is asking about expense drivers and linkages, about profit and value drivers, and about making the ‘right’ decisions for the business.

“[A]s competition intensifies and consumers demand better deals, margins are likely to decline, make the simultaneous satisfaction of both sales and profit objectives even more difficult.” – Ferris et al (1995)

We have been schooled (and continue to be schooled) in traditional expense-based methods but are finding that it just does not work in the new world. The market is playing by rules and assumptions which seem different from those implicit within the cost-plus paradigm. Markets for commercial goods and services had long ago discarded the cost-plus paradigm¹⁵. In fact it can be argued it was never valid and it has taken dynamics of today’s markets to expose it.

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Chalke, who first promoted these ideas to US actuaries which was subsequently brought to the attention of Australian actuaries by Shuttleworth, has noted that (p137):

“Although actuarial literature describes a multitude of product-pricing methodologies, current techniques exhibit three characteristics:

- (a) Product profitability is measured on a per-unit basis.
- (b) The price is determined by using a ‘cost-plus’ algorithm
- (c) The ‘cost of goods sold’ is determined by using an expense assumption that artificially allocates non-marginal costs on a unit basis.”

...Many pricing methodologies implicitly use a cost-plus algorithm through the use of a profit goal¹⁶,”

Whether or not we are pricing to a minimum profit target, so long as we are building up the price using *full cost* unit allowances (or do it in reverse), we are effectively employing a cost-plus paradigm. The cost-plus paradigm is underpinned by the expense apportionment process, which is referred in accounting circles, research and academic literature as ‘ABC’ or ‘Activity Based Costing’. ABC provides a supposedly rationale and method to attribute all the costs of a company down to product level (or unit sale) level and thereby help management understand product profitability.

While a lot has been written and taught about ABC, it is conceptually a very simple idea and algorithm. But it *is* simple because of the fundamental—I would say ‘courageous’—assumption referred to in section 3 upon which it relies in order to make some sense of the significant noise and uncertainty surrounding the interactions between company activities (including decisions that drive those activities) and the cash flows which ultimately fall out.

But none of that seems to matter to ABC proponents and users of the results it produces (ie unit costs). While perhaps not ignorant of the assumption stated above, they typically ‘forget’ them and proceed, seemingly in an act of cavalier faith, as if they were immaterial or inconsequential. The proponents would support this practice by a statement like: “Despite all its faults, its lack of veracity, and the concerns expressed seemingly endlessly by product management, it’s still the best information we have so we should use it and be prepared to make important decisions based upon it.”

It’s one thing to derive the unit costs and attempt to draw conclusions about *past* activities, decisions and outcomes; it’s entirely another to then use those units costs as key assumptions for pricing purposes which requires another courageous assumption: the future will be like the past, or, in other words, changes in product mix and relative volumes will not change the veracity of the unit cost assumptions and what it implies for product profitability. This may be a reasonable assumption in relatively static and non-competitive environments. However as markets become dynamic and more competitive, this assumption becomes weaker and ultimately breaks.

There has been long standing debate within organisations and amongst professionals of the efficacy and validity of the ABC process and its outcomes—despite continuing efforts by many to improve it¹⁷. The standard response from accountants and actuaries is to refine the process further but, in my view, seldom does this seem to get us any closer to improving our decision making. I have come to believe further refinement of the expense apportionment process by means of, for example, identification of better drivers or greater granularity, is not likely to be the solution. It continues to ignore the flawed premise on which it is based but, more importantly, misses the essence of pricing referred to at the beginning of this paper.

My hypothesis is not that there are better tools than ABC in our product pricing kitbag when it comes to assessing appropriate expense allowances for overheads nor that ABC can be

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sharpened further to produce more reliable, robust and useful pricing expense allowances but instead that we are trying to solve a problem which, in the real world of pricing, does not exist¹⁸.

Ferris et al even seem to recognise this is an unavoidable outcome (pp777-778):

“[T]here is always an argument that it is better to sell some business with some contribution to overheads than no business at all (and still incur the overheads)... In reality, the pricing process moves from a theoretical ‘cost plus’ approach to a ‘competition’ based approach and often becomes a process of negotiation between sales and marketing and the actuaries. The final outcome will often depend on the business strength and acumen of the individuals concerned and the internal control processes of the organisation.”

My hypothesis is, to put it into starker terms, that we should not even think about starting with cost-plus as a default position, but rather starting with the market, the customer and how we want to position our product in the market to optimise volume-margin. The action point is that we need better and simpler way to think about, apply and teach product pricing than cost-plus¹⁹. Many refer to it as ‘competitive pricing’ but it is also referred to as ‘strategic pricing’²⁰. Cost-plus pricing will be looked at more closely in section 6 and competitive pricing in section 7.

6. The cost-plus illusion

“For when a ship is floating calmly along, the sailors see its motion mirrored in everything outside, while on the other hand they suppose that they are stationary, together with everything on board. In the same way, the motion of the earth can unquestionably produce the impression that the entire universe is rotating.” – Nicolaus Copernicus from De Revolutionibus Orbium Coelestium (1543)

Here’s what Nagle & Holden had to say about what they call the ‘cost-plus delusion’ (emphasis is mine):

“Cost-plus pricing is, historically, the most common pricing procedure because it carries *an aura of financial prudence*. Financial prudence, according to this view, is achieved by pricing every product or service to yield a fair return over all costs, fully and fairly allocated. In theory, it is a simple guide to profitability; in practice, it is a *blueprint for mediocre financial performance*.

The problem with cost-driven pricing is fundamental: *In most industries it is impossible to determine a product’s unit cost before determining its price*. Why? Because unit costs change with volume [of this and all other products being sold]. This cost change occurs because a significant portion of costs are ‘fixed’ and must somehow be ‘allocated’ to a determine the full unit cost. Unfortunately, since these allocations depend on volume, which changes with changes in price, unit cost is a moving target.

To ‘solve’ the problem of determining unit cost, *cost-based pricers are forced to make the absurd assumption that they can set price without affecting volume*. The failure to account for the effects of price on volume, and of volume on costs, leads managers directly into *pricing decisions that undermine profits*. One particularly tragic example, for the company and its customers, was Wang Laboratory’s experience in pricing the world’s first word processor. Introduced in 1975, the product was an instant success, enabling Wang to grow rapidly and dominate the market. By the mid-1980s, however, personal computers with word-processing software were becoming credible competitors. As competition increased and growth

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slowed, the company's cost-driven pricing philosophy began killing its market advantage. Unit costs were repeatedly recalculated and prices raised to reflect the rising overhead allocation. As a result, sales declined even further. Before long, even Wang's most loyal customers began making the switch to cheaper alternatives."

I would note while this issue is certainly important to acknowledge, it is technical problem of measurement and forecasting. I have already noted earlier the disregard for the changes in product mix and volume can have on the unit costs notwithstanding that nothing fundamental has changed about the products. But there is a more fundamental point to be made—which the authors do discuss later at length—namely that the market does not care about a company's cost base, ie even if we could measure unit overhead costs accurately and predicably, they are irrelevant for pricing in competitive markets.

Shuttleworth has this to say:

"The traditional pricing approach tends to be a 'cost-plus' approach to pricing. The main problem with this pricing methodology is that having performed all the analyses it may not be possible to see the product at the resultant price²¹. If this happens, one technique is to solve for the expense allowances that will make the product competitive and still enable profit objectives to be met. The justification is normally that 'we will just have to live within these allowances, the rest of the market obviously does'. This outcome can render most of the traditional pricing process largely academic.

In other words, Shuttleworth is saying that while the justification is superficial acknowledgment of the pre-eminence of the market, it is unlikely to translate into courses of action that focus on reducing the cost base. A more effective call to action for reducing overhead expense and/or looking for new sources of revenue would be achieved by acknowledging the reduction in company profits that will follow from lower market prices.

It has been noted by one actuary in discussion of Ferris et al that cost-plus pricing is an 'inside/out' view or 'cost led' pricing. In other words, actuaries are driving marketing by first working out what is going on inside the company and then taking it outside to the market. It starts from the premise that the cost base is given and fixed. Marketing and actuarial spend their time arguing about price and not cost. It may be the right approach for:

- *monopolies*, either absolute or protected, or
- *monopoly-like situations*, ie where there is clearly and unassailable dominance in market and high entry barriers, or
- *homogeneous competitors*, ie where we can be sure all competitors (existing or potential) have and will continue to have the same cost base and profit objectives, or
- *low fixed cost firms*, ie where the company has low fixed costs and variable costs are directly attributable to product volume and activity²². The reality is more and more costs these days are fixed (eg Internet shop fronts) and thus the attribution to product and volumes becomes more nebulous and unreliable

Nagle & Holden go on to say:

"[A]n international telecommunications company with many leading technologies uses cost-plus pricing only as a 'starting point' for pricing. Product and sales managers review the cost-based 'target prices' for consistency with market conditions and argue for adjustments to reflect market conditions. Everyone in the organization finds this system fair and reasonable. But does the system foster profitability? During the three years this system has been in place, marketing has frequently requested and received permission to charge prices less than the cost-based 'target' *in order to reflect market conditions*. Now, how many times during those three years do you think marketing argued that a target price should be raised to reflect market

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conditions? Never, despite the fact that the company often has large backlogs of orders on some of its most popular products. At this company, as at many others, cost-based target prices have become *cost-based 'caps' on profitability* for the most valuable products.

Cost-plus pricing leads to overpricing in weak markets and underpricing in strong ones—exactly the opposite direction of a prudent strategy. The financial questions that should drive proactive pricing are ‘How much more sales volume must we achieve to earn additional profit from a lower price?’ and ‘How much sales volume can we lose and still earn additional profit from a higher price?’ The answers to these questions depend on how the cost of the product changes with volume. They do not depend on whether the current price of a product, at current volume, covers the cost and profit objectives.”

In essence they are querying why one would go through the exercise of pretending that cost-plus has any relevance if ultimately the price is that set according to the market conditions, the value proposition of the product in that market, and what will deliver maximum shareholder value.

Some actuaries may claim that cost-plus (or its variations) has worked well in the past – especially by those who have been around as long as I! So what’s changed? In my view, regulatory and competitive environments were far more stable and predictable, products were relatively homogenous, customers were relatively product illiterate or aware about financial products, they lacked access to product information and comparisons, industry change occurred over longer periods of time, and actuaries could manipulate effective price through the gossamer of the bonus rate or declared interest rate. Therefore cost-plus methods probably were not an unreasonable approximation to the optimal pricing. It’s a bit like the Newton’s and Einstein’s theories of relative motion: the first is an excellent approximation at speeds humans experience but fails when speeds approach that of light.

7. The real world of pricing is very different

“And yet it [the earth] moves” – Comment Galileo is rumoured to have made after his recantation before the Inquisition.

Competitive pricing is, ultimately, all about optimising product throughput, ie product contributions to overheads and profit, through deep understandings of customers, market segments, their perceptions of value, and competitive forces. It follows that competitive pricing pays no regard to that part of unit costs which represent an apportionment of overheads²³.

Unlike the narrowly based cost-plus pricing paradigm, the competitive pricing paradigm recognises directly that price is only one of four arms of marketing strategy, the others being product (features, benefits, quality, security), promotion (product and competitor information) and distribution (cost and ease of access). Price cannot be decided alone but must be structured and pitched as part of a package which focus on how customers will value the product as a whole²⁴. Section 13 provides further comment around this topic.

It was commented in the discussion of Ferris et al that competitive pricing is an ‘outside/in’ view or ‘price led’ costing. In other words, marketing is driving actuaries by first working out what is happening in the market and bringing it into the company. Competitive pricing posits that pricing starts with the market, the company’s competitive advantages, and its business goals. It is one part of a coordinated marketing and competitive strategy. ‘The game’ is one of pricing strategically, ie focussing on customer needs and delivering maximum throughput through a variety of tactics such as bundling/unbundling, market segmentation,

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loyalty programs, volume discounts and so on. A company's cost base does not even come into it²⁵.

Product positioning within the market and the value proposition of the offer is paramount – not the cost base of the company. Seemingly ironically, this puts pressure where it should be applied: cost reduction, but also business efficiency, risk management, customer service, and product/service quality, which ultimately underpins sustainable competitive advantage and profitability.

Competitive pricing is really therefore an exercise in price profit maximisation taking account of the elasticity of price demand²⁶, or, more accurately, as noted in the discussion to Shuttleworth, profit *optimisation* since, because the prediction of volume involves risks and uncertainty, the company seeks to maximise its terminal utility.

In section 13 I provide some illustrations of what this means in practice.

8. Is wealth business somehow different?

While competitive pricing is well understood in most markets, I perceive that there is often a (unstated) belief that wealth management manufacturers and life companies somehow operate under a special set of market and pricing rules. While actuaries understand and endorse the need for competitive pricing, in assessing the worth of the product, many I believe are ultimately drawn back to their training and predisposition to cost-plus to include unit allowances for overheads. There is nothing wrong with that per se; in fact it should be professionally commended—so long as the rationale remains sound and relevant.

It is not hard to discover that the nub of the concerns of actuaries is that if prices are not set in order to cover unit cost allowances for overheads then this will lead the company down the slippery road to marginal cost pricing and thus ultimate ruin. In an industry which is heavily regulated, requires large amounts of at-risk capital to operate, and where actuaries are seen (by themselves and others) to be leaders in prudential responsibility, this is not really surprising. In fact the training of actuaries even today encourages this thinking providing little in the way of warnings around the limitations of expense apportionments of overheads.

“...which measurement statistics are the most useful or suitable to be used as denominators in calculating expense rates. This area is the most subjective part of the expense analysis process...” (*The Practice of Life Insurance of Australia, p240*)

Ironically the only explicit warning given in the life insurance textbook that goes very close to proving the nonsense of pricing by means of reference to full cost allocation in the first place:

“Inappropriate allocation of overhead expenses can have serious and unforeseen consequences. If the inappropriate allocation results in a contract being mis-priced this could result in an increase in sales volumes of this product. This could be detrimental to the overall profit.”

But by what yardstick is the actuary supposed to gauge *a priori* that the allocation might be ‘inappropriate’? How is pricing without any reference to what the market will allow one to charge supposed to optimise shareholder wealth? Such concerns have no foundation in reality and, consequentially, that allocating all company costs down to products serves no useful or meaningful purpose.

There is no shortage of counterarguments or concerns expressed about competitive pricing but they essentially boil down to a two areas:

- Competitive pricing is a slippery road to ruin
- Competitive pricing is too hard and impractical

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- Competitive pricing is not aligned with necessary management of sales and expenses

We will now look at the concerns and counterarguments under each of these general headings.

9. The slippery road to ruin?

- (a) *Competitive pricing seems to imply the actuarial ‘sin’ of marginal cost pricing is supported. In any event, competitive pricing equates to something less than what a cost-plus analysis would produce.*

Marginal pricing is cost-plus pricing ignoring overheads. It is dressed up as competitive pricing but, like price wars, is indeed a dangerous game to play unless it is part of an overarching business strategy and where all stakeholders interests are aligned, or else restricted to optional rider-type benefits.

But competitive pricing does not equate in any way to ‘marginal pricing’ (or, more precisely, ‘marginal cost pricing’)²⁷. That is not to say it might not produce such a price (or something near to it). This can occur in two situations, one theoretical and one real: in the economists’ idealised state of perfect competition when the product becomes a commodity²⁸, or in times of aggressive (and perhaps irrational) price wars. But that’s the way it is. As noted in the discussion of Shuttleworth:

“The extent to which prices should be raised above marginal costs has nothing to do with your average or fixed costs – it depends upon the competitive environment you are confronted with in the marketplace, measured by elasticities of demand.... If the additional revenue [above marginal costs] is insufficient to cover your overhead and return a profit, it is just too bad, for that is the best you can achieve... When looking at an opportunity, provided you can make one more dollar over marginal cost by taking it, you are one dollar better off. The task always is to maximise those extra dollars, product by product, market by market. Pricing each product at average cost does not change market realities, and it usually makes your bottom line worse than really necessary.”

Finally competitive pricing could just as easily result in higher prices than what a cost-plus approach might produce. Either way, the combination of margin and volume should deliver higher contributions to overheads and profit than would otherwise be the case. If this proves not to be the case, then this does not mean a cost-plus price would have been sounder. It means we do not understand the price-demand elasticity curve well enough and we are sacrificing margin and/or sales unnecessarily.

Clearly it is incumbent on the pricing actuary to be totally familiar with their customer profile, company strategic policy, competitive position, and market dynamics.

- (b) *Competitive pricing assumes the market is rational and therefore always ‘right’, ie prices are being set using sound methods and logic. In intense competitive situations, this assumption may be called into question. Merely following the market down without thinking through the consequences can ruin the game for everyone. It is therefore the weaker paradigm in the event of price wars. Even with actuarial oversight, there may be immense pressure to cut prices to unsustainable levels to protect market share, channel loyalty or at least ‘stay in the game’. Competitive pricing affords the actuary a dangerous rationale to follow an ‘irrational’ herd on the premise that some contribution to profits is better than none.*

It is true that pricing wars present the most testing times but this is so *regardless* of the pricing paradigm one uses. We could likely be facing a situation of having to face up to

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‘dumb’ competitors who will not focus on customer value but perhaps a quick grab for market share at any price. This of course can easily lead to a situation of driving the market down to unsustainable price levels and destroying value for all.

It may turn out that sticking to a set of prices in the face of a competitor’s crazy prices on the basis that it ensures overheads are covered might indeed give the best strategic result. But the real reason for that outcome will have nothing to do with any arguments around ‘covering overheads’ or the cost-plus paradigm. Nagle & Holden provide comprehensive guidance should such difficult decisions arise and when it is right not to follow the herd. Section 13 considers this all too common situation in a little more depth.

A competitive approach to evaluating pricing responses is the most natural way by focussing management’s attention on where value will be created or destroyed. If product margins end up getting cut to the bone, any decision to stay the course can only be evaluated after answering the sorts of questions Nagle & Holden posit as well as considering the context of the whole portfolio of revenue sources and alternative uses of capital and resources that might exist.

Should product throughput be heading into the red zone, then any decision to bail out—even if only temporarily until the price war cycle ends—becomes truly prominent, not only in terms of revenue and overall profit, but also in terms of capital resources to close the gap, or else reputation with advisers and customers by cutting and running.

By the way, lowering risk rating standards is rarely a legitimate non-price response to pricing wars. Likewise, merely acquiescing to pricing pressure from marketing and sales people when presented with the wonderful sales results which will follow (or our demise if we don’t) is not a professional position to take. Aligning sales and marketing interests with those of shareholders may be part of the remedy for this type of pressure.

- (c) *If we are too successful in selling a ‘competitively priced’ product, it may become the dominant product line which could spell ruin..*

Yes, I’ve heard words to this effect! Such concerns are implicitly assuming ‘competitively priced’ and ‘marginally priced’ are one and the same thing. But even supposing prices were close to marginal, it might only risk ruin if the company were not managing its portfolio of products and the cost of the infrastructure to support them.

In reality, it is more likely to spell success as the product becomes the company’s cash cow for funding of other more profitable avenues!²⁹

But should it become a commodity, then perhaps this is nature’s way of saying the company’s cost base is too high or it’s “time to move on”, ie look for new sources of revenue.

Pricing is an optimisation process operating under the constraints the market imposes. As Chalke states (p148):

“If the expected profitability from an optimised product price is insufficient to induce the company to embark on the project, a new project or venture must be considered. *The lack of expected profitability is not the result of improper pricing, but of the market itself...* The most that can be accomplished through the pricing process is to attempt to cover as much expense as possible”

Wealth management companies, and life companies in particular, have been traditionally constrained to respond because of the nature of their long term contracts. But times have

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changed and so has the flexibility that companies build into their long term contracts (which is reality are not as long term as we would like!).

- (d) *If we price on a competitive basis, then, should products that have been priced on a full cost basis become laggards or be terminated without suitable replacement then, then any product which is priced less than cost-plus on a full cost basis, especially if close to marginally priced, will have insufficient fat to pick up the losses. This problem is particularly acute for life insurers who, unlike manufacturers, need to price today for products which will still be on the books in many years when cost structures and product mixes will have changed as well as market prices generally.*

In support of this argument, the actuarial life insurance text book states (p246):

“...one needs to be careful in evaluating proposals on a marginal basis as this approach is predicated on the basis that there is an existing portfolio to meet the fixed costs. If this portfolio decreases in size, more of the fixed expenses need to be covered by the additional business proposed, which may have been priced on a marginal basis.”

As the discussion by Mac and Tosh on page 7 seeks to show, this concern, while well-meaning, could misguide us as to how we should be managing and pricing products. We should instead be thinking about how to optimise the portfolio of products and the contributions they make to overheads and profit.

This implies that we should rank products and product alternatives according to their potential contributions to overheads and profit after meeting product costs. To the extent that one product has inherent risk greater than another or offers customers the right to exercise options against the company should be reflected in pricing either explicitly or via the risk discount rate used and/or the capital required to support the business over the longer term.

But even putting all this aside, even if a marginally priced product is or becomes dominant in the product lineup, the argument still does not hold up. If it cannot be priced any higher (to recover overhead allowances) without lower aggregate throughput, then it does not matter. The product was never able to pick up the slack left by others. If one manages the portfolio of products holistically then, the loss of significant contribution from other products will force the right decisions anyhow. There is no nexus between products in this regard. Should this result occur, then it is really a sign of a poorly managed business and product suite at executive level rather than about poor management of individual products.

- (e) *Competitive pricing for new products which does not provide sufficient margin to cover a ‘fair share’ of overheads will require existing full cost products to absorb what is ‘left on the ground’ and worse, expose them to cherry picking by competitors with its flow-on consequences for sales. Worse, once the door has been opened, it will lead to the market price being driven down to a new lower level.*

These concerns are perfectly sound but merely serve to demonstrate how a company can get itself tied up in Gordian knots if it builds a pricing philosophy from the inside-out, ie founded on a company’s own expense base, whether full costs or marginal costs are employed. Either way, we are exposed: either no volume or no profit.

Instead pricing should be driven outside-in, ie what the product can deliver to the customer, and what the product will deliver to the organisation as a whole. Old book clients, without barriers to exit, will always be willing to re-tender or shop around. This problem does not go away under any pricing philosophy and should be dealt with directly.

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(The cost base remains real of course but requires a focus which has nothing to do with pricing per se. See section 11 below for further comment.)

One worthy implication of the argument is the need for companies to keep their costs under control and seek to maintain best practice levels of efficiencies.

- (f) *Competitive pricing is an attempt to short cut the need to model the whole company and the portfolio of products every time an individual product decision is to be made. In doing so it makes the assumption that company overheads are already being covered by existing product and therefore do not need to be factored into current decisions. This assumption is rejected not because it is unreal but because it is dangerous. Only by factoring in overhead allowances do we avoid the potential danger.*

This is another twist on the same arguments above.

The odd aspect of this argument is that allowing for overheads in the pricing still depends on the assumption that company overheads will be met by all products and volumes that exist at a point in time. If one were to be truly conservative and carry this argument to its logical conclusion, we would need to make the assumption that each product should be able to stand on its own feet and each carry all the costs the company—just in case the other products are terminated. In other words, even full cost pricing does not provide sufficient revenue in a worst case (albeit extreme) scenario.

- (g) *Competitive pricing could become an excuse for inadequate pricing of risks.*

Ferris et al cite Australian life insurer examples, namely capital guaranteed business, lifetime immediate annuities, and trauma insurance, ie ‘rate driven’ markets where this contention seemed to ring true. They state (p785):

“The pressure on companies to adopt marginal pricing strategies has probably increased in recent times. However, marginal pricing provides the intellectual rationale for accepting the lowest possible price and is exceptionally dangerous when uncontrolled.”

I don’t disagree with this statement but neither competitive pricing nor any other form of pricing condones inadequate pricing to cover the cost of risks and guarantees which are specific to the product. These can be considered direct or marginal costs of the product which must always be covered. The examples cited were not about inadequate pricing for overhead expense recovery but of investment earnings, longevity and trauma risks—all product direct costs.

Competitive pricing is about how to optimally price a product to maximise shareholder wealth including allowance for not only product expenses but also the direct cost of such risks and guarantees. Poor assumptions will always lead to poor pricing—allowing or not allowing for overheads doesn’t change this.

Ferris et al actually seem to agree (despite first appearances) (p790):

“Macro-pricing techniques which look at a product’s total contribution to overheads and profits after meeting variable expenses, can be employed to control the pressure for marginal pricing. In addition, sales force remuneration structures can be more closely linked to the achievement of targets established using macro-pricing techniques. These targets reflect the product’s total financial contribution to the company resulting from the final price agreed.”

10. Too hard and impractical?

- (h) *Competitive pricing is sound in theory but in practice we cannot be sure of what are the product or policy costs (direct or indirect). The division between these two categories is always going to be a significant grey area where classification will be moot. Therefore it is better to be conservative and use full cost.*

Evaluation of product initiatives, including pricing, should be on a best estimate basis with some margins for risk and uncertainty about assumptions. But this should not be overdone lest we making the hurdle too high and we end up in a state of decision paralysis. It may be a reasonable proxy if variable costs are a very high proportion of total cost but for high fixed cost products (eg Internet based) this would clearly be sub optimal. There is a similar issue to employing an overly high discount rate.

Otherwise, to the extent there is uncertainty about the incremental costs themselves, this should be encapsulated in sensitivity testing, not in a bias to conservatism which really creates a artificial bias for the status quo and thereby inaction³⁰. A full cost approach is ultra-conservative. Such a bias may be appropriate in a strategic sense but should be transparent through the decision making process, and not hidden in actuarial assumptions.

Finally, full cost apportionments are derived generally by the ABC algorithm which is crude fitting of a straight line to one or more variables (cost drivers). It is an exercise in fitting a multi-dimensional straight line to what in reality is noisy, jumpy and discrete process. How do we get a sense of its reliability to predict? In other words, while ABC has an appearance of being scientific there is probably more doubt about the veracity and usefulness of its results for pricing than for incremental costs.

A discussion thread on www.actuarialoutpost.com on October 2004 considered macro pricing in practice.

- (i) *Competitive pricing, despite its appearances, may be more difficult to apply than full allocated cost pricing.*

In support of this contention, the actuarial text says (p246)

“...the process [of determining purely marginal expenses] will be more complicated because there is always the added uncertainty of ‘marginal over what?’...”

Whatever difficulties may exist they are surely outweighed by the benefit that comes from being forced to look at the economics of a product initiative much more in the way the business operates and makes decisions. It also forces one to drill down harder into understanding expenses and what drives them rather than simply applying ‘blind’ the unit expense assumptions provided by Finance (perhaps for statutory purposes). Just because the numbers may be more difficult to capture or the profit targets more challenging to define is no reason not to attempt to apply it or at least think about pricing and profitability in these terms.

Chalke points out that there is a further but less tangle problem that is usually ignored in these debates, namely that the decision making process often comes to a standstill or falls into an endless loop ‘when those responsible for the financial integrity of the product and those responsible for delivery of the product disagree about the product’s price.’

Chalke explores this issue (pp142-145) and attributes the problem to the cost-plus paradigm (or equivalently profit target paradigm) which rests on the assumption amongst others that price or profit targets can be prescribed.

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- (j) *Competitive pricing ignores the unavoidable apportionment at statutory fund and company level. Therefore the economics of the pricing decision will be out of alignment with the financials appearing in public reporting. Similar situations can occur with business valuations which tend to look at product values on full cost allocations.*

This should never be a reason not to derive the most appropriate information relevant for decision making. It should not drive pricing but to the extent we are only talking about apportionment of overheads, the issue is essentially irrelevant.

Nonetheless alignment between pricing and the financials can still be achieved by doing expense apportionments on a weighted basis with the weights reflecting the contributions each product makes to the firms overhead³¹.

- (k) *Competitive pricing ignores the costs of product establishment.*

No it doesn't. These are still incremental costs albeit non-recurring which would be captured in any NPV analysis. As noted on page 12 such expenses are irrelevant to the determination of a competitive price but relevant to the go-no-go decision.

The whole point is not to let the costs drive the product pricing but the market. You would not expect the first product sale to have to absorb the costs of a new computer system. Before one commits to those set-up costs, one looks at the expected sales of the product over its life cycle and seeks to recover those costs and the achieve the required return over that time within the market prices³².

No matter what a company's overhead costs are considered to be, however defined, what is indisputable is that every sales that brings in positive throughput adds to the bottom line and takes the company closer to achieving its goal of maximising shareholder wealth. The correct question to ask is not: 'Is this product profitable after fully allocating costs?' but rather: 'What is the best that this product can deliver?' or 'Are there products that would deliver even higher throughput?' or, more correctly: 'Are there products that would deliver higher rates of throughput, ie per unit of scarce resources (people, capital)?'

- (l) *Competitive pricing seems to imply that ABC (expense apportionments) serves no useful purpose and should be discarded.*

Competitive pricing does not suggest that ABC is redundant. While it is simple enough to identify direct volume related costs (commissions, investment management fees), other product costs may be shared or not as transparent eg computer utilisation, direct people costs etc. ABC is still needed but the need for refinement of methodology and focus is higher.

The reality is that ABC remains an essential tool to attribute specific categories of indirect expenses, which are, shared across products eg system running costs. But I do propose that other infrastructure expenses should be excluded. These would include for example general management, human resources, IT infrastructure, legal, secretariat, and finance.

In any event, ABC, or at least some apportionment methodology which passes the test of equity, is still required if for no other reason than financial reporting of life companies which must apportion or allocate all expenses to statutory funds and defined groupings of policies within those statutory funds.

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- (m) *Cost-plus price is the only way to price group life or other similar corporate level tenders. We start from the risk rates applied to each member, add loadings for expenses and finally a mark-up is applied. How else can one determine what price to quote?*

When a sufficiently homogeneous and/or informed market does not exist, when prices are highly customised to the unique circumstances of the customer, starting with a cost-plus approach may indeed be the only method that can be used. But don't misunderstand what is happening here.

In preparing the tender, the first price derived may be considered a starting point for discovering the otherwise hidden market price³³. Ideally the tender process will allow the firm to refine (discount) their price if it is short-listed. It becomes an iterative process of discovering the market price, or more precisely the market discount.

- (n) *Some products do not operate in fully competitive markets eg direct mail life insurance. A cost-plus approach is not a bad approach in that situation. It may be the only approach.*

I agree – up to a point. At the extreme, monopolies can always set their own price. Even in oligopolies it is not necessary to be overly sensitive consumer demands. The fuel industry is a case in point. But they still have their eye on the price of substitute products or services. For example, people can always swap to public transport if fuel prices become too high; direct mail insurance can still be compared with alternatives sold via advisers.

Also think of a company launching a totally innovative new product, eg the X-Box. The initial optimal price charged has nothing to do with costs but has everything to do with capturing the early adopters who are prepared to be first on the block and will pay almost anything for that privilege. In time the price can come down to a level closer to the average value that consumers would place on it. Section 13 on segment prices explores this standard marketing ploy more fully.

11. Loss of management control?

An oft-expressed concern, even by those who readily acknowledge that a competitive pricing approach is sound, is that a too vigorous pursuit of competitive pricing risks dropping the ball on sales management and overhead expense control. It is right that such concerns should be voiced—they raise important matters—so I will address them now.

Concern: Competitive pricing effectively gives all pricing control to the product manager which risks driving a sales-at-any-cost culture.

It could but only if your company rewards it by linking an individual's annual bonus to sales KPIs. But in any event, the pricing actuary's role becomes more central to manage the micro and competitive aspects. It does crystallise though that product throughput accountability does lie with the product manager and therefore the pricing that goes with it. It therefore more clearly announces that it is a joint responsibility.

Therefore the assertion highlights the need for the firm's CEO to ensure all levels of management and the sales forces have their interests aligned. Actually this need exists regardless of the pricing paradigm followed; competitive pricing merely makes it more transparent.

Responsibilities and accountabilities for product pricing, cost control, and company profitability are better delineated in terms of what individual control and influence, whether by product managers or the company's executive. The pricing actuary somewhat straddles

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that spectrum. There is overlap and there are shades of grey but there are also differences in ability to influence and control, which should be leveraged and accentuated. Business plans, budgets, business cases, regular financial reporting, and personal scorecards aligned with the company's objectives are all part of the glue which binds the intent of the company with the actions of management at all levels.

What this means in effect is that pricing becomes a management team responsibility. There is no one single person who is accountable for it. Surely this is a welcome change from the days when it was considered the exclusive domain of the chief actuary!

By the way, it is worth noting that if a firm has a truly dominant product or two, then decisions about that product and about the firm start to merge to create significant overlap of product manager and CEO responsibility and accountability (perhaps they might even be the same person). At this point, product throughput and firm profitability start to become synonymous in driving decisions.

Concern: Competitive pricing implies that management of overhead expenses is nobody's problem.

"Surely costs are important!", you cry. "After all, the organisation is always seeking ways to reduce costs and increase efficiencies." Very true. But this has less to do with pricing and more to do with gaining and sustaining a competitive advantage that others will find hard to emulate. Reducing our 'fixed' expense base leverages overall profitability of our business, provides opportunities to enhance our value propositions, and provides more flexibility to respond to market pressures and thereby stay the course of the game. But a company's expense base does not, cannot and should not drive its prices; that comes from the market and customers' perceptions of its value propositions.

Therefore at no time should my earlier comments above be interpreted to mean that I believe expense management is not important. Close and continuous management of the expense base of a company is vitally important but for reasons, which have little directly to do with, price setting per se. The two levels of control must work in tandem.

Consider this. Which of these two approaches to product pricing is more likely to signal the company executive that, in the face of fierce competitive pricing pressures, it needs to focus on driving the company cost base down and perhaps reinventing the business model?

- (a) a cost-plus approach, building from the inside-out and using pre-calculated expense allowance, which orientates the mind on justifying lower *product* profitability, or
- (b) a competitive pricing perspective, driving from the outside-in, which orientates the mind to maintaining *corporate* profitability and competitive advantage?

I like to think of it this way: a cost-plus approach 'gets costs' and tries to 'set prices' while a competitive pricing approach 'gets prices' and then signals a need to 'set costs'.

Covering overhead costs and delivering a suitable return to shareholders needs to be managed at the portfolio level or corporate level, ie holistically. A low cost base increases competitive pricing power to leverage margins, and provide competitive advantage and to increase chances of survival in highly competitive situations eg price wars. Likewise a high cost base weakens a company's ability to respond to competitive pressures and ultimately could even spell ruin³⁴.

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But I will acknowledge this: the cost base is indirectly relevant to pricing in so much as it:

- validates overall profitability and strategy, eg a low cost producer can target price-sensitive buyers; a high cost producer can target top-end buyers (so long as high costs reflect high quality).
- may establish informal (and perhaps formal) boundaries for price negotiation ie it follows pricing rather than leads it. It is a constraint for understanding what prices can ultimately deliver; not a driver for prices. It indicates a boundary below which a product cannot be sold (direct costs) or a company cannot effectively operate (overhead costs).
- can help define the types of markets that the company wishes to pursue and what product features it is prepared to support. For example, in the 1960s (for those old enough to remember!) Ford offered a value sports car, the Mustang, for those who could not afford the serious or prestige versions such as Corvette or Porsche. Ford chose to use its low cost manufacturing infrastructure to help guide what features the successful Mustang model would have or not have.

12. Pricing for risk

Nothing so far has been said about risk³⁵ and how we should allow for it in a competitive situation.

Shuttleworth discusses the question of pricing for risk at some length commenting that a variety of approaches are possible (all with inherent practical difficulties): different risk adjusted discount rates, holistic economic capital, conservatism in assumptions, explicit charges for each key risk, discounting at risk free rate and applying worst case assumptions.

I don't intend to add to that discussion except to note the obvious that the issue exists regardless of the pricing paradigm used. For example:

- How much of economic or statutory capital is attributable to products and policies? To the extent that capital is directly attributable to a product, the cost of it should be allowed for in the same way as other marginal or direct costs. A similar issue arises for the company's tax liability and the degree to which it is attributable to products.
- How should the discount rate be adjusted for risk? A market consistent valuation approach requires that different products with different risk characteristics and uncertainty around estimation of parameters should have different risk adjustments, a different rate is warranted for revenue streams as distinct from expense or claim streams.

These are all important matters to carefully consider and resolve but they are matters independent of the pricing paradigm.

13. Pricing strategically

An understanding of competitive pricing is one thing. Turning into real strategies and tactics is another. But I believe it is here where pricing actuaries can add real value. Whole conferences and many books are devoted to the subject matter and so in the interests of brevity, I can merely make a few general comments and touch on a few illustrations.

As actuaries we still have to do all the technical analysis that is core to our training but I believe pricing actuaries need to spend a much greater proportion of their time on understanding the competitive environment and helping product management optimise their strategies within it. In my experience product management readily acknowledge they do not know it all and seek out the opinion of pricing actuaries.

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Pricing strategically encompasses a range of measures and techniques including:

- Short term tactical moves and postures which are aligned with the overall aims and strategy of the business (the “business model”)
- Proactive plans to exploit a market opportunity as they arise from time-to-time
- Analysis of downstream reactions of customers or competitors
- Coordination of marketing, financial and channel decisions
- Anticipation and considered responses to market price trends and competitor moves
- Balancing customer desire for value and manufacturer’s desire for profits

Pricing strategy also includes a framework or set of principles which guide the business in making decisions about price in the context of the marketing strategy and the oft-stated four elements of the marketing mix are the known as the “four P’s”: product, promotion, place (ie distribution), and price³⁶.

While product, place and promotion are costs to the business, only price brings in the revenue. Pricing strategy converts the other three elements into the value proposition as perceived in the customer’s mind.

The mix of these key elements defines the ‘positioning’ of the product or its ‘value proposition’. They are seen as part of the overall market strategy which considers also target markets and where the business wants to position the product.

It follows that it is not accurate to refer to a ‘correct’ price but rather an optimum pricing framework which is flexible in the face of customer and competitor dynamics. The four elements are interrelated and require constant trade-offs and adjustments in order that the marketing strategy optimises profits and thereby shareholder value. By necessity this is an iterative process working towards a unknown and moving target.

The optimum pricing strategy is the one that maximises sustainable corporate growth in profit and ROE built on the forging and nurturing of channel and customer relationships. Management are often inclined though to place greater emphasis on other objectives and strategies which align with them eg increasing or maintaining market share, promoting a new brand or creating brand awareness, value or quality leadership, and even survival. All such short term objectives should be considered tactical and the pricing actuary has a responsibility to see that they align with the long term objective stated above. Even a short term objective of profit maximisation may not optimise long term profit.

In order to flesh this out, I will now briefly consider three subject areas of strategic pricing, namely segment pricing, bundling, and price wars³⁷.

Segment pricing

Market or customer segmentation is the mainstay of strategic pricing. Asking the same price of all customers fails to recognise that some customers would have been prepared to pay more – they perceive the product or service to have high value-for-money – and so misses capturing this ‘customer surplus’. It also fails to recognise that some customers have been excluded from purchasing because they perceive low value-for-money; it would have been better to make a sale to them even if at a lower price if that added to the bottom line.

By attempting to carve out these customers we may be able to capture those lost margins or sales. Strategic pricing focuses on optimising and capturing the consumer surplus by driving perceived value as close as possible to objective value and getting product price as close as

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possible to perceived value (customer focus) while at the same time optimising the volume-margin trade-offs (competitive focus). While this is all going on, the firm needs to keep an eye on the cost base, driving down to sustainable levels which provides it with competitive advantage.

Shapiro (1998) is one writer who has explored this topic in a new light. Further, Driussi (2006) is the first actuarial presentation in Australia that I am aware of that explores strategic pricing in banking³⁸ capturing sustainable customer surpluses in the face of aggressive competition—what he refers to as ‘price optimisation’. The essence of the paper is customer segmentation taken right down to the individual customer using profiling techniques to determine an individual customised price³⁹. Interestingly at no time is the notion of ‘covering overheads’ referred to as a pricing objective, except perhaps obliquely when referring to ‘portfolio constraints’.

Bundling vs unbundling

Bundling is the practice of selling two (or more) products together in one package⁴⁰. By doing so customers may get a convenience benefit (eg car, sound system) and/or a price benefit (eg six-pack of beer, holiday package, season ticket to opera, volume discounts).

An example of a price bundle from life insurance⁴¹ would be a policy which combines death, TPD and critical illness benefits. A product bundle example from wealth management would be a group superannuation policy which combines investment and insurance.

- We bundle in order to capture customer surplus to take advantage of (unknown) differences in customer preferences and the different value placed on those preferences. But this need not be the only reason. There are many others such as encourage access to main product eg free parking for patrons of hotel, responding to price competition by adding options or benefits or rights to buy other consumables at special prices or discounts - all while maintaining price (cost of benefits must be less than alternative price cut) eg Time magazine’s subscription plus a watch; Coles petrol docket, Windows and IE, Adobe and Acrobat reader.
- But there can also be sound reasons to unbundle products which have typically been sold in an bundled form (even if we had not thought of it that way) such as increase transparency of benefits and costs and thereby likelihood of consumption, or reduce possibility of competitors cherry picking subsidised benefits.

But what is the optimal bundling/unbundling strategy? The answer to the question proves to be very complex. For a thorough review of the economics of bundling, refer to Stremesch & Tellis (2002) who derive a number of propositions which may guide the decision maker. For a detailed study into bundling, its rationale, and its potential to be deemed anti-competitive, refer also to Nalebuff (2003).

Fighting price wars

There is no doubt that wealth management companies are facing more intense competition than ever before. More often too this degenerates into a price war⁴² which comes with high risks for those who choose to respond to it. According to Holden & Nagle (1998):

“Companies start price wars when they have little to lose and much to gain; those who react to the initiators often have little to gain and much to lose.”

Even those who initiate the price wars also risk creating a mindset in customers that low prices are here to stay, or, worse, that customers form the view they can negotiate even lower prices.

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With this warning in mind, pricing actuaries would do well to provide whatever support and guidance they can to enable management to make considered decisions which deliver the best outcome for the company. Importantly, such decisions most likely will not just take a one-dimensional approach of price retaliation. Importantly price adjustments are least likely to be about covering overheads.

Nagle & Holden suggest a company's tactics in the event of price wars, ie intense price competition, depends on a wide range of considerations which they discuss. The positioning and type of the response will also depend on the competitor's competitive strengths and the cost of responding. Rao, Bergen & Davis (2000) discuss a framework for diagnosing the situation and offer a range of possible non-price responses. Cressman & Nagle (2002) likewise emphasise the need to retain a long term perspective.:

“We do not suggest that management should avoid defending market share or should never initiate price cuts. Instead we argue that it must first anticipate the long run strategic consequences and weigh them against the short-run benefits. Managers should never set a price simply to make the next sale or meet some immediate sales goal; rather, *the price decision should enhance the firm's long-term ability to operate profitably*... Because price changes affect sales more quickly than other marketing decisions, they are often used as a quick-fix solution to short-term problems. Profitable pricing, however, requires that managers also consider how each decision will affect future competitive behaviour and profitability... Otherwise, it is possible to win many individual battles for market share and still end up losing the war for profitability.”

14. Conclusions

This paper challenges the idea that I believe is embedded in actuarial training and thinking, namely that products make profits.

One outworking of this orthodox thinking is the common practice among pricing actuaries to apply the cost-plus paradigm (explicitly or implicitly, modified or not), to allow for a share of company's overheads in pricing, and to measure and rank products according to their profit performance on a full cost allocation basis.

While actuaries would not dispute the proposition that the market must be taken into account in pricing products, I've always had a sense that it is often done grudgingly: “Cost-plus is basically sound although it usually requires ‘calibration to the market’ when implemented.” Certainly any proposal that smells like the actuarial sin of ‘marginal pricing’ is resisted strongly on the grounds that “It'll roon us”.

The paper concludes that such arguments do not stand up well to close scrutiny and that the considerations for pricing wealth management products to maximise shareholder wealth are fundamentally no different to pricing of any other commercial products with the same aim.

In reaching this conclusion, the paper does not suggest, as some fear, that marginal pricing is being proposed but rather something much more attuned to the reality and dynamics of markets and competitors—and much more interesting for that matter—namely competitive pricing.

Competitive pricing does not mean overheads are ignored or not controlled or managed. It does mean, however, that the management and control of overheads must be done at a portfolio level rather than at a product level.

Endorsement of competitive pricing thinking is not a necessary prerequisite for taking advantage of strategic pricing techniques but endorsement does provide the bedrock for vigorously embracing them and leveraging their full potential.

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Describing the steps that scientific theory goes through, the famous English geneticist J.B.S Haldane (1892-1964) once noted that there are four stages of acceptance:

“i) this is worthless nonsense, ii) this is an interesting, but perverse, point of view, iii) this is true, but quite unimportant, and iv) I always said so.”

I hope that this paper has been successful in getting you to Haldane’s final stage of acceptance that the idea of product profitability is wrong, that covering overheads does not equate to optimal pricing, but that competitive pricing thinking drives optimal pricing decisions. If not, perhaps it has encouraged you to at least question and continue to question your current ideas. Perhaps it has even moved you up one or two stages compared to where you may have started.

Finally I note that pricing is one part of the control cycle. To be get the full benefit of competitive pricing thinking:

- management must understand it and make decisions by it
- accountabilities for pricing and expense control must be clearly enunciated
- scorecards must align product and business results with what is within one’s control
- the management information framework must be in alignment

15. Acknowledgments

I would like to thank my work colleagues for providing feedback on an earlier draft of the paper. In particular, Ian Jones and Hugh Karp were valuable sounding boards to test and develop the ideas presented here.

A special thanks goes to Peter Beck who was very supportive of the ideas, providing insights from his own personal experience, and helping to ensure the paper remained focussed on the key issues.

In the end the paper represents a personal view and it should not be assumed that those same persons, nor my employer, endorse any or all aspects of it – although I hope they do!

16. Further reading

The paper is the culmination of much research, discussion with actuaries working in a variety of fields, and soul searching over the last two and a half years. The references below are only some of the source materials referred to. For those wanting to delve more deeply into the subject of strategic pricing I would highly recommend starting with Nagle & Holden which is an acknowledged key source reference on all matters relating to competitive pricing, and then Chalke and Shuttleworth for an actuarial perspective.

If your appetite is whetted, you might then like to consider the product performance side and start looking at the so-called ‘theory of constraints’ (Goldratt) and its blood relative ‘throughput accounting’ (Corbett) which have caused ABC proponents to seriously reconsider the foundations of their ideology over the last two decades or so.

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Endnotes

¹ Only products are referred to in this paper because it is the manufacturing perspective that actuaries traditionally centre on. Other perspectives would be just as valid depending upon the questions one is seeking to address: distribution channels, wholesale clients, customers or customer segments, time-based cohorts, geographic regions, and so on. For example, I could have just as easily asserted that: "Channels do not make profits; only firms do." I have also avoided specifying what 'product' means trusting readers will not have difficulties in applying a practical approach to their own circumstances.

Further, the use of the term 'firm' should not be interpreted too strictly. For example, for large and diverse organisations which operate self-contained and discrete divisions with little sharing of group resources, the division may be reasonably viewed as a profit centre.

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² Cost-plus means pricing by adding a profit margin to assumed unit manufacturing costs (raw materials, production costs, distribution costs) as well as allowances for manufacturing overheads (HR, IT, legal, finance, CEO etc).

³ The illustration highly simplifies the real world. That is both its strength and weakness. I hope readers will accept some licence is needed to convey the messages without unnecessary clutter.

I acknowledge I risked overcooking the illustration but I found that to be necessary in order to bring to the surface many of the questions I had myself when preparing it.

⁴ The assumptions are chosen merely for ease of analysis and do not affect the general conclusions reached. If it helps, you could think of the prices quoted as being net of direct volume related manufacturing and distribution costs. All manufactured units are sold without delay and there are no back orders, ie there is no need for stock.

⁵ By definition overheads should not be affected by the sale of products

⁶ Throughput = fee income – product expenses (direct and attributed). For insurance products, a proxy for fee income is premiums – claims – change in claims reserves – reinsurance account.

⁷ There may be other considerations too, for example whether there is a seasonal or temporal competitive effect at play which needs to be weathered.

⁸ It's always irrelevant to allow for overheads but it can also be so for direct costs if these have already been incurred. They are sunk costs which are irrelevant for decision making of any sort. For example, out-of-fashion stock or stock past its use-by date may be liquidated at bargain basement prices less than production cost in order to 'recover' some part of those costs; any contribution, no matter how small, is worth having.

While stock control is not usually an issue for wealth management companies, market share always is. Thus we have seen recently, with the lead up to the 30 June 2006 deadline for discretionary payments into superannuation up to \$1m, one financial services company prepared to waive fees for a short period with no doubt the view that direct costs incurred in that period will be recovered later.

⁹ This is not to say they cannot be influencers on this matter, only that it is not relevant to pricing specific situations.

¹⁰ In any event, a bias to conservatism is the wrong posture for pricing of product initiatives as it is equivalent to a bias for maintaining the status quo or inaction or avoiding risk.

¹¹ We also gain transparency and an ability to measure cause and effect.

¹² For example, the only competition for toll road developers is publicly owned roads. Even their price will be dictated by what the public will be prepared to bear in inconvenience, what the public perceive are their alternative routes, and what the government will allow them to get away with.

¹³ Of course we have no choice but to make such decisions for the purpose of statutory reporting but there is no reason why that should drive pricing.

¹⁴ Chalke, discussion p196

¹⁵ At least one that makes assumptions about overhead cost recovery or (equivalently) requires a minimum mark-up. The discussion of Ferris et al (1995) referred to some research in 1983 which showed that 81% of UK industrial companies used cost-plus although 40% admitted frequently adjusted it to reflect market conditions. One must be very careful to interpret such surveys because the interpretation of cost-plus can mean different things to different people. Nonetheless, 24 years have since passed.

¹⁶ The profit goal or target can take any number of form such as a minimum h% pa return on capital, x% of premiums or fees, payback period of n years etc.

¹⁷ A number of the listed references discuss the history of this debate.

¹⁸ My experience relates only to wealth management and life insurance companies. I don't doubt that my views are any less applicable to other pricing areas actuaries operate in, for example general insurance. Indeed the general insurance text has a chapter devoted to explaining and drawing a distinction between the 'philosophy of pricing' and the 'philosophy of rating' (pp281-290). It states

“Clearly sound rates should be based on the principle that each product bears a fair allocation of fixed expenses and profit. The determination of required levels of contribution is a pricing issue.”

¹⁹ ...and also its close relative of product performance. While I will mostly be looking at product pricing, my conclusions directly flow over into product profitability measurement which is merely the other end of the control cycle. In other words, we should not be measuring product profitability on a fully costed basis. What is important for decision making is product contributions to company overheads and profit.

²⁰ Chalke and Shuttleworth used the term ‘macro pricing’ to emphasise the pricing needs to be considered as a holistic process looking at firm-wide impacts on profit rather than trying to micro manage the analysis. I have avoided this term throughout this paper because it suggests a focus on the numbers overlooking all the strategic aspects important to marketing people. Even so, the focus of this paper is on the justifying the competitive pricing paradigm from what we might call an actuarial perspective so ‘macro pricing’ is an equally appropriate term in this narrower context.

For simplicity I use the term here to also capture the other forms of pricing referred to in Ferris et al (1995) which are, for this purpose, from the same pricing family, namely relationship pricing and value pricing.

²¹ Conversely, if the resultant price was lower than the market, it is likely that margin and profit was being given away unnecessarily. Either way, the price cannot be optimal, except in rare circumstances cited earlier or by coincidence.

²² aka “time and materials”

²³ Ferris et al (1995), while recognising that ‘cost plus’ is a theoretical construct with no regard to the market demand, does not embrace the idea that the theory is fundamentally flawed. It merely refers to factors which ‘often’ outweigh the theory or ‘cause problems’ with its pure application.

²⁴ For this reason, when we talk about ‘market price’, we are not really referring to a single price (as we would for a commodity) but using loose language to refer to an average level market price and the range of the prices around the average for a particular market segment. The range could be wide depending on the extent of product differentiation. A price war is started by a firm breaking out of the pack reflected by this range.

²⁵ See page 27 for some comment about how it can have indirect relevance.

²⁶ The author has prepared additional notes on price elasticity which can be provided on request.

²⁷ Marginal or direct costs generally refers to volume related costs such as commissions and other costs directly attributable to the product eg transaction processing. Better to use the term ‘incremental costs’ which refers to all those costs which will arise from the decision regardless of whether they are characterised as one-off or regular, fixed or variable, overhead or direct etc. Marginal cost pricing applies rarely but when it does, the particular goods or services are referred to as commodities.

²⁸ Commodities are homogeneous products that are traded based solely on their price, rather than quality and features.

²⁹ Commonwealth Bank in the late 1980’s launched a product somewhat revolutionary for its time: a life company rollover fund with no entry or exit fees and a modest percentage management charge on the account balance. It quickly became the largest fund of its type in the market and was able to generate significant cash flows to fund the development of a wider range of products.

³⁰ Refer endnote 10

³¹ I understand this was achieved by one major life office for which competitive pricing became the generally accepted approach.

³² After they have been incurred, they are then sunk costs and should not be included even in cost-plus pricing, benefit-cost or NPV analysis!.

³³ The auction process is based on this same premise.

³⁴ Micro economic theory expresses these same ideas in the terminology of ‘marginal costs’ and ‘average costs’ as follows: In the short run, a firm should expand its production while the price exceeds marginal costs. In the long run, ie the period over which firms can decide to enter or exit the

market, the firm needs to cover its average costs. Once a firm has entered a market, its short-term supply and pricing decisions are driven only by its marginal costs. Average costs are relevant only decisions about entry to and exit from markets. Refer to Cortis & Rivkin (1999) or any other micro economic text.

³⁵ ...other than insurance risk which is considered a direct cost in the context of this paper.

³⁶ One marketing actuary notes that there are in fact three additional P's, namely people, process and physical evidence.

³⁷ The author has prepared additional notes on strategic pricing which can be provided on request.

³⁸ As the presentation notes though, general insurers have been applying similar optimisation techniques for years.

³⁹ Price discrimination occurs when like goods or services are provided to different people at different prices and the differences in price are unrelated to the costs of providing the goods or services. As the law currently stands, businesses are generally free to charge different prices to different markets – but there are caveats.

⁴⁰ There are also 'tied' sales where product A can only be bought if product B is bought but product B can be bought alone., eg death only, or death & TPD insurance.

⁴¹ Bundling is more likely to be referred to as 'relationship pricing' in the services industries.

⁴² You know it's a price war when there is little talk about quality and service, and when management start questioning whether competitors are acting rationally, eg 'buying market share or brand recognition'.

⁴³ Chalke does not appear to be aware that some aspects of his ideas had already been previously developed much further by Goldratt and Robert Kaplan in manufacturing production lines.

⁴⁴ While the publication of this paper precedes Chalke's own paper, it was noted by the author that it was based on a presentation given by Chalke at an SOA seminar in 1988 and subsequent articles in the same year.