



Bulletin

Water
Energy
→ Retailing
Transport
→ Financial Services
Healthcare
Telecoms
Media
Post
Competition policy
Policy analysis and design
Regulation
→ Strategy
Contract design and evaluation
Dispute support services
Market design and auctions

AUGUST 2006

The theory of evolution

CAPTURING THE BENEFITS OF CUSTOMER LIFETIME VALUE MODELS

In markets where customer relationships evolve over time, traditional accounting measures commonly fail to fully capture the underlying value of customer relationships. Analysis by Frontier indicates that identifying the right measures enhances design of the sales proposition and can improve the focus of the whole organisation.

In many markets, customer relationships have an important time dimension to them. This is usually the case where customers naturally prefer to stay with the same supplier because it can be costly or inconvenient to switch. Examples include retail financial services, mobile telephony, equipment rental agreements and long-term supply agreements. Seen from the customer's side, there are "switching costs"; seen from the supplier's side, customers tend to be "sticky". If you have them today, the chances are you will have them tomorrow.

This customer stickiness changes the economics of competition. Suppliers expect to earn higher profits once the customer is won – because stickiness implies a lower price sensitivity, which means higher margins. Competitors offer



free phones, cash-back deals, discounted mortgages, etc., to get new customers signed up. Acquiring them tends to be loss-making until they have consumed enough of the high-margin service to cross the supplier's break-even point.

These features make it difficult to use traditional accounting and operational measures alone to judge how the business is doing. Snapshot performance measures will be sensitive to the composition of the customer base, and likely to be misleading. With large up-front customer acquisition costs, and a long time to break-even, the more new customers you have, the less profitable you will appear to be. Retention rates may also be distorted by the profile of the customer base.

Here's an example. A High Street bank found that for each new customer for a particular product, it was spending £60 on one-off acquisition costs (a cash-back offer and administration) in period one, and the discounts offered reduced margins by £20 in periods two and three. From period four on, the typical customer started to make a positive contribution to the bank's fixed costs.

The bank measured product profitability in terms of average annual contribution per customer (AACC), which was close to £25. Using its pricing model, the bank thought it had found a win-win strategy: by increasing prices from period four onwards by 10%, it could offer much greater discounts in the early years to attract new business, and actually increase the AACC at the same time. More customers, more profit from each. This analysis is illustrated in Table 1.

Period	Contribution per customer per year (£)			Price change (%)
	Base case	Effect of price change	New prices	
1	-£60	-£25	-£85	-42%
2	-£20	-£5	-£25	-25%
3	-£20	0	-£20	0%
Periods 4-10	£50	£5	£55	+10%
AACC	£25	£0.5	£25.5	

Table 1: Analysis from bank's pricing model

Source: Frontier illustration

However, when a pilot offer was run in one region for 12 months, the result was a significant fall in profitability. Why? The explanation is that the bank's analysis was based on a snapshot view of the business, measuring profitability by averaging across all customers. Its pricing model took a static view of the world – it did not take into account the numbers of customers who would stay with the bank for different lengths of time.

As the bank had hoped, the price change attracted 10% more new (i.e., period 1) customers with its increased up-front discounts. But because the price increases affected everyone who had been with it for more than three periods, 5% of those customers went elsewhere. The effect of this change in the customer mix was a reduction in the AACC. Figure 1 (above right) provides a more dynamic analysis, illustrating what actually went on when prices were changed.

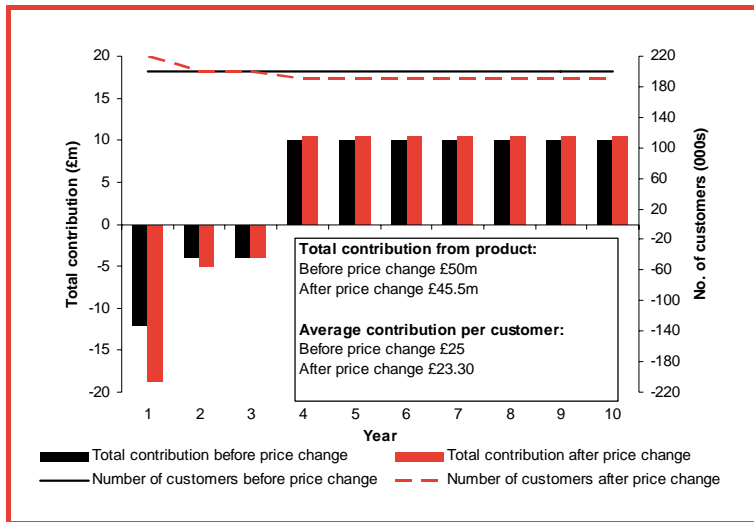


Figure 1: Impact of the price change after one period

Frontier illustration

The critical point is that the pricing of this product generated negative cash flows in the early years and positive ones in later years. The degree to which it was worth the bank waiting for future cash flows would depend on its discount rate. Once this had been understood, the bank was better placed to answer the next question: should it hold firm with the new prices and wait until its new customers started making a positive contribution, or revert to the original price schedule? Table 2 applies net present values to the bank’s pricing model.

Discount rate	NPV of base case	NPV effect of price change	NPV at new prices	NPV at new prices with demand effect
5%	£165	-£3	£162	£139
10%	£106	-£9	£97	£77

Table 2: Customer lifetime NPV analysis

Frontier illustration

This clearly indicates the extent to which the price change was value-destroying. The results were extremely negative at an internal discount rate of 10%, and significantly so even at only 5%. In fact, unless the bank had an internal discount rate of less than 3%, it would be better off with its original prices. This negative impact on value was compounded by the change in customer mix. The bank gained loss-making new customers and lost profitable existing customers. Over time, of course, this mix effect may tail off. However, because the NPV effect of the price change is negative for each individual customer, the piloted price restructuring would never be a profitable strategy.

These issues may become even more complex if cross-sales are important, because any assessment of profitability needs to take all such linked transactions into account. Traditional accounting measures often fail to capture these time and cross-sale dimensions. Customer values may be miscalculated, specific product lines wrongly valued. Such distortions easily lead to bad decisions.

The solution is to move on from traditional, static calculations of averages to the use of such tools as customer lifetime value (CLTV) models. These help companies to estimate the economic value of customer relationships over time.

They can also help to identify differences between customer groups. The starting-point is to identify those forms of behaviour that drive customer lifetime value. Customers may differ in lots of ways, but unless these can be clearly related to acquisition, retention and profitability, market segmentation is worthless. There are two types of difference to look out for:

- Differences between groups of customers – do those in one area, age-range or socio-economic category appear markedly more likely to churn? If so, targeting loyalty propositions to specific groups is likely to add value.
- Differences between cohorts – do those customers acquired in different years generate different values at the same stages in their life-cycles? If so, an important element of customer value may have changed.

FOCUS AND TRANSPARENCY

Few companies routinely model customer lifetime value to the extent we have described. Management may be reluctant to embark on such exercises because the necessary data is hard to assemble. Few management information systems immediately provide what is needed. Perfectly accurate, comprehensive data exists only in textbooks. Our experience is that a number of assumptions often need to be made to complete such analyses. This does not destroy their value – indeed, such an exercise helps to make explicit, and debatable, the assumptions about their customers that companies were previously making implicitly. This should help management to develop better performance indicators, so that any deviation from plan can be spotted early and acted upon.

The key point is not that the assumptions should be 100% correct, but that the most important should receive the most attention. Reaching consistent views about the main CLTV drivers will clearly improve the decision-making process. It should be much more obvious what customer insights are required. Similarly, in discussing operational issues, such as service response times or stock levels, most time should be invested in those things that have the biggest impact on CLTV rather than on short-term performance.

The fundamental insight embedded in these models is that the underlying value of a firm is equal to the discounted value of each of its customers, less fixed costs. Only moves that increase the discounted value of customers – for example, reducing acquisition costs, bringing forward the break-even time or improving retention rates – will increase the value of the business. Using such an approach may be more complex than relying on snapshot measures. But in markets where the value of customer relationships evolves over time, failure to recognise change may lead to extinction.

CONTACT	Simon Gaysford simon.gaysford@frontier-economics.com
	Simon Tussler simon.trussler@frontier-economics.com
	Frontier Economics Ltd 71 High Holborn London WC1V 6DA
	LONDON COLOGNE MELBOURNE SYDNEY
	www.frontier-economics.com