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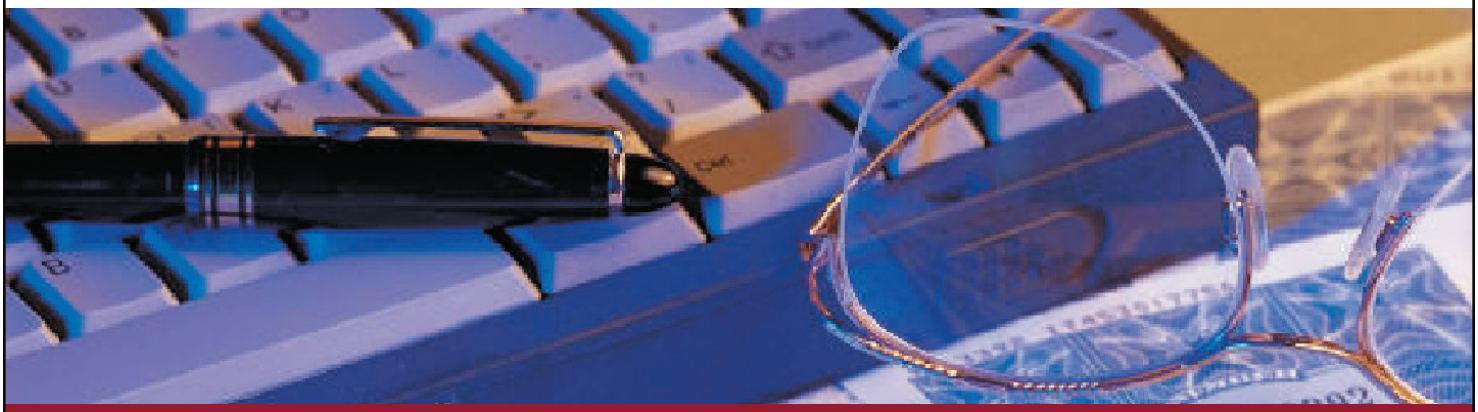

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Combining Cost-in-Use Estimates and Attribute Performance Scores

Customer Value Accounting for Value-Based

How does your product's value measure up to that of your competitors? Is your view too cloudy? Quantifying that comparison can be a key component in your pricing strategy – if you use the right tools. By giving you a sense of the price premiums that are justified by superior performance, customer value accounting can help clear the air. This article was written by Bradley T. Gale (shown at left in photo), whose e-mail address is bgale@cval.com, and Donald J. Swire (right in photo), whose e-mail address is dswire@cval.com. Both work for Customer Value, Inc. (www.cval.com).

The two most widely used approaches to measuring the differences in worth among competing products are cost-in-use analysis and importance-performance analysis. Customer value accounting, developed at Customer Value Inc., combines and extends aspects of these traditional approaches to provide a comprehensive system for measuring the differences in worth/value among competing products.

In this article, we use customer value accounting to illustrate how to integrate data on cost-in-use with data on importance, performance and equipment price for room air-cleaning equipment.

Comparing Products in Terms of Cost-In-Use

Let's start with the analysis of cost-in-use differences. To illustrate the process, we use an evaluation of room air cleaners published by *Consumer Reports*. The article provided a cost-in-use analysis for energy and filter costs for each of the 16 air cleaner models evaluated. *Consumer Reports* measured the number of kilowatts of electricity used by each model, estimated annual kilowatt consumption and monetized the differences in energy consumption using the average cost per kilowatt in the United States.

Filter costs were calculated in a similar fashion – *Consumer Reports* engineers calculated the estimated number of filters used by a model in a year times the cost per filter. Knowing the cost per kilowatt and cost for each vendor's filters made it easy to convert energy and filter usage into annual energy and filter costs for each of the 16 room air cleaner models evaluated.

Differing costs-in-using the product make some air cleaner models more valuable than others. If energy usage is the sole difference between two air cleaners, the model that uses less energy will be worth more to consumers. Cost-in-use analysis helps to quantify how much more. For example, based on the 16 models evaluated, the price of the average air cleaner is $209. Relative to the average air cleaner, the best performing Friedrich model saves $3 in energy and $71 in filter usage over a two-year period. Based on these cost-in-use differences, the Friedrich model is worth $283 — $74 more than the average model.

Comparing Products on the Basis of Performance Differences

The different brands of air cleaners do differ in terms of the cost of owning and operating. That fact makes certain brands worth more than others. However, there are typically other differences that customers should consider when making a purchase. Generally, we refer to these as performance differences.

Quantifying the worth differences associated with different levels of performance on benefit attributes, like removes dust and removes smoke in the air cleaner case, is much more difficult. In the following sections, we will outline customer value accounting, a technique for inferring the differences in incremental value associated with a product's performance differences on benefit attributes relative to competing products.

It is usually difficult to calculate directly the monetary value of all performance differences among products. However, using the right tools, you can infer the worth of your comparative advantages and disadvantages. Customer value accounting consists of three basic steps. First, we have to define what we mean by overall performance. Then, we measure the performance of our products and the competing products. Finally, we compare the overall performance of the products in the market with the prices they command. This gives us a sense of the price premiums that are justified by superior performance.

How should overall product performance be measured? The standard approach, used by market research firms, *Consumer Reports*, and most marketing departments, is to break down performance into a list of what are commonly referred to as "key buying factors." These are the product and service attributes that customers look at in determining which brand to purchase. Once these fac-

tors are identified, each vendor's products can be given a "score" reflecting performance on each attribute. These scores are the basis for assessing overall performance. Overall performance is thus a composite, weighted average, of the performance scores on the individual key buying factors.

It is important to note that the attribute list should include all of the key factors that are important to the customer. Generally, these will include product features, quality and service. The attribute list may also include aspects of the relationships that exist between buyer and seller, and, occasionally, factors that reflect customers' affinity for certain brands apart from the brands' product and service characteristics.

The customer value accounting process starts with a simple table that shows the different performance levels of competing products. Here is the abbreviated market profile for room air cleaners. It shows the performance scores of six of the 16 room air cleaner models on four performance attributes on a 1- to 10-point scale. The complete market profile spreadsheet would show scores for the other 10 brands, where the white band is located in the middle of this exhibit.

In addition to estimating the cost-in-use data for energy and filter usage described above, *Consumer Reports* evaluators measured how well each room air cleaner removed dust and smoke. These are efficacy attributes. The evaluation also covered noise (a side effect) and ease of use. To set the stage for calculating a weighted overall performance level, we have transformed the underlying performance metrics, like particles of dust per measure of volume or decibels of noise, onto a comparable 1- to 10-point scale. (See figure 1.)

In addition to performance scores, the market profile shows the relative weight or influence of each benefit attribute. We use these weights to reflect the leverage that each attribute has in the vendor-selection process. Weighted performance scores measure how models stack up on overall performance. This is the primary measure of performance that we use in evaluating the worth of a product.

Consumer Reports did not monetize benefit differences related to performance in removing dust and smoke. Yet, efficacy in removing smoke and dust is why people buy room air cleaners. That is why Customer Reports did measure and report performance scores for each model's efficacy in removing dust and smoke. Next, we describe how to monetize the added value created by brands that outperform competitors on key benefit attributes.

The Customer Value Map and Fair-Value Line

The key tool that product and pricing managers use to assess the worth of their products in the marketplace is the customer value map. Using customer value accounting, we can infer the worth differences associated with the efficacy, side effects and ease-of-use attributes.

First, we produce a customer value map for the room air cleaner models. In this example, the value map is a plot of total cost vs. overall performance on the four benefit attributes. Total cost is the price of the air cleaner plus electricity and filter costs for the relevant time period.

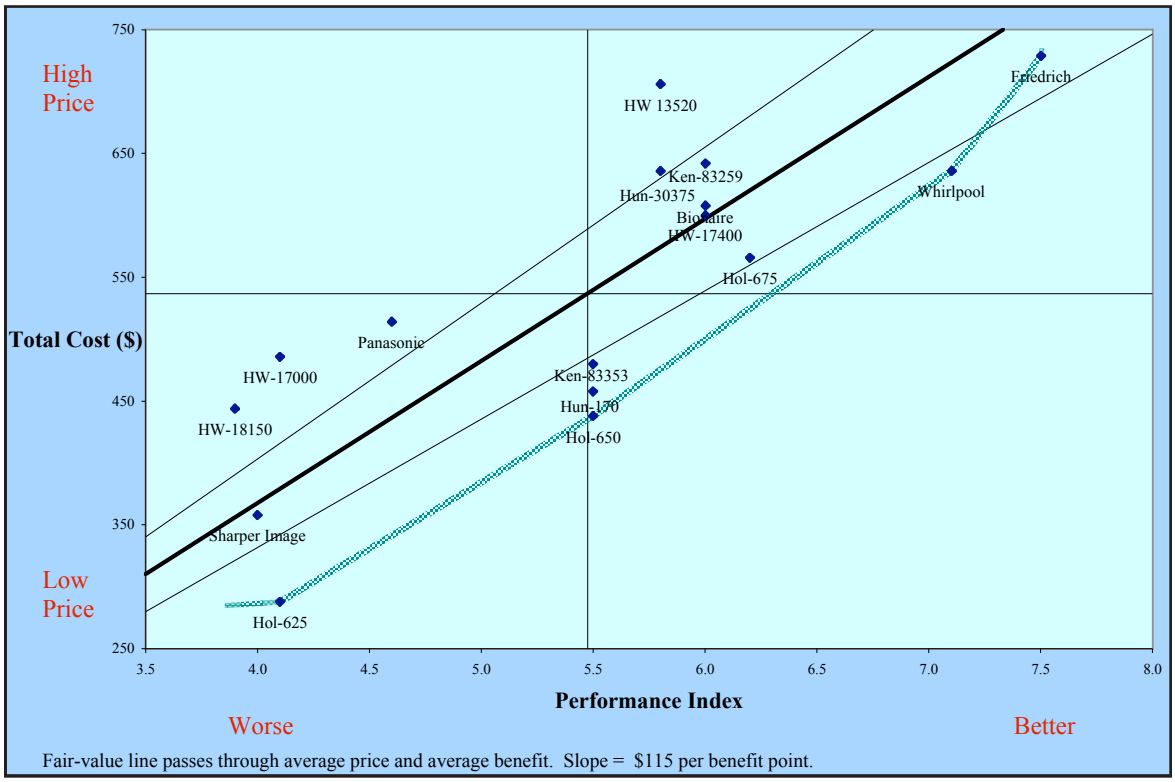
Second, we establish the tradeoff that customers are willing to make by paying more for better performing products. Generally, as in the room air cleaner market, the value map will show products to be differentiated from each other in both the vertical and the horizontal dimensions. Products plotted in the lower right (high performance, low price) are good deals for customers; products in the upper left (high price, low performance) are bad deals.

Figure 1: Performance profiles

Market Profile *Air Cleaners -- CR Feb. 02*			*Performance Scores*								Attrib. Weigh	*Value Weight*
Dimension		*Attributes*	Friedrich	Whirlpool	Bionaire	Hol-625	HW-17000	Sharper Image	Average			
Benefits		Dust	9.0	8.0	7.0	3.0	3.0	2.0	8.8		**40.0**	
		Smoke	7.0	7.0	6.0	3.0	3.0	2.0	7.2		**30.0**	
		Noise	6.0	6.0	4.0	7.0	6.0	10.0	8.3		20.0	
		Ease of use	6.0	6.0	6.0	6.0	8.0	6.0	6.7		10.0	
Weighted benefit scores			*7.5*	*7.1*	*6.0*	*4.1*	*4.1*	*4.0*	*8.0*			
Costs	Price	Equipment Price	475	250	220	120	130	350	245		100.0	
	In-use	2 year Energy	110	126	124	48	106	8	83		100.0	
	In-use	2 year Filter	144	260	264	120	250	0	150		100.0	
Weighted cost scores			*729*	*636*	*608*	*288*	*486*	*358*	*478*			
Slope of fair value line												*115*

Looking at this value map, we find that in order to get better-than-average overall performance, customers are incurring a higher-than-average total cost. In this category, the slope of the fair-value line is $115 per benefit point on a scale of 1 to 10. (See figure 2.)

Figure 2: Value Map for Air Cleaners (CR Feb. 02)



Based on the slope of the fair-value line and the fraction of weight associated with each attribute, we calculate the worth differentials associated with performance differences on a 1 to 10 scale. These worth per point data are shown in the product appraisal table (see figure 3). Like the cost per kilowatt-hour information, the worth per point data enable you to estimate the worth differences associated with the performance differences on benefit attributes in monetary terms.

Product Appraisals: Combining Performance Appraisals and Cost-in-Use Estimates

Here, we summarize the data for the top-performing Friedrich model vs. the average room air cleaner in a product appraisal that combines cost-in-use estimates and inferences about the worth of performance differences.

The average model sells for $209. The Friedrich model is worth $233 more due to performance advantages and an additional $74 more due to cost savings vs. the average model. So its worth relative to other products in this market category is $515. Accounting for both cost-in-use differences and performance differences, we find the Friedrich model is worth about $300 more than average.

Note that the incremental worth of Friedrich related to superior performance on dust removal is $169, which is much greater than the combined cost savings ($74) related to lower energy and filter costs. So, it is important for pricing teams to go beyond cost-in-use differences to also account for worth differences associated with performance differences. (See figure 3.)

The Value-Pricing Chart

Pricing teams use the data in the product appraisal to produce a value-pricing chart. The value-pricing chart summarizes the worth differences between your product and a reference product and sets the stage for pricing your product based on its worth in the marketplace, as well as based on your costs. The reference product can be the average vendor, a product close to your product in overall performance, the customer's current product or any other product you are competing against.

The Marketing War Room software combines attribute performance scores and cost-in-use analysis using the following equation:

Justified (Fair) Price = *Price of reference product + Value of your product advantages + Cost savings in using or owning your product*

The calculations are shown numerically in the Product Appraisal table and graphically in the Value-Pricing Chart. Knowing the worth of your product and the cost of your product establishes a framework for pricing your product. Hopefully, you find that the worth of your product is greater than its cost. If you price your product above what it generally is worth, you will have difficulty attracting customers. If you price your product below its cost, you lose money.

Setting your price determines the split of worth minus cost to the customer and to your business. We refer to worth minus price as customer surplus. If a product is worth more than you charge for it, customer surplus is positive. A Friedrich air cleaner is worth $515; the price is only $475. Therefore, the customer surplus is $40.

We often measure customer surplus in percentage terms, relative to the worth of the product. When expressed as a percentage of its worth, Friedrich's customer surplus is 7.8%. Customer surplus is a measure of the goodness-of-the-deal that customers get from an offer. The percentage measure of customer surplus is comparable across products that sell at different price levels. Price minus cost per unit is the profit margin for your business.

For illustration purposes, we have assumed that Friedrich's cost per room air cleaner is $375. Using this hypothetical cost, the profit margin would be $100. (See figure 4.)

Customer Value Accounting

Customer value accounting is closely related to, but more comprehensive than, economic value analyses focused on cost savings to the customer. Pricing specialists using economic value modeling typically compare a new (subject) product vs. an existing (reference) product.

They note the tangible and perhaps the emotional differences in benefits between offers. They attempt to estimate the monetary differences in worth for the tangible attributes. They find it easy to monetize some of the tangible attributes that relate to costs, like energy usage. They can use miles per gallon data, a typical number of miles driven per year and the cost per gallon to estimate differences in fuel costs. But they have no monetary conversion factor like $3 per gallon of gas that they can use to monetize differences in ride comfort, seating comfort, acceleration, emergency handling and braking. Yet, these attributes are important whether one is analyzing minivans sold to consumers or heavy-duty trucks sold to industrial customers.

Note that modeling a market and each vendor vs. every other vendor, including the category average, is a more comprehensive approach than just modeling two of the vendors in a category, a subject and a reference vendor. By modeling a market category, we can also produce a head-to-head value appraisal and a value-pricing chart for any subject vendor's offer vs. any vendor in the category.

Pricing teams use these tools — the customer value map, product appraisal and value-pricing chart — to help resolve classic pricing issues:

- Pricing a new, premium-performance product
- Pricing a new, low-cost, lesser-performing product
- Repositioning a product that is currently positioned deep into the negative customer surplus zone, with a price that far exceeds it worth
- Identifying and re-pricing products that are offering a large customer surplus vs. the average vendor — perhaps leaving money on the table

Product positioning and pricing teams display the value-pricing chart, product value appraisal and the customer value map side-by-side. This enables them to focus on their offer vs. a key reference vendor while keeping a close watch on each of the other vendors' positions on the value map.

Figure 3: Product Appraisal — Friedrich Room Air Cleaners (CR, Feb. 02)

Estimating the worth of the Friedrich product using Average as a reference

Average price ($)

Equipment Price	*209*

Worth of Friedrich Benefit Advantages

	Worth ($) per point	Performance Scores Friedrich	Performance Scores Average	Worth ($) of Differences
Dust removal	46	9.0	5.3	169
Smoke removal	34	7.0	5.0	69
Quietness (transformed from noise)	23	6.0	6.0	0
Ease of use	11	6.0	6.5	-6
Net worth of Friedrich benefit advantages				*233*

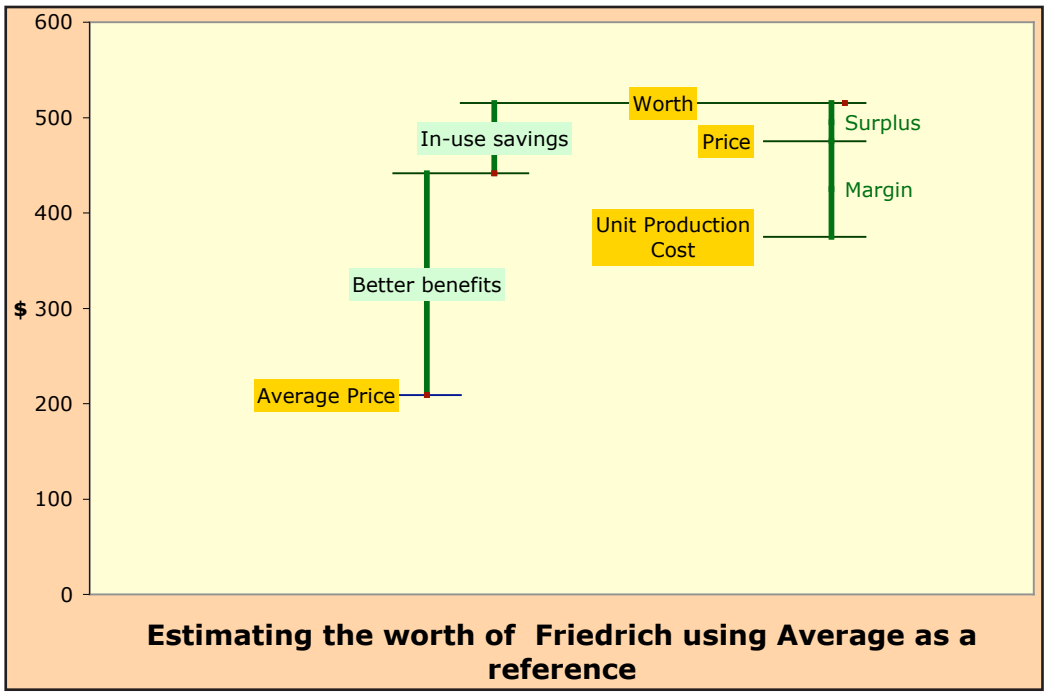
Cost savings ($) in using / owning Friedrich

2 year Energy	110	113	3
2 year Filter	144	215	71
Net cost savings			*74*

Friedrich Worth

Implied worth	*515*

Figure 4: Value-Pricing Chart



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