
A Strategic Cost Management Reinterpretation for a Classic Case in Cost Analysis

John K. Shank

EXECUTIVE SUMMARY

- Different departments in a company may analyze a problem differently, depending on their points of view and their methods for analysis. New approaches to management, strategic planning, and cost accounting further complicate the decisions.
- This article presents a classic case study—a traditional method for teaching how managers should analyze complex business decisions—concerning the introduction of new products.
- The case study then discusses the analysis from a variety of perspectives that roughly track management ideas and movements since the case was first written over 30 years ago.
- The article closes with a strategic cost analysis of the company's new product decision. The conclusions—which reach much farther than previous analyses—illustrate the kind of strategic and critical thinking needed today.

In 1967, Gordon Shillinglaw, a pioneer in managerial accounting, wrote a classic case in relevant cost analysis entitled “A/S Dansk Minox.” For 20 years professors used this case to teach why fixed costs weren’t relevant—compared, that is, with variable costs—when evaluating new product introductions. The main discussion issues of the case usually included the following:

- Fixed versus variable costs (and practice in calculating contribution margins and full-cost profits);
- Cost allocation rules for factory overhead; and
- Cost analysis for pricing new products.

Given the many developments in cost accounting in recent years, the same case can now be used in a much more strategic context.

John K. Shank is Noble Professor of Managerial Accounting and Management Control at Dartmouth College in Hanover, New Hampshire. He also teaches at Babson College in Wellesley, Massachusetts. Note that Professor Gordon Shillinglaw of Columbia University wrote the original case in 1967. It is reproduced here, with minor editing, with permission from the author.

CCC 1098-9382/99/040001-16
© 1999 John Wiley & Sons, Inc.

Today the following concerns should also be considered when evaluating new products to be introduced:

- How to integrate financial, marketing, manufacturing, and strategic cost considerations; and
- How to blend operational considerations (such as excess capacity) and strategic thinking.

Depending on whether or not one adds the strategic dimension in this case, the conclusion about what management action is “best” changes dramatically. “A/S Dansk Minox” is an excellent case even today, because it clearly shows the importance of a *strategic* perspective in cost analysis.

This article first presents the case itself, followed by a conventional analysis and, finally, by a strategic cost analysis.

CASE STUDY: A/S DANSK MINOX

This case is set in Denmark in 1967, when the boom in consumer food products was just beginning. There were more working mothers, more choices in convenience food products, and people also had more disposable income. The question was whether the company (a food products manufacturer) should introduce “complete meal” products to enhance the product line.

Case Background

A/S Dansk Minox, in Copenhagen, specialized in branded vacuum-packed meat, fish, and poultry products. For many years it had sold vacuum-packed sliced pork in gravy, a popular dish in Denmark. In 1965 the product represented about 15 percent of the firm’s total sales in a product line that had 30 products.

The typical Danish family often ate pork with a red cabbage salad. Because the salad was time-consuming to prepare at home, some competitors had introduced red cabbage salad in vacuum-packed, canned, or frozen form. However, Dansk Minox estimated that most red cabbage was still prepared at home. Although sales of ready-made red cabbage salad were expanding rapidly, consumer research confirmed that there was still a great untapped potential for such a product.

Cost Allocation Problems

At the end of 1965 Dansk Minox had not marketed vacuum-packed red cabbage salad, but its market potential and association with sliced pork caused management to consider introducing it in 1966.

The company was also considering the introduction of a specialty line of complete meals, which were to be sold in attractive cartons containing vacuum-sealed bags of the different components. Management thought that the first product in this specialty line could be “sliced pork in gravy with red cabbage.” The product would be packed in a carton containing the standard vacuum-sealed bag of

The question was whether the company (a food products manufacturer) should introduce “complete meal” products to enhance the product line.

Management thought that the first product in this specialty line could be “sliced pork in gravy with red cabbage.”

sliced pork plus another bag with the red cabbage salad. But cost allocation problems arose, which led to long discussions between the marketing and finance departments.

The standard product, sliced pork in gravy, was sold in a 450-gram bag at a consumer price of Dkr 4.85 (Danish Kroner). This "ideal" quantity for an average family yielded between three and four servings. Therefore, when considering the complete meal product, the marketing department did not wish to change the quantity of sliced pork in gravy. Extensive testing showed that families consumed between 500 and 600 grams of red cabbage salad per meal, so the company decided on a 1-kilogram complete meal pack containing the standard 450-gram bag of pork plus another vacuum-sealed bag with 550 grams of salad.

Sales Prices

The finance department sent a preliminary recommended sales price to the marketing department. This price assumed that the new product should produce about the same profit per kilogram as the standard product (i.e., Dkr 0.30 per kilogram, as shown in Exhibit 1).

The difference in consumer price between the two packs, as proposed by the finance department, meant that the consumer would have to pay Dkr 3.35 (8.20 - 4.85) for the addition of the salad. The marketing department protested that this price was prohibitive. The ingredients for making the salad at home could be bought for about Dkr 1.10, and the labor costs at home (if counted at all) would not amount to more than about Dkr 0.70. The marketing department expected the consumer to pay no more than Dkr 2.00 for the red cabbage salad and the added convenience, so they proposed a consumer price for the new pack of Dkr 4.85 + Dkr 2.00, for a total of Dkr 6.85.

The marketing department also contended that the finance department's sales price calculation showed that the raw material and labor costs amounted to only Dkr 0.75 for the salad. Was it reasonable that the other cost elements would raise the consumer price to Dkr 3.35? The marketing department then proposed its own cost calculation based on the assumption that the consumer would pay no more than Dkr 6.85 (Dkr 2.00 for the addition of salad), as indicated previously (see Exhibit 1).

Variable Costs, Margins, and General Overhead

The finance and marketing departments had no disagreements about raw material, labor, packaging material, transport and storage, and other variable costs. And the marketing department could not argue with the finance department about "other product-related fixed expenses," which covered mainly advertising, because advertising was under its control.

The two items "margins and discounts to wholesalers" and "general overhead" were, as a standard rule in the company, calculated as fixed percentages of the price to the retailer (8% and 4%, respec-

The marketing department expected the consumer to pay no more than Dkr 2.00 for the red cabbage salad and the added convenience . . .

Exhibit 1. A/S Dansk Minox

	Complete Meal (Dkr)		
	Standard Pack	Per Finance Department	Per Marketing Department
Consumer Price	4.85	8.20	6.85
Turnover Tax (12.5% of consumer price before tax)	<u>(.54)</u>	<u>(.91)</u>	<u>(.76)</u>
Consumer Price Before Tax	4.31	7.29	6.09
Retailer's Margin (27.5% of price to retailer)	<u>(.93)</u>	<u>(1.57)</u>	<u>(1.31)</u>
Price to Retailer (Dansk Minox sales)	3.38	5.72	4.78
Material: Pork	<u>1.67</u>	<u>1.67</u>	<u>1.67</u>
Labor: Pork	.25	.25	.25
Material: Cabbage		.50	.50
Labor: Cabbage		.25	.25
Packaging	.11	.26	.26
Transportation and Storage	.09	.20	.20
Margins and Discounts to Wholesalers (8%)	.27	.46	.38
Other Variable Costs	<u>.04</u>	<u>.10</u>	<u>.10</u>
Subtotal	2.43	3.69	3.61
Production Fixed Expenses (Dkr 1.20 per kilogram)	.54	1.20	.54
Other Product-Related Fixed Expenses	.14	.30	.30
General Overhead (4% of Price to Retailer)	<u>.14</u>	<u>.23</u>	<u>.19</u>
Total Cost	<u>3.25</u>	<u>5.42</u>	<u>4.64</u>
Profit	<u>.13</u>	<u>.30</u>	<u>.14</u>

... the marketing department assumed that the costs allocated to the new product would decrease automatically if a lower selling price could be agreed on.

tively). Although this procedure might be questionable, the marketing department assumed that the costs allocated to the new product would decrease automatically if a lower selling price could be agreed on.

Allocating Production Costs

Therefore, the main discussion centered on the item "production fixed expenses." After internal agreement about the sales budget every year, the total of production fixed expenses was divided by the total sales quantity, which was expressed in kilograms. In 1966 the computation showed a rate of Dkr 1.20 per kilogram. This rate was then applied to all products from the company's factory. The red cabbage salad required no new equipment, and excess capacity was available for the estimated production of the new complete meal product. The estimated sales of the new product were included in the budgeted sales quantity for 1966.

The finance department claimed that any departure downward from the rate of Dkr 1.20 per kilogram for production fixed expenses would result in an undercoverage of fixed expenses. The marketing department replied that a strict application of this rule could lead to unreasonable consequences because a relatively cheap component (red cabbage) added to an expensive component (sliced pork in gravy) *more* than doubles the weight of the new pack. The finance department stated that it would be impractical to use different overhead rates per kilogram for different products. The managing director agreed; he said that the product should not be introduced if a normal sales price calculation did not show a reasonable operating profit.

The marketing department responded that selling the new product at Dkr 8.20 per pack was out of the question. Therefore, only two alternatives remained:

1. Abandon the whole project; or
2. Set the consumer price at Dkr 6.85 and the retailer price at Dkr 4.78.

The 8 percent “margins and discounts to wholesalers” and the 4 percent “general overhead” would then amount to Dkr 0.38 + Dkr 0.19 instead of Dkr 0.46 + Dkr 0.23, a reduction of Dkr 0.12. The production fixed expense would need to be reduced from Dkr 1.20 to Dkr 0.54, or the same amount as for one standard pack.

The Decision

The managing director decided that, despite the marketing department’s arguments, the new product should not be introduced without full coverage of normal fixed expenses.

Consequently, the product was introduced at a consumer price of Dkr 8.20, and the sales budget was set at 85 tons, or about 45 percent of the budgeted tons of the standard pack. This projection assumed that the upward sales trend of recent years would continue. In other words, the company did not expect the new product to steal sales from the standard pack. Although the company expected some customers to switch from the old product to the new, these losses were expected to be offset by added sales because of advertising for the complete meal and, thus, a greater consumer awareness of Dansk Minox products.

Results

In the months that followed, retailers and consumers registered many complaints about the high price of the new product. Sales for 1966 amounted to only 30 tons rather than the budgeted 85 tons. Sales of the standard pack, on the other hand, exceeded the budgeted volume by a small percentage.

Additional Information

The following information is also relevant to this analysis:

- Assume that 1 ton equals 1,000 kilograms (a metric ton).

The managing director decided that, despite the marketing department’s arguments, the new product should not be introduced without full coverage of normal fixed expenses.

1. The budgeted sales volume for standard pack pork with gravy for 1966 was 189 tons.

2. Budgeted production fixed expense for the company for 1966 was Dkr 1.51 million.

3. Budgeted direct labor expense for the company for 1966 was Dkr 700,000.

4. Assume that the cost item "other product-related fixed expenses" is advertising and that the annual budget for the item must be committed at the beginning of the year for any product that will be sold that year.

5. The cost item "transportation and storage" represents an allocated share of the expense for operating a fleet of delivery trucks and a finished goods warehouse, both owned by the company. The company believed that these expenses should be considered volume-dependent, because the alternative to ownership was use of public facilities that based charges on kilos of product handled.

What sales volume is required at a retail price of Dkr 6.85 to give the same profit in 1966 (before taxes) as selling 30 tons at a retail price of Dkr 8.20?

1. Once the decision was made to introduce the complete meal product and to advertise it according to the plan, what was the impact on profit in 1966 (before taxes) of selling 30 tons at a retail price of Dkr 8.20?

2. Once the decision was made to introduce the complete meal product and to advertise it according to plan, what would have been the impact on profit in 1966 (before taxes) if 85 tons had been sold at a retail price of Dkr 6.85?

3. Combining questions 1 and 2, which retail price would produce more incremental profit for the firm in 1966, and how much more?

4. What sales volume is required at a retail price of Dkr 6.85 to give the same profit in 1966 (before taxes) as selling 30 tons at a retail price of Dkr 8.20?

5. What is the total unit cost and per-unit profit for 1 kilogram of complete meal at a retail price of Dkr 6.85 and with an allocation of Dkr 1.20 for production fixed expenses?

6. What is your recommendation to management regarding the new complete meal product for 1967?

What is your recommendation to management regarding the new complete meal product?

QUESTIONS ABOUT THE CASE

The following questions should be considered:

1. Once the decision was made to introduce the complete meal product and to advertise it according to the plan, what was the impact on profit in 1966 (before taxes) of selling 30 tons at a retail price of Dkr 8.20?
2. Once the decision was made to introduce the complete meal product and to advertise it according to plan, what would have been the impact on profit in 1966 (before taxes) if 85 tons had been sold at a retail price of Dkr 6.85?
3. Combining questions 1 and 2, which retail price would produce more incremental profit for the firm in 1966, and how much more?
4. What sales volume is required at a retail price of Dkr 6.85 to give the same profit in 1966 (before taxes) as selling 30 tons at a retail price of Dkr 8.20?
5. What is the total unit cost and per-unit profit for 1 kilogram of complete meal at a retail price of Dkr 6.85 and with an allocation of Dkr 1.20 for production fixed expenses?
6. What is your recommendation to management regarding the new complete meal product for 1967?

A CONVENTIONAL ANALYSIS

The company manufactures and markets a variety of vacuum-packed cooked food products. The consumer puts together a meal either by combining the pre-prepared packages (whether these are sold by Dansk Minox or by its competitors) or by adding home-prepared ingredients to the pre-prepared packages. Dansk Minox has 30 products and enjoys a solid market position. Dansk Minox's sales are about Dkr 9.5 million.

The standard pork pack weighs .450 kilograms (kg) and sells for Dkr 3.38. Therefore, the sales price per kilogram would be Dkr 7.51.

The total sales of standard pork pack is Dkr 1,419,600, which is 15 percent of total sales. Therefore, yearly sales ("turnover") is Dkr 9.5 million.

Review of the Case

In the mid-1960s, Dansk Minox concluded that there was a huge market potential for pre-prepared complete meals consisting of meat and vegetable ingredients grouped together in a single attractive package. Dansk Minox's assessment was based on various factors considered relevant at that time:

- The percentage of women in the work force was on the rise.
- The fact that working mothers strongly preferred pre-prepared complete meal products indicated a high growth potential for convenience foods.
- People had more disposable income to spend on food products.
- Introductions of innovative, convenient new food products were growing in number.

In particular, Dansk Minox believed that there was a great untapped potential for a complete meal of sliced pork in gravy with red cabbage salad, a popular Danish traditional meal.

Management's decision to introduce this complete meal led to disagreements between the marketing department and the finance department about how to determine the profitability of the new complete meal product. The main discussion centered on allocation of fixed expenses for production.

At Dansk Minox, the total production fixed expenses divided by the total sales quantity (expressed in kilograms) resulted in a rate of Dkr 1.20 per kilogram. This rate was then applied to all products.

The finance department wanted this rate to be applied to the new complete meal product, but the marketing department disagreed with this allocation scheme. Marketing believed that a strict application of Dkr 1.20 per kilogram to the complete meal product would lead to unreasonable consequences, because a relatively cheap component (red cabbage) added to an expensive component (sliced pork in gravy) would more than double the weight of the pack. The marketing department further argued that, because the factory had excess capacity that could handle the new product at no additional cost, the complete meal product should not be burdened with any fixed overhead. This debate about cost allocation affected, in turn, assumptions or decisions about price, sales volume, and profits.

Typical Student Reaction

Most students recommend the low-price strategy. The first four questions in the case are intended to ensure that students see the merits of this view. Exhibit 2 contains the contribution analysis for both the Dkr 8.20 price and the Dkr 6.85 price. The Dkr 6.85 price yields approximately Dkr 50,000 *more contribution* (and more profits) than the Dkr 8.20 price because of the additional volume that can be sold at the lower price.

Management's decision to introduce this complete meal led to disagreements between the marketing department and the finance department about how to determine the profitability of the new complete meal product.

... because the factory had excess capacity that could handle the new product at no additional cost, the complete meal product should not be burdened with any fixed overhead.

Exhibit 2. Contribution Analysis

<u>At a Retail Price of Dkr 8.20</u>		Dkr	5.72
Price to Retailer			
Incremental Cost	3.69		
Less: Transportation and Storage	(.20)		(3.49)
Profit Contribution			<u>2.23</u>
Volume	30 tons		
Total Contribution (2.23 × 30 tons)		Dkr	66,900
Less: Incremental Advertising*			(25,500)
Impact on Profit			<u>41,400</u>
*Advertising is .30/kg. The annual budget must be committed at the beginning of the year for any product that will be sold that year. The .30 allocation was based on the budgeted 85 tons rather than the 30 tons sold, so the budget was 85 tons × .30/kg = 25,500.			
<u>At a Retail Price of Dkr 6.85</u>		Dkr	4.78
Price to retailer			
Incremental Cost	3.61		
Less: Transportation	(.20)		3.41
Profit Contribution			<u>1.37</u>
Volume	85 tons		
Total Contribution (1.37 × 85 tons)		Dkr	116,450
Less: Incremental Advertising			(25,500)
Impact on Profit			<u>90,950</u>
Note: The incremental profit is higher at the Dkr 6.85 price by Dkr 49,550 (90,950–41,400).			

DISCUSSION OF CONTRIBUTION ANALYSIS

Several “soft spots” in Exhibit 2 need clarification:

1. Labor is assumed to be volume-dependent in Exhibit 2, as it was in the case. Some students may treat labor as a fixed expense—which is probably reasonable in a European context. Treating labor as a fixed expense increases the profit differential.
2. Transportation and storage costs are treated as fixed expenses because they represent an *allocated* share of the expense for operating a fleet of company-owned delivery trucks and also a company-owned warehouse. It is reasonable to assume that these trucks, during their regular trips, have extra capacity to carry the complete meal product. That is, no additional trips would be required on existing trucks. Similarly, no new trucks would be required to ship the complete meal product from the warehouse to the retail stores.
3. Exhibit 2 assumes that introduction of the complete meal product leads to no cannibalization of the standard pork pack.

Treating labor as a fixed expense increases the profit differential.

Exhibit 3. Full-Cost Analysis

Price to Retailer	Dkr	4.78	
Variable Cost		(3.61)	
Production Fixed Expenses		(1.20)	
Product-Related Fixed Expenses		(.30)	
General, Selling, and Administrative Expenses		<u>(.19)</u>	Cost = 5.30
Loss	Dkr	<u>(.52)</u>	

The key idea embodied in Exhibit 2 is that, *in the short run*, the impact on overall profit between the two prices is identical to the change in contribution (Dkr 116,450 – Dkr 66,900 = Dkr 49,550).

One can also calculate the required sales volume at the retail price of Dkr 6.85 to generate the same profit as selling 30 tons at a retail price of Dkr 8.20:

$$\frac{\text{Total Contribution at Dkr 8.20 Price}}{\text{Contribution Margin per Unit at Dkr 6.85 Price}} = \frac{\text{Dkr 66,900}}{\text{Dkr 1.37 Break-even}} = 49 \text{ tons}$$

Thus, the low price is better provided that Dansk Minox can sell more than 49 tons.

Thus, the low price is better provided that Dansk Minox can sell more than 49 tons. The 49 tons is only 58 percent of the projected sales of 85 tons. Given that 30 tons were sold at the Dkr 8.20 price, it seems quite probable that at least 49 tons can be sold at Dkr 6.85. The conclusion so far, based on contribution analysis, is that the low price is the preferred entry price.

DISCUSSION OF FULL-COST ANALYSIS

Exhibit 3 shows the full-cost profit calculations for the complete meal product at the Dkr 6.85 price. This exhibit shows a Dkr 0.52 loss for every unit sold at the low price. In other words, this suggests that, at Dkr 6.85, a complete meal is a “good contribution/no profit” product.

The contribution analysis suggests the Dkr 6.85 price, but the full-cost analysis suggests the Dkr 8.20 price. What should management do? For some 20 years, the “solution” to the case has hinged on cutting through the “full-cost illusion” in relevant cost analysis. The best case for the low-price, high-volume approach (Dkr 6.85 price) proposed by the marketing department can be summarized as follows:

For some 20 years, the “solution” to the case has hinged on cutting through the “full-cost illusion” in relevant cost analysis.

1. It produces good incremental contribution to profits. The available excess capacity should be used. The fixed costs are already being covered.

The consumer is unlikely to pay much more than Dkr 2.00 for the salad just for the added convenience of a complete meal pack.

The product only appears unprofitable because of the improper cost accounting system.

2. The contribution is much better at Dkr 6.85 than at Dkr 8.20 because of the larger sales demand at the lower price.
3. The difference in consumer price between the standard and the complete meal packs as proposed by the finance department implies that the consumer pay Dkr 3.35 (8.20 - 4.85) for the salad, because the meat content of the two packs is the same. In contrast, at the Dkr 6.85 price, the consumer pays Dkr 2.00 (6.85 - 4.85) for the cabbage salad. There is a big market for packaged cabbage at Dkr 2.00, but there is a small market at Dkr 3.35.
4. This makes sense, because the ingredients for making the red cabbage salad at home could be bought for about Dkr 1.10. The consumer is unlikely to pay much more than Dkr 2.00 for the salad just for the added convenience of a complete meal pack. The Dkr 2.00 price is probably close to what competitors are charging for packaged cabbage salad.
5. New products such as the complete meal are the *wave of the future* for the following reasons:
 - a. The convenience packs are rising in popularity.
 - b. Packaged cabbage is *already* here.
 - c. Complete meal packs fit the company's contemplated strategic thrust toward whole meals.
 - d. Competitors may be here soon if the company doesn't move quickly.
6. The product only *appears* unprofitable because of the improper cost accounting system. It is inappropriate to charge cabbage the same overhead allocation as pork. Charging overhead based on weight is misguided.
7. The value price for the complete meal is Dkr 6.85 (based on the Dkr 2.00 value price for the cabbage salad). At this price the market potential is large.
8. Any cannibalization of the standard pork pack is *irrelevant* because the standard product is vulnerable already from competitors that may introduce complete meal packs. It is better to replace the standard pack than to wait for a competitor to do so.

A STRATEGIC COST ANALYSIS

Exhibit 3 assumes allocation of Dkr 1.20 for production fixed expenses, based on the weight of the products. But other allocation rules are possible and should be discussed.

Exhibit 4 compares the company's current method of allocating fixed overhead based on weight with two alternative methods: labor cost or number of packages. As Exhibit 4 shows, *all* of these overhead allocation schemes yield an overhead cost per unit for complete meals of more than Dkr 1.00. Thus, *any* reasonable allocation scheme will result in a big loss for complete meals on a full-cost basis when priced at Dkr 6.85.

Furthermore, the products in the factory probably move (for cooking, slicing, mixing, and packing) in batches of a certain weight. Therefore, assigning fixed overhead based on kilograms makes

Exhibit 4. Alternate Methods of Allocating Fixed Overhead (OH)

<p>1. Current Method (Allocate Fixed OH on Kilograms) Total Company Sales (kgs) = 1,260,000 Total Company Fixed OH = 1,510,000 $\text{OH/kg} = \frac{1,510,000}{1,260,000} = 1.20/\text{kg}$ A Complete Meal = 1 kg \Rightarrow 1.20 of OH</p> <p>2. Alternate Method (Allocate Fixed OH on Labor Cost) Company Labor Cost = 700,000 Total Company Fixed OH = 1,510,000 $\text{OH/Labor} = \frac{1,510,000}{700,000} = 2.16$ A Complete Meal = .50 Labor $\Rightarrow 2.16 \times .50 =$ 1.08 of OH</p> <p>3. Alternate Method (Allocate Fixed OH on number of Packages) Standard Pork Package = .450 kg. Assume this is average for the meat products. $\text{Company Sales in number of Packages} = \frac{1,260,000}{.45} = 2,800,000$ Total Company Fixed OH = 1,510,000 $\text{OH/Package} = \frac{1,510,000}{2,800,000} = .54$ A Complete Meal = 2 packages $\Rightarrow .54 \times 2 =$ 1.08 of OH</p>

sense, which means that the company's existing system for allocating based on weight may be the appropriate one.

So far, then, the conclusion is that the choice of allocation schemes—which is somewhat arbitrary in any case—is really moot. Regardless of the basis for allocating fixed production overhead, the complete meal product is a loser at the low price on a full-cost basis.

Arguments Against the Low-Price Option

But counter to the Dkr 6.85 arguments based on a full-cost analysis, a *strategic* cost analysis raises the following points:

1. Concerning the allocation of fixed overhead to the complete meal pack, the following can be noted:
 - a. In the long run, capacity really is not “free” in this market.
 - b. Normal growth of the standard pack and other current products will eventually consume the factory's capacity without adding the complete meal product. In growing markets, capacity must be added *ahead* of sales. Although this means that excess capacity will thus exist, it is not “free.”
 - c. Production fixed overhead at Dkr 1.51 million is substantial—it is 16 percent of sales (1.51 million \div 9.5 million). Dansk

In the long run, capacity really is not “free” in this market.

Minox is a high-fixed-cost operation. A *good* product must be able to carry a fair share of that overhead.

- d. As Exhibit 4 demonstrates, all alternative allocation methods show a fixed-overhead allocation to complete meal packs of about Dkr 1.00 per pack or more. Moreover, allocating overhead based on weight (at Dkr 1.20/pack) can be defended in this factory.
2. In Exhibit 1, the “value price” of cabbage salad is only Dkr 1.40 at the wholesale level. However, the *long-run variable cost* (with zero fixed production overhead) is Dkr 1.39. In other words, this product cannot really support any manufacturing overhead at all. There is only Dkr 0.01 of margin to cover fixed production overhead. Thus, the cabbage salad is clearly a “good contribution/no profit” product.
3. Dansk Minox’s current market position is based on high-value, high-price products such as the standard pork package. The complete meal does not fit that strategy. The current products tend toward higher value and lower bulk, but cabbage salad is lower value, higher bulk.
 - a. The standard pack weighs .450 kg and sells for Dkr 3.38, but cabbage salad weighs .550 kg and sells for only Dkr 1.40. The complete meal mixes high-value, low-bulk products (the standard pork pack) with a low-value, high-bulk product (cabbage salad), as if both are appropriate for the factory. In a factory configured for processing meats, processing vegetables is both inefficient and expensive. Just because they are eaten together does not mean they should be packaged together. (One would not seriously consider packaging bacon and eggs together—or bread and butter, for that matter—though these products are eaten together.)
 - b. Cabbage salad takes just as much labor time (a rough proxy for “value added”) as pork: Both require Dkr 0.25 of labor per unit. However, cabbage salad sells for much less than pork. The inference is that Dansk Minox would use expensive labor—that is, labor skilled enough to process meat products—to process cabbage, whereas a factory geared solely to packaging vegetable products could employ much cheaper labor. Thus, processing meat and vegetable products in the same factory would presumably put Dansk Minox’s manufacturing operations at a competitive disadvantage.
4. Cannibalization of standard pack sales by complete meal sales would *be much more likely* at Dkr 6.85 (Dkr 2.00 for cabbage) than at Dkr 8.20 (Dkr 3.35 for cabbage). At the Dkr 6.85 price, customers might well choose the complete meal pack instead of combining Dansk Minox’s standard pork pack with a competitor’s packaged cabbage salad. Thus, introduction of the complete meal at Dkr 6.85 will directly erode sales of the standard pack and substitute a low-profit product for a higher profit one. Why cannibalize the standard pork pack with an in-house loser? It makes

Thus, the cabbage salad is clearly a “good contribution/no profit” product.

The complete meal mixes high-value, low-bulk products (the standard pork pack) with a low-value, high-bulk product (cabbage salad), as if both are appropriate for the factory.

- more sense to let someone else sell packaged cabbage, which should stimulate sales of the standard pork package.
5. The complete meal concept is *not* really likely to be the wave of the future.
 - a. It seems like a bad use of the factory at the Dkr 6.85 price (the value price) because low-value-added products are not appropriate for a high-fixed-cost factory.
 - b. The Dkr 8.20 price (full-cost price) assumes a low-volume and low-growth plan.
 - c. In fact, Dkr 8.20 is not even a high enough price, because it uses Dkr 0.30 as the figure for advertising, which (in turn) presumes sales of 85 tons. At 30 tons, advertising would cost Dkr 0.85/kg, which implies a retail price of Dkr 9.99. (Factory Cost = $1.67 + .25 + .50 + .25 + .26 + .20 + .10 + 1.20 = 4.43$. Price to retailer = $(4.43 + .30 + .85) \div .88 = 6.34$. Consumer Price Before Tax = $6.34 \div .725 = 8.74$. Retail Price = $8.74 \div .875 = 9.99$). Cutting advertising probably would reduce sales. Of course, at Dkr 9.99, sales would fall lower, price would be adjusted upward again, and so on.
 - d. The vegetable packers selling the cabbage pack are unlikely to move into meat products, because it is a different business for them.
 - e. It appears that meat product firms cannot make a long-term profit at the value price of Dkr 6.85, because not enough value is added.
 6. Therefore, unless someone can figure out how to restructure the cost chain, the complete meal idea is unlikely to create a “big wave” of anything.

Unless someone can figure out how to restructure the cost chain, the complete meal idea is unlikely to create a “big wave” of anything.

Framed this way, the problem turns on cost redesign rather than pricing.

Target Costing

The preceding strategic analysis sets the stage for using target costing to analyze this case. Specifically, assuming that Dkr 6.85 is the value price to the consumer, how much could Dansk Minox spend in the factory to show a normal profit margin? Exhibit 5 shows the calculation, which requires a 22 percent reduction in current manufacturing cost.

The product management challenge is to reduce the “normal” costs by Dkr .82 (18 percent) in order to meet the retail price target of Dkr 6.85 yet still show an acceptable full-cost profit in the factory. Framed this way, the problem turns on *cost redesign* rather than *pricing*.

SUMMARY

As is typical of good case studies, Dansk Minox’s product-introduction problem cannot be easily resolved. There are no right or wrong answers. The important point is to emphasize the com-

Exhibit 5. Target Cost for Complete Meal at a Value Price of Dkr 6.85 to the Consumer

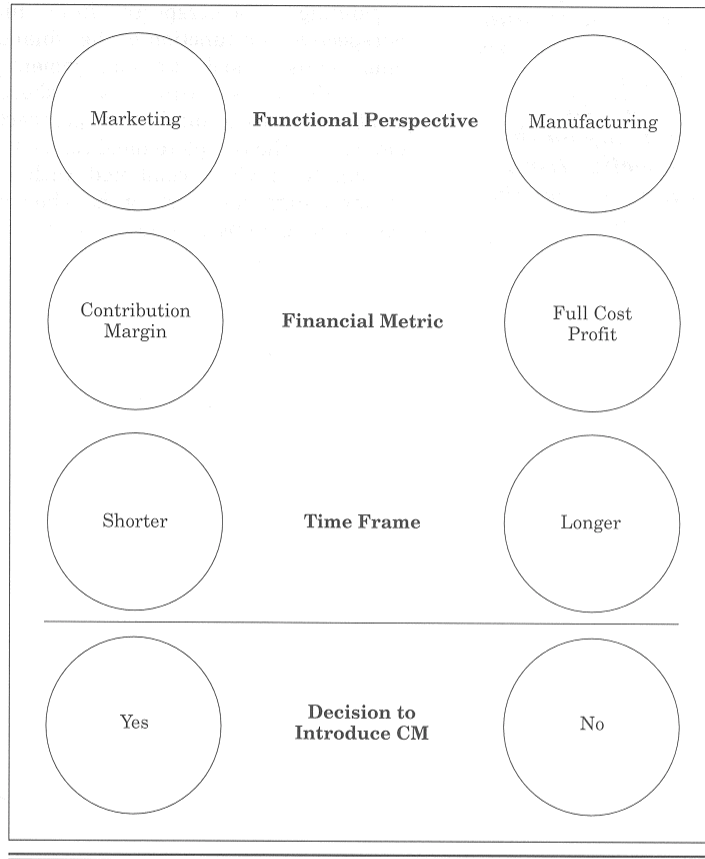
Consumer Price		6.85	
Turnover Tax (12.5%)		(.76)	
Price Before Tax		6.09	
Retailer margin (27.5%)		(1.31)	
Wholesale Price		4.78	
Normal Wholesale Margin and Allowances		.38	
Allowable Price		<u>4.40</u>	
Allocated Costs (Probably not subject to product level management.)			
General, Sales, and Administration Expenses (4%)	.19		
Transportation and Storage	.20		
Profit	.30		.69
The Product-Level Target Cost = 3.71 (4.40 - .69)			
"Normal" Cost (per case Exhibit 1) = 4.53			
Materials	2.17		
Labor	.50		
Packaging	.26		
Misc. Manufacturing	.10		
Production Fixed Expenses	1.20	(Assuming this is judged a reasonable "ABC" allocation.)	
Advertising	.30	(Based on 25,500 budget spread over 85 tons.)	
	<u>4.53</u>		

plexities and subtleties involved, and to consider the issues surrounding both the high-price and the low-price alternatives.

Once all the key arguments in support of both pricing approaches are considered, most people usually conclude the following:

1. The marketing arguments in favor of complete meal packs make sense only at the Dkr 6.85 price.
2. The Dkr 6.85 price conflicts with the manufacturing strategy of low-bulk, high-value products.
3. Thus, the Dkr 6.85 price is not financially attractive, given the factory's product line strategy and overhead structure.
4. However, a price of Dkr 8.20 or higher would be unattractive to the consumer.
5. Hence, the concept of combining cooked pork in gravy with red cabbage salad in one carton is a bad idea at the current cost structure.

Exhibit 6. The Lens Through Which We See the Problem



6. Without an effort to redesign costs—which is beyond the scope of the case—the complete meal product seems like a bad idea.

... the company should go back to the strategic drawing board to find better new-product ideas ...

Students typically argue that the company should go back to the strategic drawing board to find better new-product ideas—that is, find ideas that are more appropriate for the factory, that match the company's marketing competence, and that will generate a reasonable profit in the long run. This requires products whose contribution is high enough to cover a fair share of allocated fixed overhead and show a good full-cost profit.

At the outset, students usually come to class enthusiastic about the complete meal pack at the Dkr 6.85 price. By the end of class, however, many students express serious reservations about the whole concept of complete meals.