

Transfer Pricing

*This note examines the economics of **transfer pricing** among a multi-divisional firm. Prior to class, please prepare your answers to the problem on pages 6-7.*

So far we have studied pricing strategies in markets. A growing problem for multi-divisional firms is internal pricing. That is, when a firm internally transfers resources between divisions, how should managers determine the appropriate “transfer price”? Empirical evidence suggests that most managers do a poor job in setting transfer prices. This blocks inter-divisional coordination efforts and reduces overall profitability.

We will discuss the economic basis for setting transfer prices, and some problems that arise in implementation. The issue is complex, and some aspects of transfer pricing (tax consequences, for example) will be discussed in other classes.

Executives must deal with four central problems in managing a firm with several divisions:

1. COORDINATE: Allocate scarce resources and responsibilities.
2. EVALUATE: Evaluate the performance of individual divisions within the context of corporate objectives.
3. MOTIVATE: Set up incentives that motivate managers to fulfill both divisional and corporate goals.
4. COMMUNICATE. Minimize costs of internal communication and coordination

All four of these tasks arise when upper-level managers decide to diversify into additional stages of the production process. In this case, they must replace the discipline imposed by the market with organizational discipline. Organizational discipline is needed because managers of autonomous divisions have incentives to shirk when their divisions are incorporated into a larger organization. However, if managers of divisions

are rewarded on the basis of their individual divisions' profits, their individual decisions can come at the expense of other divisions and reduce the profitability of the firm as a whole. Setting the right transfer prices between divisions can help solve these problems.

Data suggests an overwhelming proportion of multi-divisional firms use transfer prices when transferring goods or services across divisions. A study of the top Fortune 150 firms indicated 91% of them use transfer prices. Transfer pricing policy is important and will continue to be so as markets become more global.

Theory and Concepts

Transfer Pricing with No External Market Benchmark

Assume a firm has two divisions. Division 1 manufactures a crucial component for the final product (Division 1 is often called the *upstream division*). Suppose that **each unit** of final product requires **one unit** of the crucial input. There is no outside market for this crucial input. Division 2 completes the assembly and manufacturing process, and distributes the final product in the market (this is often called the *downstream division*).

This integrated firm faces two important decisions: 1) How much of the final product should it produce? And 2) how should it value internally the crucial input produced by the upstream division? Both decisions should be made to maximize the firm's profits. Coordinating these two outcomes is "JOB #1" for transfer pricing.

Further, we want our two divisions to be efficient. Division 2 (the downstream division) faces the discipline of market demand for the final product. But Division 1 (upstream) has no external market discipline. How do we create appropriate incentives for the upstream division? That is "JOB #2" for transfer pricing.

The economics of transfer pricing are illustrated in Figure 1. The firm as a whole faces a demand curve D_F for the final product, with a marginal revenue curve MR_F for the final product. Since there are two divisions, however, there are two marginal cost curves. MC_1 is the upstream division's marginal cost function for producing the crucial input. MC_2 is the marginal cost function for assembling and producing the final product by the downstream division, *excluding* the cost of acquiring the crucial input from Division 1. Since (in this example) exactly one unit of the crucial input is needed to produce one unit of the final product, the marginal cost for producing one unit of the final product is the sum of the two division's marginal cost curves: $MC_F = MC_1 + MC_2$. *Note: Make sure you are clear on why we sum the two divisions' MC curves to get the marginal cost function MC_F for the final product.*

Now consider how much final product to make. This is similar to problems you have seen before: Since the firm as a whole faces the discipline of a market for the final product, it is profit-maximizing to produce a quantity that sets $MR_F = MC_F$. In the figure, the optimal quantity of the final product to produce is Q_F and the profit-maximizing final-good price is P_F .

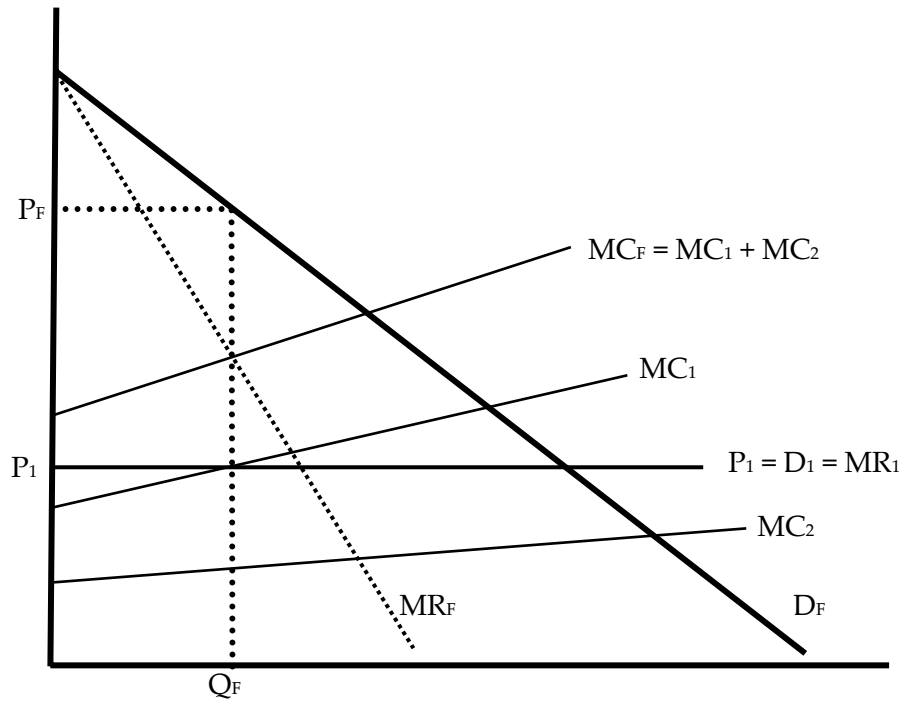


FIGURE 1. *Transfer Pricing with No External Market*

Next, consider how to get the incentives right for the upstream Division 1. The idea is to give the upstream division a guaranteed (transfer) price of P_1 , and tell the upstream division to maximize the division's profit against this price. The downstream division is obligated to buy all of Division 1's output at the guaranteed price.

What transfer price will be efficient? Consider again Figure 1. Since one unit of the crucial input is needed to produce one unit of the final product, we need the upstream division to produce $Q_1 = Q_F$ units as well. The optimal transfer price is where the upstream division's marginal cost function evaluated at this quantity: $P_1 = MC_1(Q_1)$.

Here is the key point: If you pick the right transfer price you will get the right amount of the crucial input produced by the upstream division, *and* you will get it produced efficiently (meaning, at the lowest possible cost).

Summary:

When no external market exists, the profit-maximizing transfer price is found by:

1. Find the *firm's* marginal revenue curve MR_F from the demand curve D_F ;
2. Find the *firm's* overall marginal cost curve, $MC_F = MC_1 + MC_2$;
3. Set $MR_F = MC_F$, and solve for the profit-maximizing price P_F and quantity Q_F of the final product;
4. *Now* solve the transfer pricing problem: (a) Determine how much the upstream firm must produce for there to be Q_F units of the final product; then (b) substitute the upstream division's quantity into its marginal cost function, MC_1 . This value (of MC_1) is the optimal transfer price, P_1 .

As usual, we illustrate the calculations involved with an example.

Example: Firebird Pens

The Firebird Pen Company is organized into two divisions. Division 1 manufactures the ink cartridges. Division 2 manufactures the remaining components and assembles the pens. One ink cartridge system is required to produce one pen. Demand and cost functions are estimated as follows:

$$\text{Demand for Firebird pens:} \quad P_F = 1,000 - 0.1 * Q_F$$

$$\text{Marginal cost for Division 1:} \quad MC_1 = 10 + 0.01 * Q_1$$

$$\text{Marginal cost for Division 2:} \quad MC_2 = 99.5 + 0.05 * Q_2$$

(Note: MC_2 *excludes* the cost of the ink cartridge purchased from Division 1.)

The problem is: (a) How many ink cartridge systems will be demanded by Division 2, and (b) at what level should the transfer price be set?

Analysis

Step 1: Find the *firm's* marginal revenue for each final unit produced. The firm's total revenue (TR_F) is:

$$TR_F = P_F * Q_F = (1,000 - 0.1 * Q_F) * Q_F = 1,000 * Q_F - 0.1 * (Q_F)^2$$

So the firm's marginal revenue is: $MR_F = dTR_F/dQ_F = 1,000 - 0.2 * Q_F$

Step 2: Find the firm's overall MC function. Since exactly one cartridge is required for each pen, the total MC is the sum of the MC for each division: $MC_F = MC_1 + MC_2$. Substituting in for MC_1 and MC_2 gives:

$$MC_F = [10 + 0.01 * Q_1] + [99.5 + 0.05 * Q_F]$$

Since $Q_1 = Q_F$, this simplifies to $MC_F = 109.5 + 0.06 * Q_F$

Step 3: Find how many final units is profit-maximizing for the firm overall. This is the quantity where $MR_F = MC_F$, or

$$1,000 - 0.2 * Q_F = 109.5 + 0.06 * Q_F$$

Solving for Q_F yields: $Q_F = 3,425$ pens.

Step 4: Find the right transfer price. We want to induce the upstream division to make $Q_1 = 3,425$ cartridges for the 3,425 pens. We were given that $MC_1 = 10 + 0.01 * Q_1$, so plugging in for Q_1 we have

$$MC_1 = \$10 + 0.01 * (3,425) = \$44.25$$

Thus, Division 1 should produce 3,425 cartridges at a transfer price of \$44.25 / cartridge.

Remarks

The mathematics of this example are hopefully clear. If not, go back and look at it again in the context of Figure 1: Put the right numbers on the graph, figure out why the lines intersect where they do, and why \$44.25 / cartridge is the right transfer price.

There is more that needs to be said about the economics behind this example. You might notice that Firebird Pens really didn't need to set a transfer price at all. Instead, headquarters could just tell Division 1: "Produce 3,425 cartridges; and deliver them to Division 2." This quantity-mandate strategy would get everything right in this example, no transfer pricing necessary.

In the real world, however, multi-divisional firms need to track the value of assets transferred between divisions of the firm. And, if these internal valuations (which *are* transfer prices) are being used to provide incentives or determine compensation for divisional managers, then they need to be set right. Incentive (that is, performance-based) compensation of autonomous division managers is (one of) the reasons we use economic analysis to set transfer prices, rather than just telling Division 1 to "produce X units."

In practice, economic analysis of transfer prices is just a starting point. We use it to find transfer prices, but then modify the transfer price to address tax, accounting regulations, or other considerations that lie outside the scope of this course. The *WSJ* article on Japan's investigations of transfer pricing suggests some of these complications.

Problem to Prepare for Class

Please be prepared to discuss your answers to Marinelli's problem in class. As usual, you do not need to turn in your work on class-session problems. You may work with others if you wish.

A. Marinelli Concrete, Inc.

A. Marinelli is a concrete supplier and distributor in Upper Darby, Pa. It has two divisions. One division (the upstream division) makes cement, a dry powder that is the key ingredient for making concrete. The other division (the downstream division) mixes cement with other materials to make concrete, and delivers this final product to construction sites in the greater Philadelphia area. The concrete division is run by Antonio ("Tony") Marinelli, and the cement division is run by his brother, Thomas ("Tommy") Marinelli.

Tommy's division is the sole supplier of cement to his brother's concrete division. At the end of the year, the brothers divide the firm's total profits according to the profits of each division. Effectively, each brother runs his division as a separate profit center.

Tony and Tommy have never done any formal analysis of transfer prices. When Tony needs cement, he tells Tommy how much he wants and that he wants it "at cost." Tommy then (invariably) says that it will cost more than Tony expected. Tony then cuts the volume he wants, and the two settle on a deal (that is, a price and quantity of cement) that makes neither of them happy. (In fact, Tony has occasionally found price quotes for cement from distant suppliers that are lower than Tommy's, and used these quotes to bargain Tommy's price down a bit. But Tony has been reluctant to go to an outside cement supplier.) Tony knows that the shipping costs for bulk cement from distant cement suppliers *should* make Tommy's in-house production highly cost-effective, which is why they started the cement division several years ago.

After learning that you are an MBA student at Wharton, Tony asks you what he might do to improve business arrangements with Tommy. Tony supplies you with some estimates from a consultant he hired, who estimated costs at each division (Tommy agreed to that). These indicate:

- i. The marginal cost of making cement (Tommy's side) is $MC_1 = \$20 + Q_1 / 10$, where Q_1 is the number of units of cement.
- ii. The cost of mixing and distributing concrete (Tony's side), *excluding* the cost of acquiring cement, is a constant $MC_2 = \$5$ per unit of concrete.
- iii. Marinelli faces a market demand for concrete of $Q = 1,000 - 10 * P_F$, where P_F is the final price per unit of concrete sold.

Note: Prices and costs quoted above are already adjusted so that it takes one unit of cement to make one unit of concrete. (In other words, the prices and costs given here already incorporate how much cement is actually used to make concrete. This is done so that you can just focus on the economics here.) All units of cement and concrete—i.e., the quantities—are in thousands.

Questions:

- (a) What transfer price will maximize the value of the firm overall (that is, the cement division *and* the concrete business)? What is the resulting total profit? (*Hint: Draw a graph of the firm's demand and cost curves first*).

At this transfer price, what is the profit contribution of Tommy's division? (That is, what is Tommy's revenue from selling cement to Tony, minus Tommy's costs of production?)

- (b) The firm's current transfer deals have been a bit different. Tommy generally tries to get Tony to pay \$65 / unit for cement. At a transfer price of \$65, find: How much cement Tony will buy; Tommy's division's profit; Tony's division's profit; and the total profit of the firm overall.

Compare your answers in (b) for Tommy's division profit, and the firm's profits overall, to your answers using the efficient transfer price in question 1(a).

- (c) *Now, the main point.* Is running the business as two separate profit centers limiting this firm's overall value? Why?
- (d) *Make your recommendation.* Tony asks you to meet with him and Tommy to discuss your results and recommendations. How would you recommend they change the way they run their business? In thinking through what you would propose, please note that if either brother doesn't like what he'll get under your recommended change(s), your proposal is unlikely to get implemented (and might well leave them angry). Tommy chased the last consultant off the premises with a baseball bat.

So... Can the brothers change *both* their transfer price and their profit division arrangement (that is, do something other than dividing the firm's total profit according to the profit of each division) in order to give each of them the right incentives to maximize the value of this firm overall? How do you pitch your proposal to the brothers at the meeting?

Remark. The problem experienced by Marinelli Concrete is quite common in multi-divisional firms (Marinelli is a real firm, as you might have surmised, although some of the details have been changed here). The attached article from *Fortune* contains some other examples of upstream divisions' pricing to a captive internal buyer gone wrong.

More on the Economics of Transfer Prices

Transfer Pricing When There is a Competitive External Market

The problem of finding and implementing an efficient transfer price is greatly simplified when there is an external market for the good or service that the upstream division produces. In addition, the presence of an external upstream market provides a potential additional source of profit for the firm.

To understand how both of these aspects work with an external market, assume as before that a firm has two divisions. The upstream division manufactures a crucial input for the final product. However, now there is an outside market for this crucial input. This means that (a) if the upstream division produces more than the downstream division needs, the surplus can be sold in the external market; alternatively, (b) if the upstream division produces less than the downstream division needs, then the downstream division's managers can make up the shortfall with purchases from the external market. As before, the downstream division completes the assembly and manufacturing process and distributes the product in the market.

This situation is shown in Figure 2. Here the firm takes the external market price, P_1 , as given. The fact that it is constant (flat) means the firm can buy or sell as much as it would like in the upstream external market, at a price of P_1 per unit. As always, the profit-maximizing level of output for the upstream division will set its marginal cost function (MC_1) equal to its marginal revenue (MR_1). But MR_1 is just the price P_1 in this case, since the incremental revenue from each additional sale on the upstream external market is P_1 . So setting $P_1 = MC_1$ determines the optimal upstream quantity, Q_1 .

How much should the downstream division produce? As always, the downstream division finds its profit-maximizing quantity (Q_F) by setting $MR_F = MC_F$. But now we

know the marginal cost of the upstream division is equal to the external market price! So the total marginal cost function is $MC_F = MC_1 + MC_2 = P_1 + MC_2$. In Figure 2, the quantity where MR_F crosses MC_F determines how much of the final good to make.

Now note that in Figure 2, the upstream division is producing more units than the downstream division finds it profitable to buy. So the upstream division sells the remaining units on the external market. This is profitable for the firm overall, because the upstream division's marginal costs are lower than the external market price (P_1) right up until the upstream division has produced Q_1 units.

So, how does a firm implement this efficient production across both divisions using transfer prices? This answer is: Set the transfer price equal to the external market price, P_1 . The intuition here is that the external market serves as a benchmark: The upstream firm should produce if its marginal cost is lower than the benchmark, and not produce when its marginal costs rises above the benchmark. Setting the transfer price equal to this external benchmark then gives the upstream firm the right production incentives. The downstream firm produces using the same cost basis as always, which is to say, using the marginal cost for the firm as a whole.

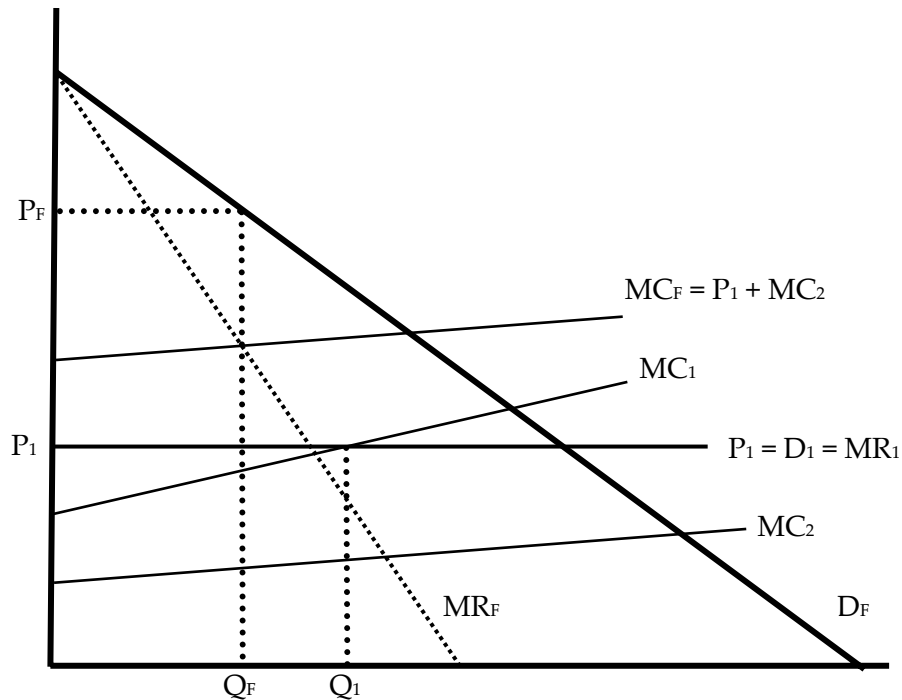


FIGURE 2. *Transfer Pricing with An External Market Benchmark*

Summary:

When a competitive external upstream market exists, the optimal transfer price is this external market price. The profit-maximizing production level is found by:

1. First, find the profit-maximizing quantity for the *upstream* division to produce: Set $MR_1 = MC_1$ to find the upstream division's optimal quantity (Q_1). With a competitive external market, this is the same as setting $P_1 = MC_1$.
2. Find the *firm's* marginal revenue curve MR_F from the demand curve D_F ;
3. Find the *firm's* overall marginal cost curve, $MC_F = P_1 + MC_2$, using the fact that the upstream division's marginal cost equals the external market price (P_1).
4. Set $MR_F = MC_F$, and solve for the profit-maximizing price P_F and quantity Q_F of the final product. If this quantity requires more of the input than the upstream division produces, Division 2 will buy the shortfall from the external market. If Division 2 does not need all of Division 1's production, then, then Division 1 can sell the remaining units in the external market.

As usual, we illustrate the calculations involved with an example.

Example: US Slobotics

US Slobotics manufactures 10/100Gb Ethernet cards (a part inside desktop computers that exchanges data across a network). It is organized into two separate divisions. Division 1 manufactures the chipset, the main component on an Ethernet card. Division 2 assembles the 10/100Gb card from the components produced by Division 1 and from external suppliers of other components. Division 2's assembly costs are \$3 per card. Many firms make chipsets, however, and that (upstream) market is considered to be quite competitive.

Managers at Division 2 have estimated that final market demand for US Slobotics 10/100Gb cards is:

$$Q_2 = 4,000 - 100 * P_2$$

where P_2 is the selling price for each card. The downstream division's cost function of producing a 10/100Gb card involves a fixed cost of 1,700 plus the assembly cost of \$3 per unit, or

$$TC_2 = 1,700 + 3 * Q_2$$

excluding the cost of the chip set. Managers at Division 1 estimate that producing chipsets internally has a total cost function

$$TC_1 = 3,000 + 2 * Q_1 + 0.001 * (Q_1)^2$$

On the external market, equivalent chipsets can be bought or sold at a (constant) price of \$12 per unit.

As a member of corporate staff, you are asked to determine what the profit maximizing output for Division 1 (and the corresponding profit) should be. How many chipsets should Division 1 expect to sell in the external market?

Analysis

Step 1: We are given that $P_1 = MR_1 = \$12$, and $MC_1 = 2 + 0.002 * Q_1$

$$\text{Now set } MR_1 = MC_1, \text{ or: } \$12 = 2 + 0.002 * Q_1$$

Solving for the upstream quantity to produce gives $Q_1 = 5,000$.

Step 2: Rearrange the final-good demand function in terms of quantity sold:

$$\begin{aligned} 100P_2 &= 4,000 - Q_2 \\ \text{or} \quad P_2 &= 40 - 0.01Q_2 \end{aligned}$$

$$\begin{aligned} \text{Total revenue (TR}_2\text{) is: } TR_2 &= P_2 * Q_2 \\ &= (40 - 0.01 * Q_2) * Q_2 \\ &= 40 * Q_2 - 0.01 * (Q_2)^2 \end{aligned}$$

Marginal revenue (MR₂) is then $MR_2 = dTR_2/dQ_2 = 40 - 0.02 * Q_2$

Step 3: The firm's overall marginal cost function is $MC_F = P_1 + MC_2$, or $MC_F = \$3 + \12 .

Step 4: Division 2's profit maximizing output occurs where $MR_2 = MC_F$, or

$$40 - 0.02 * Q_2 = \$15$$

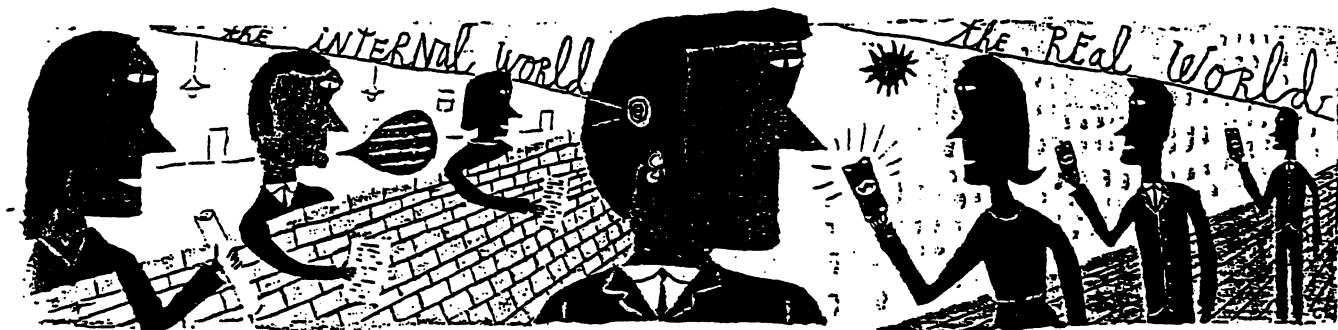
Solving for quantity yields $Q_2 = 1,250$.

So Division 2 will sell 1,250 cards. Division 1 will sell 1,250 chipsets to Division 2, but Division 1 will actually produce 5,000 chipsets and sell $5,000 - 1,250 = 3,750$ chipsets in the external market.

What is the firm's total profit? What is Division 1's contribution? Division 2's?

Managerial Implications

1. *Tension between performance evaluation and efficient coordination.* Multi-divisional firms commonly treat divisions as separate profit (or sometimes separate cost) centers. This practice greatly facilitates evaluating division managers' performance and implementing performance-based compensation systems. However, if one division is a "captive" internal customer of another division's services, then an upstream division can boost its profit level by charging high internal prices (or, if the upstream division is a cost center, it can reduce its costs by limiting the availability of these services). These problems hamper coordination between divisions and can reduce the profitability of the firm overall.
2. *Transfer pricing policies.* The key economic insight is that if the transfer prices are set efficiently, divisions can be treated as separate profit (or cost) centers *and* the incentives to distort prices (or costs) for services provided to other divisions can be minimized. The essence of the transfer pricing problem is to resolve the conflict between profit-maximizing economic decisions for the firm as a whole, and performance measurement and evaluation of divisional managers.
3. *Additional aspects.* There are other aspects to setting transfer prices that we have not examined here, such as minimizing tax liabilities in international firms. However, these tax issues simply add an additional level of complexity to the problem; they do not change the economics of why to get transfer prices right.
4. *Practical matters.* Getting transfer prices right requires information on marginal costs. This raises two complications, in practice:
 - a. Marginal cost can be difficult to determine. In practice, average variable cost often approximates marginal cost, and is commonly used instead.
 - b. There is the issue of *who* sets the transfer prices: Even if headquarters wants to set the transfer prices correctly, it often has to ask each division for information on its marginal costs first. This creates a potential incentive for an upstream division to "pad" its cost figures when the transfer prices are being determined—a problem that brings us to the need for good internal cost accounting and controls, which you will deal with in your accounting courses this year.



Another Fad Worth Killing

BY THOMAS A. STEWART

The idea of "internal customers" might have made sense once, but it has become a dangerous delusion. Get rid of it before it distracts you from real customers.

Epidemiologists at the Center for Buzzword Control have issued a New Year's financial health advisory. According to the center, which can be reached at the end of this article, the term "internal customer," long thought to be harmless or even beneficial, is no longer considered safe to use. Swallowing this sacred cow is known to cause corporate spongiform encephalitis, also known as "mad-company disease." This is a form of dementia in which corporations run around in circles, chasing their own tails, under the delusion that there is as much nourishment to be obtained there as from the green grass around them.

What's wrong with the notion of internal customers? Simply this: They don't exist. They are figments of the ever perfervid management imagination, a well-meant fiction that easily, through the law of unintended consequences, turns into ill-winded fact. There are only real customers, people with real money in real hands, which they will give you if you do what they want. Paying attention to internal customers can actually create obstacles to caring for real ones.

The internal customer was a contrivance of total quality management, and not a bad one. The internal customer was the person inside your company who received what you produced: the guy downstream. If you were a designer, the engineer was your internal customer; if an engineer, the factory manager was; etc. If you were staff, he was line. He was conjured into being to make a point. You will recall, from those thrilling

days of yesteryear, words and phrases like: "functional silos," "stovepipes," "chimneys," and "throw it over the wall," which we bolted together into mixed metaphors: "The designers sit in functional silos throwing designs over the wall to the engineers' chimney."

The Rube Goldberg imagery all too aptly described the tortuous practices that resulted when too little care was taken to see that what traversed the wall was useful next door. Staff overwhelmed the line with paperwork; designers sketched things that couldn't be built and had to be sent back. In the words of songwriter/mathematician Tom Lehrer: "Once the rockets are up, who cares where they come down? That's not my department," says Wernher von Braun."

To fix that, we told the staff and upstream departments, who never saw real customers: You have customers too, only yours are internal—they're on the line or downstream. Invest them with the quasi-moral authority of customers. Serve and satisfy them, for they are always right.

Among other good things, inventing internal customers helped break up captive in-house markets that can create a kinky kind of synergy. A friend of mine, for instance, worked for the book-publishing arm of a conglomerate that also owned a print-

ing company, which her company was compelled to use. The printer, she told me, took advantage of the market-in-bondage to jack up prices to its sibling company in order to meet their parent's profit goals. Telling the printer to treat her like a customer could stop the price gouging.

THIS IS A FORM OF DEMENTIA IN WHICH CORPORATIONS RUN AROUND IN CIRCLES, CHASING THEIR OWN TAILS.



The internal-customer idea is fine as far as it goes, but it all too easily goes too far. Says Christopher Meyer, managing director of Integral Inc., a consulting firm specializing in cycle-time improvement that was founded by Harvard business school professors Kim Clark and Steven Wheelwright: "The intentions were fine. Organizations never do things for crazy reasons." But sane reasons can have crazy results. Says Michael Brown, CEO of disk drive maker Quantum Corp. (1996 sales: about \$4.5 billion): "If you're in func-

tional silos, you've got to get out—but how you get out is important. It can be distracting and is not useful to set up a chain of internal customers. If you're not focused on paying customers, you get a lot of distortion."

Business, Meyer reminds us, exists to create value, and value is defined only by real customers. Says Meyer, who used to run human resources at Silicon Graphics: "I used to say we don't deliver product, we support. From the customer's viewpoint,

JARGON WATCH

Memos From Hell

Better Communications, a Lexington, Massachusetts, firm that teaches writing skills to employers, clipped these management-speak phrases from memos circulating at FORTUNE 500 companies.

Top leadership helicoptered this vision.

Translation: The bosses are looking beyond next week.

Added value is the keystone to exponentially accelerating profit curves.

Translation: Let's grow sales and profits by offering more of what customers want.

We need to dimension-
alize this management initiative.

Translation: Let's all make a plan.

We utilized a concert of cross-functional expertise.

Translation: People from different departments talked to each other.

Don't impact employee incentivization programs.

Translation: Don't screw around with people's pay.

Your job, for the time being, has been designated as "retained."

Translation: You're not fired, yet.

we're non-value-adding. How would you react if the sticker on a new car listed so much for air conditioning, so much for antilock brakes, and \$12.95 for HR training coordination?"

There's a fine distinction here, but an important one. HR training coordination (or any other internal work) might contribute to something customers do value, such as better workmanship. But the fact that an internal customer wants it doesn't, by itself, show that. Says Brown: "Internal customers build internal hurdles; you do things to satisfy them that might or might not be value-adding to customers." Internal customers might prize convenience more than cost, for example, or not care about costs as long as they're in someone else's budget or if they can pay with Monopoly money. In parts of IBM, people talk about "blue money" vs. "green money." Green money comes into the company from outside. Blue money comes from another department that's willing to pay you to do something—reprogram financial reporting forms, do a little spot manufacturing. It's often easier to obtain blue money than it is to get the real stuff—especially if whoever receives the blue-backs gets some sort of credit for it, such as an accounting notation giving them duplicate revenue credit if by good fortune green money comes in to cover it.

When that system gets out of hand, a whole chain of internal suppliers might get credit for their contributions to a project. Says one IBM finance manager, who adds that the problem has been fixed: "We got so carried away with duplicate revenue credit that a dollar's worth of sales could turn into five dollars on the [internal] books. Everyone could justify their existence on the basis of that one dollar."

Investing someone in-house with the holy name of customer fuzzes up a too-often-forgotten distinction: the difference between a business and an organization. A business, Stan Davis writes in his book *2020 Vision*, "applies resources to create products and services that meet market needs ... an organization is the way in which those resources are administered." A business is defined from the outside in, by markets, suppliers, and competitors. "The internal customer," Davis said in December, "is a happy fiction that creates a business that exists to run an organization—i.e., a bureaucracy."

We want the voice of the customer to be loud in the land, not the voice of the cuckoo. For that we need two things. We need a word for our colleagues, something

that tells the folks upstream that we're in this to serve the people who pay the bills while reminding people downstream that it's counterproductive to say, "You're over-head and I'm not." A lovely word, Chris Meyer suggests, is "partner." It's a sign of how far out of whack things are that "partner" has come into vogue to describe buyer-seller relationships rather than collegial ones. Meyer notes: "We've created customers on the inside and partners on the outside. We've got it backwards."

But we need something else, a way to carry the customer's voice, the voice of the business, deep into the organization. Quantum has an elegant way to do that. Like everyone else these days, though perhaps more devotedly than most, Quantum organizes work in teams—project teams, major customer teams, etc. They are, of course, usually staffed by people from several different functions. To this common mix Quantum has added a clever way to keep the teams' collective vision focused on how to grow the business rather than just on how to cooperate inside. The company asks all major customers—companies like Apple, Compaq, and Hewlett-Packard—to fill out quarterly report cards. These provide detailed scores of how Quantum has performed on measures like product quality, responsiveness, meeting delivery dates, and so on. Wherever possible—it's usually possible—the grades are quantitative. Customers submit report cards from each of their sites, a level of detail that helps Quantum spot problems and best practices.

Quantum takes the report cards seriously. A group of 15 to 20—quality gurus and key account people—pore over each report card; CEO Brown and the management team study them each quarter too. Where there are problems, he expects to see plans to fix them. Says Brown: "We really want the report cards to be very visible. It's important for everybody to see who our major customers are and how they see us." A key benefit, he says, is that the report cards bring facts from the marketplace to help set in-house priorities. Says Brown: "They help us make investment tradeoffs. Support organizations tend to develop goals that might or might not be what customers want. Should we invest more in finance or engineering? The reports tell us what customers would choose." Which is what you need to know if you want them to choose to do business with you. ■

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Japan's Tax Man Leans on Foreign Firms

Part 1: Goke, Goodyear Charged With Moving Profit Abroad

By ROBERT STRINER (A15)

Staff Reporter of THE WALL STREET JOURNAL
TOKYO—Foreign companies in Japan are getting more-frequent visits from the Tokyo tax man these days.

Tax authorities are clamping down on what they say is a propensity by multinationals to avoid the nation's high corporate taxes by illegally shifting profits off their books in Japan.

Japan's National Tax Administration says it has stepped up its hunt for Japanese units of multinational companies that engage in "transfer-pricing," an accounting trick in which a company artificially depresses the profits it reports on its books in one country by moving those profits onto books in another.

In the year ended June 30, the tax agency filed claims against 50 foreign companies for alleged transfer pricing, demanding back taxes totaling 54.8 billion yen (\$492.4 million). The agency filed only 80 transfer-pricing claims over the preceding eight years, totaling 140 million yen. Since 1993, the agency has tripled the size of its auditing team that investigates foreign companies suspected of illegally exporting profits.

Companies caught engaging in transfer-pricing often face a whopping bill. In 1994 Coca-Cola Co.'s Japan unit announced it would contest a big claim for back taxes, which this newspaper reported to be for \$140 million. The Japanese unit of Goodyear Tire & Rubber Co. was hit for roughly 600 million yen in 1994. Tax officials claimed 800 million yen from the Japanese unit of Procter & Gamble Co. in the same year, according to Japanese press reports that P&G faxed to a reporter; P&G wouldn't comment on the report.

Coca-Cola and Goodyear are still waiting for the U.S. Internal Revenue Service to cut a deal with Tokyo on who gets which taxes. Such talks sometimes result in a lower claim. This year, the Japanese unit of Roche Holding AG, a Swiss pharmaceutical concern, saw the claim against it by Japan's tax office fall after talks between Japanese and Swiss officials.

If Japanese authorities decide that a company has improperly transferred \$100 million in Japanese profits to the U.S., that company would have to pay \$27 million in back taxes to Tokyo, Arthur Andersen & Co. calculates.

Tokyo paid little attention to transfer pricing for nearly a decade, says Mark Campbell, a partner in the Tokyo office of Arthur Andersen. Back then, in fact, the U.S. was frequently accusing Japanese companies of transfer pricing. But the tax agency seems to have "turned on a dime," Mr. Campbell says. To help foreign companies deal with audits, Arthur Andersen recently added 10 transfer-pricing specialists to the three that were in its Tokyo office until then.

Tax authorities say they are more interested now because multinationals are doing more business in Japan. The tax agency is probing transfer-pricing schemes among investment banks and other foreign financial companies in

Japan, says Hidenori Shimamura, director of international examinations. His staff is questioning bankers to find out "who gets the profits from different transactions," he says.

Japan isn't the only country that nabs firms for hiding profits. But high taxes make Japan a tempting target for a tax dodge: Companies pay half their yearly earnings to the national and local governments, compared with an estimated 41% in the U.S. and 33% in the U.K.

Allegations of transfer pricing often arise here when tax authorities think the parent company of a foreign concern is overcharging its Japanese unit for the use of its products or trademarks. Coca-Cola's case is typical. Coke's Japan unit sells canned drinks developed especially for Japan, such as canned coffees under the name Georgia. The only indication that Georgia is a Coke product is the tiny Coca-Cola logo on the side of the can.

Tax authorities said the Japan unit paid too much in royalties—for things like the right to use the logo—to the parent company between 1990 and 1992, effectively shifting profits earned in Japan to the U.S., where taxes are lower. Coca-Cola's Japan

unit argued, in a statement released at the time of the claim, that the royalties it paid were "fair and reasonable, given the unmatched value of the Coca-Cola Company's trademarks, manufacturing, marketing and management know-how."

Calculating proper payments for something like a trademark is difficult. Because trademarks aren't traded in the open market, their value is unclear. Mr. Shimamura, the tax official, says his department sets a figure by examining both the company that's being audited and similar transactions at unrelated companies. That, he says, gives auditors a clear idea of what a trademark or an import might be worth in the market and how much a Japanese unit might have overpaid.

But appeals aren't easy. The Japanese government won't hear an appeal until it has been paid the taxes it says it is owed.