

# “We Control the Vertical”: Three Theories of the Firm

BY MITCHELL BERLIN

The Gramm-Leach-Bliley Act has expanded the set of products and services banks and other financial firms can provide to their customers. But how will financial institutions organize their production? In this article, Mitchell Berlin discusses three broad approaches to vertical integration and the pros and cons of a firm’s providing all stages of production and distribution.

How can a bank (or any firm) decide how much of the chain of production and distribution it should carry out on its own? For example, should a bank that offers a line of profitable credit cards handle its own back-office operations, a move that economists call *backward integration*? And when (if ever) should a technology firm that has been content to provide information-processing services to retail financial firms (such as banks) decide to *integrate forward* and provide financial services directly to the public? Questions such as these have become particularly pressing for bankers and

their competitors now that the Gramm-Leach-Bliley Act of 1999 has expanded the products and services that banks and other financial firms can provide.

One standard answer is that complementary products and services are more profitably produced by a single firm, but the real answer is not that simple.<sup>1</sup> True, complementary activities are often carried out by vertically integrated firms,<sup>2</sup> but they are also carried out by separate firms specializing in single stages of production or distribution. A prominent example is life insurance. Underwriting insurance and

selling insurance are almost surely complementary activities. But insurance companies market policies through two different channels. They use agents who sell only their own company’s products, and they also use independent agents who sell the products of multiple insurance companies.<sup>3</sup>

Although this article focuses on vertical integration, particularly forward integration into retailing, many of the same issues arise when a firm decides whether to expand its product line to include products or services that are not vertically related.<sup>4</sup>

Economists have been puzzling over this issue for more than 70 years under the general rubric the *theory of the firm*.<sup>5</sup> In a classic article in 1937, Nobel Prize winner Ronald Coase first posed the (seemingly) simple question: When will a transaction be carried out within a single firm rather than by two separate firms transacting in the market?

Although economists have proposed a multitude of theories to answer this question, there is some common ground: The best way to structure a transaction depends on how it affects the incentives of the parties to the transaction. (But see *Other Models*



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<sup>1</sup>Activities are *complements* when doing one reduces the cost of doing the other. For example, originating a loan and providing credit insurance to the borrower *may* be complementary financial activities, since information about the borrower is reusable.

<sup>2</sup>A vertically integrated firm is one that carries out two or more stages of production or distribution by itself. For example, a firm that both produces and sells its own products is vertically integrated.

<sup>3</sup>Allen Berger, J. David Cummins, and Mary Weiss’s article presents empirical evidence that the coexistence of these two delivery systems is not merely because one inefficient system survives alongside an efficient one.

<sup>4</sup>See my earlier article for a review of some of the recent empirical evidence on the costs and benefits of product line specialization and diversification.

<sup>5</sup>Bengt Holmstrom and John Roberts’ literature review is an excellent critical discussion of the theory of the firm.

of *Vertical Integration* for explanations that don't focus on incentives.) The types of incentives that theories of the firm have emphasized include individuals' willingness to cooperate in response to unforeseeable events, their willingness to provide maximum effort, and their willingness to allocate their time and attention in a sensible way across a multitude of competing tasks.

Three broad approaches have had the most influence in recent years: the transactions cost approach, the property rights approach, and the multitask approach. In this article I will use each of these approaches, in turn, to examine a firm's decision to sell through independent sales representatives or through an in-house sales group. In other words, I will look at a firm's decision about whether to integrate forward into retailing.

### IN-HOUSE SALES FORCE OR INDEPENDENT REPS?

AdaptorDie Corp. (AC) is a manufacturer of electronic components with a broad menu of products.<sup>6</sup> Like many other firms in the components business, AC uses two different channels for selling its products.

Twenty percent of its components are sold through an in-house sales force that is paid a fixed salary plus a modest commission for each sale. Following an almost universal pattern, AC's own sales employees sell only AC components.

The remaining 80 percent of AC's components are sold through independent manufacturers' representatives such as DirectCell Corp. (DC). DC's relationship with AC is not exclusive. DC offers a sales package that includes AC's products and also those of

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<sup>6</sup>My description of AdaptorDie and DirectCell draws heavily on Erin Anderson and David C. Schmittlein's article. Both firms are fictional.

## Other Models of Vertical Integration

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roadly, the industrial organization literature has proposed three motives for vertical integration, in addition to theories that rely explicitly on incentive or bargaining considerations.<sup>a</sup>

One classic motive is firms' desire to avoid *double marginalization* (or the *chain of monopolies* problem). Consider a monopolist manufacturer of electronic components selling to a retailer who is also a monopolist. If the manufacturer can't charge a fixed fee, in addition to its price per unit sold, it will charge the retailer a price above the marginal cost of production. Thus, the retailer faces a higher price for the component than it would if it could purchase the good in a competitive market. In turn, the retailer charges final customers the monopoly price (the price it paid for the component, plus its own monopoly markup).

The problem with this outcome is that firms produce too little output at too high a price, from the standpoint of both the firm and the consumer. Firms would increase their joint profits and increase consumer satisfaction as well if they integrated and sold the good at a lower price. The integrated firm would maximize profits by charging consumers a monopoly markup over the marginal cost of producing the good, a price lower than the one that includes the double markup charged by successive monopolies.<sup>b</sup>

The main criticism of double marginalization as a convincing motive for vertical integration is that there are straightforward contractual solutions to the problem that don't involve vertical integration. For example, the manufacturer could set its price equal to the marginal cost of producing each unit of the good and charge the retailer a fixed fee (as compensation for giving up monopoly profits). To be a fully convincing motive for vertical integration, double marginalization requires some reason such contracts are infeasible, for example, the contractual difficulties highlighted by the theories in the text.

A second classic motive for vertical integration is *vertical foreclosure*. Consider the case of a monopolist supplier of an input necessary to competitive manufacturers. One of the manufacturers could integrate with the monopolist supplier to gain a competitive advantage in the market for the final good. Indeed, the integrated firm might even be able to drive other manufacturers out of the market. Although this is a plausible motive for integration, the conditions for vertical foreclosure — a monopolist provider of an input — are clearly restrictive and can't explain many cases of vertical integration observed in the marketplace. For example, General Motors produces more of its auto components internally than does Ford, but not because the nature of the inputs is fundamentally different.

A third classic motive for vertical integration is *supply assurance*.<sup>c</sup> According to this motive, a manufacturer may wish to guarantee an adequate supply of an input in the face of uncertainty about its own requirements (say, because of fluctuating demand for its own manufactured good) or in the face of uncertainty about the total supply of the input. Like double marginalization, supply assurance appears to be a sensible explanation for vertical integration, but only in the presence of the types of contracting and bargaining problems that take center stage in the approaches discussed in this article. Without such problems, firms could write relatively simple contracts to ensure an adequate supply of inputs. For example, uncertain demand for electricity has not led to vertical integration but to long-term contracts between electric utilities and coal suppliers.

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<sup>a</sup>Jean Tirole's excellent textbook has a full chapter devoted to models of vertical integration.

<sup>b</sup>Double marginalization is really a special case of a more general class of distortions covered at length by Tirole under the general heading "the basic vertical externality."

<sup>c</sup>Some prominent formal models of the supply assurance motive include the article by Dennis Carlton and the one by Patrick Bolton and Michael Whinston.

other electronics manufacturers, although, following common practice, it doesn't offer competing versions of the same component. DC rents its own office space and hires its own sales staff. All components are sold on straight commission, that is, AC pays DC a percentage of the sale price for each component sold. However, the unsold products remain the property of the manufacturer.

AC's use of two distinct sales channels raises some obvious (and not so obvious) questions. What types of components are sold using each channel? Why does AC use different compensation schemes for the two channels? (Its internal sales force works for fixed salaries while independent reps receive a percentage of sales.) A less obvious question — but only because we may not think to question a practice that is so common — is why AC's own sales force is not permitted to sell other firms' components while DC's sales force has a nonexclusive sales relationship? The answers to questions like these may shed light on the broader question: What are the relative advantages and disadvantages of each type of sales channel?<sup>7</sup>

## IT'S THE TRANSACTION, STUPID

The *transactions cost* approach argues that the answers to these questions can be found by looking at

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<sup>7</sup>The real world organizational choice is somewhat more complicated than my description of a choice between an internal sales force that sells the firm's products exclusively and the independent sales rep that has nonexclusive relationships with many firms. Traditional franchises, such as gas stations, are independent retailing firms that have exclusive sales relationships with gasoline producers. Also, Dell's internal sales personnel sell the products of other computer companies, for example, Hewlett Packard printers. These organizational forms may be thought of as intermediate contractual solutions.

the details of individual transactions between different firms, for example, a contractual agreement by DC to sell AC's capacitors as part of its sales package.<sup>8</sup> This approach says that costs inevitably arise as firms bargain and disagree in the normal course of conducting business in a rapidly changing marketplace. Transaction costs are distinct from production costs such as AC's manufacturing costs or DC's sales costs. Broadly, transaction costs include all expenses and foregone opportunities that arise because of actual bargaining and dickering as well as expenses borne to avoid potential disagreements. These costs range from lost sales when disagreements lead to delays to lawyers' fees when negotiations become so contentious that the courts (or even the threat to go to the courts) come into play.

The transactions cost approach begins with a straightforward thought experiment: For a particular transaction — such as the sale of capacitors — we can evaluate the transaction costs that would arise if separate firms carried out

If [transaction costs] are high enough, the theory predicts that the component will be sold through [an] internal sales force instead, because incentives to disagree can more easily be mitigated or overcome within a firm.

the transaction, that is, if the capacitor were produced by manufacturer AC and sold by independent sales representative DC. If these costs are high enough, the theory predicts that the

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<sup>8</sup>Seminal contributions in the transactions cost approach have been made by Oliver Williamson and by Benjamin Klein, R.A. Crawford, and Armen Alchian. See Williamson's 1985 book for a critical summary of the literature in this tradition.

component will be sold through AC's internal sales force instead, because incentives to disagree can more easily be mitigated or overcome within a firm.<sup>9</sup>

**Asset Specificity Creates Transaction Costs.** The most important determinant of transaction costs is the so-called *degree of asset specificity*: the extent to which the transacting firms invest in assets whose value depends on the business relationship's remaining intact.

Both AC and DC have made numerous investments in the course of their business relationship. For example, DC invested in office equipment, including a personal computer for each of its sales agents. A computer is a nonspecific asset that can be used to store and process information about accounts for any manufacturer; that the computers currently store information about orders for AC doesn't affect the value of the computer. And if AC were to replace DC and find a new manufacturer's rep, it wouldn't spend much time wondering whether it could find a firm with equally powerful computers.

However, firms also invest in assets that would lose much, if not all, of their value if the business relationship broke down. For example, some

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<sup>9</sup>This is too simple, since difficulties also arise when a transaction is handled within a single firm. We discuss these below, but the transactions cost approach has a less distinctive and less complete analysis of the various costs of keeping transactions carried out within the firm.

electronic components are not standardized and must be modified to suit a particular customer's needs. Customization is a process that requires an understanding of the customer's needs, an understanding of which modifications are feasible, and a channel for communications between product designers and customers. Thus, the sales agent must have an intimate knowledge of the final customer's business and must also have a working relationship with the manufacturer's designers and engineers.

Knowledge about customers and working relationships, both of which take time and effort to build and nurture, are examples of (intangible) *relationship-specific*, or *idiosyncratic*, assets.<sup>10</sup> If AC and DC parted ways in a dispute over the feasibility of a customer's demand for a product modification: (1) AC would lose its storehouse of knowledge about the customers who traditionally purchase through DC, and (2) the working relationships between DC's sales force and AC's engineers would go up in smoke.

With so much to lose on both sides, a complete breakdown in the business relationship is unlikely. But that won't prevent the firms from haggling over who receives the gains and who bears the brunt of making adjustments. And even if disagreements don't typically lead to a split, haggling can be time-consuming and expensive. Perhaps more significant, if everyone expects lots of disagreements, or if the adjustments lead to an unequal distribution of the net gains, firms may avoid making idiosyncratic investments in the first place; that is, the willingness to make

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<sup>10</sup>Idiosyncratic assets needn't be intangible. The textbook example of an idiosyncratic asset is Fisher Body's plant for producing auto chassis located right next to Chevrolet's assembly operation.

valuable investments is undermined because of individuals' unwillingness to cooperate.

For example, the head of AC's engineering division can centralize (and restrict) communications between AC's engineers and DC's sales force. If communication is difficult, working relationships between sales personnel and designers may never develop, and potentially profitable product adjustments may never get proposed. The lost profit from inflexible product design should be reckoned an indirect transaction cost.

**In a predictable business environment, transactions will be largely routine, and firms may be able to write contracts that specify each party's rights and obligations.**

**Uncertainty Increases the Costs of Haggling.** In a predictable business environment, transactions will be largely routine, and firms may be able to write contracts that specify each party's rights and obligations. In an unpredictable world, things are very different. Changing circumstances require adaptive responses, and it may be impossible to write contracts that are both flexible enough to permit adjustments and precise enough to give

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<sup>11</sup>In the economics literature, contracts that do not include detailed clauses to cover all contingencies are called *incomplete contracts*. Typically, contracts are incomplete because (1) it is very hard to specify all contingencies in advance, and (2) it is difficult to describe contingencies with sufficient clarity that a court can actually enforce the contract.

adequate guidance when disagreements arise.<sup>11</sup> For example, for nonstandardized products no one can accurately predict which customers will seek customized variants and which changes they will demand. Thus, for nonstandardized components, uncertainty about the future is great, and transaction costs are likely to be high; time-consuming haggling will be a problem, and the risks of a bargaining breakdown are likely to be great.

**Customized Products Are Sold by In-House Sales Forces.** Let's push our thought experiment about AC further. Divide AC's products into two groups: those that are standardized and those that are customized to meet customers' demands. Since customized products require an unpredictable series of adaptations, and since these will require significant investments in idiosyncratic assets (knowledge about customer needs and relationships between design and sales personnel), transaction costs are likely to be high if such components are sold through independent sales rep DC. Theory predicts that these products are more likely to be sold through the in-house sales staff, while AC's standardized products will be sold through DC.

Indeed, this prediction is supported by the work of Erin Anderson and David Schmittlein, who examined a real-world electronics firm and found that it sells customized components through its in-house sales force and standardized components through manufacturers' reps.<sup>12</sup>

**In-House Sales Divisions Have Advantages When Transaction Costs Are High.** If difficulties can afflict transactions between separate firms, how can keeping the transaction

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<sup>12</sup>Bengt Holmstrom and Paul Milgrom interpret this evidence differently as we will see below.

within a single firm be better? One possibility is that information may flow more easily within an organization than between organizations. Since members of a single organization all share in the same flow of profits, cooperation may be more the norm, and sales personnel and designers within the same firm may have fewer incentives to withhold information.<sup>13</sup> This cooperation can be facilitated through judiciously designed internal compensation schemes. Furthermore, to the extent that the information flows are the result of conscious design, the firm's top management can encourage the free flow of useful information. This may be particularly important when disputes arise, as they inevitably will, between separate divisions of a single firm.

Apart from the value of a freer flow of information, the resolution of disputes between divisions may be eased by the use of *administrative fiat*; that is, top management can impose an outcome when the sales and engineering divisions can't come to agreement on their own. Firms often have specialized internal mechanisms for handling more serious disputes. For example, in a case study of a high technology firm's choice between purchasing inputs from external sources and producing the inputs internally — sometimes called the *make or buy decision* — Marc Knez and Duncan Simester found that disputes between the engineering and sales divisions were arbitrated by "chief technologists," usually former engineers who acted as final judge. Knez and Simester also found that in this firm, arbitration was never used to resolve disputes between outside producers of inputs and the purchasing firm.

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<sup>13</sup>The property rights theorists discussed in the next section disagree strongly with these claims.



### ASSETS ARE POWER

The *property rights* approach also addresses the problem of designing organizations to mitigate the effects of the disputes that inevitably arise in the course of doing business in an unpredictable world. But the property rights view doesn't agree that keeping a transaction within the firm is more likely to lead to improved information flows or greater incentives for individuals to cooperate.<sup>14</sup> Accordingly, the underlying thought experiment differs from that of the transactions cost approach. Property rights theorists begin with separate organizations — separate firms or even separate divisions of the same firm — and with a description of the various assets needed to carry out business

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<sup>14</sup>The property rights approach ignores differences in the way information flows between firms and within firms and also ignores differences in the details of compensation schemes.

transactions. For a property rights theorist, the underlying question is: "Who should own which assets?"<sup>15</sup>

To illustrate this approach, let's go back to our example. There are three distinct organizations: AC's manufacturing division, AC's sales division, and independent manufacturers' rep, DC. To simplify, imagine that there are just two types of assets: the machines used to produce electronic components and the sales lists of customers who have bought each component in the past. In the property rights view, AC and DC would be viewed as independent firms only if AC owns the machines and DC owns the customer list. The fundamental feature that distinguishes DC from AC's internal sales division is that DC owns its

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<sup>15</sup>This approach was originated by Oliver Hart and Sanford Grossman and was developed subsequently by Oliver Hart and John Moore in a series of articles. See Hart's 1995 book for an accessible introduction.

customer list while AC's sales division doesn't.

**Owners Are Powerful.** In the property rights view, if someone owns an asset, he or she has the power to exclude others from using it.<sup>16</sup> For example, the owner of the customer list controls an essential link between AC and its potential customers; knowing who has purchased a product in the past is very valuable knowledge when AC wants to market an advanced version of an existing component. Without this knowledge AC would have to rely on expensive scattershot methods to inform potential customers of the new product (e.g., commercial time during the Super Bowl).

Consider the case where AC and DC are separate firms, that is, DC owns the customer list, and imagine that one of DC's important customers insists on a costly customization of a component. DC's credo is: "The customer is always right!" But AC's engineers are under severe pressure to keep costs in line after a number of embarrassing cost overruns. AC's engineers prefer that the customer accept a modest customization (at most) and that the costs of producing the tailor-made product be charged to the customer. DC's sales personnel argue that they have made promises that AC would work closely with the customer to adapt the component.

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<sup>16</sup>Proponents of the property rights view are well aware that this definition is a simplification, but one chosen to facilitate formal analysis. In a recent contribution, Raghuram Rajan and Luigi Zingales have proposed a more nuanced view of ownership in which the owner can regulate access to an asset and also regulate access to those who work with the asset. This extension is important because, in many cases, it is the knowledge and expertise of the team of employees working with an asset that is most valuable rather than ownership of the asset itself. Phillippe Aghion and Jean Tirole propose another significant extension and distinguish formal ownership and real ownership — which requires the owner to be well informed enough to know how to make good use of the asset.

Who will win this dispute?

The owner of the customer list, DC, is likely to win because it has a lot of bargaining power. It holds the (mainly implicit) threat to walk away with the customer list and to peddle its services to

conflicts than in conflicts with an independent manufacturers' rep.

**All Power to the People (Whose Efforts Are Most Valuable).** If disputes, large and small, cordial and hostile, are the warp and the woof of

**Conflicts are pervasive both within and between firms. But an internal sales division doesn't have the same bargaining power as an independent firm, since the head of the sales division can't walk away with the sales list.**

one of AC's competitors.<sup>17</sup> This threat is a powerful one, since AC may find it very difficult to quickly re-establish a channel to existing customers without the customer list.

After enough disputes like this, the head of engineering at AC might well ask herself whether it wouldn't be more profitable to sell a larger share of its products through its own in-house sales division. The property rights view emphasizes that the head of engineering would be naïve to expect that conflicts would be less pervasive within a single firm or that internal sales personnel would be more concerned about the engineering division's cost control efforts than would independent sales personnel. Conflicts are pervasive both within and between firms. But an internal sales division doesn't have the same bargaining power as an independent firm, since the head of the sales division can't walk away with the sales list.<sup>18</sup> Thus, the head of engineering can reasonably expect to prevail more often in internal

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<sup>17</sup>Economists call this the "hold-up problem."

<sup>18</sup>What's to keep the head of sales from walking away with the customer list? Noncompete clauses are customary in situations such as these.

business life, it is easy to see why the head of engineering at AC or the president of DC would be concerned about who owns which assets. However, from an efficiency standpoint — that is, if we are primarily concerned about increasing individuals' incentive to make jointly valuable investments — it is not immediately clear that it matters who prevails more often. Cutting costs and satisfying unique customer needs are both worthy business goals, and how the engineers of AC, the sales personnel of DC, and the sales personnel of AC's sales division divide up the profits doesn't seem to be an important issue to anyone but themselves.

In fact, relative bargaining strengths *do* matter because members of the different organizations invest time and effort that increases the value of their *joint* output, but each member's willingness to make such investments depends on his or her *own* expected return on the investment. The central idea of the property rights view is that bargaining power — and the assets that confer bargaining power — should be in the hands of those people whose efforts are most significant in increasing the value of the business relationship. Giving these people more bargaining power ensures that they receive more of the

rewards from investing time and energy and, thus, that they have a stronger incentive to make these investments.<sup>19</sup>

### Who Should Own the Customer List? Two Examples.

Consider a component that comes in many varieties, each one tailored to a particular type of user, or one that requires extensive follow-up service. Here the relationship between the sales organization and the customer is paramount. Sales personnel must know their customers' needs; indeed, the seller may play a significant role in advising the customer, both at the time of sale and after.

For products such as these, the most important investments are made by the sales organization, and the sales organization should own the customer list to capture a larger share of the profits from providing excellent customer service. Theory would predict that these products should be sold by DC, rather than by AC's in-house sales organization.<sup>20</sup> Increasing DC's bargaining power can also increase AC's profits, even if AC's engineers often have difficulty winning disputes. DC's investments in customer service also increase the value of AC's investments in product design. Thus, giving DC lots

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<sup>19</sup>However, David de Meza and Ben Lockwood's article demonstrates that the question of who should be given power over assets may be slightly more complicated than this discussion suggests. In particular, we need to know more about the details of the bargaining environment to make precise predictions.

<sup>20</sup>Note that Anderson and Schmittlein's evidence that standardized electronic components are sold by independent manufacturers' representatives is inconsistent with this interpretation. However, for the most part, it has proved relatively difficult to devise convincing and powerful empirical tests that distinguish one theory's empirical predictions from another's. See Michael Whinston's paper for one attempt to devise a formal framework for distinguishing between the predictions of the transactions cost and property rights approaches.

of bargaining power can significantly increase the sum of AC's and DC's firm-specific investments and the *total profits* to be divided.<sup>21</sup>

Consider another class of components in which AC is a leader in product innovation, but which are mainly standardized and which require little follow-up servicing. In this case, a knowledgeable sales force may still be necessary to educate customers about new products, but a close relationship between sales personnel and customers

**Thus, providing high-powered rewards for easily measured outputs will lead individuals (and their organizations) to neglect tasks that may be important but whose results are difficult to measure.**

is not as important. For these components, the customer list should not be owned by an independent sales organization such as DC. The customer list is still very valuable, and DC's bargaining power would mainly undercut AC's engineers' incentive to work hard without a countervailing gain.

### RICHES BEYOND MEASURE

A third approach, the *multitask* approach, doesn't view bargaining and

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<sup>21</sup>In the language of the formal theory, individuals' investments in human capital are complements. One individual's investment in human capital raises the marginal return to investment in human capital for other individuals.

hold-up problems as the central influence on the design of firms. Instead, this approach draws out the implications of a simple, but powerful pair of insights: (1) Most managers and employees are engaged in the production of many outputs — or, viewed differently, engaged in a variety of tasks; (2) Some outputs are easy to measure, and some are hard to measure.<sup>22</sup>

For example, the members of any sales force are really engaged in a variety of activities when they sell a component. The most obvious is the sale itself, something that is relatively easily measured. But sales personnel also collect information about customers' needs and problems, and this information can be tremendously valuable to the product's designers and engineers. Unlike booking a sale, diligence and ingenuity in collecting information are hard to measure. Of course, these activities will ultimately be reflected in future sales, but the effects may take a long time to come to fruition, and they will be spread widely.

**When Measurement Is Difficult, Low-Powered Incentives Are Best.** Consider a compensation scheme such as the one between AC and DC, a straight percentage commission on total sales. When sales personnel are heavily rewarded for the volume of sales, they will predictably allocate their time and attention to selling, and they will neglect the less rewarding task of collecting intelligence to be passed on to AC's designers. Thus, providing high-powered rewards for easily measured outputs will lead individuals (and their organizations) to neglect tasks that may

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<sup>22</sup>The multitask approach has been developed in a series of papers by Bengt Holmstrom and Paul Milgrom, although the insight that measurement problems are central to a theory of the firm figures prominently in Yoram Barzel's work. Milgrom's paper with John Roberts on influence costs — politicking within firms — is another application of the multitask approach.

be important but whose results are difficult to measure.

For some products, collecting intelligence from AC's customers and transmitting it to AC's designers is very important. According to the multitask approach, such products should be sold by the in-house sales division, not DC's sales reps. And the lion's share of the in-house sales staff's compensation should be a fixed salary — a low-powered compensation scheme, in the sense that pay is not closely related to measured performance.<sup>23</sup>

Of course, this compensation scheme has inevitable drawbacks, too. Internal sales personnel may allocate their time more appropriately between activities with short- and long-term payoffs, but they may simply work less hard than DC's sales force. AC can partially counter this drawback and also directly reward employees' effort on difficult-to-measure activities by using compensation and promotion schemes tied to subjective performance evaluations by supervisors.<sup>24</sup>

**Measurement Difficulties Also Help Explain Job Design.** The multitask view suggests that jobs may also be designed differently depending on whether components are sold by an in-house sales force or by independent manufacturers' representatives. For example, if one salesperson offers the products of numerous producers, each producer will worry that its own product

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<sup>23</sup>Anderson and Schmittlein's characterization of the difference between compensation schemes for in-house sales employees and independent manufacturers' reps is clearly consistent with this theory.

<sup>24</sup>See Robert Gibbons's and Canice Prendergast's surveys for evidence on the use of subjective evaluation in the workplace. An interesting feature of employing subjective evaluations is that internal politicking to influence supervisors' evaluations becomes a significant problem in organizational design. See Milgrom and Roberts' article on influence activities.

is being shortchanged. Many firms avoid this problem by using an in-house sales force that sells its firm's products exclusively.

But this only raises another question. Why not insist on an exclusive sales relationship with the independent manufacturers' rep also? Why doesn't each sales organization agree to sell only one manufacturer's product line at a time?<sup>25</sup> One reason is that for some types of products, there isn't a lot to gain from an exclusive relationship. When it is easy to measure and reward a salesperson's effort in selling a product, an exclusive relationship isn't necessary. Sales figures will accurately reflect the time and effort that sales personnel have spent in selling each manufacturer's products. For some products AC can simply examine DC's sales of AC's components to make sure that DC is not promoting a competitor's product at AC's expense.

**While engaging in complementary activities may be part of the rationale for expanding a firm's activity mix, the firm must also take serious account of incentives.**

On the other hand, the goods handled through in-house employees (and not by independent reps) are sold that way precisely because sales figures are not good measures of sales effort for some types of components. The same measurement problems that cause AC to use internal sales personnel and low-powered incentive schemes for some products also cause AC to impose

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<sup>25</sup>Actually, this hypothetical arrangement has features in common — notably exclusivity — with traditional retail franchise relationships. See Francine Lafontaine and Margaret Slade's article for an evaluation of the empirical literature on retail franchising.

exclusivity on its sales employees. The simplest way to make sure that the employee is not shifting time and attention to promote a competitor's components is to impose exclusivity. While it may be hard to keep close tabs on an employee's allocation of time among various sales activities, it is relatively easy to check whether he or she is selling another firm's products on company time.

## CONCLUSION

Recent theories of internal organization offer some general lessons for a financial services firm that's thinking about moving into new product lines by integrating backward or forward or by selling related products. Perhaps the most important general insight is that while engaging in complementary activities may be part of the rationale for expanding a firm's activity mix, the firm must also take serious account of

incentives. The Gramm-Leach-Bliley Act has introduced a new category of activities, *activities complementary to banking*, that could be provided through financial holding companies. The act requires that bankers seeking to engage in a new, complementary activity must describe the nature of the complementarity in detail. Although regulators will not demand that bankers analyze incentive considerations when new activities are brought into the firm, bankers themselves would be well advised to take their own analyses further than the law demands.

Indeed, the starting point of Oliver Williamson's investigations into

the transactions cost motivations for vertical integration was the recognition that even highly complementary activities could be profitably carried out by separate firms if the terms of the transactions between the firms are relatively predictable and don't require relationship-specific investments. In these cases, specialized firms may well achieve a high degree of coordination through contracts alone, because individuals' incentives to disagree are small and easily overcome.

While the theoretical work is not yet sufficiently well developed to give bank managers precise guidance, the theories do yield some important insights. One of the central insights of the property rights view is that bargaining problems don't just disappear when transactions are brought within a single firm. The key is to assign ownership rights over assets to those whose effort produces the most value for the firm. For example, many bank holding companies have discovered that purchasing an investment banking subsidiary doesn't improve coordination between commercial bankers and investment bankers — one of the ostensible benefits of having a single company handle both activities — and may simply multiply tensions.<sup>26</sup> A stand-alone investment firm or one with significant autonomy within a holding company structure may be more realistic, because it may allow investment bankers to capture a larger share of the rewards from their customer relationships.<sup>27</sup>

The multitask approach teaches that for complex products,

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<sup>26</sup>In the business press and management literature, problems like these have often been classified as "cultural conflicts."

organizations face difficult tradeoffs between providing incentives for maximal effort and promoting cooperation and other hard-to-measure activities. An example of these tradeoffs is the continuing tension between the sales-oriented activities of commercial lenders — it is easy to measure and reward lenders according to new accounts gained — and their responsibility to closely monitor credit quality — it is intrinsically more difficult to measure careful monitoring of the credit risk of existing accounts. Generally, the multitask approach states that difficult-to-measure tasks should be handled by employees, with subjective evaluations supplementing otherwise low-powered incentive schemes. The approach also suggests that, to the greatest extent possible, easy-to-measure tasks and difficult-to-measure tasks should be assigned to separate individuals or groups.

While the theories yield many practical insights, economists who have been influential in developing the theory of the firm argue that testing theories against each other in careful empirical studies is the most immediate task at hand.<sup>28</sup> Such testing should yield more refined economic insights into existing business practices and hopefully more refined guidance to businesses making practical decisions. 

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<sup>27</sup>Of course, it may be difficult for the front office to precommit not to meddle in the affairs of any of its supposedly autonomous affiliates.

<sup>28</sup>Michael Whinston's paper attempts to formalize the different predictions of the property rights view and the transactions cost view within a common framework. His conclusion is that the theories have not yet been developed with sufficient precision to distinguish them empirically.



## REFERENCES

- Aghion, Phillippe, and Jean Tirole. "Formal and Real Authority in Organizations," *Journal of Political Economy*, 105, 1994, pp. 371-402.
- Anderson, Erin, and David C. Schmittlein. "Integration of the Sales Force: An Empirical Examination," *Rand Journal of Economics*, 15, Autumn 1984, pp. 385-95.
- Barzel, Yoram. "Measurement and the Organization of Markets," *Journal of Law and Economics*, 25 (April 1982), pp. 27-48.
- Berger, Allen N., J. David Cummins, and Mary A. Weiss. "The Coexistence of Multiple Distribution Systems for Financial Services: The Case of Property Liability Insurance," *Journal of Business*, 70, 1997, pp. 515-47.
- Berlin, Mitchell. "Jack of All Trades? Product Diversification in Nonfinancial Firms," Federal Reserve Bank of Philadelphia *Business Review* (May/June 1999), pp. 15-29.
- Bolton, Patrick, and Michael Whinston. "Incomplete Contracts, Vertical Integration, and Supply Constraints," *Review of Economic Studies*, 60, January 1997, pp. 121-48.
- Carlton, Dennis. "Vertical Integration in Competitive Markets Under Uncertainty," *Journal of Industrial Economics*, 27, March 1979, pp. 189-209.
- Coase, Ronald A. "The Nature of the Firm," *Economica*, 1937, pp. 396-405.
- De Meza, David, and Ben Lockwood. "Does Asset Ownership Always Motivate Managers? Outside Options and the Property Rights Theory of the Firm," *Quarterly Journal of Economics*, May 1998, pp. 361-86.
- Gibbons, Robert. "Incentives in Organizations," *Journal of Economic Perspectives*, 12, Fall 1998, pp. 115-32.
- Grossman, Sanford J., and Oliver D. Hart. "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration," *Journal of Political Economy*, 94, 1986, pp. 691-719.
- Hart, Oliver. *Firms, Contracts, and Financial Structure*. Clarendon Lectures in Economics, Oxford: Oxford University Press, 1995.
- Hart, Oliver, and John Moore. "Property Rights and the Theory of the Firm," *Journal of Political Economy*, 1990, pp. 1119-58.
- Holmstrom, Bengt. "The Firm as a Sub-Economy," *Journal of Law, Economics, and Organization*, 15, 1999, pp. 74-102.
- Holmstrom, Bengt, and Paul Milgrom. "Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design," *Journal of Law, Economics, and Organization*, 7, 1991, pp. 24-52.
- Holmstrom, Bengt, and John Roberts. "The Boundaries of the Firm Revisited," *Journal of Economic Perspectives*, 12, Fall 1998, pp. 73-94.
- Klein, Benjamin, R. A. Crawford, and Armen A. Alchian. "Vertical Integration, Appropriable Rents, and the Competitive Contracting Practice," *Journal of Law and Economics*, 21, October 1978, pp. 297-326.
- Knez, Marc, and Duncan Simester. "Direct and Indirect Bargaining Costs and the Scope of the Firm," Working Paper, University of Chicago, June 2000.
- Lafontaine, Francine, and Margaret E. Slade. "Retail Contracting: Theory and Practice," *Journal of Industrial Economics*, 45, March 1997, pp. 1-25.
- Milgrom, Paul, and John Roberts. "An Economic Approach to Influence Activities in Organizations," *American Journal of Sociology*, 94, Supplement, pp. S154-79.
- Prendergast, Canice. "The Provision of Incentives in Firms," *Journal of Economic Literature*, 38, March 1999, pp. 7-63.
- Rajan, Raghuram G., and Luigi Zingales. "Power in a Theory of the Firm," *Quarterly Journal of Economics*, 113, May 1998, pp. 387-432.
- Tirole, Jean. *The Theory of Industrial Organization*. Cambridge, MA: MIT Press, 1992.
- Whinston, Michael. "On the Transactions Costs Determinants of Vertical Integration," Working Paper, Northwestern University, 1997.
- Williamson, Oliver. *The Economic Institutions of Capitalism*. New York: Free Press, 1985.