Vertical Boundaries of the Firm  
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One of the defining characteristics of a firm is the extent of its activities. This includes its size, the range of products it sells, and the extent of its control over distribution and production. Thirty years ago, an airline would own planes, run its own reservation system, hire flight crews and so on. But if an airline leases jets and outsources maintenance and reservations, is it still an airline? Even if it is, does it make sense to have others run operations that seem inseparable from the airline business? Is a PC still a Dell if all the parts are made by other firms? Apparently the answers to all of these questions are “yes,” since they’re standard practice. The boundaries of what’s done inside a firm and what’s done outside are one of the most interesting developments in modern business and worth a closer look.

Today we'll look at the firm's vertical boundaries: the extent to which it expands upstream into its supply chain or downstream into distribution. Virtually all firms face a recurring issue of whether to assume ownership and control over suppliers or distributors; what we term “vertical integration.” How does a firm decide whether to produce in-house or outsource: whether to make or buy? The answer: It depends. There are advantages to producing in-house, and other advantages to outsourcing. Depending on the circumstances, one or the other might be better. And in some cases, firms have figured out ways to get most of the benefits of both.

Examples

Dell. Known for its ability to manufacture PCs to order from parts made by others, an extreme case of vertical separation. Monitors made by Sony and Philips, processors by Intel, and motherboards by Solectron.

Cablevision. In addition to its cable business, Cablevision Systems Corp owns Rainbow Media Group (which owns five national cable channels, including AMC, IFC, and Bravo, as well as the Knicks and Rangers sports teams), Lightpath (a Long Island cable phone company), and The Wiz (electronics retailer).

JP Morgan. Prior to its merger with Chase, JP Morgan outsourced its IT support to a four-firm alliance headed by Computer Sciences Corp. Their 7-year deal was worth an estimated $2.1 billion.

Merck Medco. In 1993, Merck bought “pharmacy benefits manager” Medco to give it access to an important retail distribution channel.
IBM PCs. When IBM came out with its “personal computer” in 1982, it asked Intel to make the microprocessors (the 8088), Microsoft to write the operating system (DOS), and Tandon to produce the floppy disk drives.

Advantages of Outsourcing

Among the most important issues governing an outsourcing decision are:

- **Production efficiency.** If others can produce more at lower cost, let them do it! There are a variety of reasons why one firm might have lower costs than another. The key reason is scale economies. If a firm is too small to produce a particular input efficiently, it should probably buy it from a supplier who can. That’s why the Stern School doesn’t make its own paperclips, write its own network software, or run its own food services. Specialization is a variant of this idea: although most large firms have their own legal departments, they often hire specialists for specific problems (M&A, for example). Core competence is another. Sometimes a firm is large enough to produce its own inputs, but producing inputs doesn’t play to its strengths.

- **Competition among suppliers.** The discipline of the market often provides an attractive price/quality tradeoff. Obviously this is not the case if you face a monopoly supplier. Conversely, in-house production typically faces less discipline, particularly in a large firm. (Anyone who has worked at a large firm knows the hazards of dealing with the in-house “monopoly provider.”) This latter is often referred to as the problem of “agency.”

Advantages of In-House Production

Among the important issues governing a decision to produce in-house are:

- **Relationship-specific assets and the holdup problem.** Sometimes the process of outsourcing involves investments that are specific to the relationship. Once those investments are made, the investor is at the mercy of the other party. The classic example is Fisher Body, now a subsidiary of GM. For years, Fisher made chassis for GM. When the technology changed from wood to metal, however, production required a large investment. Location was critical, and GM wanted the plant to be next to its assembly plant. Fisher was hesitant to make the investment, which would put GM in a strong bargaining position after it was made. GM, on the other hand, had difficulty writing an appropriate long-term contract, since it could not forecast demand years ahead. The dispute was resolved when GM acquired Fisher Body in 1926.

The problem, in this case, is the difficulty of writing a contract that would cover every contingency. If Fisher and GM could have written a contract that assured Fisher it would not be exploited, they might very well have continued as separate entities.
• **Control over the supply chain.** It’s generally more difficult to coordinate activities through markets than within a firm, but how difficult it is depends on the product. There’s little difficulty in buying commodity products like paperclips. But when fine details about the product are critical, it can be easier to produce in-house. A good example is Spain’s Inditex, the private company that makes and sells apparel under the Zara and other brand names. They argue that an integrated supply chain makes it possible to respond more quickly than competitors to changes in fashion than if they outsourced production to low-cost suppliers in Asia.

A variant of this argument applies to new products. The manufacturer of a novel product may need to design specialized inputs, which can be easier to do in-house. In many examples, inputs move outside the firm once the industry grows (so that scale economies kick in) and matures (so that the technology settles down). Cell phones are a good example.

• **Information.** There are a couple of issues related to information. One is information about the market. Integration into distribution provides useful and timely information about market conditions. Zara is again a good example. By owning retailers, they get virtually instant feedback on market trends. A second information issue is the ability to keep proprietary information confidential. This is particularly important where such information is valuable (pharmaceuticals, perfume).

• **Strong buyers or sellers.** When faced with buyers or sellers who have strong market position, firms may decide to integrate to protect themselves. An important special case is termed “double marginalization”: If a monopoly producer has a monopoly supplier, the effect on the retail market is to restrict production more than a single integrated monopoly would. A single integrated monopoly would make higher profits at a lower price. Short of this, firms might well integrate to compete with a monopoly supplier (Nielsen, Shimano). Or if they are concerned about access to supply or distribution might very well acquire them. Eg, the battles between AOL/Time-Warner (which has cable and internet distribution channels) and Disney (which does not). Similary, Orbitz is the response of several major airlines that Travelocity and Expedia were gaining too much power over online sales of airline tickets.

**Examples Revisited**

It’s ridiculously easy to second-guess someone else’s decisions after the fact, but let’s see if we can understand the logic behind the examples listed earlier.

**Dell.** Dell is a master of coordinating supply relations, but the extent raises some interesting questions. What is the source of value Dell provides to customers? Can others imitate? Can (say) Sony sell directly to customers and leave Dell out of the loop?
Cablevision. The standard explanations for integration don’t seem to apply here, with the exception of the last one. Our guess is that Cablevision needs content, and since there are relatively few providers (eg, movies, NY sport teams), and many of them are affiliated with potential rivals, the only way to insure supply is to produce in-house. The biggest cost is the difficulty of managing such a diverse portfolio of businesses. Do they really need The Wiz? Cable phone, of course, is a possible economy of scope, which we’ll discuss in the next lecture.

JP Morgan. The difficulty of outsourcing IT is that it’s critical to the business yet hard to define precisely what the service is that’s being outsourced. A classic case of market relationships being difficult to manage. Many observers think that for large financial institutions, you should have strong internal IT support. More basic services, though, might be outsourced. For example, some firms outsource management of their web servers, which has become something of a commodity business (homogeneous product, lots of suppliers).

IBM and Microsoft. The standard comment is that this was a dumb move by IBM. One counterargument is that IBM was late to the market for microcomputers, and couldn’t have moved as quickly if it had done everything in-house. Another is that they were operating under threat of anti-trust action (a 13-year suit was dropped by the US after Reagan took office).

Merck Medco. This seems like another defensive purchase, in which Merck was protecting itself against consolidation in distribution. It was apparently triggered by Clinton’s study of health care, which died without trace. The question is whether it makes sense going forward. If you were Merck’s CEO and did not own Medco, would you buy it?

Mixed Systems

So far, we have only considered two extreme options: make or buy. Some of the best solutions lie in between.

One is “tapered integration,” in which firms integrate some operations but leave some to the market. An example is Pepsi and Coca Cola, which own some of their bottling facilities but do not control the entire value chain that gets the product to the consumer. In doing so, the firms can wield influence in their input markets while also ensuring the existence of competition with respect to prices and service quality.

Another popular solution is “franchising.” Franchising typically involves a firm owning some, but not all of its downstream operations. Wendy’s, for example, might operate some of its own restaurants and also sell licenses to third parties to operate others. The question is how to handle any specific assets. Generally the franchise contract gives Wendy’s control over things that affect the brand (menu, image) and the franchisee...
control over non-specific assets (the lease).

A third intermediate solution is the so-called “Japanese system.” In Japan, firms have long-standing relationships with suppliers that seem to avoid the problems of vertical integration and vertical separation. Toyota has very close control over its supply chain, despite using outside suppliers extensively. The relative success of this system has let people to ask how important cultural factors are in maintaining such system of relations among firms. Also, as we consider the Japanese system, the exact definition of firm boundaries becomes less clear, which ultimately begs the question of what a firm is.

Finally, firms have become more sophisticated in terms of the kinds of contracts they might write. Even without ownership, they might be able to control key aspects of a relationship. “Vertical restraints” are arrangements among firms in a value chain that effectively reinforce vertical relations without explicit integration. The purpose of such arrangements is to induce more efficient pricing, output and advertising decisions for the value chain. For example, Pepsi creates exclusive agreements to act as a monopoly supplier in some restaurants. In another example, Ford may authorize dealers only to sell its vehicles. Why would it do this? Otherwise, it could encounter the problem of training salespeople who then use these newfound skills to sell Chryslers.

Another contracting issue is “resale price maintenance.” What if you could travel to store A and receive excellent service from staff in helping you choose a stereo, and then travel to store B to make your purchase? At store B, a bargain basement outlet, no investment has been made in sales so prices are lower. Service stinks, but you already made your decision based on Store A’s stellar service. In this case, the store with lousy service is essentially free-riding off the store with better service. Store A loses sales, and the manufacturer will probably lose in the end if it depends on consistently high-quality service for its goods. (Not everyone, after all, will figure out the Store A/Store B trick). To prevent such behavior without integrating into retail centers, manufacturers thus impose resale price maintenance – establishing a minimum, standard price for retailers to prevent free riders from relying on other stores. In other words, manufacturers ensure that prices will be more consistent from store to store; thus quality of service and (higher) price guarantees can be delivered back to the manufacturer.

These issues will be explored at length in your Corporate Strategy course, next term.

**Legal Issues**

Government competition policy sometimes plays a role, as it has in the separation of film production and distribution in the US from the 1940s until recently, the 1984 breakup of AT&T, the proposed but ill-fated plan to separate Microsoft’s operating system and applications units, and the enforced separation of UK brewing and pub ownership.

Vertical integration is not *per se* illegal (ie, illegal in and of itself). But it can be in practice if it’s used to hinder competition. The question for policymakers is to decide
when vertical integration enhances efficiency and when it’s simply a device to hinder competition. It’s not an easy call, ever, and the unclear state of the law reflects that.

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