

Lecture Text

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Sustaining Competitive Advantage

(edited for clarity)

Introduction

Sustainability has been a long-term preoccupation of mine. And the reason has to do with teaching strategy classes over twenty years and essentially getting responses from my MBA students, whose solutions to business problems often tend to be, "Well, come up with that world-beating technology," or "Build that better mousetrap and surely that will take care of all of the competitive woes that afflict us."

And this is not a new insight. Ralph Waldo Emerson, writing back in 1838, did in fact observe that if you build a new mousetrap, there will be throngs and throngs of people coming to your place even if you didn't operate a discount store.

Building a better mousetrap

And I got sufficiently irritated over the years by the better mousetrap as a solution to every problem and business strategy that I decided that I would go away and look at the real mousetrap industry to see if this is correct, even within the confines of that particular product.

So I did a lot of research. I read magazines like *Pest Control Monthly*, which makes for a truly spectacular read. And a couple of things became very clear from the research into the mousetrap industry. The first thing is that there has been an enormous amount of innovation in the mousetrap industry. So, while most of us fortunately have limited familiarity with mousetraps, or are only aware of the spring-type traps, actually the modern design is not that old. They don't quite go back to time immemorial. And in addition to those, we have all kinds of wonderful new mousetraps that have been developed in the twentieth century.

So there are repeating traps. If you have a particularly acute mouse problem, these things can check in multiple mice before you check them out, a functionality valuable for some people. There are glue boards for those of us who tend to be clumsy and get our fingers caught in moving parts. And there are even the ultrasonic devices that, while not strictly speaking traps, help make your mouse control problem your neighbor's mouse control problem, and so should be considered as close substitutes. So that's point number one.

Point number two is that, despite all this, one can't really identify a Bill Gates of the mousetrap industry. What happens, if you go back and look, for instance, at the annual reports of the companies that specialize in this? Let's take the example of Woodstream, which pursues an interesting corporate strategy that seems to focus around catching fish and catching mice, making equipment for both those segments. The Woodstream annual reports have lots of discussions of all the great new product introductions that they're going to come up with that are going to change the future for the better. And buried in smaller text towards the back of the report is a discussion of why the previous year's products turned out not to do as well as expected because those unscrupulous competitors elsewhere copied them, etc.

So my conclusion from this was that advice to build the better mousetrap isn't sufficient, even in the mousetrap industry. However, having concluded this, I realized that actual interest in learning whether this works in the mousetrap industry or not might be somewhat limited. So I figured that I had to broaden the base of the research very significantly, and so that's what I want to share with you next.

Predicting Profits

So let's play a little guessing game to try and figure out how much this problem that we saw in the mousetrap industry—companies innovate and then quickly get imitated—how frequent that problem is. And so, for the purposes of this game, I went away and took 700 business units from something called the PIMS database. These are typically business units that are parts of large companies. We're talking about, say, Eastman Kodak's film business, or something like that. We're not talking about Sal's Fish and Flower Shop. These are well-established business units, 700 of them. And I split them into two groups based on their return on investment in year one. Obviously, since that's how I classified them, the bottom half had a lower return on investment than the top half, although what's perhaps a little bit more surprising is the extent of the differential, because 36 percentage points of ROI is big.

Then, keeping the businesses in the groups in which they started out, I tracked what happened to this 36 percentage-point differential over the next ten years. And this is one of those occasions within the program—generally we like fact-based analysis—but here I'm going to ask you for sheer conjecture as to what happened to this 36 percentage-point differential.

So again, to recap: I took 700 business units for which I had data for at least ten years; split them into two groups, based on initial return on investment; and then, keeping the businesses in the groups in which they started out, tracked what happened to those group averages over the next nine years and, in particular, what happened to the differential between the top group and the bottom group on average in terms of ROI.

The Importance of Sustainability

So let's actually look at the data. I just want you to look at this chart for a little bit and think about how this makes you feel. If you're starting at the top, this doesn't look so good. If you're starting at the bottom, this is a little bit of an encouragement that maybe your yesterdays aren't fated to be your tomorrows. Maybe there is some possibility of doing better.

A second positive is, if you look particularly at these guys out here, they don't have as big an advantage as they did initially. But still, the ability to sustain a couple of extra percentage points over the long run—those of us who run financial valuation models know what kind of a difference that can make to your assessed valuation. Those of us who've also prepared investment proposals for corporate review know how much of a difference it can make to be able to tack on those few extra margin points. So another positive is it doesn't go to zero, and 3.6 percent is still 3.6 percent, something that we can't afford to overlook.

So in terms of headlines, this is the single exhibit that I put up as to why I spend a lot of my time thinking about issues of sustainability versus unsustainability, because the assumption that an initial competitive advantage is going to persist over ten years turns out not to be borne out if we look cross-sectionally. We can find exceptions like Wal-Mart, and we'll talk about Wal-Mart some more in a minute. And that's where one ray of good news comes from, which is that these are the averages, but you're not necessarily condemned to

go down the averages. And so, if you don't like the look of this slide, let's recognize that there's variation around these lines.

The second thing to think about is, the point that's already been made: If 3 percent is the best that you can do, that's nothing to sneer at. And I think the third point that's worth stressing, which we haven't talked about, is that even if you can't find a way of doing better than these averages, or even if you think you're going to do worse than these averages, it's probably better to think through that and figure out the consequences for your strategy than to say, "This is depressing stuff. There's very little sustainability out there, so let me not even worry about this in the hope that I won't have to think about this any further."

Sony and sustainability

So take a company like Sony, for instance, in consumer electronics, where the pace of imitation is particularly rapid. Sony knows that it doesn't have ten years to make money off a new product. Sony knows that it has got between twelve and twenty-four months before clones of its products are out there. And so, in the capital budgeting project approval process, the thing that they look at is if it is going to be feasible to price this product at a level that's going to allow us to recover its investment costs over an eighteen- to twenty-four month period, because that's all we have. And you may find that depressing, but it seems much better than making product launch decisions on the usual assumption that competitors will stay put while we come up with our new and improved product—which still tends to be a pretty common assumption in a lot of new product launch plans that I've seen.

Sony does a little bit better by recognizing that, like it or not, they're going to have a limited window of sustainability. And so they're only going to pick products where they can see the prospect of earning those investments back over the timeframe for which they have a sustainable advantage. So the message from this is, yes, we need to think hard about issues of sustainability, but it's not—and I *would* say this, of course—that there's so little sustainability that we shouldn't worry about it at all.

Wal-Mart and sustainability

This is an illustration from Wal-Mart, so I have slightly kludged data here. We have return on investment and then we have Wal-Mart's return on equity. What's really unusual about Wal-Mart, if we superimpose the Wal-Mart ROE on the previous slide, is the extent to which they've been able to earn a couple of extra percentage points of return beyond what these long-run dynamics would actually predict over a thirty-year period. So notice that it's not that they're that far off this particular median line. Notice also that Wal-Mart itself has suffered some diminution in performance since 1971, which I picked as year one for them because that's the year they went public. But the point is, we would still regard Wal-Mart, I think, as historically a success, despite the fact that it hasn't entirely been able to sustain either its return on equity or its growth rate at the blistering rates that it was recording back in the early '70s or '80s.

So a second point that I want to make is that sustainability is a matter of degree. I can't think of an ironclad, sustainable, proof-under-all-conditions kind of strategy that you just know is going to be unchallengeable over the next ten or twenty years. Or maybe we can find some special situations like this—patent protection for a long period of time—where one could, in fact, make that claim.

But, by and large, what we're talking about here is something that's gray, rather than black or white. And one of the things that we need to gain a sense of is how we calibrate that degree of sustainability rather than simply classify an advantage as sustainable or unsustainable. How much sustainability do we have? Wal-Mart has been in a very different position from Sony, for instance, in this particular regard, even though the sustainability for both of them has fallen far short of perfect.

So it's trying to make these distinctions—trying to understand what allows some firms like Wal-Mart to do substantially better than these population averages that we were putting up—that we're going to spend our time on for the rest of this period.

Threats to Sustainability

And what we're going to do is essentially walk through four different kinds of threats to sustainability. We'll work through these clockwise, starting with the most obvious threat to sustainability, which is imitation—somebody else doing exactly what you're doing and increasing competition—and then start to think about other kinds of threats as well, which I'll explain in more length as we get to those particular threats.

The Threat of Imitation

But let's start off with imitation. The threat of imitation, very simply, is if everybody can do it, the notion that you're going to make a lot of money at it doesn't seem very, very likely, and something that lots of companies, including companies that we think of as having sustainable advantages, really worry about. So take a look at Intel. Why did Andy Grove write a book titled *Only the Paranoid Survive*? Some of this is doubtless due to personality makeup, etc., but some of this reflects the reality that Intel has been experiencing in the marketplace.

The time that you make money off of a new microprocessor is when it's new, when it's still in short supply, because production yields are low, competition hasn't come in, and the box manufacturers find it critical to incorporate the new chip into their computer as a differentiating feature and are willing to pay a premium.

So one of the things that's been a problem for Intel's principal business of microprocessors for PCs has to do with the fact that, if we look at successive generations of product introductions, the amount of time that they've had available to them to enjoy this monopoly has actually shrunk. And this in a business which most of us would regard as somewhat atypical in terms of the kind of sustainability that it offers, because Intel has been able to keep its market share up at 90 percent in this market for a significant length of time. So imitation isn't just a problem in consumer electronics or low-tech products. Imitation is a problem that occurs fairly broadly across the product spectrum.

Responses to imitation

The question is, what can one do about imitation beyond just noting the fact that this particular threat exists? The first set of barriers that we talked about were scale or scope—the notion that, if you can precommit to being large in a market in which there are scale or scope economies, others may hang back from imitation, even if they realize that you're making your money through scale, because they realize that if they matched your scale, supply would exceed demand in the market by so much that it would be a bloodbath all around.

So think of Wal-Mart with one store in a town barely capable of holding a discount store, and a competitor thinking of putting in a second store and imitating Wal-Mart's market presence. It's not going to happen if the Wal-Mart store is large enough in relation to the town that it's serving as to not leave enough space for somebody else to come in.

Scale could apply at the local level, as the example I just talked through suggested. It could apply at the regional level, with Wal-Mart sewing up these entire regions. It could apply at the national level, with Wal-Mart using its muscle. And it now applies even to outside discount retailing, as they use leverage in food and general merchandise to do much better than single-line competitors actually manage to do.

So one source of barriers to imitation that will survive smart competitors figuring out how you're making your money is scale. And then we have a couple of other categories, like learning. Think of the business of running a discount store. David Glass [former president and CEO of Wal-Mart] once described this to me as "a business of details." Where do you put the fixtures? Which products do you cross-promote? How do you structure the window displays? There's no theory of retailing that tells you how to do these. These are things that you have to experiment with, figure out for yourselves, and then implement in your stores.

Wal-Mart's been at this for a very long time. And so, for somebody coming without that kind of experience base, there's just a certain component of time and a certain component of effort involved in figuring out stuff that Wal-Mart has already learned or Wal-Mart already knows. And if Wal-Mart takes advantage of that lead that it has to push further down the learning curve, by the time you've caught up with where they used to be yesterday, they'll probably be at some other point, going forward in a way that allows them to ride down this learning curve faster than their competitors, preserving some kind of advantage.

And in retailing, the great thing is that a lot of the learning is very tacit. It's not a blueprint that somebody can carry out of the door. And so Wal-Mart has been able to protect it. Of course, it doesn't apply across the board. So when it comes to something like the design of Wal-Mart's IT system, which is blueprintable and blueprints of which exist, it's not surprising that some competitor figured out a cheap way to tap into all this learning by just hiring away the CIO and his top five people. That seemed to bypass this particular barrier to imitation.

So it's not all kinds of experience or learning that create barriers to imitation. It has to be learning that you can somehow protect because it's tacit, or maybe because you've got a patent on it, or something else. Otherwise, frequently companies spend a lot of time learning and then find that that learning actually leaks very cost effectively to their competitors.

Third, there is the possibility of building relationships. So Wal-Mart, at this point, partly because of its scale, has the kind of relationships with vendors that no other discount merchandiser could hope to replicate. So if you went to Procter & Gamble and said, "I read the Wal-Mart case and I'm starting this discount retailer to go up against them. What kinds of terms are you going to give me?" chances are you wouldn't be getting the same kind of commitment that Wal-Mart has gotten with a couple of hundred P&G folks, based in Bentonville [Arkansas], directly plugging into the IT systems, using that to streamline the merchandise-ordering system. It's just a very different kind of relationship that Wal-Mart's managed to establish at this point with its vendors that would, presumably, on the cost-of-goods sold side, continue to rankle for any kind of imitator.

Reputation is this notion that sometimes a way of deterring imitation is just by creating a reputation for being particularly good or particularly fierce. An illustration in the Wal-Mart case is that there's such a customer halo that's developed around Wal-Mart at this point, that even when Wal-Mart actually prices at the same level as its competitors in a particular market, if you do studies of customers after their shopping experience, they'll say that the prices at Wal-Mart are lower. And given how powerful this delusion seems to be, from the standpoint of an imitator, you would presumably have to price somewhat lower than Wal-Mart just to achieve an equal share of customer mind when it comes to "what's the place I go to when I want to buy stuff cheap?" Wal-Mart, in contrast, has that preexisting reputation that in some sense imposes a penalty on somebody who would try and play the same game that they do.

Another way in which we can develop reputation is through retaliation. Wal-Mart certainly has a reputation for slashing prices very aggressively if somebody opens a discount store close to where they're located. The studies that I've seen suggest that price cuts range from 7 to 10 percent, which again, in a business averaging net margins of 3, 4, 5 percent, you can kind of see, if you had a choice between going after somebody else versus going after Wal-Mart, why you might decide that these weren't the guys that you wanted to encounter retaliation from.

Response lags is the idea that it takes time to do anything, and so by the time you've figured out how to do something, Wal-Mart may be doing some other things as well. A good illustration is provided by their continuous upgrading of their IT system. So they were the first to put in barcode scanners, which we now treat as ubiquitous but which were considered revolutionary at the time.

Couple of years later, Kmart got the idea and said we'll put in barcode scanners, too, at the checkout counters. Wal-Mart had put in a private satellite network by the time Kmart finished rolling out its barcode scanners, so forth and so on. So what you get, if you look at Kmart versus Wal-Mart, with Kmart you seem to get a sense of a competitor perpetually off balance, partly because it's presented with this moving target. And every time they think they've made some progress towards closing the gap, something else happens that, frankly, in addition to being hard to deal with competitively, is just demoralizing if you're trying to beat up on this company.

And then finally, there's a point that the different components of the system you saw in the Wal-Mart case fit together in a particular way. And presumably, imitation of that whole system is going to be a lot harder than if Wal-Mart was a one-trick company that was particularly good at doing procurement, or particularly good at doing logistics, or something like that.

So the intent behind going through these barriers at some length is to counter any suggestion from the early slide of returns converging towards 20 percent, suggesting that these are laws of nature that are like gravity and cannot be opposed. There are clearly a range of things that companies can do that affect the degree of threat of imitation and the other threats to sustainability that they face. So the point of thinking through the threats is, once again, not to get oneself depressed, but to try and figure out whether particular threats are worth taking seriously, and then as the second stage of the analysis, trying to figure out what levers, if any, are available to counter particular kinds of threats that we've

encountered. And in the context of Wal-Mart, we see a lot of conscious attention over time to dealing with threats of imitation.

The Threat of Substitution

The next threat is a little bit less obvious. As Joseph Schumpeter once said, substitution is to imitation as blowing up your house is to forcing open the door. So in imitation, somebody typically tries to come up with the same kind of business model that you have, and compete with you in the marketplace. Substitution is a very different kind of threat. Somebody tries to come up with a new business model that entirely displaces what you've been doing in the marketplace.

Wal-Mart

We didn't really get any chance to talk about this in the Wal-Mart case, but the substitution threats that they've been worried about in retailing for a while are associated with this notion of the retailing wheel, and the idea that every format arrives, has its period of competitiveness, and then is displaced by newer, more efficient formats.

And this is a theory that's supposed to apply to U.S. retailing over the last 150 years. Wal-Mart's getting into warehouse clubs, and neighborhood markets, and other different formats like that was an approach of saying, OK, we realize that there is this threat of other formats displacing our preferred format, and at a minimum, we need to understand what the threat is. We need to figure out whether we can be an effective player; far better, if there *is* a real threat to our base model, if we're the ones who do the cannibalizing than if other competitors do.

So Wal-Mart has dealt fairly successfully so far with substitution threats. They're the number-two player in warehouse clubs, although still well behind Costco. They're also moving along smartly with neighborhood markets as a way of cutting off the notion of somebody attacking them with more of a convenience store-like strategy. So these are mini-Wal-Marts that are being put into small locations. They've managed, given their other strengths, to find ways of dealing with this threat.

Barnes & Noble

Things don't always go this well. A good example of a substitution threat that proved very hard to deflect: Think of poor Barnes & Noble. Since the 1970s, store by store by store, these people have been working away at penetrating the U.S. market, and have increased their share of the U.S. book market from 4 percent to the high teens, and feel really good about this. They have this great new format called superstores, where you can go in, drop espresso on the books, and do all kinds of other things that are not encouraged in conventional bookstores, and this is how they've been essentially able to drive lots of independent booksellers out of business.

So they're feeling pretty pleased. And then what does Amazon do to them? It doesn't try and do what Borders has been trying unsuccessfully to do to Barnes & Noble for a while—Borders has just been trying to imitate and has proven somewhat unsuccessful. Amazon says, wait a minute. We can figure out, with new technology, a business model that entirely displaces, substitutes, neutralizes these sources of advantage that Barnes & Noble has built up.

So, Barnes & Noble thinks that it can do well on procurement by building big warehouses, sort of like the Wal-Mart strategy: Buy a lot of books, get them all sent to a warehouse, sort

them, and send them on their way. The original Amazon model was: We're only going to hold an inventory of 2,000 titles, and we're not going to warehouse any of the rest. Our business model allows us to order the books from the publishers when the customer places an order. And, by the way, this is a brilliant business model because we get the customer's money right away and the 180 days [to pay our suppliers] don't start until we place the orders. So we have this huge float associated with rethinking how we do procurement.

On operations they said, so what if Barnes & Noble has got thirteen million square feet of selling space? The most valuable selling space, as we see it, is on the screen. And the great thing about this is we don't need billions of dollars of investment to get there. And, even better, we can redesign the screen whenever we want to: keep changing it, keep upgrading it in a way that's hard to imagine with a physical store network.

Amazon, given its different choices on procurement and operations, clearly had to deal with logistics very, very differently. And so, initially they relied entirely on this UPS rapid shipping, although they've broadened the range of options. But I want to stress, beyond the details of the example, that the Amazon threat to Barnes & Noble is a very different threat to sustainability from, say, Kmart's threat, such as it was, to Wal-Mart. Kmart was trying to do the same thing as Wal-Mart. Here we have a competitor pursuing the same market, but doing so with a business model that essentially threatens to make irrelevant, at least for a part of the market, the business model built up by the existing incumbent.

No wonder these kinds of threats are hard to deal with, because they're indirect. There is a lot more room for internal "this will never work" kinds of arguments as you're looking at a substitution threat coming down the horizon. So it is important to try and think about responses to substitution threats.

Responses to substitution

What happens if you've spent a lot of time building up this great business model only to find that somebody else has taken advantage of technological advance, regulatory loopholes, or something else to come up with an entirely different way of competing that threatens to take business away from you?

Well, one response—and this is perhaps the most common response, as discussed by my colleague Clay Christensen—is not responding. It's very easy, particularly if it's a technology coming in from the low end—which is the kind of substitution threat that Clay focuses on—to tell yourself, "This doesn't meet the needs of our current customers, etc. It'll never catch on. We don't need to worry about online book retailing or other kinds of new business models that are coming along."

Somewhat more interesting options for dealing with substitution threats: There's the idea of single-handedly fighting off the substitution threat, which might work if you're Intel with a 90 percent market share. So Intel uses a certain kind of architecture in its microprocessors: complex instruction set computing [CISC] technology. And there was a new kind of architecture, RISC [Reduced Instruction Set Computing] technology, which looked set to arrive. And as best as we can tell, Intel's response was, "Well, given who we are and how large we are, not to say dominant, if we keep the performance of our technology within 50 percent of the performance of the RISC technology, we have enough clout in the marketplace to make sure that RISC doesn't get anywhere." So Intel's main strategy was to try and figure out if there were ways of resisting this. Just in case, they also prepared themselves for the possibility of switching over to the new technology by starting an in-

house RISC development effort, in case their efforts to keep CISC technology on the cusp of the market didn't work out.

So that's another set of possible responses. You can straddle the new business model and the old business model, although that's sometimes like riding two horses at the same time—some significant managerial challenges. You can decide to switch, although this is not usually the stuff out of which inspirational business autobiographies are written. Or you could decide to actually resist actively and hope that you've called it correctly in terms of the long-run viability of your model versus competing business models.

Barnes & Noble

So those are some relatively obvious responses. But just think of what else Barnes & Noble should have done in the situation that they faced, as opposed to what they actually did, and examples of other companies successfully pursuing this strategy—what they might recommend for Barnes & Noble.

Barnes & Noble, when they saw the threat from Amazon, said, OK, what we're going to do is also set up an in-house online retailing effort, barnesandnoble.com, and we're going to keep it entirely separate from our existing businesses because we don't want the tax complications, we don't want all of the other issues that arise if we upset the store managers by putting this stuff into stores. In effect, Barnes & Noble decided that it was going to tie its hands and not use the assets that it had developed that were still of some value to make a success of its online venture.

Imagine how much better they might have been able to do if they actually could overcome their reluctance to put computer terminals in the stores so that customers could actually order books in stores if they didn't find them in stock. Imagine how much leverage they might have been able to derive by offering people pickup or return services at the stores, even if they placed their orders online, because one of the big irritants about the Amazon business model are the shipping costs that end up getting incurred.

And so, for a period of several years there, they said, we're going to straddle but we're not going to pay any attention to how we take elements of what we have and elements of what the new technology makes possible, and combine them into something that can actually give Amazon a run for its money. And, yes, it would probably have been bad for the existing business, but if you look at Amazon, Amazon's market cap is apt to fluctuate by \$5 billion, \$10 billion from week to week. But the last time I checked, it was about \$20 billion. We have Barnes & Noble valued at about \$2.5 billion. Clearly, they might have thought about sacrificing something in the base business if they could have come up with an online play that was a little bit more appealing than, "This is just like Amazon, so you should patronize barnesandnoble.com," which was their unique selling proposition.

So in terms of general points about responding to substitution threats, one is that responses typically are needed. These categories of threats to sustainability often tend to get ignored much more than the threat of imitation.

The second thing is, it's useful to think broadly about responses, and in particular about responses that you have a particular advantage at mounting, perhaps because it exploits some existing resources or assets that you've built up; perhaps because your competitor is constrained by regulatory or other factors. But starting with a full set of responses and applying this test—What competitively does it make sense for me to do? What do I have an

advantage of doing that others are going to have trouble matching?—is as good a principle for dealing with these kinds of threats as it is for dealing with imitation threats. So that's substitution.

The Threat of Holdup

The threat of holdup is related to the notion that frequently in business, we have a tendency to try and split people into: These are our friends; these are our enemies. And one of the interesting things is that, since friends are usually making investments that are specialized to us and we're making investments that are specialized to them, you really have to worry about your friends "holding you up" as much as you have to worry about enemies competing against you in the marketplace.

I don't think Wal-Mart has to worry very much, given its size, about even Procter & Gamble holding it up: Wal-Mart accounts for 20 percent of P&G sales versus P&G accounting for 3 percent of Wal-Mart sales—slight asymmetry. But think of things from Wal-Mart's suppliers' perspectives. You're invited to make these specialized investments in retailing, and across the aggregate supplier base, estimates of suppliers' investment have run as high as \$40 billion. So this is nontrivial stuff that you're being asked to do. Now, Wal-Mart's your friend, but you do worry a little bit that after you've made this big investment they might suddenly turn around and say, "Ah, well that's sunk. Now let's renegotiate the basis of our business relationship since you're already locked into us."

To illustrate different approaches to the threat of holdup, take the example of U.S. and Japanese automakers and their suppliers. Here what I've done is focused on U.S. automakers' relationships with partners. So I've left out their captive operations, left out their arms-length suppliers, and focused just on people that these automakers describe themselves as having long-term relationships with. And, on a similar basis, on Japanese automakers' relationships with the suppliers they consider long-term partners, which incidentally account for a larger chunk of their total part production: 38 percent versus just 10 percent for the partner-type suppliers in the United States.

As we look at the differences between the U.S.-U.S. relationships and the Japanese-Japanese relationships, it seems that, relative to Japan, in the United States there's been more of an adversarial resolution to this potential holdup problem. So partners are relatively reluctant to make investments dedicated to a particular manufacturing plant because they know that GM, or Ford, or Chrysler is going to get back to them and say, "Ours is the only plant within any effective radius for you. Cut your price at this point, going forward." Japanese take a somewhat more cooperative approach to such relationships as evinced by suppliers' willingness to put factories very close to downstream customers' factories, even if there aren't opportunities to supply other customers.

The Japanese suppliers also invest much more in capital that's specialized to a particular automaker on the part of the parts suppliers than in the United States. And again, there is much more dependence on a particular automaker for a Japanese partner than for a U.S. partner vis-à-vis a U.S. automaker in terms of share of total sales accounted for by your largest customer.

So these are two different ranges of approaches for dealing with holdup problems. On the U.S. side—these are historical data—the approach seemed to be very much, let's simply go out and maximize our bargaining power against their bargaining power. So we keep them small, we treat them badly, we make sure that they don't make much money. We reverse-

engineer their parts, and price everything on a cost-plus basis, and break everything down into the simplest possible parts so that only we do the subassemblies, and avoid having anybody develop any power over us by becoming integrators in any sense.

In Japan, in contrast, partly due to different cultural and social history, a very different kind of system emerged, where players were relying on a long tradition of dealing with each other plus mutual dependence as a way of making this arrangement work. Of course, the downside of the Japanese model is, given how tight the relationship between a parts supplier and an automaker is, when there's any disruption at that one parts supplier, it is a big problem. So when the plant that made brake linings for Toyota had a fire, even though production was only interrupted for seven days, that disrupted a lot of Toyota's worldwide activities very significantly.

So the notion is *not* that one approach is always better than the other approach. Instead, the first point is that there are a range of approaches. Second, bargaining so hard as to push your partners to the wall or beyond is probably not the most effective way of managing the business for the long run. And so the U.S. automakers have, in fact, significantly changed a lot of their procurement policies in the last ten or fifteen years to what looks much more like a cooperative model with a limited number of suppliers, significant mutual dependence, etc.

Responses to holdup

So it is better to think of several generic responses to holdup. You can try and sign a contract to make sure that everything is spelled out. Unfortunately, we know that contracts are incomplete and it's always possible for somebody to come back and invoke force majeure. A second option is to vertically integrate. That way, you don't have to worry about that pesky parts supplier. On the other hand, you do have a huge internal bureaucracy to deal with. And the notion that it's any easier to agree on transfer prices between an in-house supplier and an in-house customer, as opposed to agreeing on prices with an external supplier—I'll leave it to those of you who've had experience with these to convince the rest of you that it's not necessarily much simpler to integrate.

This was more or less the U.S. approach: Let's build up bargaining power by making sure that we have ten different suppliers for each component; let's bargain hard by reverse engineering their costs and only giving them a cent or a dime margin; let's make sure that none of our assets are very specialized to a particular supplier, or very dependent on a particular supplier.

In general, what developments in the auto industry suggest is that this pushed things far too far in terms of taking an adversarial approach to dealing with the holdup problem. A more cooperative approach, generally speaking, has proven a direction in which the U.S. automakers have found it advisable to move, imitating the Japanese: more emphasis on longer-term relationships with a small number of suppliers, and some notion of mutual dependence to make sure that the suppliers don't feel that as soon as they've made their investment they're just going to be expropriated by the company that they've made the investment to try and supply.

So that is holdup, which implies that you have to think about your friends as well as your foes in terms of where your interests might diverge and the range of options for dealing with them.

The Threat of Slack

Finally, we've talked so far about external threats to sustainability. There is also the internal threat to sustainability. Experience shows that very rich cash flows are like very rich diets: They tend to lead to a hardening of the corporate arteries unless some proactive efforts are made to avoid that from happening. Keith?

___: What's the definition of slack?

PROFESSOR GHEMAWAT: To explain slack let me start with free cash flow. Free cash flow is defined as cash flow in excess of your reinvestment needs in your current activities. Slack is related to that gap between how much money is coming in and what you need to grow the business and the assets in place.

Slack matters because one of the biggest challenges to sustainability is that success itself tends to be hard to deal with from an internal organizational perspective. And one of the remarkable things to me about Wal-Mart is how far they've managed to come without starting to do some of the things very economically successful companies often do: starting to waste their cash once a rich stream of it starts coming in.

So let me give you an extreme example of slack. (All of these examples are abbreviated and in that sense incomplete, and this one is perhaps particularly unfair to the target company, but it will help me make my point, so I'll go ahead anyway.) Let's take a look at General Motors, and let me explain what's going on, on this very busy slide. The top green line is the market value for General Motors between 1980 and 1997. Then, against that market value, I looked at their strategic investments—their net capital expenditures in excess of depreciation, and their R&D expenditures—and rolled those forward, applying both a 0 percent time value of money and a 10 percent time value of money. So obviously, a big investment in 1980 would, in nominal terms, still be the same in 1997 in terms of how much it would contribute to this [0 discount rate] line. But it would be a lot larger, given the time value of money in present value terms, if we were carrying everything forward at a discount rate of 10 percent.

What this chart suggests is that between 1980 and 1997, General Motors managed to increase its market value from \$20 billion to \$40 billion, which sounds pretty good. Not so good are the blue and red lines suggesting that the present value in 1997 of the investments that had been made over the previous eighteen years to achieve this \$40 billion market cap position were, depending on what kind of discount rate you apply, between \$150 billion and \$325 billion. So this was a relatively large investment in relation to market value created.

Now, this slightly overstates things because some of what's holding the market value down is healthcare costs, etc., keep escalating. So that's probably held the lid down on market value. And there are some issues about how far back they could have cut R&D and still continued to operate as a car company. But the broader point is that, if we look at this company, if we correct for those, you can bring the present value of the total investment down to perhaps \$200 billion—still relatively large in relation to the \$20 billion in market value that was recorded as an increment over this period.

The question is, how does a company, over such a long period of time, make decisions that probably were consistently bad, because it's hard to destroy this much value with just one bad decision. You really need a string of them to get to these kinds of numbers. And it's hard not to resist the explanation that GM is still the world's largest industrial enterprise. There is a very healthy cash flow coming in from many of the positions that they've established around the world. So in some sense, the only company that could lose a couple of hundred billion dollars to slack is a company that had the potential to earn that much in cash flow in the first instance. That's a boundary condition of some sort. In addition to which one can point to some of the specific features of GM, such as its size, its bureaucracy, and a whole bunch of other things that we know aren't good for organizations as plausible correlates of this slack that we're observing. But it really *is* mind-boggling as to what's happened.

This was H. Ross Perot's point. When he was briefly on the GM board, GM was starting an \$80 billion factory automation program. And apparently Perot's comment to the board was, "Well, you know, for \$40 billion, we could buy Honda and Toyota and still have \$40 billion left over." And this insight was not popular with other members of the board or the management, which is why Perot departed with his rich payoff from that particular board of directors.

We could draw this kind of chart for a whole bunch of companies, almost all of the icons of yesteryear in the United States. So I've done charts like this for Eastman Kodak, AT&T, Xerox; you can name them. And the point is the numbers don't end up being quite as large, because many of those are smaller companies than General Motors. But in general, there is a robust finding that companies with a large amount of free cash flow really need to be particularly careful about how they spend that free cash flow, because that's the situation in which boondoggles are engendered, and all kinds of questionable investments actually clear the vetting process that's undertaken.

The one thing I'd come back to is that one would still like an explanation as to why they made consistently poor decisions over such a long time on so many different fronts. And it's hard to explain that without invoking some kind of organizational explanation as opposed to, "Oh, they just misestimated the price elasticity of demand once," or something like that. So if this were a shorter timeframe, it would be easier to attribute this to one, or two, or three specific mishaps, which we know can happen to anybody in any business. It's more the sustained nature of the shortfall as well as the amount of value destruction that seems a bit remarkable.

Responses to slack

So to try and wrap up on slack and then try and wrap up on this talk, obviously there are a lot of things that you can do to respond to slack within your organization as well. And I'm not going to get into a lecture on organizational transformation at this point because that would take us well beyond the remaining time available. But just to think about some of these things, unless you have some information on what's actually feasible, what other competitors are doing, you probably leave yourself vulnerable to this kind of situation. It certainly is important to monitor the behavior of whomever it is that you're worried about in order to control slack. And so there are lots of attempts to do so. For instance, think of something as homely as punching in time clocks when employees check in. That's just a desire to make sure that, through employee monitoring, you're getting full use of those resources.

Such monitoring doesn't work as well in settings where you have a more professionally skilled workforce. Incentives are related to the idea that maybe you can't monitor slack directly, but by giving people the appropriate incentives, they can make the right choices about how much effort to devote. Of course, trying to do it all through money or controls usually isn't a good idea. So as we saw at Wal-Mart, heavy reliance on norms and various other kinds of social controls are a complement to incentives and to the monitoring. Why did Mr. Sam [Walton] share a hotel room with the top managers he was traveling with? Probably didn't need to after the first billion, one would guess, and he had seventy or eighty by the time he passed away. But it was all about "If I don't lead by example, with what credibility can I ask my employees to pay attention to the pennies in this business?"

Another response to slack is to do something like a leveraged buyout. That certainly focuses the mind on making sure that every last bit of financial surplus available is squeezed out of the business. Changing governance so that you don't have a board like GM's—largely dominated by insiders bringing in fresh perspectives. And then finally, in some situations where organizations really are stuck, you can't reduce slack just by changing things at the top. Enlisting the energies of the whole organization in order to move in the right direction is important.

Summary

The first thing we've done today in this lecture is to talk about sustainability, and why assuming that, if you've got a competitive advantage today, you will surely have it tomorrow or ten years from now, is not a great idea. If it were a great idea, we wouldn't have to worry about any of these kinds of threats that unfold over time. But unfortunately, things often tend not to be very sustainable.

The second thing we did was walk through this framework for at least capturing some of the forces that tend, over time, to put downward pressure on returns relative to your competitors. And third, how you prevent these forces from impinging on your business, or certainly pushing returns down as rapidly as they might if you weren't going to try and take any kinds of countermeasures. We've talked about a lot of countermeasures, and these are the bullet points under each of the four heads.

Building Sustainable Advantage

To end up, how do you build these kinds of advantages and how do you protect them? If we step away from the four threats to sustainability and all of the bullet points, what are the headlines here?

Let's think of how Walton actually got started with Wal-Mart. How did he discover what became this sustainable, hugely valuable growth engine called discount retailing? Well, his background was in small-town retailing, so while everybody else was building discount stores on the coasts back in the '60s, he understood that he actually would have no personal advantage going and opening a discount store in New York or in California. He understood that what he was bringing to the party was a unique insight into and experience of small-town retailing. And he was looking for formats that were going to fit that, rather than saying, "OK, I'll just go do what everybody else is doing." So there was always a sense of, "What do I uniquely have to contribute?"

Second, he very actively scanned the environment. So he hadn't heard of discount retailing until a Gibson's opened up in a town next to one that he had one of his stores in. Then—and this is the 1950s, this is Arkansas; this is not Silicon Valley—he went on a twelve-month

sabbatical from his business, in the late 1950s, to go and explore this new format by visiting hundreds of discount stores around the country. So there was some scanning associated with figuring out what's going on. Zooming in on discount retailing as a possibility and really trying to understand the pluses and minuses of that format was critical to figuring out whether it would actually work in small-town Arkansas.

After looking at a couple of hundred discount stores, thinking about what he knew about retailing and small towns, he decided that it was time to go ahead and start rolling these things out. So I think that there are probably some general insights from the specific process that Walton actually followed.

Protecting Sustainable Advantage

This is the last slide that I'm going to talk through. And this is where we started out: Sustainability isn't forever. Somebody was commenting to me in the break that he'd asked a couple of my colleagues, over the course of this program, which company has the most sustainable, ironclad advantage. And two out of three of the respondents said Wal-Mart, if I remember the conversation from the break right. What we've seen is that, even in the Wal-Mart case—and this is a company I've been writing cases about for twenty years now—you can identify some issues that may affect their ability to perpetuate what they've done so far.

So the point of analyzing sustainability is not to end with a binary characterization of sustainable/unsustainable. The point is really to try and understand that it's a matter of degree. Understand what the determinants of that degree are, and try and figure out if any of them are susceptible to managerial influence. Are any of them things that you can do something about? Usually it does cost to invest in doing those things. But the notion is that you probably want to think of that investment not as something discretionary to improve the business going forward, but as something that is necessary just to keep in place, given the kind of competitive treadmill that issues of sustainability place us on.

So the idea ultimately is to try to get to actionable things that you can do that are going to affect the extent and rapidity with which these kinds of threats affect you, if at all, rather than to try and find the perfect silver bullet; or find the perfect spot of sand to stick one's head into in the hope that others will pass you by without noticing what a neat advantage you've created for yourself, and without trying to somehow ruin it by imitating or substituting or holding you up; or even doing that unto yourself by establishing an organization that takes advantage of its inherent advantages to not run as efficiently as possible.

Dynamic Thinking

This lecture was meant to try to get you thinking about some dynamic issues. Because my experience, from having worked for a while as a strategy consultant as well as an academic, is that if we think about static strategic analysis—How do you analyze an industry at a point in time, or how do you analyze a competitor's position relative to others?—these were things that pretty much got worked out in the 1980s, largely by Mike Porter, various people at various consulting firms, a few other academics, etc. And actually, we haven't seen much of that changing over the last ten, fifteen years.

Where a lot of work is being done on strategy these days in terms of academic research, work that the consultants are doing, is really focused around issues of dynamics, which we don't understand very well, where we don't have one single all-purpose framework that we

can apply to every kind of dynamic issue that comes up. But where the issues, at least—issues like sustainability—are important enough that even if the available frameworks are partial and don't do the job for us completely, we probably want to use them as best as we can to try and face up to these issues, as opposed to focusing on creating a competitive advantage, and then just *hoping* that everybody else will allow you to hang onto it going forward.

Thank you very much.