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The Three Capitals of Pricing – Human, Systems and Social Capital

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Abstract

In this paper we explore the possibility, heretofor unexplored in the marketing literature, that firms "invest funds" in their pricing processes. This builds on some of the recent economic work on the costs of price adjustment. To do this we undertook a two-year, cross-disciplinary, ethnographic study on the nature of investments made by senior managers to enhance the effectiveness of the pricing processes within their firms. We discovered at least three distinct types of investments that managers at these firms made to price more effectively, which we term as the three capitals of pricing - human capital, systems capital and social capital. Our evidence suggests that pricing is really about managing both prices and investments in the pricing capital used to set and adjust those prices. The existence of these three forms of pricing capital provides a new perspective on pricing strategy, suggesting that firms compete on prices simultaneously in three different ways within their organizations. First, they compete on whether to invest in pricing capital versus or other areas of capital investment, such as plant, equipment, etc. Second, they decide what form of pricing capital to invest in – human, systems or social. Third, they set and adjust prices constrained by the existing pricing capital they have in place at the time of their pricing actions. We discuss the implications of these three forms of pricing capital and these new perspectives on pricing for the marketing, economics and strategy literature.

Key Words: *Pricing, Human Capital, Systems Capital, Social Capital, Resource Based View of the Firm, Ethnography, Price Rigidity.*

"Price is the only marketing mix variable that generates revenues; all others involve expenditures (or possibly investments) of funds." Rao (1984)

I - Introduction

This quote, the first line of Rao's (1984) summary of the pricing literature in marketing, is as true now as when it was first written. To this day, most of pricing literature in marketing is successfully focused on the unique strength of pricing emphasized in the first part of the sentence – "Price is the only marketing mix variable that generates revenues". The marketing literature is very effective at creating insights on how to improve the revenue generating capabilities of pricing in a variety of areas, including: choices of pricing forms such as every day low pricing (Hess and Gerstner, 1991; Hoch et. al. 1994; Lal and Rao, 1997; Bell, Ho and Tang, 1998; Ailawadi, Lehmann and Neslin, 2001), bundling (Stemersch and Tellis, 2001), pricing in channels of distribution (Lal, 1990), sales promotion (Blattberg & Neslin, 1990), competitive pricing (Moorthy, 1985), price image (Simester, 1995), psychological aspects of pricing (Monroe, 1990), etc.

At the same time, the second half of this sentence highlights an implicit assumption common to most of the pricing literature in marketing today – that pricing does not involve expenditures (or possibly investments) of funds, while assuming that all other areas of the marketing mix do "involve expenditures (or possibly investments) of funds". Yet there is reason to believe that pricing may indeed involve expenditures of funds. In particular, there is an economic literature on "the costs of price adjustment" which suggests that price adjustment is a "*very difficult, costly and time-consuming process*" (Caplin and Leahy 1995) and that changing prices "*is a complex process, requiring dozens of steps and a non-trivial amount of resources*" (Levy et. al. 1997). Empirical studies by authors such as Blinder et.al. (1998), Slade (1998) and Levy, et al. (1997) have provided additional evidence that these costs may be significant in many industries. Moreover these costs have substantial theoretical implications because they can be a source of price rigidity (or price stickiness), as demonstrated theoretically by such authors as Mankiw (1985), Blanchard and Kiyotaki (1987), Rotemberg (1987), Ball and Romer (1990) and Mankiw and Reis (2001). Indeed, according to Carlton (1987) sources

of price rigidity fundamentally change the outcomes of models in microeconomic and industrial organization, and according to Blinder et al. (1998, p. 21) these costs have become "…one of the main strands of New Keynesian theorizing".

What hasn't been explored yet in the literature on the costs of price adjustment are the "possible investments of funds" suggested in the opening quote for other areas of the marketing mix. Yet recent work in this area suggests this is a promising direction to explore. For example, authors such as Zbaracki et. al. (2001), Sims (2000) and Mankiw and Reis (2001) have begun to explore managerial and decision costs of price adjustment. As another example, Rotemberg (2000), discussing Zbaracki et. al.'s (2001) paper, suggests that "the production function of firms uses inputs not just to produce outputs, but also price lists and prices." Recent work by Zbaracki et. al. (2002) suggests that firms producing prices may require investments in pricing capital, and Dutta et. al. (2001, 2002) suggest that pricing processes at firms can be complex enough to create a strategic capability.

Our quest in this paper is to build on the existing literature on costs of price adjustment by exploring firm investments in pricing processes. To do this we undertook a two-year, cross-disciplinary, ethnographic of the pricing processes of a large Midwest industrial supplier and several of its major customers. This study allowed us to gather detailed information on why managers felt the need for investments in the price setting process and the nature of investments that were made by senior management to enhance the effectiveness of the pricing processes with the firm. Many scholars have suggested this as an appropriate methodology to explore pricing. For example Rao (1984), states that "*the benefits of knowing more about decision processes of how industry managers go about determining (and changing) prices for their products are quite apparent*". In economics authors such as Caplin (1998) call for "*more detailed empirical work and for increased understanding of the manner in which corporations actually arrive at pricing decisions*", while Blinder et. al. (1998) suggest "*going to the source of price change activity—the managers who change the prices--to gain insights about pricing*".

As we tried to make sense of the data we collected, we found there were themes and commonalities across a variety of price setting tasks on the kinds of skills, systems and infrastructure the organizations invested in to do pricing. When seen as a whole, above

the fray of the particular pricing actions and decisions, we discovered at least three distinct types of investments that firms make to do pricing, which we grouped into human capital, systems capital and social capital. Our evidence suggests that managers recognized the need for investments in pricing capital since lack of these pricing capitals often constrained their ability to set prices. We also document how managers went about enhancing their pricing capital along these three dimensions that we identified.

By human capital we mean the knowledge and skills embedded in the managers at the firm. There is a long literature in economics (Becker 1964, Lucas 1988) and sociology (Coleman 1950) on the importance of human capital in other economic contexts. This is the kind of pricing capital that is developed in articles, textbooks, and classes on pricing in the marketing and economics disciplines. By systems capital we mean the tools and systems managers use to do pricing. These are more often computer hardware and software to handle the data and theories developed in economics and marketing to do more effective pricing. There is a large and growing literature in MIS on these kinds of systems (Subramani 1999). By social capital we mean investments that enhance coordination and cooperation among participants in the price setting process, who have differing incentives and perceptions. There is a growing literature in economic sociology arguing for the importance of this kind of capital for economic phenomenon (Coleman 1990, Burt 1999). And there is even precedence for social capital in marketing. In the 1938 Journal of Marketing R.S. Tucker (1938), discussing pricing, suggests that, "*the workings of price are obscured by custom — meaning not only the conventions of accounting and business practice but especially the habits and social standards of customers*".

By uncovering these three capitals of pricing we suggest that there is more to pricing - firms manage both prices, and the investments they make in the pricing processes they use to set and adjust those prices. This offers a different view of pricing strategy (see figure 1), suggesting that firms take actions on pricing simultaneously at three different levels in their organizations. At the highest level, they must decide whether to invest in pricing capital or other capital investments they can make for their firm. This builds on existing research in marketing where a higher-level game lies behind the tactical actions we observe in the marketplace (e.g., Wernerfelt 1994b). At the middle level, they must

mange their pricing capital portfolio, deciding which forms of pricing capital to build – human, systems and social capital. Fortunately each of these forms of capital has a rich existing literature that can be used to model the implications and interactions of these varying forms of capital on pricing. At the third level firms must decide how to set and adjust prices given the capital they have in place. We suggest that this perspective offers a more holistic view of pricing, and discuss the implications of these three forms of pricing capital and these new perspectives on pricing for the marketing, economics and strategy literature.

The rest of the paper is organized as follows. We first discuss the method for collecting data followed by the evidence on the three capitals of pricing. The subsequent section then discusses the implications of these three capitals for the pricing literature in marketing and economics. We conclude the paper by discussing the limitations and potential directions for future research.

II - Method And Data

"Such a study should attempt to look at issues of price setting for one product as well as a line of related products and at various levels of the distribution channel; attention also has to be paid on the problems and procedures relating to the implementation of price policies"

(Rao 1984)

In our research, we sought to understand how managers allocate resources to set prices effectively. The methods ordinarily used for analyzing price-setting could not address this question, so we adopted an ethnographic methodology. There is precedent for such a methodology across a broad range of related problems. Ethnographic methods offer a means for exploring existing marketing phenomena and uncovering new dimensions, thereby expanding the theoretical power of the marketing discipline (Deshpande, 1983). "Marketing ethnography" (Sherry, 1990) has also been used to identify the processes and investments of a wide variety of marketing-related activities, including service encounters (Arnould, Price and Diebler 1994), personal selling (Biggart 1989), retail activity (Sherry 1990), and marketing channels (Arnould 1995). Our methods are also consistent with some of the earliest work in marketing. For instance, early scholars in marketing (e.g., Grether, 1937; Tucker, 1939) studied firms in depth to

describe pricing policies to identify responses to regulations like fair trade. Cochoy (1998) states that these authors went about making "an inventory of marketing institutions, procedures and practices" and were oriented towards the empirical study of real markets (Jones and Monieson, 1990). Finally, our approach follows recent research in economics that has uncovered new dimensions of bargaining costs within a firm (Knez and Simester, 2001).

Research Setting:

In choosing a research site, we sought to balance access and complexity (Patton, 1980). We needed access to a broad range of informants engaged in pricing activities essential to the competitive position of the firm. We also needed a firm that sold a diverse range of prices, products, distributors and end users so that we could study suitably wide set of phenomena. We found a large, Mid-Western industrial firm that manufactured parts used to maintain machinery that fit both criteria. The company was a market leader in its industry and sold more than 8000 parts across three product lines. The company sold its products to original equipment manufacturers, to various value-added resellers that would in turn sell the components to end users, and in some cases directly to the end users. Our study addressed primarily the market for the components sold through the various value-added resellers. The firm has a reputation as a high quality producer and as an innovator in these markets. Managers have invested significantly in product, and pricing processes over the past ten years.

Data sources:

Our data collection took place exclusively within naturalistic settings (Guba & Lincoln, 1989). We gathered data over the course of two annual "pricing seasons" during which the firm set its prices. Data for the first season were retrospective; we interviewed participants and gathered their stories about the pricing process. During the second season tracked the price-setting process as it occurred. We sought to improve the validity of our theory by following the triangulation methods described by Huberman and Miles (1994) and Eisenhardt (1989). Our three main sources of data were interviews, non-participant observation, and records data.

Interviews:

In our interviews, we sought a detailed description of the price-setting process, including the tasks and participants involved, the data-processing requirements, the routines used, and the sources of controversy. In total, we interviewed twenty-seven informants. These included a broad range of participants, including the pricing manager and pricing analysts, the vice-president of marketing, the director of sales, the marketing director, various managers and members of the sales force, several pricing support staff, systems analysts responsible for the pricing systems, and former employees who had important pricing responsibilities. We also interviewed various customers. In these interviews, we sought a detailed description of how the customers dealt with changes at the focal firm. We also sought to understand the relationship between the customers and the firm we studied and the relationship between the customers and firms selling comparable products.

All but one of the interviews were taped and transcribed. One customer did not want to be taped, so instead one researcher asked questions while another took detailed notes during the interview. The interviews varied in length from 45 minutes to over seven hours. In many instances, we conducted multiple interviews, returning to interview informants until we had as complete a picture as possible of their perspectives on price-setting at the organization. We interviewed five informants twice, and two informants three times. In addition, the main pricing coordinator we interviewed nearly every time we visited the research site.

*Non-participant observation*s

In addition to interviews, some members of the research team attended pricing meetings over the course of the second pricing season. We observed various interactions among pricing team members while we were on site. In addition, we observed various members of the organization using computer resources and various other pricing tools.

Records data

We collected different kinds of record data to provide information about price-setting actions at the organization. We collected copies of list prices and supplemental prices for both pricing seasons that we studied. Where available, we collected notes and other documents from the first pricing season of our study. We also collected a complete set of meeting minutes and the various supplemental documents handed out during the pricing meetings over the second pricing season we studied. We collected copies of email messages circulated among the central price-setting team. We collected copies of special pricing requests (e.g., discounts and rebates off of list price) for several pricing seasons. These gave a comprehensive account of pricing requests from the sales force that had been approved by the management at the organization. We also collected detailed records of time spent on pricing activities by the pricing coordinator as well as information about those activities and about others involved. Over the course of the study and of our data analysis two of the authors continued to contact the pricing coordinator about any documents for which we needed clarification or when additional documents or information were needed.

Data Analysis

In the spirit of ethnographic analysis, the different backgrounds and training of the researchers proved an important source of dialog throughout data collection and analysis. Throughout the course of our data collection, we continually discussed from our different perspectives what we encountered. We decided to cease data collection and commence formal data analysis once we concluded that we had reached data exhaustion (Hill, 1993). We reached this conclusion when we felt that as a team we had established a clear understanding of the processes taking place within the organization, that we had observed all available pricing activities, and that we had interviewed (and, as necessary, re-interviewed) all the important informants.

Following standard ethnographic practice (Arnould & Wallendorf, 1995), we made no *a priori* assumptions about the nature of investments in pricing capital at the firm we studied. Indeed, at the start of our research, we did not anticipate that pricing required investment. The initial aim of the study was to explore how resources were applied to the pricing process. As the analysis progressed, we gradually developed an

inductive, emergent theory (Guba & Lincoln, 1989), a tripartite typology of three capitals invested in pricing processes: human capital, social capital, and systems capital. We observed each capital across a broad range of pricing processes. Our typology might also apply to other processes within the firm, but the investments we identified were fixed investments that members of the firm intended specifically to address price-setting processes. The evidence we present below is only illustrative. It represents a small sample of the much wider empirical support that we found for the theoretical conclusions presented in this paper.

III – Evidence From the Field

In this section we offer our evidence on the need for investments that managers recognized to enhance their effectiveness to set prices, and we also describe the nature of investments the firm made. We suggest that the various types of investments made in the price setting process to meet these needs can be broadly classified as three types of pricing capital that firms are developing – human capital, systems capital and social capital. We end this section with a discussion of examples where lack of pricing capital along any one of the three dimensions constrained pricing activity at these firms.

III.1 Human Capital

III. 1.1 Evidence on the Need for Human Capital:

We begin by describing the nature of pricing know-how that was needed by the firm. The process of setting prices as suggested by the marketing framework entails obtaining competitive intelligence on prices of comparable products and likely response, the intended customers for those products and their profitability. In order to set prices, all the major players who are involved in the price setting process at the corporate office must be, at a minimum, conversant with the theoretical and practical realities of the pricing task and the pricing related programs. Such skills take many forms. They range from analysis of break-even consequences of price changes, to financial analyses of price changes that incorporate estimates of customer elasticity, to dynamic estimates of projected cost changes, to calculations of anticipated growth and lifetime value of

customers. The managers were aware of this process, as the following quote from a senior pricing manager suggests:

"Let's say you have 1000 parts in a geographical market, look at each part number and try to work out who was your competitor, what prices did they have in the market place, was it high volume, which customer was it going to…and their profitability."

Even the process of benchmarking with competitive offerings requires investments. In practice, this step requires help from personnel in engineering and product design to assess functional equivalence of the firm's and its competitors' products. Further, in order to set competitive prices, information has to be obtained from the field on exact pricing terms being offered by competitors to potential customers. A senior manager, when asked to elaborate on how the competitor information was put together, mentioned that when he was put in charge of pricing there was no good information on competitive offerings. It took him three years –he had to work with engineers, production staff and others to prepare a list of comparable competitive offerings for each of their own product lines.

Even if pricing know-how exists at the corporate level, it is also important that the field sales people are also trained in the relevant pricing know-how. Since salespeople were at the forefront of customer discussions and negotiations it was essential that they too understood key aspects of pricing. For instance, a senior manager describes how important know-how was for the salespeople.

"Probably the biggest thing I could think about was showing them (sales persons) examples of current business that had already been decided upon – sales guys think they are heroes until the financial people comeback about two months later when they have had time to do their analyses and they say boy this stinks. …we need more people in the field who have the basic understanding of financial concepts especially return on customer investment."

III.1.2 Evidence on Investments to Build Human Capital

The senior managers at the firm were keenly aware of the need to build pricing skills of the employees. We found that attempts were made to improve the skill set related to pricing in at least three different ways: (1) investments in human capital through hiring, (2) investments in human capital through training of existing employees, and (3) investments in human capital through expanding the experience of existing employees.

We found evidence that a common strategy used by the focal firm and their major customers was to enhance pricing human capital through hiring. We found evidence of managers acquiring human capital through hiring MBAs from major academic programs to help them do their pricing. For example, at one major customer a manager described how when he took over the job he had hired six to eight MBAs from top programs to help improve the pricing at his company.

Another means of developing pricing human capital is through training programs. We saw examples of such training on both a formal and an informal basis. Formal programs aimed at improving knowledge of the state of the art in pricing. For example, the firm we studied had begun sending current managers to additional pricing courses in order to increase their theoretical knowledge about pricing. Informal programs aimed more at task-specific human capital. For example, one sales manager described a training package that he put together in order to help members of the sales force recognize whether they have negotiated a good deal.

"I put together part of this in this packet purely to help address the training part of it to understand: this represents our standard product, you see our profitability and net profit before taxes, fixed costs and over here is the freight that we talk about and the other variable costs."

Another means of developing pricing human capital in addition to courses and informal training is through developing special tools that help field personnel to make better customer analysis. For example, one senior manager describes how they developed pricing tool-box that field sales person could carry with them to help them assess customer profitability.

"…not all of our sales people are really that able to understand the financial analysis. So we have to come up with tools that are so simple so … they will do the analysis."

Finally, the firm enhanced pricing human capital through expanding the experience of existing employees. For instance, pricing capital was also built through informal interactions with competitors and customers. These interactions yield the street knowledge and intuition that organizations develop after years of working with customers. For example, one of the salespeople in the organization described how he went about assessing price increases budgeted by the customer:

"For the most part you would focus very heavily on the high volume items and look at the costs and try and utilize your knowledge of the product and of the market in a very informal process. That says here I am using my experience and I went over and spoke to this fellow and what did he know about this and what did he know about that. … I would try to get the cost, sales analysis information and try to come up with what I knew people had budgeted for as a price increase."

The evidence on the need for pricing know-how and the steps taken by senior management to develop that pricing capital is summarized in Table 1a.

From the standpoint of the existing literature, effective pricing requires developing the human capital—specifically, know-how about different pricing theories, know-how to assess customer profitability through analysis of data and know-how about different pricing programs among others. The importance of developing pricing capital is consistent with the rich literature in human capital developed in economics, sociology, and organizational behavior (Becker, 1962b; Schultz, 1961; Lucas, 1988; Rubinson and Browne, 1994).

III.2 Systems Capital

III.2.1 Evidence on the Need for Systems Capital

Developing the pricing human capital is a critical step but not enough to ensure effective pricing. Managers recognized that they needed appropriate pricing systems in

order to assess customer value or to respond appropriately to competitive pricing actions. We describe the nature of systems know-how that managers felt they needed to help them set prices effectively.

First, in order to assess the value perceived by customers for the firm's products and services, managers and analysts realized that they needed a system that tracks customer transaction history and the actual prices paid by them. Further, this system had to have the ability to integrate pricing information from different parts of the firm because often the sales force could offer special prices, discounts or other subsidies to customers. Thus the systems and processes had to be in place to track and store these special prices and the reasons why these special prices were offered. For example, a pricing manager discovered that the existing systems couldn't keep track of actual transaction prices from year to year and reasons for any special discounts offered to customers:

"I knew when it got to the next year I couldn't remember why the hell I had priced the way I did and I would have customers calling me saying, "What did you just do to me?" I had no idea why I had priced. What I found going through that is part number by part number there were different issues, different competitors, reasons why it needed to be."

Second, managers realized that they needed a flexible pricing system that enabled them to offer prices that was responsive to competitive considerations. Consider, for example, the challenge faced by the pricing manager of the firm that we studied. He learned that his competitors were tailoring their prices to individual customers by offering different levels of discount on different products to different customers. His pricing system, could vary discounts across customers, however it could only offer a single discount for the entire selection of products that each customer purchased from the firm. As he describes the situation:

"People were discounting one level of [list price] for everything in the [price list]. This happens today and it drives me insane. There are parts that are driving our business and you do not discount [them]. This was our fundamental problem. [Our competitor] had a program and they were using it against us and it was frustrating me. I had to match what they were doing. Our pricing system did not allow us to do that."

The need for investments in appropriate systems in the price setting process was highlighted by repeated observations of the research team. Almost all managers and other pricing personnel described their experience in pricing as intertwined with the pricing systems they had to work with.

"What is interesting is that whenever we ask people to describe their experiences of pricing throughout their employment at the organization - the informant inevitably divides up their history with the organization into periods demarcated by different systems. They seem to remember pricing according to different systems that were used rather than the actual pricing levels themselves." (Researcher Field Note)

III.2.2 Evidence on Investments to Build Systems Capital

The senior management in the firm was keenly aware of the need to build appropriate systems. They invested in systems that enabled all relevant pricing personnel to track customer purchase history, ease the process of making price changes and enable field sales personnel to better assess customer value. We now offer evidence on these system investments.

First, in order to get more accurate information about customer purchase history, senior managers invested in a computer system that kept track of exact prices paid by customers including special discounts and reasons for those special discounts. The manager indicated that his whole purpose in designing the pricing system "was to try to maximize the profitability in the marketplace."

"So the whole design of the [computer system] was we needed a rule-based pricing system. ... [The pricing computer system] gives you a database to understand and report what you did, why you did it, and flag to you when a variable changes."

This system also enabled the flow of information across multiple pricing systems within the company. Further, the organization had developed systems that allowed the sales force to call up a part number and get information about the various uses of that product, comparable competitor products, and engineering details.

Many of the customers of the firm we studied also invested in these kinds of systems. For example, one customer had a massive system set up to take prices from its

suppliers and develop an overall pricing package. As another example, one of the customers we interviewed described how their organization designed a system to automate rebates in order to have data available immediately.

"I saw this rebate thing get larger and larger so I decided this was a thing we could automate. So we put in a process that is hands on with a button that is pushed at the end of the month. Our system is updated enough that we closed out April last night and we had sales figures after the last guy walked out of the door. I want things done and at my fingertips. This precludes us from having to actually having to make photocopies of invoices. It takes two minutes to set up a customer when they come on board. I can do it any way I want on the screen and I can dissect it any way I want. This is a powerful program. I prefer to go out and negotiate with customers and tell them here is our deal, you get this break over this product line."

The system described above offered the firm several advantages. For instance, the firm could quote prices to his customers almost immediately. Historically, the sales person would have to go back to the office and calculate deals. With the investment in systems capital, deals with customers could be reached much more quickly.

Finally, the firm invested in customized software as part of the toolkit for field sales personnel. This enabled the sales force to estimate customer margins and profitability for the product lines they were offering to those customers.

The evidence on the need for systems capital and the investments made by senior management to develop appropriate pricing systems is summarized in Table 1b.

The investments made to install more appropriate systems reflects that in addition to human capital, effective pricing also requires access to tools and systems that can be used by managers to effectively apply the human capital they have developed on pricing, i.e. systems capital. Systems capital for pricing generally consists of computer and information systems and the related software to do the analytical work pricing demands (Subramanian, 1999). As a pragmatic construct, then, systems capital increases the ability of the firm to do pricing analysis.

III.3 Social Capital

III.3.1 Evidence on The Need for Social Capital

Developing the human capital and the appropriate pricing systems goes a long way towards enabling the firm to price more effectively. However, at the firm we study, managers realized that the process of setting prices relies critically on coordination and cooperation among personnel from different parts of the firm. Often, there are disagreements among participants in the price setting process. If the price setting process in place does not take into account these differences and set up mechanisms to ensure cooperation among all participants, they could delay price changes and sometimes even reverse price change decisions made by a group.

The managers involved in the price setting process were aware of the need to ensure cooperation and coordination among different participants. For instance, managers told us about examples where there was disagreement between sales and marketing groups about price changes for specific products because of differing incentives. The corporate marketing group decided to raise prices on products since they believed the market would bear it. However, the field sales force disagreed since they were worried about repercussions from customers and the impact on customer relationship. The marketing group went ahead and raised the list prices anyway and did not communicate the price increase to the field sales force. The marketing manager acknowledged the poor communication to the sales force:

"*We had one big {list price} increase three or four years ago and the person that was responsible for it mis-communicated to the area and sales managers, in particular the severity of the price increase. I don't know why because it was a lot higher.*"

Since the field sales-force had not agreed to this increase in the list price they offered special discounts to customers that completely offset this list price increase. So there was no net price change to end customers, despite two price changes within the company. One sales person described how they increased the discount to negate the list price increase initiated by marketing:

"In past years when this has happened, I looked at this price sheet in 94 and new one in 95 there was a 3.2 percent different, we would walk in and sell them at [30 percent off of list price] and I would change the [discount by 3.2 percent] so it was a very simple price change."

Managers also recognized that disagreements also delayed the price setting process. For instance, disagreements occurred in the price setting process because different participants had different perceptions on how to position the firm against its competitors. During the first year of our study, such disagreements led to considerable debate among participants on what prices to raise, what prices to leave untouched, and what prices to reduce. The director of pricing who was in the marketing group described one such dispute. Describing the pricing of one of the product line from the standpoint of the marketing group, he observed:

"People who did know us considered us one thing: high price. As a marketer, I did not like that. I wanted good value and I wanted to create a good brand that meant good value, so I knew that I had that as a problem."

In response, he proposed lowering the list price on that product line in order to communicate to the end user that the product was a good value. The sales force objected because to them the reseller was the customer. The pricing director who is in marketing described the concern of the sales force:

"The [sales representative] in life has a very focused opinion around the fact that we should be the highest [list] price because when he sold to resellers ... now he could come in and say "Take my line. [Our competitor] will sell it to you for $21 and I will sell it to you for $20. The [competitor] price sheet says $35 and mine says $45 so you can make more margins with my product than you can with theirs."

As the pricing director, a marketer, further noted, the sales force was primarily interested in the response of the reseller, while as a marketer his primary focus was on the end customer:

"The fundamental argument from [the sales force] to me was that the people who sell the product is the reseller. They don't care what the [list price] is; they care what they pay. And so his mental pricing map of pricing was we created a[list

price] for our resellers. My answer was "No we didn't." You may use it but we created a [list price] for the end user customers. We wanted to attract a good value to the end user."

These differences evoked passionate disputes from the various participants. As one participant observing an argument over the issue said, "there was one argument on Tuesday morning that I thought they were going to throw punches." These disagreements delayed the process of setting prices considerably.

The need to invest resources that would enhance coordination among different participants in the pricing process is highlighted by the following quote of a senior manager:

"If I have a criticism of myself and senior management is that we did not spend an awful lot of time trying to communicate pricing logic to all concerned, educate them and bring them on board."

III.3.2 Evidence on Investments to Build Social Capital

Senior managers at the firm and its major customers were aware that given the large number of people involved in some aspect of pricing and the immense amount of coordination required. Investments in the price setting process that improves their ability to function together through improved tools, interactions or networks can be very valuable for pricing.

The firm we studied took a number of steps that enhanced the likelihood of cooperation among different participants in the pricing process. The firm invested in development of guidelines and processes that enhanced the potential for cooperation among all relevant personnel involved in the pricing process. Below we offer evidence on the steps that were taken.

In order to overcome problems of differing incentives among different participants in the price setting process, senior management often set guidelines within the firm that incorporated these differences. For example, one of the sales directors found a great deal of controversy over the pricing decisions made by the sales force, so the sales director decided to set up guidelines in coordination with marketing. The sales director comments on the nature of the task:

"There was so much turmoil at that time on what pricing should be and kind of a lot of hallway talk about [how] they dropped the price too low there and our profitability stinks because of the sales people doing this on pricing. And right or wrong, I basically said "Fine, I will put together some guidelines that clean up a lot of these inconsistencies and get [my manager and my counterpart in marketing] to sign off." Well it wasn't that easy because they didn't like some of the things in the guidelines. So we ended up compromising and all three of us signed it and boom that became the guideline."

Another action taken by senior management to enhance coordination among different participants was to establish new processes that increase interaction among different members of the sales force. For instance, senior management realized the importance of building consensus between the corporate marketing and the field sales group. Thus the new price setting team had members from each of these groups. The pricing manager describes how the pricing team now explicitly includes representatives from field sales group.

"There were field sales people on the pricing team…So when we had the pricing team together it was both field and inside people {corporate marketing} - it had to be - it is the only way to build consensus on both sides."

Finally, new processes were set up to enhance know-how about the market -- resellers, end customers and competitors-- amongst the different participants in the pricing process. As discussed earlier, disagreements occurred in the price setting process because different participants had different perceptions about market positioning and the relative importance of resellers versus end customers. The differences often occurred due to different levels of market information about competitors, resellers and end customers. In order to reduce such differences and to ensure that all the participants in the pricing process had access to the best possible information about customers and comparable competitor products, the pricing team was expanded to include members from other functional areas. For example, the pricing manager describes the current composition of the team that was involved in setting the list price as including:

"me—I was the pricing manager—three sales people—the territory manager, the area manager, and a private label person—and product [engineering and design]

people."

The need for coordination in the pricing process and investments made to enhance cooperation suggest that in addition to pricing know-how and access to tools and systems, effective pricing also requires investments that enhance internal coordination among the participants in the pricing process. This is because pricing is embedded in a complex web of organizational interactions. The process of setting and changing prices requires attending to the interactions among different participants and their differing incentives. From the standpoint of the existing literature, effective pricing requires investments in social capital (Coleman, 1990; Bourdieu and Wacquant, 1992; Putnam, 1993; Burt, 1999). Putnam (1993:167), for example, defines social capital as "features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated action." In the context of the pricing process, this implies various aspects of the firm's formal and informal social structure and processes that serve to enhance buy-in among different participants in the pricing process. This is the area that has received the least attention in pricing, but plays a critical role in the price setting process.

The evidence on the need for social capital and the investments made by senior management to develop appropriate pricing social capital is summarized in Table 1c.

III.4 Lack of Pricing Capital as a Constraint on Pricing Actions

Besides the need and existence of investments in pricing capital, we also came across many situations where a lack of pricing capital was a constraint on the kinds of pricing actions the firms were able to undertake. In these situations managers identified the lack of capital as a central constraint on their activities.

For example, a lack of pricing know-how occurred in many different forms and in different parts of the organization and pre-empted the firm from setting effective prices with respect to their customers. One senior pricing manager highlighted how in the past, lack of personnel with relevant training delayed pricing decisions.

"I have my hands full because my people don't understand the pricing analysis,{pricing} programs, and cannot assess the customers scenario"

Another manger complained that he lacked personnel who were knowledgeable about other pricing personnel in the organization. The quote below highlights how this delayed pricing decisions, since these decisions could not be delegated.

"The problem that I knew we were encountering when we were doing this pricing was that you couldn't delegate this to anybody because nobody had been around ten years to know what was going on."

Further, the lack of a more adaptive pricing system precluded them from undertaking more complex pricing schemes like bundling. For instance, the system could only allow a single discount across all product lines. Further, it did not have different competitor information for different products integrated into the data-base. Thus in many cases, they were able to either offer a customer a bigger discount across all products and lose money on the products for which the firm could get a higher price or offer a smaller discount on all products and lose the business on the products for which the competitor was offering a lower price. The quote below by a pricing manager highlights this problem:

"There is a desire to unbundle [prices] across products. It is not that we do not want to sell these products together, it is more that we do not want to have across the board discount for all products. Some products are always very price competitive …other parts you can't get anywhere else or you buy once in a blue moon. We would give one price off across the board…The fact was there was so much money lying on the table."

Finally, weak social ties of the pricing personnel with senior management in other divisions and functional areas precluded the pricing manager from convincing other managers to adopt his recommended pricing strategies. For example, at one of the customers (an OEM that bought parts from the focal firm) we visited, one of the managers described his experience in his task of managing pricing:

"Despite hiring some of the best MBA's and developing our systems capabilities pricing has not improved around this company over my first two years. Why not? Because I didn't consider how to sell these pricing ideas internally. I haven't been able to get the divisions to take my pricing ideas and implement them."

IV - Discussion

Our framework moves the discussion on pricing at a higher level by suggesting that managers are competing on investments in pricing capital as well as on prices themselves. The legacy of most pricing managers in our research was not a particular price they set, or price war they won. Rather, it was the investments they made to develop the pricing capital during their tenure in the position. It remained with their company long after they had moved up or moved on in the company.

This suggest that pricing is actually being managed in three different ways in organizations (see Figure 2). At the first level we suggest a new set of pricing decisions that have not received attention in the pricing literature. Specifically, the firm must make decisions on whether to invest in its pricing capital infrastructure or in capital investments available to the firm, such as plant or equipment. At the second level, managers must manage the pricing capital portfolio, and decide what kind of pricing capital to invest in. This is a new kind of pricing decision that lends itself to modeling because each of these capitals has an existing literature base to draw from. At the third level these three capitals act as the infrastructure within which firms must undertake pricing actions, and therefore must be explicitly considered as managers make pricing decisions. For example, a lack of pricing capital can be a constraint on pricing actions, i.e. a source of price rigidity. We discuss each of these levels and their implications for the marketing, economics and strategy literature next.

First Level - Investing in Pricing Capital versus Other Capital Investments

In the long run we suggest that firms invest to enhance their pricing capital. We found evidence that senior management made conscious efforts to build all three pricing capitals. It developed the pricing human capital through new hires, training programs and enriching the pricing experience of their employees. These investments enabled relevant pricing personnel to develop a better understanding of customer price sensitivity as well as competitors' pricing strategies. Senior management also invested in pricing systems that enabled all relevant pricing personnel to track customer purchase history, ease the process of making changes and enable field sales personnel to better assess customer value. These systems enabled the sales force to access information about customer

purchase history and estimate customer margins and profitability for the product lines they were offering to those customers. Finally, in order to enhance coordination amongst different personnel in the pricing process, cross functional pricing teams were formed and guidelines were developed. These actions allowed a more efficient mechanism to overcome differences in the price setting process, due to differing information sets as well as differing incentives.

Our work suggests that firms should realize that their pricing capitals are a choice variable in the long term. Investment in the three capitals thus become a higher level game (e.g., Moorthy 1985; Wernerfelt 1994) being played by firms that sets the stage for subsequent choice of pricing strategy and price competition. Pricing managers have to decide which kinds of pricing capital to invest in, to best develop their firm's ability to set prices. This builds on existing research in marketing where higher level decisions like choices of business formats (Wernerfelt 1994b) and umbrella branding (Wernerfelt 1988) influence subsequent tactical actions we observe in the marketplace. From papers ranging from choices of business formats to issues of umbrella branding, marketers have a long tradition of identifying the key strategic issues lying behind our tactical choices and showing how an understanding of firm choices on those more fundamental issues drives eventual decisions on the tactics.

Our perspective allows pricing to be discussed effectively at the highest levels of the organization. Firms are simultaneously competing on pricing capitals as well as prices with other firms. CEO's are competing by deciding on the nature of investments to enhance the effectiveness of the price setting process. So when the CEO at Ford decides on the nature of investments that would allow them to implement smart pricing, the CEO of General Motors, Honda and others have to realize that the pricing playing field is perhaps being changed along all three dimensions of pricing capital. A narrow view of only one type of pricing capital may prevent senior managers from setting the most appropriate pricing direction for the firm.

There have been suggestions that to become effective at pricing, managers have to incur expenditures to assemble the necessary fact base and to rethink what it means to manage price (Dolan and Simon 1996). Consider the kinds of investments P& G had to make in pricing capital when they changed to value pricing (Lal and Kristofferson,

1996b). Further, the response of competitors to P&G's value pricing strategy suggest that firms like P&G have to continue refining their pricing capital on a sustained basis if they want their value pricing strategy to work to their advantage. Also consider some of the recent research findings (Ailawadi, Lehmann and Neslin, 2001) on how competitors responded to P&G when they implemented value pricing (i.e., EDLP). Competitors like Unilever who have multi market contact with P&G tended to follow the lead provided by P&G more than smaller brands like Gillette. Further, the intensity of response was different for different brands in different product categories. The nature of this competitive response suggests that in order to compete effectively with these firms, P&G may have to further refine its pricing capital. For instance, depending on the differences in the nature of competition across different retail customers, P&G has to set up internal processes to overcome turf battle across different category managers when setting any kind of value pricing with respect to retail customers. For instance, competitive conditions may dictate that P&G offer special deals or some other types of discounts to a retailer for certain product categories in order to offer an overall better value vis-à-vis competition. However, this will be resisted by category managers whose incentives are not compatible with this outcome. Thus new incentive programs and new teams may have to be formed to enhance the pricing social capital across category managers.

This level of pricing decision-making also offers a different lens to revisit the behavioral theory of the firm and related organizational perspectives on strategy. In particular, our approach offers a different insight about the tension between a firm's ability to change prices and the constraints on that ability. As we indicated earlier, a central assumption behind most views of pricing—including work in economics and marketing — is that firms can readily change prices. Only the behavioral theory of the firm has even suggested that firms might choose to offer prices below market value to customers, but the behavioral theory treats that outcome as an artifact of organizational processes. Here, we treat that outcome as a consequence of the strategic choices a firm makes. Central to any pricing decision, we argue, is the investment in pricing capital the managers at a firm choose. Pricing decisions and the limits on those decisions are established by the three dimensions of pricing capital that the firm possesses at any point in time.

Our perspective also offers a more “rational” or economic reasoning behind the use of heuristics or simpler pricing rules by firms. We suggest that these rules and heuristics may be the outcome of a different rational economic decision, investments in pricing capital. Specifically, our perspective suggests that it may not be profitable to invest enough in pricing processes to make them fully “optimal”. Perhaps firms use these simpler rules because it is too costly to invest in pricing capital. Given the complexity required to do pricing as it is taught in marketing and economics, and the value of other activities by the firm, it is likely that many firms would choose to adopt these simplifying rules and heuristics and be better off investing in other areas such as production and distribution. Therefore, this perspective offers an interesting extension to the literature on satisficing (Simon 1974), evolutionary theory of the firm (Nelson and Winter 1982) and the behavioral theory of the firm (Cyert and March 1963).

Second Level – Managing the Pricing Capital Portfolio

Our perspective also suggests that managers are also managing the pricing capital portfolio across these three areas of pricing capital – human, systems and social capital. We devoted all of section III to developing managerial examples of this kind of activity in the firms we studied. The implications of these three kinds of capital are many.

Research on price competition and competitive response in marketing, has looked at the nature of competitive interactions using scanner data (e.g., Kadiyali, Vilcassim and Chintagunta 1999; Leeflang and Wittinck, 1996) or game theoretic models (e.g., Moorthy 1985). The existence of three kinds of capital suggests more subtle modeling and empirical issues as to how each kind of capital affects competition. At the tactical level does human capital impact prices differently than systems or social capital? For example, one could think of human capital as the ability to take given data and analyze it effectively, whereas systems capital could be the ability to gather, record and remember data. Social capital might work differently in a firm, such as impacting the consistency of implementation of pricing at the firm. Fortunately there are streams of literature devoted to different kinds of capital ranging from human capital (e.g., Becker, 1964; Schultz, 1961; Lucas, 1988; Rubinson and Browne, 1994), to systems capital (Subramanian, 1999) and social capital (e.g., Coleman, 1990; Bourdieu and Wacquant, 1992; Putnam,

1993; Burt, 1999). Our work suggests looking to these literatures to explore the implications of these different kinds of capitals on price competition. Eventually, we will also need to explore the nature of interactions and externalities between these different kinds of capital. Studying the modeling implications of pricing capital portfolios also opens new opportunities for cross-disciplinary research.

These three capitals of pricing also allow one to compare pricing processes with another rich literature in marketing on new product development offers some interesting contrasts. There is a rich stream of research in marketing that has explored how firms can enhance their ability to successfully introduce new products by investments that redesign the product development process. These investments in product development have led to adoption of new approaches like cross-functional teams and stage gate processes (e.g., Griffiin 1992c; Griffin and Hauser 1996), conjoint design (e.g., Greene and Srinivasan 1990; Urban and Hauser 1992), design for manufacturing (Srinivasan et. al 1997) and quality function deployment (Hauser and Clausing 1988) among others. There may be many opportunities for interesting research across these two areas.

The theoretical implications of a three capitals view of pricing extend beyond pricing strategy. A key issue in marketing strategy is how can a firm gain and sustain competitive advantage. The resource-based view addresses that strategic problem by suggesting that firms can use superior resources to generate economic rent (Wernerfelt 1984). Firms create value through combining and developing resources, generally through improved products or lower costs (Peteraf 1993). Our perspective on the three dimensions of pricing capital suggest that these investments are key resources to enable managers to extract better value. This suggests that investments to enhance the pricing capital can also be a source of competitive advantage.

Our work builds on existing literature that have suggested that a firm's marketing orientation can be a source of competitive advantage (Day 1994; Dutta,Narasimhan and Rajiv 1999) and recent work that has suggested that the pricing process may be a capability that firms have to develop (Dutta, Zbaracki and Bergen 2001). Our work builds on this literature by articulating the different types of investments in pricing--the three pricing capitals-- that enable firms to build their pricing capability. Further, given that it takes time to build the pricing capital, firms that have a higher level of pricing

capital may enjoy some market advantage. The pricing capital framework allows firms to identify their sources of competitive advantage. For instance, if the advantage that Barnes and Noble enjoys relative to competition is the social pricing capital it has built with its publishers (Raff 2001), then it can think of additional ways to strengthen that advantage.

The three capitals perspective also extends the resource-based view in that it addresses the process by which firms develop the pricing resources. Research in the resource-based perspective has had difficulties in identifying the processes that lead to the development and creation of resources and capabilities (Foss 1997). In particular, there has been virtually no research on the nature of internal firm routines or coordination mechanisms that enhance firm resources and profits (Foss 1997; Mahoney 1995). Our description of the process through which firms can develop their pricing capital along the three dimensions demonstrates how various routines, coordination mechanisms, training programs, and enrichment of managerial experience can lead to improved pricing capital and profitability.

Managerially, our perspective suggests a variety of activities that can be undertaken to improve their pricing capital portfolio management. These include assessing their pricing capital, undertaking gap analysis to see which area needs most attention in order to enhance pricing effectiveness, or benchmarking with respect to competition to discern areas of competitive advantage as well as weaknesses.

Assessing the Pricing Capital Portfolio: By developing the three types of capital we allow managers the ability to assess their firm's pricing capital portfolio by using existing academic tools to measure the amount of capital they currently have in their corporation. In terms of human capital, companies can test and assess what concepts their employees know about pricing with a variety of tools. There are texts (see, for example, Nagle and Holden, 1996; Monroe, 1990; Dolan and Simon, 1998; Blattberg and Neslin, 1992), exams, cases, classes and pricing experts that can help develop assessment tools to give the company a true picture of what their pricing human capital looks like. Likewise the company can look at its systems capital and assess what accounting, computer, MIS and financial systems they have in place, what software and analysis tools these systems have in place, and how accessible these systems are to their employees to get a picture of their systems capital. Finally, in terms of social capital there are tools

like the social capital short form (Burt, 1996), network analysis (Anderson, 1992), and other qualitative analyses that can be used to reflect the level of the firm's pricing social capital.

Gap Analysis: By assessing the status of the firm's current pricing capital portfolio, managers can compare the company's current capital situation against what the manager wants the capital situation to be. The manager could look for the biggest gaps in their capital portfolio and invest their first. Knowing where there are large gaps in the current pricing capital portfolio can guide upper management to know if, when and where they need to devote their resources. One example at a company we visited was that after the manager repeatedly failed to convince other divisions to accept their pricing recommendations, he learned that his biggest gap was in terms of social capital. So the manager set about hiring important people from within the firm into his pricing team.

Benchmarking Pricing Capital Relative to Competition: By developing the three types of capital we allow managers the ability to compare her firms pricing capital situation with other firms in the industry to see if they have a pricing advantage or disadvantage. The separation of the three different types of capital enables the manager to gather more diagnostic information on the dimensions where they have a relative advantage. These advantages can be built, nurtured and sustained over time to give their companies an ongoing competitive advantage on pricing. For instance, social capital structures can be sustained to give firms more effective pricing for any given set of systems or skills. Likewise, firms may hire experts and create a culture that allows them to continually refresh their human capital, giving them a sustainable human capital advantage over time. Proprietary systems can also be used to develop similar advantages.

The benchmarking can be done in a variety of ways. First, if the firm is large enough it can benchmark against itself, finding what the capital positions are for various divisions, and comparing the capital structures in multiple divisions with the performance of these divisions on pricing. They may find that there are types of pricing capital that are lacking throughout the corporation. Or they may find pockets of all kinds of capital in parts of their organization, but not everywhere. Then these pockets of capital can be used as a resource to share the value of that kind of capital and how to develop that

capital in the organization. Outside of the firm this benchmarking can be done in many ways, from going to industry conferences, casual discussions with managers in other firms, hiring managers from other firms or undertaking market research on managers in your industry. The value of this kind of benchmarking is that the firm can find out if it is currently at a competitive advantage or disadvantage with companies in its industry. And where the disadvantage is greatest may be a starting point for investing in pricing capital. And the firm may stake out a niche or competitive advantage in pricing capital with this market information. Finally, the firm may benchmark with firms in other industries to find out new types of capital that may be relevant in their firm. This pushes the envelope, allows very different pricing processes to be compared to the firm's pricing process and may enable development of innovative types of pricing capital.

Third Level – Taking Pricing Actions

A major implication of the three capitals of pricing is that they act as the background upon which pricing actions are taken. As such, a lack of investment in these capitals can act as a constraint on pricing actions taken by firms. Interestingly, even though these investments are important to enable managers to set prices effectively, they are not well understood in practice. As Dolan and Simon (1996) state "*How well are managers equipped with the informational and organizational means to develop and implement … pricing strategies? Usually not too well*"(p.301). Our evidence on the three capitals of pricing--human, systems, social--offers a framework to better understand the nature of investments to enhance pricing effectiveness.

In our data we found many examples where managers were not able to set prices effectively in the short run, because they lacked the appropriate pricing capital. For instance, the field sales force lacked the pricing human capital to assess customer profitability and thus would close deals that were not profitable, this situation improved only after training and new hires as also through development of tools that allowed the sales force to compute customer profitability. The firm early on also lacked the pricing systems to enable them to set prices for each individual customers, thus they could not compete effectively, until they upgraded their pricing systems. Finally, lack of investments to ensure cooperation among all the participants in the pricing process led to

delays in the price setting decision. Thus lack of investments in the pricing capital can limit the firm's ability to set effective prices, at least in the short run.

The existence of the three pricing capitals suggest that in the short run any complex pricing scheme like bundling or usage based pricing will have to take into account the firm's existing pricing capital. Consider the implications of these constraints on pricing decisions such as EDLP. For instance, when P&G first implemented its EDLP pricing strategy a number of retail and wholesale customers were very angry. The CEO of Stop and Shop went so far as to say that "P&G is acting like a dictator. Like all dictators they will fall. We will do everything in our power to undermine their plan". Wholesalers were also upset. SuperValu added a special surcharge to P&G products above its regular fees, and many wholesalers discontinued or stopped merchandising P&G brands. One senior P&G manager said, "I had never in my 30 years in this business seen our customer base as angry, both in what we were doing, and in how we were doing it" (Kristofferson and Lal, 1996a,b).

Our framework offers a new set of variables to consider when setting EDLP strategy, than the ones suggested in the existing marketing literature (e.g., Hoch,Dreze and Purk 1994; Lal and Rao 1997; Bell and Lattin, 1998; Bell, Ho and Tang 1998; Ailawadi, Lehmann and Neslin 2001). P&G may have faced this customer response because they did not adequately train their sales force on how to convince these customers that this new pricing strategy will not impact them adversely. In other words the sales personnel may have lacked the appropriate human capital. It is also possible that the senior managers did not make the necessary investments in pricing social capital to ensure cooperation across all the P&G product managers and the field sales force in order to assess how best to deliver value pricing to these retail and wholesale customers. Finally, it is also possible that P&G may not have had the necessary pricing systems capital to assess customer profitability regarding EDLP. For instance, EDLP stores tend to attract more large basket shoppers (Bell, Ho and Tang, 1998), thus it may not be as attractive in locations where a large fraction of customers are small basket shoppers. This suggests that if P&G wants to get its retail customers on board about the EDLP pricing strategy, then it should have pricing systems that track the nature of the customer mix at a retail location and then tailor pricing strategy for those retailers.

Our perspective also suggests that in the short run, the ability of manufacturers or retailers to rely on pricing strategies to engender tacit collusion may depend on their existing pricing capital. For instance, Lal (1990) suggests that trade promotions can be an instrument for tacit collusion across national brand manufacturers. This assumes that all the firms have the appropriate social capital to monitor trade promotion activities. Absent such pricing social capital, such tacit coordination through trade promotions may not be feasible. The role of pricing capital can also be observed in other pricing strategies like price matching guarantees. Existing research has suggested that while they engender tacit collusion (Hess and Gertner 1991), price matching can also enhance competition through increased search by more price sensitive consumers (Chen, Narasimhan and Zhang 2001). Thus if firms do not have the appropriate social, human and systems capital to assess the nature of customer base they face, such price matching may not enable tacit coordination across retailers.

V - Conclusion

In this paper we have asked the reader to go beyond the current view of pricing as managing prices, to a view in which pricing is about both managing prices and managing investments in pricing processes. In particular we have developed three distinct types of "pricing capital" a firm can invest in – human, systems and social capital. We also discuss the implications of this perspective on pricing strategy and suggest that this brings pricing into multiple levels of decision-making in the organization.

However, this is only a first step in understanding the pricing processes. The goal of this paper is to draw attention to this important aspect in pricing that has not received attention in the past. While our approach enables us to develop an in depth understanding of the different dimensions of the pricing capital, it comes at a cost in terms of generalizability. One future research direction is to study the dimensions of pricing capital identified in our study across other firms and industries. This would help us better understand the relative importance of the three pricing capitals in different market conditions and maybe uncover additional types of pricing capital.

There are many issues that also need more in depth exploration, like our current approach. For instance, it is possible that these capitals work in combination with one

another more effectively than in isolation. Thus a manager by investing in one type of capital impacts the other types of capital or the rest of the process more fully. This leverages the complementarities between the capitals. Here an investment in social capital will not replace human capital, but may make the existing human capital in the organization accessible to everyone in the company — allowing the existing human capital to be fully functional. Or investment in a system that allowed the field sales-force access to company information to make pricing bids may allow the most valuable information to be accessed by the people who need it most. Or multiple types of capital could be invested in at once. So the sales-force could receive both training in pricing and a system to access information together, because if either were given in isolation they would not have the desired effect since both types of capital are too low. Our perspective suggests that these are critical questions from both research as well as managerial perspective.

Another interesting research avenue is to explore the modeling implications of investments in pricing processes for economic issues ranging from competition to growth to the theory of the firm to public policy. Finally, there is a rich array of sociological implications that are likely to follow from the inclusion of social capital into pricing processes. We don't know what the answers to these questions will be. Based on our research we can only say that we believe these questions are critically important to ask, and are a large part of the realities managers face when setting prices.

Finally, we should note that this paper offers a very rational view of how firms manage prices and the three capitals of pricing. There was evidence in our study which we did not address in this paper that suggests a variety of less rational aspects to pricng at the firms we studied. Thus, we also recommend future research on more heuristic, more consistent with the behavioral theory of the firm and other more organizational perspectives in pricing.

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1a. Evidence: Human Capital

Need for Human Capital	Evidence	Investments - Human Capital	Evidence
Lack of knowledge of appropriate pricing actions among the sales force	Strong interview evidence	Training of sales force to better understand customer value and pricing implications.	Moderate interview evidence
Lack of pricing expertise in firm	Moderate interview evidence	Hiring of pricing talent: Pricing manager, pricing analyst, financial analyst On-the-job training and sending to pricing courses	Strong interview and observation evidence
Lack of know-how of other relevant personnel who can help in assessing competitor prices and customer price sensitivity	Moderate interview evidence	Keeping existing pricing personnel longer in their positions and enhancing their experience.	Moderate interview evidence
Lack of training and tools to field sales person to assess customer profitability.	Strong interview evidence	Sales force training on assessing customer profitability. Training in use of tool-box to help in assessing deal profitability	Strong interview evidence

1b. Evidence: Systems Capital

Need for Systems Capital	Evidence	Investments - System Capital	Evidence
Lack of customer purchase history and exact price paid by customer	Strong interview evidence	Investments in systems to track customer purchase history: actual price paid by customer- any special deals and reasons for them	Strong and observation evidence
Unable to respond to competitor offerings of customized prices	Moderate interview evidence	Investments in flexible systems that allowed variation by product as well as customer	Strong interview and observation evidence
Unable to offer price bundles that take into account differences in competitive structure	Moderate interview evidence	Investments in systems that allow such variation	Moderate interview and observational evidence
Field sales person unable to assess profitability of a specific deal in the field.	Strong interview evidence	Investments in tool-box to help in customer assessment.	Strong interview evidence

1c. Evidence: Social Capital

Need for Social Capital	Evidence	Investments - Social Capital	Evidence
Differing incentives among participants in the price setting process	Strong interview evidence	Developing guidelines taking into account differing incentives Building consensus by forming pricing teams consisting of field sales force as well as corporate marketing	Strong interview evidence
Differing perceptions on how to position the firm vis-a-vis competitors	Moderate interview evidence	Forming broad cross-functional teams to enhance accuracy of competitor and customer information	Strong interview and observation evidence
Differing perceptions on who is more important, reseller versus end customer	Strong interview evidence	Forming broad cross-functional teams to enhance accuracy of information about competitor and response of reseller and end customer	Strong interview and observation evidence

Figure 2 – Towards New Theories of Pricing

First Level – Choice to Invest in Pricing Capital or other Capital Investments

Second Level – Choice of Pricing Capital to Invest In – Human, Systems, or Social

Third Level – Pricing Actions Given the Existing Investments in Pricing Capital