INFORMATION, POWER, AND CONTROL OF THE DISTRIBUTION CHANNEL: PRELIMINARY RESULTS OF A FIELD STUDY IN THE CONSUMER PACKAGED GOODS INDUSTRY

Eric K. Clemons
University of Pennsylvania

Michael C. Row
University of Pennsylvania

Follow this and additional works at: http://aisel.aisnet.org/icis1992

Recommended Citation
http://aisel.aisnet.org/icis1992/37
INFORMATION, POWER, AND CONTROL OF THE DISTRIBUTION CHANNEL: PRELIMINARY RESULTS OF A FIELD STUDY IN THE CONSUMER PACKAGED GOODS INDUSTRY

Eric K. Clemons
Michael C. Row
The Wharton School
University of Pennsylvania

ABSTRACT

Information technology can reduce coordination costs, leading to increased coordination and cooperation among buyers and suppliers in an industry. However, increased cooperation may be limited by other factors, particularly power dynamics and the structure of the bargaining game. This paper investigates the role of power in influencing the effects of IT on interactions between manufacturers and retailers in the consumer packaged goods industry. IT can change the balance of power by changing the value of key resources, including information. This will affect the division of benefits from improved coordination through IT, thus shaping the level and form of coordination.

1.0 INTRODUCTION

Recently, considerable progress has been made in applying economic theory to understanding the complex interactions among IT, organizational structure, and industry structure. At the heart of this progress is the proposition that innovations in IT fundamentally influence the economics of coordination. As Malone and Rockart (1992) succinctly summarize, if the cost of coordination decreases, more coordination will be consumed, often substituting for other resources. Moreover, coordination-intensive structures will tend to evolve. This has led researchers to focus on interactions among economic activities, either within a firm or among firms. Several academic theorists (e.g., Malone and Crowston 1991; Bakos 1991) are actively pursuing an understanding of coordination costs.

At the same time, understanding coordination costs alone is not sufficient for explaining and predicting the effects of information technology on economic organization, particularly interorganizational interactions. Increasing coordination between firms through IT can reduce costs or increase revenues, creating an economic surplus. Yet it frequently appears that the optimum level of coordination or cooperation that is possible, based solely on coordination costs and the expected surplus from coordination, is not approached in practice. Building on Williamson's (1975) transactions cost economics, IT theorists such as Clemons and Row (1992) and Gurbaxani and Whang (1991) have explored the role of transaction risk, the risk (or the costs of reducing that risk) of being opportunistically exploited by the other party to the transaction, in limiting coordination through IT.

This paper explores the role of power in influencing the effects of IT on inter-organizational interactions. Power determines how any surplus created from improved coordination will be allocated among participants. Firms will seek to use their power to shape actively the form of coordination, to maximize their share of the economic surplus created through increased coordination. The mechanisms that evolve for coordination where power dynamics are present may not be the most efficient when viewed from the perspective of the industry as a whole.

The concept of power used here is Pfeffer and Salancik's (1978) resource dependency theory. The exercise of power occurs around bargaining for resources. Each player requires access to resources to accomplish his objectives. Where these resources are controlled by another party, and where this party may desire different usage of these resources, bargaining must occur. The bargaining power of each party is determined by the relative value of the resource dependencies.

Power dynamics can lead to inefficiencies in coordination. Conflicts in basic objectives can interact with environmental factors to lead to bargaining processes that are inefficient for the participants when viewed as a combined system. These processes evolve and are held in place by power. Efforts to improve coordination, through IT or...
otherwise, may threaten the balance of power, leading to resistance. In many cases, the forces of competition are not strong enough to overcome this resistance, enabling inefficiencies to persist for quite some time.2

These issues are explored through a field study of the consumer packaged goods industry in the United States. This study involved extensive review of the trade press and other publicly available information, as well as interviews with over thirty senior managers from five manufacturers and seven retailers.

Manufacturers, such as Lever Brothers and Procter & Gamble, produce and sell branded goods through a complex distribution system of brokers, wholesalers, and retailers. Increasingly, manufacturers are interacting directly with retailers (Mathews 1991a). These interactions can broadly be classified into three bargaining areas:

- **Promotions.** Negotiation over marketing events such as couponing and special displays that affect the short term sales of specific products

- **Logistics.** Managing the operational aspects of getting the product to the customer, including ordering, distribution, and inventory management

- **Merchandising.** Determining the product mix, shelf allocation, and pricing that define a retailer's strategic position

Our analysis focuses on the areas of promotions and logistics. We argue that the structure of the promotion bargaining game creates significant inefficiencies, both in promotions and in logistics. IT has the potential to improve the level of coordination, benefiting the industry as a whole. However, power dynamics are likely to slow or limit increased integration. Retailers benefit from the current promotion bargaining structure, due to asymmetries in information between manufacturers and retailers as to the effects of promotional programs and retailers' ability to exploit manufacturer competition. Coordination of promotions can be improved through sharing of information and new payment mechanisms tied to performance; however, this increased coordination is likely to come at the expense of retailer bargaining power, leading to resistance and under-investment in coordination. Moreover, the level of coordination in promotions and the division of the benefits from coordination are dependent on the specific payment approaches adopted. Inefficiencies in logistics are closely linked to promotion bargaining. Again, sharing of information can lead to increased coordination and efficiency. However, retailers control the information critical in rationalizing logistics; sharing that information directly affects the retailer's ability to benefit from promotional inefficiencies. The complications should lead to under-investment in logistics coordination and to the retailer being in a position to demand a large portion of the savings from logistics rationalization.

The next section discusses bargaining between manufacturers and retailers for promotions, identifying the key structural factors that create conflict and limit coordination, thereby introducing large inefficiencies into the system. Section 3 discusses how IT is being used in the industry to improve efficiency and coordination, and summarizes the effects on bargaining. Section 4 goes beyond what is currently observable in the industry, making some predictions based on our analysis of power and incentives. Section 5 summarizes the key findings in the form of hypotheses and suggests directions for future work.

2.0 GAINING FOR PROMOTIONS

Promotions encompass the manufacturers' and retailers' decisions concerning marketing events whose purpose is to directly influence short term customer behavior. This may involve coupons, temporary price reductions, or special displays. Considerable money is at stake here. In 1988, manufacturers spent $10 billion on sales promotions, two thirds of which went to the trade (retailers and wholesalers) (Hartley 1988).3 According to manufacturers interviewed, there are many promotional costs not captured in reported promotion expenditures.

Our interviews suggest that promotions is an area of high contention between retailers and manufacturers. Managers at manufacturers almost unanimously referred to promotions as forced subsidies of retailers by manufacturers and were heavily involved in investigating mechanisms for controlling the retailers' use of manufacturers' promotional funds. Retailers, on the other hand, see promotional money as a key source of profitability and vigorously resist any efforts to control or reduce these funds. This section identifies the key structural characteristics of promotion bargaining that lead to conflict and the inefficiencies that result.

2.1 Differences in Objectives

Central to the conflict is a significant difference in basic promotional objectives. Manufacturers use promotions to increase the sales of their specific brand, typically by encouraging consumers to switch from competing brands. Manufacturers may issue coupons directly to consumers, through newspapers or direct mailing. These manufacturer coupons are redeemable at any retailer. Manufacturers can also execute promotions through participating retailers. These retailer-supported promotions include special displays, reduced prices, retailer coupons, and retailer advertisements.

Retailers, however, are interested in promotions that increase total store sales; they are less concerned with which products make up these sales. A promotional price on one detergent will generate increased sales of that brand, but often those increased sales will be at the expense of a comparable product, with limited increase in total detergent sales. This substitution effect is becoming more pronounced as brand images are eroded (Liesse 1991) and consumers begin to view brands as equivalent.
These differences in objectives are exacerbated by critical resource dependencies and other characteristics of promotion, which are addressed below.

2.2 Resource Dependencies

A firm’s bargaining power can be conceptualized in terms of resources, or fixed factors of production (Barney 1986; Pfeffer and Salancik 1978). Bargaining power increases with the value of a firm’s resources to the other party and the lack of availability of substitutes for those resources. Changes in the patterns of resource dependencies, either the value of key resources or the availability of substitutes, thus reflect changes in bargaining power.

In promotion bargaining, manufacturers are negotiating for access to the retailer’s resources: customer relationships, retail store real estate, and labor. Manufacturers increasingly require retailer cooperation to implement promotions effectively. This is obviously true of promotions directly implemented by retailers, such as special displays and prices. It is also true of manufacturer coupons issued directly to consumers: retailers must be willing to accept and process these coupons on behalf of the manufacturer. On the other hand, the retailer needs access to the manufacturers’ products, brand image, and promotional funds to achieve their objectives. The most important resource is the brand image, since the ability of a promotion to attract customers and increase sales volume is strongly related to brand strength.

In the bargaining situation for promotions, the resource dependencies are shifting to favor retailers. Brand loyalty is eroding. Increasingly, consumers are becoming “brand switchers” who are loyal to a set of brands they consider comparable and make individual purchases based on shelf price (Liesse 1991). Brand erosion reduces the ability of a promotion on a particular product to attract customers and increase total store sales, thus reducing the value to the retailer of one of the manufacturers’ most important resources for bargaining. Reduced brand loyalty also makes sales more dependent on in-store promotions, hence increasing the value of resources controlled by the retailer (Reagan 1991). Both effects damage manufacturer bargaining power, forcing increased direct monetary payments to obtain retailer promotional support. Donnelly Marketing estimated that expenditures on in-store media would reach $350 million in 1991, a 464% increase over the past six years (Reagan 1991). Of course, there are brands that still wield considerable power in negotiating with retailers. These “Frankenbrands,” as one retailer termed them, may be so strong that most retailers will sell them at a loss to maintain parity with competing retailers.

Another trend favoring retailers is increased concentration on the retail side. As large retailers increasingly control the customer base in their markets, their cooperation becomes more critical to manufacturers in making a promotion successful. Manufacturers must pay more to achieve their promotional objectives.

2.3 Manufacturers’ Prisoners’ Dilemma

The structure of bargaining for promotions is costly for manufacturers. Promotions rarely increase total consumption in mature categories; consumers will not do more laundry due to a coupon drop or a special display. While one manufacturer acting alone may alter demand within a category, if all manufacturers have effective promotion programs, the benefit of promotions to manufacturers is reduced or eliminated. These promotions are typically zero-sum, with an increase in sales of one product coming at the expense of another. They may even be negative-sum, given the costs and inefficiencies associated with promoting.

Retailers benefit from high and frequent promotions. The volatility in prices created by frequent promotions can support higher retail prices. Moreover, high promotion levels allow retailers to exploit manufacturer competition for retail promotion support, driving up the level of direct payments. This further erodes the profitability of a promotion for the manufacturer while increasing the profitability of the promotion for the retailer.

This structure has the characteristics of a prisoners’ dilemma: manufacturers would all be better off by reducing or eliminating promotions, but then a single manufacturer’s incentives for promoting would be higher.

- **Forward buying and diverting.** Manufacturers lack the information to monitor the performance of retailers in implementing promotional programs. Typically, manufacturers offer retailers case allowances, reduced prices for cases purchased by the retailer during a promotional period, in return for specific performance including special displays, promotional prices, advertisements, and other promotional support. While it is possible to monitor some aspects of performance, such as displays and advertising, through store visits, the manufacturer has no information on actual product movement under the promotion. With scanner technology, the retailer does have detail information on product movement, creating an information asymmetry and leading to two practices that are extremely dysfunctional from an industry standpoint:

  - **Forward Buying.** Retailers can stock-up on goods at the promotional price to cover sales beyond the promotional period. The effect is a reduction of product cost for the retailer with no promotional benefit for the manufacturer.

  - **Diverting.** Frequently, manufacturers will run a promotion only in selected regions of the country, with the specific intent of building sales in a region where they need to compete more effectively. Retailers can purchase goods at the promotional price in one region and sell them to retailers in another region where the promotion is not in effect. Again, this reduces product cost for the retailers involved with no promotional benefit for the manufacturer. Moreover, the costs of
shipping the products between retailers serves no economic purpose for the industry.

Previously, manufacturers marked promotional prices directly on the product package in order to exert some control over retail pricing and to limit forward buying and diverting. However, these \textit{off-label} promotions introduced additional production and handling costs for both manufacturers and retailers, since each promoted product would have to be set up and handled as a separate stock keeping unit. Recently, most promotions have been \textit{off-invoice} case allowances, which provide no protection from forward buying and diverting.

Diverting and forward buying multiply logistical inefficiencies caused by promotions in general. One manufacturer estimated that over 50\% of inventory in the distribution channel was due to these practices. Promotions lead to spikes in demand, resulting in spikes in manufacturing and shipping. Forward buying and diverting multiply these spikes. According to one manufacturer, 80\% of product sales occur on four days over the year, the last day of promotion periods. These demand distortions lead to increased costs and reduced resource utilization for manufacturers.

2.5 Summary of Promotion Bargaining

The structure of promotion bargaining leads to considerable inefficiencies in the distribution channel. The prisoners' dilemma structure of promotions encourages too much promotion. Promotional logistics distortions, including forward buying and diverting, lead to higher inventories and higher manufacturing and transportation costs. It is estimated that 30\% to 40\% of manufacturer promotion allowances to retailers represent pure inefficiencies, while 30\% is retained as profit by retailers, and only 30\% is passed on to consumers (DeNitto 1992).

In general, the structure of bargaining and the importance of retailers' resources increase retailer power. A portion of the promotional payments to retailers can be viewed economically as a transfer payment attributable to this power. Retailer power and the underlying economics of promotion bargaining can serve to limit increased coordination through IT.

3. ROLE OF IT

IT has the potential to alter the level of coordination between manufacturers and retailers and improve the overall efficiency of the distribution channel. However, IT has some important implications for the balance of power that can limit cooperation and influence the division of benefits created through increased integration. This section identifies areas of IT application that can affect coordination and the efficiency of the channel. Initial impacts on the structure of bargaining and the balance of power are identified. The next section goes beyond what is currently observable in the industry and makes some predictions about long term effects of IT.

3.1 Electronic Marketing and In-Store Promotions

Information accumulated by check-out scanner systems is beginning to be utilized to improve targeting of promotions. Catalina Marketing's Checkout Coupon system triggers coupons at check-out based on scanned purchases. A customer who purchases Coke may receive a coupon for Pepsi. A customer who buys Pampers may get a coupon for baby food. More accurate targeting of coupons enables higher coupon value, which encourages redemption. Moreover, it is possible to process the coupons electronically, thus providing information to evaluate the effectiveness of a promotion.

Some systems are going a step further. By identifying purchases with specific customers, marketers can develop promotional programs targeted at those specific individuals based on their actual purchase behavior (Kleinfeld 1991; Thayer 1989). Customers with high brand loyalty can be identified and either rewarded by their existing brand or targeted for switching by a competing brand. Ultimately, promotions to a customer can evolve over time: a family with a child can be targeted for diapers, formula, baby food, and breakfast cereal as appropriate as the child ages. Information on long term effectiveness of promotional programs is available, allowing programs to be continually refined and adjusted over time. The marketer can enter into a dialogue with individual consumers, building customer loyalty and improving marketing effectiveness (Blattberg and Deighton 1991).

IT-based promotional systems not only improve the value of promotions to both manufacturers and consumers through better targeting, they also encourage consumer response by reducing the customer's cost of participation. VidOcart, Inc. offers shopping cart mounted video systems currently being tested in thirteen retail chains (Promo 1992). Promotional messages, advertisements, and special offers are triggered by the cart's location in the aisles. The customer indicates his or her response to the promotion on the cart, which is electronically transmitted to the check-out counter and automatically reflected on the bill. Electronic coupons are also being implemented through card based systems, such as the program implemented at Ukrop's (Kleinfeld 1991). Each customer has a coupon "bank," an electronic file (either on the retailer's computer system or on a "smart" card) of valid discounts available to that customer. The retailer records new promotions electronically into the customer's file. The customer need not take any action other than buying the promoted items; the system will review scanned purchases, compare them to promotions available in the customer's coupon account, and automatically apply the appropriate discounts.

Electronic marketing systems are just beginning to emerge in the industry. Initial indications are that these systems
can be extremely effective, although there are many unresolved technical and interorganizational issues. How these systems will eventually affect interactions between retailers and manufacturers is unknown at this point. We discuss some hypotheses on this evolution in the next section.

3.2 New Payment Approaches

IT enables new payment approaches to promotions that can radically change incentives and the structure of bargaining. Scanner systems and electronic marketing systems provide information that can be used to implement "pay for performance" arrangements, where compensation is tied to specific measurable criteria tracked through IT. The objectives of such arrangements are to reduce dysfunctional behavior, such as forward buying and diverting, and to align retailers' objectives more closely with those of manufacturers. There are two basic approaches being experimented with in the industry, which we call "pay for results" and "pay for behavior." We will describe two cases that illustrate these approaches.

Procter & Gamble has pioneered a marketing fund system based on "pay for results" (DeNitto 1992). In this system, periodic promotions through case allowances are eliminated or drastically reduced. Instead, the manufacturer prices the product consistently at an every-day-low-price (EDLP). Retailers receive a set amount of funds for implementing promotions. The level of these marketing funds is determined by sales targets negotiated with the retailer and supported by analysis of scanner data. These funds are increased or decreased over time, based on the retailer's performance against targets. The retailer has total discretion over actual tactical promotion decisions, although Procter & Gamble plays an advisory and coordinating role. Payment is based on how well the retailer makes those decisions, that is, on sales, hence "pay for results."

There are two main effects of this program. First, since case allowances during limited promotional periods are replaced by EDLP, there are reduced incentives for forward buying and diverting, with considerable benefits for logistical smoothing. Second, since tactical decisions are shifted to the retailer, there is less scope for exploiting period by period manufacturer competition to drive up the level and cost of promotions. Previously, retailer promotion decisions were made period by period based on how much manufacturers were willing to pay for each period; manufacturers essentially bid against each other for weekly sales. This bargaining structure increased the manufacturers' prisoners' dilemma, leading to higher promotion levels and higher promotion payments, regardless of whether the promotion was effective for the manufacturer. With Procter & Gamble no longer bidding on a period by period basis, the retailer will only promote when effective toward store sales and Procter & Gamble product targets. As a result, there is a decrease in the overall promotion level.

Initial results of the program suggest it is successful in achieving these objectives. Procter & Gamble has reduced the promotional dollars given to retailers and reduced the overall level of promotions in their products. However, many retailers and wholesalers are resisting the program. Procter & Gamble's initial success may be due primarily to their dominant position in most of their categories. The long term structural effects and implications for other manufacturers are uncertain.

"Pay for behavior" involves the manufacturer contracting for specific promotional services (e.g., couponing, price, advertisement, or display) from the retailer. The provision of those services could be electronically monitored, enabling the manufacturer to measure the effectiveness of the program. Several manufacturers are experimenting with electronically monitored "pay for behavior" programs with retailers. This type of program is well established with third-party marketers offering electronic marketing services. For example, Catalina Marketing sells manufacturers exclusive rights to promote on its Checkout Coupon system for a specific category, geographical region, and time period. The manufacturer pays based on a formula that incorporates coupons issued and redeemed, so the cost of the promotion is strongly linked to performance.

"Pay for behavior" has the advantage that manufacturers only pay for what they get and they know what they get. If properly structured, forward buying and diverting could be reduced or eliminated. For example, case allowances based on scanned final sales during the promotional period would eliminate the incentives for forward buying and diverting.

3.3 IT for Logistics Integration

IT allows automation of logistics decision making, providing information as a substitute for inventory and distribution resources. New structures are emerging for managing logistics interactions that have the potential to greatly improve coordination and efficiency in the channel.

Electronic Data Interchange (EDI) is becoming common in the industry. Standards are emerging to facilitate computerized communication. It has been estimated that 700 to 800 firms are now using EDI for purchase orders, and about half of those are also using EDI for invoices (Garry 1992). Many firms are experimenting with extending this to include price and promotion information. The short term benefits from EDI are administrative savings. One large retailer estimates EDI-generated savings of $800,000 a year (Weinstein 1992).

A few large firms are going further than simple EDI, seeking to restructure their logistics systems to reduce costs. The premier example of this is the partnership between Wal-Mart and Procter and Gamble (Feder 1991). A foundation of this relationship is shared access to information. Procter & Gamble receives information on store sales directly from Wal-Mart's scanner systems. They can then plan production and delivery more efficiently. Typically, Procter & Gamble delivers directly to the store. In
effect, many logistics functions have been shifted to the manufacturer. Wal-Mart is using the experience of their partnership with Procter & Gamble and other key vendors to improve coordination with all of their suppliers. Currently, their EDI network for pricing, purchasing, order tracking, and payment covers more than 2,000 vendors. Recently, Wal-Mart has rolled out a system, available to all vendors, that provides access to detailed internal information on sales and inventory (Mathews 1991b). As William R. Fields, Wal-Mart’s Executive Vice President of Merchandise and Sales, put it in a letter to vendors (Mathews 1991b): “Shared information is the basis to a true partnership and through this new system we are giving you access to Wal-Mart data as well as your company data that has never been available before.”

Other manufacturers and retailers are also experimenting with “just-in-time” or “quick response” approaches. These approaches are typically based on closer cooperation between manufacturers and retailers, including improved access to forecasts and detailed product movement information from the store scanners. They also involve customizing the distribution channel to facilitate coordination. Goods may be shipped directly to stores, rather than to warehouses. Shipments may be made directly from the production plant, bypassing the manufacturers’ distribution center. The retailer may even pick up a shipment directly from the manufacturer. The distribution approach is adjusted over time to fit changes in demand.

4. ANALYSIS AND IMPLICATIONS

The applications of IT discussed in the previous section can have far reaching implications for coordination in the promotion area and the balance of power. This section analyzes the impact of these technologies in terms of objectives, resources, and uncertainty, making some predictions about the long-term effects on relationships within the channel.

4.1 Increased Value of the Point of Purchase

Electronic marketing systems have the potential to increase the value of the point of purchase as a critical resource in bargaining with manufacturers. The point of purchase is increasingly valuable both as a channel for promotion delivery and as the accumulation point for information on customer behavior. The potential effectiveness of electronic marketing will reduce the value of substitute promotional channels available to manufacturers, such as newspaper inserts and mass mailings. There will still be substitute delivery channels, such as direct mail, but the effectiveness of these substitutes may be dependent on purchase information that must be accumulated at the point of purchase. The net result of this increase in resource value of the point of purchase is that retailers will have increased bargaining power.

4.2 Differing Outcomes of New Payment Approaches

While the increase in information supported by scanners and electronic marketing can enable new approaches to payment for promotions, these approaches may have dramatically different outcomes in terms of coordination and the balance of power. Current “pay for results” approaches are relatively unsophisticated, being based on cases sold to the retailer and analysis of aggregate scanner data obtained from information vendors such as IRI. These arrangements may become much more sophisticated by linking them to actual store scanner data. However, this information is typically controlled by the retailer. As noted earlier, “pay for results” approaches have the ability to reduce promotion expenditures to retailers and overall retail promotion levels. This is against the immediate interests of retailers. As a result, retailers have both the incentive and the ability to limit some aspects of “pay for results.”

“Pay for results” may also have some important long-term structural implications. Reducing the level of price promotions at the retail level may accelerate retailer price competition and consolidation, ultimately increasing the bargaining power of large retailers. Many of the retailers opposing Procter & Gamble’s approach feel it favors large EDLP players like Wal-Mart. These retailers compete through economies of scale and operational efficiencies and have recently made significant inroads against traditional retailers (Mathews 1991a). In the long run, manufacturers, particularly smaller ones, may find themselves worse off by further retailer consolidation. Retail price competition reduces industry margins and profitability, benefiting consumers but damaging retailers and manufacturers alike. At the same time, larger retailers will have more bargaining power to demand a larger share of shrinking industry profits.

Reducing the level of promotions may damage small manufacturers and weaker brands for another reason. Price promotions are an effective tool for a weaker brand to challenge a dominant brand. The manufacturers’ cost in implementing a promotion through retailers is a function of sales volume; case allowances to cover the retailers’ lost margins and operating costs for the promotion are incurred not just for incremental sales, but for all sales under the promotion. Therefore, a promotion is more costly for the manufacturer for a product with 60% share than for a product with 20% share, and more beneficial for a product with 20% share.

“Pay for behavior” may have very different implications for coordination and the balance of power. Retailers may be in a better position to exploit manufacturer competition for promotion support, particularly if electronic marketing improves the effectiveness of promotions. Manufacturers should be willing to pay more for increasingly effective promotions. But increasing effectiveness also increases the cost of not promoting, since the incremental sales from a promotion come primarily from other products. Manufacturers will be forced to bid each period on the right to
retain their customers and sales. Prices on effective promotional services will be bid up higher and higher.

4.3 Limits to Logistics Integration

Improving the level of coordination in logistics requires change in promotion management. Just-in-time logistics is incompatible with high levels of investment inventory and diverting. This is evidenced by the fact that most quick-response partnerships have been with EDLP merchandisers, such as Wal-Mart and Kmart. Traditional retailers are in a very difficult position. They need logistics efficiencies to survive against the efficiency and economies of scale of the large EDLP players. At the same time, eliminating promotions to achieve operational efficiencies eliminates profits from forward buying and diverting and reduces the advantages of their merchandising, forcing them to compete with the mass merchandisers and discounters, such as Wal-Mart, on terms established by these larger players.

Second, rationalizing logistics is likely to favor large players, both manufacturers and retailers. Procter & Gamble can justify direct plant-to-store delivery of goods more easily than a manufacturer with less product scope and less product volume. Moreover, since integration makes intensive use of information and IT, there should be an increase in potential economies of scale, increasing with manufacturers' market share and breadth of category coverage. A result is likely to be increasing consolidation of both retailers and manufacturers.

Third, logistics efficiencies are driven by information from the retailer while investments are typically made by manufacturers. Although manufacturers expect to realize the savings from these investments, the retailers' information is a critical resource, and it is more than plausible that the retailer will be in a position to appropriate a good portion of the logistical savings. As David Teece (1987) has pointed out, the success of an innovation, and the amount of investment firms are willing to make in innovation, depends on the innovator's ability to retain the benefits from his innovation. Where other parties control key complementary resources, resources required to exploit the innovation, those other parties may be in a position to bargain away a portion of the economic benefits of that innovation.

Access to the retailer's logistics information also has power implications for promotion bargaining that may increase the retailer's share of savings from logistics integration. Information received from retailers for logistics purposes can also be used to monitor retailer performance, particularly in promotions, reducing opportunities for forward buying and diverting, and tying promotional payments more closely to manufacturer objectives. By eliminating information asymmetries, this information can shift the balance of power toward manufacturers. The most likely effect is that retailers will demand further compensation for sharing information needed to drive logistical improvements.

Finally, to the extent that logistics integration directly or indirectly leads to a reduction in the level of promotions, price competition at the retail level could increase. As noted earlier, price competition can reduce total industry profits. Ultimately, most of the benefits from improved logistics integration may flow to consumers in the form of lower overall prices due to increased competition.

5. CONCLUSIONS

The bargaining situation between manufacturers and retailers for promotions and logistics that has emerged in the U.S. consumer packaged goods industry is dysfunctional in many respects. There are many indications that promotions have become a prisoners' dilemma for manufacturers, resulting in a high level of promotions that have little competitive or economic benefit. Only a fraction of manufacturers' promotional expenditures actually are used to accomplish their promotional objectives. Moreover, logistics distortions from promotions, multiplied by the practices of forward buying and diverting, have led to significant inefficiencies and excess costs in manufacturing, transportation, and inventory.

IT researchers have proposed that IT can reduce or eliminate these inefficiencies by increasing the level of coordination in the channel (Malone and Rockart 1992). The argument is that inefficiencies in managing interactions are caused by high coordination costs, which can be reduced by IT. However, factors other than coordination cost can influence the level of coordination observed in practice and the mechanisms used to achieve this coordination. This paper has investigated how the structure of the bargaining game and the power implications of an increase in integration can influence the level and form of coordination. This analysis has suggested several hypotheses:

- **IT can influence objectives by changing payment structures**

Payment mechanisms for implementing manufacturer promotions can be oriented around manufacturers' performance requirements. This has the potential for greatly improving the effectiveness of manufacturer promotion funds and may reduce the expense associated with this activity. However, retailers have an incentive to resist such pay for performance arrangements, since they benefit from the current inefficiencies. Moreover, retailers control key information required to implement pay for performance payment structures, putting them in a position to influence the level and form of coordination.

Different payment structures can have very different outcomes in terms of what coordination mechanisms evolve and how the resulting surplus is divided. "Pay for results" is likely to reduce retailer bargaining power and to reduce the overall level of promotions. "Pay for behavior" is likely to reduce retailer incentives for such inefficient practices as forward buying.
and diverting, but will still leave them in a position to exploit manufacturer competition, thus appropriating much of the benefits from improved coordination.

- **IT can change the value of key resources**

The retailers' interface with the customer is becoming increasingly valuable for promotion activity. This increases the retailers' bargaining power.

Closer coordination of logistics has the potential to generate considerable savings in the distribution channel. However, there are important structural ramifications of this. Reducing or eliminating promotions can facilitate operational efficiency but can lead to increased consolidation and price competition at the retail level. The long term effects of this are difficult to predict with certainty; clearly, the retailer will receive some additional compensation due to his control of increasingly critical resources, but this may be partially offset by other changes.

- **IT can reduce uncertainty**

Reduction in uncertainty can alter bargaining power, increasing the power of one party relative to another. Information facilitates more rational negotiation, increasing the possibility of cooperation. But information can also decrease the possibility for cooperation; information to resolve key uncertainties may be controlled by the other party, allowing that party to appropriate a significant portion of the savings possible from uncertainty reduction. In extreme cases, the key information may be controlled by the party that, in fact, benefits from the inefficiencies created by the uncertainty. In general, the presence of these information asymmetries leads to under-investment in coordination and cooperation; the party that needs the information will under-invest because he cannot retain the full benefit and the party that possesses the information will under-invest because he will lose a source of power.

All of these forces are at work in interactions between manufacturers and retailers. Manufacturers require more information on product movement and sales forecasts in order to improve coordination of manufacturing and logistics. This information is controlled by the retailer, who is therefore in a position to demand a portion of resulting savings in return for access to the information. More importantly, access to product movement information can provide the basis for "pay for performance" promotional payment mechanisms that reduce the retailers' ability to exploit inefficiencies in promotion, such as forward buying and diverting. Again, it is difficult to predict how these forces will ultimately balance out.

This study identifies some key issues for further work. We are in the process of extending this work in several directions.

**Formal modeling of decision areas.** The key elements of the bargaining structures identified here can be formally modeled using game theoretic techniques. This modeling should enable us to make more concrete generalizations about the role of bargaining structure on coordination.

**Coordination Structures.** The results of this study are being integrated with experience in other industries and with economic theory to develop a framework for describing and categorizing mechanisms for interorganizational coordination. Such a framework will support more broad-based empirical investigations.

### 6. ACKNOWLEDGEMENTS

We gratefully acknowledge the assistance of officers at manufacturers, retailers, and wholesalers in the consumer packaged goods industry. This work would have been impossible without the generous financial support of our sponsors at the Reginald H. Jones Center, especially the Lever family of companies.

### 7. REFERENCES


8. ENDNOTES

1. The concept of power encompasses transaction risk. Exposure to transaction risk can be counterbalanced by other forms of power.

2. The U.S. automobile industry is a good example of economic inefficiencies caused by essentially political factors that persist despite economic competition.

3. The other one third of sales promotion expenditures is primarily manufacturer coupons issued directly to consumers, typically through free-standing-inserts (FSI) included in newspapers.

4. The importance of retailer cooperation is demonstrated by the U.K. experience. Retailers will accept manufacturer coupons against any purchase, not just the intended product. This is an important reason why manufacturer couponing in the U.K. is largely nonexistent.

5. Some research (e.g., Vilcassim and Wittink 1987) has indicated that supporting higher shelf price is one of the key effects of promotions. This can be conceptualized in terms of search costs (Stigler 1961). Consumers will not invest excessive effort in searching for the best price if items vary in price, searching is time consuming or expensive, and the price differences are low. This variation in prices allows merchants to charge slightly higher prices on average.

6. Wal-Mart’s recent moves to forge closer relationships with manufacturers has the side-effect of virtually eliminating the role of food brokers (Mathews 1991b). If this approach becomes widespread in the industry, the position of brokers and the small manufacturers that rely on them will be seriously threatened.