

# "Chips": A Strategic Distribution Game

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*Current marketing simulations minimize the channel of distribution element of the marketing mix. A new marketing simulation, "Chips," emphasizes strategic and tactical decision making in a dynamic, interactive, and competitive marketing environment. The game emphasizes channel management and negotiations, making it a useful supplement for courses in marketing management or marketing channels. Students are strongly attracted to the human interaction aspect of the negotiating process.*

Marketing instructors use marketing simulation games to represent a controlled market environment that will require decision making representative of that in the real marketplace. Major games are *Marketing in Action* (Ness and Day 1978), *Markstrat* (Larreche and Gatignon 1977), *Marketing Simulation* (Bush and Brobst 1979), *Compete* (Faria et al. 1979), *Marketing Dynamics* (Hinkle and Koza 1975) and *Marketing Interaction* (Keiser and Lupul 1977). While these games realize most of the objectives listed for such games by Faria et al. (1979), they fall short in one important aspect: they ignore or minimize the channel of distribution element of the marketing mix (Keiser 1974; Burns 1977). A significant void in the student's learning experience is created in conveying the impression that channel selection and utilization are largely mechanical tasks. In reality, distributors, retailers, and other channel intermediaries represent a separate market (apart from the ultimate consumer or industrial user) which must be persuaded, cajoled, and otherwise encouraged to support a firm's marketing strategy. Many games also fail to demonstrate that the successful implementation of any strategy requires personal interaction between channel members (Burns 1977): not only are the routine tasks of

inventory management and distribution required, but also necessary is a perpetual give and take through formal and informal negotiations. All of these processes take place while competitors implement strategies and tactics to outmaneuver the focal firm in the process of securing reliable suppliers and distributors.

To compensate for the shortcomings inherent to many of the popular marketing games, a dynamic, interactive marketing management game called "Chips" (Cadotte 1985) was developed. "Chips" builds upon the behavioral simulation developed by Stern et al. (1973), but includes many more decision variables and behavioral interactions. Specifically, "Chips" incorporates the concept of competitive organizations at both the manufacturing and the distributor levels. These organizations must make price, promotion, product, and place decisions as they compete for sales, market share, and profits in a nearly pure market environment. Most importantly, they must learn to work together through negotiation to secure resources and markets.

## GAME ENVIRONMENT

### Market Setting

The setting for the market simulation is the microprocessor or computer-on-a-chip market. Motuboshi, a fictitious Japanese firm, has developed a microprocessor which consumes less energy and provides more computing power than the other microprocessors on the market.

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To achieve maximum market penetration within the U.S. electronic market, Motuboshi will license up to three domestic manufacturers to produce the product and distribute it in 30 sales territories. Manufacturers gain access to the industrial market by selling through a network of distributors recruited from the teams assigned to that function. The distribution rights to each territory are sold individually on an exclusive franchise basis. The franchise contracts are negotiable and reflect the size of market as well as the market strength of the manufacturer and distributor.

The market for the new microprocessor is highly competitive, since each manufacturer produces the same chip. Market shares are determined by the manufacturer's advertising expenditures and by the distributor's price and sales force allocation in relation to the advertising, price, and sales force decisions of other manufacturers and distributors. The equations which determine marketing demand are curvilinear, and the instructor can adjust the elasticity (the slope of the curve) independently for each decision variable.

### Support Organizations

Three service firms facilitate business operations during the game: a bank, a marketing research firm, and the Internal Revenue Service (controlled by the instructor). The bank sells quarterly certificates of deposit (CD's) and will lend money to any member of the channel in an amount up to 200 percent of the borrower's equity. The marketing research firm collects several types of marketing information which the manufacturers and distributors can purchase for a fee. This service firm also analyzes market conditions and estimates price, sales force, and advertising elasticities. The instructor-controlled IRS monitors the activity of each organization, mediates conflicts, collects taxes, and audits the financial records of each team to insure accuracy and the proper use of documentation materials. The IRS also is the source of money for the bank, the source of chips for manufacturers (production), and the buyer of chips from distributors (industrial consumption).

### Physical Setting

Poker chips represent the microprocessors and facilitate inventory handling and transactions, with product differentiation accomplished by using the different colors to represent the three different manufacturers. Monetary exchanges are accomplished through the use of ersatz currency. The preferred setting is a large room such as a student union ballroom or large lecture hall. Each team is assigned a table or location in the room as its home office. Manufacturers are located at the back or the top of the room, distributors are located in the center section, and the service organizations are located in the front. This layout facilitates the interaction between channel participants and allows for the visual observation of channel flows.

### Administrative Requirements

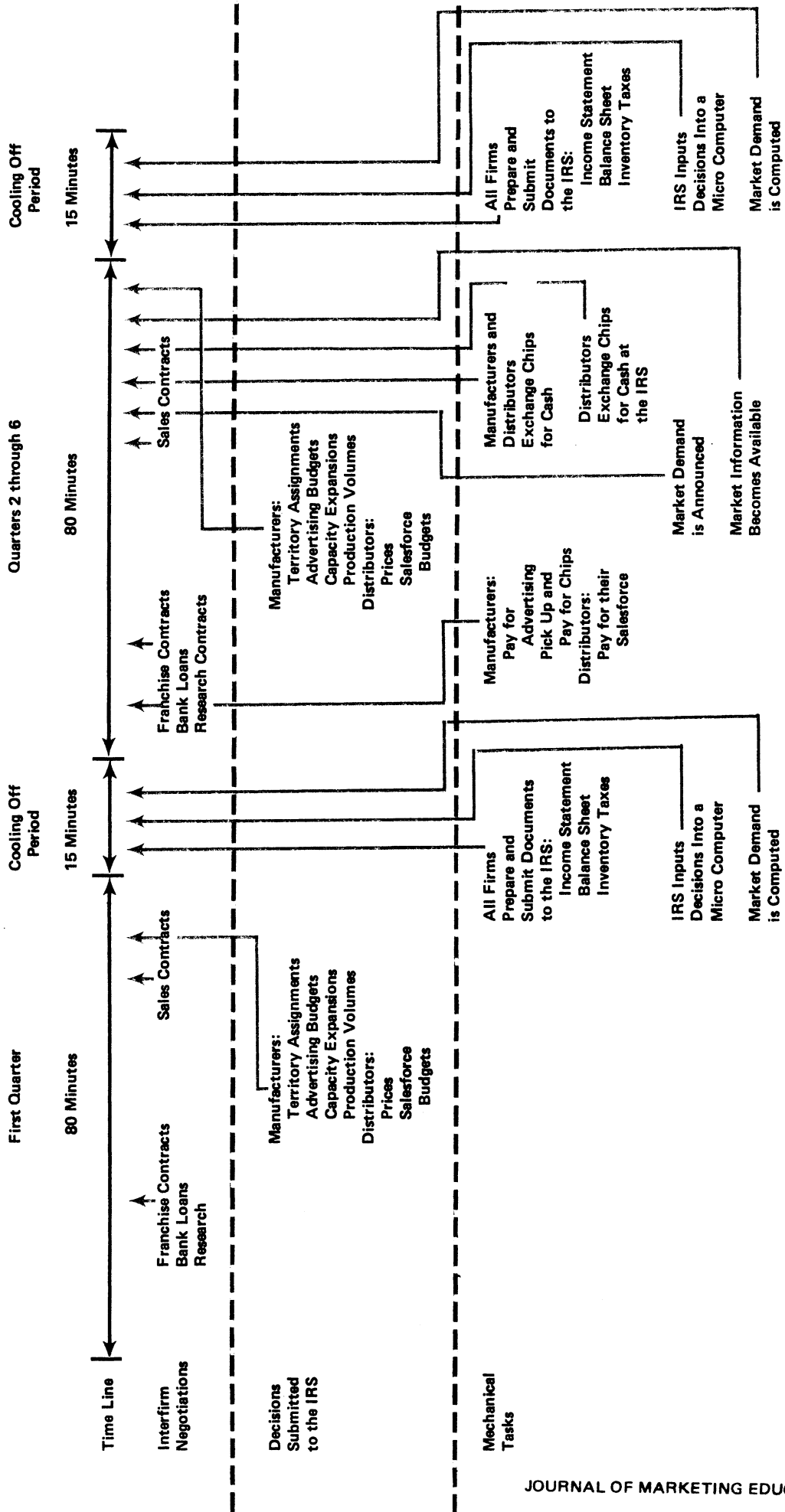
Team formation may be achieved through either random assignment of class members or self-selection on a first-come-first-serve basis. In terms of team size, both the manufacturers and the bank require five to eight players each. The distributors and marketing research require three to five players apiece, depending upon class size. Several quarters of experience suggest a minimum of two manufacturers and six distributors. As many as three manufacturers and 15 distributors have been used. The game has been played with as few as 36 students and as many as 150 students.

The actual play of the game can become very hectic, especially during the first two quarters. To limit instructor involvement in the mechanical tasks, two or three former students may be enlisted to serve as the IRS. These students can set up the game for each session and audit the books between game sessions. During the play of the game, they exchange money and chips, monitor team books, operate the computer, and answer general questions about the game. A total of 30 to 40 hours per course is required to perform these functions. With these mechanical tasks taken care of, the instructor is free to work closely with students playing the game.

### PLAY OF THE GAME

Figure 1 shows the events, activities, and decisions which constitute the play of the game.

**FIGURE 1**  
**PLAY OF THE CHIPS GAME**



The game consists of six market quarters, each lasting approximately 80 minutes. During the first quarter, manufacturers and distributors work to establish a distribution network for selling chips to the industrial market. During the remaining five quarters, the firms work to generate and satisfy market demand through a series of strategic and tactical decisions.

The preferred timetable for playing the game is three sessions lasting three hours each, scheduled during the evenings over a three-week time period. Two quarters can be played each evening, with sufficient time between sessions for an appraisal of events and the team's strategy and tactics. An alternate schedule is to play 75-minute quarters over a six-week period or on six class days.

### Preparation

Prior to each quarter of the game, every firm must develop a marketing game plan. This plan includes the firm's objectives and strategies regarding negotiations, margins, promotional budgets, terms of trade, financing, marketing research, the location and sequence of territories to be opened, and the franchise fees to be paid for those territories. This plan and all aspects of the marketing strategy are expected to be revised as information becomes available regarding the strategy, tactics, and positions of the firm's suppliers, customers, competitors, and service firms.

The first quarter of play is filled with uncertainty and confusion for the companies. The students are reminded that they are new venture firms entering a nearly unknown market. As with all entrepreneurs, their success will be determined in part by their ability to grasp the nature of the market and to realize what it takes to succeed in it.

### First Quarter

The distributors submit bids to the manufacturers prior to the first quarter, and the manufacturers then select a small number of distributors for subsequent negotiations that occur during the first 50 minutes of the first quarter. During the last 30 minutes of the quarter, the direction of the negotiation shifts to the prices and quantities of the chips to be moved through the channels. The first quarter

ends with the manufacturers submitting to the IRS (instructor) their decisions relative to production capacity, production level, and advertising and trade show space. The distributors, in turn, submit their sales force and pricing decisions.

### Cooling Off

During the 10- to 15-minute cooling-off period between quarters, the firms are instructed to review market developments, reassess their marketing strategy and tactics, and plan for the next quarter of business. In addition, the firms must prepare several financial statements, including an income statement and balance sheet which are submitted to the IRS and which in subsequent quarters may include taxes on excess inventory.

Market-demand estimates are computed during the cooling-off period. The decisions of the manufacturer and distributors are entered into a portable microcomputer, which executes a series of predefined calculations and prints out a market-demand estimate for each distributor by territory. The program also generates several types of marketing data which can be purchased through the marketing research firm. The immediate feedback from the portable microcomputer helps the students evaluate their decisions and adjust their strategy and tactics for the current quarter.

### Subsequent Quarters

The second and all subsequent quarters of play are composed of mechanical tasks, strategic decision making, and tactical execution. At the start of the quarter, the money budgeted for the sales force and promotional efforts must be paid. The manufacturers pick up and pay for the chips, then exchange them for cash with the distributors.

Next, the IRS announces the market-demand figures and the distributors exchange the chips for cash at the IRS desk. Deposits into money-market funds may be made, loans may be obtained or repaid, and market information may be purchased from the marketing research firm.

The second quarter of play also sees the manufacturers and distributors negotiating for additional sales territories. The price and quantity negotiations and promotional sales

force, and pricing decisions are repeated. These negotiations benefit from the firm's prior experience and the available market information.

### STUDENT LEARNING

The "Chips" game is designed to achieve the major educational objectives of marketing simulations as defined by Faria et al. (1979). In addition, "Chips" gives the student the opportunity to experience or observe (1) the dynamics of intraorganizational (team) management; (2) the evolution of a market from the introductory stage through the growth and maturation stages; (3) the need to estimate the marginal costs and benefits of price, sales force, and advertising adjustments (elasticity); (4) the need to anticipate competitive moves and counter-moves; (5) the opportunity costs of inventory creation (speculation) or postponement; (6) the need to allocate scarce resources among several investment alternatives; and (7) the effect of all of these decisions on the firm's liquidity, profit margin, turnover, leverage, and return on investment. The game also illustrates the difficulties of dealing in a commodity market where price and channel relations are the major components of a firm's differential advantage.

The "Chips" game is unique among marketing simulation games in its focus on channel relations and interorganizational negotiations. Several of these features are detailed below.

#### Channel Structure

Each firm has the opportunity to develop a variety of channel relations. The conventional channel strategy is to deal at arm's length with buyers and sellers and negotiate for the best price for each quarter: no loyalty is established between buyers and sellers, and contracts may be broken if better deals can be found. In contrast, firms can set up a vertical marketing system where they share in marketing information, extend credit back and forth in the channel, and otherwise assist each other in achieving their objectives. Although many student teams begin with conventional channel strategy, most firms "discover" the economic and management advantages of vertical marketing systems.

Students also learn the need to establish a stable environment within the channel. By making routine the various channel tasks of

buying and selling, money and product exchange, and financing, firms discover they can concentrate on the broader strategic and tactical issues which affect their success.

#### Behavioral Relationships

"Chips" creates a dependency relationship between manufacturers and distributors. Distributors control the ultimate selling price of the chips, the number of salespeople assigned to a territory, and the amount of inventory available for sale across all of the territories in which they have franchises from a particular manufacturer. Manufacturers control the amount of promotion, determine the number of chips available to distributors (via their allocation, production, and capacity decisions), and control the rate and nature of market development through their franchising decisions. While firms can act independently, they are more likely to find a need to cooperate and work towards a common goal of market penetration and company profitability.

The game also illustrates clearly the need to manage dependence and power. Most firms recognize that their success depends upon the performance of their suppliers and customers. This dependence can, and often does, lead to conflict and the failure to achieve financial goals. In order to minimize conflict and financial loss, some firms will attempt to amass power and thereby influence the decisions of their channel partners. Power relationships are established by controlling important markets and financial resources. The size of the sales force and advertising budgets and the granting of price discounts, consignment selling, transaction postponement, delayed and prepayment terms, as well as the sharing of market information are all used to gain influence in the channel.

#### Negotiations

Formal and informal negotiations dominate the play of the game. All firms must negotiate because other organizations control the resources and markets which are necessary to their success. The importance of *good* negotiation is realized quickly because the firm's oversights and failures immediately affect its financial performance and market standing. These conditions force many students to study the negotiating process and the tactics of bargaining. Everything becomes

negotiable and all concessions and market decisions become bargaining chips designed to further the firm's objectives. In addition, real and perceived power become important in determining negotiating positions and outcomes and, therefore, firms seek control over key resources. Bargaining tactics include the use of promises, threats, withholding information, and bluffing.

The better teams prepare for the actual face-to-face interaction by analyzing the market strength and financial position of suppliers and buyers. They also try to define what they want out of the contract and what they are willing to concede. They are encouraged to consider every aspect of the contract from their opponent's viewpoint.

Finally, students learn the importance of carefully written contracts. Verbal agreements are not enforceable and many students learn this lesson the hard way. In legal disputes requiring the instructor to serve as judge, students learn that all contract clauses are interpreted at face value, regardless of the team's intentions. Finally, students learn that they must live up to the conditions to which they have agreed, no matter how unattractive a previous agreement may be.

#### STUDENT REACTION

Student reaction to the game is highly favorable. Following the three most recent classes, students were asked (in an open-ended question) what aspect of the course they enjoyed the most. Out of 180 students, over 78 percent volunteered that the game was the most rewarding. Reasons cited include all those enumerated by Faria et al. (1979). Importantly, the value of the negotiation experience was added to the top of this list.

These nonstructured responses were supplemented by data from 88 students who were recently surveyed to obtain a more complete picture of their impressions of the game. Table 1 summarizes the results of this survey. Strong support is established for the use of "Chips" from an overall pedagogical perspective, as well as its presentation of specific marketing channel concepts. Specific textbook concepts of dependence, power, conflict, and negotiation are well supported as major elements contained in the dynamic interactive environment of "Chips."

Students indicated that "Chips" simulated a realistic business environment.

#### GAME LIMITATIONS

The major disadvantage of the game is its chaotic beginning, especially with classes having 100 or more students. Like other marketing strategy games, "Chips" creates apprehension in the participants because of their lack of familiarity with the rules and their uncertainty about the outcome of their decisions. Having upwards of 100 people in a room, even if they are performing predefined tasks, adds to the apparent confusion. Fortunately, students adapt quickly to their new environment. As in all games, experience helps to clarify the rules and operating procedures.

Another limitation of the game is the need to perform all of the accounting tasks manually. Marketing students generally do not have the skills or interests of accountants or mathematicians. Mathematical errors and misunderstanding of certain accounting procedures tend to frustrate some teams.

Another limitation is that students are not able to participate in all phases of the channel experience. A person on a distributor team cannot experience the problems and opportunities faced by a manufacturer, and vice versa. Members of the service firms do not participate in all dimensions of channel negotiations. Furthermore, not all firms are created equal. Manufacturers potentially have more power by virtue of their size, the influence of their decisions on market demand, and their small number relative to distributors. While some distributors become channel captains, manufacturers are more likely to assume that role.

#### CONCLUSION

The "Chips" marketing game achieves most of the objectives defined by Faria et al. (1979). It distinguishes itself from other marketing simulations in that it is a behavioral simulation in addition to being a computer simulation. It captures not only the key interrelationships between product, price, promotion, and distribution, but also the dynamic, interactive environment inherent in the give-and-take relationship between firms within distribution channels.

**TABLE 1**  
**SURVEY RESULTS**

Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No. of Respondents
The simulation demonstrated the responsibilities of each channel member.	33%	55%	6%	3%	3%	88
The time constraints during each simulation session were reasonable.	16	49	8	19	8	88
The simulation demonstrates the use of textbook concepts in channel situations.	8	47	32	11	2	88
The concepts of inter-channel negotiation are demonstrated in the simulation.	28	63	2	2	5	88
There seemed to be a need for organized channel management to compete successfully in the simulation.	56	30	6	5	2	86
My team was able to use power in channel relationships to achieve our objectives.	11	31	22	26	10	88
The use of power by my own team or by other teams in the channel was clearly evident.	19	47	18	11	2	86
Dependence was a factor contributing to the channel relationships that developed.	15	61	16	8	0	88
Through the channel simulation, I came to appreciate the meaning of dependence in channel relations.	14	50	27	6	3	88
We were able to create some measure of dependence on the part of other channel members who worked with us.	13	47	23	16	2	88
We felt at the mercy of other channel members during negotiations.	16	19	25	25	14	87
Conflict was felt in relationships established in the channel.	35	52	6	5	2	88
The simulation demonstrated the importance of various business functions in channel management operations.	24	61	7	5	1	86
The simulation is a realistic learning experience as a classroom exercise.	43	39	9	5	2	86

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