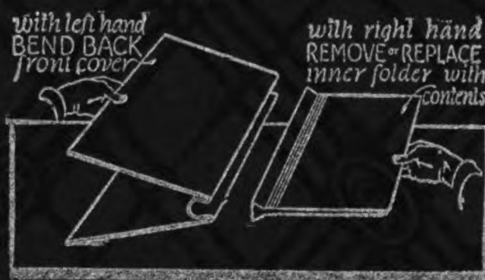




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ANALYSIS OF THE DILLON STUDY

by

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A Major Paper

**Submitted to the College of Business and Public Service
in partial fulfillment of the requirements for the degree
of Master of Business Administration.**

Prepared for

Professor Edward M. Barnett

June, 1961

**TO ALL THOSE WHO MADE
THIS OPPORTUNITY POSSIBLE**

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CHAPTER I

INTRODUCTION

During the year Nineteen Hundred and Sixty, the supermarket celebrated its thirtieth anniversary. The same year also closed a chapter on one of the most phenomenal decades of industry growth known to mankind.

The constant pressure of innovistic competition has presented the food industry with only some of its current techniques of retailing. Other selling activities are the result of experiments conducted by supermarket people in order to increase the efficiency of their operations. Yet, many of the successes must also be attributed to sheer good fortune; customers simply "wanted" and "needed" the supermarket, and profitable growth was often an easy matter.

It seems, however, that the day is fading fast when supermarket operators can arbitrarily select store locations and merchandising techniques, and still be assured of reasonable success solely on the basis of filling an unsatisfied need.

Yes, there were times when a new market almost always produced the volume anticipated. In recent years, however, expansion has come mostly from the addition of new units,

and it has become increasingly difficult to find new locations without injuring old ones.¹ A survey conducted by the Super Market Institute among its members showed that 60 per cent of the new supermarkets opened in 1958 were doing less business than anticipated.² In that category were stores doing as little as 45 per cent of the advance estimate.

Under the circumstances, supermarket operators must develop new methods for gauging sales results. Techniques must also be developed that will encourage greater profitability and efficiency in new and existing units. In a dynamic market, a firm cannot "stand still;" it must either grow or die. Food executives must develop new methods for perpetuating growth since expansion is a source of increased rewards. It is believed by many in the food industry that new growth procedures will result through a series of more refined techniques of customer and operations research.

It appears that many food retailers are still governed by "time proven" procedures and beliefs. There are still managers today that are under the impression that everyone living within shopping distance of a store is a potential

¹Loewy, Raymond, Super Markets of the Sixties, (Chicago: Super Market Institute, 1960), p. 9.

²"The Courtship of Mrs. Consumer," Super Market Merchandising, Vol. 23, (October, 1958), p. 38.

customer ... or that a fully-stocked store with a bountiful selection is destined for success. Many stores are built in terms of the company's past experiences with minor concessions granted to the "latest trends." But the missing ingredient which can contribute to greater opportunity for success, applied both to customers and operations, is research.

Many food companies have already grasped eagerly at the benefits made available through exploration of customers and store procedures. Many vital facts regarding consumer attitudes and store operations have already been uncovered ... facts enabling merchants to sell more goods profitably. In other words, when customer wants and behaviors are known, designers can tailor individual markets for specific customers.

But, it is an opinion that retail enterprisers lag far behind in the efforts and activities devoted to research and development in manufacturing and industrial situations. Perhaps this is due, in part, to a general unwillingness of retail people to share the fruits of their investigating efforts. Perhaps another reason for the relatively slow realization of a need for introducing large-scale research techniques in retailing is because of a general unawareness of the high cost of moving merchandise. Maybe retailers are startled by the sizable initial cost of setting up research designs; they are not accustomed, as is the manufacturer,

to making large investments in product, market and procedures development.

Yet, it is becoming a truism that research and development activity is of great importance to every progressive company. In whatever terms this productivity is expressed ... the number of new products handled, the portion of sales contributed in the past few years by products not previously sold, the profitability of shelf space, return on investment, cost reductions, or simply the general success and health of the retailer over a period of years . . . it is obvious that few companies can hope to advance or even hold their own without an active and productive program of experimentation and research.

But, complicating matters is the fact that human beings are not static things; rather they are constantly shifting their values and their behavior. Such books as The Big Change³ and The Changing American Market⁴ reveal that Americans not only have more money today, but they also have very different values. These dynamic aspects of humans are first translated into new and different demands and then finally into different shopping behaviors.

³Allen, Frederick Lewis, The Big Change, (New York: Harper and Brothers, 1952).

⁴The Changing American Market, by the editors of Fortune, (Garden City, New York: Hanover House, 1955).

With so many constantly changing technological and sociological trends in modern living, the food retailer must be aware of these changes, and he must act upon them. There must be an inexorable compulsion to overcome this uncertainty, or companies may fail in their struggle for survival. So even as this paper is being written, changes in shopping behavior are occurring, and newly developed behavioral patterns are mellowing for the harvest.

Thus are presented two major dilemmas that shape the life of a company as it pursues along a time track to forever. First, there is a problem of lessening the interval between market changes and the adapting of the retailing structure to these changes for competitive advantage purposes. And secondly, there must be a continuous refinement of operation systems research which can bring greater and more complete understanding to the business manager in the execution of his responsibilities and also act as an aid in the decision-making process. The ultimate aim is to bring the "scientific method" to work in food marketing and to provide specific quantitative guides for reaching top-management decisions.

In recent months, industry managers have spearheaded an attack for bettering operating methods, and for uncovering newly developed buying behaviors. Each effort and study tends to bring to the food industry a better understanding

of the supermarket and a sharper perspective of how the customer spends her food budget within this most dynamic of all retail outlets.

One such recent study of consumers and food-store operations, conducted by the editors of the magazine, Progressive Grocer, was the 1959 "Dillon Study." The editorial staff claims to have undertaken this report in an attempt partially to fulfill a continuing need within the industry for basic data. Perhaps few retail, wholesale or manufacturing organizations have the manpower, facilities, or inclination to devote to depth studies. Yet, more and more chains, cooperatives, and voluntary groups recognize the need for this kind of candid appraisal. Some retailers have hailed this report as a long stride towards a satisfactory establishment of operating principles ... other merchants have actually patterned shelf allocation, store layout, and merchandising after the study.⁵

Like the final summary chapter in a popular "Do-It-Yourselfer," "The Dillon Study" offers readers a clear insight into the major components of store profit, and attempts to lay bare the mystery of modern supermarket operation.

⁵A midwestern division of a large retail chain has recently established a complete revamp of shelf allocation based on "The Dillon Principles."

The purpose of this paper will be threefold. First, it will attempt to further an awareness of the importance of scientific research in the retail food industry. Secondly, this will be a critical analysis of "The Dillon Study," and it will attempt to uncover any questionable techniques and/or "findings" in the report. And finally, this paper will consider and discuss some of the implications of this study in aiding individual operators set forth guiding principles ... and perhaps aid in the framing of an improved conceptual and/or practical scheme whereby retailers can strive for a competitive advantage through research.

CHAPTER II

THE DILLON ORGANIZATION

Many of the findings in "The Dillon Study," and also the conclusions drawn, can possibly be justified when a thorough knowledge is held of the organization, its structure, and its history. This critique, however, will not attempt to provide such a detailed background since it is believed to be unimportant in reviewing this study for ideas and principles of broadly applicable merit.

However, a "sketchy" presentation is made of the organization for purposes of refreshing the memory of readers, and to introduce this company to those that are unfamiliar with the Dillon operation.

"Ray Dillon, President of J. S. Dillon & Sons, got his start in the food business working for his father in a small service store in Hutchinson, Kansas, then a town of fifteen thousand."⁶ Today Hutchinson has grown to a population of almost thirty-eight thousand and the small store has mushroomed into fifty-two supermarkets in Kansas and Colorado with sales close to \$90 million dollars. Seven new markets were opened in 1958-60; also a half-million dollar bakery

⁶"The Dillon Study," by the editors of Progressive Grocer, (May, 1960), p. 2.

and a new million and a quarter dollar warehouse were completed during that same period.

Friends of Dillon claim a basic reason for the company's success would be the large measure of old-fashioned virtues ... fairness, honesty, diligence, and service. A second, and perhaps far more important factor, can be perceived; namely, a penchant for change. Dillon was a pioneer in 100 per cent prepackaged produce, had the first fluorescent lighted store in the food business, and was among the first to offer stock to employees and profit sharing to managers.⁷

The editors of Progressive Grocer have commented that perhaps the greatest reflection of the Dillon drive to improve and to share knowledge is their participation in the study itself. Obviously, a most complete cooperation was necessary to provide such an inclusive report of sales, operating costs, and margins. Also, it required an unusual degree of cooperation to allow the "magazine" to completely rearrange the shelves, and even the aisles, in five (and presumably profitable) Dillon Stores.

Competitors who have bumped heads with Dillon down the years have a grudging admiration for the firm. Says one independent, "They've got good stores, good personnel, and a good reputation. And they're the best damn merchandisers in the Midwest!"⁸

⁷Ibid., p. 2.

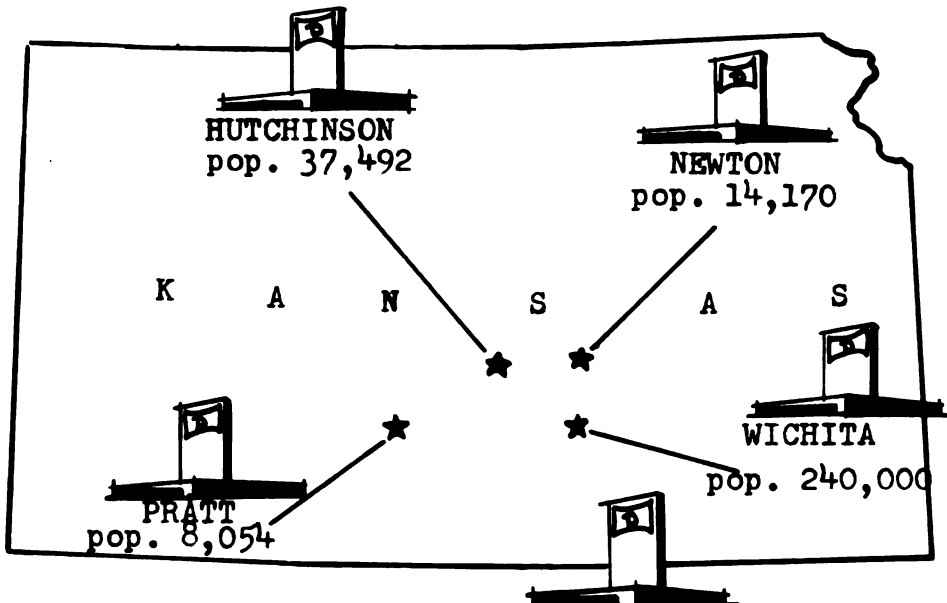
⁸Ibid., p. 3.

CHAPTER III

FACTS OF THE STUDY

Massive research project, a full year in the making, analyzes the sale of over 8 million units of merchandise, 713,000 customer transactions, shows how Dillon Markets realize an average margin of 21.8% on retail sales, how the modern consumer spends her food budget.⁹

Where the Study Was Made



This study of sales and margins by product groups was made in five supermarkets by J. S. Dillon and Sons Company in the state of Kansas.

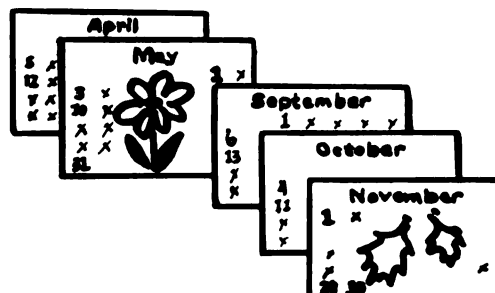
Dillon operates a total of 52 markets and the five stores studied represent a good cross-section of the operation. They also typify the best in modern super-market operation. As the map indicates the "study" stores are located in cities and towns of various sizes and thus serve consumers of various income levels and occupations.¹⁰

⁹Ibid., p. 4.

¹⁰Ibid.

When the Study Was Made

The study was made in two distinct periods-eight weeks in the Spring and eight weeks in the Fall of 1959. These periods were selected in order to eliminate insofar as possible the variations in sales due to seasonal conditions that affect the purchase of many product groups. The figures and analyses presented are based on the total 16 weeks covered by both periods.¹¹



In an attempt to isolate the overall effect of the changes that were made in the test stores, sales were audited over two eight-week periods, April 5 to May 30, and September 21 to November 14. Since the results of the second audit period, as measured against the first, reflect the application of the plan for increased productivity, an analysis of these periods is in order.

It would be very difficult, perhaps almost impossible, to select any eight-week periods during the year and classify them as "typical" or "normal" selling weeks. This is true with the audit periods selected in "The Dillon Study."

The first period (April 5 - May 30) begins with a selling period just following the Easter Holiday and the long Lenten season. Perhaps for many customers this means the first time in over a month that purchases may again be made of cookies, snacks, candy ... or any other items that

¹¹Ibid., p. 5.

were on the abstinence list during Lent. Similarly, the "base" period is ended with a week that is traditionally one of the best sales weeks of the entire year, the pre-Memorial Day week, with an emphasis on the purchase of products associated with the first major outdoor holiday of the year.

The second audit period (September 21 - November 14) reflects a number of "lesser" abnormalities. The audit begins two weeks after the opening of schools for the Fall term, and usually ushers in a different kind of shopping behavior. Summer is considered "gone;" meal planning is more elaborate, there are once again "school lunches," and buying in general begins to reflect the purchase of "stick-to-the-ribs" items and departs from the light, quick-fix summer meals. And finally, to the degree that the week prior to the Thanksgiving Holiday reflects some of the concentrated buying of that period, then the final days of the audit, too, are not considered "typical."

Not only is there the possibility that sales totals would be affected during the audits, but also the product mix would tend to emphasize those items typical of the particular season or holiday.

Thus, it is doubtful that selection of these periods actually did aid in eliminating the variations in sales due to seasonal conditions. Obviously, the months selected

would tend to be more favorable to the sale of items such as, hot cereals, cake mixes, and brown-serve rolls ... than the sale of ice cream, barbecue sauce, frozen lemonade or hamburger buns. A complete section of "The Dillon Study, (pp. 6-16), is devoted to explanation and illustration of percentage sales and profit figures of 530 product groups ... items cited above are obviously part of this list.

The following chart from "The Dillon Study" illustrates another hazard of using this rather limited "test period:"

SALES & MARGINS BY PRODUCT GROUPS¹²

Product Group	\$ Sales	% of Total Sales
. . .		
Baby Food, Strained Vegetables	\$15.51	.05
Pumpkin, Canned	16.59	.05

The dollar sales of these two product groups were almost equal during the sixteen-week test period. But, speaking as a former store manager, it is known that the sale of canned pumpkin drops off to practically nothing during the months of June, July and August. On the other hand, strained baby food can be expected to have a rather steady sales movement throughout the year. As a result, dollar sales figures over a longer period of time could be expected to differ from those

¹²Ibid., p. 10.

reported. Not only can these figures convey a doubtful picture of the sales volume, but they may also fail to report the relative importance of the products. Would any operator disagree that, in most cases, the .05 per cent of total dollar sales reported for strained baby vegetables is more "important" for successful operation when the "traffic-generating" value of baby food is considered?

An investigation conducted over a period of one year would obviously be more accurate and would better reflect these seasonal changes in buying. But, such a plan would probably be inconsistent with allocated budgets of time and funds. Sampling, then, is the most likely procedure ... yet, two eight-week periods, as used in the study, are not considered satisfactory. It is recommended that the "base" period be altered from one eight-week period to four two-week periods ... perhaps one period for each season of the year. Single-week periods, spread over a longer period of time, would also be satisfactory.

Facts About the Stores Studied

Throughout the series of articles that Progressive Grocer will devote to "The Dillon Study," sales, profits, and other pertinent operating data will be presented in terms of the average - or composite of the five stores studied. This, your editors believe, will prove more understandable to readers than data reported for the total of all stores since the operator normally thinks of a single store and its weekly performance. Basic facts about the composite Dillon supermarket are shown here so that the reader will be better able to evaluate the full study.¹³

¹³Ibid., p. 5.

It is probably true that viewing sales and operating data in terms of an "average" of the five test markets will provide figures more familiar to supermarket operators. Perhaps this is wise only if individual store sales and profits are provided in addition ... or at least stated as not deviating greatly from the composite score. Such a statement "assuring" that average figures are representative is lacking from the study.

There is no great quarrel with the selection of stores for the study, however, one note of caution is offered. While the Dillon margins and figures found on the operating statement of the five test stores can never really be expected to match precisely the profit percentages of other operators ... their value as a guide to typical pricing and operating margins must be questioned since the editors have strongly implied that the stores selected were among the "best" and most profitable in the organization. Obviously, a comparison of quantitative data from these stores would tend to reflect quite dissimilar results than if a contrast were made with five of the "poorest" stores in the company.

CHAPTER IV

THE DILLON STUDY -- GROCERY MARGINS

As one reviews the facts presented in this section of the study, certain trends become clear. The first and most obvious conclusion is that per cent margin on total sales has been steadily advancing in recent years. This is revealed by a comparison of the average margins realized in the grocery department in Progressive Grocer studies dating back to 1950. In that decade, average margin has risen from about 15 per cent to 20 per cent.¹⁴

While the evidence presented in the study supports the above claim, and while this thinking is generally accepted to be true by those in the industry ... it does not seem that such an unqualified statement can be made.

GROCERY MARGINS AND NET PROFIT¹⁵

Firm	1950		1955		1957		1960	
	% Mar.-	% Pro.	% Mar.-	% Pro.	% Mar.-	% Pro.	% Mar.-	% Pro.
Company A	16%	1.2%	16.8%	1.4%	18.6%	1.2%	17.4%	(Loss)
Company B	16%	.8%	16.7%	1.0%	18.7%	(Loss)	18.0%	(Loss)

¹⁴Ibid., p. 8.

¹⁵The chart provides figures from operating statements of Midwestern Divisions of two major retail chains, each operating in highly competitive areas.

There has been a rather marked increase in the operating costs of retail food operators in the past decade. The gradual rise in grocery markup reported by "The Dillon Study" probably reflects the continuous addition of new grocery lines that carry traditionally higher margins, and also the inclusion of higher-markup items (example: convenience sizes, etc.) within existing lines. Yet, it can be shown that this general movement towards higher profit percentages can be tempered in certain local situations under severe competitive conditions. The addition of high-profit items to the product lines, in these cases, has not been sufficient to offset lower margins forced by the action in local "price wars."

An investigation of the area in which Dillon operates, and in particular the areas of the test stores, will reveal the general absence of severe "cut-throat" competition. Safeway and A & P are relatively "weak" in the larger cities ... and competition in Newton and Hutchinson comes mostly from some smaller independent operations. This rather enviable position can make a drastic difference in the merchandising program and profit margins of the company.

Finally, the chapter devoted to margins lacked any discussion of "balanced" selling. No consideration was given to the number or kind of promotions during the audit periods, or to the "traffic builders" that were used. The extent of the markdowns on the traffic items, and the number of "profit"

promotions used to balance off these losses in markup dollars, can have an influence on the total margin figures.

CHAPTER V

THE DILLON STUDY -- HOW MERCHANDISE MOVES

During the 16 weeks of the study, more than 8,034,000 units of merchandise were recorded as sold.¹⁶ Assuming store hours from 9 to 9, seven days a week, this is the equivalent of some twenty units of merchandise rung up on the registers every minute each of the test stores is open.

This particular section of the research proposed some rather startling comments and some interesting questions regarding the task of keeping this huge flow of merchandise moving swiftly, efficiently, and profitably through the various phases of food store operation.

Throughout the report, one of the major areas of emphasis, and one of the important ingredients of the merchandising program that has become the "nucleus" of the study, is the task of proper shelf allocation.

Whether due to new items being introduced into the product group, a gradual imbalance of facings on the shelves resulting from out of stocks, or the time of year necessitating an altered line up, it can be truthfully said that there is not a supermarket in the country that could not make better use of its existing shelf space in one or more areas of the grocery department.¹⁷

¹⁶Ibid., p. 17.

¹⁷Ibid., p. 20.

The researchers propose that the key to proper allocation for maximum profits and productivity will be found in careful analysis of product movement.

Although seemingly to be a rather basic assumption, the writer finds this effort to be rewarding in terms of uncovering vital information, the implications of which may have long been overlooked by retail operators. Using the most common 24-unit case pack for all items, one finds that nine out of ten grocery items sell less than a case per week.

CASE SALES PER WEEK¹⁸

Rate of Sales Per Week	No. of Items	% of Total
Less than 1 case	3,753	89.5 %
1 to 2 cases	244	5.8
3 to 5 cases	156	3.7
6 to 10 cases	33	0.8
Over 10 cases	9	0.2
	<u>4,195</u>	<u>100.0 %</u>

Since profit and productivity are closely linked with grocery movement, those subscribing to the Dillon hypothesis claim that every item bears close scrutiny to determine if that product is carrying its share of the "work." A section of the report is reproduced here:

¹⁸
Ibid., p. 18.

HOW WIDE SHOULD VARIETY BE?¹⁹

Product Group	Total Items Carried	Items Acctg. for 80 % of sales
Canned Fruit	96	53
Peaches	16	8
Cherries	11	4
Applesauce	5	2
Pineapple	15	8
Pears	6	3

Thus "The Dillon Study," with its charts of product movement and emphasis on handling items that, "contribute their share," implies that operators need only to develop similar tests for eliminating "unprofitable" items. Yet, there is no mention of any optimum number of items to be carried, or how to arrive at any decisions regarding the quantity of products and brands to be stocked. Furthermore, this approach does not seem to consider individual corporate views and objectives. Certain products, though perhaps not meeting with sales and profit standards, may be stocked to satisfy another purpose.

Harold G. Ward, Sales and Merchandising Manager for Von's Markets in Los Angeles, California, indicates clearly that the Dillon criterion for product breadth is not universally held.

¹⁹ Ibid., p. 20.

One way to increase the average purchase is to give customers more things to spend their money on. That is one reason we carry such an extensive variety of brands. In too many stores the customer finds her choice being narrowed down. She may not buy many, many products, but she wants to know they are there just as in a treasure chest.²⁰

Perhaps it is pertinent at this time to make comment on a frequently mentioned association in the study ... that of the relationship between poor allocation and out-of-stock conditions. It is implied that corrective allocation measures tend to eliminate "empty" shelves. However, an out-of-stock condition can be the result of several factors other than shelf allocation. Perhaps the item is temporarily unavailable from the supplier, deliveries can be delayed ... or the merchandise may be found in the backroom, but just never got stocked. Finally, there is no mention of the ordering task. Good ordering technique places shelf allocation in a subordinate role, and, in some cases, can rectify the shortcomings of inadequate shelf facings.

To conclude a discussion of this chapter, it should suffice to comment that much information contained in this section of "The Dillon Study" is regarded as being repetitive of a number of previous reports.

The writer will criticize this study or any other research endeavor that does not appear to accept or utilize findings of

²⁰"The Fabulous Von's Story," Super Market Merchandising, (July, 1960), p. 7.

previous investigations as a base or starting point for conducting a search for new and additional knowledge.

Similarly, individual operators should, whenever practical, use "The Dillon Study" as a guide to further studies into the unknown. Management should begin a research design with certain "knowns," and then move ahead into new areas of investigation rather than duplicating what has already been done.

CHAPTER VI

THE DILLON STUDY -- PROPER GROCERY SPACE ALLOCATION IS KEY TO INCREASED PRODUCTIVITY

Introduction

Because of the relative importance of proper shelf allocation ... and because of the major focus of attention devoted to this area by the Dillon people ... the following section of this paper will be perhaps the most detailed.

Most operators will agree that proper space allocation is essential in maintaining full shelves with a minimum of effort and cost. Proper allocation tends to result in a uniform disappearance of items from the shelf; proper procedures also result in more uniform stocking and less investing in inventory capital. However, the task of analyzing and interpreting product movement is not easy, and some retailers have just not made the necessary application.

As a result, space allocation in the grocery department is often on a "hit-or-miss" basis with little or no planning involved. The time is fast approaching, however, when "guessing" and just "passable" methods will not be good enough. Competition has developed to the point where certain areas provide no little problem with their saturation of markets. It is becoming apparent that, more than ever before,

operators will have to make their retail facilities, both new and old, more productive.

When a supermarket is in the planning stage, space is often allocated to the individual sections, and the items within each section, on the basis of warehouse movement. However, since warehouse movement is based upon the distribution of items to all stores over a long period of time ... there are certain factors that make this method undesirable, in some cases. First, any misallocations at the store level are enhanced at the warehouse. Secondly, "sales features," which are included in warehouse movement can distort average sales figures. Thirdly, the criterion of warehouse movement in no way makes allowance for variations in consumer preferences in different localities.

Proper space allocation has long been considered one of the basic problems in operating a food store. Too little space allocated to a given product can result in decreased sales ... as additional shelf space is given to an item, sales increase, but at a decreasing rate.²¹

Since this dilemma has constantly confronted food operators, the inquiry made into "scientific" space allocation by "The Dillon Study" was investigated with some interest.

One of the primary purposes of 'The Dillon Study' was to determine if it is possible through concentra-

²¹"Better Utilization of Selling Space in Food Stores," USDA, (Washington, D. C., November, 1952), p. 7.

tion on fundamental merchandising principles to make the successful modern supermarket even more productive than it has already proven to be.²²

The program, as put into effect in the Dillon stores, consists of several different elements, the most important of which is a newly developed guide to grocery department space allocation.²³

To be able to isolate the overall effects of changes that were made in the five test stores, sales were audited over two separate eight-week periods. During the interim period, the grocery departments were rearranged, merchandise was refaced and new lines were introduced to occupy the space that was freed by reallocating space to individual items, based on their sales history.

The application of this plan for increased store productivity produced the following overall results in the five project stores:

AVERAGE GROCERY DEPARTMENT PERFORMANCE²⁴

	BEFORE	AFTER	CHANGE
Grocery Linear Feet	596	519	-12.9%
Gen. Mdse. Linear Feet	78	107	+37.2%
Grocery Sales per Sq. Ft.	3.71	3.98	+ 7.3%
Total Grocery Unit Sales	46,939	49,856	+ 6.2%
Total Grocery Dollar Sales	\$15,227	\$16,345	+ 7.3%
Total Grocery Dollar Margin	\$ 2,978	\$ 3,285	+10.3%
Total Grocery % Margin	19.5%	20.1%	+ 3.1%
Total Grocery Oper. Expense	14.6%	13.8%	- 5.5%
Total Grocery Net Profit	4.9%	6.3%	+28.6%
Grocery % of Total Sales	41.9%	43.3%	+ 3.3%
Gen. Mdse. of Total Sales	4.2%	5.1%	+21.4%
Special Display % of Gro. Sal.	5.0%	8.0%	+60.0%

²²"The Dillon Study," op. cit., p. 33.

²³Ibid., p. 36.

²⁴Ibid., p. 33.

In reviewing the results of the altered shelf allocating and merchandising, several "voids" are evident. First, there is the obvious lack of one crucial measurement of productivity in any supermarket ... that of "average sale per customer."

This measurement is a rather common practice in the industry, and it is a bit unusual to find it missing from such a detailed score of productivity.

More of an item can be sold by giving it more space, but the question still remains: How do you get more sales per customer? ... How do you increase the size of the average transaction. It does not seem likely that any amount of reallocating will increase the customer count, hence any favorable showing of the "average purchase" in the second period could possibly be attributed to "plus purchases." It would be interesting to see how the Dillon stores fared on this count.

Next, a simple calculation was made by the writer to determine the average sale price per grocery item sold during each of the sales audits. The average sale price per grocery item before the merchandising change amounted to 0.324 (\$15,227 ÷ 46,939). The result after applying the plan for increased productivity was 0.327 (\$16,345 ÷ 49,856) ... or an increase of only about one per cent. Perhaps this figure is of little significance, yet it would seem that after altering store layout to increase the linear feet of general mer-

chandise some 37.2 per cent, the average sale per grocery item would be expected to be higher because of a typically higher retail price on this type of merchandise. Then too, it is quite possible that regular grocery price advances during the period could have accounted for some of this increase in average price, leaving even less to be attributed to increased productivity.

It would also be desirable if the study indicated, or at least made mention of, the sales promotion and advertising activity that was conducted during each of the eight-week audits. The reader is left to assume that there were no significant changes in this activity. If this was not the case, however, changes in promotional techniques and plans could affect all sales and profit margins reported in the study.

Furthermore, it is also important to know whether "total grocery operating costs" included promotional expenses ... or whether these costs were reflected only in "total store profit," as is the common accounting procedure in the industry.

Perhaps some further comment should be made regarding the first eight-week period. Assuming for the moment that the period selected for this important audit was "typical" ... there still remains a major problem to be solved.

The test stores were already operating and grocery items and shelves had already been allocated. This condition was

necessarily more favorable to certain merchandise (those products with a GREATER number of facings) ... and obviously, less favorable to other products (those items with LESS facings). This is true if it is assumed that as additional shelf space is given to an item sales increase at a decreasing rate. Thus, one variety of soup (with ten facings) may outsell a second variety (with only six facings) at a rate of three to one ... but it is doubtful whether this same ratio would be maintained if the number of facings were equal on the two soup items.

Perhaps it would seem that this is a hopeless dilemma, yet apparently can be coped with in the following manner.

The writer recommends that a future investigation conduct an experiment with ALL items within a major product category receiving EQUAL shelf facing during the audit or "base" period. This would have the effect of eliminating any so-called "advantages" to those products with a wider spread. This method will not be without at least one problem ... that of running out of stock on the extremely popular items. The solution, of course, will be found in constant vigilance, and perhaps stocking certain items daily.

The report of sales under this system, together with the practice of subtracting special display sales from total unit sales volume (since sales from special display locations are in a sense a bonus and not incumbent on shelf display space) ... would tend to be more acceptable to the critical

research and would provide a more valid criteria for establishing desirable shelf allocation.

Further reluctance to accept the favorable report figures is fostered by the apparent lack of an acceptable research technique. Complete sales audits were made in each of the five stores during the first eight-week "base" period. Merchandising changes were put into effect, and then these same five stores were again tested and audited. This procedure is questioned since there were no "control" stores ... none of the stores were left unaltered in order to provide the valuable basis for comparison. In other words, what indications are there that the favorable performance during the second eight-week period would not have occurred anyway? ... without any alterations in stock or merchandising. It has already been pointed out that the two sales "test" periods could not be assumed comparable in regard to seasonal characteristics. There is the further possibility of some extenuating circumstances during the Fall period favorable to performance, or likewise, some hindering factor during the Spring campaign. Without some kind of "weighted" factor to aid in lessening the effect of "sales variables" on the final audit, the reliability cannot be accepted at face value.

CHAPTER VII

THE DILLON STUDY -- LAYOUT OF FLOOR PLAN

Only by a breakthrough to new highs in productivity per store and per foot of display space will food operators be able to build on the growth records rung up during the past decade.²⁵

A stronger promotional program of "cut prices" would almost be certain to result in unit and dollar sales increases, but such gains would evidently be made at the expense of gross profit. On the other hand, price increases would boost profit margins, but only with a corresponding loss in sales volume.

More desirable methods are offered, however, in the Dillon plan for increased productivity. The first of these proposals, space allocation, has already been discussed. Other elements in the program come under the general heading of helping the customer find what she wants, and making her buy more.²⁶

With these objectives in mind, the designers set out to develop a store layout that would emphasize related-item selling and augment regular store volume.

²⁵Ibid., p. 34.

²⁶Ibid., p. 36.

The first step involves grouping the items according to their relationship to one another. Syrups and molasses, for example, are displayed next to pancake mixes in the baking section. Glassware is adjacent to juices and deserts, and also in the snack section. Laundry supplies such as water softeners, clothes softeners, bleaches, starches, bluing, clothes pins and lines, are displayed in with soaps and detergents. Baking chocolate, cocoanut, cornstarch, shelled nuts, pie fillings, baking powder and soda, etc., are displayed with cake mixes, flour, sugar, shortening, and other baking needs. Potato chips, pretzels, popcorn, nuts, cheese dip mixes, shoestring potatoes, etc., are displayed together in a Snack Section.²⁷

This plan for "suggestion selling" is almost universally accepted among retailers as a worthwhile activity, however, there are no exact "ground rules" and layouts that work well for one operator may not produce desired results for another. With this in mind, the following recommendations may be somewhat arbitrary, yet seem plausible to the writer.

In reviewing the floor plan (page 42 of "The Dillon Study"), one immediately notes that the fourteen-foot section of soft goods has been placed directly opposite the baby food department. This strategy is doubtful since it is believed that customers buying baby food are also extremely likely candidates for purchases in the soft-goods section. Then too, many operators prefer to place soft goods in a location of lesser traffic congestion ... so that selections may be made leisurely, and garments "tried on" if necessary.

Possibly an item such as dog food would more logically

²⁷Ibid., p. 36.

be placed opposite the baby food: the reasoning behind this move being that pet foods are of a "must-buy" nature and shoppers are not likely to by-pass this section while searching the baby foods. Pet owners, without infants, are sure to see the section ... on the other hand, the young mother is not likely to forget Fido either. This reasoning is further substantiated by a recent study conducted by Alpha Beta Markets of La Habre, California.²⁸

One test case had the high-volume soups stocked directly opposite olives. The move was calculated to boost olive sales beyond the company average, yet after the switch, buying of olives was almost non-existent. In X-ray fashion, a traffic study pointed up the difficulty. While a customer paused to select soups, her back was turned to the olives ... she moved on before even seeing them. Substitution of baby food for the soup changed the picture. Management noticed that customers seeking baby food were immune to olive displays, and olive buyers do not normally purchase baby food.

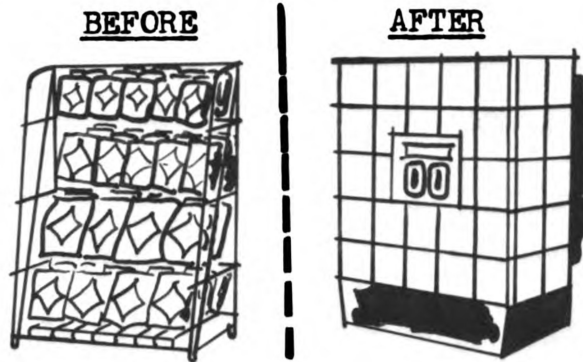
Next, the Dillon layout places the health and beauty-aid items some six aisles away from the store office. This non-food department is also shielded from the view of any of the perishable departments. This positioning is generally a poor practice to follow in controlling pilferage.²⁹

²⁸"Shadowed Shoppers Provide Clues on Displays," Food Topics, (January 19, 1959), p. 10.

²⁹Progressive Grocers, Modern Supermarkets and Superettes, (New York: The Butterick Press Company, 1956), p. 91.

Finally, following the technique of related-item selling, it would seem that spaghetti sauces and tomato paste would qualify for stocking near the macaroni products ... and that this entire section should then be placed either before or after the prepared foods department.

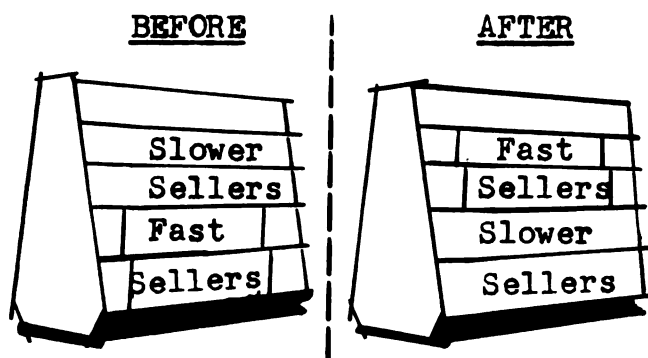
One other proposal for increased productivity deserves comment. The removal of many permanent end-display fixtures must be attempted with caution.³⁰



In some cases, semi-permanent displays may be more profitable than a replacement "feature." For example, a high volume display of potato chips is often a choice for a permanent "end" location since such a product responds well to impulse buying, is stocked and maintained by outside vendors, and requires little or no store labor. Hence, "net" return on possible alternatives of end displays should govern the selection.

Finally, shelf positioning of items provided an opportunity for change in the Dillon stores.

³⁰Ibid., p. 34.



"When practical, preferred or eye-level shelf positions were given to the items in each product group that produced the greatest dollar profit."³¹

Finding situations where it was practical to employ this strategy was probably the exception rather than the rule. It can easily be seen by observing the illustration above that lower shelves are traditionally deeper and hold more merchandise than those above. Placing slower-moving merchandise in bottom positions would be inconsistent with theories of turnover and minimum inventory. Size variations would also present some impracticalities. The slower selling 8 oz. or buffet-size cans of fruits and vegetables would become "lost" if placed on the bottom shelf ... and larger economy sizes that lead in sales would be too cumbersome for stocking on the top positions. In fact, in viewing actual photographs of the Dillon stores, one notices that such items as Miracle Whip, Heinz Ketchup, Crisco, etc. all occupy the lowest shelf position.

Although the steps of a complete allocation program in the grocery department have been clearly established in "The Dillon Study," (pp. 40-41), the reader will note that it is

³¹ Ibid., p. 35.

not always desirable to rigidly adhere to such a plan.

For example, while catsup accounts for 46 per cent of the sales rung up by all condiments and sauces, it should not be faced out to occupy half of the total space set aside for this product group. To do so would leave less than adequate space for other items in this line such as meat sauces, vinegar, mustard, etc. As a result, these items occupy 41 per cent of the space devoted to all condiments and sauces in the revised plan. The space required to "overstock" these slower-moving items theoretically is taken from the faster sellers, in this case catsup, which produced 46 per cent of sales, but is allocated only 27 per cent of the space.

In closing this analysis of the Dillon plan, it is only fair to comment that seemingly the program for shelf allocation and store layout is generally very complete and regarded as a fine presentation. The writer, from experience, has found that the basic flaws in space allocation come about through "over-facing" the slow-selling items rather than the fast movers. The Dillon plan, by allocating a minimum space to the poorer items, shows that facings can generally be gained and allocated to the volume products. The results tend to provide a more realistically balanced stock with lower inventories.

CHAPTER VIII

THE DILLON STUDY -- OTHER COMMENTS

In a chapter entitled, "Dillon Study Figures Dramatic Potential of General Merchandise Lines," the researchers report that during the first eight weeks of the program, the existing general merchandise accounted for 4.2 per cent of total store sales. When space was reassigned and new non-food items and departments introduced, sales advanced to 5.1 per cent of the total.³²

Only one of the five test stores had stocked soft goods during the first eight weeks of the test. Hair care departments were added to all Health and Beauty Aids departments during the second part of the study. At the same time, housewares departments were greatly expanded and entirely new toy departments added.³³

Thus, the words of "The Dillon Study" make it clear that the original situation was one where many lines of non-foods had not been previously handled in the Dillon stores. During the second eight-week audit, after the stores had "jumped with both feet" into this new merchandise, sales showed an increase of almost one per cent.

Does this increase in the sale of general merchandise, only eight weeks after new lines had been introduced, indicate

³²Ibid., p. 57.

³³Ibid., p. 58.

the acceptability of general merchandise ... are the results indicative of outstanding or even acceptable results?

The writer does not believe that these figures present anything conclusive. For one thing, after substantially increasing the total display area of general merchandise some 37.2 per cent,³⁴ sales would be expected to increase ... perhaps even more than actually occurred. Then, too, there is the "novelty" factor. Will the sale of general merchandise continue to gain in the Dillon stores, or will movement taper off a bit when the impact of this new merchandise "wears off?" Finally, there must also be consideration given to the "true" profitability of these sales, after deducting the cost of an increase in inventory value, and considering the "lost sales" of regular grocery items whose facings or potential display locations have been eliminated to make room for the general merchandise.

"Average Special Display Boosts Sales 536% Over Normal Shelf Position Movement ..." ³⁵ is another claim made by the researchers. This study shows that large "end" displays of a product will get similar fantastic increases in sales. What else? It should no longer be necessary to report that mass displays of a product will "move." The big weakness in these sales figures is the stress on the particular pro-

³⁴Ibid., p. 33.

³⁵Ibid., p. 81.

duct displayed without consideration of its relationship to all other products in the store. A sales gain in one product does not necessarily increase the total volume. For instance, a sales feature (special display) on Brand A corn not only affects adversely the sale of Brand B corn, but also probably limits the sale of canned peas, beans, asparagus, etc. What is accomplished is too often nothing more than a reshuffling of products ... leading customers towards one particular brand. Many times total gross profit will suffer because such promotions encourage the sale of "specials" at the expense of the more "profitable" regular-priced merchandise. Additional sales of these "end" displays may mean a lot of volume containing little or no profit dollars. The sales measurement that is important in evaluating displayed merchandise is a gauge of "plus" purchases.

Another possible situation that can affect short-run product movement is the extent of new items. Many times new products alter the sales of all items within a category group. Again, such a possibility should be considered when observing sales movement.

In a report, perhaps even one as detailed as "The Dillon Study," it is almost an impossible task to fully uncover the relation of the pricing structure to product movement. Yet, any critical analysis should probably consider this factor. Not only can the company pricing policy offset the sale of

certain product categories, but the number of "deal-pack" items during the audit periods can affect the movement of certain other merchandise. Thus, to the degree that "off labels" and "shelf-talker" merchandise direct extra sales towards a product, movement must be considered "abnormal." The short-run volume can be influenced greatly by such an off-label pack and can distort shelf allocation measurements based on sales volume.

Concluding this analysis of "The Dillon Study" presents a crucial and frustrating dilemma. After all data has been tallied; after all studies have been made; and after each calculation has been carried out to the last decimal ... there remains one basic and governing criterion for determining the practical value of such a plan for productivity improvement. This critical question that now confronts the administrator as he prepares to pass judgment is ... can the implementation of the plan be conducted profitably? Will the benefits derived from the Dillon plan for productivity justify the cost and effort of making the necessary changes? The writer wonders whether the Dillon management has effected these merchandising and layout changes in any of the remaining forty-seven markets ... when the cost of such a program must be borne independently.

Furthermore, it would be interesting to conduct a survey, now, to determine what changes made during, and immediately after the study, have not proved successful in the "long run" ... and have been changed back to the original setup.

CHAPTER IX

CONCLUSIONS

Today, supermarkets are not always the conservative investment they once were. The extremely high cost of building new markets in areas that may become overrun with supers in a few short years places serious decision burdens before top management.

Research of growth barriers, the result of higher building and operating costs, is intended to provide management with the necessary tools to cope with these dilemmas. Executives are also learning that customer loyalty is a hard thing to come by, yet extremely important for successful development. As a result, the supermarket shopper is easily becoming the most discussed, counted, and measured individual in the annals of selling.

But despite all of the studies made, supermarket executives believe that they know very little about the complex activities of customer buying and store operations. Administrators realize that it is increasingly more difficult to accomplish satisfactory growth patterns through "old methods" of stacking higher and bigger displays. The great need today is to increase sales and productivity from new and existing markets, and to accomplish these goals without increasing

operating expenses.

The Editors of Progressive Grocer have offered "The Dillon Study" as such a blueprint for higher sales and profits. While the study was undertaken for the direct benefit of the food retailer, it was also intended to hold interest and value for those who serve and supply the food stores. One cannot deny that this investigation was a timely presentation, complete in many respects, and a notable effort. Yet, like many "pioneering" efforts, the study provides a source of controversy and criticism.

The researchers themselves will probably agree that nothing was really "proven" in the endeavor ... perhaps this was not their intention. The accounts of product movement and operating margins reveal only what resulted in the five Dillon stores during the test audits ... any reports of retailers differing from the Dillon figures do not necessarily indicate a poor operation. And just because "The Dillon Study" is "research," this does not mean that it has universal application.

Furthermore, it is an opinion that the "principles" approach to successful store operation is premature. Before there can be any such set of governing rules or techniques, (if ever), there must first be a great deal more knowledge of shopping behavior and operating environment ... empirical studies that add to the existing knowledge and can be used in the formation of a series of concepts regarding such

activities. These concepts, then, conceivably would become the basis for, "The Principles of Profitable Store Operations."

The value of "The Dillon Study" and similar reports to the individual operator should now become clear. This is not necessarily a report to be repeated. Perhaps it is best used as a starting point for moving ahead into new areas of study. Management should recognize what it already knows about its customers and operations and investigate beyond this point ... rather than checking to see if there can be a comparison made with the Dillon organization. The writer further recommends that operators undertake enough research to provide insights into current operations, and enough to get a feeling of the kind of customer image that is being created and what factors help affect this image.

Three major areas should be considered in developing a design for research and investigation. The first consideration places emphasis on the development of a planned program. Defining the problem to be studied is extremely important. It should be recognized that any rewarding program will require a sizable outlay of time, effort, and capital. Activities must also receive the full support of top management and must be directed towards the attainment of company goals and objectives.

Secondly, finding the answer to questions about supermarket operations and customers is an involved decision.

Trained observers are usually necessary to scrutinize the dynamic relationship of customers, employees, neighborhoods, and stores. There has been a great refinement in research techniques and methods for data collection and tabulation in recent years, but to maximize the results, these methods must be guided by proper supervision and direction.

Finally, the program must be one of continuity and unceasing effort. Once a store has been opened or remodeled, after apparent careful study, the quest is not completed. Only with continued investigation and guidance will there be a successful orchestration of the marketing mix needed to bear the enterprise along the time track to "forever."

There are no real boundaries to the degree that these research designs may be employed by individual operators for solving unique problems. In other words, research by an individual company must look for the answer in terms of the emotions, needs, and desires of its own customers, and the objectives of its own operations.

It is evident that the rapid growth in number of supermarkets has led to a gradual reduction in the number of customers served per unit. This means that food executives cannot necessarily expect population increases to foster sales gains. It is because of the need and desire for additional corporate growth that the writer justifies and supports research activity. In short, the cost of research can be

small compared with the savings it can effect, and the costly mistakes it can prevent; if it can forewarn and persuade retailers to modify their operation in order profitably to adjust to changing customer behaviors, the cost of research is small indeed.

Finally, in closing, the writer would like to apologize for what may appear to be a consistently negative attitude towards the efforts of "The Dillon Study." This is not necessarily the case. One could also speak very well of such a sincere and descriptive presentation ... but such a popular approach rarely affords a formidable challenge to the writer.

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