MARKETING STRATEGY AND PRODUCT LINE PLANNING
FOR A SMALL BUSINESS FIRM
by
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(1973)
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Signatures of Authors ..............................................

Alfred P. Sloan School of Management, May 20, 1975

Certified by ..........................................................
Professor Gary Lilien, Thesis Supervisor

Accepted by ..........................................................
Chairman, Departmental Committee on Graduate Students
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John Clement Avallon
and
David Owen Stolper

"Submitted to the Alfred P. Sloan School of Management on May 20, 1975, in partial fulfillment of the requirements for the degree of Master of Science."

ABSTRACT

On behalf of a small manufacturing firm, the profitability of a particular product is determined and a marketing strategy is proposed.

In order to determine the profitability, sales revenue is modeled as a function of the elements of marketing strategy, the method of distribution and price. The sales revenue is then used with cost information to calculate profitability. Input data for the model is obtained from test marketing activities and interviews of consumers.

An industry analysis is conducted to provide background information and specific facts that are needed to formulate a strategy.

The resulting strategy for the firm includes the following recommendations: 1) the most profitable method of sales uses manufacturers' representatives and 2) production capacity constraints require the firm to switch to manufacturers' representatives in a limited number of regions.

Thesis Supervisor: Gary Lilien

Title: Assistant Professor of Management
ACKNOWLEDGMENTS

We would like to express our most sincere appreciation to Professor Gary Lilien for the guidance and patience he has offered throughout this effort. The valuable insights into the photographic industry provided by Richard Fink and the typing efforts of Nancy Forstrom are also most appreciated.
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CHAPTER 1
INTRODUCTION

Strategic planning is the determination of courses of action and allocations of resources that will achieve the basic long term goals and objectives of an enterprise. A firm's approach to strategic planning is influenced by its size, because small and large businesses have different basic operating characteristics that must be considered in the strategic planning process.

The amount of resources expended on strategic planning depends largely on the profits or other rewards that a firm expects to earn within the planning horizon. A small firm, therefore, cannot use elaborate or expensive methods of analysis to formulate or select alternative strategies. The corporate planning staff, which is often discussed in current literature and in business school classrooms, is a luxury that is restricted to large firms, because the expense of this approach to strategic planning is a fixed cost that is too large for a small firm.

The content or substance of strategic plans differ between small and large firms. What is referred to as a 'strategy' for a small firm might be an operating plan for a large firm because of the differences in the overall scope of the plan, the time horizon and the amount of resources involved. Within a particular small firm, the strategic plan is also closer to an
operational plan because there are fewer layers of organization. The top managers, who have responsibility for long range plans, also have major operating responsibilities. This dual role makes it difficult for managers to maintain the differences between the two types of planning. In addition, the urgency of daily operating problems makes it easy for strategic planning to be neglected.

In this thesis, on behalf of a small manufacturing firm which faces the constraints and problems mentioned above, we analyze a particular new product decision and formulate a product line and marketing strategy. Our efforts should be consistent with the needs and resources of this firm's top management.

This endeavor has required us to apply tools from the areas of marketing, economics and strategic planning, and provided a valuable opportunity to gain experience in dealing with a practical business problem.

Our basic model of the strategic planning process is outlined and diagrammed below.

1. Statement of the firm's goal and objectives.
2. Analysis of the firm.
3. Analysis of the industry.
4. Determination of strategy; including the formulation of alternatives and the selection of a strategy.
As indicated by the double-direction arrows in the diagram, feedback is part of this process because additional information may be needed during the analysis. For example, if diversification into a new industry is considered as a strategy, it is necessary to analyze those industries which are candidates for diversification.

In succeeding chapters we will discuss the firm and the industry and analyze a particular strategy. First, however, we must state the firm's objectives, set forth by its managers:

1. To earn profits, and grow at a moderate rate, in order to increase profits.
2. To maintain the essential characteristics of a small business, in which the managers are actively involved with the daily operations of the firm.
3. To reduce the business risk of the firm's activities, by having a stable product line with a relatively long life.
CHAPTER 2
THE FIRM

GPI is a small manufacturing firm, founded in 1972, and managed by the two founding partners.

Manufacturing Activities

GPI was started as a contract machine shop that specialized in high precision work. It now also assembles a decorative clock whose key parts are suited to fabrication in the firm's machine shop. The clock is manufactured for exclusive distribution by a marketing firm, which has full responsibility for all sales activities.

The firm has a production staff of 12, most of whom are under 25 years of age and have been trained on the job. Production man-hours are divided equally between the fabrication of parts and the assembly operations.

GPI manufacturing activities are characterized by craftsmanship, rather than high technology. The basic precision of its machinery have been understood for a long time, and the key input to the manufacturing process is the skill and craftsmanship of the machinist.

GPI considers its manufacturing strengths to be the following:

1. The efficiency and skill of its machine shop.
2. Its ability to engineer and implement manufacturing processes, especially for low volume products which require hand fabrication and assembly.
The firm's main weakness in the production area is difficulty in expanding capacity because it specializes in manufacturing that requires a high degree of skill or training and close control.

Financial Condition

Since GPI is not a public corporation, its managers prefer not to release copies of its income statement and balance sheet. However, they summarize their financial position as follows:

1. Sales have grown rapidly in the first three years of operation, doubling each year; and operations were profitable in all three years. The first quarter of 1975 was the best ever, with a continued growth of sales (now at an annual rate of $500,000 per year) and profits (now 10 percent of sales).

2. GPI growth has been financed with earnings and a small amount of short and medium term borrowing. The combination of rapid growth and under capitalization have, however, strained the firm's working capital position. The problems of a shortage of working capital have been overcome by careful cash planning, and the use of short term borrowing and trade credit. In addition, the working capital position has been helped by a rapid turnover of receivables because most of GPI's sales are to firms who pay promptly.

Marketing

For most of GPI's production there is no marketing activity. In contract machinery it has established itself as a key supplier
to a small number of customers and does not have the capacity to handle additional work. The one product that is assembled by the firm is marketed by the exclusive distributors.

Recent Events

GPI feels that there is a large business risk inherent in the work it now does. The sales of the product it now manufactures are expected to taper off in 1976 and subcontracting work is always risky because there is no control over the sale of the product to the ultimate user. For GPI, the risks of subcontracting have been reduced somewhat because it specializes in work that is done by very few firms and because it could begin marketing activities if the current backlog of work disappeared. Nevertheless, subcontracting risks exist. In 1974, in order to reduce the risk of current "product line" and maintain profitable growth, GPI entered the photographic accessory market by introducing a film magazine for adapting Polaroid film to non-Polaroid cameras. The purpose of the product is to extend the advantages of instant photography to expensive, professional grade cameras. This type of adaptation is made possible when the camera has interchangeable, independent film magazines. The resulting Polaroid picture is exactly the same size as the camera's normal negative. Thus the size of the negative must be large enough to produce a useful picture. These cameras with a negative size that is close to the size of Polaroid film packs (approximately 2" x
are known as medium format cameras. There are several medium format cameras, each of which requires a different Polaroid film magazine because each has a different attaching mechanism.

GPI entered this market by introducing a Polaroid film magazine for the Hasselblad camera—the most well-known and widely-owned medium format camera. The decision was based on the following considerations:

1. Its manufacturing capabilities were particularly well suited to producing a top quality Polaroid film magazine that could be priced lower than any competing product.

2. Polaroid's introduction of a film that yielded not only an instant print but also an instant professional quality negative was expected to generate increased interest in Polaroid film magazines on the part of medium format camera owners. The instant negative is produced within 30 seconds without a darkroom. It has extremely high resolution and can be used to make excellent enlargements.

By the end of March, 1975, 325 units had been shipped, and there was a backlog of 75 pieces. The marketing effort has consisted of mailings to photographic dealers and press releases in various photographic publications. (This effort will be described in detail in Chapter 5.

The decision to enter the photographic accessory market and sell Polaroid film magazines for Hasselblad cameras was an important strategic step. It has been a profitable one, because sales have already been high enough to pay for the development
costs and contribute to the profits of the firm. However, several questions need to be answered.

1. What is the maximum profit that can be earned selling Polaroid film magazines for Hasselblad cameras?
2. What marketing strategy will maximize profits?
3. What is the future of GPI in the photographic accessory market?

In the succeeding chapters, we will address these questions.
CHAPTER 3

THE PHOTOGRAPHIC INDUSTRY

To provide a framework in which to analyze the issues facing GPI, we proceed with an analysis of the photographic industry. The intent of this discussion is to describe the structure of the industry, its products, major participant firms, and the nature of manufacturing and marketing activities.

An outline of the industry analysis is below.

I. Groups in the Industry
   1. Manufacturers
   2. Wholesalers
   3. Retailers
   4. Photofinishers
   5. Photographers

II. Polaroid Film Magazine Market

III. Marketing
   1. Methods of Distribution
   2. Advertising
   3. Means of Competition
   4. Barriers to Entry

IV. Production
I. GROUPS IN THE INDUSTRY

The five groups described in this section are the firms and individuals that manufacture, sell and use photographic equipment and supplies. It is important that we characterize these groups because they include GPI's competitors and customers. It is important to keep in mind that the members of each group vary widely in size and field of concentration, but it is necessary to know who they are and what they do to provide background information for GPI's marketing strategy and its future participation in the industry.
1. Manufacturers

The manufacturers in this industry are those firms that produce any equipment or supplies used in the taking or processing of photographs. Thus, in addition to camera manufacturing, we include producers of such items as lighting equipment, projection and dark room equipment, film, chemicals, papers, and an assortment of accessories. Manufacturers can be grouped into producers of still and motion picture equipment, including cameras, projection equipment and accessories; sensitized materials; and chemicals. Table I provides a breakdown of the dollar sales of U.S. manufacturers in each of the above groups.

According to the U.S. Department of Commerce, there were 554 firms classified as manufacturers of photographic equipment and supplies in 1972. They operated 623 plants and employed 94,700 persons.*

The firms vary widely in size. The largest U.S. firms are multi-national and manufacture a broad product line covering more than one of the above categories. Kodak is the largest U.S. manufacturer and accounts for more than half of the total U.S. photographic production, producing still and motion picture cameras, projection equipment, film, chemicals, and darkroom equipment. Polaroid and GAF are the only other U.S.

* The U.S. Department of Commerce includes manufacturers of photocopying and microfilming equipment in this category.
### TABLE 1

VALUE OF PHOTOGRAPHIC MERCHANDISE SHIPPED BY UNITED STATES MANUFACTURERS

At Manufacturers Price Level<sup>(1)</sup> In Millions Of Dollars

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Sales Of</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photographic Equipment</td>
<td>3,975</td>
<td>3,640</td>
<td>3,275</td>
<td>2,958</td>
<td>2,894</td>
</tr>
<tr>
<td>And Supplies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Still Picture Equipment, Except Film</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>620</td>
<td>550</td>
<td>460</td>
<td>447</td>
<td>450</td>
</tr>
<tr>
<td><strong>Motion Picture Equipment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>195</td>
<td>180</td>
<td>160</td>
<td>152</td>
<td>175</td>
</tr>
<tr>
<td><strong>Sensitized Material</strong></td>
<td>2,725</td>
<td>2,500</td>
<td>2,275</td>
<td>2,011</td>
<td>1,930</td>
</tr>
<tr>
<td><strong>Photographic Chemicals</strong></td>
<td>255</td>
<td>240</td>
<td>220</td>
<td>220</td>
<td>245</td>
</tr>
<tr>
<td><strong>Other Photographic Equipment And Supplies</strong></td>
<td>180</td>
<td>170</td>
<td>160</td>
<td>128</td>
<td>94</td>
</tr>
</tbody>
</table>

<sup>(1)</sup> Does not include photo lamps (169 million in 1972) and lenses sold separately for photographic applications (22 million in 1972).
TABLE I (continued)

U.S. PHOTOGRAPHIC INDUSTRY - HOW IT IS DIVIDED*

* Based on Manufacturers' Shipments for 1972 (Department of Commerce), and Including Photolamps and Lenses Sold Separately For Photo Application (in dollars).
firms with over $100 million in manufacturing sales.

The majority of U.S. manufacturers are small firms which produce one or a few products. These firms are a factor in the industry, however, since in many cases they produce a unique, high-quality, single product or specialized piece of equipment that competes effectively with products of large firms.

Still Picture Equipment

Sales of cameras, accessories and other equipment were approximately $1 billion in 1974, or 35 percent of total dollar shipments by U.S. photographic manufacturers. Still picture equipment and accessories accounted for 75 percent of this amount. Table 2 shows the sales in each of the categories that are included in still picture equipment.

The major categories of still picture cameras, according to the size or type of film used, are cartridge loading, 35 mm, medium format, press and view and Polaroid.

Most cameras manufactured in the U.S. are included in the cartridge loading or Polaroid categories and are positioned for less serious amateur photographers. The extent of the U.S. manufacturers' emphasis on this segment of the market is made clear in Table 2 which shows that 13.7 million cameras with an average price of $17.74 accounted for 84 percent of the sales of U.S. produced cameras.
### TABLE 2

**STILL PICTURE EQUIPMENT MANUFACTURERS**

Sales in Millions of Dollars

<table>
<thead>
<tr>
<th></th>
<th>1972</th>
<th>1967</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SALES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1972</strong></td>
<td></td>
<td><strong>1967</strong></td>
</tr>
<tr>
<td><strong>Cameras</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$&lt;$ 30</td>
<td>120 [9.8 million camera]</td>
<td>138 [10.7 million camera]</td>
</tr>
<tr>
<td>$&gt;$ 30</td>
<td>123 [3.9 million camera]</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>46</td>
<td>71</td>
</tr>
<tr>
<td><strong>Flash Attachments</strong></td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td><strong>Projectors</strong></td>
<td>89</td>
<td>68</td>
</tr>
<tr>
<td><strong>Film Processing Equipment</strong></td>
<td>111</td>
<td>88</td>
</tr>
<tr>
<td><strong>Accessories, Miscellaneous</strong></td>
<td>111</td>
<td>105</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>611</td>
<td>479</td>
</tr>
</tbody>
</table>
The market for more expensive cameras in the United States is dominated by foreign manufacturers. In fact, every major 35 mm and medium format camera is produced outside the United States. Even those U.S. manufacturers who sell this type of camera manufacture abroad. Most of these cameras came from Japan, which has 84 percent of the market for imported cameras costing over $10. The next largest importer is West Germany with 6 percent, followed by the United Kingdom with 3 percent and Sweden with 1.8 percent. Most manufacturers of high quality cameras also produce or sell a full line of accessories, including lenses, flash units, viewfinders, film magazines and other attachments used with their cameras. A reputation for quality craftsmanship and superior technical content is of great importance to photographers.

Motion Picture Equipment

Motion picture equipment, with sales of $200 million, consists primarily of cameras and related film processing and projection equipment. Most producers of movie cameras also produce still cameras and a line of general camera accessories.

An important reason for this is that the two have similar distribution channels. Furthermore, the technology involved in the design and manufacture of movie cameras is, in many respects, the same as that of still cameras.
Film, Paper And Chemicals

In contrast to the equipment market, the U.S. manufacturers have 94 percent of the U.S. film and sensitized material market. In 1972 we imported $138 million of these products while domestic manufacturers had sales at $2,275 million, including exports of $298 million. Among the four major film producers, Kodak, Polaroid and GAF are also engaged in the production of cameras while the fourth--Agfa--is engaged only in the production of film and photographic papers.
2. Photographic Wholesalers*

Photographic equipment and supplies are sold at the wholesale level by distributors, manufacturers representatives and manufacturers. The largest U.S. wholesalers are listed in Table 3. Most of them represent one or more foreign manufacturers and sell a full line of cameras and accessories. Only Kodak, Polaroid, GAF and Bell & Howell and Berkey Photo sell substantial amounts of U.S. manufactured equipment.

* Wholesalers refers to firms who sell to photographic dealers and other retailers, rather than those who sell equipment and supplies at wholesale prices to professional or industrial photographers.
<table>
<thead>
<tr>
<th>Company</th>
<th>U.S. Sales of Equipment</th>
<th>Total U.S. Sales of Equipment and Film</th>
<th>Total Sales (Worldwide)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPOI</td>
<td>75</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>Bell &amp; Howell</td>
<td>53</td>
<td>-</td>
<td>425</td>
</tr>
<tr>
<td>Berkey</td>
<td>37</td>
<td>-</td>
<td>187</td>
</tr>
<tr>
<td>A I C</td>
<td>14</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>GAF</td>
<td>-</td>
<td>219</td>
<td>850</td>
</tr>
<tr>
<td>Honeywell</td>
<td>-</td>
<td>50</td>
<td>-</td>
</tr>
<tr>
<td>Kodak</td>
<td>-</td>
<td>2,694</td>
<td>4,500</td>
</tr>
<tr>
<td>Interphoto</td>
<td>49</td>
<td>-</td>
<td>90</td>
</tr>
<tr>
<td>E. Leitz</td>
<td>17 - 18</td>
<td>17 - 18</td>
<td>17 - 18</td>
</tr>
<tr>
<td>Paillard</td>
<td>22 - 25</td>
<td>22 - 25</td>
<td>22 - 25</td>
</tr>
<tr>
<td>Fuji</td>
<td>-</td>
<td>85</td>
<td>640</td>
</tr>
<tr>
<td>Hanimex</td>
<td>-</td>
<td>-</td>
<td>27</td>
</tr>
<tr>
<td>Ponder &amp; Best</td>
<td>-</td>
<td>-</td>
<td>60</td>
</tr>
<tr>
<td>Minolta</td>
<td>-</td>
<td>57</td>
<td>-</td>
</tr>
<tr>
<td>Canon</td>
<td>-</td>
<td>-</td>
<td>271</td>
</tr>
<tr>
<td>Rollei</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
3. Photographic Retailers

U.S. Department of Commerce figures indicate that there were 3,342 camera and photography supply stores in the United States in 1972, with total aggregate sales of approximately $693 million. These shops are widely distributed geographically; but, as indicated in Table 4, the areas of heaviest sales are New York, California and Illinois. The shops themselves vary in size and products sold, from the small, local "mom and pop" shop to large chains of stores (e.g., Fox Stanley, Willoughby Peerless) with many employees (See Table 5). Photographic products (especially film) are also retailed in drug and grocery stores and in photographic departments of department and discount stores. Including these outlets, Department of Commerce estimates there are a total of about 12,500 photo dealers in the United States. A group that must also be included as retailers are those manufacturers who sell directly to the public via mail order or other means.

4. Photofinishers

In 1967 there were 1,500 firms with total sales of 685,000 million classified as photofinishers by the U.S. Department of Commerce. Of these firms, 11 percent had sales over one million dollars and accounted for 63 percent of the total industry sales. Several of the largest firms have chains of retail outlets which also sell photographic equipment and supplies (e.g., Pake,
TABLE 4

LARGEST RETAIL PHOTOGRAPHIC MARKETS
IN THE UNITED STATES (1967)

Ten Largest States

<table>
<thead>
<tr>
<th>State</th>
<th>No.</th>
<th>Sales (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>347</td>
<td>73.7</td>
</tr>
<tr>
<td>California</td>
<td>421</td>
<td>72.9</td>
</tr>
<tr>
<td>Illinois</td>
<td>145</td>
<td>37.2</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>147</td>
<td>28.1</td>
</tr>
<tr>
<td>Michigan</td>
<td>97</td>
<td>23.9</td>
</tr>
<tr>
<td>Ohio</td>
<td>127</td>
<td>17.2</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>83</td>
<td>15.8</td>
</tr>
<tr>
<td>New Jersey</td>
<td>106</td>
<td>14.0</td>
</tr>
<tr>
<td>Florida</td>
<td>141</td>
<td>13.7</td>
</tr>
<tr>
<td>Texas</td>
<td>107</td>
<td>13.1</td>
</tr>
</tbody>
</table>

Ten Largest Metropolitan Areas

<table>
<thead>
<tr>
<th>No.</th>
<th>Sales (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York City *</td>
<td>334</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>172</td>
</tr>
<tr>
<td>Chicago **</td>
<td>131</td>
</tr>
<tr>
<td>San Francisco</td>
<td>84</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>78</td>
</tr>
<tr>
<td>Boston</td>
<td>48</td>
</tr>
<tr>
<td>Washington</td>
<td>24</td>
</tr>
<tr>
<td>St. Louis</td>
<td>29</td>
</tr>
<tr>
<td>Detroit</td>
<td>41</td>
</tr>
<tr>
<td>Honolulu</td>
<td>28</td>
</tr>
</tbody>
</table>

* including northeastern New Jersey
** including northwestern Indiana
### TABLE 5

**PHOTOGRAPHIC RETAIL STORES**

<table>
<thead>
<tr>
<th>Sales</th>
<th>No. of Stores With This Size</th>
<th>Total Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 mm*</td>
<td>3</td>
<td>21.0</td>
</tr>
<tr>
<td>2 - 5 mm</td>
<td>7</td>
<td>20.0</td>
</tr>
<tr>
<td>1 - 2 mm</td>
<td>23</td>
<td>33.0</td>
</tr>
<tr>
<td>.5 - 1 mm</td>
<td>103</td>
<td>69.0</td>
</tr>
<tr>
<td>.3 - .5 mm</td>
<td>196</td>
<td>73.0</td>
</tr>
<tr>
<td>.1 - .3 mm</td>
<td>999</td>
<td>167.4</td>
</tr>
<tr>
<td>.05 - .1 mm</td>
<td>686</td>
<td>50.0</td>
</tr>
<tr>
<td>.03 - .05 mm</td>
<td>254</td>
<td>10.2</td>
</tr>
<tr>
<td>.02 - .03 mm</td>
<td>242</td>
<td>5.9</td>
</tr>
<tr>
<td>.01 - .02 mm</td>
<td>143</td>
<td>2.2</td>
</tr>
<tr>
<td>.01 mm</td>
<td>49</td>
<td>.26</td>
</tr>
</tbody>
</table>

**Size of Stores By No. of Employees** **

<table>
<thead>
<tr>
<th>No. of Employees Per Store</th>
<th>No. of Stores With This No. of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>8</td>
</tr>
<tr>
<td>20 - 49</td>
<td>62</td>
</tr>
<tr>
<td>15 - 19</td>
<td>43</td>
</tr>
<tr>
<td>10 - 14</td>
<td>134</td>
</tr>
<tr>
<td>8 - 9</td>
<td>124</td>
</tr>
<tr>
<td>6 - 7</td>
<td>244</td>
</tr>
<tr>
<td>4 - 5</td>
<td>448</td>
</tr>
<tr>
<td>3</td>
<td>379</td>
</tr>
<tr>
<td>2</td>
<td>513</td>
</tr>
<tr>
<td>1</td>
<td>525</td>
</tr>
</tbody>
</table>

* distributing is believed to be the same at present
** for partnership and proprietorship employees only
* millions of dollars
Fotomat, Fox Stanley). These industry statistics do not include major film manufacturers—such as Kodak—that do processing or photo retailers doing small amounts of processing.

5. Photographers

In 1973, there were estimated to be 110,000 professional photographers, including those self-employed and employed full time or part-time by studios, industry and the press.\(^{(1)}\)

In 1967, the U.S. Department of Commerce counted 26,558 photographic studios with sales of 745 million. The Department of Commerce also estimated that by 1974 sales had grown to 1.6 billion and would continue to grow to 2.9 billion by 1980. This projected growth will probably be accompanied by increased equipment needs on the part of professional photographers. This trend is encouraging to GPI and the other manufacturers of equipment for professionals. It also opens the possibility of GPI developing other products aimed at professional photographers.

Besides professional photographers, there are a substantial number of amateurs. In 1973, it was estimated that there were 2.75 million photohobbyists (those for whom photography is a main hobby) and that 67 percent of all households owned at least one still picture camera.\(^{(1)}\)

\(^{(1)}\) These estimates are taken from the 1973-74 Wolfman Report on the Photographic Industry in the United States.
II. POLAROID FILM MAGAZINE MARKET

GPI's greatest concern is with the Polaroid film magazine segment of the accessory market. In this section we discuss these products as a group and then focus on the specific market for Polaroid film magazines for Hasselblad cameras. We pay particular attention to the firms involved and the current state of the market because this information is important in the determination of GPI's marketing strategy.
-31-

Uses

As mentioned previously, the Polaroid film magazine extends the advantages of instant film to medium format cameras. This accessory is valuable to many photographers because they can see the results of the shot immediately. The principle uses of the Polaroid camera back are as follows:

1. Photo composition, lighting, exposure, and color can be instantly verified to assure desired results by taking a test shot with Polaroid film. In the studio with an elaborate and expensive setup or in the field where the photographer may be shooting a unique scene, shortcomings can be discovered in time and proper adjustments made.

2. The Polaroid film magazine can provide a quick check on whether the camera or other equipment are functioning properly.

3. Using the back with Polaroid type 105 positive/negative film, the photographer can instantly obtain a black and white print and a fixable, high resolution negative capable of yielding blowups. The negative is produced without a darkroom. In some types of black and white studio work, it may be economical to shoot an entire session with the 105 positive/negative film. If the photographer wants to catch a particular motion or mood, with positive/negative film he can stop shooting when the desired shot is obtained because the negative can be used to make prints and enlargements. With conventional film the photographer must shoot many times and hope that one is right.
4. The Polaroid camera back is useful as a teaching and demonstration tool because the effects of various photographic techniques and accessories can be quickly demonstrated.

5. There are numerous occasions where another party must approve the intended photograph. The Polaroid back is ideal for showing preliminary results before spending a lot of time and money.

6. The camera back can be used by any photographer simply to take high quality Polaroid pictures. It is useful for this purpose in scientific, law enforcement and medical photographic applications where a Polaroid picture has sufficient quality and speed is important.

Film Types

The camera back uses a number of different film packs, all of which contain eight pictures and are standard items manufactured by Polaroid for use with Polaroid cameras.

1. Type 105 Positive/Negative--provides both a positive print and a high-quality negative without a darkroom. (Cost is $.50 per picture.)

2. Type 107--provides black and white prints. It is a very high-speed film that is ideal for low light conditions. (Cost is $.41 per picture.)

3. Type 108--provides color prints. (Cost is $.60 per picture.)

4. Type 108 Polacolor 2--provides prints with much better color than regular type 108. (Cost is $.65 per picture.)
The four films above all have a picture size of 3-3/4 inches by 2-3/4 inches; since the Hasselblad has a negative size of 2-1/4 inches by 2-1/4 inches, not all the film area is utilized. There are two film Types--87 and 88--which are the same as Types 107 and 108 respectively, except they are smaller and therefore less expensive. If the photographer intends to use only Types 107 and 108, which may be the case if he will only use the back for test shots, he can reduce film costs by using a Polaroid film magazine that accepts Types 87 and 88. (Type 87 costs $.35 per picture and Type 88 costs $.44 per picture.)

Cameras For Which Polaroid Film Magazines Are Available

As mentioned in Chapter 2, for a camera to utilize a Polaroid film magazine, it must satisfy two basic requirements:

1. It must have interchangeable film magazines.

2. The size of the camera's normal negative that is obtained from conventional film must be large enough to be useful as a Polaroid print.

The five cameras that satisfy these two requirements are listed in Table 6. They are all expensive, high quality precision instruments that are sold primarily to professional or serious (and wealthy) photographers. Each of these cameras forms the basis of a photographic "system," which has interchangeable lenses, viewfinders and film magazines and a variety of other accessories. In choosing this type of camera instead of a 35 mm camera, the photographer gains the advantages of a large negative
TABLE 6

MEDIUM FORMAT CAMERA WITH INTERCHANGEABLE FILM MAGAZINES

<table>
<thead>
<tr>
<th>Camera Manufacturer and Model</th>
<th>Country of Manufacture</th>
<th>Sold By</th>
<th>List Price</th>
<th>Price of Basic Lens</th>
<th>Price of 500 * Telephoto Lens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hasselblad 500 c/m</td>
<td>Sweden</td>
<td>Paillard</td>
<td>$1,117.50</td>
<td>$515.00</td>
<td>$1,434.00</td>
</tr>
<tr>
<td>Mamiya RB67</td>
<td>Japan</td>
<td>Bell &amp; Howell</td>
<td>819.00</td>
<td>354.00</td>
<td>729.00</td>
</tr>
<tr>
<td>Bronica EC</td>
<td>Japan</td>
<td>EPOI</td>
<td>851.00</td>
<td>336.00</td>
<td>1,137.00</td>
</tr>
<tr>
<td>Bronica SZA</td>
<td>Japan</td>
<td>EPOI</td>
<td>1,236.00</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Kowa Supper 66</td>
<td>Japan</td>
<td>Berkey Marketing</td>
<td>660.00</td>
<td>194.00</td>
<td>999.00</td>
</tr>
<tr>
<td>Rollei SL.66</td>
<td>W. Germany</td>
<td>Rollei</td>
<td>1,290.00</td>
<td>381.00</td>
<td>1,530.00</td>
</tr>
</tbody>
</table>

* In million of dollars
(used to obtain better enlargements) and the flexability of interchangeable film magazines.

The most popular medium format camera is the Hasselblad. Industry sources estimate that between 40,000 and 50,000 are now in use in the United States. The Hasselblad has an unmatched reputation for quality; in recent years it has received excellent publicity because it was used on every U.S. manned space mission, including those to the moon. Because the Hasselblad is extremely expensive, and becoming more so each year, it does not sell as well as it had in the past. The current sales rate is about 5,000 cameras per year in the United States.
GPI's Competition

A Polaroid film magazine basically consists of a box which holds and develops Polaroid film packs and a plate and latching mechanism which allows the box to be attached to the back of a particular camera. Every manufacturer of Polaroid film magazines uses a standard "box," manufactured by Polaroid for holding and developing the film. There are, however, significant differences in the ways that the various manufacturers of Polaroid backs for the Hasselblad camera have chosen to accomplish the interface between the camera and this "box." The design of the camera itself prevents manufacturers from producing an ideal Polaroid back. Each of the different designs makes some service, either in overall performance or compatibility with other Hasselblad accessories.

The currently available Polaroid film magazines for medium format cameras are listed in Table 7. The Hasselblad camera has attracted the greatest number of manufacturers, each of whom are discussed below.

1. The manufacturer of the camera, Victor Hasselblad Aktiebolag, produces two Polaroid backs—one for film Types 87 and 88 and another for film Types 105, 107 and 108. (The differences between these film types was described earlier.) The camera back for Types 105, 107 and 108 was introduced recently—April, 1975. As of May, less than one hundred pieces had been shipped to United States dealers.
<table>
<thead>
<tr>
<th>Camera</th>
<th>Manufacturer</th>
<th>Sold By</th>
<th>Dealer Price</th>
<th>List Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rollei SL66</td>
<td>Rollei (W. Germany)</td>
<td>Rollei</td>
<td>--</td>
<td>$290.00</td>
</tr>
<tr>
<td>Kowa Super 66</td>
<td>Kowa (Japan)</td>
<td>Berkey Marketing</td>
<td>--</td>
<td>295.00</td>
</tr>
<tr>
<td>Bronica</td>
<td>Bronica (Japan)</td>
<td>EPOI</td>
<td>--</td>
<td>280.00</td>
</tr>
<tr>
<td>Mamiya RB67</td>
<td>Mamiya (Japan)</td>
<td>Bell &amp; Howell/Mamiya Co.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mamiya RB67</td>
<td>BSI (US)</td>
<td>Manufacturer's Representatives</td>
<td>$78.00</td>
<td>115.00</td>
</tr>
<tr>
<td>Hasselblad</td>
<td>Hasselblad (Sweden)</td>
<td>Paillard Inc.</td>
<td>103.00</td>
<td>154.00 (1)</td>
</tr>
<tr>
<td>Hasselblad</td>
<td>Hasselblad (Sweden)</td>
<td>Paillard Inc.</td>
<td>130.00</td>
<td>190.00</td>
</tr>
<tr>
<td>Hasselblad</td>
<td>Arca Swiss (Switzerland)</td>
<td>Bogen Photo</td>
<td>168.00</td>
<td>250.00</td>
</tr>
<tr>
<td>Hasselblad</td>
<td>Optical &amp; Engineering Research (US)</td>
<td>O&amp;ER</td>
<td>99.50</td>
<td>142.00</td>
</tr>
<tr>
<td>Hasselblad</td>
<td>Klinger (US)</td>
<td>Precision Camera</td>
<td>(2)</td>
<td>160.00</td>
</tr>
<tr>
<td>Hasselblad</td>
<td>GPI (US)</td>
<td>GPI</td>
<td>98.00</td>
<td>140.00 (3)</td>
</tr>
<tr>
<td>Hasselblad</td>
<td>GPI (US)</td>
<td>GPI</td>
<td>129.00</td>
<td>190.00</td>
</tr>
</tbody>
</table>

(1) Hasselblad has two models: the less expensive one uses film types 87 and 88, and the other uses film types 105, 107 and 108.

(2) Precision Camera Accessories has no dealer price because it is sold by mail order.

(3) GPI's two models differ in that one is all metal while the other is plastic and metal. It's all metal model is the only one produced.
Paillard, the American distributor of Hasselblad, is a major importer of photographic equipment, including Hasselblad cameras, Bolex motion picture cameras and Topcon 35 mm cameras and all the accessories produced by these three manufacturers. It has total sales of about $22 million.

2. Arca-Swiss is a Swiss manufacturer of a variety of cameras and equipment. For about four years, it was the only firm producing a Polaroid back for the Hasselblad camera. The American distributor for Arca-Swiss is Bogen Photo Corp., a small national distributor of photo equipment with about $4 million in annual sales.

3. Optical & Electronics Research is a small American manufacturer that introduced its back in January, 1975. It manufactures a variety of optical and electronic equipment; the Polaroid film back for Hasselblad is not a major item in its product line. It has been selling its Polaroid back directly to dealers without salesmen.

4. Klinger Fine Mechanics is a small firm which, like GPI, is basically a machine shop. It has formed a marketing subsidiary called Precision Camera Accessories to sell its Polaroid film magazine by mail order.

In a competitive market, a firm's financial strength (liquidity and ability to raise additional capital) is an important resource because it can be used to lower prices or support a major advertising campaign. These actions can
increase market share and possibly force financially weaker
competitions that cannot advertise as much or meet lower prices
out of the market (at which time the price could be raised).
It is therefore useful to have an idea of the relative finan-
cial strengths of the firms discussed above. These firms are
not public operations; so, their financial statements are not
readily available. However, we were able to determine that
the Hasselblad-Paillard and Arca-Swiss-Bogen Photo combina-
tions probably have greater financial resources than GPI. GPI,
although similar in size to Optical & Electronics Research, seems
to be stronger financially. Financial information on Klinger
Fine Mechanics is not available.

GPI believes strongly that its design is the best one of
the five; most photographers or dealers who have seen or used
the GPI back have agreed that it is as good or better than
the others—including the one manufactured by Hasselblad.
However, among those who have not seen the GPI back, there is
generally an expectation that the Hasselblad back is better
than that of GPI.

Current State of the Market

The estimated total U.S. sales of the various manufactur-
ers of Polaroid film magazines are listed on next page:
<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Shipment</th>
<th>Back Order</th>
<th>Date of Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arca-Swiss</td>
<td>2,500</td>
<td></td>
<td>1968</td>
</tr>
<tr>
<td>Hasselblad (for Types 87 &amp; 88 film)</td>
<td>2,500</td>
<td>300</td>
<td>1972</td>
</tr>
<tr>
<td>GPI (two models)</td>
<td>300</td>
<td>125</td>
<td>March, 1974</td>
</tr>
<tr>
<td>Optical &amp; Electronic Research (O&amp;ER)</td>
<td>100</td>
<td></td>
<td>January, 1975</td>
</tr>
<tr>
<td>Klinger Fine Mechanics</td>
<td>100</td>
<td></td>
<td>January, 1975</td>
</tr>
<tr>
<td>Hasselblad (for Types 105, 107 &amp; 108)</td>
<td>100</td>
<td>1,000</td>
<td>April, 1975</td>
</tr>
</tbody>
</table>

The table shows that Hasselblad built up a backlog immediately upon announcing its new Polaroid film back. There is, however, apparently some probability that these initial orders may not be filled for a long time. In the case of the Polaroid film back that Hasselblad produces for Type 87 and 88 film, a back order of this size existed for well over a year and has still not been eliminated. Furthermore, the introduction of the new model was one year later than originally promised by Hasselblad.

Bogen Photo has not been actively selling the Arca-Swiss back, apparently because its price is so much higher than the others. A year ago it had advertisements in publications aimed at professional photographers, but this has now stopped.

The other two smaller firms--Klinger and O&ER--do not have salesmen calling on dealers. Klinger's sales effort has been concentrated on small space advertisements (1/6 page) that solicit mail orders from photographers. O&ER had one
direct mail advertisement that introduced its back to photo dealers and has also had some small (1/6 page) ads in trade publications that are intended to generate awareness among photographers.
III. MARKETING IN THE PHOTOGRAPHIC INDUSTRY

1. Distribution Channels

There are five basic distribution channels open to manufacturers in the photographic industry.

1. Selling directly to the public via mail order.
2. Selling to dealers by means of company salesmen.
3. Selling to a single distributor of a number of separate products.
4. Selling to dealer with a manufacturers' representative.
5. Selling directly to a number of photographic dealers without salesmen.

The advantages and disadvantages of each for manufacturers are discussed below. It is important that we understand the various distribution methods because one of them must become an important aspect of the marketing strategy that GPI selects.

1. Selling directly to the photographer via mail order: In this method of distribution, the consumer is made aware of the product through direct mail or space advertising. The main advantage of this method is that the manufacturer receives the full retail price of the product. In addition, there is neither a sales staff nor an investment in receivables because full payment is enclosed with the order. However, significant advertising and mailing costs can be incurred in reaching prospective customers. There are also extra administrative and handling costs incurred
in servicing individual retail customers instead of dealers. The attractiveness of mail order selling is also limited because there are many photographers who won't see the advertisement. An even larger number will not buy anything through the mail because there is no opportunity to see the equipment before purchasing and because mail order firms do not easily provide service support to their customers.

The remaining distribution options all utilize photographic dealers. There are three important advantages in having dealers, as compared to mail order selling.

1. The photographer has the opportunity to see, handle and, in many cases, use the product before purchasing.

2. There is personal contact between the photographer and the salesman. The dealer will often know the customer and his needs and buying habits.

3. The dealers offer repair and maintenance services.

2. Company salesmen selling to dealer: In order to economically justify the employment of its own salesmen, the manufacturer must have a high sales volume or many products to sell. The manufacturer does, however, gain complete control over the sales effort and achieves a closer customer contact. Their own salesmen are better able to sell the products because they become experts on the specific products and their markets and concentrate their efforts on the sale of these products.
3. Selling to a distributor: A distributor is primarily a marketing company; its most important assets are its sales force and marketing experience. It also performs these services for the manufacturer:

   a. Bears the credit risks associated with selling to many photographic dealers.

   b. Processes orders from the dealers.

   c. Buys in large quantities and carries an inventory.

Manufacturers of photographic products pay an average commission of 15 percent to distributors. The actual cost is negotiable and depends on the distributor's reputation, the type of product and the quantities involved. Negotiations also determine the responsibilities for advertising and promotional costs and performance guarantees on both sides.

A firm must find a distributor that will devote proper attention to its products, because the manufacturer loses control over the marketing function and has only limited contact with dealers and users.

An agreement with a distributor usually has a minimum duration; even if a manufacturer has the option to terminate its relationship with a distributor, it can be extremely damaging to small manufacturers if it has to go through six months or a year without adequate sales representation.

4. Selling through manufacturers' representatives: The manufacturers' representative is an individual or firm whose function
is to write orders on behalf of a manufacturer. In this photographic industry, the usual cost of this service is a 7 to 10 percent commission. A representative serves the same basic function as a distributor, but does not buy and sell on his own account; so the manufacturer retains responsibility for credit analysis, collections and order processing. As was the case with a distributor, a firm loses control over the marketing effort when it has a representative and must be careful to choose one with a compatible product line.

5. Selling to dealers without salesmen: There are several techniques for selling to dealers without salesmen:

a. Mailings to dealers.

b. Advertisements in dealer publications.

c. Participation in trade exhibitions, which allows contact with many dealers in a short period.

The main advantage in not having salesmen is the savings in commission costs. The biggest disadvantage is, of course, in having to sell without the benefits of personal contact with buyers. In addition, when a firm has no personal contact with customers, its understanding of the market and ability to detect and react to changes in the market is limited.

2. Advertising

Manufacturers and wholesalers use advertising to reach both photographers and photodealers. Unless the manufacturer
is selling via mail order, the advertising aimed at photographers is intended to generate awareness and interest. Manufacturers do not have control over dealers, who almost always sell several brands of most types of equipment, so advertising is one of the few ways to encourage photographers to ask for a particular brand. The various types of advertising are described below:

1. **Space advertising**: Table 8 gives the costs of advertising in various trade publications. There are four types of publications:

   - Type A: Dealer publications.
   - Type B: Periodicals primarily for amateurs.
   - Type C: Periodicals primarily for professionals.
   - Type D: Periodicals primarily for a particular type of photographer.

2. **Direct Mail Advertising**: Direct mail can be used to solicit mail orders or generate interest and awareness. The total expense consists of postage costs, preparation costs (including printing and stuffing) and the cost of obtaining a mailing list. The costs vary accordingly with the class of mail used and number of pieces mailed. GPI has sent three mailings to photographic dealers at an average total cost of $350 each.

3. **Trade shows**: Dealers and photographers each have trade shows (although there are more for photographers than for dealers). Exhibiting in a major national show costs a minimum of $2,000 including the expense of manning the exhibit. Large manufactur-
TABLE 8

INDUSTRY PUBLICATIONS AND THEIR ADVERTISING RATES

<table>
<thead>
<tr>
<th>Publications</th>
<th>Type</th>
<th>1 Page</th>
<th>1/3 Page</th>
<th>1/6 Page</th>
<th>Circulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo Weekly</td>
<td>A</td>
<td>996</td>
<td>358</td>
<td>225</td>
<td>12,000 (non-paid)</td>
</tr>
<tr>
<td></td>
<td>1 time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 times</td>
<td>869</td>
<td>322</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td>Photo Trade News</td>
<td>A</td>
<td>920</td>
<td>380</td>
<td>230</td>
<td>12,000</td>
</tr>
<tr>
<td></td>
<td>1 time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 times</td>
<td>770</td>
<td>310</td>
<td>195</td>
<td></td>
</tr>
<tr>
<td>Photo Marketing</td>
<td>A</td>
<td>777</td>
<td>321</td>
<td>164</td>
<td>10,000 (est)</td>
</tr>
<tr>
<td></td>
<td>1 time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 times</td>
<td>646</td>
<td>264</td>
<td>134</td>
<td></td>
</tr>
<tr>
<td>Modern Photography</td>
<td>B</td>
<td>8,065</td>
<td>2,870</td>
<td>1,578</td>
<td>100,000 (est)</td>
</tr>
<tr>
<td></td>
<td>1 time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 times</td>
<td>6,010</td>
<td>2,192</td>
<td>1,155</td>
<td></td>
</tr>
<tr>
<td>Rangefinder</td>
<td>C</td>
<td>1,180</td>
<td>590</td>
<td>390</td>
<td>40,000 (35% paid)</td>
</tr>
<tr>
<td></td>
<td>1 time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 times</td>
<td>945</td>
<td>475</td>
<td>315</td>
<td></td>
</tr>
<tr>
<td>Photo Methods</td>
<td>C</td>
<td>2,245</td>
<td>875</td>
<td>490</td>
<td>$50,000 (5% paid)</td>
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<tr>
<td></td>
<td>1 time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 times</td>
<td>1,730</td>
<td>710</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>Biomedical Communications</td>
<td>D</td>
<td>950</td>
<td>400</td>
<td>210</td>
<td>22,000</td>
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<tr>
<td></td>
<td>1 time</td>
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<tr>
<td></td>
<td>12 times</td>
<td>770</td>
<td>320</td>
<td>175</td>
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<tr>
<td>Law Enforcement Communication</td>
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<td>880</td>
<td>375</td>
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<tr>
<td></td>
<td>12 times</td>
<td>715</td>
<td>195</td>
<td>165</td>
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</tbody>
</table>
ers and distributors have elaborate exhibits, staffed by as many as 10 to 20 persons at once (more for Kodak)!

3. Modes of Competition

There are two levels of competition in the industry, at the manufacturer and wholesaler level, and among the retailers.

Manufacturers and wholesalers compete in two ways—generating interest among photographers and selling directly to the dealers. They generate interest among photographers by advertising in photographic journals and by participating in various exhibitions and demonstrations. In addressing photographers, equipment manufacturers attempt to sell experience in the industry, quality of workmanship and particular technical features and accessories. Frequently, in order to emphasize the wide range of available accessories, advertisements include a picture of the entire photographic "system," showing the camera(s) and every accessory available. It is important to note that manufacturers do not usually compete on the basis of price because they have little control over the ultimate selling price.

In approaching dealers, manufacturers and wholesalers are selling, rather than generating interest and awareness. Since most equipment and supplies are sold by salesmen who call on the dealers, an important sense of competitive strength is an effective sales force. Companies also compete by offering special promotions and deals to the retailers and emphasizing the amount of support that they give to the dealer. Support of the
dealer includes in-store demonstrations by a representative of
the manufacturer or wholesaler, national advertising, and point
of sale display devices.

Among retailers the competition is primarily based on
price. To a large extent, photo dealers are selling the same
products, and the easiest way for a dealer to differentiate him-
self is to offer lower prices. They also attempt to differenti-
ate themselves by stocking a large variety of cameras and
accessories (which requires a large inventory investment) and by
emphasizing their service capabilities.

The problem of price competition among photo dealers is
frequently discussed in trade publications. There is continued
downward pressure on prices from mail order firms and discount
department stores. Prices are also held down because the markets
for the most popular cameras in large metropolitan areas are
almost a form of perfect competition; there are many buyers
and sellers and it is easy for all parties to know everyone else's
prices.

4. Barriers to Entry

GPI must overcome several important barriers, described
below, in order to establish itself as a manufacturer of photo-
graphic accessories. In the specific market for Polaroid film
magazines for Hasselblad cameras, these barriers work to protect
Hasselblad and its American distributor, Paillard Inc.
1. Manufacturers need a reputation for quality workmanship and experience, which can only be gained over a period of time. Hasselblad's international reputation as the world's finest maker of medium format cameras will automatically transfer to its own Polaroid film magazine.

2. In order to compete, GPI must incur the relatively large fixed costs of advertising which can only be supported by a large product line. Paillard, in addition to marketing the Hasselblad and its vast array of accessories, also sells a line of motion picture cameras and a line of 35 mm cameras which allows it to take maximum advantage of quantity discounts in advertising rates and amortize the cost of trade shows over more than product line.

3. A large product line also allows Hasselblad to exercise greater control over its distributor and probably negotiate a better agreement with Paillard than could GPI.
CHAPTER 4
DESCRIPTION OF THE MODEL

The potential profit to be earned from the sales of Polaroid film magazines for Hasselblad cameras equals the total sales revenue less production and marketing costs. Cost information is obtainable from the firm and from the industry analysis. Total sales revenue depends on marketing strategy and other factors—such as the general economy and competition. Marketing strategy includes decision variables—such as price, method of distribution and the amount and type of advertising and promotion.

Practically, it is difficult to measure the sales response to all of the factors listed above; so, we propose a simple model which considers the response to price and the method of distribution:

1. Total Sales Revenue = \( \sum_{i} (\text{price} \times \text{number of units sold}_i) \)

   \( i \) denotes various segments of the market, such as commercial, portrait, industrial and serious amateur photographers. The total sales revenue equals the sum of revenues in each segment.

2. Number of Units Sold\(_i\) = number of Hasselblad owners\(_i\) \times \%\text{BUY}

   \%\text{BUY} is the percentage of Hasselblad owners that buy a GPI Polaroid film magazine.

3. \( \%\text{BUY}_i = \%\text{BUY}_i / (\text{AWARE \& RECEPTIVE})_i \times \%\text{(AWARE \& RECEPTIVE)} \)
4. $\% (\text{AWARE} \& \text{RECEPTIVE}) = \% \text{AWARE} \times \% \text{RECEPTIVE}$

$\% \text{AWARE}$ is the percentage of Hasselblad camera owners that know of the availability of GPI film magazines.

$\% \text{RECEPTIVE}$ is the percentage of Hasselblad owners, not owning a Polaroid film magazine, who will purchase one (not necessarily the GPI film magazine).

$\% (\text{AWARE} \& \text{RECEPTIVE})$ is the percentage of Hasselblad owners that are aware of the GPI back and also will buy some type of Polaroid film magazine.

$\% \text{BUY/} (\text{AWARE} \& \text{RECEPTIVE})$ is the percentage of Hasselblad owners that will buy a GPI back, given that they are aware of the GPI back and will buy some type of Polaroid film magazine.

**FIGURE 1**

SCHEMATIC OF VARIOUS PERCENTAGES

REFERENCED IN THE MODEL DESCRIPTION

$\% (\text{AWARE} \& \text{RECEPTIVE}) = \% \text{BUY/}(\text{AWARE} \& \text{RECEPTIVE}) + \% \text{NOT BUY/}(\text{AWARE} \& \text{RECEPTIVE})$
The entire box represents all Hasselblad owners.

In order to use this model, for each type of Hasselblad photographer, we must measure:

a.) %AWARE
b.) %RECEPTIVE
c.) %BUY/(AWARE & RECEPTIVE).
Estimating %AWARE

In order to estimate %AWARE, we make the important assumption that the method of distribution chosen to sell the GPI Polaroid film magazine is the prime determinant of %AWARE. We temporarily ignore other factors which influence %AWARE, such as advertising and the number of units already in use.

GPI has a choice between four methods of distribution:

1. Sell to photographic dealers without salesmen by means of mailings, advertisements, and photographic trade shows.
2. Selling to photographic dealers by means of manufacturers representatives.
3. Selling to one distributor who sells to photographic dealers.
4. Selling directly to photographers through mail order.

All of the first three alternatives above use a photographer dealer, and we assume that for these methods, %AWARE is closely related to the percentage of dealers who sell the GPI Polaroid film magazines. Therefore, we assume the %AWARE equals the percent of photo dealers that will sell GPI film magazines under each method of distribution. Since photo dealers vary widely in their size and type of customers, we must weight each dealer according to the number of photographers who buy Hasselblad equipment from him.

The first method above (selling to photo dealers without salesmen) is the one currently used by GPI; so, its effective-
ness in attracting dealers is known by experience.

The second and third alternatives are identical in employing salesmen to contact photo dealers; they differ in the cost to the manufacturer. In order to measure the effectiveness of these two methods, we proposed to simulate the operations of a distributor or manufacturers' representative by acting as salesman and calling on photographic dealers in a test area.

For the mail order method of distribution, the %AWARE is determined by the particular advertising campaign that is undertaken. In the industry analysis, we investigated the cost of various types of advertising in order to understand the cost effectiveness of various mail order advertising strategies.

Problems in Measuring %AWARE

a.) Our model assumes that %AWARE depends only on the method of distribution. This is, of course, simplistic since the manufacturer can also influence awareness with advertising and promotional activities.

b.) For the methods of distribution which involve photo dealers, we propose to estimate %AWARE by counting the number of dealers who will sell GPI film backs and weight them according to the number of photographers that buy Hasselblad equipment from each. Some problems with this measurement are:
1. The percent of dealers who buy will tend to be less than the percent of customers contacted because many camera owners frequent more than one dealer.

2. It is important to accurately determine the number of photographers who buy Hasselblad equipment from each dealer, so we must subjectively estimate this information.

c.) We also assume that we (the authors) can reasonably simulate the efforts of a professional salesman. Obviously, we lack selling experience and knowledge of the buying habits of photodealers. In addition, we will see each dealer only once, which will tend to decrease our effectiveness because regardless of our experience it may frequently take more than one salescall to convince a new dealer to sell the GPI film back.
Measuring %BUY/AWARE & RECEPTIVE

In order to measure the percentage of Hasselblad owners that will buy a GPI Polaroid film magazine, given awareness and an intention to buy some back, we propose to conduct interviews of Hasselblad owners. An outline of the planned interview is given in Table 9. The various sections of the interview were intended to accomplish the following.

Part 1: In introducing ourselves, in order to create a relaxed and informal atmosphere, we planned to make it clear that we were not selling anything and merely wanted his opinion as an experienced professional photographer.

Part 2: This section was included to determine the relative popularity of the various medium format cameras.

Part 3: Here, we determine the type of photographer (commercial, industrial, etc.) and add to our understanding of photographer awareness of Polaroid film magazines and their uses.

Part 4: The demonstration of the product was intended to simulate the sales effort of a photo dealer because three of the four proposed methods of distribution used dealers.

Part 5: This section was designed to measure %BUY/(AWARE & RECEPTIVE) and its sensitivity to price and competition from Hasselblad because it is by far the strongest competitor.

Part 6: These questions were intended to add to our understanding of photographers' buying habits, especially with regard to mail order purchasing.
TABLE 9
Outline of Interviews of Camera Owners

1. **Introduction:** "We are the manufacturers of a new photographic accessory and would like to show it to you and ask your opinion about it. We're not attempting to sell the product to you."

2. **Does he own a Hasselblad camera?**
   
   If yes, proceed to next question.
   
   If no, does he own any medium format camera, and does he use a Polaroid film magazine with it?
   
   (End Of Interview)

3. **Background Questions:** Does the photographer own a Polaroid back for the Hasselblad?
   
   If yes, (1) What model?
   (2) How does he like it?
   (3) Where was it purchased?
   (4) What price?
   (5) What are models he has heard of?
   (6) How does he use it?

   If no, (1) What models has he heard of?
   (2) How would he use it if he had one?
   (3) If there is no interest, suggest possible applications.

4. **Show Product:** Let him hold it and see it attached to the camera. Discuss technical features and film types.

5. **Obtain demand information:** Without mentioning competitors, ask in this order:
-59-

**TABLE 9 (continued)**

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>a. Would he pay $150 for the GPI back?</td>
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<tr>
<td>(If not) b. Would he pay $130?</td>
<td></td>
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<tr>
<td>(If not) c. Would he pay $110?</td>
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<tr>
<td>(If not) d. Would he pay $90?</td>
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</tbody>
</table>

Describe the new Polaroid film magazine to be manufactured by Hasselblad for distribution by Paillard. Mention the film types and glass in window. Ask demand questions again.

6. **Obtain other information about buying habits:**

   (1) How many dealers does he use?
   (2) What professional periodicals does he read?
   (3) What discount from list does he expect?
   (4) Would he consider buying this type of equipment through the mail? Why or why not?
Estimating %RECEPTIVE

In order to estimate %RECEPTIVE, we shall contact photographic dealers and ask them:

1. Among their customers, who own a Hasselblad, what percentage will ultimately own a Polaroid film magazine?

2. Among their customers who own a Hasselblad, what percentage already own a Polaroid film magazine?

3. What type of photographers are their Hasselblad customers?

%RECEPTIVE is actually the difference between the percentage that will ultimately own a Polaroid film magazine and the percentage that already own one.

The dealers contacted will be those that are already active sellers of GPI backs and have reordered from GPI at least once. This will ensure that they have some familiarity with the market and are relatively active sellers of Hasselblad cameras and accessories.
CHAPTER 5
RESULTS OF RESEARCH

1. Measuring %AWARE

As stated in Chapter 4, we assume that %AWARE is primarily a function of the number of dealers who will sell the GPI backs. In turn, the success that a manufacturer will have in selling to dealers depends on his method of communicating the existence and quality of his product. Thus %AWARE is ultimately dependent on whether or not manufacturers use salesmen to contact dealers.

GPI currently sells to dealers without salesmen by means of direct mail and space advertising. In April, 1975, it also participated in a major dealer trade show. In order to determine %AWARE for this distribution method, we analyze the results of its sales efforts to date.

GPI has sold to 133 photographic dealers since introducing its Polaroid film magazine in March, 1974. One hundred of these dealers ordered in response to direct mail advertising from GPI. There have been three mailings. The first brought orders from 67 dealers. The second and third yielded orders from 18 and 15 new dealers respectively. The mailing list includes 1,200 dealers.

In analyzing these results, we do not know which dealers are active sellers of Hasselblad equipment. We do know, however, that only 400 U.S. photo dealers sell Hasselblad equipment regularly. Judging from reorders by the GPI dealers,
about 50 of them are active Hasselblad dealers. If GPI has sold to 50 or 12-1/2 percent of the 400 active dealers, then we estimate %AWARE to be between 10 percent and 15 percent.

For the two methods of distribution which utilize salesmen to contact photo dealers, we measured %AWARE by acting as salesmen. We made 18 sales calls to dealers in New York City and Philadelphia.

The results were as follows:

A. Nine of the 18 dealers purchased one or more camera backs, either on the spot or shortly thereafter.

B. One Hasselblad dealer expressed a strong interest in the product but wanted to consult with the chief salesman, who was not present.

C. One Hasselblad dealer stated strongly that he would never purchase an accessory for a Hasselblad camera from another manufacturer if Hasselblad made the same accessory.

D. Three were not Hasselblad dealers and did not sell Hasselblad cameras but who occasionally sold Hasselblad accessories. These dealers were interested in the product and took the literature.

E. Four dealers stated that they sold very few Hasselblad cameras or accessories, thus they had little interest in the GPI back. However, they did take the literature.
The results above indicate that if a salesman calls on photographic dealers, at least 50 percent of them can be expected to sell the GPI back and that, therefore, %AWARE would not be less than 50 percent. However, based on our conversations with the dealer, those dealers in categories D & E, above, who do not purchase would have very little effect on Hasselblad owners' overall awareness of the GPI film magazine.

Therefore, we feel it is not unreasonable to raise %AWARE to the range of 65 percent to 85 percent.

2. Results of the Interviews of Photographers

We conducted interviews of 30 photographers by visiting commercial photographic studios, most of which were located in one small area of Boston.

The information obtained from the interviews of photographers is presented below:

1. Of 30 photographers, the ownership of medium format cameras with interchangeable backs were:

   Hasselblad....... 17
   Mamiya RB67....... 5
   Bronica............ 3
   Rollei SL66....... 1
   None.............. 4

2. Of the 17 Hasselblad owners, six owned an Arca-Swiss Polaroid film magazine for which they all paid over $200. One of them owned a GPI Polaroid film magazine.
The photographers who owned Polaroid film magazines were using them for two main purposes: to test lighting and exposure and to give customers a quick preview of the final photograph(s).

The photographers who owned an Arca-Swiss back had all purchased them during the period when it was the only one available. Most said that it was adequate for their needs but agreed that the GPI back seemed as good or better than it.

The awareness of the various types of Polaroid film magazines for the Hasselblad was limited. Most had heard of the Arca-Swiss (or had purchased it) and the older back made by Hasselblad for Type 87 and 88 film, but were not familiar with the new back being made by Hasselblad or the other five backs. Some had seen an advertisement or announcement by another manufacturer but could not remember the name of the firm.

3. In speaking to the ten Hasselblad owners who did not own Polaroid backs, we obtained the following demand information:

a.) Four photographers would pay $150 for a GPI back.

b.) One photographer would pay $130 for a GPI back.

c.) Three photographers would not buy any Polaroid back.

d.) Two photographers provided no demand information.

This information does not reliably provide an estimate of %BUY/(AWARE & RECEPTIVE), either for all Hasselblad owners or for commercial photographers. The problems with it are as follows:
a.) The sample size (eight) is much too small to allow any statistically valid conclusions.

b.) We arrived unknown to the photographer, presented a new product from an unknown manufacturer and expected a decision with regard to an investment within 15 or 30 minutes. This process is not close enough to the normal purchase procedure for reliable results.

c.) Our own inexperience and method of interviewing reduced the comparability of the interviews.

d.) We did not succeed in making the photographers properly aware of the Hasselblad product. They were able to see and use the GPI back, but we did not even have literature on the Hasselblad back. Therefore, in most interviews, the Hasselblad back was not seriously considered as an alternative to the GPI back.

We can, however, draw one general conclusion from the demand information above. The response to the GPI back was more positive than negative, and does not rule out the possibility of a sizeable market existing for the GPI back. Three of the four who said they would buy were genuinely interested and offered to buy one from us.

4. In our interviews, we learned the following about photographers' buying habits:
a.) Most professionals frequent one particular dealer. They receive a professional discount from their dealers but are not concerned about it. They know their dealer allows them a discount and most of them do not shop around trying to find a lower price.

b.) All but one photographer said he would not consider buying a Polaroid film magazine through the mail. Some said this was especially true when the equipment was new to the market and not widely used.

c.) We could not identify any clear trend in trade periodical readership habits. Almost every major photographic periodical was mentioned with equal frequency.

In the interviews, we successfully created a relaxed and informal atmosphere, in which most photographers were easier to speak with and see the GPI back. Several of them mentioned ideas for new photographic accessories. This atmosphere, however, created a problem because it tended to reduce our control over the interviews and make it difficult to proceed with other questions as originally planned. This reduced the comparability of the interviews and caused them to last longer than we planned.

Improvements in our interviewing technique are possible. In particular, appointments should be arranged in advance to assure undivided attention to the interview. It should be made obvious that it is a formal interview, rather than an informal
conversation. The interview should be structured, quick and to the point.

After conducting these interviews, we have come to the conclusion that they are not a reasonable way to determine %BUY/(AWARE & RECEPTIVE). One difficulty is in finding a large enough, random sample of Hasselblad owners in each of the several categories of photographers. Furthermore, our interviews took a total of 30 manhours to complete. Even an independent marketing research would find it difficult, within reasonable cost constraints, to find and interview 50 Hasselblad owners who: 1) did not already own a Polaroid back; 2) were interested in purchasing one (i.e., receptive); and 3) were evenly distributed across the photographer categories. We conclude that there is no reasonable way for GPI to use interviews to estimate purchase probability because the expense of hiring an independent firm to perform such interviews would not be justified.

3. Estimation of %RECEPTIVE

We contacted eight active GPI dealers by telephone in order to determine %RECEPTIVE. Summarizing their responses, they believe:

1) 25 percent of their Hasselblad customers already own a Polaroid film magazine.

2) 60 percent of their Hasselblad customers will ultimately own a Polaroid film magazine.
Thus the percentage that will buy a Polaroid film magazine in the future (%RECEPTIVE) is 35 percent.

The information obtained from these dealers poses one problem. They estimate that 25 percent of the owners already own a Polaroid film magazine. Since 5,000 Polaroid backs have been sold so far, this means the total number of potential customers is 20,000. However, another reliable source estimated that there were 45,000 Hasselblads in use in the United States. This discrepancy is only partially explained by multiple ownership of cameras. We feel 45,000 cameras in use is a more reliable estimate, which means 5,000 out of 45,000 (or 11 percent) of the camera owners already have a Polaroid back. Since the dealers seem to have overestimated this figure by a factor of two, we will assume they may also have overestimated the percent of ultimate ownership by the same factor. Thus we will bound %RECEPTIVE by the range 19 percent to 35 percent. To facilitate later computations, we raise the lower bound to 20 percent.

4. Estimating %BUY/AWARE & RECEPTIVE

%BUY/(AWARE & RECEPTIVE) is the probability that a Hasselblad owner will buy a GPI back, given that he knows about it and is going to buy some Polaroid back. Since we assume that the dealer is a key determinant of awareness, the selection
process takes place at the dealer's shop, where the photographer has the opportunity to see and handle the GPI back. The chief competition to the GPI back in this situation is the new back manufactured by Hasselblad that uses film Type 105, 107 and 108. The selection depends primarily on price and quality. The GPI back has a list price of $140, $40 less than the list price of the one manufactured by Hasselblad. We also know from our interviews of photographers and contact with dealers that the GPI back is perceived by those who have seen it as being equal to or better in quality than the Hasselblad back. In addition, dealers who have already invested $100 to purchase the GPI back will help sell it.

We presented these results to the management of GPI. After several discussions, their consensus opinion was that 20 percent at a minimum and probably not more than 50 percent of the receptive and aware population would choose the GPI back over alternatives.

It should be noted here that we were not able to collect data on the ideal, segment by segment basis suggested by the model in Chapter 4. This was due to the inability of our data sources to effectively distinguish between the characteristics of the segments. However, in our interviews with dealers we found they generally did not see significant differences between groups, so we feel our approach is reasonable.
CHAPTER 6

ANALYSIS OF RESULTS

Controllable variables in the marketing strategy are method of distribution, prices and advertising. In this chapter, using our model, we calculate the contribution to gross margin of the proposed methods of distribution and select one. The pricing and advertising policies are then discussed and the entire marketing strategy is related to production constraints.

Review of Results of Preceding Chapters

Estimates of the values (determined previously) of the variables used in the model are:

Number of Hasselblad cameras in the United States............... 45,000(1)

Number already owning Polaroid film magazines..................... 5,000(2)

%AWARE: selling to dealers without salesmen..................... 12.5%(3)

%AWARE: selling to dealers with salesmen.......................... 75%(4)

Range of %RECEPTIVE.....................................20%-35%(5)

Range of %BUY/(AWARE & RECEPTIVE)........20%-50%(6)

(1) See page 35  
(2) See page 35  
(3) See page 62  
(4) See page 63  
(5) See page 68  
(6) See page 69
Selection of a Distribution Method

The decision to use a distributor or manufacturer's representative to sell will be only dependent on cost differences if we assume each method is equally effective. This assumption is reasonable since in each situation selling is done by salesmen of equivalent skill and knowledge of the market in direct contact with the dealers. The distributor's commission for selling of a single GPI camera back is $15, and there are no other costs to GPI.

The manufacturer's representative's commission is $8 per camera back. Added costs to GPI, however, are the costs of credit analysis, order processing, billing, packaging and handling which GPI estimates to be approximately $2 per camera back. The total costs of the manufacturer's representative is thus $10 per camera back. On this basis, the distributor as a method of selling to dealers is eliminated.

Interviews of photographers who own Hasselblads indicated that only one of eighteen would consider purchasing anything by mail order, especially if the product is new and unknown.

The increased price obtained by selling via mail order is not high enough to compensate for the small number of photographers who are receptive to purchase through the mail. On this basis, mail order is also eliminated from consideration as a method of selling.
At this point, we also mention that company salesmen were not considered as an alternative because we estimate that the cost of having even one salesman would easily exceed $50,000 for salary, commission and traveling expense and therefore would not be reasonable for a product whose sales could not possibly be more than $250,000 (due to production constraints).

The methods of distribution which remain possible as components of GPI's marketing strategy are:

1. Selling to dealers without salesmen via direct mail and space advertising.

2. Selling to dealers through manufacturer's representatives.

For these two alternatives, we calculate the contribution to GPI's gross margin.
Calculation of the Number of Units Sold

<table>
<thead>
<tr>
<th></th>
<th>No Salesman</th>
<th>Manufacturer's Representative</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>1. %(AWARE &amp; RECEPTIVE) = %AWARE x %RECEPTIVE</td>
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<td></td>
</tr>
<tr>
<td>%AWARE</td>
<td>.125</td>
<td>.75</td>
</tr>
<tr>
<td>%RECEPTIVE</td>
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<tr>
<td>{0.20 0.025}</td>
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<td>{0.20 0.15}</td>
</tr>
<tr>
<td>{0.35 0.044}</td>
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<td>{0.35 0.263}</td>
</tr>
<tr>
<td>2. %BUY = %BUY/(AWARE &amp; RECEPTIVE) x %(AWARE &amp; RECEPTIVE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>%(AWARE &amp; RECEPTIVE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>{0.024 0.044}</td>
<td></td>
<td>{0.15 0.263}</td>
</tr>
<tr>
<td>%BUY/(A&amp;R)*</td>
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</tr>
<tr>
<td>{0.20 0.005 0.009}</td>
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<td>{0.20 0.03 0.053}</td>
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<td>{0.50 0.013 0.022}</td>
<td></td>
<td>{0.50 0.075 0.131}</td>
</tr>
<tr>
<td>3. Number of Units Sold = %BUY x Number of Camera Owners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Camera Owners = 45,000</td>
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<tr>
<td></td>
<td>0.025 0.044</td>
<td>0.15 0.263</td>
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<td></td>
<td>0.20 225 396</td>
<td>0.20 1350 2363</td>
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<td></td>
<td>0.50 563 990</td>
<td>0.50 3375 5906</td>
</tr>
<tr>
<td>Average = 546 units(^{(1)})</td>
<td>Average = 3,250 units(^{(1)})</td>
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\(^{(1)}\) This average is calculated assuming the variables which were measured as ranges are symmetrically distributed over the ranges given and are independent of each other.
On an economic basis, the decision between the two methods of selling to dealers discussed above rests on the comparison of gross margins. Using their current method of selling (no salesman) GPI estimates their gross margin per camera back to be $48. With total expected sales volume of 540 units estimated above, the total gross margin earned by selling to dealers via space and direct mail advertising is $25,920. The gross margin per camera back using the manufacturer's representative will be $40 ($48 less $8 commission), resulting in a total gross margin of $130,000. It is evident that, on a purely economic basis, the manufacturer's representative method of selling is more profitable.

In order to select a method of distribution, it is necessary to compare projected unit sales with the current production capacity of 900 units per year. This requires us to know the distribution over time of projected sales. We estimate that 75 percent of the sales of Polaroid film magazines will occur within one year because the introduction of our new Polaroid film magazines within the past year should cause a rapidly increasing awareness of Polaroid backs among Hasselblad owners.

GPI's current sales rate is about 600 units per year. (This agrees with the average projected by our calculations for methods of distribution which do use salesmen.) At this rate GPI should reduce its back order to zero within two months, at which time it will not be able to fully utilize its production capacity without changing its marketing strategy. Our analysis
suggests that at that time GPI can increase its sales and contribution to gross margin by using manufacturers' representatives to sell to dealers. Manufacturers' reps can be used to match growth in sales with the growth in production capacity because GPI has the option of adding reps in one region at a time.

If GPI switched over completely to reps, it might create large backlogs and, hence, ill-will.

Even if GPI was able to expand capacity quickly enough to take full advantage of its apparent ability to sell the Polaroid back, this would be a risky investment because the majority of sales are likely to be concentrated in the next two years. After this, time backs will be sold primarily to new camera owners, and the volume could only amount to about 300 to 500 units per year for GPI. A high sales volume is only likely to last longer than a few years if Hasselblad continues to encounter production delays.

Other Aspects of Marketing Strategy

The two other elements of marketing strategy advertising and pricing policies still must be discussed. As was mentioned previously, if the new Hasselblad back was not available, photographers would apparently be willing to pay a higher price than the current market price of the GPI back. Since the Hasselblad is not readily available and may not be for some
time, there is an opportunity to raise the price and add to the gross margin. The price could then be lowered when the Hasselblad back was available. However, in actual practice, frequently raising and lowering prices may cause ill-will among dealers and photographers.

Advertising is not considered in the model in view of the difficulty in quantitatively measuring its effect and the fact that it be determined independent of the choice of distribution methods. Regardless, its effect can be expected to be positive because it provides support for the dealers selling the GPI camera back by increasing awareness and interest on the part of photographers.

Despite these positive aspects, for GPI advertising is largely a defensive tool because it cannot hope to have more exposure than Hasselblad, its chief competitor. GPI feels that it can afford to budget $3,000 for space advertising, about 2 to 3 percent of sales. Paillard spends much more than $3,000 each month and regularly sends announcements and catalogs to Hasselblad owners. In addition, larger firms obtain lower, effective costs for advertising space because they use larger spaces and advertise more frequently.
Summary of the Operating Strategy

The four key elements of GPI's strategy with regard to Polaroid film magazines are listed below:

1. Production: GPI will allow its production capacity to be expanded slowly and carefully from a current level of 75 units per month to 100 units per month in October, 1975, and 125 units per month by January, 1976. This growth in production capacity is achieved slowly because faster growth of production capacity is not considered possible without sacrificing quality or efficiency in the work force.

2. Method of Distribution: The current rate of sales of Polaroid film backs is 50 units per month. Since this rate is lower than the present production rate of 75 units; the current order backlog is falling, and by August will be gone. At this time the firm will have an excess of capacity unless it increases sales. It can increase sales by adding a manufacturers' representative in one region of the United States at this time. One rep is expected to add about 25 units per month in sales. In this way, manufacturers' reps can be slowly added to keep the sales rate closely coordinated with the production rate. Figure 2 shows the way in the production rate and sales rate can be coordinated by increasing the number of manufacturers' reps.
3. Advertising: GPI will use advertising primarily as a defensive tool to give its name exposure among users. As mentioned, GPI has budgeted about $3,000 for advertising expenses.

4. Pricing: GPI should not raise its current prices because it must maintain a differential between the GPI back and the one manufactured by Hasselblad.

FIGURE 2

THE COORDINATION OF SALES EFFORT
AND THE PRODUCTION RATE

[Diagram showing the coordination of sales effort and production rate with labeled axes and points marked as 'New Mfr Rep.', 'Sales Rate', 'Production Capacity', etc.]
CHAPTER 7

LONG RANGE STRATEGY

In Chapter 1 we listed three goals of GPI's management:

1. To earn profits and grow in order to increase profits,

2. To maintain the essential small business character of the firm,

3. To reduce business risk by establishing a product line with a relatively long life.

The sale of Polaroid film magazines for the Hasselblad camera will add to profits in the short term and satisfy the first objective; the management feels that this growth will not cause a change in the character of the firm. However, the growth attributed to the sale of Polaroid film magazines will not satisfy the third objective because the sales of this product are expected to be concentrated in the next two years, after which they should decrease to a much lower, but steadier, volume.

At that time, the firm will develop excess production capacity as the sales of Polaroid backs for Hasselblad cameras drop. It will be expensive to simply eliminate this production capacity because by that time the firm will have developed valuable, but non-saleable, assets; its assembly capability and its reputation and experience in the photo accessory market.
The most obvious way to utilize these assets is to look for new opportunities in the photographic accessory market and specifically in the area of Polaroid film magazines for medium format cameras. In fact, GPI is now beginning to market a second Polaroid film magazine for the Mamiya RB67. This camera is newer to the market and has greater current sales than the Hasselblad; so, it will have a steadier sales volume growth.

Since there are a limited number of medium format cameras with interchangeable backs, GPI should also look to the photo accessory market in general for new products because it will have developed goodwill and marketing experience in this industry. As much as possible, any new products should utilize and build on its reputation for quality acquired in the manufacture of Polaroid backs.

Consumers (in this market, photographers) are usually the best source of new product ideas. For example, in our interviews, several photographers suggested new product ideas to us. GPI should continue its contact with photographers; it can do this by participating in photographic trade shows.

As discussed in Chapter 1, our objective was to make our efforts on behalf of GPI consistent with the resources, managerial and financial, of a small manufacturing firm. This objective has been achieved since the cost and time requirements of the proposed method of analysis are sufficiently low. To achieve its stated goals, GPI will necessarily have to analyze new opportunities and develop strategic plans to sustain growth.
and profitability. GPI's success will largely be a function of their ability to make such judgments and plans properly. Thus, the method of analysis proposed provides for a decision making framework to assist GPI's management.