Introduction

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THIS volume contains essays that revisit the ideals of the PIMS (Profit Impact of Marketing Strategy) project. They are collected and published here in honor of Robert D. Buzzell's contributions to marketing research in general and the PIMS project in particular. The impetus for these essays originated from a conference held in October 2002. A group of scholars and researchers gathered at the University of Virginia's Darden School to honor Bob Buzzell and exchange ideas and papers reflecting on the achievements and recent advances relating to the PIMS program of research on marketing strategy. What did we learn and what should we have learned from the PIMS project concerning the economic causes and consequences of marketing decisions?

The following people attended the conference:

- Kusum Ailawadi, Tuck School, Dartmouth College
- Jay Bourgeois, The Darden School, University of Virginia
- Eric Boyd, The Darden School, University of Virginia
- Robert Buzzell, Georgetown University
- Markus Christen, INSEAD
- George Day, The Wharton School, University of Pennsylvania
- Paul Farris, The Darden School, University of Virginia
- Bradley Gale, Customer Value, Inc.
- Hubert Gatignon, INSEAD
- Lutz Hildebrandt, Humboldt University, Berlin
- William Kehoe, McIntire School of Commerce, University of Virginia
- Trey Maxham, McIntire School of Commerce, University of Virginia
- Marian Moore, The Darden School, University of Virginia
- Michael Moore, The Darden School, University of Virginia
- Russ Morgan, University of Utah
- Bill Moult, Marketing Science Institute
- Mark Parry, The Darden School, University of Virginia

– Jack Pendray, retired
– David Reibstein, The Wharton School, University of Pennsylvania
– Keith Roberts, PIMS Europe Ltd.
– William Robinson, Purdue University
– Paul Simko, The Darden School, University of Virginia
– Robert Spekman, The Darden School, University of Virginia
– David Szymanski, Mays School of Business, Texas A&M University
– Ron Wilcox, The Darden School, University of Virginia

The time is right to revisit some of the ideals and achievements of the PIMS project. Sufficient time has elapsed to review critically the observations, views, and unresolved issues from PIMS research. New developments in strategic thinking, econometric methods, and fundamental changes in technology and the nature of competition also make this exercise important. Further, we know that there are periodic attempts to regenerate the kind of interfirm cooperation that produced the PIMS data. Most of these attempts are relatively modest in scope compared to the original PIMS project. Still, they share many of the ideals: generating practical business insights and cross-firm learning that are based in the rigorous analysis of a shared database, and producing findings that are replicable and open to scholarly debate. It is our hope that such projects will benefit from the essays in this volume.

Batten Institute

The initial support for the conference to honor Bob Buzzell and the PIMS project came from the Batten Institute. This institute is a foundation within the Darden Graduate School of Business Administration at the University of Virginia. It invests in applied research and knowledge transfer programs at the frontiers of change in organizations, markets, and technologies. Certainly the PIMS project is an example of applied research that pushed the frontiers of organizational change and strategy formulation. The institute is a nexus of practitioners and scholars interested in fostering new practical knowledge about business innovation and change.

The Darden School was founded as the Virginia Business School in 1954 and its first classes in entrepreneurship and small business were offered in 1961. In early 1996, Darden created the Batten Center for Entrepreneurial Leadership with a generous gift from the Batten

family of Norfolk, Virginia, and its Landmark Foundation. The Batten Institute, which succeeded the Batten Center on January 1, 2000, was made possible through a subsequent gift from University of Virginia alumnus Frank Batten, Sr.

Marketing Science Institute

This book and the PIMS project owe a debt of gratitude to the Marketing Science Institute (MSI) and Don Lehmann, who, as executive director in 2002, agreed to co-sponsor the conference that led to this book. MSI is a unique, not-for-profit institute that was established in 1961 as a bridge between business and academia. Its mission is to initiate, support, and disseminate leading-edge studies by academics that address research issues specified by member companies. MSI functions as a working sponsorship and brings together executives with leading researchers from approximately a hundred universities worldwide. Bob Buzzell was executive director of MSI when the PIMS project was launched under the auspices of MSI.

Overview

We have organized the chapters in this volume around four themes. A brief summary of each theme follows.

PIMS in retrospect: achievements, context, and calibration (Chapters 1–3)

What are the strategic questions we hoped to answer and what did PIMS accomplish? Three chapters address PIMS achievements. The first, by Paul Farris, details the richness of the database, the number of journal articles published, and the debates inspired around the questions raised. An additional contribution to Chapter 1 is John Farley's description of how comparative international research has benefited from the performance measures pioneered by PIMS. George Day's chapter then laces PIMS' contributions to the field of marketing strategy into the context of the growth and maturation of the field. He shows how PIMS anticipated many of the developments in strategy through the phases of sources, positional advantage, and performance. The third chapter, by Eric Boyd, Paul Farris, and Lutz Hildebrandt,

provides some needed calibration of PIMS against the corporate universe as captured by COMPUSTAT data.

Major dimensions of marketing strategy (Chapters 4–7)

The strategic decision to enter a market is arguably the most important one that a business will face. In developing an understanding of the causes and consequences of entry timing, the expected reaction by competitors to entry must first be modeled, and its role then evaluated. Then the newness and quality of the offerings relative to the competitors are inevitably evoked as explanations for greater or lesser success. Decisions on pricing, marketing investments, and sustainable levels of product quality quickly follow, however. The four chapters in this section address these issues in turn. William Robinson and Mark Parry survey what we have learned on early entry. David Szymanski, Michael Kroff, and Lisa Troy review assembled evidence to question whether innovativeness really enhances new product success. The subsequent two chapters focus on marketing, prices, and product quality. David Reibstein and his co-authors review PIMS-based and other studies of advertising and prices. They argue that marketing spending should include sales-force spending and expand earlier work on advertising, prices, and profitability to include investments in the sales force. Lutz Hildebrandt and Dirk Temme revisit a classic study of the influence of product quality, using now state-of-the-art econometric techniques to control unobserved variables. This chapter, with its heavy emphasis on methodology, sets the stage for the next section.

Methodological questions and answers for panel data (Chapters 8–10)

What have we learned about modeling causal relationships among systems of variables, adjusting for scale differences, levels versus differences, specification involving identities, and the role of cross-sectional versus time-series or meta-analyses? Problems with strictly cross-sectional data are well known, as are the shortcomings of inappropriately pooled data (including time series). Can new approaches and methodologies produce analyses of PIMS-type data to overcome some of these limitations? We think so, and the three methodologically oriented chapters contained here highlight this potential. In Chapter 8,

Kusum Ailawadi and Paul Farris argue that the role of components and identities is a special problem and opportunity as concerns the specification of causal models. In Chapter 9, Michael Moore, Russ Morgan, and Judith Roberts show how PIMS data *should* be used in conjunction with standard specification tests to shed insight into the correct specification of simultaneous equation marketing models. In Chapter 10, Marcus Christen and Hubert Gatignon address what is perhaps the most controversial issue resulting from the PIMS database – the relationship between market share and profitability. Through the use of simulation where the underlying relationship is known, they demonstrate that the first-differencing methods commonly used by other researchers underestimate the true relationship between market share and profits.

PIMS in prospect (Chapter 11)

Becoming data-driven is a current business mantra, but it is not always clear what kinds of data are appropriate to address various decisions. In this final section we take on the task of speculating how PIMS might be different if we were launching it today. First, what are the newer metrics for describing marketing strategy and evaluating business performance that a revised PIMS would probably include? Second, what have the methodological debates taught us about how to approach research in this field? Finally, how would a dataset like PIMS be constructed to reflect developments in the industrial organization literature, particularly regarding the measurement of market power and the implications for policy, particularly antitrust? Paul Farris and Michael Moore explore each of these questions in turn in the final chapter.

1 The PIMS project: vision, achievements, and scope of the data

PAUL W. FARRIS
WITH JOHN U. FARLEY

The Profit Impact of Marketing Strategy (PIMS) project, which began in 1972, was one of the most successful and influential partnerships between marketing academics and the private sector. Robert Buzzell, as Executive Director of the Marketing Science Institute, was one of a small group of people who made the PIMS project possible. The program resulted in a unique dataset used to investigate the links among marketing strategy, market structure, and performance. The Marketing Science Institute was a near-perfect organizational platform from which to launch a project that had the ambitious goal of understanding how and why some marketing strategies were more profitable than others. To enable this investigation, PIMS, from the beginning, set a new standard of depth and breadth for panel data collected from operating business units. In this book we have collected a set of original essays that revisit the ideals of the PIMS project. Our purpose is to explore what we learned and, perhaps, what we should or still might learn about researching the connections between marketing strategy and profits.

This does not mean that we are finished with the questions that PIMS helped the field of marketing strategy pose. However, enough time has passed and enough additional evidence has been accumulated that we believe it is appropriate to appraise what was accomplished. Some of the essays will help put the achievement of PIMS into the context of the times (both then and now). Others will provide additional insights, evidence, and reflections on the important questions that were raised by PIMS research. Lastly, we believe this book contains ideas for shaping the future of the questions and methodologies of marketing strategy research.

Since many readers may have little familiarity with PIMS, we first describe the PIMS data and offer some observations on what made

these data unique, including the historical context, the central role of market share in strategy research, and a brief description of the methodological debates that the PIMS data inspired and enabled. Finally, this chapter will summarize some of the major accomplishments of the PIMS project.

1.1 What was unique about the PIMS data?

The PIMS data were exceptional for four reasons. First, the extensive questionnaire collected an unprecedented number of descriptors of business strategy and market structure, and financial performance. Many of these variables were innovative ways of characterizing differences among businesses. Second, the strategic business unit (SBU) as the unit of observation was uniquely suited for strategy research in terms of organizational disaggregation. (Diversified businesses were allocating resources with the help of share-growth matrices that steered more funds towards "business units" that had strong competitive positions.) Third, because of both the number and variety of businesses in the database, more sophisticated analyses that required more observations (degrees of freedom) became possible. PIMS, from the very beginning, augmented a primarily cross-sectional database with a time series (four years of data) on each business. The availability of both time-series and cross-sectional data was a key asset. Fourth, PIMS asked for information in what now seems to be an amazingly rich variety of different formats and scales (log-scales, percentage of totals, five-point scales, three-point scales – to name just a few). As Kusum Ailawadi pointed out to me, this avoids the "methods bias" that plagues many questionnaires and reduces the respondent fatigue that leads to less thought and more automation in responses. John Farley explores the influence of the PIMS questionnaire in an appendix to this chapter.

1.1.1 Design and scope of the questionnaire

Since the full PIMS questionnaire has been reproduced elsewhere (Buzzell and Gale 1987), we offer a more compact overview of the data here. The design of the questionnaire was a major achievement. Tables 1.1a–1.1c provide a summary of the data collected by the PIMS questionnaire. The list of "variables" available for analysis is

Table 1.1a. ***A summary of data collected by PIMS: I***

Most PIMS variables are categorical variables with the number of discrete values indicated (e.g. C-8 refers to the eight different classifications for Type of Business. Other types of variables include undisguised number (UD), disguised dollar figure (D$), and undisguised percentage (%).) Most financial measures are useful only as ratios to other measures with the same disguise factor.

Data on products, customers, end user, channels, competitors	*Type of variable*	*Data on products, customers, end user, channels, competitors*	*Type of variable*
Type of business	C-8	Change in customer concentration	C-3
Year category/market established	C-5	Above relative to competitors	C-3
Year of firm entry into market	C-5	Purchase frequency end users	C-7
Life-cycle stage	C-4	Purchase frequency customers	C-7
Order of entry (Pioneer – Laggard)	C-3	Purchase amount end users	C-9
Sig. patents products/processes	C-4	Purchase amount customers	C-9
Standardized/customized products	C-2	% annual purchases	C-5
Frequency of product-line changes	C-4	Importance of products' customers	C-5
Major technology changes last five years	C-2	Importance of auxiliary services	C-3
New product development time	C-5	Reliance on advisers for purchase	C-3
% sales to: hhs., mfs., instit., gov. & contractors	5×%	% sales: direct, through own channels, to wholesale, to retail	4×%
Number end users	C-9	Gross margins earned by channels	%
Number immediate customers	C-8	SIC code	UD
End user concen. (% = 50% sales)	%	Geographic scope market	C-5
Change in user concentration	C-3	Number of competitors	C-5
Above relative to competitors	C-3	Entry major competitors	C-2
Customer concen. (% = 50% sales)	%	Exit major competitors	C-2

Table 1.1b. ***A summary of data collected by PIMS: II***

See note at head of Table 1.1a

Vertical/horizontal integration	*Type of variable*	*Relative measures (versus three leading competitors)*	*Type of variable*
SBU vertical integration	C-3	Shares of three largest competitors	3×%
Company vertical integration	C-3	Market share rank	UD
SBU purchases within company	%	% superior, equivalent, inferior quality	3×%
Common reports f/suppliers SBU	C-2	Relative prices vs. competitors	Index
Sales to other SBUs same company	%	Relative costs (non-marketing)	Index
Common reports for above	C-2	Relative wages	Index
Shared facilities other SBUs	C-3	Relative salaries	Index
Shared customers other SBUs	C-4	% new products for SBU	%
Shared marketing (e.g. SF, ad prog.)	C-3	% sales f/new product for three leading competitors	%
% purchases f/three largest suppliers	%	Breadth of line	C-3
Above as % supplier sales	%	Breadth served market, type customers	C-3
Alternative sources supply	C-3	Breadth served market, no. customers	C-3
Compete with suppliers	C-3	Breadth served market, size customers	C-3
Possible supplier forward integration	C-2	Relative sales force % sales	C-5
Compete w/other SBUs in company?	C-2	Relative media	C-5
		Relative sales promotion	C-5
		Quality of services	C-5
		Relative image	C-5

Table 1.1c. ***A summary of data collected by PIMS: III***

See note at head of Table 1.1a.

Financial measures and productivity ratios	*Type of variable*	*Financial measures and productivity ratios*	*Type of variable*
Size of served market	D$	Gross book value P&E	D$
Sales/lease revenue	D$	Net book value P&E	D$
Order backlog >50% sales	C-2	Average investment (including cap. leases)	D$
Purchases (value added)	D$	Average current liabilities	D$
Manufacturing and distribution expense	D$	Total assets	D$
Product/process R&D	D$	Sales value of capacity	D$
Sales force	D$	Capacity utilization	%
Advertising and promotion	D$	Sales/employee (UD)	UD
Media	D$	Sales/salesman (UD)	UD
Other marketing expense	D$	Employee unionization	%
Total marketing expense	D$	Four-year price growth	UD
Depreciation	D$	Four-year material costs growth	UD
Net income	D$	Four-year wage cost growth	UD
Average receivables	D$	Production input shortages	4×2
Average finished goods inventory	D$	Price controls	C-2
Average inventory inputs & WIP	D$		

considerably longer than appears in these three tables. Mathematical transformations and combinations of the raw data created many additional variables. Examples of variables resulting from such transformations are three-firm concentration indices, return on investment, volatility of market share, and dummy variables representing high purchase-amount and high purchase-frequency.

Each table lists a code for the type of variable collected. Of particular note is the code D$, indicating that the variable is recorded as a dollar figure but that the actual amount has been disguised. In the process