

Research in Business

Learning Objectives

After reading this chapter, you should understand . . .

- 1 What research is and its different types.**
- 2 The distinction between good research and research that falls short of professional quality.**
- 3 The relationship between a manager and a research supplier.**
- 4 The value of learning research process skills.**

Bringing Research to Life

“Jason Henry? I'm Myra Wines.”
“Come in, Ms. Wines. We'll meet here in the conference/living room. As I told you when you called, we're just establishing our Florida office. Of course, you can see that. Watch your step around the cables.”

The stylish, middle-aged woman found her way among several crates of partially unpacked computer systems to the sofa and seated herself as gracefully as she could among the heap of books, electronic gear, and unopened boxes. She snapped open a briefcase to produce a miniature cassette recorder, which she clicked on. “If this makes you nervous, I'll turn it off,” she said. “I was a TV investigative reporter for 15 years. Old habits die hard . . . especially ones that have gotten you out of a dozen jams.”

“Turn it off then,” said the younger man, curtly. “It doesn't make me nervous, but I fail to see the need of it.”

“My contact in Canada indicated you and your wife, a doctor in public health, both graduated from college in California. You moved here from Ottawa where the United Nations employed you both. You are an accountant turned business economist and consultant. You've several corporations here in Florida—to do auditing, economic analysis, epidemiological consulting, and diversified business research. What have I missed?”

“My wife, Dorrie, speaks four languages.”

“I knew that. A producer in Toronto who works for United Nations TV where she taped her public service program alerted me to your move to Florida.”

“Then that covers everything, doesn't it,” he said with asperity, “except a birthmark above my knee.”

“Your right knee,” she said positively. Disbelief and irritation were evident in his expression, and quickly she added, “Just a guess. Fifty-fifty chance of being right, you know.”

That broke the tension. He chuckled. “I have a gold filling in one of my teeth. Can you tell me which one?”

Now she laughed. “I never bluff against such high odds as 32-to-1.”

They both smiled. Then he killed the merriment by adding, “The odds would be 31-to-1. There would be one right answer and 31 wrong. Obviously, that makes the odds 31-to-1.”

Smiling through gritted teeth, Myra changed the subject. “How many computers do you have here?”

“Counting the portables, five, plus several dumb terminals. Plus three printers and one fax for incoming and one for outgoing. And a voice-mail system and a pager. I am networking all of this together, as you can see. I have six phone lines, though I need only four right now. I'm your basic unapologetic computer jockey.”

Looking around at the disorder, Myra observed, “And this is your residence, too.”

“We don't want the hassle of separate office space. Most of my clients in Phoenix, Butte, and Ottawa will never see the office. As far as they know, I am working out of the classiest suite in this city's best office building.”

“Well, it's quite a few computers,” she said doubtfully.

“I believe that you find the truth by crunching the numbers.”

“I don't agree. As a reporter I learned you get the truth by staying in touch with people, watching world events, seeing the big picture, and digging for revealing details. I have four phone lines myself—one each for a fax and an answering machine, one for a computer that I use to dial into commercial online databases, and two additional phones so I can talk to two people at the same time. I have my own domestic incoming/outgoing 800 number, and if I don't run up a thousand-dollar-a-month long-distance bill for international calls, I know I'm not living right.”

“Really? I find it difficult to believe that being a consumer affairs manager is so very lucrative.”

"No, it isn't," she admitted with a chuckle. "After 15 years my TV station told me I needed a face-lift, and when I said no, they canned me. Just like that. I got the scariest lawyer in town—someone so vicious I had once run a week-long exposé of him—and he got me a terrific settlement. I pick up a few thousand a month by giving lectures to conventioners. One of my best talks is 'The Angry Consumer.' I always include lots of facts that are absolutely up-to-date, because I was—and am—in daily touch with consumer advocates in every state capital, plus D.C., Ottawa, and even Tokyo and London."

"Is it all opinion and anecdote, or do you have some substantiating statistics?"

"My phone bill is astronomic."

"So it's anecdotal; that's what you're saying."

"If that's what you want to call it," she declared with a tinge of irritation. "Anyway, after one of my particularly hard-hitting talks, one member of the audience approached me, asked a lot of questions about my laptop computer, which I used to control my slide show. She was a headhunter looking for a consumer affairs manager for the company whose computer I use, MindWriter. Ultimately, after several interviews, they made me an offer I couldn't refuse."

"I know the brand. It's good equipment at a good price, but if it breaks down, you're in trouble according to the computer magazines. However, I have no firsthand evidence the magazines are accurate."

"We do have some concerns about customer satisfaction—especially in product service. The corporate higher-ups have assigned me my first task—assessing customer satisfaction, or dissatisfaction, as it may be. There is a meeting next week in Austin, Texas, to discuss the background and preliminaries. I've been told to bring my ideas and my 'number cruncher.'"

"And who would that be?" inquired Jason.

"You, I hope. I'll level with you. I am not a numbers person."

"I know that. You miscounted your telephone lines a minute ago. Fax. Answering machine. Dial-up databases. Two for personal calls. That makes five. You said four."

She flushed, counting silently to 10. This young man might know his numbers but tact escaped him. "Then you know what I'm talking about," she said a little too sharply. "I would really like to impress the folks in Texas, this being my first project, but not a soul in my office can be counted on as a number cruncher and I can't show up at the meeting without one."

"I know something about customer research, and you're right to be nervous . . ."

"Not nervous. Properly concerned."

"Concerned then. The first step will be to listen carefully and discover exactly what facts management has gathered, what they are concerned about, what the problem is from their point of view, what the problem really is at various levels of abstraction . . ."

"Listening to people. Discussing. Looking at things from different viewpoints. The kind of thing I am very good at."

"Right. And after we hear them out, we come to what I am good at: Measurement. Scaling. Survey design. Sampling the customers. Finally, we would collaborate on the report of results . . ."

"I have two tickets to Austin for next Wednesday. Can you break away from this unpacking and cabling and fly over with me?"

"Sure."

"OK. My source in Toronto says you are intelligent, prickly, and pigheaded, inclined to be overly left-brained and intolerant, but dependable, reasonably priced, and respectful of your elders. We'll work out the money details on the flight over. I think we'll get along OK."

"I am willing to proceed on that hypothesis. We'll certainly know if we can work together by the time we return from Texas."

Why Study Research?

Assume for the moment that you are the manager of your favorite full-service restaurant. (Taco Bell doesn't qualify here; think of something else.) You are experiencing significant turnover in your waiter/waitress pool, and long-time customers have been commenting that the friendly atmosphere that has historically drawn them to your door is changing. What will you do? Where will you begin in trying to solve this problem? Try another decision-making scenario: You are talking with the head of the academic department in which you are majoring. This person chairs the committee that selects the textbook for the research methodology course. How should they begin to evaluate their options?

The study of research methods provides you with the knowledge and skills you need to solve the problems and meet the challenges of a fast-paced decision-making environment. **We define business research as a systematic inquiry whose objective is to provide information to solve managerial problems.** Business research courses recognize that students preparing to manage business, not-for-profit, and public organizations—in all functional areas—need training in a disciplined process for conducting an inquiry of a **management dilemma**, the problem or opportunity that requires a management decision. **Three factors stimulate an interest in a scientific approach to decision making:**

1. The manager's increased need for more and better information.
2. The availability of improved techniques and tools to meet this need.
3. The resulting information overload if discipline is not employed in the process.

During the last two decades, we have witnessed dramatic changes in the business environment. Emerging from an historically economic role, the business organization

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Research and the Valuation of Intangibles

Since 1973, the Financial Accounting Standards Board (FASB) has assumed "responsibility for establishing standards of financial accounting and reporting." The conservative FASB recently took a mini-step toward recognizing the shift in company valuation from bricks and mortar to information. As of January 2002, companies involved in mergers will no longer have to amortize goodwill. As Neil Gross, the senior editor of *Business Week*, explained, "You don't wear out research or run out of brand power—at least most of the time. Investors need a sense of the assets' value and whether expenses to support them—such as advertising—are really productive." The FASB, encouraging "voluntary disclosures related to matters that are important to the success of the company," agreed that the "importance of voluntary disclosures is expected to increase in the future because of the fast pace of change in the business environment."

A company's stable of brands is possibly its most valuable intangible. How else can you explain the record-setting purchase of RJR Nabisco (\$25.4 billion) at a significant premium over stock book value or the stockholder-welcomed investment in employee benefits by powerhouse Starbucks? The answer: Kohlberg Kravis Roberts & Co. believes some brands (Oreo cookies, Hawaiian Punch, and Winston cigarettes, among them) are very valuable and worth the price. Starbucks has learned that the experience of the customer in its stores is critical to successful expansion. So if an intangible, brand value, can drive purchase price, merger price, stock value, and employee commitment, then assessing people's willingness to pay for such things—research—is critical to understanding the present and future U.S. economy.

has evolved in response to the social and political mandates of national public policy, explosive technology growth, and continuing innovations in global communications. These changes have created new knowledge needs for the manager and new publics to consider when evaluating any decision. Other knowledge demands have arisen from problems with mergers, trade policies, protected markets, technology transfers, and macroeconomic savings-investment issues.

The trend toward complexity has increased the risk associated with business decisions, making it more important to have a sound information base. Each of the factors listed below, which characterize the complex business decision-making environment, demands that managers have more and better information on which to base decisions:

- There are more variables to consider in every decision.
- More knowledge exists in every field of management.
- Global and domestic competition is more vigorous, with many businesses downsizing to refocus on primary competencies, reduce costs, and make competitive gains.
- The quality of theories and models to explain tactical and strategic results is improving.
- Government continues to show concern with all aspects of society, becoming increasingly aggressive in protecting these various publics.
- The explosive growth of company sites on the World Wide Web, e-commerce, and company publications via desktop and electronic publishing have brought the prospect of extensive new arrays of information—but information quality is increasingly suspect.
- Workers, shareholders, customers, and the general public are demanding to be included in company decision making; they are better informed and more sensitive to their own self-interests than ever before.
- Organizations are increasingly practicing **data mining**, learning to extract meaningful knowledge from volumes of data contained within **internal databases**.
- Computer advances have allowed businesses to create the architecture for **data warehousing**, electronic storehouses where vast arrays of collected, integrated data are ready for mining.
- The power and ease of use of today's computers have given us the capability to analyze data to deal with today's complex managerial problems.
- Techniques of quantitative analysis take advantage of increasingly powerful computing capabilities.
- The number and power of the tools used to conduct research have increased, commensurate with the growing complexity of business decisions.
- Communication and measurement techniques within research have been enhanced.

To do well in such an environment, you will need to understand how to identify quality information and to recognize the solid, reliable research on which your high-risk decisions as a manager can be based. You also will need to know how to conduct such research. Developing these skills requires understanding the scientific method as it applies to the managerial decision-making environment. This book addresses your needs as an information processor.

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Webvan: Online Grocer Needed a Tasty Delivery of Research

Webvan, the only remaining major player in the devastated online supermarket venue, indicated in summer 2001 that it too would seek bankruptcy protection. Analysts indicated surprise, but maybe they shouldn't have. Webvan had grandiose dreams, but no solid research to back them up. It set out to open in 26 cities without first determining if its business model was successful in even one of them. Several major grocery titans had accumulated ample evidence that online supermarkets were a risky venture. Kroger's Rodney McMullen indicates that "more customers tell you they want to use it than actually use it." Yet,

Webvan captured \$1.2 billion in investment capital with little research evidence to determine whether consumers would want home delivery of groceries. It even installed a 100-foot-long computerized conveyor in its freezer case to facilitate order fulfillment, but failed to uncover (via research) that the system couldn't work effectively in sub-zero temperatures. So while Streamline, Shoplink, Home-Grocer, Urban Fetch, and Peapod folded or transformed to something less than they dreamed of being, Webvan struggled to show a profit for investors—who now will likely be more than impatient.

What Is Research?

We begin with a few examples of management problems involving decision making based on information gathering. From each of these illustrations, we can abstract the essence of research. How is it carried out? What can it do? What should it not be expected to do? As you read the four cases, be thinking about the possible range of situations for conducting business research, and try answering these questions: (1) What is the decision-making dilemma facing the manager? (2) What must the researcher accomplish?

CHILDCO

You work for CHILDCO, a corporation that is considering the acquisition of a toy manufacturer. The senior vice president for development asks you to head a task force to investigate six companies that are potential candidates. You assemble a team composed of representatives from the relevant functional areas. Pertinent data are collected from public sources because of the sensitive nature of the project. You examine all of the following: company annual reports; articles in business journals, trade magazines, and newspapers; financial analysts' assessments; and company advertisements. The team members then develop summary profiles of the candidate firms based on the characteristics gleaned from the sources. The final report highlights the opportunities and problems that acquisition of the target firm would bring to all areas of the business.

NUCMED

You are the business manager for NUCMED, a large group of physicians specializing in nuclear medicine and imaging. A prominent health insurance organization has contacted you to promote a new cost containment program. The doctors' committee to whom you will make a recommendation will have a narrow enrollment window for their decision. If they choose to join, they will agree to a reduced fee schedule in exchange for easier filing procedures, quicker reimbursement, and listing on a physicians' referral network. If they decline, they will continue to deal with their patients and the insurance carrier in the current manner. You begin your investigation by mining data

from patient files to learn how many are using this carrier, frequency of care visits, complexity of filings, and so on. You then consult insurance industry data to discover how many potential patients in your area use this care plan, or similar care plans with alternative insurance carriers, and the likelihood of a patient choosing or switching doctors to find one that subscribes to the proposed program. You attempt to confirm your data with information from professional and association journals. Based on this information, you develop a profile that details the number of patients, overhead, and potential revenue realized by choosing to join the plan.

ColorSplash

ColorSplash, a paint manufacturer, is having trouble maintaining profits. The owner believes inventory management is a weak area of the company's operations. In this industry, the many paint colors, types of paint, and container sizes make it easy for a firm to accumulate large inventories and still be unable to fill customer orders. The owner asks you to make recommendations. You look into the present warehousing and shipping operations and find excessive sales losses and delivery delays because of out-of-stock conditions. An informal poll of customers confirms your impression. You suspect the present inventory database and reporting system do not provide the prompt, usable information needed for appropriate production decisions.

Based on this supposition, you familiarize yourself with the latest inventory management techniques in a local college library. You ask the warehouse manager to take an accurate inventory, and you review the incoming orders for the last year. In addition, the owner shows you the production runs of the last year and his method for assessing the need for a particular color or paint type.

Modeling the last year of business using production, order, and inventory management techniques, you choose the method that provides the best theoretical profit. You run a pilot line using the new control methodology. After two months, the data show a much lower inventory and a higher order fulfillment rate. You recommend that the owner adopt the new inventory method.

York College

You work for York College's alumni association. It is eager to develop closer ties with its aging alumni, to provide strong stimuli to encourage increased donations, and to induce older, nontraditional students to return to supplement enrollment. The president's office is considering starting a retirement community geared toward university alumni and asks your association to assess the attractiveness of the proposal from an alumni viewpoint. Your director asks you to divide the study into four parts.

Phase 1. First you are to report on the number of alumni who are in the appropriate age bracket, the rate of new entries per year, and the actuarial statistics for the group. This information allows the director to assess whether the project is worth continuing.

Phase 2. Your early results reveal there are sufficient alumni to make the project feasible. The next step in the study is to describe the social and economic characteristics of the target alumni group. You review gift statistics, analyze job titles, and assess home location and values. In addition, you review files from the last five years to see how alumni responded when they were asked about their income bracket. You are able to describe the alumni group for your director when you finish.

Phase 3. It is evident that the target alumni can easily afford a retirement community as proposed. The third phase of the study is to explain the characteristics of alumni who would be interested in a university-related retirement community. For this phase, you engage the American Association of Retired Persons (AARP) and a retirement

community developer. In addition, you search for information on senior citizens from the federal government. From the developer you learn what characteristics of retirement community planning and construction are most attractive to retirees. From the AARP you learn about the main services and features that potential retirees look for in a retirement community. From government publications you become familiar with existing regulations and recommendations for operating retirement communities and uncover a full range of descriptive information on the typical retirement community dweller. You make an extensive report to both the alumni director and the university president. The report covers the number of eligible alumni, their social and economic standings, and the characteristics of those who would be attracted by the retirement community.

Phase 4. The report excites the college president. She asks for one additional phase to be completed. She needs to predict the number of alumni who would be attracted to the project so she can adequately plan the size of the community. At this point, you call on the business school's research methods class for help in designing a questionnaire for the alumni. By providing telephones and funding, you arrange for the class to conduct a survey among a random sample of the eligible alumni population. In addition, you have the class devise a second questionnaire for alumni who will become eligible in the next 10 years. Using the data collected, you can predict the initial demand for the community and estimate the growth in demand over the next 10 years. You submit your final report to the director and the president.

What Is the Dilemma Facing the Manager?

The manager's predicament is fairly well defined in the four cases. Let's see how carefully you read and understood them. In CHILDCO the senior vice president for development must make a proposal to the president or possibly the board of directors about whether to acquire a toy manufacturer and, if one is to be acquired, which one of the six under consideration is the best candidate. In NUCMED the physicians in the group must decide whether to join the proposed managed health care plan of one of their primary insurers. In ColorSplash the owner of the paint manufacturer must decide whether to implement a new inventory management system. At York College, the president must propose to the board of directors whether to fund the development of a retirement community. How did you do? If you didn't come to these same conclusions, reread the cases before proceeding, to catch what you missed.

In real life, management dilemmas are not always so clearly defined. In the case of MindWriter (the "Bringing Research to Life" vignette), Myra Wines knows there is a concern about customer satisfaction, but her personal positive experience gives her no clue as to what is causing management's concern. Jason Henry has read an article in the business press that implies after-purchase service might be to blame.

In ColorSplash, rather than pinpointing the problem as one of inventory management, the paint manufacturer's owner could have faced several interactive phenomena:

1. A strike by the teamsters impacting inventory delivery to retail and wholesale customers.
2. The development of a new paint formula that offers superior coverage but requires a relatively scarce ingredient to manufacture, thereby affecting production rates.
3. A fire that destroyed the primary loading dock of the main shipping warehouse in the Midwest.
4. The simultaneous occurrence of all three events.

As the research process begins with a manager's decision-making task, accurately defining the dilemma is paramount but often difficult. We address this issue in Chapter 3.

What Must the Researcher Accomplish?

The different types of study represented by the four cases can be classified as reporting, descriptive, explanatory, or predictive.

CHILDCO and the first phase of York College each illustrate a reporting study.

Reporting At the most elementary level, a **reporting study** may be made only to provide an account or summation of some data or to generate some statistics. The task may be quite simple and the data readily available. At other times, the information may be difficult to find. A reporting study calls for knowledge and skill with information sources and gatekeepers of information sources. Such a study usually requires little inference or conclusion drawing. In CHILDCO the researcher needs to know what information should be evaluated in order to value a company. In the study of management, this knowledge would be acquired primarily in courses in financial management, accounting, and marketing. Knowing the type of information needed, the researcher in CHILDCO identifies sources of information, like trade press articles and annual reports. Because of the possible effect of the toy manufacturer evaluation on the stock prices of the conglomerate instigating the study and each toy company, only public sources are used. Other reporting studies of a less sensitive nature might have the researcher interviewing source gatekeepers. In York College, for example, interviewing the director of local retirement facilities might have revealed other sources to include in the search. Such an expert is considered a gatekeeper. Early in your career, identifying gatekeepers for your firm and industry is critical to your success as a manager.

Purists claim that reporting studies do not qualify as research, although carefully gathered data can have great value. Others argue that at least one form, investigative reporting, has a great deal in common with widely accepted qualitative and clinical research.¹ A research design does not have to be complex and require inferences for a project to be called research. In the early part of your career, you will likely be asked to perform a number of reporting studies. Many managers consider the execution of such studies an excellent way for new employees to become familiar with their employer and its industry.

NUCMED and the second phase of York College each illustrate descriptive studies.

Descriptive A **descriptive study** tries to discover answers to the questions *who, what, when, where, and, sometimes, how*. The researcher attempts to describe or define a subject, often by creating a profile of a group of problems, people, or events. Such studies may involve the collection of data and the creation of a distribution of the number of times the researcher observes a single event or characteristic (known as a **research variable**), or they may involve relating the interaction of two or more variables. In NUCMED, the researcher must present data that reveal who is affiliated with the insurer, who uses managed health care programs (both doctors and patients), the general trends in use of imaging technology in diagnosing illness or injury severity, and the relationship of patient characteristics, doctor referrals, and technology use patterns.

Descriptive studies may or may not have the potential for drawing powerful inferences. Organizations that maintain databases of their employees, customers, and suppliers already have significant data to conduct descriptive studies using internal information. Yet many firms that have such data files do not mine them regularly for the decision-making insight they might provide. In the opening vignette, Myra Wines could mine numerous company databases for insight into the nature and number of service-related problems arising after purchase and, similarly, for information about product

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Conflicting Conclusions

On May 21, 2001, a century-long industrial marriage was severed when Bridgestone/Firestone Inc. announced it would stop selling tires to Ford. Firestone CEO John Lampe said that any relationship needed to be built on "trust and mutual respect" and that Ford's anticipated replacement of 13 million tires—without just cause in Firestone's perspective—showed an obvious lack of trust. These two automobile industry giants, although looking at the same crash data, came to very different conclusions. Firestone claimed its tires failed at higher than normal rates *only* when installed on Ford Explorers. Ford claimed that crashes involving Explorers were far more likely with Firestone tires. Firestone's Lampe stated, "Our analysis suggests that there is a significant safety concern with a substantial segment of Ford Explorers." He added that Ford "steadfastly refused to acknowledge those concerns."

Was the National Highway Traffic Safety Administration (NHTSA) data incorrect? Did the companies examine

significantly different insurance data? Were the conflicting conclusions incorrect? The answer to each of these questions is no. Business research is conducted to make better decisions. Both companies need to make decisions that will protect their brand equity and provide insulation from wrongful death and injury lawsuits. Many believe Firestone is fighting for its very survival while Ford's situation is far less severe. While initially GM has reaffirmed its relationship with the tire company, even naming Firestone its 2001 Supplier of the Year, and Nissan Motor expects to continue its relationship with Firestone, if they or other automotive companies choose to follow Ford's lead, Firestone could crumble under the animosity of the divorce.

www.firestone.com

www.ford.com

use inquiries. A database generated by warranty registration cards could reveal significant data concerning purchaser characteristics, as well as purchase location and product use behavior. A descriptive study, however, does not explain why an event has occurred or why the variables interact the way they do.

The descriptive study is popular in business research because of its versatility across disciplines. In not-for-profit corporations and other organizations, descriptive investigations have a broad appeal to the administrator and policy analyst for planning, monitoring, and evaluating. In this context, *how* questions address issues such as quantity, cost, efficiency, effectiveness, and adequacy.²

Explanatory Academics have debated the relationship between the next two types of studies, explanatory and predictive, in terms of which precedes the other. Both types of research are grounded in theory, and theory is created to answer *why* and *how* questions. For our purposes, an **explanatory study** goes beyond description and attempts to explain the reasons for the phenomenon that the descriptive study only observed. Research that studies the relationship between two or more variables is also referred to as a *correlational study*. In an explanatory study, the researcher uses theories or at least hypotheses to account for the forces that caused a certain phenomenon to occur. In ColorSplash, believing the problem with paint stockouts is the result of inventory management, the owner asks the researcher to detail warehousing and shipping processes. This would be a descriptive study if it had stopped here. But if problems in the processes could be linked with sales losses due to an inability to make timely deliveries to retail or wholesale customers, then an explanatory study would emerge. The researcher tests this hypothesis by modeling the last year of business using the relationships between processes and results.

ColorSplash and the third phase of York College each represent explanatory studies.

The final phase of York College is an example of a predictive study.

Predictive If we can provide a plausible explanation for an event after it has occurred, it is desirable to be able to predict when and in what situations the event will occur. A **predictive study**, the fourth type, is just as rooted in theory as explanation. NATA, a national trade association for the aviation industry, may be interested in explaining the radiation risks from the sun and stars for flight crews and passengers. The variables might include altitude, proximity of air routes to the poles, time of year, and aircraft shielding. Perhaps the relations among the four variables explain the radiation risk variable. This type of study often calls for a high order of inference making. Why, for example, would a flight at a specified altitude at one time of year not produce so great a radiation risk to the airliner's occupants as the same flight in another season? The answer to such a question would be valuable in planning air routes. It also would contribute to the development of a better theory of the phenomenon. In business research, prediction is found in studies conducted to evaluate specific courses of action or to forecast current and future values.

The researcher is asked to predict for the York College president the success of the proposed retirement facility for alumni based on the number of applicants for residency the project will attract. This prediction will be based on the explanatory hypothesis that alumni frequent programs and projects sponsored by the institution because of an association they maintain between their college experience and images of youthfulness and mental and physical stimulation.

Finally, we would like to be able to control a phenomenon once we can explain and predict it. Being able to replicate a scenario and dictate a particular outcome is the objective of **control**. In York College, if we assume that the college proceeds with its retirement community and enjoys the predicted success, the president will find it attractive to be able to build a similar facility to serve another group of alumni and duplicate that success.

Control is a logical outcome of prediction. The complexity of the phenomenon and the adequacy of the prediction theory, however, largely decide success in a control study. At York College, if a control study were done of the various promotional approaches used with alumni to stimulate images of youthfulness, the promotional tactics that drew the largest number of alumni applications for residency could be identified. Once known, this knowledge could be used successfully with different groups of alumni *only if* the researcher could account for and control all other variables influencing applications.

Is Research Always Problem-Solving Based?

Applied research is used to evaluate opportunities as in CHILDCO and York College.

In the four cases, researchers were asked to respond to "problems" that managers needed to solve. **Applied research** has a practical problem-solving emphasis, although the problem solving is not always generated by a negative circumstance. Whether the "problem" is negative, like rectifying an inventory system that is resulting in lost sales (ColorSplash), or an opportunity to increase stockholder wealth through acquiring another firm (CHILDCO), problem solving is prevalent in business research.

The problem-solving nature of applied research means it is conducted to reveal answers to specific questions related to action, performance, or policy needs. In this respect, all four examples appear to qualify as applied research. Pure, or basic, research is also problem-solving based, but in a different sense. It aims to solve perplexing questions (that is, problems) of a theoretical nature that have little direct impact on action, performance, or policy decisions. **Pure research** or **basic research** in the business arena might involve a researcher for an advertising agency who is studying the results of the use of coupons versus rebates as demand stimulation tactics, but not in a specific

instance or in relation to a specific client's product. In another pure research scenario, researchers might study the influence on productivity of compensation systems that pay by piece-work versus salary-plus-commission. Thus, both applied and pure research are problem-solving based, but applied research is directed much more to making immediate managerial decisions.

Some authorities equate research with basic or scientific investigations and would reject all four examples. History shows, however, that science typically has its beginnings in pragmatic problems of real life. Interest in basic research comes much later, after development of a field's knowledge. Research is too narrowly defined if it is restricted to basic or pure research.

One respected author defines scientific research as a "systematic, controlled, empirical, and critical investigation of natural phenomena guided by theory and hypotheses about the presumed relations among such phenomena."³ The terms *systematic* and *controlled* in this definition refer to the degree to which the observations are controlled and alternative explanations of the outcome are ruled out. The terms *empirical* and *critical* point to the requirements for the researcher to test subjective beliefs against objective reality and have the findings open to further scrutiny and testing. These qualities are what this author means by "scientific." Whether all business research needs to be this stringent or should be "guided by theory and hypotheses about presumed relations" is debatable.

The classical concept of basic research does call for an hypothesis,⁴ but in applied research such a narrow definition omits at least two types of investigation that are highly valued. First is the exploratory study in which the investigator knows so little about the area of study that hypotheses have not yet emerged.⁵ An equally important area of study is that which purists call merely descriptive. The importance of descriptive research to business should be reinforced:

There is no more devastating condemnation that the self-designated theorist makes of the researcher than to label his work purely descriptive. There is an implication that associates "purely descriptive" research with empty-headedness; the label also implies that as a bare minimum every healthy researcher has at least one hypothesis to test, and preferably a whole model. This is nonsense.

In every discipline, but particularly in its early stages of development, purely descriptive research is indispensable. Descriptive research is the stuff out of which the mind of man, the theorist, develops the units that compose his theories. The very essence of description is to name the properties of things: You may do more, but you cannot do less and still have description. The more adequate the description, the greater is the likelihood that the units derived from the description will be useful in subsequent theory building.⁶

In answer to the question posed at the beginning of this section, "Is research always problem-solving based?" the answer is yes. Whether basic or applied, simple or complex, all research should provide an answer to some question. If managers always knew what was causing problems or offering opportunities in their realm of responsibility, there would be little need for applied research, pure research, or basic research; intuition would be all that was necessary to make quality decisions.

Any of the four types of studies—reporting, descriptive, predictive—can properly be called research. We also can conclude examples that research is a systematic inquiry aimed at providing in managerial problems. This defines the bare minimum that any effort called research.

All four cases and the MindWriter vignette meet this definition, but they suggest different stages of scientific development. A rough measure of the development of science in any field is the degree to which explanation and prediction have replaced reporting and description as research objectives. By this standard, the development of business research is in a comparatively formative stage.

Research and the Scientific Method

A more thorough discussion of the scientific method is included in Chapter 2.

The development of the scientific method in business research lags behind similar developments in the physical sciences. Physical scientists have been more rigorous in their concepts and research procedures. They are much more advanced in their theory development than are business scientists. The public domain has sponsored much physical research, some of it for hundreds of years. Governments have allocated billions of dollars to support such research, driven by the motivation to overcome disease or to improve the human condition. Nations driven by threat of war and national pride have also played a major role in the advance of physical science. Much of the findings of their research is in the public domain.

Business research is of much more recent origin and is largely supported by business organizations that hope to achieve a competitive advantage. Research methods and findings cannot be patented, and sharing findings often results in a loss of competitive advantage. The more valuable the research result is, the greater the value in keeping it secret. Under such conditions, access to findings is obviously restricted. Even though there is a growing amount of academic business research, it receives meager support when compared to research in the physical sciences.

Business research operates in a less favorable environment in other ways, too. Physical research is normally conducted under controlled laboratory conditions; business research seldom is. Business research normally deals with topics such as human attitudes, behavior, and performance. People think they already know a lot about these topics and do not easily accept research findings that differ from their opinions.

Even with these hindrances, business researchers are making great strides in the scientific arena. New techniques are being developed, and rigorous research procedures are advancing rapidly. Computers and powerful analytical methods have contributed to this movement, but a greater understanding of the basic principles of sound research is more important.

One outcome of these trends is that research-based decision making will be more widely used in the future than it has been in the past. Managers who are not prepared for this change will be at a severe disadvantage.

What Is Good Research?

Good research generates dependable data, being derived by practices that are conducted professionally and that can be used reliably for managerial decision making. In contrast, poor research is carelessly planned and conducted, resulting in data that a manager can't use to reduce his or her decision-making risks. Good research follows the standards of the **scientific method**. We list several defining characteristics of the scientific method in Exhibit 1-1 and below, discussing the managerial dimensions of each.

1. Purpose clearly defined. The purpose of the research—the problem involved or the decision to be made—should be clearly defined and sharply delineated in terms as unambiguous as possible. Getting this in writing is valuable even in instances where the



EXHIBIT 1-1 What Actions Guarantee Good Research?

Characteristics of Research	What a Manager Should Look for in Research Done by Others or Include in Self-Directed Research	Chapter
Purpose clearly defined	<ul style="list-style-type: none"> • Researcher distinguishes between symptom of organization's problem, the manager's perception of the problem, and the research problem. 	Chapter 3
Research process detailed	<ul style="list-style-type: none"> • Researcher provides complete research proposal. 	Chapter 4
Research design thoroughly planned	<ul style="list-style-type: none"> • Exploratory procedures are outlined with constructs defined. • Sample unit is clearly described along with sampling methodology. • Data collection procedures are selected and designed. 	Chapters 2, 3
High ethical standards applied	<ul style="list-style-type: none"> • Safeguards are in place to protect study participants, organizations, clients, and researchers. • Recommendations do not exceed the scope of the study. • The study's methodology and limitations sections reflect researcher restraint and concern for accuracy. 	Chapter 5
Limitations frankly revealed	<ul style="list-style-type: none"> • Desired procedure is compared with actual procedure in report. • Desired sample is compared with actual sample in report. • Impact on findings and conclusions is detailed. 	Chapters 6, 7, 15, 20
Adequate analysis for decision maker's needs	<ul style="list-style-type: none"> • Sufficiently detailed findings are tied to collection instruments. 	Chapters 15-19
Findings presented unambiguously	<ul style="list-style-type: none"> • Findings are clearly presented in words, tables, and graphs. • Findings are logically organized to facilitate reaching a decision about the manager's problem. • Executive summary of conclusions is outlined. • Detailed table of contents is tied to the conclusions and findings presentation. 	Chapters 15-20
Conclusions justified	<ul style="list-style-type: none"> • Decision-based conclusions are matched with detailed findings. 	Chapters 15-20
Researcher's experience reflected	<ul style="list-style-type: none"> • Researcher provides experience/credentials with report. 	Chapter 20

decision maker and researcher are the same person. The statement of the decision problem should include its scope, its limitations, and the precise meanings of all words and terms significant to the research. Failure of the researcher to do this adequately may raise legitimate doubts in the minds of research report readers as to whether the researcher has sufficient understanding of the problem to make a sound proposal attacking it. This characteristic is comparable to developing a strategic plan before developing a tactical plan or an action map for achieving an objective.

The nine criteria summarized in Exhibit 1-1 profile desirable, decision-oriented research, especially when managers perform the research themselves. These criteria create barriers to adjusting research findings to meet desired ends.

We discuss ethical research issues at length in Chapter 5.

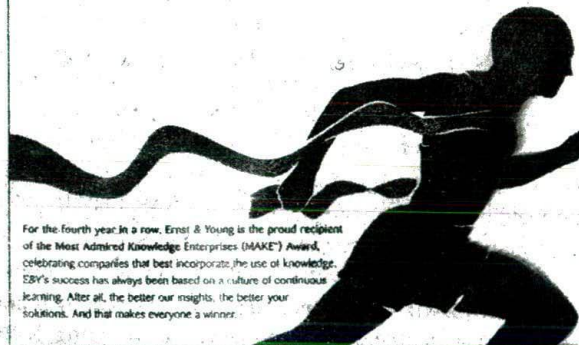
Consulting companies are increasingly a source for business research. In selecting a company to provide strategic direction, an organization should carefully consider the company's research skills and experience. Ernst & Young has won numerous awards for its information technology. This latest award recognizes the firm's attention to continuous learning.
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2. Research process detailed. The research procedures used should be described in sufficient detail to permit another researcher to repeat the research. Except when secrecy is imposed, research reports should reveal with candor the sources of data and the means by which they were obtained. Omission of significant procedural details makes it difficult or impossible to estimate the validity and reliability of the data and justifiably weakens the confidence of the reader in the research itself as well as any recommendations based on the research. This characteristic is comparable to developing a tactical plan.

3. Research design thoroughly planned. The procedural design of the research should be carefully planned to yield results that are as objective as possible. When a sampling of the population is involved, the report should include evidence concerning the degree of representativeness of the sample. A survey of opinions or recollections ought not to be used when more reliable evidence is available from documentary sources or by direct observation. Bibliographic searches should be as thorough and complete as possible. Experiments should have satisfactory controls. Direct observations should be recorded in writing as soon as possible after the event. Efforts should be made to minimize the influence of personal bias in selecting and recording data. This characteristic is comparable to developing detailed action plans for each tactic.

4. High ethical standards applied. Researchers often work independently and have significant latitude in designing and executing research projects. A research design that includes safeguards against causing mental or physical harm to participants and makes data integrity a first priority should be highly valued. Ethical issues in research reflect important moral concerns about the practice of responsible behavior in society.

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Researchers frequently find themselves precariously balancing the rights of their subjects against the scientific dictates of their chosen method. When this occurs, they have a responsibility to guard the welfare of the participants in the studies and also the organizations to which they belong, their clients, their colleagues, and themselves. Careful consideration must be given to those research situations in which there is a possibility for physical or psychological harm, exploitation, invasion of privacy, and/or loss of dignity. The research need must be weighed against the potential for adverse effects. Typically, you can redesign a study, but sometimes you cannot. The researcher should be prepared for this dilemma.

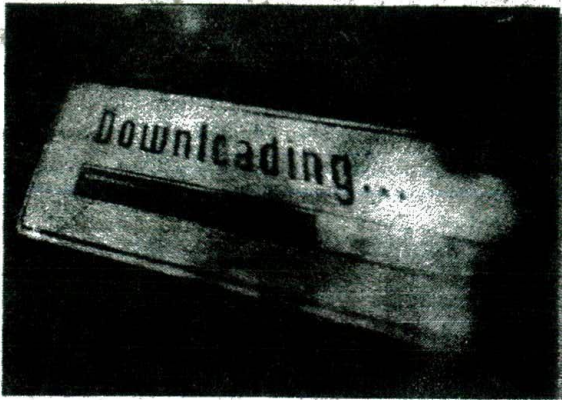
5. Limitations frankly revealed. The researcher should report, with complete frankness, flaws in procedural design and estimate their effect on the findings. There are very few perfect research designs. Some of the imperfections may have little effect on the validity and reliability of the data; others may invalidate them entirely. A competent researcher should be sensitive to the effects of imperfect design, and his or her experience in analyzing the data should provide a basis for estimating their influence. As a decision maker, you should question the value of research where no limitations are reported.

6. Adequate analysis for decision maker's needs. Analysis of the data should be extensive enough to reveal its significance, and the methods of analysis used should be appropriate. The extent to which this criterion is met is frequently a good measure of the competence of the researcher. Adequate analysis of the data is the most difficult phase of research for the novice. The validity and reliability of data should be checked carefully. The data should be classified in ways that assist the researcher in reaching pertinent conclusions and clearly reveal the findings that have led to those conclusions. When statistical methods are used, the probability of error should be estimated and the criteria of statistical significance applied.

7. Findings presented unambiguously. Some evidence of the competence and integrity of the researcher may be found in the report itself. For example, language that is restrained, clear, and precise; assertions that are carefully drawn and hedged with appropriate reservations; and an apparent effort to achieve maximum objectivity tend to leave a favorable impression of the researcher with the decision maker. Generalizations that outrun the evidence on which they are based, exaggerations, and unnecessary verbiage tend to leave an unfavorable impression. Such reports are not valuable to managers wading through the minefields of business decision making. Presentation of data should be comprehensive, easily understood by the decision maker, and organized so that the decision maker can readily locate critical findings.

8. Conclusions justified. Conclusions should be limited to those for which the data provide an adequate basis. Researchers are often tempted to broaden the basis of induction by including personal experiences and their interpretations—data not subject to the controls under which the research data were gathered. Equally undesirable is the all-too-frequent practice of drawing conclusions from a study of a limited population and applying them universally. Researchers also may be tempted to rely too heavily on data collected in a prior study and use it in the interpretation of a new study. Such practice sometimes occurs among research specialists who confine their work to clients in a small industry. These actions tend to decrease the objectivity of the research and weaken readers' confidence in the findings. Good researchers always specify the conditions under which their conclusions seem to be valid.

9. Researcher's experience reflected. Greater confidence in the research is warranted if the researcher is experienced, has a good reputation in research, and is a person of integrity. Were it possible for the reader of a research report to obtain sufficient



What are the consequences of faking data in research? Is it more than an ethical dilemma if you falsify the description of your methodology or if you modify your sampling plan? These are ethical and procedural issues that researchers, even famous ones, face. In its December 2001 issue, *FastCompany* asked author, consultant, and motivational speaker Tom Peters to revisit the writing of *In Search of Excellence*, the 1982 best-selling business title. In his confession #3, Peters is quoted as saying that he "faked the data" that resulted in the eight underlying principles—principles that guided American business for much of the next decade. Rather than evolving from a large study of businesses where each was selected based on its performance metrics (a probability study), he switched the research design. Instead, Peters, along with partner and coauthor Robert

Waterman, asked McKinsey colleagues and other contacts to identify "cool" companies (a nonprobability, judgment sample). They conducted detailed personal interviews with contacts in those initial 62 companies, then reduced the list to 43 by a post-interview review of performance metrics. Peters, in confession #7, admits he missed some of the emerging "excellence" factors because they were "too superficial to make an impact." Some of the things his study missed: early signs of the growing influence of information technology and the importance speed would play in business. Does his confession diminish the importance of the results?
www.tomspeters.com, www.mckinsey.com, www.fastcompany.com

information about the researcher, this criterion perhaps would be one of the best bases for judging the degree of confidence a piece of research warrants and the value of any decision based upon it. For this reason, the research report should contain information about the qualifications of the researcher.

These nine criteria provide an excellent summary of what is desirable in decision-oriented research (see Exhibit 1-1). They are especially appropriate to guide research done by managers themselves, for they create barriers to adjusting research findings to meet desired ends rather than to reflect reality.

Criterion 2 calls for a detailed proposal specifying what will be done, but in many exploratory studies it is not possible to be that precise prior to starting the study. It is even more important, therefore, when researcher and manager are separated by organizational boundaries, to state the nature of the decision problem clearly and unambiguously (criterion 1).

The threat of bias is mentioned under criterion 3, but it should be given more emphasis. The business researcher often knows from the beginning what results the sponsor would like to have. To combat this potentially biasing influence, it may be necessary to secure an understanding between manager and researcher before stating that the objective is to uncover reality—wherever that leads.

Criterion 3 calls for complete disclosure of methods and procedures used in the research study. This also is highly desirable, because it enables others to test findings through replication. Such openness to scrutiny has a positive effect on the quality of research. However, competitive advantage often mitigates against methodology disclosure in business research. Sometimes even the acknowledgment of a study's existence is considered unwise. For example, firms like J. D. Power and Associates will not provide enough information on their methodology to repeat an automotive market study. Similarly, at the time each developed its low-cost line of desktop computers, neither Compaq nor IBM knew of the extensive research the other was doing. In the litigation by state attorneys general against cigarette companies, it proved disastrous when evidence was revealed that cigarette companies had performed studies manipulating nicotine levels to enhance the addictive power of tobacco products.

Criteria 1 through 9 should guide all research studies. Although these criteria use phraseology such as “unambiguous as possible,” this only recognizes the reality of research work. The aim is always to be objective, yet we are all subjective. We also must recognize that research designs have flaws, even though calling attention to them in our work may be painful (criterion 5).

The Value of Acquiring Research Skills

You can profit by having research skills in at least five situations.

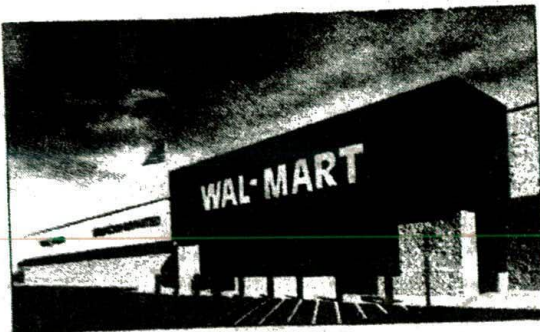
CHILDCO is an example of (1), and CHILDCO, NUCMED, and ColorSplash offer examples of (2). The “Bringing Research to Life” vignette at the beginning of the chapter offers examples of (3), (4), and (5). York College is an example of (4).

1. Manager as research-based decision maker.
2. Subordinate employee as researcher.
3. Manager as research services buyer or evaluator.
4. Manager as evaluator of secondary data sources.
5. Research specialist.

As a decision maker you’ll often feel the need for more information before selecting a course of action (see the CHILDCO case). Your options are limited if there is no one to whom you can delegate this task. You must either make an intuitive judgment without gathering additional information or gather the data yourself with some reasonable level of skill. Gathering information may involve data-mining existing databases and information sources or collecting new information. At the early levels of your career in management, when your experience is limited and your intuitive judgment less reliable, it should be obvious which option is better.

In a second instance, you may be called on to do a research study for a higher level executive. Such a task, often coming early in your career, can be seen as a career-boosting opportunity; it can be your chance to make a favorable impression on that executive (see the CHILDCO, NUCMED, and ColorSplash cases).

The third scenario has you buying research services from others or evaluating proposals for research prepared by others. If you can understand the research design proposed and adequately judge the quality of the planned activities and the likelihood that such activities will assist you in making a decision, you can save your organization both time and money. Literally thousands of companies provide research services. While many specialize in a given industry or type of research, others provide a wide variety of services to meet almost any manager’s needs. Some of the world’s largest research firms are listed in Exhibit 1–2.



Wal-Mart Stores, Bentonville, Arkansas, is the world’s largest retailer as well as one of the most profitable firms in the world. Its installed equipment provides for more than 100 terabytes of data in its data warehouse (equivalent to 16,000 bytes for every person in the world). Wal-Mart uses its customer information to negotiate some of the best prices and to more fully understand its customers and suppliers. It also uses its extensive data to reduce losses—identifying products that have high shoplifting rates and combining this data with video footage of the stores to reveal patterns of losses within the store layout. Wal-Mart recently chose not to renew its contract with Information Resources Inc., a partner of choice for consumer goods manufacturers and retailers seeking market and consumer intelligence. Wal-Mart decided it wasn’t receiving enough value for sharing a very valuable asset: customer point-of-sale data. www.wal-mart.com, www.infores.com

EXHIBIT 1-2 Some of the World's Largest Research Companies

Company	Web URL	Type of Research
IMS Health	www.imshealth.com	Provides information solutions to the pharmaceutical and health care industries.
ACNielsen Corp.	www.acnielsen.com	Provides market research, information, and analysis to the consumer products and services industries.
Nielsen Media Research (division of VNU USA)	www.nielsenmedia.com	Provides television information services in the U.S. and Canada.
Information Resources Inc. (IRI)	www.infores.com	Provides UPC scanner-based business solutions to the consumer packaged goods industry.
Westat	www.westat.com	Provides research to agencies of the U.S. government, as well as businesses, foundations, and state and local governments.
Kantar Group, Ltd.	www.kantargroup.com	Provides worldwide media research and measurement for media owners, agencies, and advertisers.
Arbitron Co.	www.arbitron.com	Provides information services used to develop the local marketing strategies of the electronic media and their advertisers and agencies.
NFO Worldwide	www.nfow.com	Provides results-oriented insights so clients may develop stronger brands and market more successful products and services.
Market Facts	www.marketfacts.com	Provides global marketing research and consulting to business, government, and associations.
MMRI (Maritz Marketing Research)	www.maritz.com/mmri	Provides large-scale, custom-designed research studies that provide critical marketing information.
Taylor Nelson Sofres Intersearch (TNSIntersearch)	www.intersearch.tnsofres.com	Provides custom research, omnibus studies, attitudinal polling, and drug sample monitoring in a variety of industries.

SOURCE: Information extracted from company websites.

Because much decision making relies on using information collected during prior research projects, by having research skills you will be able to deal professionally with the fourth scenario: evaluating the applicability of prior research to assist in resolving a current management dilemma (see "Bringing Research to Life" and York College).

A fifth reason to study research methods is so that you may establish a career as a research specialist. As a specialized function, research offers attractive career opportunities, especially in financial analysis, marketing research, operations research, public relations, and human resources management. As illustrated in the chapter-opening vignette, job opportunities for research specialists exist in all fields of management and in all industries.

The Manager-Researcher Relationship

The management of the information process from gathering to reporting is an integral part of any manager's job. So it is not surprising that many managers do their own research, at least part of the time. The lower a manager is in the decision-making hierarchy, the more likely he or she is to do most of his or her own research. When managers lack either research time or talent, they may delegate the task to a staff assistant or a research specialist. This delegation of responsibility can result in greater synergy, especially if the research is decision driven and each party makes a full contribution to the joint venture. However, the separation of research user from research conductor can pose problems in data analysis, interpretation, conclusion finding, and recommendations. This is why businesses that regularly use outside research specialists often use the same firm repeatedly: Knowledge of the company, its people, and its processes is as critical as knowledge of the decision-making dilemma.

In an organizational setting, the researcher should look on the manager as a client. An effective **manager-researcher relationship** is not achieved unless both fulfill their respective obligations and several critical barriers are overcome.

Manager-Researcher Contributions

The obligations of managers are to specify their problems and provide researchers with adequate background information and access to company information gatekeepers. It is usually more effective if managers state their problems in terms of the decision choices they must make rather than specify the information they think they need. If this is done, both manager and researcher can jointly decide what information is needed.

In the opening vignette, MindWriter's customer affairs manager Myra Wines, as a staff rather than a line manager, may need assistance from managers with line responsibilities to define plausible actions that could affect postpurchase service. She has clearly been charged with the responsibility of executing the customer satisfaction study, but she does not have authority to implement conclusions affecting, for example, product engineering, product manufacture, or distributor relationships. Thus she needs to clarify with those line managers what courses of action might be taken to correct identified problems. If, however, dissatisfaction is arising because of how customers are treated when interacting with the customer affairs staff, Myra has direct line authority to determine plausible actions to correct such problems within her own domain.

Researchers also have obligations. Organizations expect them to develop a creative research design that will provide answers to important business questions. Not only should researchers provide data analyzed in terms of the problem specified, but they also should point out the implications that flow from the results. In the process, conflict may arise between what the decision maker wants and what the researcher can provide or thinks should be provided. The decision maker wants certainty and simple, explicit recommendations, while the researcher often can offer only probabilities and hedged interpretations. This conflict is inherent in their respective roles and has no simple resolution. However, a workable balance can usually be found if each person is sensitive to the demands and restrictions imposed on the other.

Manager-Researcher Conflicts

The sources of manager-researcher conflict are numerous:

- Knowledge gap between the researcher and the manager.
- Job status and internal, political coalitions to preserve status.
- Researcher's isolation from managers.

Knowledge Gap Some conflicts between decision makers and researchers are traced to management's limited exposure to research. Managers seldom have either formal training in research methodology or research expertise gained through experience. And, due to the explosive growth of research technology in recent years, a knowledge gap has developed between managers and research specialists as model building and more sophisticated investigative techniques have come into use. Thus the research specialist removes the manager from his or her comfort zone: The manager must now put his or her faith, and sometimes his or her career, in the hands of the research specialist and hope for the best.

Job Status and Internal Coalitions In addition, managers often see research people as threats to their personal status. Managers still view management as the domain of the "intuitive artist" who is the master in this area. They may believe a request for research assistance implies they are inadequate to the task. These fears are often justified. The researcher's function is to test old ideas as well as new ones. To the insecure manager, the researcher is a potential rival.

The researcher will inevitably have to consider the corporate culture and political situations that develop in any organization. Members strive to maintain their niches and may seek ascendancy over their colleagues. Coalitions form and people engage in various self-serving activities, both overt and covert. As a result, research is blocked, or the findings or objectives of the research are distorted for an individual's self-serving purposes. To allow one's operations to be probed with a critical eye may be to invite trouble from others competing for promotion, resources, or other forms of organizational power.

Researcher Isolation A third source of stress for researchers is their frequent isolation from managers. Researchers draw back into their specialty and talk among themselves. Management's lack of understanding of research techniques compounds this problem. The research department can become isolated, reducing the effectiveness of conclusions a researcher may draw from research findings.

These problems have caused some people to advocate the use of a "research generalist." Such a person would head the research activity, help managers detail their research needs, and translate these needs into research problems. He or she also would facilitate the flow of information between manager and researcher that is so important for bringing the researcher into the decision-making process.

When Research Should Be Avoided

Not every managerial decision requires research. Business research has an inherent value only to the extent that it helps management make better decisions. Interesting information about consumers, employees, or competitors might be pleasant to have, but its value is limited if the information cannot be applied to a critical decision. If a study does not help management select more efficient, less risky, or more profitable alternatives than otherwise would be the case, its use should be questioned. Alternatively, management may have insufficient resources (time, money, or skill) to conduct an appropriate study or face a low level of risk associated with the decision at hand. In these situations, there are valid reasons to avoid business research and its associated costs in time and money. The important point is that applied research in a business environment finds its justification in the contribution it makes to the decision maker's task and to the bottom line.

One objective of this text is to provide you with plausible solutions to potential sources of manager-researcher conflicts. In the chapters that follow, we discuss scientific research procedures and show their application to pragmatic problems of the organization manager. At a minimum, our objective is to make you a more intelligent consumer of research products prepared by others as well as enable you to perform quality research for your own decisions and those of others to whom you report.



EXHIBIT 1-3 Trends in the Research Profession and Necessary Management Safeguards

Trends in Research Profession What Managers Should Watch For

The Positive Trends

- Budding recognition of the importance of researcher participation in strategic planning.
- Emerging return to the strong, internal research group.

The Negative Trends

- Increasing pressure for rapid measurement and feedback.
- Increasing pressure for research specialists to interpret research results and provide strategic recommendations.
- Increasing demand for information privacy, reducing respondent willingness to cooperate.
- General consulting firms moving toward functional specialization and increasingly doing their own research.
- Continued perception of research as an expense rather than an investment in reducing uncertainty.
- Increasingly wide range of competence among those offering services in the research industry.
- Widening cultural mindset gap between business strategists and research specialists.
- Consulting and industry's expectation that new hires have received scientific research training in college.
- Decrease or delay in intellectual transfer between academia and research profession.

- Strategic planning initiatives that have an appropriate research component.
- Better methodologies performed by knowledgeable professionals generating significant value to management decision making.
- Methodologies that raise questions about the representativeness of samples.
- Projects fielded without thoroughly understanding the management dilemma, which results in information with little value to solve the dilemma.
- Research providers who may be technically competent with expertise in quantitative skills, but who are not trained or have limited training in management.
- Research providers who are knowledgeable about extracting valuable knowledge from internal databases (data mining).
- Consultants who lack the technical skill in research methodologies creating a lack of translation from management dilemma to research protocol.
- Consultants sharing information among specialized clients, generating a loss of intellectual capital that fosters distinctive competencies—the basis of competitive advantage.
- Research budgets being cut during economic downturns.
- Insufficient quality of credentials among research professionals being used or considered.
- Assignment of projects to researchers with insufficient technical background to do quality research.
- Breakdown in communication between the researcher and the manager who will use the research results, resulting in information, not knowledge.
- Assuring that curricular demands placed on the new hires by their collegiate institutions have included research methodologies.
- Assuring that firms hired as research specialists keep abreast of the newest methodologies through continuing education efforts.

Trends in the Research Profession and Management Safeguards

Management's demand for more, better, and quicker information is bringing many changes to the research profession. Exhibit 1-3 summarizes these changes and the safeguards needed to protect the quality of the information used in decision making. Few of these trends are positive. As a result, managers who are unfamiliar with research methodology and who rely on research information to decrease decision-making risk are all the more vulnerable. The preponderance of negative news also makes managers who are familiar with research methodology and who know what makes *good* research far more valuable to their organizations. As you are about to join this latter group, you are to be commended for your foresight.

SUMMARY

1 Research is any organized inquiry carried out to provide information for solving problems. Business research is a systematic inquiry that provides information to guide business decisions. This includes reporting, descriptive, explanatory, and predictive studies. We emphasize the last three in this book.

2 What characterizes good research? Generally, one expects good research to be purposeful, with a clearly defined focus and plausible goals, with defensible, ethical, and repeatable procedures, and with evidence of objectivity. The reporting of procedures—their strengths and weaknesses—should be complete and honest. Appropriate analytical techniques should be used; conclusions drawn should be limited to those clearly justified by the findings; and reports of findings and conclusions should be clearly presented and professional in tone, language, and appearance. Managers should always choose an investigator who has an established reputation for quality work. The research objective and its benefits should be weighed against potentially adverse effects.

3 The relationship between manager and researcher is an important one. Both share the obligation of making a project meaningful. Several factors complicate this relationship. Among these are ethical considerations and the political environment. Changes in the research industry also complicate the relationship, and the manager must safeguard against the negative changes. Among these are research being performed by individuals untrained in research protocol, pressure on research specialists to provide strategic and tactical recommendations regardless of their management experience, continuing perception of research as a nonessential expense, and as the range of necessary skills increases, the broadening range of competence possessed by individuals who call themselves research specialists.

4 The managers of tomorrow will need to know more than any managers in history. Research will be a major contributor to that knowledge. Managers will find knowledge of research methods to be of value in many situations. They may need to conduct research either for themselves or for others. As buyers of research services they will need to be able to judge research quality. Finally, they may become research specialists themselves.

KEY TERMS

applied research	12	descriptive studies	10	pure research	12
basic research	12	explanatory studies	11	reporting studies	10
business research	5	internal databases	6	research variable	10
control	12	management dilemma	5	scientific method	14
data mining	6	manager-researcher relationship	21		
data warehousing	6	predictive studies	12		

EXAMPLES

Company	Scenario	Page
Bridgestone/Firestone	Studying secondary data to understand tire tread separation.	11
CHILDCO*	Company researching the acquisition of a toy manufacturer.	7
ColorSplash*	A paint manufacturer studying inventory control options to improve profitability.	8
Ernst and Young	A consulting services firm that does research for its clients and values the increased knowledge level of its employees.	16
Financial Accounting Standards Board	New standard for measuring "goodwill" that recognizes the value of research and brand equity.	5
Ford Motor Co.	Studying secondary data to understand Explorer rollover susceptibility.	11
MindWriter*	Laptop manufacturer hiring a research services supplier.	BRTL, throughout
NATA*	An aviation trade association study to examine radiation risks for flight crews and passengers.	12
NUCMED*	Physician specialists in nuclear medicine and imaging evaluating a health care cost containment plan.	7
Tom Peters	Research process reflected in <i>In Search of Excellence</i> .	18
York College*	A multiphase study by a university alumni association to evaluate a proposal to build a retirement community to serve alumni.	8
Wal-Mart	Maintains a mammoth data warehouse to improve profitability.	19
Webvan	How an absence of research contributed to the problems of a new business model.	7

*Due to the confidential and proprietary nature of most research, the names of some companies have been changed.

DISCUSSION QUESTIONS

Terms in Review

Making Research Decisions

1. What is research? Why should there be any question about the definition of research?
2. What is the difference between applied and basic or pure research? Use a decision about how a salesperson is to be paid, by commission or salary, and describe the question that would guide applied research versus the question that would guide pure research.
3. A human resources manager needs to have information in order to decide whether to create a custom motivation program or purchase one offered by a human resources consulting firm. What are the dilemmas the manager faces in selecting either of these alternatives?
4. You are manager of the midwestern division of a major corporation, supervising five animal-feed plants scattered over four states. Corporate headquarters asks you to conduct an investigation to determine whether any of these plants should be closed, expanded, moved, or reduced. Is there a possible conflict between your roles as researcher and manager? Explain.
5. Advise each of the following persons on a specific research study that he or she might find useful. Classify each proposed study as reporting, descriptive, explanatory, or predictive.
 - a. When the management decision problem is known:
 - (1) Manager of a full-service restaurant with high employee turnover.
 - (2) Head of an academic department committee charged with selecting a research methods textbook.
 - b. When the management decision problem has not yet been specified:
 - (1) Manager of a restaurant.
 - (2) Plant manager at a shoe factory.
 - (3) Director of Big Brothers/Big Sisters in charge of sponsor recruiting.
 - (4) Data analyst with ACNielsen research.
 - (5) Human resources manager at a university.
 - (6) Product manager of the Ford Explorer.
 - (7) Family services officer for your county.
 - (8) Office manager for a pediatrician.
6. The new president of an old, established company is facing a problem. The company is currently unprofitable and is, in the president's opinion, operating inefficiently. The company sells a wide line of equipment and supplies to the dairy industry. Some items it manufactures, and many it wholesales to dairies, creameries, and similar plants. Because the industry is changing in several ways, survival will be more difficult in the future. In particular, many equipment companies are bypassing the wholesalers and selling directly to dairies. In addition, many of the independent dairies are being taken over by large food chains. How might research help the new president make the right decisions? In answering this question, consider the areas of marketing and finance as well as the whole company.
7. You have received a research report done by a consultant for your firm, a life insurance company. The study is a survey of morale in the home office and covers the opinions of about 500 secretaries and clerks plus about 100 executives and actuaries. You are asked to comment on its quality. What will you look for?
8. As area sales manager for a company manufacturing and marketing outboard engines, you have been assigned the responsibility of conducting a research study to estimate the sales potential of your products in the domestic (U.S. or Canadian) market. Discuss key issues and concerns arising from the fact that you, the manager, are also the researcher.

From Concept to Practice

9. Apply the principles in Exhibit 1-1 to the research scenario in question 8.

Bringing Research to Life

10. In what type(s) of study is Myra interested (applied or basic/pure research; exploratory, predictive, or descriptive study)?

11. What evidence is presented in the vignette of data warehousing? Of data mining?

WWW Exercises

Visit our website for Internet exercises related to this chapter at www.mhhe.com/business/cooper8.

CASES

CALLING UP ATTENDANCE



DATA DEVELOPMENT INC.

*All cases indicating a video icon are located on the Instructor's Videotape Supplement. All nonvideo cases are in the case section of the textbook. All cases indicating a CD icon offer a data set, which is located on the accompanying CD.

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1. See, for example, Murray Levine, "Investigative Reporting as a Research Method: Analysis of Bernstein and Woodward's *All the President's Men*," *American Psychologist* 35 (1980), pp. 626-38.
2. See, for example, Elizabethann O'Sullivan and Gary K. Rassel, *Research Methods for Public Administrators* (New York: Longman, 1999).
3. Fred N. Kerlinger and Howard B. Lee, *Foundations of Behavioral Research*, 4th ed. (New York: HBI College & School Division, 1999), p. 15.
4. An hypothesis is a statement that is advanced for the purpose of testing its truth or falsity.
5. An exploratory study describes an investigation when the final research problem has not yet been clearly fixed. Its aim is to provide the insights needed by the researcher to develop a more formal research design.
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Applying Scientific Thinking to Management Problems

Learning Objectives

After reading this chapter, you should understand . . .

The distinctions between different approaches (styles of thinking) to problem solving.

The terminology used by professional researchers employing scientific thinking.

What is needed to formulate a solid research hypothesis.

Bringing Research to Life

“Myra, have you had any experience with research suppliers?” asked Jason.

“Not like you, no. But yes, when I served in the Army Reserve,” said Myra. “They never knew what to do with me, a woman, a captain, and a TV journalist. I think they feared my snoopiness would break out of control.”

“So, one summer they sent me to test ammunition and a new cannon.”

“The firing range was a played-out mine, now strip-mined until it was worse than a moonscape. In its day, the site had been one of the most prosperous mining regions, where the people were known for fearlessly and proudly going out to dig and produce. The nearest town was so severely depressed that, for the pitifully few jobs we provided, the folks welcomed us in to bomb their backyard to cinders.”

“The cannon we were testing was impressive. We armed it with three-inch shells, put on ear protectors and goggles and lobbed shells into the range. There would be a tremendous flash and boom, and the shells would go roaring and soaring out of sight. We would soon hear a tremendous boom coming back to us, and see dust and ash kicked up several hundred feet. We were all very happy not to be down range. When we went down range later, we’d find a huge crater and a fused puddle of iron, but nothing else but slag and molten rocks.”

“There was this one problem. About every 20th shell would be a dud. It would fly off and land, and maybe kick up some dust, but explode it would not.”

“On paper, this was not supposed to be a problem. The arsenal sent down an officious second lieutenant, and he showed us reports that the army had dropped such duds from hundred-foot platforms, from helicopters, had applied torches to them—everything—and had discovered them to be completely inert. The only thing he claimed would ignite one of these duds was to drop another, live bomb on it.”

“Regrettably, this proved not to be the case. In the middle of the night we would hear one of these so-called duds explode. We would rush out at dawn, and sure enough, find a new crater, molten slag, molten rock, and so forth. It was quite a mystery.”

“So I nosed around. I sat up one night on a hill overlooking the range, and, sure enough, I saw people with flashlights moving around in there.”

“Locals were coming in at night, intending to crack open the bombs and scavenge for copper wire or anything they thought was salvageable. Except, of course, their actions ignited one of the beauties, and erased any evidence of a crime being committed by vaporizing the perpetrators on the spot.”

“So I started hanging around the locals. They were involved in every kind of thrill sport. It was not unusual to see a 50-mile auto race with four ambulances on hand on the edge of the oval, to cart off the carnage to the surgical hospital in the next county. I saw men leap into cars with threadbare tires, loose wheels, malfunctioning brakes, with brake fluid and transmission fluid drooling all over the track. Nobody thought anything of this. If I asked, their answer was, ‘I’ll go when my number is up,’ or ‘It’s not in my hands.’”

“These good folk had lost all sense of cause and effect. They could wheel their cars out onto the track on a tire they knew was thin as tissue, and if it blew out and put them in the hospital, their reaction was ‘Some days you can’t win for losin’.”

“Their nonscientific attitude made sense, from a cultural-economic view. It was what let their men go down in the mines year after year. I begged the sheriff to warn them away from our range. ‘What’s the big problem, Captain Wines?’ he asked. ‘They are going to kill themselves,’ I said. ‘They are going to die anyway,’ he said. ‘We all are going to die. People die every month who never went out on the range.’”