PROBLEM DEFINITION: THE FOUNDATION OF BUSINESS RESEARCH

Importance of Starting with a Good Problem Definition

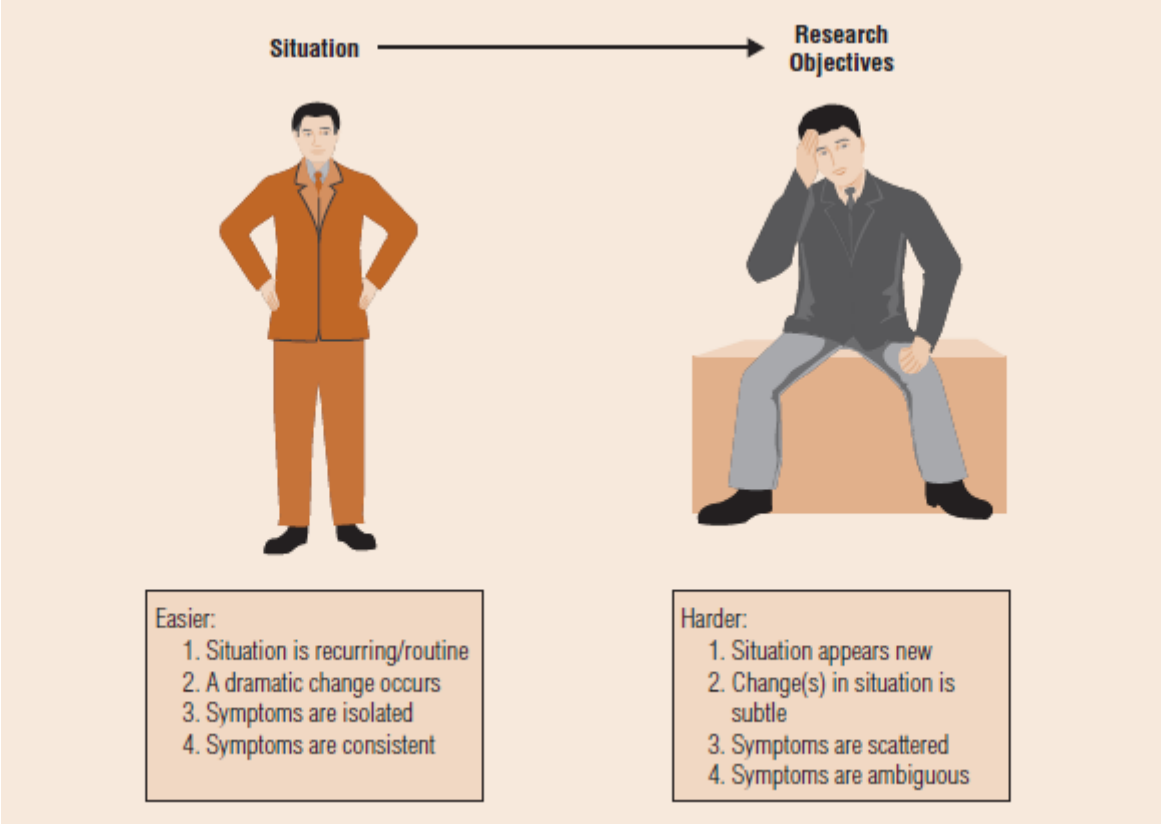
When the client fails to understand their situation or insists on studying an irrelevant problem, the research is very likely to fail, even if it is done perfectly. Translating a business situation into something that can be researched is somewhat like translating one language into another. It begins by coming to a consensus on a decision statement or question. A **decision statement** is a written expression of the key question(s) that a research user wishes to answer. It is the reason that research is being considered. It must be well stated and relevant. The researcher translates this into research terms by rephrasing the decision statement into one or more research objectives. These are expressed as deliverables in the research proposal. The researcher then further expresses these in precise and scientific research terminology by creating research hypotheses from the research objectives.

For simplicity, the term **problem definition** is adapted here to refer to the process of defining and developing a decision statement and the steps involved in translating it into more precise research terminology, including a set of research objectives. If this process breaks down at any point, the research will almost certainly be useless or even harmful. It will be useless if it presents results that simply are deemed irrelevant and do not assist in decision making. It can be harmful both because of the wasted resources and because it may misdirect the company in a poor direction. Ultimately, it is difficult to say that any one step in the research process is most important. However, formally defining the problem to be attacked by developing decision statements and translating them into actionable research objectives must be done well or the rest of the research process is misdirected. Even a good road map is useless unless you know just where you are going. All of the roads can be correctly drawn, but they still don't get you where you want to be. Similarly, even the best research procedures will not overcome poor problem definition.

Problem Complexity:

Ultimately, the quality of business research in improving business decisions is limited by the quality of the problem definition stage. This is far from the easiest stage of the research process. Indeed, it can be the most complex. Figure below helps to illustrate factors that influence how complex the process can be.

- **SITUATION FREQUENCY**
  Many business situations are cyclical. Cyclical business situations lead to recurring business problems. These problems can even become routine. In these cases, it is easy to define problems and identify the types of research that are needed. In some cases, problems are so routine that they can be solved without any additional research. Recurring problems can even be automated through a company's DSS. For example, pricing problems often occur routinely. Just think about how the price of gas fluctuates when several stations are located within sight of each other. One station's prices definitely affect the sales of the other stations as well as of the station itself. Similarly, automobile companies, airline companies, and computer companies, to name just a few, face recurring pricing issues. Because these situations recur so frequently, addressing them becomes routine. Decision makers know how to communicate them to researchers and researchers know what data are needed.



- **DRAMATIC CHANGES**
  When a sudden change in the business situation takes place, it can be easier to define the problem. For example, if Deland's business had increased sharply at the beginning of the year, the key factors to study could be isolated by identifying other factors that have changed in that same time period. It could be that a very large trucking contract had been obtained, or that a current customer dramatically increased their distribution needs, which Deland is benefiting from. In contrast, when changes are very subtle and take effect over a long period of time, it can be more difficult to define the actual decision and research problems. Detecting trends that would permanently affect the recruitment challenges that Deland faces can be difficult. It may be difficult to detect the beginning of such a trend and even more difficult to know whether such a trend is relatively permanent or simply a temporary occurrence.

- **HOW WIDESPREAD ARE THE SYMPTOMS?**
  The more scattered any symptoms are, the more difficult it is to put them together into some coherent problem statement. In contrast, firms may sometimes face situations in which multiple symptoms exist, but they are all pointing to some specific business area. For instance, an automobile manufacturing company may exhibit symptoms such as increased complaints about a car's handling, increased warranty costs due to repairs, higher labor costs due to inefficiency, and lower performance ratings by consumer advocates such as Consumer Reports. All of these symptoms point to production as a likely problem area. This may lead to research questions that deal with supplier-manufacturer relationships, job performance, job satisfaction, supervisory support, and performance. Although having a lot of problems in one area may not sound very

positive, it can be very helpful in pointing out the direction that is most in need of attention and improvement. In contrast, when the problems are more widespread, it can be very difficult to develop useful research questions. If consumer complaints dealt with the handling and the appearance of the car, and these were accompanied by symptoms including consumer beliefs that gas mileage could be better and that dealerships did not have a pleasant environment, it may be more difficult to put these scattered symptoms together into one or a few related research questions. Later in the chapter, we'll discuss some tools for trying to analyze symptoms in an effort to find some potential common cause.

- **SYMPTOM AMBIGUITY**
  Ambiguity is almost always unpleasant. People simply are uncomfortable with the uncertainty that comes with ambiguity. Similarly, an environmental scan of a business situation may lead to many symptoms, none of which seem to point in a clear and logical direction. In this case, the problem area remains vague and the alternative directions are difficult to ascertain. A retail store may face a situation in which sales and traffic are up, but margins are down. They may have decreased employee turnover, but lower job satisfaction. In addition, there may be several issues that arise with their suppliers, none of which is clearly positive or negative. In this case, it may be very difficult to sort through the evidence and reach a definitive decision statement or list of research objectives.

The Problem-Definition Process

Problems Mean Gaps

A **problem** occurs when there is a difference between the current conditions and a more preferable set of conditions. In other words, a gap exists between the way things are now and a way that things could be better. The gap can come about in a number of ways:

1. Business performance is worse than expected business performance. For instance, sales, profits, and margins could be below targets set by management. This is a very typical type of problem analysis. Think of all the new products that fail to meet their targeted goals. Trend analysis would also be included in this type of problem. Management is constantly monitoring key performance variables. Previous performance usually provides a benchmark forming expectations. Sales, for example, are generally expected to increase a certain percentage each year. When sales fall below this expectation, or particularly when they fall below the previous year's sales, management usually recognizes that they have a potential problem on their hands. The Research Snapshot on the next page illustrates this point.

2. Actual business performance is less than possible business performance. Realization of this gap first requires that management have some idea of what is possible. This may form a research problem in and of itself. Opportunity-seeking often falls into this type of problem-definition process. Many American and European Union companies have redefined what possible sales levels are based upon the expansion of free markets around the world. China's Civil Aviation Administration has relaxed requirements opening the Chinese air travel market to private airlines. Suddenly, the possible market size for air travel has increased significantly, creating opportunities for growth.

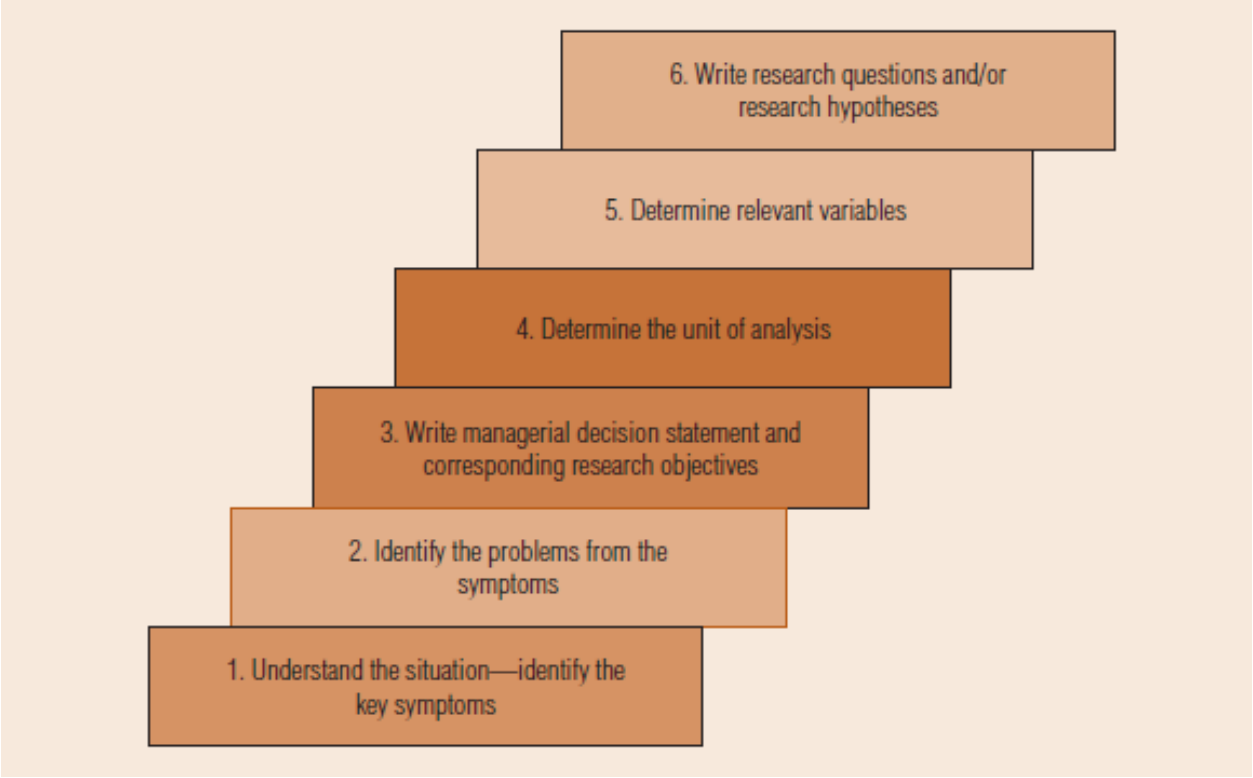
3. Expected business performance is greater than possible business performance. Sometimes, management has unrealistic views of possible performance levels—either too high or too low. One

key problem with new product introductions involves identifying realistic possibilities for sales. While you may have heard the old adage that 90 percent of all new products fail, how many of the failures had a realistic sales ceiling? In other words, did the company know the possible size of the market? In this case, the problem is not with the product but with the plan. Some product "failures" may actually have been successful if management had a more accurate idea of the total market potential. Management can close this gap through decision making. Researchers help managers make decisions by providing relevant input.

The Problem-Definition Process Steps

The problem-definition process involves several interrelated steps. Sometimes, the boundaries between each step aren't exactly clear. But generally, completing one step leads to the other and by the time the problem is defined, each of these steps has been addressed in some way. The steps are

1. Understand the business situation—identify key symptoms
2. Identify key problem(s) from symptoms
3. Write managerial decision statement and corresponding research objectives
4. Determine the unit of analysis
5. Determine the relevant variables
6. Write research questions and/or research hypotheses



The Problem-Definition Process

1-Understand the Business Decision

A **situation analysis** involves the gathering of background information to familiarize researchers and managers with the decision-making environment. The situation analysis can be written up as a way of documenting the problem-definition process. Gaining an awareness of marketplace conditions and an

appreciation of the situation often requires exploratory research. Researchers sometimes apply qualitative research with the objective of better problem definition. The situation analysis begins with an interview between the researcher and management.

INTERVIEW PROCESS

The researcher must enter a dialogue with the key decision makers in an effort to fully understand the situation that has motivated a research effort. This process is critical and the researcher should be granted access to all individuals who have specific knowledge of or insight into this situation. Researchers working with managers who want the information "yesterday" often get little assistance when they ask, "What are your objectives for this study?" Nevertheless, even decision makers who have only a gut feeling that the research might be a good idea benefit greatly if they work with the researcher to articulate precise research objectives.

Researchers may often be tempted to accept the first plausible problem statement offered by management. For instance, in the opening vignette, it is clear that David believes there is a recruitment problem. However, it is very important that the researcher not blindly accept a convenient problem definition for expediency's sake. In fact, research demonstrates that people who are better problem solvers generally reject problem definitions as given to them. Rather, they take information provided by others and re-associate it with other information in a creative way. This allows them to develop more innovative and more effective decision statements. There are many ways to discover problems and spot opportunities.

There is certainly much art involved in translating scattered pieces of evidence about some business situation into relevant problem statements and then relevant research objectives. While there are other sources that address creative thinking in detail, some helpful hints that can be useful in the interview process include:

i. Develop many alternative problem statements. These can emerge from the interview material or from simply rephrasing decision statements and problem statements.
ii. Think about potential solutions to the problem. Ultimately, for the research to be actionable, some plausible solution must exist. After pairing decision statements with research objectives, think about the solutions that might result. This can help make sure any research that results is useful.
iii. Make lists. Use free-association techniques to generate lists of ideas. The more ideas, the better. Use interrogative techniques to generate lists of potential questions that can be used in the interview process. **Interrogative techniques** simply involve asking multiple what, where, who, when, why, and how questions. They can also be used to provoke introspection, which can assist with problem definition.
iv. Be open-minded. It is very important to consider all ideas as plausible in the beginning stages of problem solving. One sure way to stifle progress is to think only like those intimately involved in the business situation or only like those in other industries. Analogies can be useful in thinking more creatively.

IDENTIFYING SYMPTOMS

Interviews with key decision makers also can be one of the best ways to identify key problem symptoms. Recall that all problems have symptoms just as human disease is diagnosed through symptoms. Once symptoms are identified, then the researcher must probe to identify possible causes of these changes. **Probing** is an interview technique that tries to draw deeper and more elaborate explanations from the discussion. This discussion may involve potential problem causes. This probing

process will likely be very helpful in identifying key variables that are prime candidates for study.

One of the most important questions the researcher can ask during these interviews is, "what has changed?" Then, the researcher should probe to identify potential causes of the change. At the risk of seeming repetitive, it is important that the researcher repeat this process to make sure that some important change has not been left out. In addition, the researcher should look for changes in company documents, including financial statements and operating reports. Changes may also be identified by tracking down news about competitors and customers.

2-Identifying the Relevant Issues from the Symptoms

Anticipating the many influences and dimensions of a problem is impossible for any researcher or executive. The preceding interview is extremely useful in translating the decision situation into a working problem definition by focusing on symptoms. However, the researcher needs to be doubly certain that the research attacks real problems and not superficial symptoms. For instance, when a firm has a problem with advertising effectiveness, the possible causes of this problem may be low brand awareness, the wrong brand image, use of the wrong media, or perhaps too small a budget. Certain occurrences that appear to be the problem may be only symptoms of a deeper problem.

3-Writing Managerial Decision Statements and Corresponding Research Objectives

The situation analysis ends once researchers have a clear idea of the managerial objectives from the research effort. Decision statements capture these objectives in a way that invites multiple solutions. Multiple solutions are encouraged by using plural nouns to describe solutions. In other words, a decision statement that says in what "ways" a problem can be solved is better than one that says in what "way" a problem can be solved. Ultimately, research may provide evidence showing results of several ways a problem can be attacked.

Decision statements must be translated into research objectives. At this point, the researcher is starting to visualize what will need to be measured and what type of study will be needed.

What information or data will be needed to help answer this question? Obviously, we'll need to study the driver census and the number of hires needed to fill open positions. James needs to find out what might cause employee dissatisfaction and cause turnover to increase. Thinking back to the interview, James knows that there have been several changes in the company itself, many related to saving costs. Saving costs sounds like a good idea; however, if it harms driver loyalty Even slightly, it probably isn't worthwhile. Thus, the corresponding research objectives are stated as follows:

- Determine what key variables relate to driver loyalty within the company, meaning (1) how does the lower level of pay impact driver retention and (2) what does the increase in long-haul trucking do to Deland Trucking's ability to increase retention?

- Assess the impact of different intervention strategies on driver satisfaction These research objectives are the deliverables of the research project. A research study will be conducted that (1) shows how much each of several key variables relates to loyalty and retention and (2) provides a description of likelihood of different intervention strategies on driver satisfaction.

The researcher should reach a consensus agreement with the decision maker regarding the overall decision statement(s) and research objectives. If the decision maker agrees that the statement captures the situation well and understands how the research objectives, if accomplished, will help address the

situation, then the researcher can proceed. The researcher should make every effort to ensure that the decision maker understands what a research project can deliver. If there is no agreement on the decision statement or research objectives, more dialogue between decision makers and researchers is needed.

4-Determine the Unit of Analysis

The **unit of analysis** for a study indicates what or who should provide the data and at what level of aggregation. Researchers specify whether an investigation will collect data about individuals (such as customers, employees, and owners), households (families, extended families, and so forth), organizations (businesses and business units), departments (sales, finance, and so forth), geographical areas, or objects (products, advertisements, and so forth). In studies of home buying, for example, the husband/wife dyad typically is the unit of analysis rather than the individual because many purchase decisions are made jointly by husband and wife.

Researchers who think carefully and creatively about situations often discover that a problem can be investigated at more than one level of analysis. For example, a lack of worker productivity could be due to problems that face individual employees or it could reflect problems that are present in entire business units. Determining the unit of analysis should not be overlooked during the problem-definition stage of the research.

5-Determine Relevant Variables

WHAT IS A VARIABLE?

What things should be studied to address a decision statement? Researchers answer this question by identifying key variables. A **variable** is anything that varies or changes from one instance to another. Variables can exhibit differences in value, usually in magnitude or strength, or in direction. In research, a variable is either observed or manipulated, in which case it is an experimental variable.

The converse of a variable is a **constant**. A constant is something that does not change. Constants are not useful in addressing research questions. Since constants don't change, management isn't very interested in hearing the key to the problem is something that won't or can't be changed. In causal research, it can be important to make sure that some potential variable is actually held constant while studying the cause and effect between two other variables. In this way, a spurious relationship can be ruled out. At this point however, the notion of a constant is more important in helping to understand how it differs from a variable.

TYPES OF VARIABLES

There are several key terms that help describe types of variables. The *variance* in *variables* is captured either with numerical differences or by an identified category membership. In addition, different terms describe whether a variable is a potential cause or an effect.

A **continuous variable** is one that can take on a range of values that correspond to some quantitative amount. Consumer attitude toward different airlines is a variable that would generally be captured by numbers, with higher numbers indicating a more positive attitude than lower numbers. Each attribute of airlines' services, such as safety, seat comfort, and baggage handling can be numerically scored in this way. Sales volume, profits, and margin are common business metrics that represent continuous variables.

A **categorical variable** is one that indicates membership in some group. The term **classificatory variable** is sometimes also used and is generally interchangeable with *categorical variable*. Categorical

variables sometimes represent quantities that take on only a small number of values (one, two, or three). However, categorical variables more often simply identify membership.

For example, people can be categorized as either male or female. A variable representing biological sex describes this important difference. The variable values can be an "M" for membership in the male category and an "F" for membership in the female category. Alternatively, the researcher could assign a "0" for men and a "1" for women. In either case, the same information is represented.

A common categorical variable in consumer research is adoption, meaning the consumer either did or did not purchase a new product. Thus, the two groups, purchase or not purchase, comprise the variable. Similarly, turnover, or whether an employee has quit or not, is a common organizational variable.

In descriptive and causal research, the terms *dependent variable* and *independent variable* describe different variable types. This distinction becomes very important in understanding how business processes can be modeled by a researcher. The distinction must be clear before one can correctly apply certain statistical procedures like multiple regression analysis. In some cases, however, such as when only one variable is involved in a hypothesis, the researcher need not make this distinction.

A **dependent variable** is a process outcome or a variable that is predicted and/or explained by other variables. An **independent variable** is a variable that is expected to influence the dependent variable in some way. Such variables are independent in the sense that they are determined outside of the process being studied. That is another way of saying that dependent variables do not change independent variables.

For example, average customer loyalty may be a dependent variable that is influenced or predicted by an independent variable such as perceptions of restaurant food quality, service quality, and customer satisfaction. Thus, a process is described by which several variables together help create and explain how much customer loyalty exists. In other words, if we know how a customer rates the food quality, service quality, and satisfaction with a restaurant, then we can predict that customer's loyalty toward that restaurant. Note that this does not mean that we can predict food quality or service quality with customer loyalty.

Dependent variables are conventionally represented by the letter Y. Independent variables are conventionally represented by the letter X. If research involves two dependent variables and two or more independent variables, subscripts may also be used to indicate Y1, Y2 and X1, X2, and so on.

Ultimately, theory is critical in building processes that include both independent and dependent variables. Managers and researchers must be careful to identify relevant and actionable variables. *Relevant* means that a change in the variable matters and *actionable* means that a variable can be controlled by managerial action. Superfluous variables are those that are neither relevant nor actionable and should not be included in a study. Theory should help distinguish relevant from superfluous variables. The process of identifying the relevant variables overlaps with the process of determining the research objectives. Typically, each research objective will mention a variable or variables to be measured or analyzed. As the translation process proceeds through research objectives, research questions, and research hypotheses, it is usually possible to emphasize the variables that should be included in a study.

6-Write Research Objectives and Questions

Both managers and researchers expect problem-definition efforts to result in statements of research questions and research objectives. At the end of the problem-definition stage, the researcher should prepare a written statement that clarifies any ambiguity about what the research hopes to accomplish. This completes the translation process.

Research questions express the research objectives in terms of questions that can be addressed by research. For example, one of the key research questions involved in the opening vignette is "Are wages and long-haul distance related to driver loyalty and retention?" Hypotheses are more specific than research questions. One key distinction between research questions and hypotheses is that hypotheses can generally specify the direction of a relationship. In other words, when an independent variable goes up, we have sufficient knowledge to predict that the dependent variable should also go up (or down as the case may be). One key research hypothesis for Deland Trucking is:

Higher cents per mile are related positively to *driver loyalty.*

At times, a researcher may suspect that two variables are related but have insufficient theoretical rationale to support the relationship as positive or negative. In this case, hypotheses cannot be offered. At times in research, particularly in exploratory research, a proposal can only offer research questions. Research hypotheses are much more specific and therefore require considerably more theoretical support. In addition, research questions are interrogative, whereas research hypotheses are declarative.

Clarity in Research Questions and Hypotheses

Research questions make it easier to understand what is perplexing managers and to indicate what issues have to be resolved. A research question is the researcher's translation of the marketing problem into a specific inquiry.

A research question can be too vague and general, such as "Is advertising copy 1 better than advertising copy 2?" Advertising effectiveness can be variously measured by sales, recall of sales message, brand awareness, intention to buy, recognition, or knowledge, to name a few possibilities. Asking a more specific research question (such as, "Which advertisement has a higher day after recall score?") helps the researcher design a study that will produce useful results, as seen in the Research Snapshot above. Research question answers should provide input that can be used as a standard for selecting from among alternative solutions. Problem definition seeks to state research questions clearly and to develop well-formulated, specific hypotheses.

A sales manager may hypothesize that salespeople who show the highest job satisfaction will be the most productive. An advertising manager may believe that if consumers' attitudes toward a product are changed in a positive direction, consumption of the product also will increase.

Hypotheses are statements that can be empirically tested. A formal hypothesis has considerable practical value in planning and designing research. It forces researchers to be clear about what they expect to find through the study, and it raises crucial questions about data required. When evaluating a hypothesis, researchers should ensure that the information collected will be useful in decision making. Notice how the following hypotheses express expected relationships between variables:

- There is a positive relationship between *buying on the Internet* and the presence of *younger children* in the home.
- *Sales* are lower for salespeople in regions that receive less *advertising support.*
- Consumers will experience *cognitive dissonance* after the decision to *adopt* a TiVo personal

video recorder.

- *Opinion leaders* are more affected by mass media communication *sources* than are non-leaders.
- Among non-exporters, the degree of perceived importance of overcoming barriers to exporting is related positively to general interest in exporting (export intentions).

Management is often faced with a "go/no go" decision. In such cases, a research question or hypothesis may be expressed in terms of a meaningful barrier that represents the turning point in such a decision. In this case, the research involves a **managerial action standard** that specifies a specific performance criterion upon which a decision can be based.

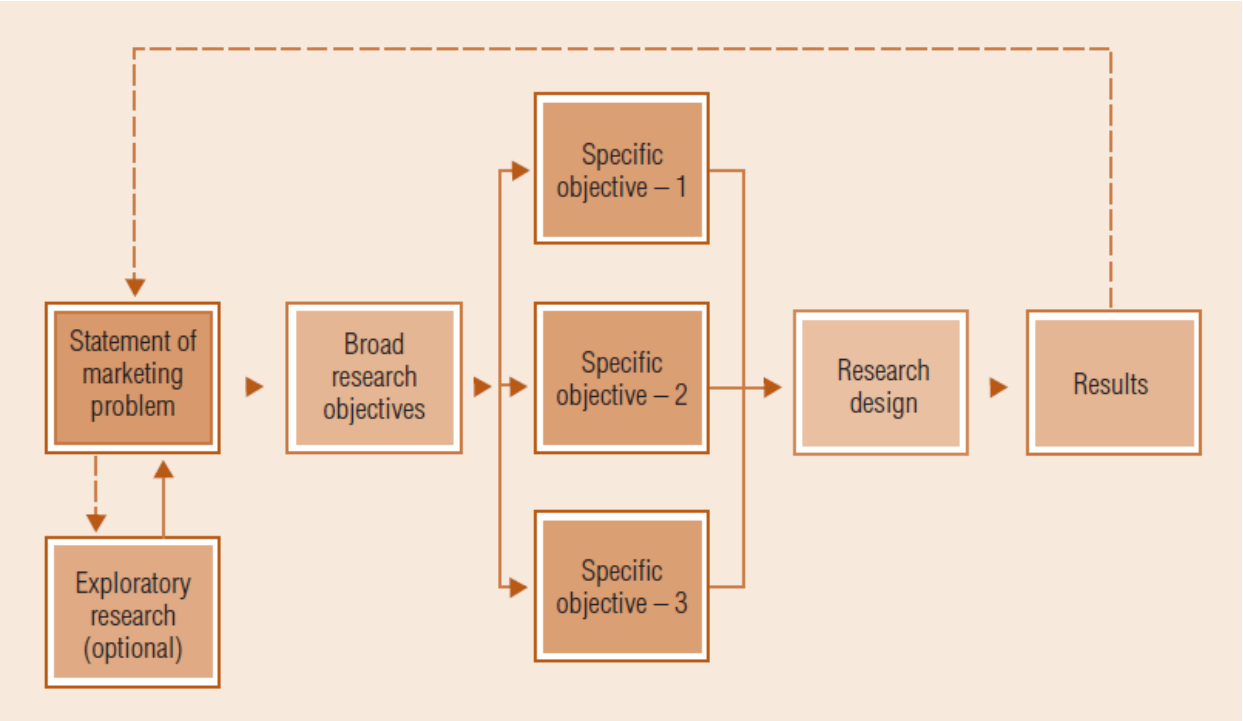


FIGURE Influence of Decision Statement of Marketing Problem on Research Objectives and Research Designs

How Much Time Should Be Spent on Problem Definition?

Budget constraints usually influence how much effort is spent on problem definition. Business situations can be complex and numerous variables may be relevant. Searching for every conceivable cause and minor influence is impractical. The more important the decision faced by management, the more resources should be allocated toward problem definition. While not a guarantee, allowing more time and spending more money will help make sure the research objectives that result are relevant and can demonstrate which influences management should focus on.

Managers, being responsible for decision making, may wish the problem-definition process to proceed quickly. Researchers who take a long time to produce a set of research objectives can frustrate managers. However, the time taken to identify the correct problem is usually time well spent.

The Research Proposal

The **research proposal** is a written statement of the research design. It always includes a statement explaining the purpose of the study (in the form of research objectives or deliverables) and a definition of the problem, often in the form of a decision statement. A good proposal systematically outlines the particular research methodology and details procedures that will be used during each stage of the research process. Normally a schedule of costs and deadlines is included in the research proposal. The research proposal becomes the primary communication document between the researcher and the research user.

The Proposal as a Planning Tool

Preparation of a research proposal forces the researcher to think critically about each stage of the research process. Vague plans, abstract ideas, and sweeping generalizations about problems or procedures must become concrete and precise statements about specific events. Data requirements and research procedures must be specified clearly so others may understand their exact implications. All ambiguities about why and how the research will be conducted must be clarified before the proposal is complete.

The researcher submits the proposal to management for acceptance, modification, or rejection. Research clients (management) evaluate the proposed study with particular emphasis on whether or not it will provide useful information, and whether it will do so within a reasonable resource budget. Initial proposals are almost always revised after the first review.

The proposal helps managers decide if the proper information will be obtained and if the proposed research will accomplish what is desired. If the problem has not been adequately translated into a set of specific research objectives and a research design, the client's assessment of the proposal will help ensure that the researchers revise it to meet the client's information needs.

An effective proposal communicates exactly what information will be obtained, where it will be obtained, and how it will be obtained. For this reason, it must be explicit about sample selection, measurement, fieldwork, and data analysis. For instance, most proposals involving descriptive research include a proposed questionnaire (or at least some

sample questions).

The Proposal as a Contract

When the research will be conducted by a consultant or an outside research supplier, the written proposal serves as that person's bid to offer a specific service. Typically, a client solicits several competitive proposals, and these written offers help management judge the relative quality of alternative research suppliers.

A wise researcher will not agree to do a research job for which no written proposal exists. The proposal also serves as a contract that describes the product the research user will buy. In fact, the proposal is in many ways the same as the final research report without the actual results. Misstatements and faulty communication may occur if the parties rely only on each individual's memory of what occurred at a planning meeting. The proposal creates a record, which greatly reduces conflicts that might arise after the research has been conducted. Both the researcher and the research client should sign the proposal indicating agreement on what will be done.

Decisions to Make	Basic Questions
Problem definition	What is the purpose of the study? How much is already known? Is additional background information necessary? What is to be measured? How? Can the data be made available? Should research be conducted? Can a hypothesis be formulated?
Selection of basic research design	What types of questions need to be answered? Are descriptive or causal findings required? What is the source of the data? Can objective answers be obtained by asking people? How quickly is the information needed? How should survey questions be worded? How should experimental manipulations be made?
Selection of sample	Who or what is the source of the data? Can the target population be identified? Is a sample necessary? How accurate must the sample be? Is a probability sample necessary? Is a national sample necessary? How large a sample is necessary? How will the sample be selected?
Data gathering	Who will gather the data? How long will data gathering take? How much supervision is needed? What procedures will data collectors need to follow?
Data analysis and evaluation	Will standardized editing and coding procedures be used? How will the data be categorized? Will computer or hand tabulation be used? What is the nature of the data? What questions need to be answered? How many variables are to be investigated simultaneously? What are the criteria for evaluation of performance? What statistical tools are appropriate?
Type of report	Who will read the report? Are managerial recommendations requested? How many presentations are required? What will be the format of the written report?
Overall evaluation	How much will the study cost? Is the time frame acceptable? Is outside help needed? Will this research design attain the stated research objectives? When should the research begin?

FIGURE **Basic Points Addressed by Research Proposals**

The proposal then functions as a formal, written statement of agreement between marketing executives and researchers. As such, it protects the researcher from criticisms such as, “Shouldn’t we have had a larger sample?” or “Why didn’t you use a focus group approach?” As a record of the researcher’s obligation, the proposal also provides a standard for determining whether the actual

research was conducted as originally planned. Suppose in our Deland Trucking case, following the research, David is unhappy with the nature of the results because they indicate that higher cents per mile do, in fact, impact driver loyalty.

Funded business research generally refers to basic research usually performed by academic researchers and supported by some public or private institution. Most commonly, researchers pursue federal government grants. A very detailed proposal is usually needed for federal grants, and the agreement for funding is predicated on the research actually delivering the results described in the proposal. One important comment needs to be made about the nature of research proposals. Not all proposals follow the same format. A researcher can adapt his or her proposal to the target audience or situation. An extremely brief proposal submitted by an organization's internal research department to its own executives bears little resemblance to a complex proposal submitted by a university professor to a federal government agency to research a basic consumer issue.

Anticipating Outcomes

As mentioned above, the proposal and the final research report will contain much of the same information. The proposal describes the data collection, measurement, data analysis, and so forth, in future tense. In the report, the actual results are presented. In this sense, the proposal anticipates the research outcome. Experienced researchers know that research fails more often because the problem-definition process breaks down or because the research client never truly understood what a research project could or couldn't do. While it probably seems as though the proposal should make this clear, any shortcoming in the proposal can contribute to a communication failure. Thus, any tool that helps communication become as clear as can be is valued very highly.

DUMMY TABLES

One such tool that is perhaps the best way to let management know exactly what kind of results will be produced by research is the *dummy table.* **Dummy tables** are placed in research proposals and are exact representations of the actual tables that will show results in the final report with one exception: The results are hypothetical. They get the name because the researcher fills in, or "dummies up," the tables with likely but fictitious data. Dummy tables include the tables that will present hypothesis test results. In this way, they are linked directly to research objectives

A research analyst can present dummy tables to the decision maker and ask, "Given findings like these, will you be able to make a decision?" If the decision maker says yes, the proposal may be accepted. However, if the decision maker cannot see how results like those in the dummy tables will help make the needed decision(s), it may be back to the drawing board. In other words, the client and researcher need to rethink what research results are necessary to solve the problem. Sometimes, examining the dummy tables may reveal that a key variable is missing or that some dependent variable is really not relevant. In other words, the problem is clarified by deciding on action standards or performance criteria and recognizing the types of research findings necessary to make specific decisions.

QUALITATIVE RESEARCH TOOLS

Chemists sometimes use the term *qualitative analysis* to mean research that determines what some compound is made of. In other words, the focus is on the inner meaning of the chemical— its *qualities*. As the word implies, qualitative research is interested more in *qualities* than quantities. Therefore, qualitative research is not about applying specific numbers to measure variables or using statistical procedures to numerically specify a relationship's strength.

What Is Qualitative Research?

Qualitative business research is research that addresses business objectives through techniques that allow the researcher to provide elaborate interpretations of market phenomena without depending on numerical measurement. Its focus is on discovering true inner meanings and new insights. Qualitative research is very widely applied in practice. There are many research firms that specialize in qualitative research.

Qualitative research is less structured than most quantitative approaches. It does not rely on self-response questionnaires containing structured response formats. Instead, it is more **researcher-dependent** in that the researcher must extract meaning from unstructured responses, such as text from a recorded interview or a collage representing the meaning of some experience, such as skateboarding. The researcher interprets the data to extract its meaning and converts it to information.

Uses of Qualitative Research

The researcher has many tools available and the research design should try to match the best tool to the research objective. Not every researcher has expertise with tools that would comprise qualitative research. Generally, the less specific the research objective, the more likely that qualitative research tools will be appropriate. Also, when the emphasis is on a deeper understanding of motivations or on developing novel concepts, qualitative research is very appropriate. The following list represents common situations that often call for qualitative research:

1. When it is difficult to develop specific and actionable problem statements or research objectives. For instance, if after several interviews with the research client the researcher still can't determine exactly what needs to be measured, then qualitative research approaches may help with problem definition. Qualitative research is often useful to gain further insight and crystallize the research problem.
2. When the research objective is to develop an understanding of some phenomena in great detail and in much depth. Qualitative research tools are aimed at discovering the primary themes indicating human motivations and the documentation of activities is usually very complete. Often qualitative research provides richer information than quantitative approaches.
3. When the research objective is to learn how a phenomena occurs in its natural setting or to learn how to express some concept in colloquial terms. For example, how do consumers actually use a product? Or, exactly how does the accounting department process invoices? While a survey can probably ask many useful questions, observing a product in use or watching the invoice process will usually be more insightful. Qualitative research produces many product and process improvement ideas.
4. When some behavior the researcher is studying is particularly context dependent—meaning the reasons something is liked or some behavior is performed depend very much on the particular situation surrounding the event. Understanding why Vans are liked is probably difficult to determine correctly outside the skating environment.

5. When a fresh approach to studying some problem is needed. This is particularly the case when quantitative research has yielded less than satisfying results. Qualitative tools can yield unique insights, many of which may lead the organization in new directions.

Qualitative "versus" QuantitativeResearch

In social science, one can find many debates about the superiority of qualitative research over quantitative research or vice versa. We'll begin by saying that this is largely a superfluous argument in either direction. The truth is that qualitative research can accomplish research objectives that quantitative research cannot. Similarly, truthful, but no more so, quantitative research can accomplish objectives that qualitative research cannot. The key to successfully using either is to match the right approach to the right research context.

Many good research projects combine both qualitative and quantitative research. For instance, developing valid survey measures requires first a deep understanding of the concept to be measured and a description of the way these ideas are expressed in everyday language. Both of these are tasks best suited for qualitative research. However, validating the measure formally to make sure it can reliably capture the intended concept will likely require quantitative research. Also, qualitative research may be needed to separate symptoms from problems and then quantitative research can follow up to test relationships among relevant variables.

Quantitative business research can be defined as business research that addresses research objectives through empirical assessments that involve numerical measurement and analysis approaches. Qualitative research is more apt to stand on its own in the sense that it requires less interpretation. For example, quantitative research is quite appropriate when a research objective involves a managerial action standard. For example, a salad dressing company considered changing its recipe. The new recipe was tested with a sample of consumers. Each consumer rated the product using numeric scales. Management established a rule that a majority of consumers rating the new product higher than the old product would have to be established with 90 percent confidence before replacing the old formula. A project like this can involve both quantitative measurement in the form of numeric rating scales and quantitative analysis in the form of applied statistical procedures.

Contrasting Qualitative and Quantitative Methods

Quantitative researchers direct a considerable amount of activity toward measuring concepts with scales that either directly or indirectly provide numeric values. The numeric values can then be used in statistical computations and hypothesis testing. In contrast, qualitative researchers are more interested in observing, listening, and interpreting. As such, the researcher is intimately involved in the research process and in constructing the results. For these reasons, qualitative research is said to be more **subjective**, meaning that the results are researcher-dependent. Different researchers may reach different conclusions based on the same interview. In that respect, qualitative research lacks **intersubjective certifiability**, the ability of different individuals following the same procedures to produce the same results or come to the same conclusion. This should not necessarily be considered a weakness of qualitative research; rather it is simply a characteristic that yields differing insights. In contrast, when a survey respondent provides a commitment score on a quantitative scale, it is thought to be more objective because the number will be the same no matter what researcher is involved in the analysis.

Exhibit below on the next page illustrates some differences between qualitative and quantitative research. Certainly, these are generalities and exceptions may apply. However, it covers some of the key distinctions.

Qualitative Research	Research Aspect	Quantitative Research
Discover Ideas, Used in Exploratory Research with General Research Objects	Common Purpose	Test Hypotheses or Specific Research Questions
Observe and Interpret	Approach	Measure and Test
Unstructured, Free-Form	Data Collection Approach	Structured Response Categories Provided
Researcher Is Intimately Involved. Results Are Subjective.	Researcher Independence	Researcher Uninvolved Observer. Results Are Objective.
Small Samples—Often in Natural Settings	Samples	Large Samples to Produce Generalizable Results (Results That Apply to Other Situations)
Exploratory Research Designs	Most Often Used	Descriptive and Causal Research Designs

EXHIBIT Comparing Qualitative and Quantitative Research

Qualitative research seldom involves samples with hundreds of respondents. Instead, a handful of people are usually the source of qualitative data. This is perfectly acceptable in discovery-oriented research. All ideas would still have to be tested before adopted. Does a smaller sample mean that qualitative research is cheaper than qualitative? Perhaps not. Although fewer respondents have to be interviewed, the greater researcher involvement in both the data collection and analysis can drive up the costs of qualitative research.

Given the close relationship between qualitative research and exploratory designs, it should not be surprising that qualitative research is most often used in exploratory designs. Small samples, interpretive procedures that require subjective judgments, and the unstructured interview format all make traditional hypotheses testing difficult with qualitative research. Thus, these procedures are not best suited for drawing definitive conclusions, as would be expected from causal designs involving experiments. These disadvantages for drawing inferences, however, become advantages when the goal is to draw out potential explanations because the researcher spends more time with each respondent and is able to explore much more ground due to the flexibility of the procedures.

Contrasting Exploratory and Confirmatory Research

Philosophically, research can be considered as either exploratory or confirmatory. Most exploratory research designs produce **qualitative data**. Exploratory designs do not usually produce **quantitative data**, which represent phenomena by assigning numbers in an ordered and meaningful way. Rather than numbers, the focus of qualitative research is on stories, visual portrayals, meaningful characterizations, interpretations, and other expressive descriptions. Often, exploratory research may be needed to develop the ideas that lead to research hypotheses. In other words, in some situations the outcome of exploratory research is a testable research hypothesis. Confirmatory research then tests these hypotheses with quantitative data. The results of these tests help decision making by suggesting a specific course of action. For example, an exploratory researcher is more likely to adopt a qualitative approach that might involve trying to develop a deeper understanding of how families are impacted by

changing economic conditions, investigating how people suffering economically spend scarce resources. This may lead to the development of a hypothesis that during challenging economic times consumers seek low-cost entertainment such as movie rentals, but would not test this hypothesis. In contrast, a quantitative researcher may search for numbers that indicate economic trends. This may lead to hypothesis tests concerning how much the economy influences rental movie consumption.

Some types of qualitative studies can be conducted very quickly. Others take a very long time. For example, a single focus group analysis involving a large bottling company's sales force can likely be conducted and interpreted in a matter of days. This would provide faster results than most descriptive or causal designs. However, other types of qualitative research, such as a participant- observer study aimed at understanding skateboarding, could take months to complete. A qualitative approach can, but does not necessarily, save time.

In summary, when researchers have limited experience or knowledge about a research issue, exploratory research is a useful step. Exploratory research, which often involves qualitative methods, can be an essential first step to a more conclusive, confirmatory study by reducing the chance of beginning with an inadequate, incorrect, or misleading set of research objectives.

Orientations to QualitativeResearch

Qualitative research can be performed in many ways using many techniques. Orientations to qualitative research are very much influenced by the different fields of study involved in research. These orientations are each associated with a category of qualitative research. The major categories of qualitative research include

1. Phenomenology—originating in philosophy and psychology
2. Ethnography—originating in anthropology
3. Grounded theory—originating in sociology
4. Case studies—originating in psychology and in business research

Precise lines between these approaches are difficult to draw and there are clearly links among these orientations. In addition, a particular qualitative research study may involve elements of two or more approaches. However, each category does reflect a somewhat unique approach to human inquiry and approaches to discovering knowledge. Each will be described briefly below.

1) Phenomenology

WHAT IS A PHENOMENOLOGICAL APPROACH TO RESEARCH?

Phenomenology represents a philosophical approach to studying human experiences based on the idea that human experience itself is inherently subjective and determined by the context in which people live.10 The phenomenological researcher focuses on how a person's behavior is shaped by the relationship he or she has with the physical environment, objects, people, and situations. Phenomenological inquiry seeks to describe, reflect upon, and interpret experiences.

Researchers with a phenomenological orientation rely largely on conversational interview tools. When conversational interviews are face to face, they are recorded either with video or audiotape and then interpreted by the researcher. The phenomenological interviewer is careful to avoid asking direct questions when at all possible. Instead, the research respondent is asked to tell a story about some experience. In addition, the researcher must do everything possible to make sure a respondent is comfortable telling his or her story. One way to accomplish this is to become a member of the group. Another way may be to avoid having the person use his or her real name. This might be particularly

necessary in studying potentially sensitive topics such as smoking, drug usage, shoplifting, or employee theft.

Therefore, a phenomenological approach to studying the meaning of Vans may require considerable time. The researcher may first spend weeks or months fitting in with the person or group of interest to establish a comfort level. During this time, careful notes of conversations are made. If an interview is sought, the researcher would likely not begin by asking a skateboarder to describe his or her shoes. Rather, asking for favorite skateboard incidents or talking about what makes a skateboarder unique may generate productive conversation. Generally, the approach is very unstructured as a way of avoiding leading questions and to provide every opportunity for new insights.

WHAT IS HERMENEUTICS?

The term hermeneutics is important in phenomenology. **Hermeneutics** is an approach to understanding phenomenology that relies on analysis of texts in which a person tells a story about him or herself.12 Meaning is then drawn by connecting text passages to one another or to themes expressed outside the story. These connections are usually facilitated by coding the key meanings expressed in the story. While a full understanding of hermeneutics is beyond the scope of this text, some of the terminology is used when applying qualitative tools. For instance, a **hermeneutic unit** refers to a text passage from a respondent's story that is linked with a key theme from within this story or provided by the researcher. These passages are an important way in which data are interpreted.

Computerized software exists to assist in coding and interpreting texts and images. ATLAS.ti is one such software package that adopts the term hermeneutic unit in referring to groups of phrases that are linked with meaning. Hermeneutic units and computerized software are also very appropriate in grounded theory approaches. One useful component of computerized approaches is a word counter. The word counter will return counts of how many times words were used in a story. Often, frequently occurring words suggest a key theme. The Research Snapshot above demonstrates the use of hermeneutics in interpreting a story about a consumer shopping for a car

2) Ethnography

WHAT IS ETHNOGRAPHY?

Ethnography represents ways of studying cultures through methods that involve becoming highly active within that culture. **Participant-observation** typifies an ethnographic research approach. Participantobservation means the researcher becomes immersed within the culture that he or she is studying and draws data from his or her observations. A *culture* can be either a broad culture, like American culture, or a narrow culture, like urban gangs, Harley-Davidson owners, or skateboarding enthusiasts.

Organizational culture would also be relevant for ethnographic study.15 At times, researchers have actually become employees of an organization for an extended period of time. In doing so, they become part of the culture and over time other employees come to act quite naturally around the researcher. The researcher may observe behaviors that the employee would never reveal otherwise. For instance, a researcher investigating the ethical behavior of salespeople may have difficulty getting a car salesperson to reveal any potentially deceptive sales tactics in a traditional interview. However, ethnographic techniques may result in the salesperson letting down his or her guard, resulting in more valid discoveries about the carselling culture.

OBSERVATION IN ETHNOGRAPHY

Observation plays a key role in ethnography. Researchers today sometimes ask households for permission to place video cameras in their home. In doing so, the ethnographer can study the consumer in a "natural habitat" and use the observations to test new products, develop new product ideas, and develop strategies in general.

Ethnographic study can be particularly useful when a certain culture is comprised of individuals who cannot or will not verbalize their thoughts and feelings. For instance, ethnography has advantages for discovering insights among children since it does not rely largely on their answers to questions. Instead, the researcher can simply become part of the environment, allow the children to do what they do naturally, and record their behavior.17 The opening vignette describing a participant-observer approach to learning about skateboarding culture represents an ethnographic approach. Here, the researcher would draw insight from observations and personal experiences with the culture.

3) Grounded Theory

WHAT IS GROUNDED THEORY?

Grounded theory is probably applied less often in business research than is either phenomenology or ethnography.

Grounded theory represents an inductive investigation in which the researcher poses questions about information provided by respondents or taken from historical records. The researcher asks the questions to him or herself and repeatedly questions the responses to derive deeper explanations. Grounded theory is particularly applicable in highly dynamic situations involving rapid and significant change. Two key questions asked by the grounded theory researcher are "What is happening here?" and "How is it different?"19 The distinguishing characteristic of grounded theory is that it does not begin with a theory but instead extracts one from whatever emerges from an area of inquiry.

HOW IS GROUNDED THEORY USED?

Consider a company that approaches a researcher to study whether or not its sales force is as effective as it has been over the past five years. The researcher uses grounded theory to discover a potential explanation. A theory is inductively developed based on text analysis of dozens of sales meetings that had been recorded over the previous five years. By questioning the events discussed in the sales interviews and analyzing differences in the situations that may have led to the discussion, the researcher is able to develop a theory. The theory suggests that with an increasing reliance on e-mail and other technological devices for communication, the salespeople do not communicate with each other informally as much as they did five years previously. As a result, the salespeople had failed to bond into a close-knit "community."

Computerized software also can be useful in developing grounded theory. In our Vans example, the researcher may interpret skateboarders' stories of good and bad skating experiences by questioning the events and changes described. These may yield theories about the role that certain brands play in shaping a good or bad experience. Alternatively, grounded theorists often rely on visual representations. Thus, the skateboarder could develop collages representing good and bad experiences. Just as with the text, questions can be applied to the visuals in an effort to develop theory.

4) Case Studies

WHAT ARE CASE STUDIES?

Case studies simply refer to the documented history of a particular person, group, organization, or event. Typically, a case study may describe the events of a specific company as it faces an important decision or situation, such as introducing a new product or dealing with some management crisis. Textbook cases typify this kind of case study. Clinical interviews of managers, employees, or customers can represent a case study.

The case studies can then be analyzed for important themes. **Themes** are identified by the frequency with which the same term (or a synonym) arises in the narrative description. The themes may be useful in discovering
variables that are relevant to potential explanations.

HOW ARE CASE STUDIES USED?

Case studies are commonly applied in business. For instance, case studies of brands that sell "luxury" products helped provide insight into what makes up a prestigious brand. A business researcher carefully conducted case (no pun intended) studies of higher end wine labels (such as Penfold's Grange) including the methods of production and distribution. This analysis suggested that a key ingredient to a prestige brand may well be authenticity. When consumers know something is authentic, they attach more esteem to that product or brand.

Case studies often overlap with one of the other categories of qualitative research. The Research Snapshot on the next page illustrates how observation was useful in discovering insights leading to important business changes.

A primary advantage of the case study is that an entire organization or entity can be investigated in depth with meticulous attention to detail. This highly focused attention enables the researcher to carefully study the order of events as they occur or to concentrate on identifying the relationships among functions, individuals, or entities. Conducting a case study often requires the cooperation of the party whose history is being studied. This freedom to search for whatever data an investigator deems important makes the success of any case study highly dependent on the alertness, creativity, intelligence, and motivation of the individual performing the case analysis.

CommonTechniquesUsedinQualitativeResearch

Qualitative researchers apply a nearly endless number of techniques. These techniques overlap more than one of the orientations previously discussed, although each category may display a preference for certain techniques.

1- Focus Group Interview

What Is a Focus Group Interview?

The focus group interview is so widely used that many advertising and research agencies do nothing but focus group interviews. In that sense, it is wrongly synonymous with qualitative research. Nonetheless, focus groups are a very important qualitative research technique and deserve considerable discussion.

A **focus group interview** is an unstructured, free-flowing interview with a small group of people, usually between six and ten. Focus groups are led by a trained moderator who follows a flexible format encouraging dialogue among respondents. Common focus group topics include employee programs,

employee satisfaction, brand meanings, problems with products, advertising themes, or new-product concepts.

The group meets at a central location at a designated time. Participants may range from consumers talking about hair coloring, petroleum engineers talking about problems in the "oil patch," children talking about toys, or employees talking about their jobs. A moderator begins by providing some opening statement to broadly steer discussion in the intended direction. Ideally, discussion topics emerge at the group's initiative, not the moderator's. Consistent with phenomenological approaches, moderators should avoid direct questioning unless absolutely necessary.

ADVANTAGES OF FOCUS GROUP INTERVIEWS

Focus groups allow people to discuss their true feelings, anxieties, and frustrations, as well as the depth of their convictions, in their own words. While other approaches may also do much the same, focus groups offer several advantages:

1. Relatively fast
2. Easy to execute
3. Allow respondents to piggyback off each other's ideas
4. Provide multiple perspectives
5. Flexibility to allow more detailed descriptions
6. High degree of scrutiny

a) Speed and Ease

In an emergency situation, three or four group sessions can be conducted, analyzed, and reported in a week or so. The large number of research firms that conduct focus group interviews makes it easy to find someone to host and conduct the research. Practically every state in the United States contains multiple research firms that have their own focus group facilities. Companies with large research departments likely have at least one qualified focus group moderator so that they need not outsource the focus group.

b) Piggybacking and MultiplePerspectives

Furthermore, the group approach may produce thoughts that would not be produced otherwise. The interplay between respondents allows them to **piggyback** off of each other's ideas. In other words, one respondent stimulates thought among the others and, as this process continues, increasingly creative insights are possible. A comment by one individual often triggers a chain of responses from the other participants. The social nature of the focus group also helps bring out multiple views as each person shares a particular perspective.

c) Flexibility

The flexibility of focus group interviews is advantageous, especially when compared with the more structured and rigid survey format. Numerous topics can be discussed and many insights can be gained, particularly with regard to the variations in consumer behavior in different situations.

d) Scrutiny

A focus group interview allows closer scrutiny in several ways. First, the session can be observed by several people, as it is usually conducted in a room containing a two-way mirror.

The respondents and moderator are on one side, and an invited audience that may include both researchers and decision makers is on the other. If the decision makers are located in another city or country, the session may be shown via a live video hookup. Either through live video or a two-way mirror, some check on the eventual interpretations is provided through the ability to actually watch the research being conducted. If the observers have questions that are not being asked or want the moderator to probe on an issue, they can send a quick text message with instructions to the moderator.

FOCUS GROUP ILLUSTRATION

Focus groups often are used for concept screening and concept refinement. The concept may be continually modified, refined, and retested until management believes it is acceptable. While RJR's initial attempts at smokeless cigarettes failed in the United States, Philip Morris is developing a smokeless cigarette for the U.K. market. Focus groups are being used to help understand how the product will be received and how it might be improved. The voluntary focus group respondents are presented with samples of the product and then they discuss it among themselves. The interview results suggest that the key product features that must be conveyed are the fact that it produces no ashes, no side smoke, and very little odor. These beliefs are expected to lead to a positive attitude. Focus group respondents show little concern about how the cigarette actually functioned. Smokers believe they will use the product if nonsmokers are not irritated by being near someone using the "electronic cigarette." Thus, the focus groups are useful in refining the product and developing a theory of how it should be marketed.

GROUP COMPOSITION

The ideal size of the focus group is six to ten people. If the group is too small, one or two members may intimidate the others. Groups that are too large may not allow for adequate participation by each group member. Homogeneous groups seem to work best because they allow researchers to concentrate on consumers with similar lifestyles, experiences, and communication skills. The session does not become rife with too many arguments and different viewpoints stemming from diverse backgrounds. Also, from an ethnographic perspective, the respondents should all be members of a unique and identifiable culture. Vans may benefit from a focus group interview comprised only of skateboard enthusiasts. Perhaps participants can be recruited from a local skate park. However, additional group(s) of participants that are not boarders might be useful in gaining a different perspective.

ENVIRONMENTAL CONDITIONS

A focus group session may typically take place at the research agency in a room specifically designed for this purpose. Research suppliers that specialize in conducting focus groups operate from commercial facilities that have videotape cameras in observation rooms behind two-way mirrors and microphone systems connected to tape recorders and speakers to allow greater scrutiny as discussed above. Refreshments are provided to help create a more relaxed atmosphere conducive to a free exchange of ideas. More open and intimate reports of personal experiences and sentiments can be obtained under these conditions.

THE FOCUS GROUP MODERATOR

The **moderator** essentially runs the focus group and plays a critical role in its success. There are several qualities that a good moderator must possess:

1. The moderator must be able to develop rapport with the group to promote interaction among all participants. The moderator should be someone who is really interested in people, who listens carefully to what others have to say, and who can readily establish rapport, gain people's confidence, and make them feel relaxed and eager to talk.

2. The moderator must be a good listener. Careful listening is especially important because the group interview's purpose is to stimulate spontaneous responses. Without good listening skills, the moderator may direct the group in an unproductive direction.

3. The moderator must try not to interject his or her own opinions. Good moderators usually say less rather than more. They can stimulate productive discussion with generalized follow-ups such as, "Tell us more about that incident," or "How are your experiences similar or different from the one you just heard?" The moderator must be particularly careful not to ask leading questions such as "You are happy to work at Acme, aren't you?"

4. The moderator must be able to control discussion without being overbearing. The moderator's role is also to focus the discussion on the areas of concern. When a topic is no longer generating fresh ideas, the effective moderator changes the flow of discussion. The moderator does not give the group total control of the discussion, but he or she normally has prepared questions on topics that concern management. However, the timing of these questions in the discussion and the manner in which they are raised are left to the moderator's discretion. The term *focus group* thus stems from the moderator's task. He or she starts out by asking for a general discussion but usually *focuses* in on specific topics during the session.

PLANNING THE FOCUS GROUPOUTLINE

Focus group researchers use a discussion guide to help control the interview and guide the discussion into product areas. A **discussion guide** includes written introductory comments informing the group about the focus group purpose and rules and then outlines topics or questions to be addressed in the group session. Thus, the discussion guide serves as the focus group outline. Some discussion guides will have only a few phrases in the entire document. Others may be more detailed. The amount of content depends on the nature and experience of the researcher and the complexity of the topic. A cancer center that wanted to warn the public about the effects of the sun used the discussion guide in Exhibit below. The business researchers had several objectives for this question guide:

- The first question was very general, asking that respondents describe their feelings about being out in the sun. This opening question aimed to elicit the full range of views within the group. Some individuals might view being out in the sun as a healthful practice, whereas others view the sun as deadly. The hope is that by exposing the full range of opinions, respondents would be motivated to fully explain their own position. This was the only question asked specifically of every respondent. Each respondent had to give an answer before free discussion began. In this way, individuals experience a nonthreatening environment encouraging their free and full opinion. A general question seeking a reaction serves as an effective icebreaker.

- The second question asks whether participants could think of any reason they should be warned about sunlight exposure. This question was simply designed to introduce the idea of a warning label.

- Subsequent questions were asked and became increasingly specific. They were first asked about possible warning formats that might be effective. Respondents are allowed to react to any formats suggested by any other respondent. After this discussion, the moderator will introduce some specific formats the cancer center personnel have in mind.

- Finally, the "bottom-line" question is asked: "What format would be most likely to induce people to take protective measures?" There would be probing follow-ups of each opinion so that a respondent couldn't simply say something like "The second one." All focus groups finish up with a catchall question asking for any comments including any thoughts they wanted passed along to the sponsor (which in this case was only then revealed as the Houston-based cancer center).

In general, the following steps should be used to conduct an effective focus group discussion guide:

1. Welcome and introductions should take place first.
2. Begin the interview with a broad icebreaker that does not reveal too many specifics about the interview. Sometimes, this may even involve respondents providing some written story or their reaction to some stimulus like a photograph, film, product, or advertisement.
3. Questions become increasingly more specific as the interview proceeds. However, the Moderator will notice that a good interview will cover the specific question topics before they Have to be asked. This is preferable as respondents are clearly not forced to react to the specific issue; it just emerges naturally.
4. If there is a very specific objective to be accomplished, such as explaining why a respondent would either buy or not buy a product, that question should probably be saved for last.
5. A debriefing statement should provide respondents with the actual focus group objectives and answering any questions they may have. This is also a final shot to gain some insight from the group.

FOCUS GROUPS AS DIAGNOSTIC TOOLS

Focus groups are perhaps the predominant means by which business researchers implement exploratory research designs. Focus groups also can be helpful in later stages of a research project, particularly when the findings from surveys or other quantitative techniques raise more questions than they answer. Managers who are puzzled about the meaning of survey research results may use focus groups to better understand what survey results indicate. In such a situation, the focus group supplies diagnostic help after quantitative research has been conducted.

Focus groups are also excellent diagnostic tools for spotting problems with ideas. For instance, idea screening is often done with focus groups. An initial concept is presented to the group and then they are allowed to comment on it in detail. This usually leads to lengthy lists of potential product problems and some ideas for overcoming them. Mature products can also be "focusgrouped" in this manner.

VIDEOCONFERENCING AND FOCUS GROUPS

With the widespread utilization of videoconferencing, the number of companies using these systems to conduct focus groups has increased. With videoconference focus groups, managers can stay home and

watch on television rather than having to take a trip to a focus group facility.

FocusVision (**http://www.focusvision.com/**) is a business research company that provides videoconferencing equipment and services. The FocusVision system is modular, allowing for easy movement and an ability to capture each group member close up. The system operates via a remote keypad that allows observers in a far-off location to pan the focus group room or zoom in on a particular participant. Managers viewing at remote locations can send the moderator messages during the interview.

INTERACTIVE MEDIA AND ONLINE FOCUS GROUPS

Internet applications of qualitative exploratory research are growing rapidly and involve both formal and informal applications. Formally, the term **online focus group** refers to a qualitative research effort in which a group of individuals provides unstructured comments by entering their remarks into an electronic Internet display board of some type, such as a chat-room session or in the form of a blog. Because respondents enter their comments into the computer, transcripts of verbatim responses are available immediately after the group session. Online groups can be quick and cost efficient. However, because there is less personal interaction between participants, group synergy and snowballing of ideas may be diminished.

Several companies have established a form of informal, "continuous" focus group by establishing an Internet blog for that purpose. We might call this technique a **focus blog** when the intention is to mine the site for business research purposes.

ONLINE VERSUS FACE-TO-FACE FOCUS GROUP TECHNIQUES

A research company can facilitate a formal online focus group by setting up a private chat room for that purpose. Participants in formal and informal online focus groups feel that their anonymity is very secure. Often respondents will say things in this environment that they would never say otherwise. For example, a lingerie company was able to get insights into how it could design sexy products for larger women. Online, these women freely discussed what it would take "to feel better about being naked."26 One can hardly imagine how difficult such a discussion might be face to face. Increased anonymity can be a major advantage for a company investigating sensitive or embarrassing issues.

DISADVANTAGES OF FOCUS GROUPS

Focus groups offer many advantages as a form of qualitative research. Like practically every other research technique, the focus group has some limitations and disadvantages as well. Problems with focus groups include those discussed below.

First, focus groups require objective, sensitive, and effective moderators. It is very difficult for a moderator to remain completely objective about most topics. In large research firms, the moderator may be provided only enough information to effectively conduct the interview, no more. The focus group interview obviously shouldn't reduce to, or even be influenced by, the moderator's opinion. Also, without a good moderator, one or two participants may dominate a session, yielding results that are really the opinion of one or two people, not the group. The moderator has to try very hard to make sure that all respondents feel comfortable giving their opinions and even a timid respondent's opinion is given due consideration. While many people, even some with little or no background to do so, conduct focus groups, good moderators become effective through a combination of naturally good people skills, training (in qualitative research), and experience.

Second, some unique sampling problems arise with focus groups. Researchers often select focus group participants because they have similar backgrounds and experiences or because screening indicates that the participants are more articulate or gregarious than the typical consumer. Such

participants may not be representative of the entire target market. Thus, focus group results are not intended to be representative of a larger population.

Third, although not so much an issue with online formats where respondents can remain anonymous, traditional face-to-face focus groups may not be useful for discussing sensitive topics. A focus group is a social setting and usually involves people with little to no familiarity with each other. Therefore, issues that people normally do not like to discuss in public may also prove difficult to discuss in a focus group. Fourth, focus groups do cost a considerable amount of money, particularly when they are not conducted by someone employed by the company desiring the focus group. As research projects go, there are many more expensive approaches, including a full-blown mail survey using a national random sample. This may cost thousands of dollars to conduct and thousands of dollars to analyze and disseminate.

2-Depth Interviews

An alternative to a focus group is a depth interview. A **depth interview** is a one-on-one interview between a professional researcher and a research respondent. Depth interviews are much the same as a psychological, clinical interview, but with a different purpose. The researcher asks many questions and follows up each answer with probes for additional elaboration.

Like focus group moderators, the interviewer's role is critical in a depth interview. He or she must be a highly skilled individual who can encourage the respondent to talk freely without influencing the direction of the conversation. Probing questions are critical. **Laddering** is a term used for a particular approach to probing, asking respondents to compare differences between brands at different levels. What usually results is that the first distinctions are attribute-level distinctions, the second are benefit-level distinctions, and the third are at the value or motivation level. Laddering can then distinguish two brands of skateboarding shoes based on a) the materials they are made of, b) the comfort they provide, and c) the excitement they create.

Each depth interview may last more than an hour. Thus, it is a time-consuming process if multiple interviews are conducted. Not only does the interview have to be conducted, but each interview produces about the same amount of text as does a focus group interview. This has to be analyzed and interpreted by the researcher. A third major issue stems from the necessity of recording both surface reactions and subconscious motivations of the respondent. Analysis and interpretation of such data are highly subjective, and it is difficult to settle on a true interpretation.

Depth interviews provide more insight into a particular individual than do focus groups. In addition, since the setting isn't really social, respondents are more likely to discuss sensitive topics than are those in a focus group. Depth interviews are particularly advantageous when some unique or unusual behavior is being studied. For instance, depth interviews have been usefully applied to reveal characteristics of adolescent behavior, ranging from the ways they get what they want from their parents to shopping, smoking, and shoplifting.

Depth interviews are similar to focus groups in many ways. The costs are similar if only a few interviews are conducted. However, if a dozen or more interviews are included in a report, the costs are higher than focus group interviews due to the increased interviewing and analysis time.

3-Conversations

Holding **conversations** in qualitative research is an informal data-gathering approach in which the researcher engages a respondent in a discussion of the relevant subject matter. This approach is almost completely unstructured and the researcher enters the conversation with few expectations. The goal is to have the respondent produce a dialogue about his or her lived experiences. Meaning will be extracted from the resulting dialogue. A conversational approach to qualitative research is particularly

appropriate in phenomenological research and for developing grounded theory. In our Vans experience, the researcher may simply tape-record a conversation about becoming a "skater." The resulting dialogue can then be analyzed for themes and plots. The result may be some interesting and novel insight into the consumption patterns of skaters, for example, if the respondent said,

"I knew I was a real skater when I just had to have Vans, not just for boarding, but for wearing."

This theme may connect to a right-of-passage plot and show how Vans play a role in this process. Technology is also influencing conversational research. Online communications such as the reviews posted about book purchases at **http://www.barnesandnoble.com** can be treated as a conversation. Companies may discover product problems and ideas for overcoming them by analyzing these computer-based consumer dialogues. A conversational approach is advantageous because each interview is usually inexpensive to conduct. Respondents often need not be paid. They are relatively effective at getting at sensitive issues once the researcher establishes a rapport with them. Conversational approaches, however, are prone to produce little relevant information since little effort is made to steer the conversation. Additionally, the data analysis is very much researcher-dependent.

4-SEMI-STRUCTURED INTERVIEWS

Semi-structured interviews usually come in written form and ask respondents for short essay responses to specific open-ended questions. Respondents are free to write as much or as little as they want. The questions would be divided into sections, typically, and within each section, the opening question would be followed by some probing questions. When these are performed face to face, there is room for less structured follow-ups. The advantages to this approach include an ability to address more specific issues. Responses are usually easier to interpret than other qualitative approaches. Since the researcher can simply prepare the questions in writing ahead of time, and if in writing, the questions are administered without the presence of an interviewer, semi-structured interviews can be relatively costeffective. Some researchers interested in studying car salesperson stereotypes used qualitative semistructured interviews to map consumers' cognitions (memory). The semi-structured interview began with a free-association task:

List the first five things that come into your mind when you think of a "car salesman."

This was followed up with a probing question:

Describe the way a typical "car salesman" looks.

This was followed with questions about how the car salesperson acts and how the respondent feels in the presence of a car salesperson. The results led to research showing how the information that consumers process differs in the presence of a typical car salesperson, as opposed to a less typical car salesperson

5-SOCIAL NETWORKING

Social networking is one of the most impactful trends in recent times. For many consumers, particularly younger generations, social networking sites like MySpace, Second Life, Zebo, and others have become the primary tool for communicating with friends both far and near and known and unknown. Social networking has replaced large volumes of e-mail and, many would say, face– to-face

communications as well. While the impact that social networking will eventually have on society is an interesting question, what is most relevant to marketing research is the large portion of this information that discusses marketing and consumer related information. Companies can assign research assistants to monitor these sites for information related to their particular brands. The information can be coded as either positive or negative. When too much negative information is being spread, the company can try to react to change the opinions. In addition, many companies like P&G and Ford maintain their own social networking sites for the purpose of gathering research data. In a way, these social networking sites are a way that companies can eavesdrop on consumer conversations and discover key information about their products. The textual data that consumers willingly put up becomes like a conversation. When researchers get the opportunity to react with consumers or employees through a social network site, they can function much like an online focus group or interview.

6-Free-Association/Sentence Completion Method

Free-association techniques simply record a respondent's first cognitive reactions (top-of-mind) to some stimulus. The Rorschach or inkblot test typifies the free-association method. Respondents view an ambiguous figure and are asked to say the first thing that comes to their mind. Free-association techniques allow researchers to map a respondent's thoughts or memory.

The sentence completion method is based on free-association principles. Respondents simply are required to complete a few partial sentences with the first word or phrase that comes to mind. For example:

*People who drink beer are*_____.
*A man who drinks a dark beer is*_____.
*Imported beer is most liked by*_____.
*The woman drinking beer in the commercial*_____.

Answers to sentence-completion questions tend to be more extensive than responses to word association tests. Although the responses lack the ability to probe for meaning as in other qualitative techniques, they are very effective in finding out what is on a respondent's mind. They can also do so in a quick and very cost-effective manner. Free-association and sentence- completion tasks are sometimes used in conjunction with other approaches. For instance, they can sometimes be used as effective icebreakers in focus group interviews.

7-OBSERVATION

Observation can be a very important qualitative tool. The participant-observer approach typifies how observation can be used to explore various issues. Meaning is extracted from field notes. **Field notes** are the researchers' descriptions of what actually happens in the field. These notes then become the text from which meaning is extracted.

Observation may also take place in visual form. Researchers may observe employees in their workplace, consumers in their home, or try to gain knowledge from photographic records of one type or another. Observation can either be very inexpensive, such as when a research associate sits and simply observes behavior, or it can be very expensive, as in most participant-observer studies.

8-COLLAGES

Business researchers sometimes have respondents prepare a collage to represent their experiences. The collages are then analyzed for meaning much in the same manner as text dialogues are analyzed.

Computer software can even be applied to help develop potential grounded theories from the visual representations.

Like sentence completion and word association, collages are often used within some other approach, such as a focus group or a depth interview. Collages offer the advantage of flexibility but are also very much subject to the researcher's interpretations.

9-PROJECTIVE RESEARCH TECHNIQUES

A **projective technique** is an indirect means of questioning enabling respondents to project beliefs and feelings onto a third party, an inanimate object, or a task situation. Projective techniques usually encourage respondents to describe a situation in their own words with little prompting by the interviewer. Individuals are expected to interpret the situation within the context of their own experiences, attitudes, and personalities and to express opinions and emotions that may be hidden from others and possibly themselves. Projective techniques are particularly useful in studying sensitive issues.

10-THEMATIC APPERCEPTION TEST (TAT)

A **thematic apperception test (TAT)**, sometimes called the *picture interpretation technique,* presents subjects with an ambiguous picture(s) and asks the subject to tell what is happening in the picture(s) now and what might happen next. Hence, themes (*thematic*) are elicited on the basis of the perceptual-interpretive (*apperception*) use of the pictures. The researcher then analyzes the contents of the stories that the subjects relate. A TAT represents a projective research technique.

Frequently, the TAT consists of a series of pictures with some continuity so that stories may be constructed in a variety of settings. The first picture might portray a person working at their desk; in the second picture, a person that could be a supervisor is talking to the worker; the final picture might show the original employee and another having a discussion at the water cooler. A Vans TAT might include several ambiguous pictures of a skateboarder and then show him or her heading to the store. This might reveal ideas about the brands and products that fit the role of skateboarder.

The picture or cartoon stimulus must be sufficiently interesting to encourage discussion but ambiguous enough not to disclose the nature of the research project. Clues should not be given to the character's positive or negative predisposition. A pretest of a TAT investigating why men might purchase chainsaws used a picture of a man looking at a very large tree. The research respondents were homeowners and weekend woodcutters. They almost unanimously said that they would get professional help from a tree surgeon to deal with this situation. Thus, early in pretesting, the researchers found out that the picture was not sufficiently ambiguous. The tree was too large and did not allow respondents to identify with the tree-cutting task. If subjects are to project their own views into the situation, the environmental setting should be a well-defined, familiar problem, but the solution should be ambiguous.

Exploratory Research in Science and in Practice

Misuses of Exploratory and Qualitative Research

Any research tool can be misapplied. Exploratory research cannot take the place of conclusive, confirmatory research. Thus, since many qualitative tools are best applied in exploratory design, they are likewise limited in the ability to draw conclusive inferences—test hypotheses. One of the biggest drawbacks is the subjectivity that comes along with "interpretation." In fact, sometimes the term *interpretive* research is used synonymously with qualitative research. When only one researcher interprets the meaning of what a single person said in a depth interview or similar technique, one should be very cautious before major business decisions are made based on these results. Is the result replicable? **Replication** means that the same results and conclusions will be drawn if the study is repeated by different researchers with different respondents following the same methods. In other words, would the same conclusion be reached based on another researcher's interpretation?

Indeed, some qualitative research methodologies were generally frowned upon for years based on a few early and public misapplications during what became known as the "motivational research" era. While many of the ideas produced during this time had some merit, as can sometimes be the case, too few researchers did too much interpretation of too few respondents. Compounding this, managers were quick to act on the results, believing that the results peaked inside one's subliminal consciousness and therefore held some type of extra power. Thus, often the research was flawed based on poor interpretation, and the decision process was flawed because the deciders acted prematurely.

SCIENTIFIC DECISION PROCESSES

Objectivity and replicability are two characteristics of scientific inquiry. Are focus groups objective and replicable? Would three different researchers all interpret focus group data identically? How should a facial expression or nod of the head be interpreted? Have subjects fully grasped the idea or concept behind a nonexistent product? Have respondents overstated their satisfaction because they think their supervisor will read the report and recognize them from their comments? Many of these questions are reduced to a matter of opinion that may vary from researcher to researcher and from one respondent group to another. Therefore, a focus group, or a depth interview, or TAT alone does not best represent a complete scientific inquiry.

However, if the thoughts discovered through these techniques survive preliminary evaluations and are developed into research hypotheses, they can be further tested. These tests may involve survey research or an experiment testing an idea very specifically (for example, if a certain advertising slogan is more effective than another). Thus, exploratory research approaches using qualitative research tools are very much a *part* of scientific inquiry. However, before making a *scientific* decision, a research project should include a confirmatory study using objective tools and an adequate sample in terms of both size and how well it represents a population.

But is a *scientific* decision approach always used or needed? In practice, many business decisions are based solely on the results of focus group interviews or some other exploratory result. The primary reasons for this are

(1) Time,
(2) Money,
(3) Emotion.

1) TIME

Sometimes, researchers simply are not given enough time to follow up on exploratory research results. Companies feel an increasingly urgent need to get new products to the market faster. Thus, a seemingly good idea generated in a focus group (like Clear, Vanilla, or Cherry Dr Pepper) is simply not tested with a more conclusive study. The risk of delaying a decision may be seen as greater than the risk of proceeding without completing the scientific process. Thus, although the researcher may warn against it, there may be logical reasons for such action. The decision makers should be aware, though, that the conclusions drawn from exploratory research designs are just that—exploratory. Thus, there is less likelihood of good results from the decision than if the research process had involved further testing.

2) MONEY

Similarly, researchers sometimes do not follow up on exploratory research results because they believe the cost is too high. Realize that tens of thousands of dollars may have already been spent on qualitative research. Managers who are unfamiliar with research will be very tempted to wonder, "Why do I need yet another study?" and "What did I spend all that money for?" Thus, they choose to proceed based only on exploratory results. Again, the researcher has fulfilled the professional obligation as long as the tentative nature of any ideas derived from exploratory research has been relayed through the research report.

3) EMOTION

Time, money, and emotion are all related. Decision makers sometimes become so anxious to have something resolved, or they get so excited about some novel discovery resulting from a focus group interview, that they may act rashly. Perhaps some of the ideas produced during the motivational research era sounded so enticing that decision makers got caught up in the emotion of the moment and proceeded without the proper amount of testing. Thus, as in life, when we fall in love with something, we are prone to act irrationally. The chances of emotion interfering in this way are lessened, but not reduced, by making sure multiple decision makers are involved in the decision process.

SECONDARY DATA RESEARCH IN A DIGITAL AGE

Introduction

Research projects often begin with **secondary data**, which are gathered and recorded by someone else prior to (and for purposes other than) the current project. Secondary data usually are historical and already assembled. They require no access to respondents or subjects.

Advantages of Secondary Data

The primary advantage of secondary data is their availability. Obtaining secondary data is almost always faster and less expensive than acquiring primary data. This is particularly true when researchers use electronic retrieval to access data stored digitally. In many situations, collecting secondary data is instantaneous. Consider the money and time saved by researchers who obtained updated population estimates for a town during the interim between the 2000 and 2010 censuses. Instead of doing the fieldwork themselves, researchers could acquire estimates from a firm dealing in demographic information or from sources such as Claritas or PCensus. As in this example, the use of secondary data eliminates many of the activities normally associated with primary data collection, such as sampling and data processing. Secondary data are essential in instances when data cannot be obtained using primary

data collection procedures. For example, a manufacturer of farm implements could not duplicate the information in the *Census of Agriculture* because much of the information there (for example, amount of taxes paid) might not be accessible to a private firm.

Disadvantages of Secondary Data

An inherent disadvantage of secondary data is that they were not designed specifically to meet the researchers' needs. Thus, researchers must ask how pertinent the data are to their particular project. To evaluate secondary data, researchers should ask questions such as these:

- Is the subject matter consistent with our problem definition?
- Do the data apply to the population of interest?
- Do the data apply to the time period of interest?
- Do the secondary data appear in the correct units of measurement?
- Do the data cover the subject of interest in adequate detail?

Even when secondary information is available, it can be inadequate. Consider the following typical situations:

• A researcher interested in forklift trucks finds that the secondary data on the subject are included in a broader, less pertinent category encompassing all industrial trucks and tractors. Furthermore, the data were collected five years earlier.

• An investigator who wishes to study individuals earning more than $100,000 per year finds the top category in a secondary study reported at $75,000 or more per year.

• A brewery that wishes to compare its per-barrel advertising expenditures with those of competitors finds that the units of measurement differ because some report point-of-purchase expenditures with advertising and others do not.

• Data from a previous warranty card study show where consumers prefer to purchase the product but provide no reasons why. The most common reasons why secondary data do not adequately satisfy research needs are (1) outdated information, (2) variation in definition of terms, (3) different units of measurement, and (4) lack of information to verify the data's accuracy. Furthermore, in our rapidly changing environment, information quickly becomes outdated. Because the purpose of most studies is to predict the future, secondary data must be timely to be useful. Every primary researcher has the right to define the terms or concepts under investigation to satisfy the purpose of his or her primary investigation. This practice provides little solace,

Typical Objectives for Secondary-Data Research Designs

It would be impossible to identify all the purposes of research using secondary data. However, some common business and marketing problems that can be addressed with secondary research designs are useful. Exhibit below shows three general categories of research objectives: fact finding, model building, and database marketing.

Broad Objective	Specific Research Example
Fact-finding	Identifying consumption patterns Tracking trends
Model building	Estimating market potential Forecasting sales Selecting trade areas and sites
Database marketing	Enhancing customer databases Developing prospect lists

EXHIBIT. Common Research Objectives for Secondary- Data Studies

1) Fact-Finding

The simplest form of secondary-data research is fact-finding. A restaurant serving breakfast might be interested in knowing what new products are likely to entice consumers. Secondary data available from National Eating Trends, a service of the NPD Group, show that the most potential may be in menu items customers can eat on the go. According to data from the survey of eating trends, take-out breakfasts have doubled over the past few years, and they have continued to surpass dine-in breakfast sales for over a decade. These trends make smoothies and breakfast sandwiches sound like a good bet for a breakfast menu. Also, NPD found that 41 percent of breakfast sandwiches are consumed by people in their cars and 24 percent of people polled take them to work. These findings suggest that the sandwiches should be easy to handle.

But what to put on the biscuit or bun? Another research firm, Market Facts, says almost half of consumers say they would pay extra for cheese. These simple facts would interest a researcher who was investigating the market for take-out breakfasts. Fact-finding can serve more complex purposes as well. In the digital age we live in, the use of music as a means to notify users of a call is commonplace. The Research Snapshot on the next page gives some of the amazing growth facts predicted in this industry.

IDENTIFICATION OF CONSUMER BEHAVIOR FOR A PRODUCT CATEGORY

A typical objective for a secondary research study might be to uncover all available information about consumption patterns for a particular product category or to identify demographic trends that affect an industry. For example, a company called Servigistics offers software that will scan a company's own parts inventory data and compare it with marketing objectives and competitors' prices to evaluate whether the company should adjust prices for its parts. Kia Motors tried using this service in place of the usual method of marking up cost by a set fraction. By considering secondary data including internal inventory data and external data about competitors' prices, it was able to make service parts a more profitable segment of its business.3 This example illustrates the wealth of factual information about consumption and behavior patterns that can be obtained by carefully collecting and analyzing secondary data.

TREND ANALYSIS

Business researchers are challenged to constantly watch for trends in the marketplace and the environment. **Market tracking** is the observation and analysis of trends in industry volume and brand share over time. Scanner research services and other organizations provide facts about sales volume to

support this work. Almost every large consumer goods company routinely investigates brand and product category sales volume using secondary data. This type of analysis typically involves comparisons with competitors' sales or with the company's own sales in comparable time periods. It also involves industry comparisons among different geographic areas. Exhibit below on the next page shows the trend in cola market share relative to the total carbonated soft-drink industry.

2) Model Building

The second general objective for secondary research, model building, is more complicated than simple fact-finding. **Model building** involves specifying relationships between two or more variables, perhaps extending to the development of descriptive or predictive equations, a technique that is used by the Nielsen Claritas Company routinely to add value to their secondary data. Models need not include complicated mathematics, though. In fact, decision makers often prefer simple models that everyone can readily understand over complex models that are difficult to comprehend. For example, market share is company sales divided by industry sales. Although some may not think of this simple calculation as a model, it represents a mathematical model of a basic relationship. We will illustrate model building by discussing three common objectives that can be satisfied with secondary research: estimating market potential, forecasting sales, and selecting potential facility or expansion sites.

ESTIMATING MARKET POTENTIAL FOR GEOGRAPHIC AREAS

Business researchers often estimate their company's market potential using secondary data. In many cases exact figures may be published by a trade association or another source. However, when the desired information is unavailable, the researcher may estimate market potential by transforming secondary data from two or more sources. For example, managers may find secondary data about market potential for a country or other large geographic area, but this information may not be broken down into smaller geographical areas, such as by metropolitan area, or in terms unique to the company, such as sales territory. In this type of situation, researchers often need to make projections for the geographic area of interest.

FORECASTING SALES

For any project, such as forecasting sales, you need information about the future. You will need to know what company sales will be next year and in future time periods. Sales forecasting is the process of predicting sales totals over a specific time period. Accurate sales forecasts, especially for products in mature, stable markets, frequently come from secondary-data research that identifies trends and extrapolates past performance into the future. Researchers often use internal company sales records to project sales. A rudimentary model would multiply past sales volume by an expected growth rate. A researcher might investigate a secondary source and find that industry sales are expected to grow by 10 percent; multiplying company sales volume by 10 percent would give a basic sales forecast.

ANALYSIS OF TRADE AREAS AND SITES

Managers routinely examine trade areas and use **site analysis techniques** to select the best locations for retail or wholesale operations. Secondary-data research helps managers make these site selection decisions. Some organizations, especially franchisers, have developed special computer software based on analytical models to select sites for retail outlets. The researcher must obtain the appropriate secondary data for analysis with the computer software. The **index of retail saturation** offers one way to investigate retail sites and to describe the relationship between retail demand and supply.7 It is easy to calculate once the appropriate secondary data are obtained:

$$\textit{Index of retail saturation} = \frac{local\,market\,potential(demand)}{local\,market\,retailing\,space}$$

Data Mining

Large corporations' decision support systems often contain millions or even hundreds of millions of records of data. These complex data volumes are too large to be understood by managers. Two points about data volume are important to keep in mind. First, relevant data are often in independent and unrelated files. Second, the number of distinct pieces of information each data record contains is often large. When the number of distinct pieces of information contained in each data record and data volume grows too large, end users don't have the capacity to make sense of it all. Data mining helps clarify the underlying meaning of the data.

The term **data mining** refers to the use of powerful computers to dig through volumes of data to discover patterns about an organization's customers and products. As seen in the Research Snapshot on the next page, this can even apply to Internet content from blogs. It is a broad term that applies to many different forms of analysis. For example, **neural networks** are a form of artificial intelligence in which a computer is programmed to mimic the way that human brains process information.

Market-basket analysis is a form of data mining that analyzes anonymous point-of-sale transaction databases to identify coinciding purchases or relationships between products purchased and other retail shopping information.10 Consider this example about patterns in customer purchases: Osco Drugs mined its databases provided by checkout scanners and found that when men go to its drugstores to buy diapers in the evening between 6:00 p.m. and 8:00 p.m., they sometimes walk out with a six-pack of beer as well. Knowing this behavioral pattern, supermarket managers may consider laying out their stores so that these items are closer together

A data-mining application of interest to some researchers is known as **customer discovery**, which involves mining data to look for patterns identifying who is likely to be a valuable customer. For example, a larger provider of business services wanted to sell a new product to its existing customers, but it knew that only some of them would be interested. The company had to adapt each product offering to each customer's individual needs, so it wanted to save money by identifying the best prospects. It contracted with a research provider called DataMind to mine its data on sales, responses to marketing, and customer service to look for the customers most likely to be interested in the new product. DataMind assigned each of the company's customers an index number indicating their expected interest level, and the selling effort was much more efficient as a result.

When a company knows the identity of the customer who makes repeated purchases from the same organization, an analysis can be made of sequences of purchases. The use of data mining to detect sequence patterns is a popular application among direct marketers, such as catalog retailers. A catalog merchant has information for each customer, revealing the sets of products that the customer buys in every purchase order. A sequence detection function can then be used to discover the set of purchases that frequently precedes the purchase of, say, a microwave oven. As another example, a sequence of insurance claims could lead to the identification of frequently occurring medical procedures performed on patients, which in turn could be used to detect cases of medical fraud.

Data mining requires sophisticated computer resources, and it is expensive. That's why companies like DataMind, IBM, Oracle, Information Builders, and Acxiom Corporation offer data-mining services. Customers send the databases they want analyzed and let the data-mining company do the "number crunching."

3) Database Marketing and Customer Relationship Management

CRM (customer relationship management) systems are a decision support system that manage the interactions between an organization and its customers. A CRM maintains customer databases containing customers' names, addresses, phone numbers, past purchases, responses to past promotional offers, and other relevant data such as demographic and financial data. **Database marketing** is the practice of using CRM databases to develop one-to-one relationships and precisely targeted promotional efforts with individual customers. For example, a fruit catalog company CRM contains a database of previous customers, including what purchases they made during the Christmas holidays. Each year the company sends last year's gift list to customers to help them send the same gifts to their friends and relatives.

Because database marketing requires vast amounts of CRM data compiled from numerous sources, secondary data are often acquired for the exclusive purpose of developing or enhancing databases. The transaction record, which often lists the item purchased, its value, customer name, address, and zip code, is the building block for many databases. This may be supplemented with data customers provide directly, such as data on a warranty card, and by secondary data purchased from third parties. For example, credit services may sell databases about applications for loans, credit card payment history, and other financial data. Several companies, such as Donnelley Marketing (with its BusinessContentFile and ConsumerContentFile services) and Claritas (with PRIZM), collect primary data and then sell demographic data that can be related to small geographic areas, such as those with a certain zip code. (Remember that when the vendor collects the data, they are primary data, but when the database marketer incorporates the data into his or her database, they are secondary data.) Now that some of the purposes of secondary-data analysis have been addressed, we turn to a discussion of the sources of secondary data.

Sources of Secondary Data

Secondary data can be classified as either internal to the organization or external. Modern information technology makes this distinction seem somewhat simplistic. Some accounting documents are indisputably internal records of the organization. Researchers in another organization cannot have access to them. Clearly, a book published by the federal government and located at a public library is external to the company. However, in today's world of electronic data interchange, the data that appear in a book published by the federal government may also be purchased from an online information vendor for instantaneous access and subsequently stored in a company's decision support system. Internal data should be defined as data that originated in the organization, or data created, recorded, or generated by the organization. **Internal and proprietary data** is perhaps a more descriptive term.

Sources of Internal and Proprietary Data

Most organizations routinely gather, record, and store internal data to help them solve future problems. An organization's accounting system can usually provide a wealth of information. Routine documents such as sales invoices allow external financial reporting, which in turn can be a source of data for further analysis. If the data are properly coded into a modular database in the accounting system, the researcher may be able to conduct more detailed analysis using the decision support system. Sales information can be broken down by account or by product and region; information related to orders received, back orders, and unfilled orders can be identified; sales can be forecast on the basis of past data. Other useful sources of internal data include salespeople's call reports, customer complaints, service records, warranty card returns, and other records. Researchers frequently aggregate or disaggregate internal data. For example, a computer service firm used internal secondary data to analyze sales over the previous

three years, categorizing business by industry, product, purchase level, and so on. The company discovered that 60 percent of its customers represented only 2 percent of its business and that nearly all of these customers came through telephone directory advertising. This simple investigation of internal records showed that, in effect, the firm was paying to attract customers it did not want. Internet technology is making it easier to research internal and proprietary data. Often companies set up intranets so that employees can use Web tools to store and share data within the organization. And just as Google's search software lets people search the entire World Wide Web, Google is offering the enterprise search, which is essentially the same technology in a version that searches a corporate intranet. The enterprise search considers not only how often a particular document has been viewed but also the history of the user's past search patterns, such as how that user has looked at particular documents and for how long. In addition, other companies have purchased specialized software, such as Autonomy, which searches internal sources plus such external sources as news government Web sites

External Data: The Distribution System

External data are generated or recorded by an entity other than the researcher's organization. The government, newspapers and journals, trade associations, and other organizations create or produce information. Traditionally, this information has been in published form, perhaps available from a public library, trade association, or government agency. Today, however, computerized data archives and electronic data interchange make external data as accessible as internal data. Exhibit below illustrates some traditional and some modern ways of distributing information.

Information as a Product and Its Distribution Channels

Because secondary data have value, they can be bought and sold like other products. And just as bottles of perfume or plumbers' wrenches may be distributed in many ways, secondary data also flow through various channels of distribution. Many users, such as the Fortune 500 corporations, purchase documents and computerized census data directly from the government. However, many small companies get census data from a library or another intermediary or vendor of secondary information.

LIBRARIES

Traditionally, libraries' vast storehouses of information have served as a bridge between users and producers of secondary data. The library staff deals directly with the creators of information, such as the federal government, and intermediate distributors of information, such as abstracting and indexing services. The user need only locate the appropriate secondary data on the library shelves. Libraries provide collections of books, journals, newspapers, and so on for reading and reference. They also stock many bibliographies, abstracts, guides, directories, and indexes, as well as offer access to basic databases.

THE INTERNET

Today, of course, much secondary data is conveniently available over the Internet. Its creation has added an international dimension to the acquisition of secondary data. For example, Library Spot, at **http://www.libraryspot.com**, provides links to online libraries, including law libraries, medical libraries, and music libraries. Its reference desk features links to calendars, dictionaries, encyclopedias, maps, and other sources typically found at a traditional library's reference desk.

VENDORS

The information age offers many channels besides libraries through which to access data. Many external producers make secondary data available directly from the organizations that produce the data

or through intermediaries, which are often called *vendors.* Vendors such as Factiva now allow managers to access thousands of external databases via desktop computers and telecommunications systems. Hoovers (**http://www.hoovers.com**) specializes in providing information about thousands of companies' financial situations and operations.

PRODUCERS

Classifying external secondary data by the nature of the producer of information yields five basic sources: publishers of books and periodicals, government sources, media sources, trade association sources, and commercial sources. The following section discusses each type of secondary data source.

1) Books and Periodicals

Some researchers consider books and periodicals found in a library to be the quintessential secondary data source. A researcher who finds books on a topic of interest obviously is off to a good start. Professional journals, such as the *Journal of Marketing, Journal of Management, Journal of the Academy of Marketing Science, The Journal of Business Research, Journal of Advertising Research, American Demographics,* and *The Public Opinion Quarterly,* as well as commercial business periodicals such as the *Wall Street Journal, Fortune,* and *BusinessWeek,* contain much useful material.

2) Government Sources

Government agencies produce data prolifically. Most of the data published by the federal government can be counted on for accuracy and quality of investigation. Most students are familiar with the U.S. *Census of Population,* which provides a wealth of data.

3) Media Sources

Information on a broad range of subjects is available from broadcast and print media. *CNN Financial News* and *BusinessWeek* are valuable sources for information on the economy and many industries. Media frequently commission research studies about various aspects of Americans' lives, such as financial affairs, and make reports of survey findings available to potential advertisers free of charge. Data about the readers of magazines and the audiences for broadcast media typically are profiled in media kits and advertisements.

4) Trade Association Sources

Trade associations, such as the Food Marketing Institute or the American Petroleum Institute, serve the information needs of a particular industry. The trade association collects data on a number of topics of specific interest to firms, especially data on market size and market trends. Association members have a source of information that is particularly germane to their industry
questions.

5) Commercial Sources

Numerous firms specialize in selling and/or publishing information. For example, the Polk Company publishes information on the automotive field, such as average car values and new-car purchase rates by zip code. Many of these organizations offer information in published formats and as CD-ROM or Internet databases.

Market-Share Data. A number of syndicated services supply either wholesale or retail sales volume data based on product movement. Information Resources, Inc., collects market-share data using Universal Product Codes (UPC) and optical scanning at retail store checkouts.

Demographic and Census Updates. A number of firms, such as CACI Marketing Systems and Urban Information Systems, offer computerized U.S. census files and updates of these data broken down by small

geographic areas, such as zip codes. Many of these research suppliers provide indepth information on minority customers and other market segments.

Consumer Attitude and Public Opinion Research. Many research firms offer specialized syndicated services that report findings from attitude research and opinion polls. For example, Yankelovich provides custom research, tailored for specific projects, and several syndicated services.

Consumption and Purchase Behavior Data. NPD's *National Eating Trends* (NET) is the most detailed database available on consumption patterns and trends for more than 4,000 food and beverage products. This is a syndicated source of data about the types of meals people eat and when and how they eat them. The data, called *diary panel data,* are based on records of meals and diaries kept by a group of households that have agreed to record their consumption behavior over an extended period of time.

Advertising Research. Advertisers can purchase readership and audience data from a number of firms. W. R. Simmons and Associates measures magazine audiences; Arbitron measures radio audiences; ACNielsen Media Measurement estimates television audience ratings. By specializing in collecting and selling audience information on a continuing basis, these commercial sources provide a valuable service to their subscribers.

Single-Source Data-Integrated Information

ACNielsen Company offers data from both its television meters and scanner operations. The integration of these two types of data helps marketers investigate the impact of television advertising on retail sales. In other ways as well, users of data find that merging two or more diverse types of data into a single database offers many advantages. The data and information industry uses the term **single-source data** for diverse types of data offered by a single company.

Sources for GlobalResearch

As business has become more global, so has the secondary data industry. The Japan Management Association Research Institute, Japan's largest provider of secondary research data to government and industry, maintains an office in San Diego. The Institute's goal is to help U.S. firms access its enormous store of data about Japan to develop and plan their business there. The office in San Diego provides translators and acts as an intermediary between Japanese researchers and U.S. clients.

Secondary data compiled outside the United States have the same limitations as domestic secondary data. However, international researchers should watch for certain pitfalls that frequently are associated with foreign data and cross-cultural research. First, data may simply be unavailable in certain countries. Second, the accuracy of some data may be called into question. This is especially likely with official statistics that may be adjusted for the political purposes of foreign governments. Finally, although economic terminology may be standardized, various countries use different definitions and accounting and recording practices for many economic concepts. For example, different countries may measure disposable personal income in radically different ways. International researchers should take extra care to investigate the comparability of data among countries.

The U.S. government and other organizations compile databases that may aid international secondary data needs. For example, *The European Union in the U.S.* (**http://www.eurunion.org**) reports on historical and current activity in the European Union providing a comprehensive reference guide to information about laws and regulations. The *European Union in the U.S.* profiles in detail each European Union member state, investment opportunities, sources of grants and other funding, and other information about business resources.