

TECH 646 Analysis of Research in Industry and Technology

Ch 4. The Research Process: An Overview

Based on the text book and supplemental materials from the text book:
Cooper, D.R., & Schindler, P.S., *Business Research Methods* (12th edition), McGraw-Hill/Irwin

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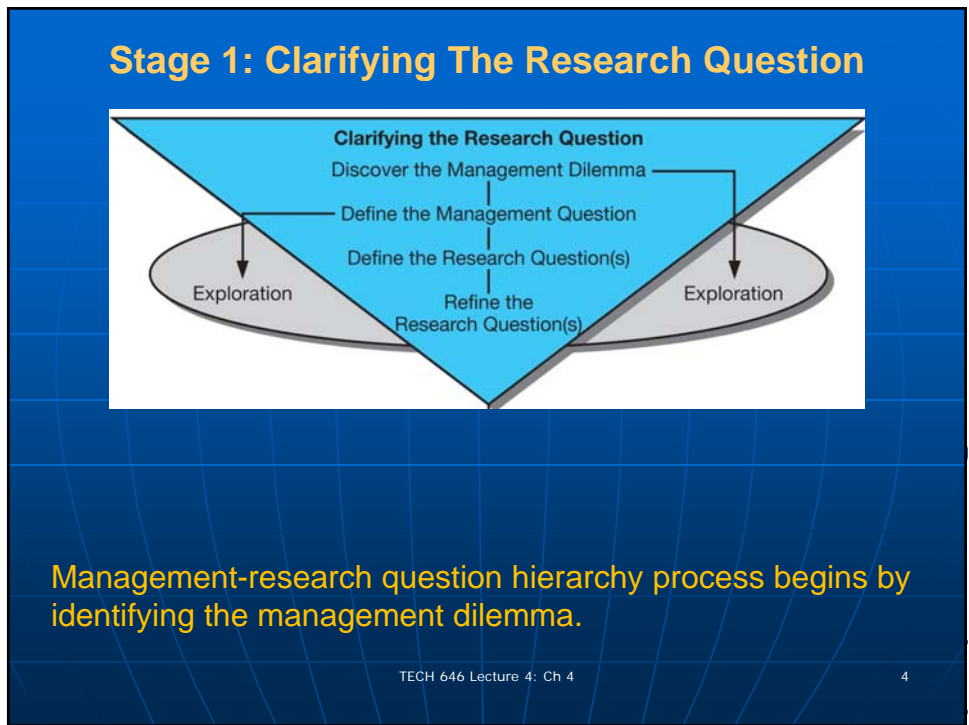
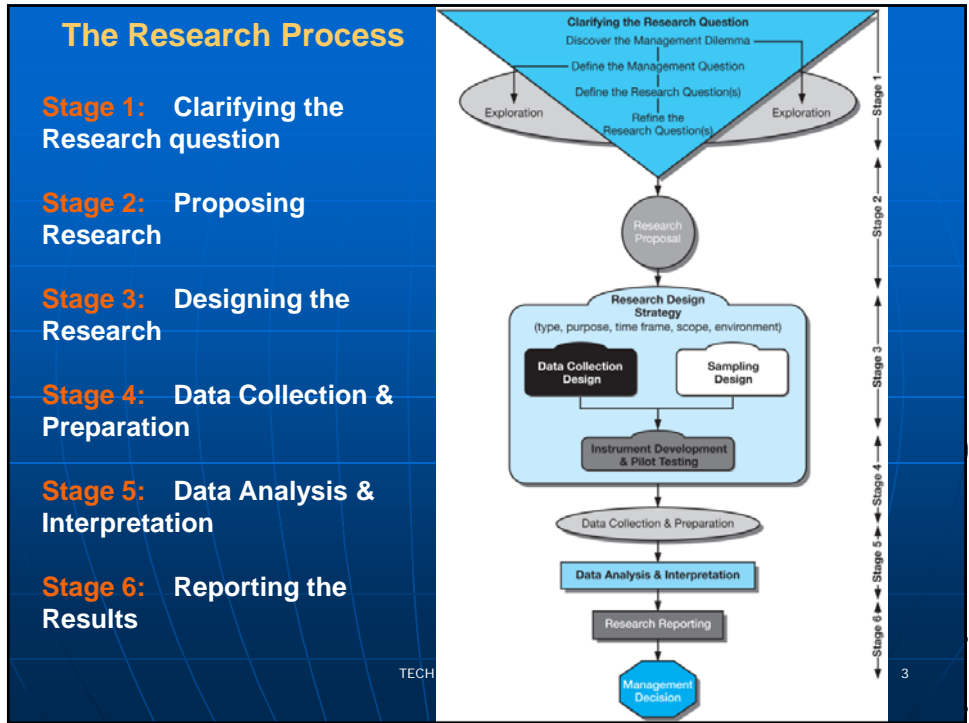
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Chapter 4

- Learning Objectives ... Understand ...
 - That research is **decision- and dilemma-centered**.
 - That the **clarified research question** is the result of careful exploration and analysis and sets the direction for the research project.
 - How **value assessments and budgeting** influence the process for proposing research, and ultimately, research design.
 - **What is included** in research design, data collection, and data analysis.
 - **Research process problems** to avoid.

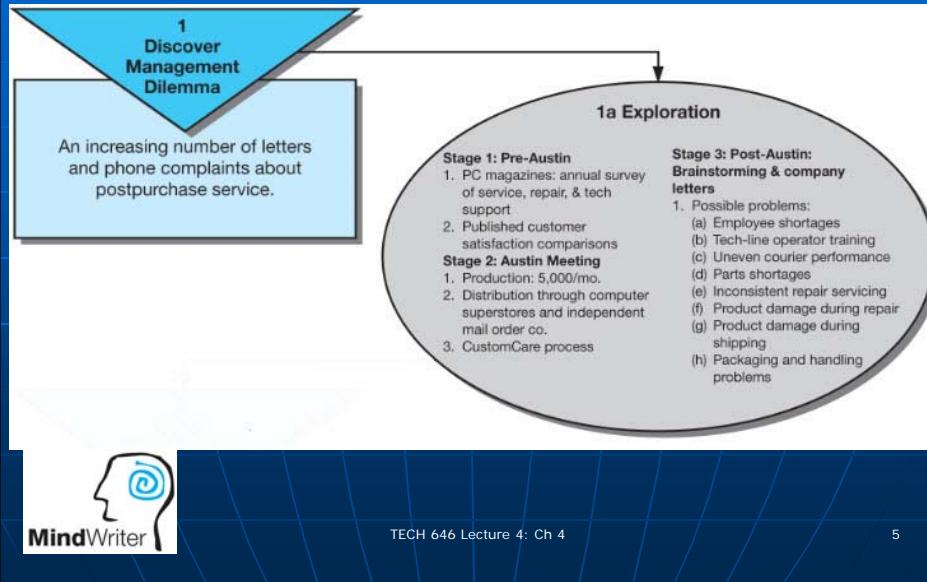
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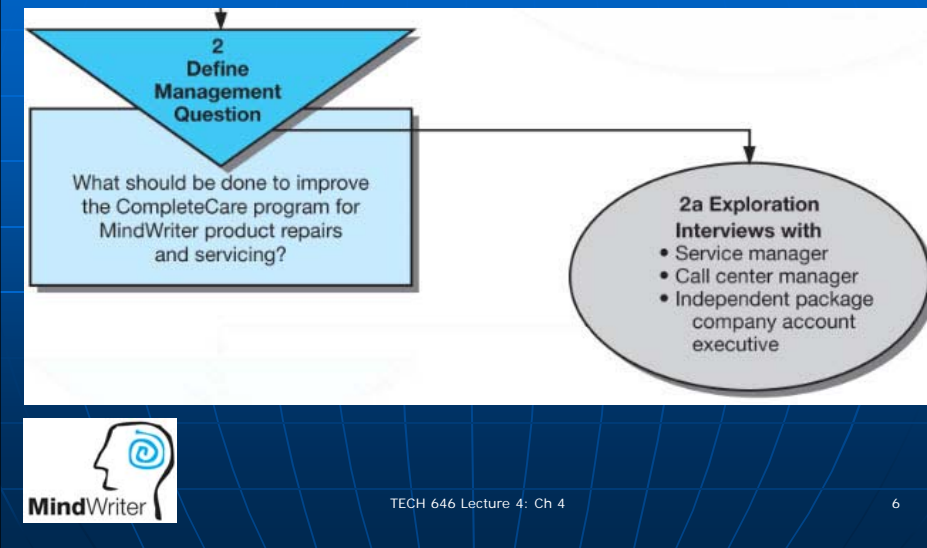
Stage 1: Clarifying The Research Question

Step 1: Discover the Management Dilemma



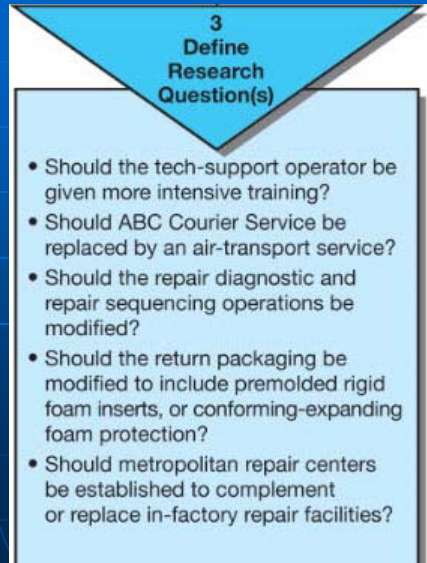
Stage 1: Clarifying The Research Question

Step 2: Define the Management Question



Stage 1: Clarifying The Research Question

Step 3: Define the Research Question

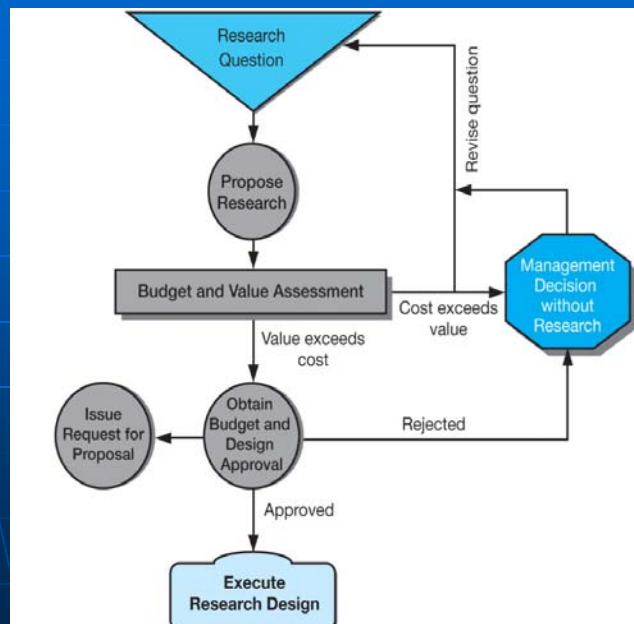


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Stage 2: Proposing Research

Budget Types

- Rule-of-Thumb budgeting
- Departmental or functional area budgeting
- Task budgeting



Evaluating the Value of Research: Cost/Benefits Evaluation Methods



Ex Post Facto
Evaluation

Prior or Interim
Evaluation

Option/Alternative
Analysis

Decision Theory: rules
& variables

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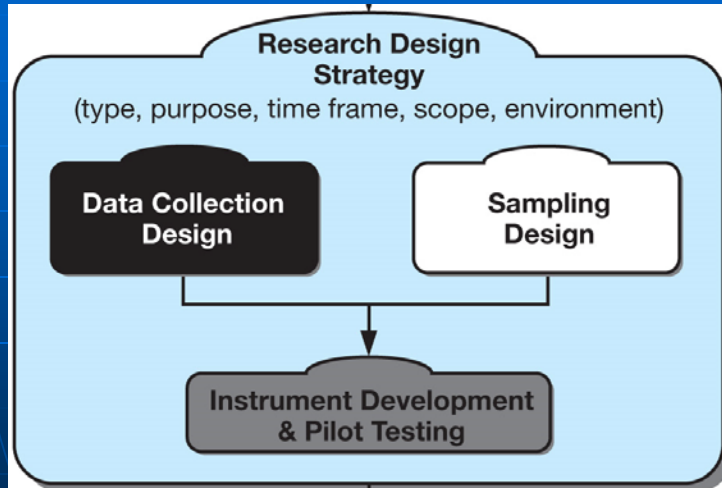
The Research Proposal



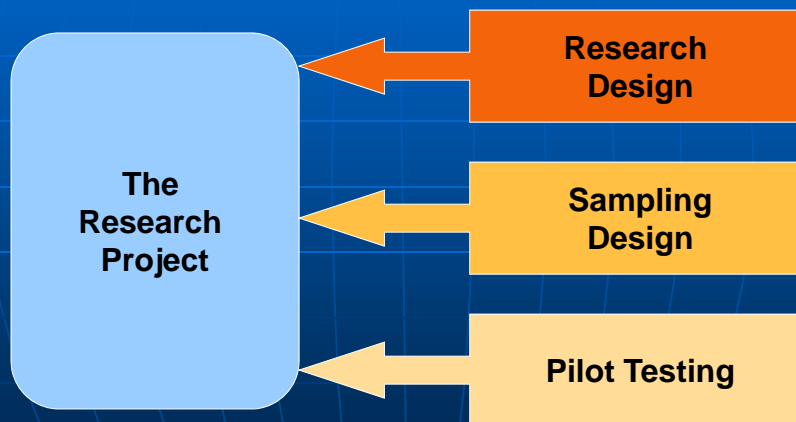
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Stage 3: Designing Research



Stage 3: Designing Research



Stage 3: Designing The Research

- **Research design** is the blueprint for fulfilling objectives and providing the insight to answer the management dilemma.
- There are many methods, techniques, procedures, and protocols possible.
 - **Chapter 6** identifies various research designs and
 - **Chapters 7-14** discuss specific methodologies.

Stage 3: Designing The Research

- **Sampling Design**
 - Identify the **target population** and determine whether a sample or census is desired.
 - A **census** is a count of all elements in a population. A **sample** is a group of cases, participants, events, or records that constitute a portion of the target population.
 - The researcher must determine whether to choose a **probability or nonprobability sample**.
 - Types of samples, sample frames, how samples are drawn, and the determination of sample size are discussed in Chapters 15.

Stage 3: Designing The Research

- Pilot Testing
 - To **test weaknesses** in **design and instrumentation**
 - To provide **proxy data** for selection of a probability sample
 - Size of pilot group: 25 to 100 subjects
 - Chapter 14 focuses on instrument development and pilot testing is discussed.

Data Types

- Secondary Data
 - Originally collected to address a problem other than the one which require the manager's attention at the moment.
- Primary Data
 - Data the research collects to address the specific problem at hand.

Stage 4: Data Collection and Preparation

- Data Collection: Secondary & Primary Data
 - Simple observation
 - Questionnaires
 - Standardized test
 - Observational forms
 - Laboratory notes
 - Instrument calibration logs
- Data Characteristics

Abstractness

Verifiability

Elusiveness

Closeness

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Collecting Sensitive Data: Demands Safeguards

Scotts used a healthcare management company to collect **sensitive wellness data** during annual health assessments to preserve participant confidentiality.



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Step 5. Data Analysis and Interpretation

Your Views About Classes

About the Workshop

1. Did you attend the workshop?
2. How do you feel about the workshop?
3. Do you feel that the workshop was worth the time and effort?
4. Do you feel that the workshop was a valuable experience?
5. What do you like most about the workshop?
6. What do you like least about the workshop?
7. How do you feel about the workshop?
8. How do you feel about the workshop?

Yes No

Strongly agree Agree Disagree Strongly disagree

Not at all A little A lot Not at all A little A lot

Reduce data to manageable size

Develop summaries

Look for patterns

Apply statistical techniques

Step 6. Reporting the Results



Parts of the Research Report

- **Executive Summary**
 - A synopsis of the problem, findings, and recommendations
- **Research Overview**
 - The problem's background
 - Literature review and summary
 - Methods and procedures
 - Conclusions
- **Implementation Strategies**
 - Expands on recommendations
- **Technical Appendix**
 - All the materials necessary to replicate the project

Research Overview

Problem's background

Summary of exploratory findings

Research design and procedures

Conclusions

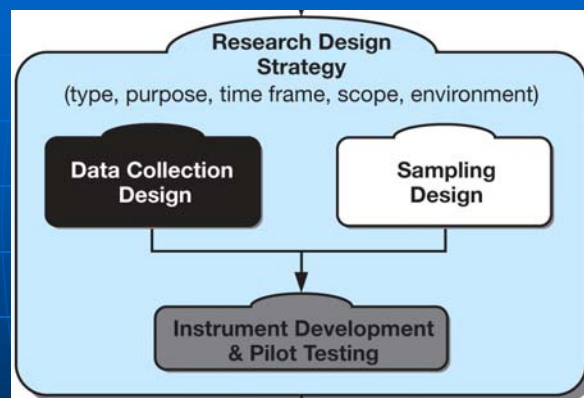
Research Process Problems to Avoid



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Research Process Problems to Avoid



Problem to avoid:
Company Database Strip-mining

Problem to avoid:
Favored Techniques Syndrome

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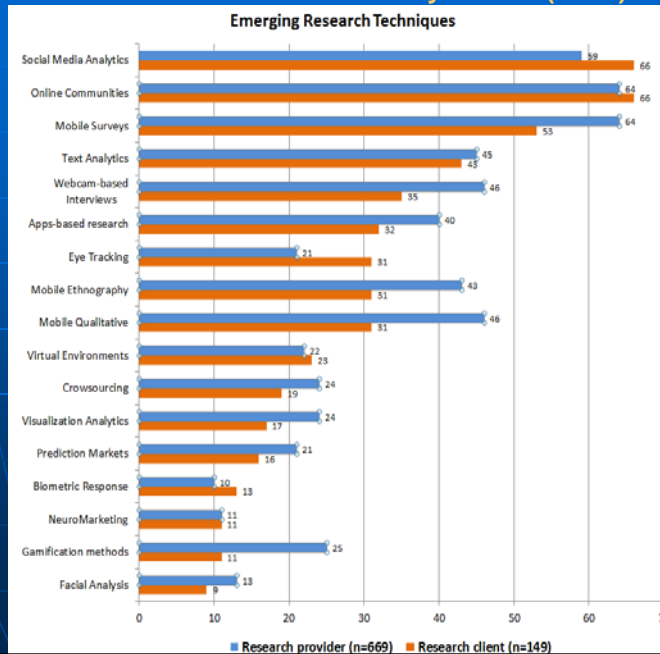
Snapshot: The Container Store teams with OpinionLab to gain feedback

The screenshot shows the 'THE gift REGISTRY' page on The Container Store website. The page is divided into three main sections: 'GIVE A GIFT', 'CREATE A REGISTRY', and 'MANAGE YOUR REGISTRY'. The 'CREATE A REGISTRY' section is active, showing a form with fields for 'Registry's First Name', 'Registry's Last Name', 'OR Registry Number', 'Categories' (with radio buttons for Wedding, Development Community, Baby, Graduation/Quin, Housewarming, and Celebration/Retirement, Birthday, etc.), 'Email', and 'Password'. There are 'Find Registry', 'Go', and 'Go' buttons. Below the form, there are promotional banners for 'Must Have Gifts', 'A Great Registry Starts Here', and '\$2,000 IN FABULOUS PRIZES!'. On the right side, there is a feedback survey titled 'The Container Store' with a 'Page Comments' section, 'Page Ratings' (Content, Design/Layout, Ease of Use, Overall), and 'Optional Questions' (Did you encounter an error...? If yes, were they ultimately resolved...?).

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PicProfile: Top Four Emerging Research Techniques 2012 Greenbook Research Industry Trends (GRIT) report



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Summary

Q&A?

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