

**MANAGEMENT INFORMATION SYSTEMS 8/E**

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# **Chapter 17**

## **Marketing Information Systems**

# Objectives

- Recognize the high level of interest that marketing has shown in functional Information System and appreciate how their theoretical models benefit other functional areas as well
- Visualize a functional Information System as a group of input and output subsystems connected by a database
- Understand how the input subsystems gather data and information both internally and from the environment
- Recognize that the output subsystems include various types of software that transform data into information describing the functional area
- Have an awareness of how information technology has been incorporated into marketing research and the gathering of marketing intelligence
- Be familiar with some of the programs in the software library, which support decisions relating to product, place, promotion, price and the integrated mix

# Introduction

- Marketing was the first functional area to exhibit an interest in MIS
- The marketing information system has three subsystems; the accounting information system (AIS), marketing research, and marketing intelligence
- Functional information systems: the conceptual systems should be "mirror images" of the physical systems

# Functional Information Systems Represent Functional Physical Systems

## Functional information systems

Marketing information system

Manufacturing information system

Finance information system

Human resource information system

Information resource information system

Marketing function

Manufacturing function

Finance function

Human resources function

Information Services function

## Physical system of the firm

# Marketing Principles

## ■ Marketing mix

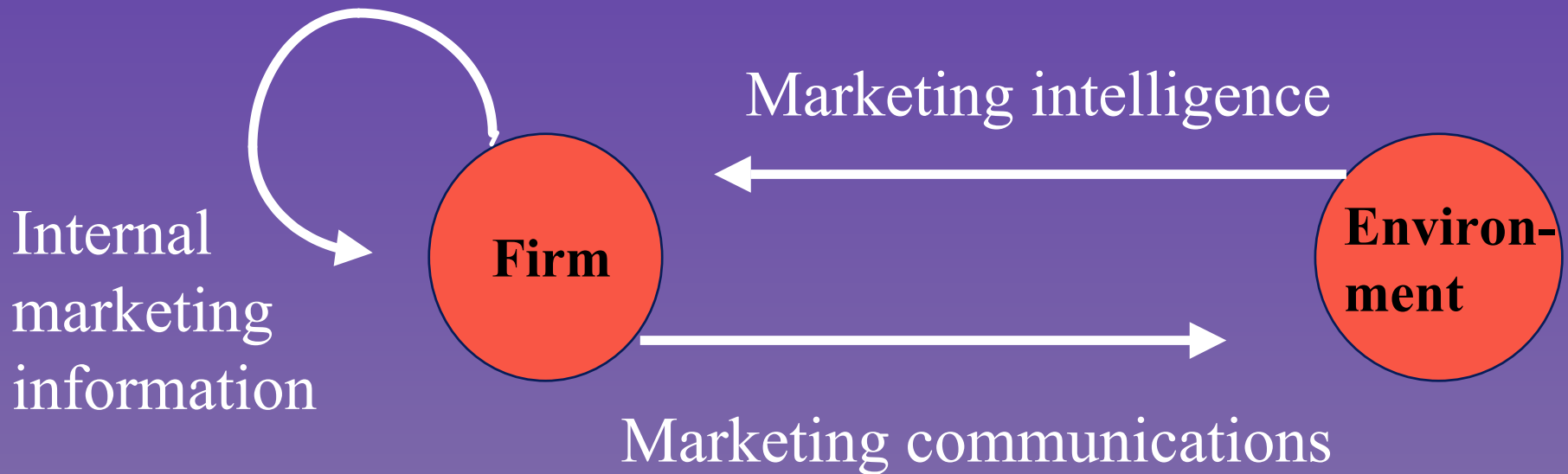
- Product
- Promotion
- Place
- Price

4 P's

# The Marketing Information System (MKIS)

- Kotler's marketing nerve center
- 3 information flows
  - Internal
    - » Gathered in firm
  - Intelligence
    - » From environment
  - Communications
    - » To environment

# Kotler's Information Flows



# Marketing Information System (MKIS) Definition

A computer-based system that works in conjunction with other functional information systems to support the firm's management in solving problems that relate to marketing the firm's products.



# An MKIS Model

## ■ Output

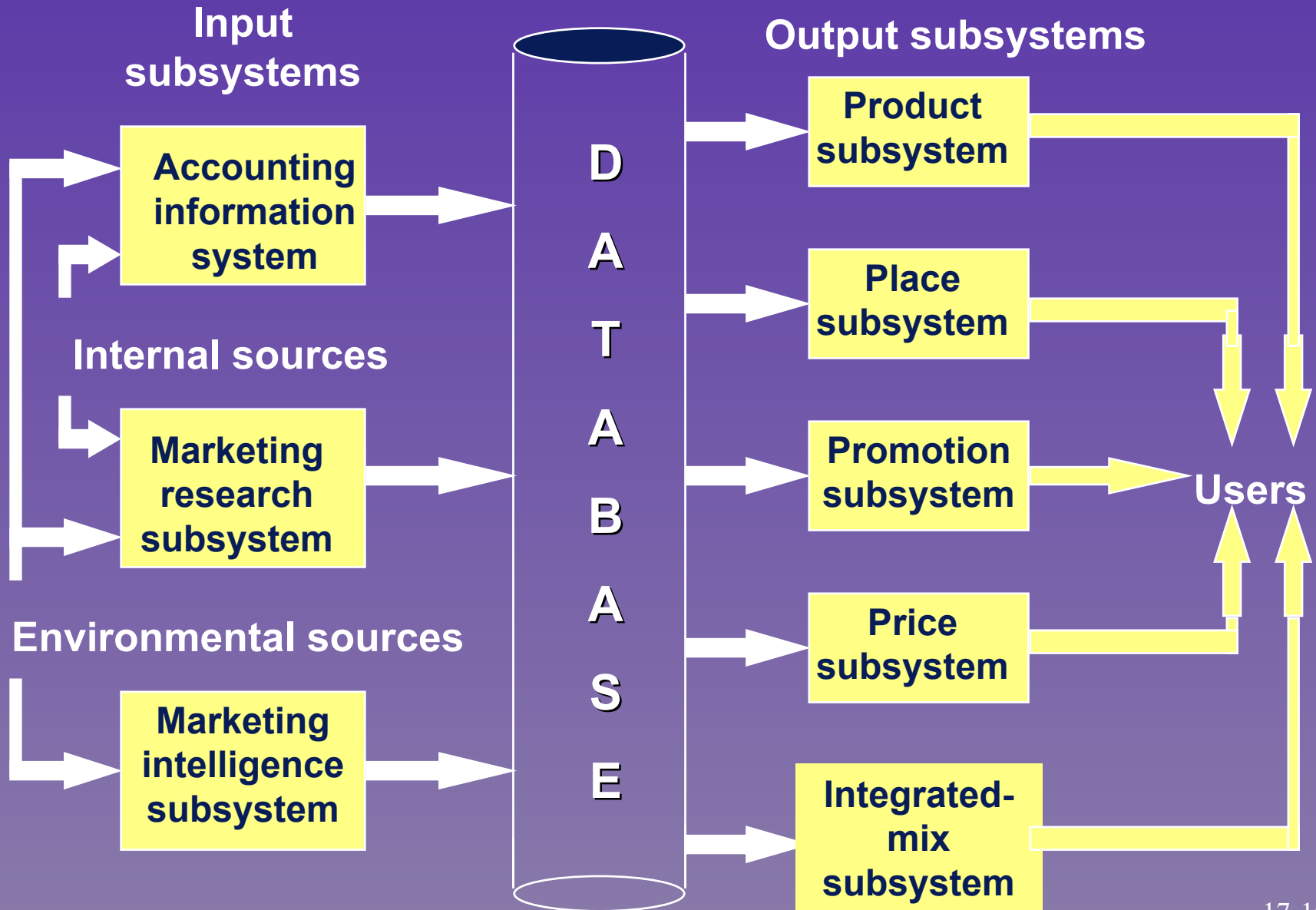
- Product
- Place
- Promotion
- Price
- Integrated mix

## ■ Database

## ■ Input

- AIS
- Marketing research
- Marketing intelligence

# MKIS Model



# Accounting Information System

- Sales order data is input.
- AIS provides data for
  - Periodic reports
  - Special reports
  - Mathematical models and knowledge-based models

# Marketing Research Subsystem

- Managers use marketing research to gather information
  - Gathered from customers and prospects
  - Purchased or procured from other organizations
- Processed using marketing research subsystem

# Primary and Secondary Data

- Used by marketing research subsystem
- Primary data are collected by the firm
- Examples of primary data
  - Survey
  - In-depth interview
  - Observation
  - Controlled experiment

# Primary and Secondary Data (cont.)

- Secondary data
  - Mailing lists
  - Retail sales statistics
  - Video retrieval systems
- Some secondary must be bought and some is free

# Marketing Research Software

- Graphics packages (print maps)
- Makes market research a reality for all firms
- Statistical analysis
- Expertise to interpret software outputs is the key to successful use of these tools

# Marketing Intelligence Subsystem

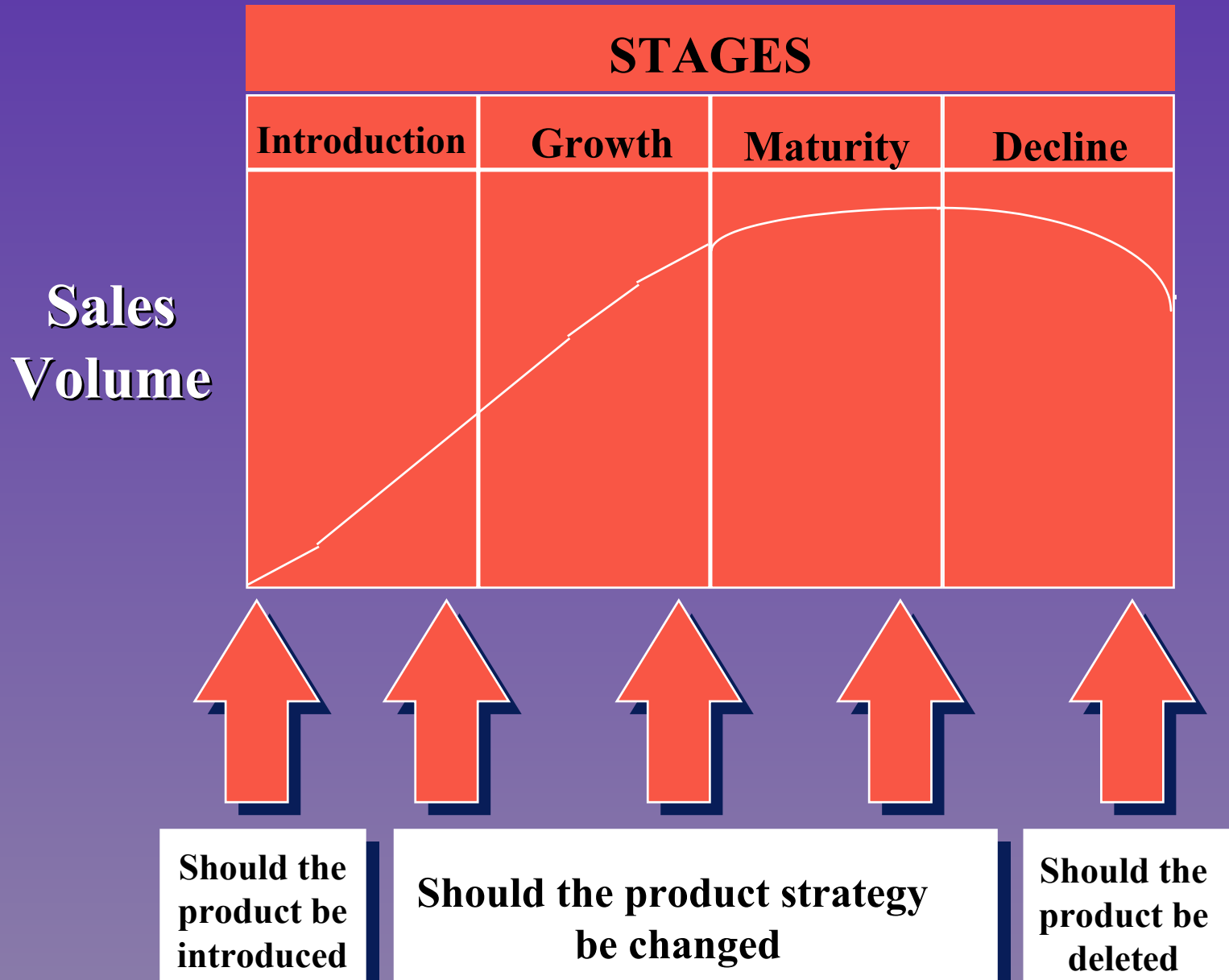
- Ethical activities aimed at gathering information about competitors
- Not to be confused with industrial espionage
- Each functional information system has an intelligence responsibility



# Product Subsystem

- Product life cycle supported through:
  - 1) Introduction
  - 2) Growth
  - 3) Maturity
  - 4) Decline
- Information answers 3 key questions:
  - 1) Introduce?
  - 2) Change strategy?
  - 3) Delete?

# The Product Life Cycle and Related Decisions



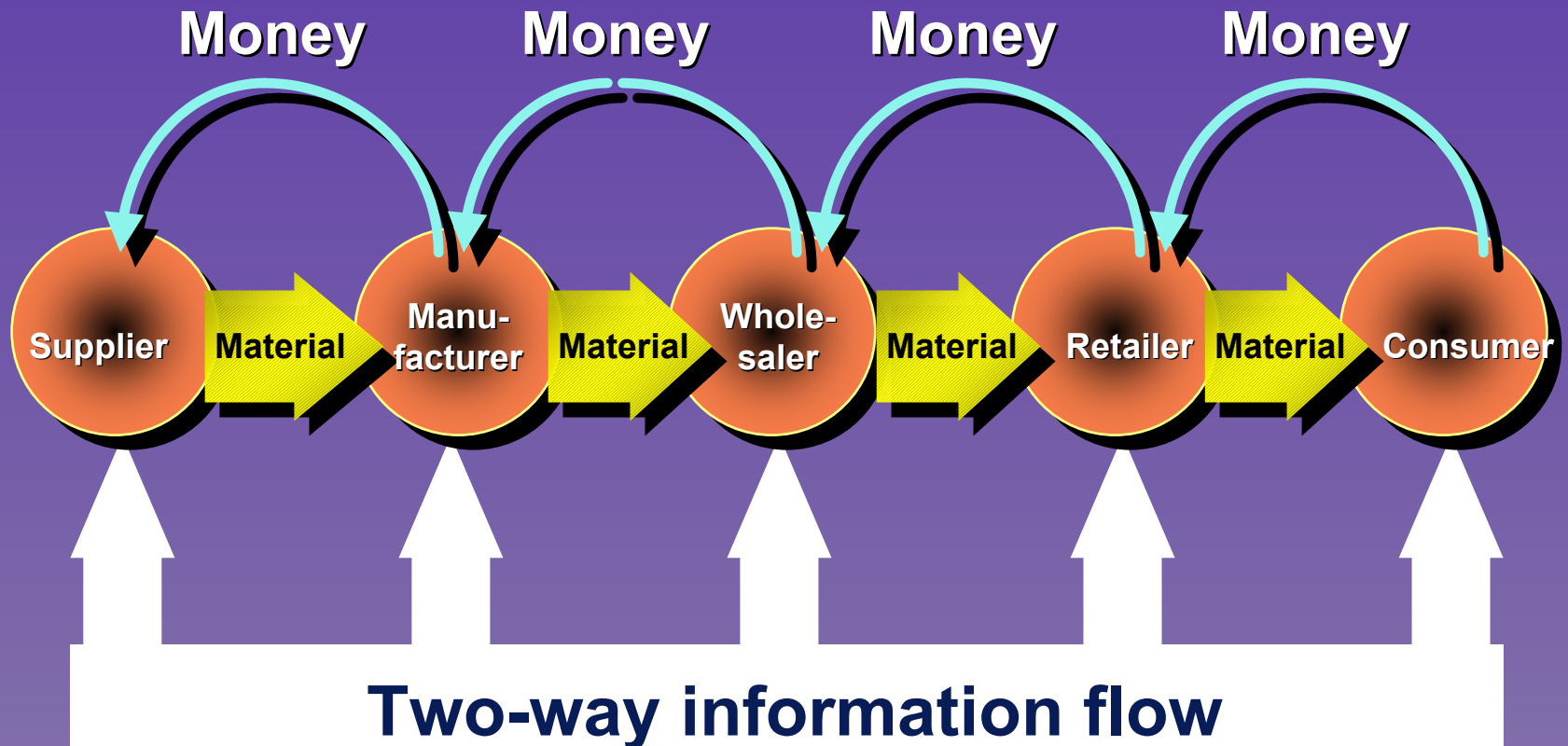
# New Product Evaluation Model

- Another part of the product subsystem
- New product committee
- Explicitly considers production as well as marketing
- Lists decision criteria and their weight

# Place Subsystem

- Channel of distribution may be short or long
- Material, money, and information flow through the distribution channel
  - Resource flows
  - Feedback
    - » Flows in direction opposite to the material flow
  - Feedforward information
    - » Flow of information to customer
  - EDI

# Material, Money, and Information Flow



# Promotion Subsystem Includes:

- (1) advertising
- (2) personal selling
- (3) sales promotion

# Difficult Area to Computerize

## Successful examples

1. Sales promotion --OCR scanning of barcodes on coupons
2. Personal selling --laptops
  - A. Order entry
  - B. Customer call reports

# Pricing Subsystem

## Two Basic Approaches

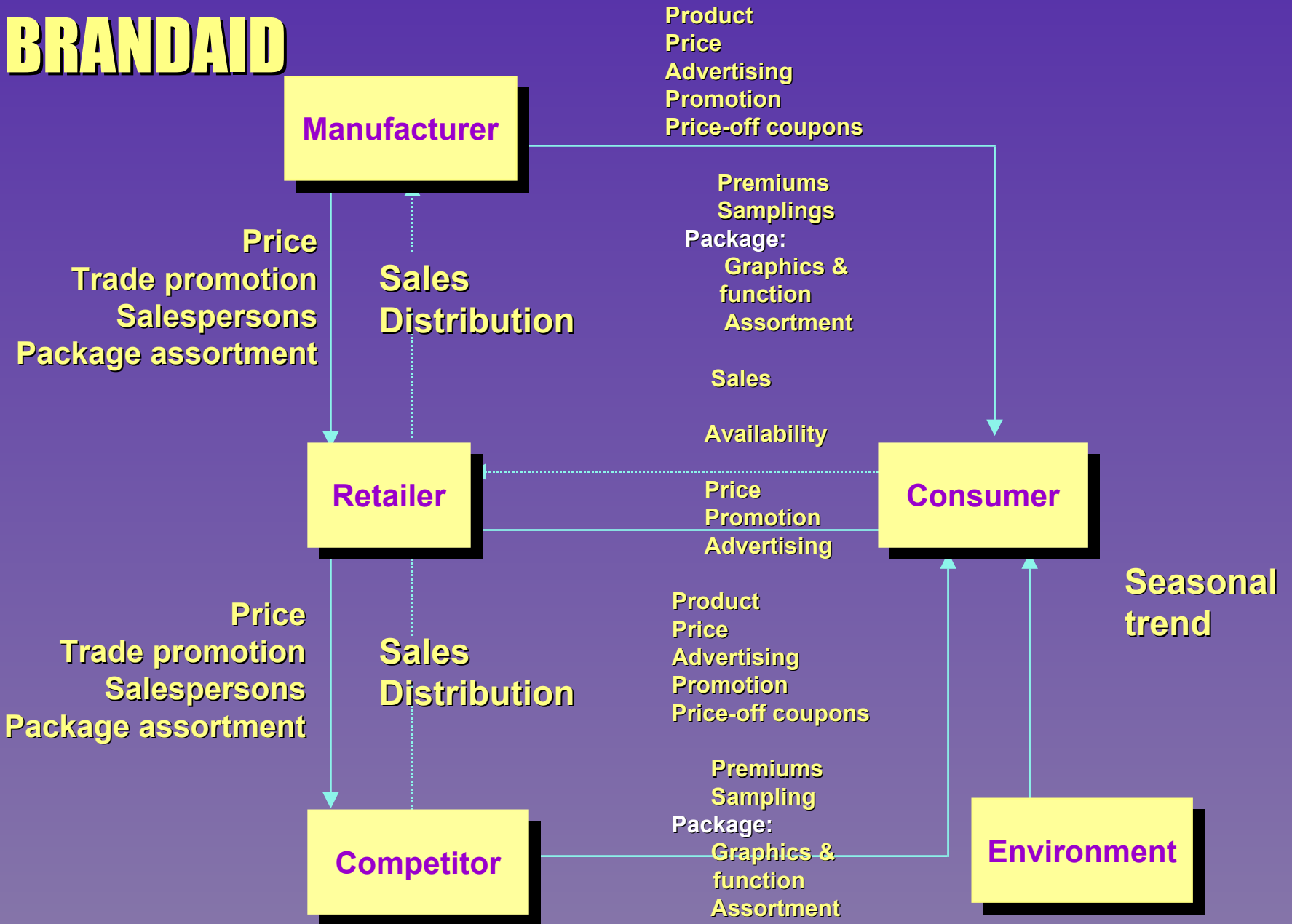
1. Cost based (AIS provides the basis)
2. Demand-based (use what-if model)



# Integrated-Mix Subsystem

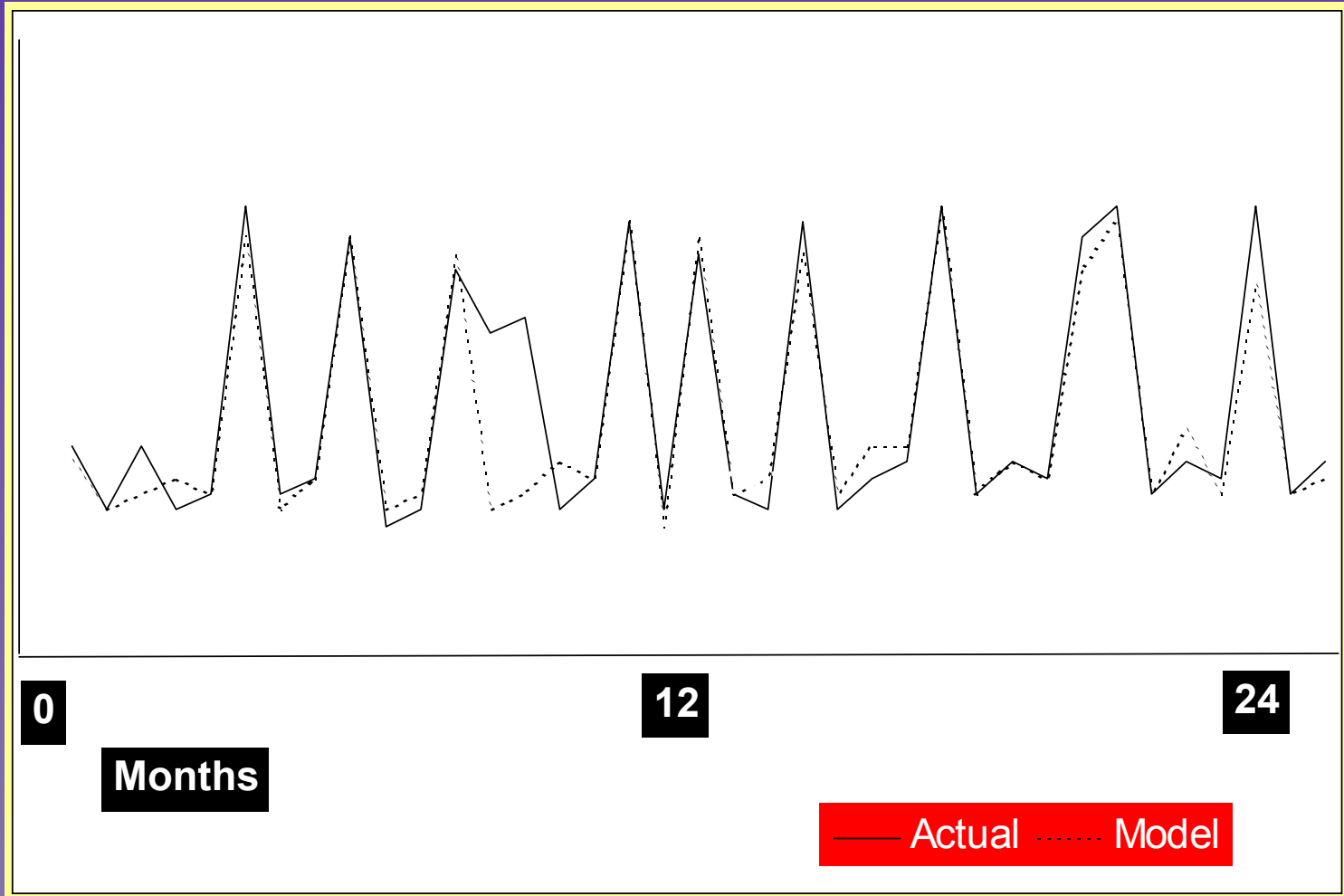
- BRANDAID Model
  - Solid arrows: influences
  - Dashed arrows: responses
- Environmental and retailer influence on the consumer
  - Individual influences
  - Combined influences
- Unexpected influences

# BRANDAID



# Influence of Four Variables, Taken Together

S  
A  
L  
E  
S



# A Model Cannot Cope with Unexpected Events

Sales



New Package

..... Model  
—— Actual

Months

# The MKIS in Fortune 500 Firms

- Preprocessed information 71% of 1990 firms
- Mathematical modeling
  - Generally down
  - Reason is unknown
  - Except for production deletion and advertising media selection
- Model use is becoming more balanced

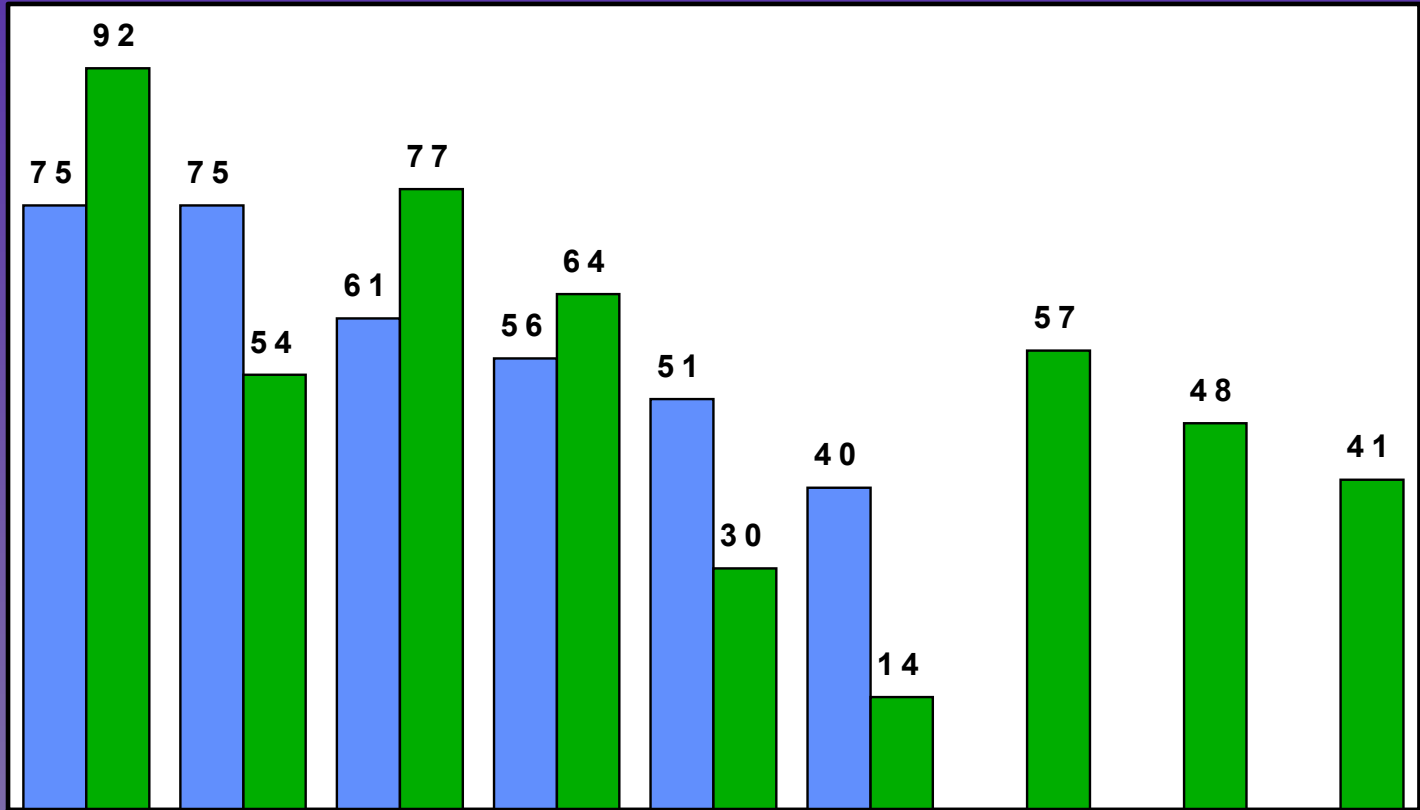
Studies conducted by Li, McLeod, and Rogers

# The MKIS in Fortune 500 Firms (cont.)

- Support for management levels
  - Models
  - Overall
- Support for management functions
- Support for the marketing mix

**Percent of computer users**

100  
80  
60  
40  
20  
0



Retrieving Data

Storing Data

Processing Data

1980

1990

# Purposes of Computer Usage

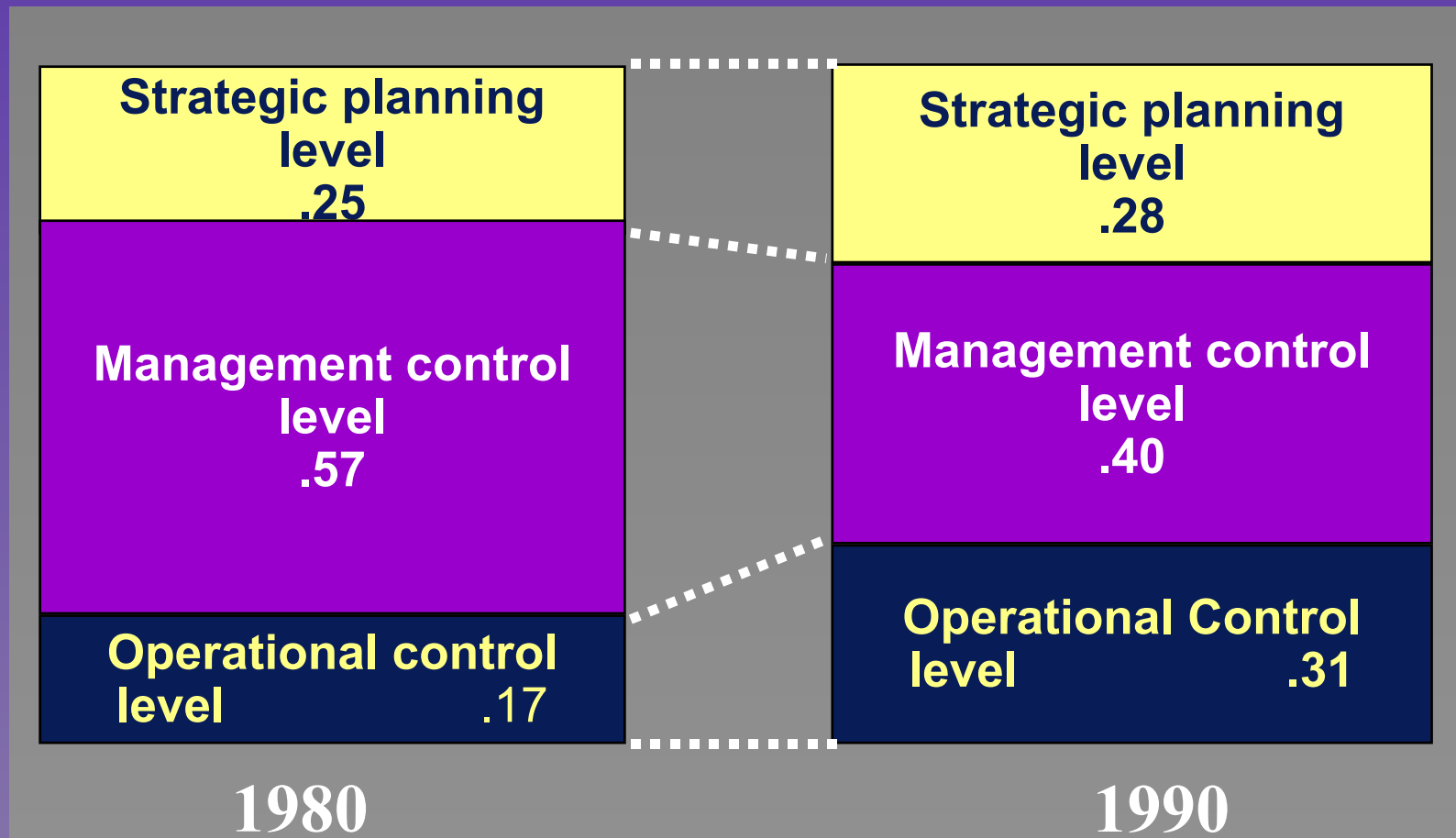
# Model Use Is Becoming More Balanced



Note: The percentages are based on the number of respondents ranking the particular management levels first.

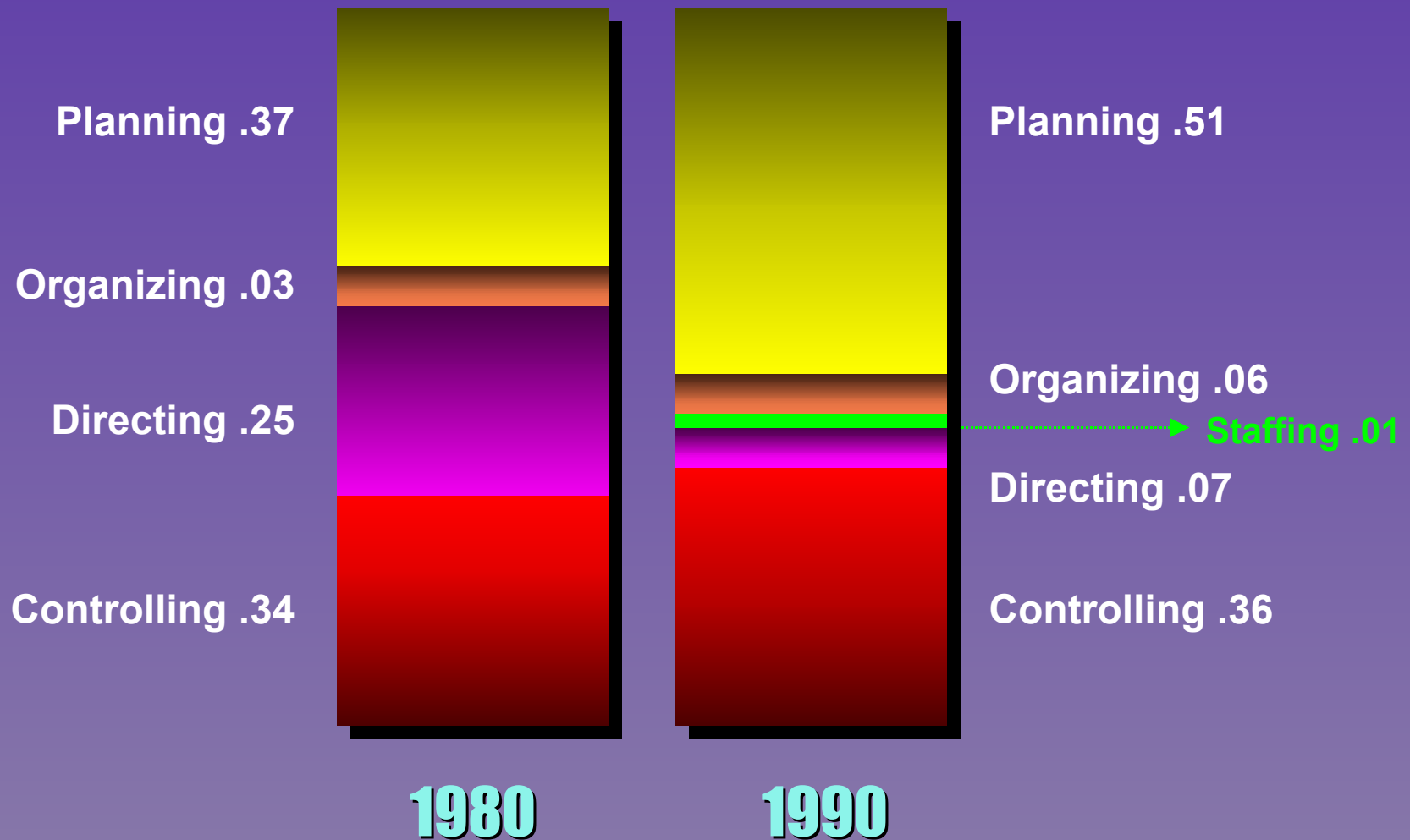


# Overall Support from the Marketing Information System Is Becoming More Balanced

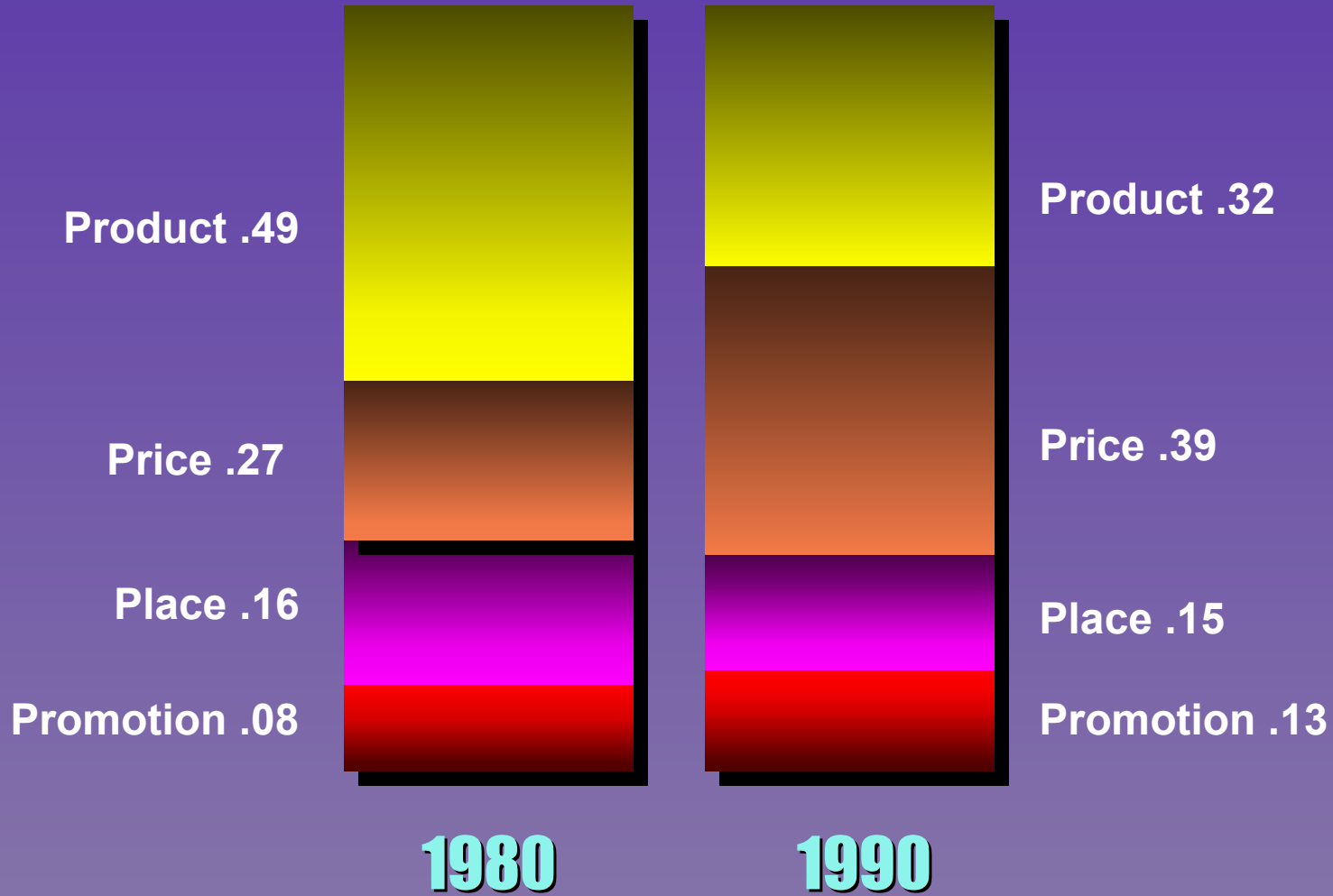


Note: The percentages are based on the number of respondents ranking the particular management levels first.

# The 1990 Managers Placed More Emphasis on Planning and Less on Directing Than Did Their 1980 Counterparts



# Marketing Managers Are Using the Computer More for Making the Difficult Price and Promotion Decisions



Note: The percentages are based on the number of respondents ranking the particular mix functions first.

# How Managers Use the MKIS

| Subsystem                        | Subsystem |       |           |   | Price | Integrated Mix |
|----------------------------------|-----------|-------|-----------|---|-------|----------------|
|                                  | Product   | Place | Promotion |   |       |                |
| VP of marketing                  | X         | X     | X         | X | X     | X              |
| Other executives                 | X         | X     | X         | X | X     | X              |
| Brand managers                   | X         | X     | X         | X | X     | X              |
| Sales manager                    |           |       | X         | X |       |                |
| Advertising manager              |           |       | X         | X |       |                |
| Manager mktg resrch              | X         | X     | X         | X | X     | X              |
| Manager of product planning      |           | X     |           |   |       |                |
| Manager of physical distribution |           |       | X         |   |       |                |
| Other managers                   | X         | X     | X         | X | X     | X              |

# MKIS Use by Managers

- Industry giants are using the computer as a marketing tool
  - To learn about consumer needs and wants
  - To formulate the marketing mix
  - To follow-up on how well mix is received by the consumers
- MKIS information output used across the firm

# Summary

## ■ MKIS

- Input subsystems

  - » AIS, Marketing Research, Marketing Intelligence

- Output subsystems

  - » Product, Place, Promotion, Price, Integrated Mix

## ■ Operational MKISs consider management and marketing concepts

- Planning is the key

# Case Study

1. In a marketing research subsystem, **primary data** is
  - A) collected by the firm
  - B) collected by an entity other than the firm
2. Which of the marketing subsystems has proven the most difficult in terms of applying computer-based information system aid?
  - A) product subsystem
  - B) place subsystem
  - C) promotion subsystem
  - D) price subsystem