Transparency Masters
to *accompany*

Information Processing Systems for Management

Second Edition

Hussain and Hussain

Transparency Masters

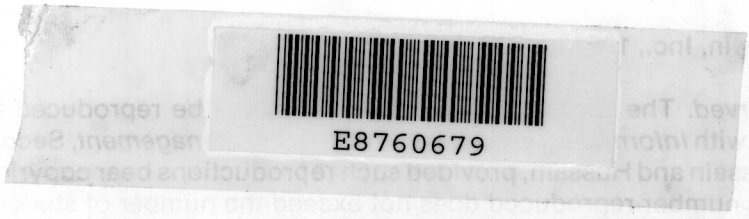
to accompany

Information Processing Systems for Management

Donna Hussain

K.M. Hussain

New Mexico State University



1985
Second Edition

Richard D. Irwin, Inc.
Homewood, Illinois

Printed in the United States of America.

1 2 3 4 5 6 7 8 9 0 W 2 1 0 9 8 7 6 5

TRANSPARENCY MASTERS

Introduction

A few words on the transparency masters for the second edition as compared with the first. This is followed by a discussion of the content for each chapter and some comments on the use of color and overlays.

Differences From First Edition

The set of transparency masters for the second edition is vastly extended (190 more), both in coverage and detail. It is also better balanced in terms of each chapter. Most chapters now have enough transparencies for use in at least a one hour and 20 minute lecture for each of the twenty-seven chapters. One set of seven transparencies alone can take one hour and 20 minutes. This covers the basic material plus some details or supplementary material allowing the instructor considerable choice on emphasis.

Content

- The content of the transparency masters is consistent with the text but does not follow the text either in sequence or in coverage. Only a few figures and tables are duplicates from the text because there are no alternatives for them. For almost everything else, the transparency master offers an alternative view or representation, sometimes three or four, such as with the classification of programming languages (3-4 to 3-8). If you prefer the one in the text, you will need to make a transparency from it.
- Space limitations have prevented the inclusion in this collection of diagrams and tables that appear in the book. You may choose to make transparency masters of selected material from the text and add them to this collection. You might delete some of the details or add arrows to identify points you think should be emphasized. Such transparencies will help reinforce the students' reading of the text. Transparencies to introduce each chapter might be added as well, such as chapter outlines or questions the chapter will answer.
- When new material is in the form of a list, a presentation technique is to expose only one new item in the list at a time. This can be done by covering the master with a thin transparent paper when it is projected, then sliding the paper downward as each new concept is explained. The instructor can see through the transparent paper and anticipate the next line, but only the uncovered portions of the transparency will appear on the screen for the student audience.
- In a few cases (like Chapters 25 and 27) there is a list of contents of the transparency masters which could be used as an introduction or summary. This is merely a demonstration of what you may want to do for the other chapters.
- There is some material, such as the discussion of Planning of Information Systems, that perhaps deserves a chapter in the text but, for various reasons, was hardly mentioned. Such topics are discussed in great detail in the transparency masters (10-1 to 10-3).
- Some transparencies have multiple uses and can be used in one or another chapter. For example, the transparencies on "change" (15-1-1 to 15-1-3) can be used in the chapter on maintenance (Chapter 15) explaining reasons for maintenance; also in the chapter on organizing of the human element (Chapter 17) where resistance to change is discussed. Likewise, a transparency on the information system being a "human-machine" system (text page 362) can be used in either the chapter on control (Chapter 16) identifying the points needing control, or in the chapter on organizing the human element (Chapter 17). Or in both chapters. And even in the chapter on introduction (Chapter 1), or on development (Chapter 10) as an overview. Depends on your emphasis.

Colors and Overlays

- Color can be very useful to identify a different concept, stage of development, or set of components. It is easy to identify as "in red" or "blue" and is especially useful when there is an overlap as in the transparencies on integration for growth curves (21-1-1 to 21-1-4). In some cases, each curve can be an overlay as with development cycle (15-5), and one can discuss each curve and progressively add material, thereby controlling the amount of material added. In one case (21-1-2 to 21-1-4) each overlay is shown separately but in most cases they are shown collectively to save on reproduction costs.
- There are some duplicates as with the overlays on "Management of Change." This is shown in 17-6 but is a duplicate of 15-1-1. The duplication is a reminder of a previous discussion.
- There are some sets of overlays where overlays are added in layers. Sometimes a subtraction must be made before one is added, otherwise the transparency is too crowded. This is true of 15-1 and 16-1. Thus the right-hand side of 16-1-1 must be removed before the right-hand side of 16-1-2 is used--if at all needed. Thus the overlays must be independently stapled, not on top of each other but on different sides of the transparency frame.

- Some transparencies can be used in full or in part. An example is the set on control with the boxes in a flow diagram. Just the flow diagram could be used and all types of control identified, giving examples of how violations take place. (Incidentally, this set of seven transparencies alone can take a full lecture of one hour and 20 minutes.) However, if you wish to get into details or need to answer questions from the floor on how to control errors and misuses, then the overlays can be used. Each set of explanations can be coded by a number and color that corresponds to one of the boxes in the diagram to facilitate quick reference.

Final Comments

Few sentences are used that are complete, and many acronyms and abbreviations are used. The purpose of the transparencies is to jog the memory and serve as a checklist. Once selected and organized for each lecture, preparation for the lecture is minimal; often none at all. So, good luck, and if you have the time, please suggest ways as to how these transparency masters could be supplemented and improved. Meanwhile, have fun.

Note To The Instructor:

Also available from Richard D. Irwin, Inc., is an Instructor's Manual and Test Bank, which contains a sample of student answers to end-of-chapter questions and 1,000 objective test questions.

Donna Hussain

K. M. Hussain

DISTRIBUTION OF TRANSPARENCY MASTERS

Chapter		Number of Transparency Masters
1.	Information for Business Management	7
2.	The Computer Processor	11
3.	Software	10
4.	Input, Output, and Storage Equipment	12
5.	Teleprocessing and Networks	10
6.	Design of a Data Base	11
7.	Data Preparation: Collection, Coding, and Validation	9
8.	Administration of a Data Base	7
9.	Data Base Management Systems	10
10.	Planning and Developing an Information System	6
11.	Feasibility Study	10
12.	Determining Systems Requirements	9
13.	Design of a System	9
14.	Implementation, Testing, Conversion, and Evaluation of System Development	6
15.	Operations, Evaluation, Maintenance, and Redevelopment	8
16.	Quality Control and Security	13
17.	Organizing the Human Element in Information Systems	16
18.	Distributed Data Processing	20
19.	Functional Computer Applications	10
20.	Planning and Control Applications	13
21.	Systems Integration and Growth	8
22.	Computers in Manufacturing	7
23.	Computers in the Office	8
24.	The Electronic Office	11
25.	The Microcomputer: Business and Home Use	19
26.	Impact of Computers on Management	14
27.	Computers in Our Future	22

Transparency Master 1-1

REVOLUTIONS

Industrial	Computer
Big is better	v. v. v. small is "best"
Harness steam as power	Computers as power
Reduce human muscle	Reduce mental chore
	slide rule
	mechanical calculators
Replace labor by machinery	Replace labor by computers
Eliminate heavy labor	Eliminate labor/secretaries
Fewer blue collar class	Fewer white collar class
Centralized control	Total control (?)
Dependent on energy	Dependent on computers

Transparency Master 1-2-1

1900	walk	4 mph
	auto	40 mph
1980	plane	400 mph
1950	millisecond	10^{-3}
	microsecond	10^{-6}
	nanosecond	10^{-9}
1980	picosecond	10^{-12}

Transparency Master 1-2-2

80 yrs.	1900	walk	4 mph	10^2 hundred
		auto	40 mph	
	1980	plane	400 mph	

30 yrs.	1950	millisecond	10^{-3}	10^9 billion
		microsecond	10^{-6}	
		nanosecond	10^{-9}	
	1980	picosecond	10^{-12}	

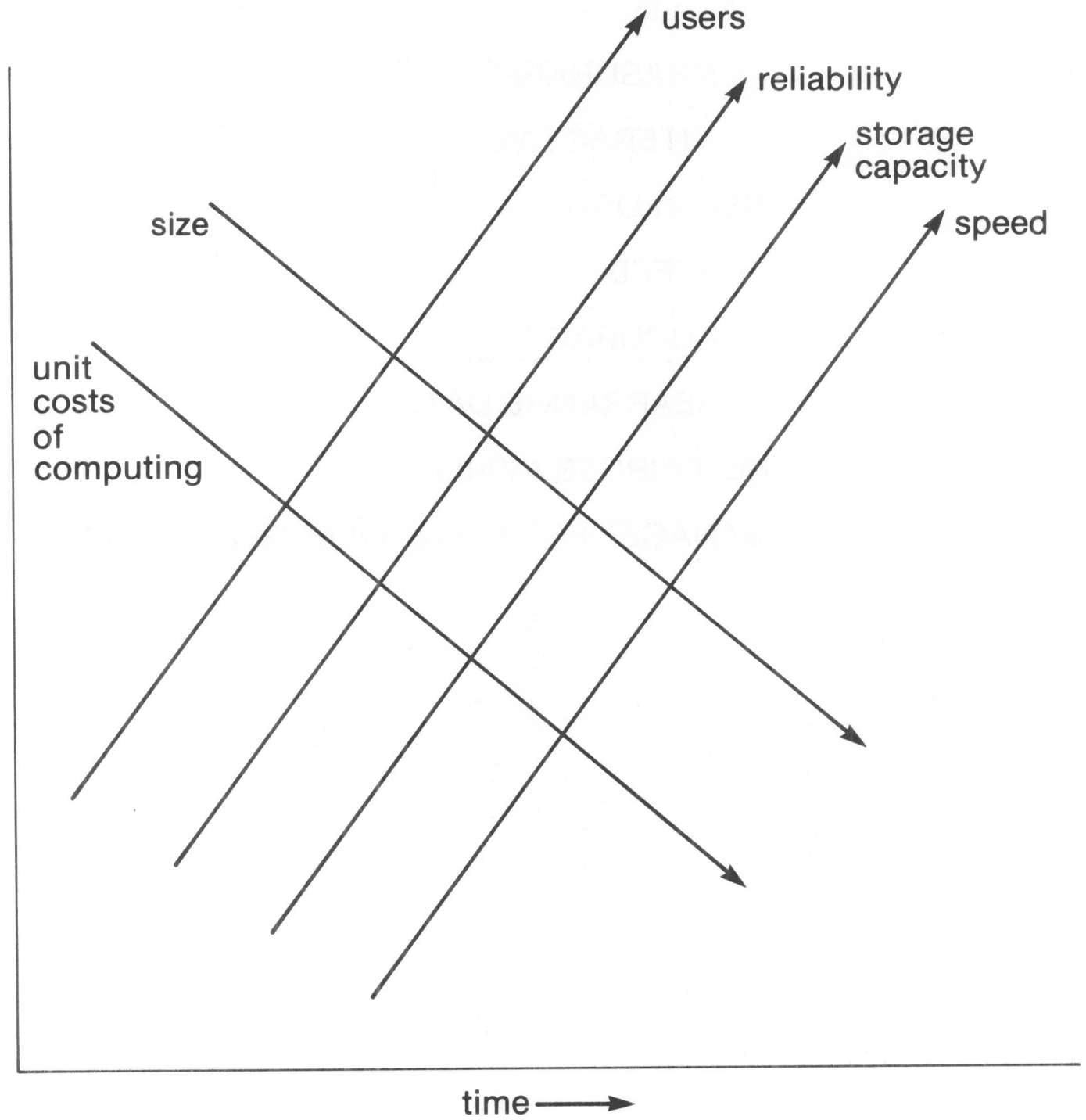
revolution?
have we adapted?
can we adapt?

Transparency Master 1-3

	1955*	1965	1975	1985
Number of computers	1	22.5	226	1,100
Performance cost	1	100	10,000	1,000,000
Programmer productivity	1	2.0	2.7	3.6
System reliability	1	5	24	120

*normalized to 1

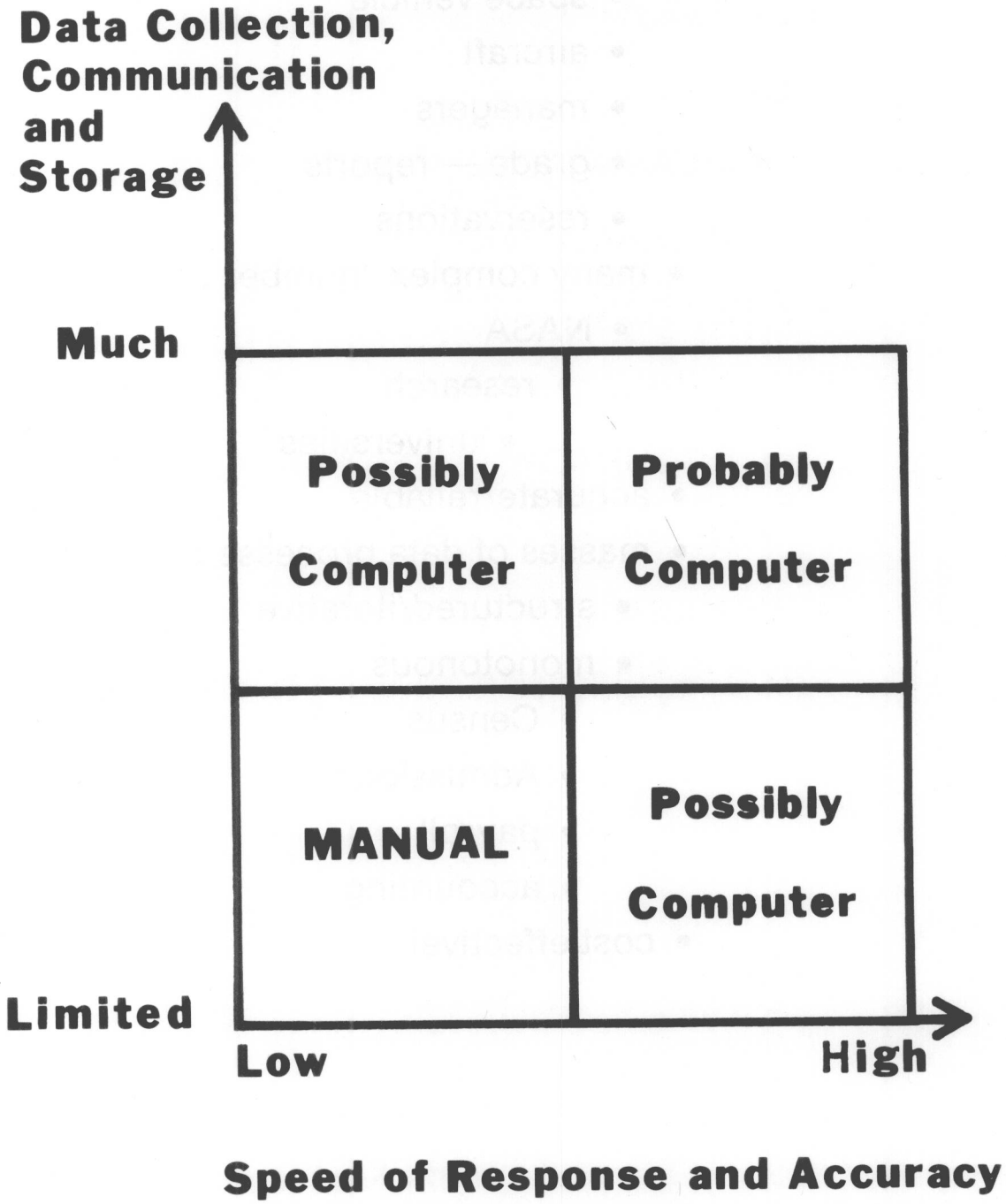
Transparency Master 1-4



Transparency Master 1-5

- WHEN TO AUTOMATE?
  - REPETITIVE OPERATIONS
  - LARGE AMOUNTS OF DATA
  - DATA IS
    - MEASURABLE
    - INTERACTIVE
  - NEED FOR
    - SPEED
    - ACCURACY
    - REARRANGE DATA
  - RESOURCES AVAILABLE
  - MANAGEMENT IS KNOWLEDGEABLE

Transparency Master 1-6

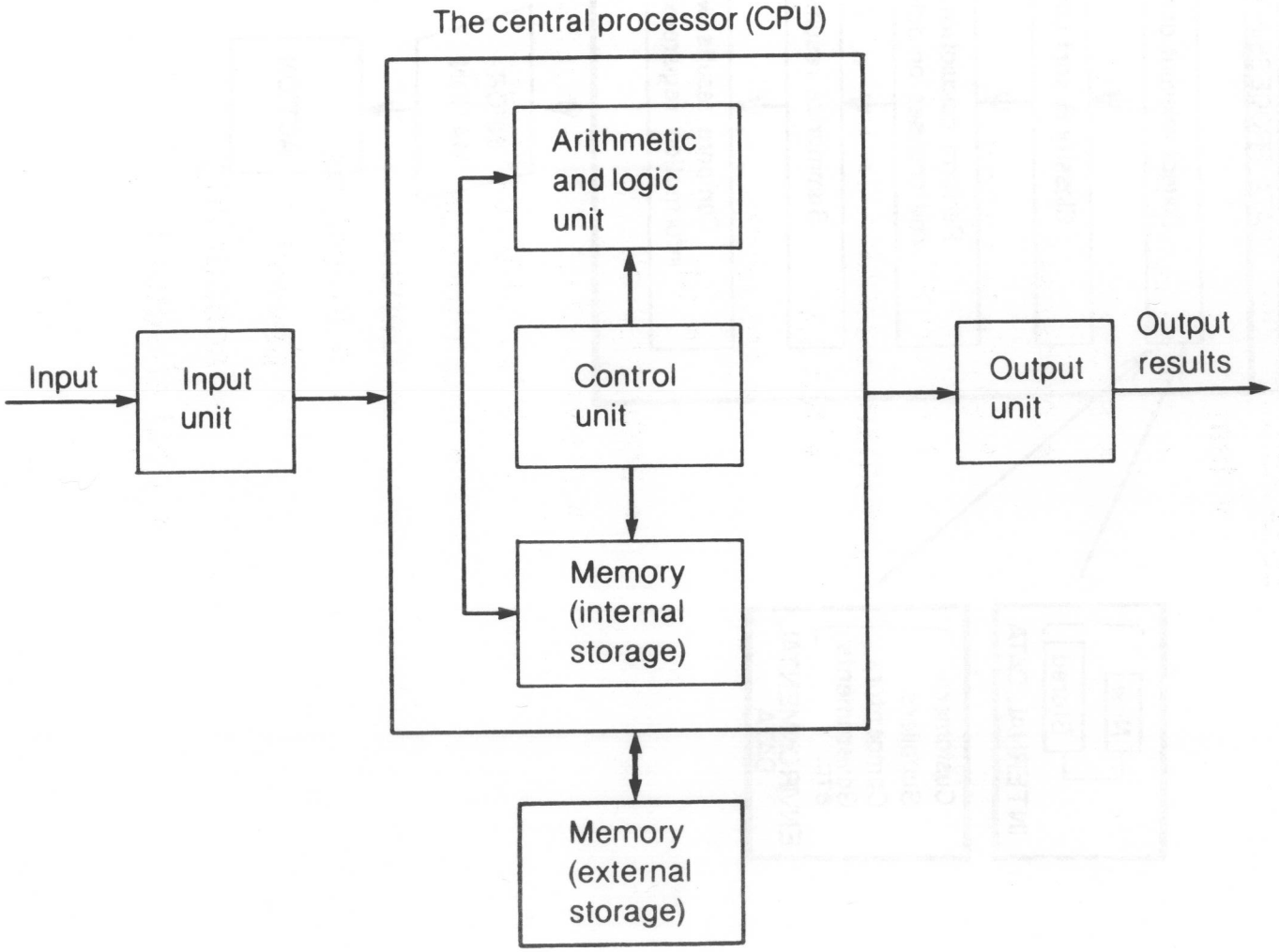


Why computers?

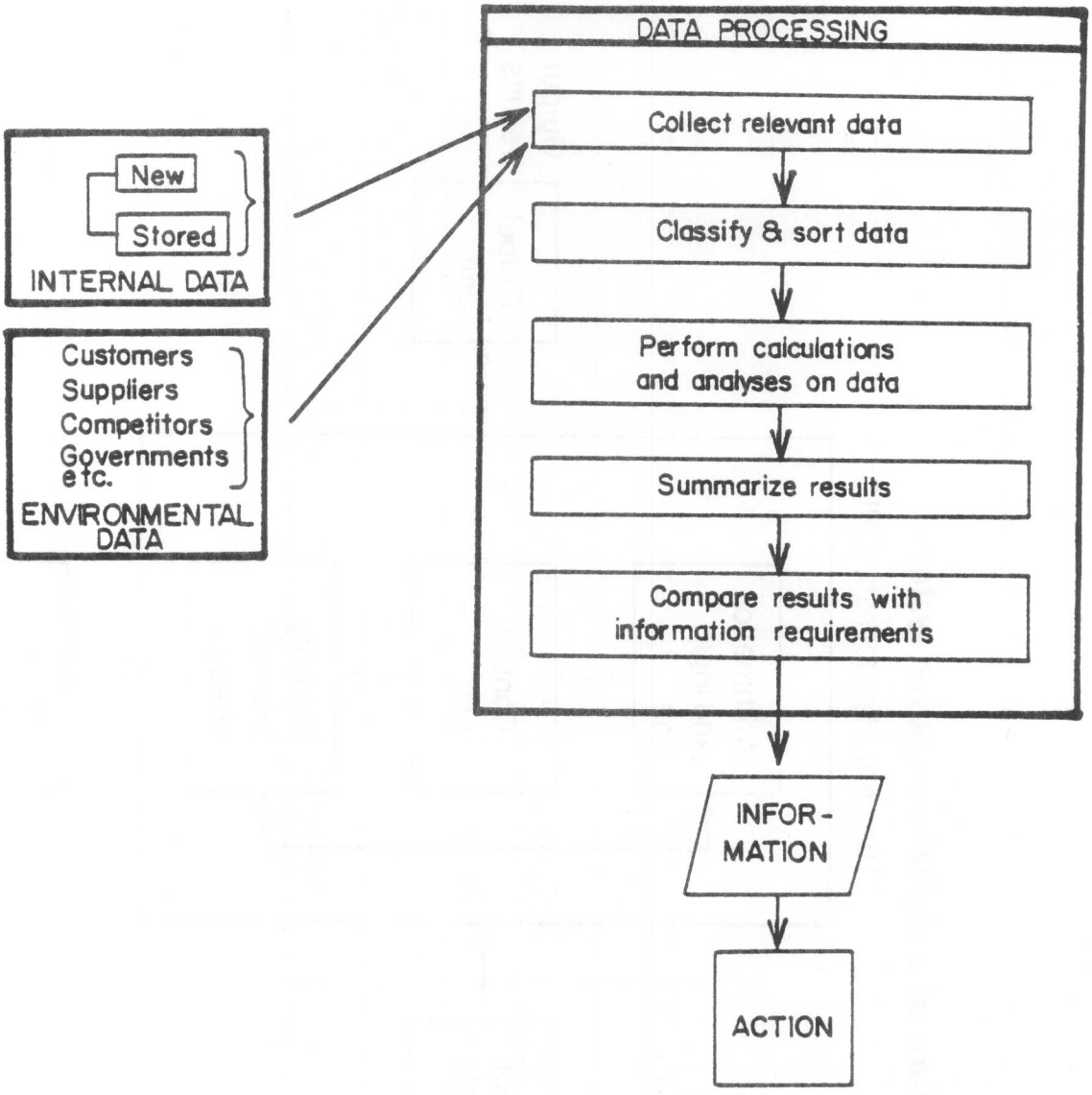
- fast
  - space vehicle
  - aircraft
  - managers
  - grade — reports
  - reservations
- many complex "number crunching"
  - NASA
    - research
      - universities
- accurate/reliable
- masses of data processed
  - structured/iterative
  - monotonous
    - Census
    - Admissions
    - payroll
    - accounting
- cost effective!

Transparency Master 2-2

FIGURE 2.3
The organization of a digital computer system



Transparency Master 2-3



Transparency Master 2-4

Processing characteristics	*Scientific applications*	*Business applications*
Input/output volume	Low	Very high
Input/output speed	Relatively unimportant	Very important
Ratio of computations to input	Very high	Low
Computation speed	Very important	Relatively unimportant
Storage requirements	Modest	High