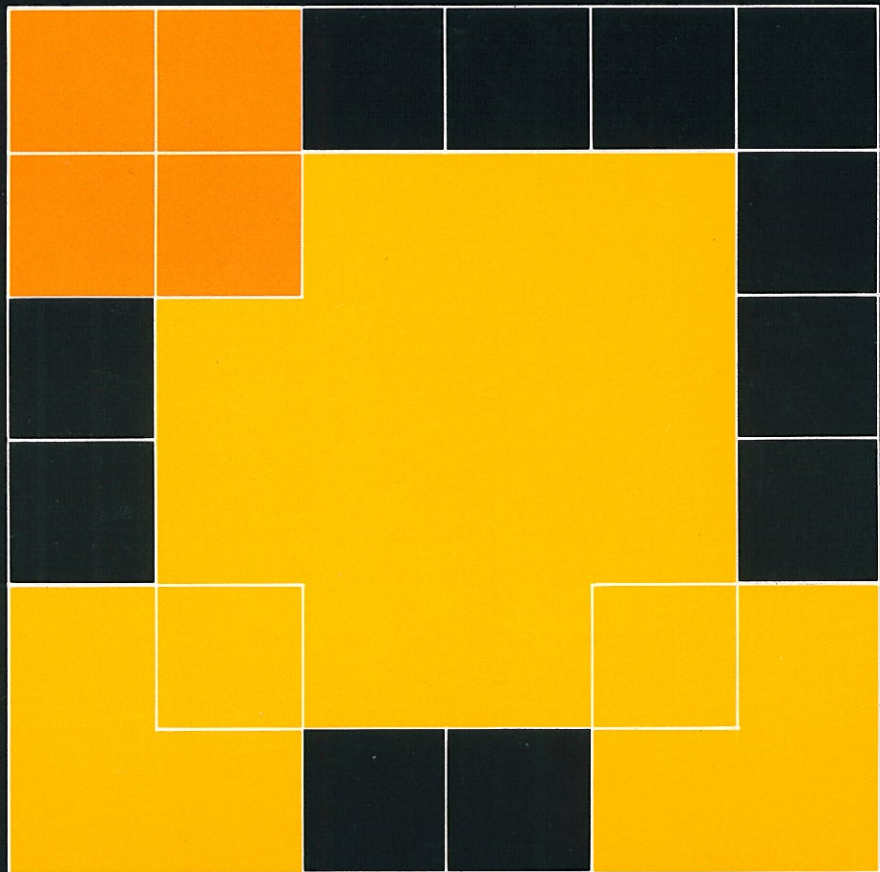


Series 80

MANTIS
Application Development System



Cincom Systems

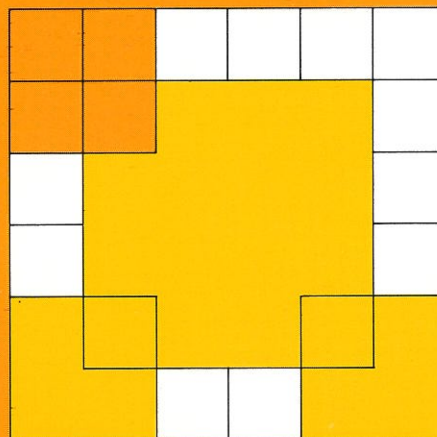
The productivity crisis.

The need for increased productivity in business and industry has never been more critical. In recent years, one of the keys to improving productivity has been the use of computer technology in automating business systems.

But industry has only begun to tap the potential of the computer, largely because skyrocketing user demand for new applications has overwhelmed data processing's ability to develop them.

The resulting applications backlog looms as a significant barrier to company-wide productivity gains, for both the immediate and the long term goals of the corporation.

Cincom's Series 80 MANTIS represents a major breakthrough in the technology needed to solve this crisis.



Series 80 Mantis

A major breakthrough in application development technology.

The Situation:

Overwhelming demand

Today's data processing organizations enjoy unprecedented stature in the companies they serve. But a host of problems common to the industry have severely limited data processing's ability to meet increased demand for new computer applications.

A recent market study conducted by IBM revealed that:

- 93% of all data processing organizations have a significant applications backlog.
- 50% of all applications require over one year to develop. 33⅓% require two years or more.
- For 90% of all programs developed, maintenance costs will exceed development costs.
- Only eight cents of each budget dollar is allotted to new application development.
- To train recent graduates as programmers costs \$6,000 to \$10,000 per person, plus salaries and general overhead.
- 56% of the data processing budget is personnel costs—only 31% is spent for hardware.

Faced with this prohibitive 1-2 year wait for needed applications, users have attempted to meet their own needs through many alternatives: time sharing, mini/micro computers, query language/report writers, and applications packages. These tools have improved productivity in specific areas. But none has addressed the central need: productivity in developing all types of applications, while maintaining the company's integrated MIS objectives.

What is needed to solve the productivity crisis is an entirely new approach to application development. An approach that significantly increases productivity in developing all types of applications.

The Solution:

Series 80 MANTIS

To meet this need Cincom has developed Series 80 MANTIS, a dramatic breakthrough in application development technology.

MANTIS is the only system available today that provides complete beginning-to-end online application development, without the need for batch processes.

Using Series 80 MANTIS, the programmer can:

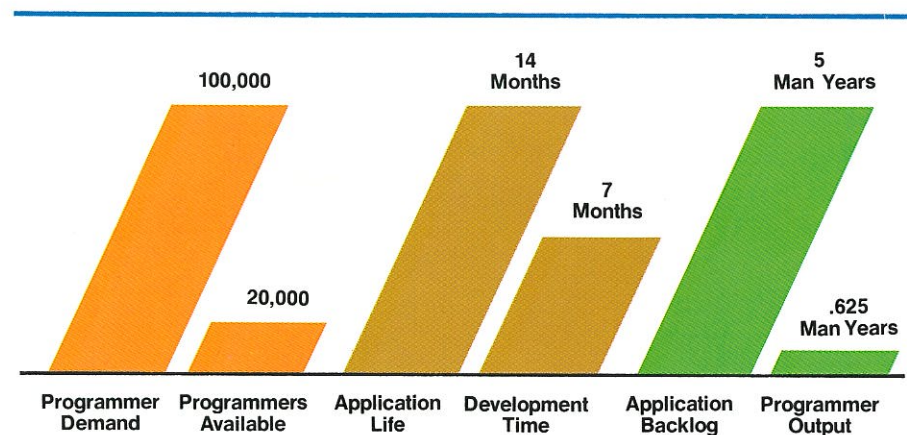
- create screens
- create files
- write programs

- test/debug applications
- document systems
- put systems on security menus
- release applications for production.

The entire application is implemented, interactively—all in one sitting.

With MANTIS even complex applications can be developed in a fraction of the time normally required. And MANTIS can be used by both programmers and sophisticated end-users.

TODAY'S DILEMMA



With Mantis, the user can develop even the most complex applications in a fraction of the time normally required.

With its unmatched combination of features, MANTIS can solve any application—from the simplest to the most complex. And solutions are delivered to end-users within a dramatically reduced timeframe.

MANTIS' key features include:

- Free-form interactive screen design
- Conversational file design and allocation
- Logical data views
- Conversational programming with a high level language incorporating the strengths of BASIC, PL/1, PASCAL, and APL.
- Online documentation system
- Computer-aided instruction facilities

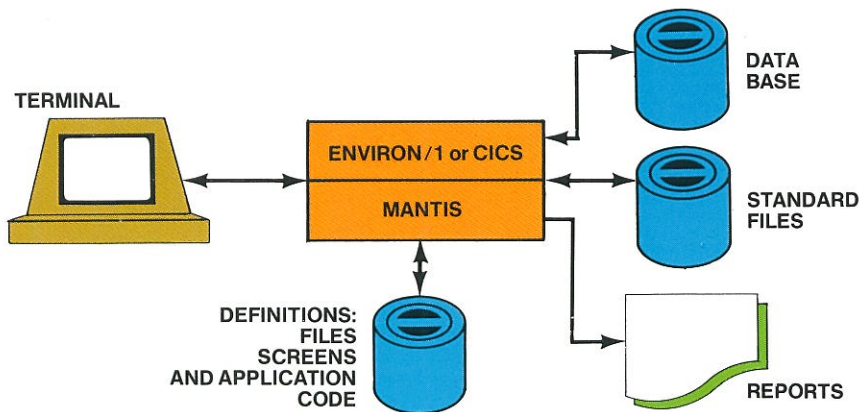
- Directory listings (maintenance is automatic through the library system)
- Master terminal security controls
- Menu-driven operation
- Independence to interface with any existing file structures or data bases.
- Batch or online hard copy
- Automatic interface to Series 80 TOTAL data base and standard files
- Interface to existing programs
- Dynamic screen attribute modification

In addition, MANTIS provides application development techniques, such as:

- Top-down design
- Structured coding
- Step-level refinement of programs and systems
- Prototyping of systems

And since the end-user is involved throughout the development process, MANTIS insures an accurate solution on the first attempt.

OPERATING ENVIRONMENT



An industrial manufacturer decided to establish an order entry system. The projected development time for the system was 36 months. Using MANTIS, two people wrote the entire system in 10 weeks.



Series 80 MANTIS: Improved productivity for the entire company.

Immediate response to end-user.

With MANTIS, user requests can be fulfilled in a fraction of the time required by traditional methods. And end-user involvement insures end-user satisfaction. In addition many applications can be developed directly by the end-user.

Increased programmer productivity.

MANTIS reduces the need to add personnel by making the existing staff more productive. This, in turn, improves programmer morale and reduces employee turnover.

Reduced training costs. The \$6,000 to \$10,000 normally required to train new programmers is virtually eliminated. MANTIS can be taught in-house in one day, and programmers are immediately productive.

Reduced investment in short-lived applications. On the average, an application takes seven months to develop and has a life of 14 months. With MANTIS, short-life applications are developed with less investment. And the payback on long-term applications is significantly increased.

End-user involvement. MANTIS' ease-of-use enables data processing to involve end-users while retaining full control of the environment and the data. User satisfaction

is improved, and the company's integrated MIS objectives are not compromised.

Improved corporate productivity.

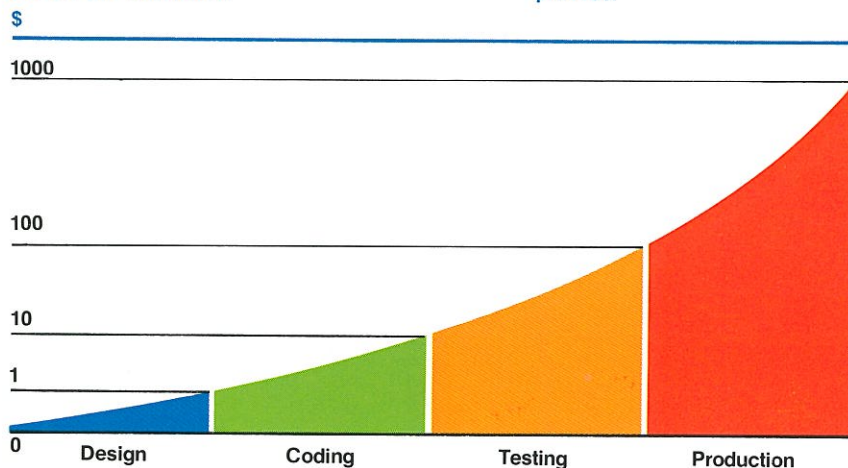
As data processing uses MANTIS to reduce the applications backlog, the user departments receive the tools needed to increase their productivity. All of which results in a better bottom line for the entire company.

Protection of software investment.

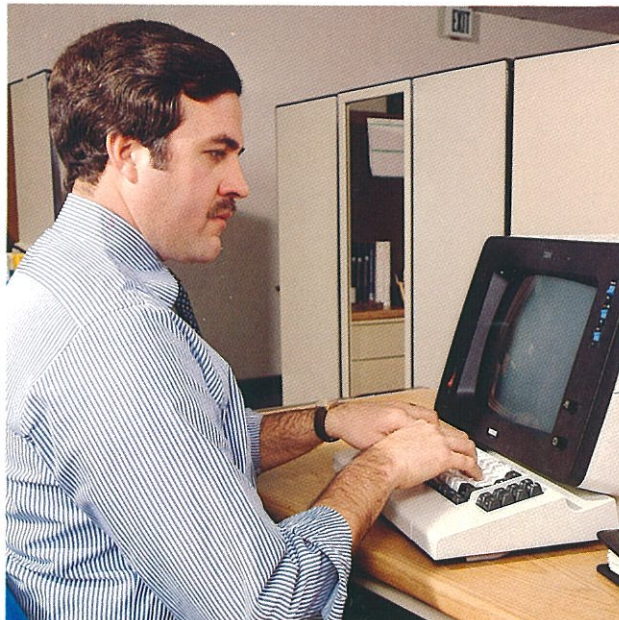
MANTIS' environmental independence and its transportability between operating systems and teleprocessing monitors protect your software investment as changes occur. New technologies can be utilized with minimal conversions.

The cost of making enhancements or corrections to an application increases exponentially over time. A rule of thumb would be a factor of 10 for each subsequent stage. These costs can be minimized through increased user involvement earlier in the application development process.

COST OF CHANGE



Two programmers spent six months trying to bring up a system, using a competitive application development product. Finally, they were told by the vendor that the application was too complex for their product. So the company installed MANTIS and one person developed the application in three days.



Series 80 MANTIS: Flexible. Powerful. Proven.

Series 80 MANTIS has been tested and proven in many leading data processing organizations. MANTIS is designed with key characteristics that extend its capabilities well beyond any other system.

- MANTIS provides a quick, easy entry into online systems.
 - MANTIS is easy to learn and use.
 - Many users without computer training can use MANTIS directly.
 - An entire system can be developed in a single session. The need for JCL or batch runs is eliminated.
 - The programmer and user can work together at the terminal to solve the end-user's problem.
 - Programs can easily be altered after testing by the user.
 - MANTIS can be used to create system prototypes.
 - Old systems can be brought online quickly using MANTIS as a conversion aid.
- MANTIS provides complete DOS/OS compatibility, and is also available for both CICS and Series 80 ENVIRON/1. Systems developed under one will run under the other without alteration.
 - MANTIS with VSAM is in line with IBM's main development direction.
 - MANTIS uses a fraction of the memory that many other facilities require.
 - Low overhead and high throughput insure that even highly complex applications will run efficiently.

A leading computer services organization had been considering purchasing an online personnel package. Using Series 80 MANTIS, they developed the exact system they wanted in 3 days. The resulting savings more than paid for MANTIS.



A large oil company purchased MANTIS to aid in development of a project estimated to take 9 man-years. The first task, to create 45 screen designs from original specifications, had been estimated to take several months. With MANTIS, it required only 120 man-hours.




```

10 DATA ENTRY PROGRAM FOR THE MASTER FILE
20 I
30 SCREEN MAP ("EMPLOYEE MASTER")
40 FILE RECORD ("EMPLOYEE MASTER", "LEVEL 3")
50 CONVERSE MAP
60 WHILE MAP NOT="CANCEL"
70 . INSERT RECORD
80 . CONVERSE MAP
90 END

```

A program to enter data from a 3270 and store it on a file can be developed in a matter of minutes. The map and file names are given. The "CONVERSE" command writes and reads the 3270 screen. The "INSERT" command writes a record into the file. "Move" operations are unnecessary since MANTIS automatically associates screen and file fields with the same name.

```

10 MASTER RECORD UPDATE PROGRAM
20 I
30 SCREEN MAP ("EMPLOYEE MASTER")
40 FILE RECORD ("EMPLOYEE FILE", "LEVEL-3")
50 FILE INDEX ("NAME INDEX", "UPDATE")
60 SHOW "DO YOU WISH TO SEE RUN INSTRUCTIONS ?"
70 IF ANSWER="YES"
80 . PROMPT "MASTER INSTRUCTIONS"
90 END
100 CONVERSE MAP
110 WHILE MAP NOT="CANCEL"
120 . WHEN MAP="PF3"
130 . . DO EDIT NEW ENTRY
140 . . IF COUNTRY="USA" AND CURRENCY="DOLLARS"
150 . . . CALL CALCULATE FICA
160 . . . DO CALCULATE SOC SEC
170 . . END
180 . INSERT RECORD
190 . CONVERSE MAP
200 . END

```

The initial program can be increased in complexity as the user's needs change. In this example a PROMPTER containing textual instructions for the operator is used. Complex calculations can be executed directly in the MANTIS program. Existing conventional routines or programs can also be called from a MANTIS procedure. MANTIS automatically structures the statements to ease debugging and maintenance. There is no limit to the number of files or screens a program may use.

EMPLOYEE MASTER RECORD UPDATE INSTRUCTIONS

THIS APPLICATION PROVIDES THE ABILITY TO ENTER NEW EMPLOYEES, OR MAINTENANCE OF EXISTING EMPLOYEES BY SPECIFIC KEY INQUIRY OR BROWSING.

THE FOLLOWING FUNCTIONS ARE SUPPORTED AND A MENU IS DISPLAYED ON EACH SCREEN TO DEFINE SELECTION CRITERIA.

```

NEXT — RETRIEVES SPECIFIC RECORDS IF EMPLOYEE NUMBER IS ENTERED, OR
NEXT SEQUENTIAL RECORD IF EMPLOYEE NUMBER IS BLANK.
UPDATE — UPDATES AN EXISTING RECORD WITH THE CHANGES MADE ON THE
SCREEN.
INSERT — ADDS THE NEW EMPLOYEE RECORD TO THE FILE.
EXIT — RETURNS THE USER TO THE MAIN MENU FOR THE EMPLOYEE RELATIONS
SYSTEM.

```

(PRESS ENTER TO RETURN TO THE MASTER UPDATE APPLICATION)

PROMPTERS contain textual information used for either operator instructions or documentation. PROMPTERS can be invoked optionally from a MANTIS program or from a display facility. Prompters are created in a conversational "text editing" manner.

DIRECTORY OF SCREENS

NAME	PASSWORD	DESCRIPTION
APPLICATIONS	CASINO	APPLICATION SELECTION MENU
COST ALLOW	HUDSON	ALLOWANCES UPDATE FOR INVENTORY COSTS
COST BASIC	HUDSON	BASIC COSTS UPDATE
COST DATA	HUDSON	CURRENT DATA UPDATE FOR INVENTORY COSTS
COST SELECT	HUDSON	SELECT FUNCTIONS FOR COSTING SYSTEM
EMPLOYEE MASTER	PERS	MASTER FUNCTION SCREEN FOR EMPLOYEE RELATIONS
GENERAL LEDGER	ACCT	GENERAL LEDGER SYSTEM MENU
LOAN PAYMENT	DOLLARS	INSTALLMENT LOAN CALCULATIONS
MACHINE USE	SMF	GRAPHIC DISPLAY OF MACHINE UTILIZATION
REGRESSION	STATS	MULTIPLE LINEAR REGRESSION

MANTIS contains a fully integrated directory which cross-references information about users, programs, files, screens, security levels, etc. This facility is maintained automatically as new entities are defined or added to MANTIS. Various directory listings are available under strict security control.

Series 80 MANTIS in use.

```

MANTIS
MENU SELECTION

RUN A PROGRAM BY NAME.....1  RUN VARIOUS APPLICATIONS.....9
DISPLAY A PROMPTER.....2  SIGN ON AS ANOTHER USER.....10
DESIGN A PROGRAM.....3  DIRECTORY OF PROGRAMS.....11
DESIGN A SCREEN.....4  DIRECTORY OF SCREENS.....12
DESIGN A FILE.....5  DIRECTORY OF FILES.....13
DESIGN A PROMPTER.....6  DIRECTORY OF PROMPTERS.....14
DESIGN A LOGICAL VIEW.....7  DIRECTORY OF LOGICAL VIEWS.....15
DESIGN AN INTERFACE.....8  DIRECTORY OF INTERFACES.....16
TERMINATE.....PA2
  
```

After the user signs on, MANTIS displays a facilities menu. Each user's menu can be tailored for any MANTIS application to insure complete security and ease of use. The user then selects the function to be executed.

```

...|...1...|...2...|...3...|...4...|...5...|...6...|...7...|...8

*****
* NEXT.....PF1 *
* UPDATE...PF2 *
* INSERT...PF3 *
* EXIT.....PA2 *
*****

EMPLOYEE RELATIONS
MASTER RECORD FUNCTIONS *****

EMPLOYEE NUMBER.....#####
LAST NAME.....#####
FIRST NAMES.....#####
SPOUSE'S NAME.....#####
HIRE DATE.....## / ## / ##
CURRENT SALARY.....$###,###.##
SEX.....# (M OR F)

COMMENTS
*****
*****
*****
  
```

3270 screen design is usually the first step in implementing an application. MANTIS' free-form, interactive design facility makes screen definition simple and efficient. The user merely keys in all headings and data fields. The # sign indicates data fields.

```

...|...1...|...2...|...3...|...4...|...5...|...6...|...7...|...8

*****
* NEXT.....PF1 *
* UPDATE...PF2 *
* INSERT...PF3 *
* EXIT.....PA2 *
*****

EMPLOYEE RELATIONS
MASTER RECORD FUNCTIONS *****

EMPLOYEE NUMBER.....#####
LAST NAME.....#####
FIRST NAMES.....#####
SP *****
HI *
CU * FIELD NAME: EMPLOYEE NUMBER *
SE * INTENSITY: NORMAL / BRIGHT / HIDDEN *
* PROTECTED? NO / YES *
* NUMERIC? NO / YES *
* PEN DETECTABLE? NO / YES *
# * ALWAYS SENT BACK? NO / YES *
# *
# *
*****
  
```

3270 field attributes can now be assigned. MANTIS automatically highlights the field being defined and provides user modifiable default attributes. The overlaid definition window automatically moves to the top of the screen as attributes for fields at the bottom are being defined.

```

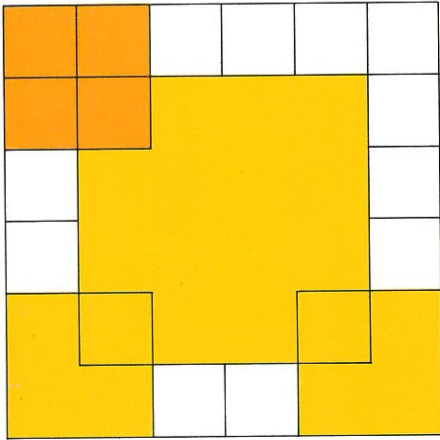
MANTIS RECORD LAYOUT DEFINITION

PAGE 1
ELEMENT-----NAME-----DATA-TYPE DIMENSIONS-----ATTRIBUTES-----
1 EMPLOYEE NUMBER SMALL 26 KEY
2 LAST NAME TEXT 26
3 FIRST NAMES TEXT 26
4 SPOUSES NAME TEXT 16
5 HIRE DATE SMALL 16
6 CURRENT SALARY BIG SCRAMBLE
7 SEX TEXT 1
8 COMMENTS TEXT 3 50
  
```

The user can quickly create new files if needed for an application. The files can have multiple keys and can contain encrypted fields to provide additional security. Fields can be added to MANTIS files without affecting programs or causing file conversions.

(USE PF1--PF4 TO PAGE; USE PA2 TO EXIT)

Series 80 MANTIS.
The solution to
your productivity crisis



While many online application development products are available today, only Cincom's Series 80 MANTIS dramatically improves programmer productivity by eliminating all batch steps in online systems implementation.

Only with MANTIS can the programmer develop, test, document, and execute the entire application—online, interactively, all in one sitting.

With MANTIS, even the most complex applications can be developed in a fraction of the time normally required by traditional systems. And programs can easily and quickly be altered after testing by the user.

Running under Series 80 ENVIRON/1 or CICS, Series 80 MANTIS reduces development time for both standard and data base

applications. And its ease-of-use means programmer productivity will begin to increase within hours after installation. In addition, many applications can be developed directly by the end-user.

As Series 80 MANTIS is used to reduce your applications backlog, users receive the tools they need to increase their efficiency. And your productivity crisis is solved.

Tested and proven in leading data processing organizations, MANTIS is an integral component of Cincom's Series 80, the industry's only fully integrated data base/data communications system.

No other system measures up to Series 80 MANTIS. For a complete demonstration, contact your Cincom representative.

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