GIGI the "personal End-User Terminal".

DEC IS CHANGING THE WAY

THE WORLD *THINKS*

GIGI

DEC'S corporate slogan is "DEC is changing the way the world thinks". GIGI is a prime illustration of DEC's committment to this concept; since it will clearly change the way people view and interact with a computer system.
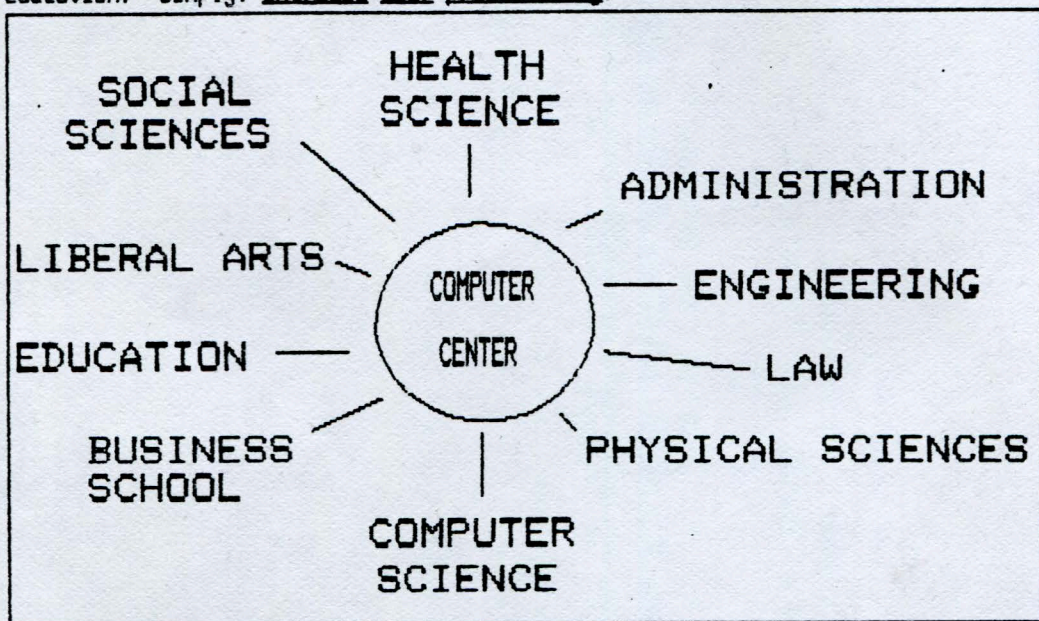
COMPUTING CHALLENGE

PROVIDE A BROAD VARIETY OF COMPUTING SERVICES TO A DIVERSIFIED USER POPULATION

GOAL:

USER PRODUCTIVITY

The primary challenge of educational computing is to provide a broad variety of computing services to a diversified user population. The goal is to increase user effectiveness with a primary by-product being increased productivity. Productivity in education can be related to: Faculty in terms of research, class preparation, concept presentation, text preparation,etc; Student via increased discipline exposure and practice to more difficult concepts and problems; Staff improvements by maximizing job effectiveness, reduce learning time, improve job accuracy and maximize on personal skills and education. Simply: Increase user productivity.

SOCIAL SCIENCES   HEALTH SCIENCE

LIBERAL ARTS   ADMINISTRATION

COMPUTER CENTER   ENGINEERING

EDUCATION   LAW

BUSINESS SCHOOL   PHYSICAL SCIENCES

COMPUTER SCIENCE

Who is the user population? The higher education user population encompasses a wide variety of end-users which includes; Administration, Engineering, Physical Sciences, Business School, Computer Science, Liberal-Arts, Education, Social Science, Health Sciences and Law.
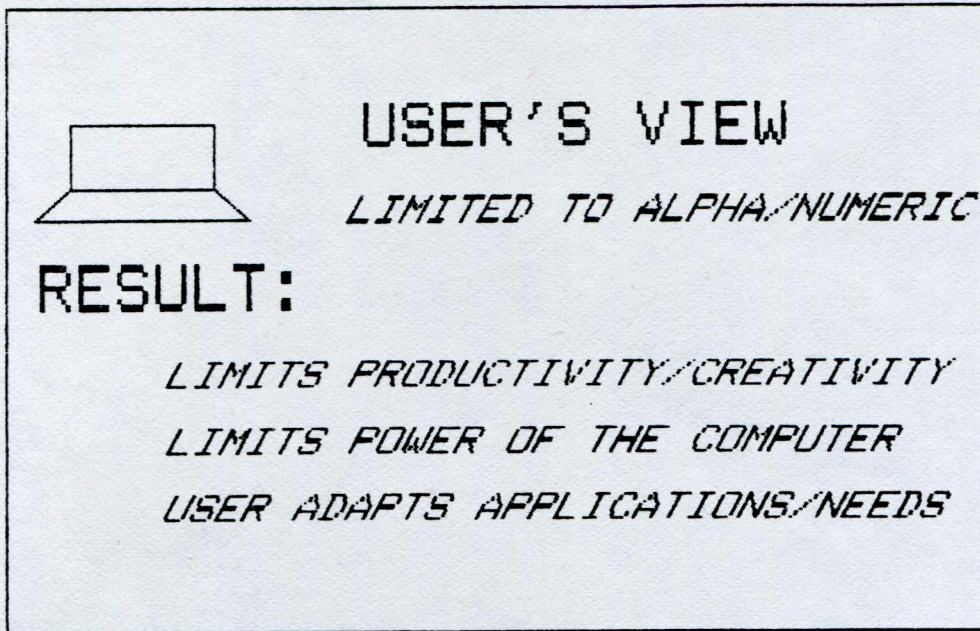

UNIVERSITY COMPUTING

"MICROCOSM OF THE
COMPUTING WORLD"

Educational computing is a *microcosm* of the computing world. The application space of educational computing is extremly diverse: time-sharing, graphics, word-processing, text management, libraries, program development, data-entry, computation, instructional, computer-based-education research and administrative data processing.
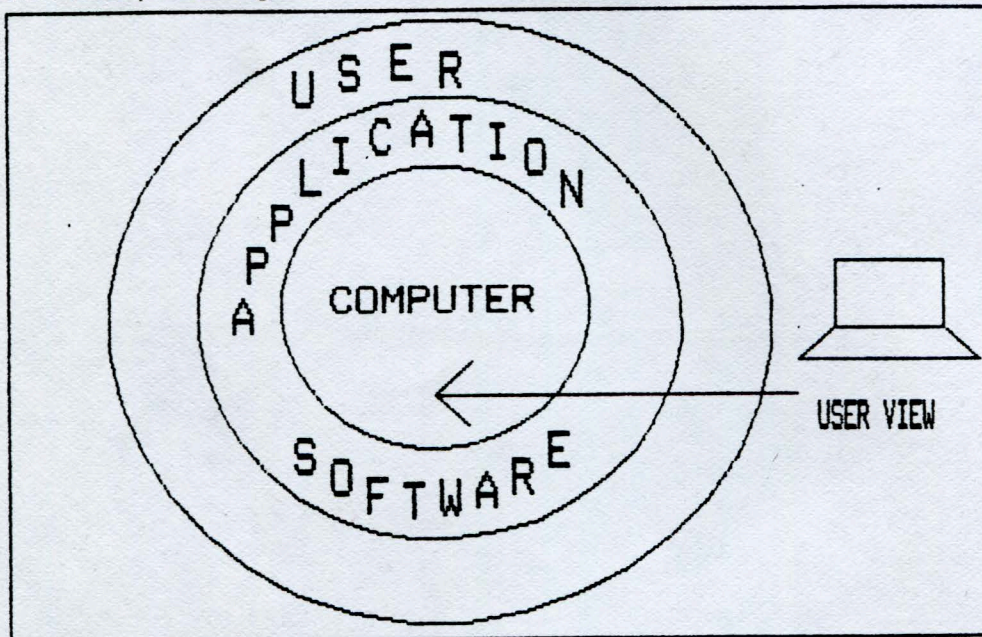

To date, the user's view into the computer is limited by the terminal, which is his primary interface with the computer.

USER'S VIEW

LIMITED TO ALPHA/NUMERIC

RESULT:

LIMITS PRODUCTIVITY/CREATIVITY

LIMITS POWER OF THE COMPUTER

USER ADAPTS APPLICATIONS/NEEDS

Therefore, the user's "*window*": (1) limits both his productivity and creativity (2) limits the user's view of the power of the computer since the computers power is not easily accessible and (3) forces the user to modify his application and needs to fit the "*window*".

HISTORICALLY

DUMB   GRAPHICS   DATA-ENTRY   APL

INTELLIGENT   PERSONAL   TEXT MGT/WPS
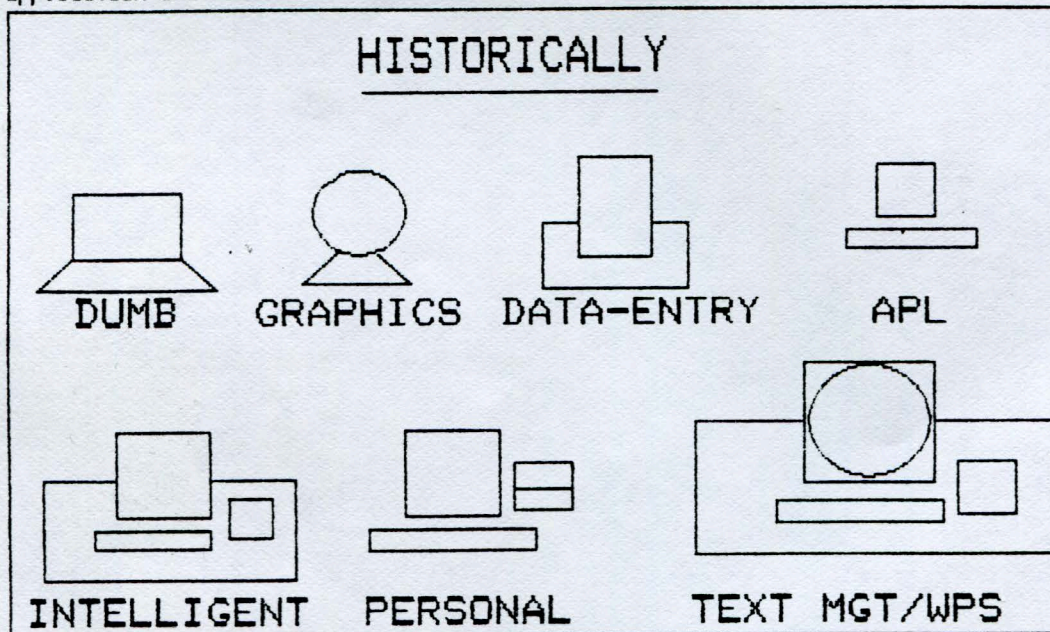
Historically, the user solution to this problem was to acquire various "*windows*" into the computer. Typically, this resulted in two or more of the following terminals: dumb terminal, graphics terminal, data-entry terminal, APL terminal, intelligent terminal, personal computer, word processing terminal, and text management terminals.

RESULT:

EXPENSIVE HARDWARE

COMPLEX APPLICATION DEVELOPMENT

NON-STANDARIZATION

USER MODIFIES NEEDS

LIMITED SOLUTIONS

EARLY TERMINAL REPLACEMENT

FRUSTRATION

NON-EASE OF USE

This resulted in: (1) expensive hardware (2) complex application development (3) non-standarization (4) user modified his needs to fit the terminal (5) the application solution was limited/restricted (6) early terminal replacement (7) user frustration and (8) non-ease of use.

POOR *HUMAN*

INTERFACE

TO THE *COMPUTER*

Therefore, the Bottom-Line is *poor human interface to the power of the computer*.

SOLUTION

### PERSONAL END-NODE (TERMINAL)
WHICH ADAPTS TO THE USER

BENEFITS

The solution to this dilema is a "*personal*" terminal which adapts to the user.

PERSONAL END-NODE

— NON-LIMITING

— MAXIMIZE USER PRODUCTIVITY

— MAXIMIZE HOST COMPUTING POWER

— EASE OF USE

— COST EFFECTIVE

The benefits of such a terminal would be (1) to maximize user productivity, (2) to extend user effectiveness (the terminal would no longer be the limiting factor), (3) to maximize the power of the processor by extending the power to the user, (4) to improve ease of use, and (5) finally, to be cost effective.

GIGI

GIGI is a *personal* terminal.

RESULT

EXPANDED VIEW
INTO
WORLD OF COMPUTING
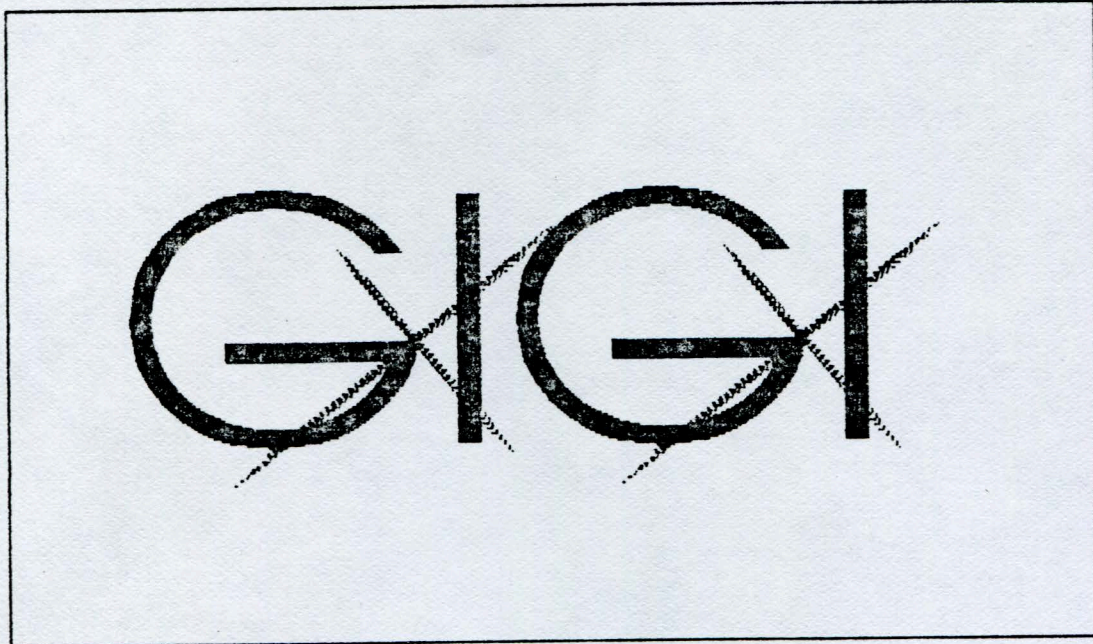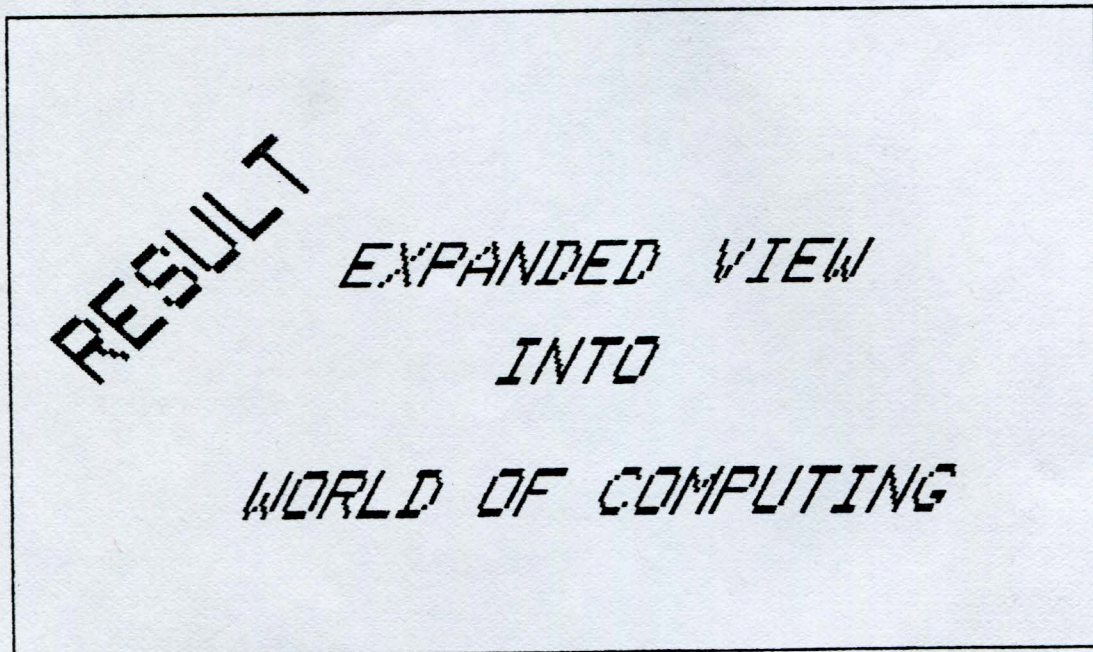
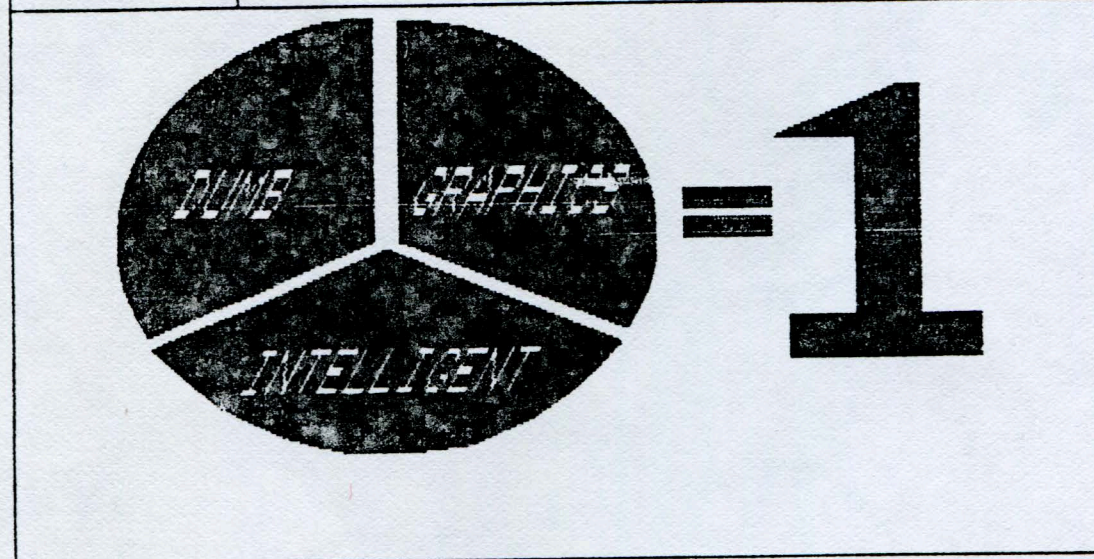GIGI adapts to the needs of the user and expands his "view" into the world of computing.

GIGI

FEATURES

AND

BENEFITS

In order to fully appreciate GIGI lets examine GIGI's features and how they translate into USER benefits.

FEATURE: | **THREE IN ONE TERMINAL**

FEATURE : Three in one terminal. GIGI is a *dumb* terminal. GIGI is a *graphics* terminal. GIGI is a *intelligent* terminal. Therefore, GIGI is a **three in one terminal**.

BENEFITS	THREE IN ONE TERMINAL

— REDUCED COST

— EXPANDS USER VIEW

— MAXIMIZES: USER AND HOST

— NON-LIMITING

— GROWS WITH THE USER

— MULTIPLICITY USERS/APPLICATIONS

— ALL FEATURES STANDARD

User Benefits:

(1) Reduces the cost of having a wide variety of incompatible terminals on campus.

(2) Personal "End-Node" of an educational network. Adopts to the user requirements- Instructional, Research, Administrative, WP, Text Management and Data-Entry.

(3) Maximize computing center and end-user application development $'s and improves end-user productivity while at the terminal.

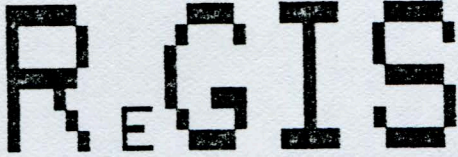(4) Grows with the user as his needs develop and expand.

(5) Non-limiting in terms of application development

(6) Cost effective: slightly higher than a dumb terminal but lower cost than graphics and intelligent terminals. Considered with longer application life (user suitability) the overall terminal costs will be reduced.

(7) Ideal for computer laboratory (terminal room) where users from various departments with a wide variety of needs must be satisfied. Computer Science, Bussiness, Math, Engineering, Physics, Architecture, Music, the Languages and Health Sciences.

(8) All GIGI features are standard. There are no options which would impact application compatiability between GIGI terminals. *Maximizes application* development while *minimizing costs* .

FEATURE	REMOTE GRAPHICS INSTRUCTION SET
	RₑGIS

FEATURE: Remote Graphic Instruction Set (ReGIS). ReGIS is the heart of GIGI's graphic terminal **power**.

BENEFITS	REMOTE GRAPHIC INSTRUCTION SET

- REDUCES HOST GRAPHIC LOAD
- EASY TO USE
- INTERFACE TO ALL ASCII LANGUAGES
- DEC STANDARD PROTOCOL
- REMOVES THE COMPLEXITY OF *GRAPHICS*
- REDUCES HOST MASS STORAGE REQUIREMENTS
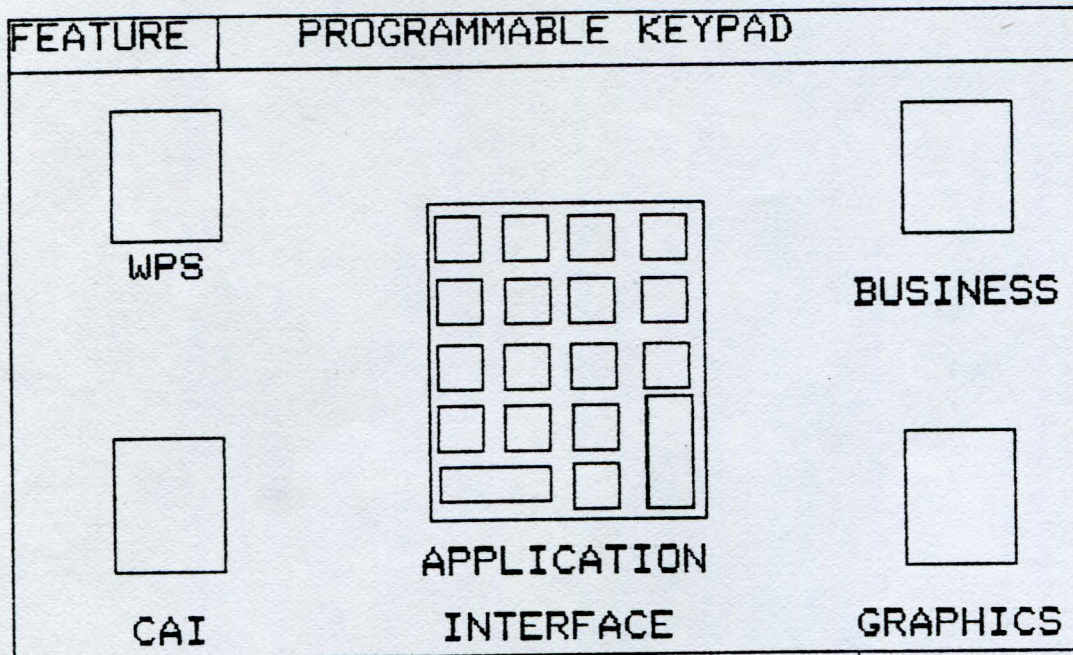- EASY TEXT/GRAPHICS MANIPULATION

User Benefits:

(1) Reduces the load traditionally placed on the host processor by graphic terminals: (a) Limits transmission of characters since ReGIS is located in the terminal and, therefore, can interpret commands rather than receive detailed data strings. (b) ReGIS contains key algorithms: curve, circle, box, etc. along with (c) significant text capability which far exceeds most text processing terminals (character height, size, width, etc).

(2) Easy to use and interfaces to all ASCII languages.

(3) Dec standard protocol for all future graphic application developments.

(4) Removes the *mystique* of graphics. ReGIS brings graphics into the area/utilization of the *general user* while still providing the **power** and **flexibility** required by the *experienced* graphic user.

(5) Reduces central disk storage requirements since ReGIS stores no detailed data strings usually required by graphic terminals.

(6) GIGI removes the historical complexity/limitations of graphic and text intermixed on the same display. With GIGI, the user has full graphical and textual capability simultaneously available.

FEATURE	PROGRAMMABLE KEYPAD

WPS

BUSINESS

APPLICATION

CAI   INTERFACE   GRAPHICS

FEATURE: PROGRAMMABLE KEYPAD. THE "PERSONALIZATION" OF GIGI INTO A WIDE VARIETY OF APPLICATIONS AND DISCIPLINES.

BENEFITS	PROGRAMMABLE KEYPAD

— SIMPLIFIES APPLICATION INTERFACE

— REDUCES USER LEARNING CYCLE

— IMPROVES APPLICATION SUCESS RATIO

— REDUCES USER ERROR RATE

— CHANGABLE BY EACH APPLICATION

— IMPROVES USER PRODUCTIVITY

— EASE OF USE/GIGI APPLICATIONS

— KEYBOARD OVERLAY/EASILY CREATED

USER BENEFITS:
(1) Simplifies end-user interface to the application

system. Enables single key strokes to be interpreted
as significant commands by the host application
package. Ideal for data-entry, CAI, business
analysis, financial modelling, word processing,
administrative applications- scheduling, budgeting,
etc, and a wide variety of other applications.
(2) Reduces end-user learning cycle and improves
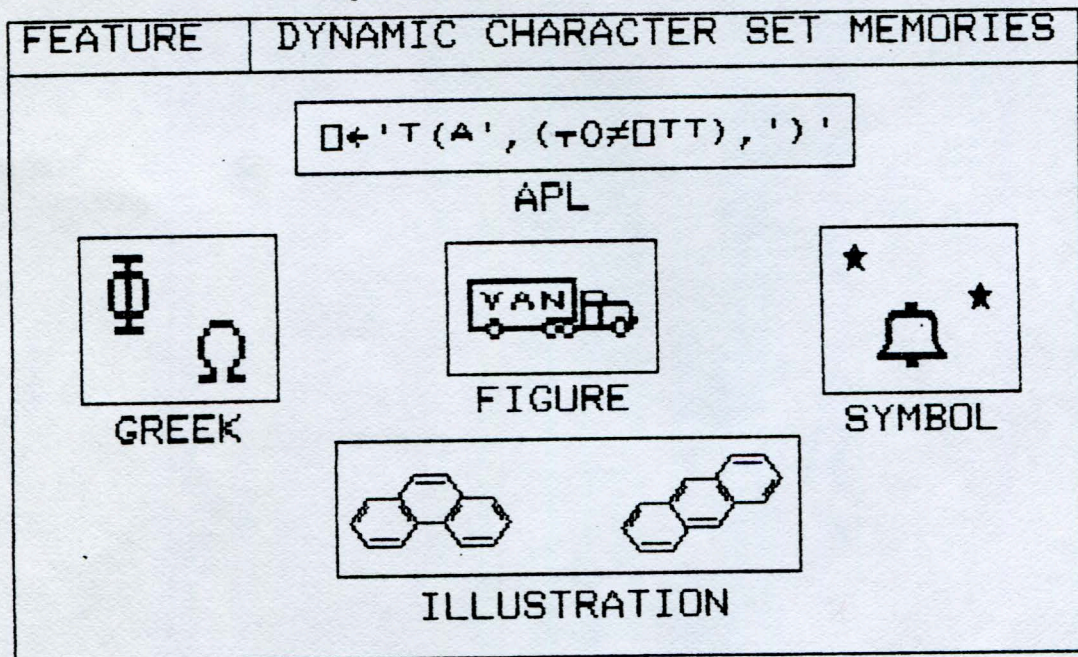overall end-user sucess ratio; especially for the
novice user.
(3) Allows faculty to develop application specific
packages and maximize the end-user's interface.

(4) Changeable by each application- down line loaded
and keyboard representation is easily removed and
created by the use of an application overlay.
(5) Improves end-user productivity.
(6) Eases use of DEC application packages: graphics
editor, RITE, GIGI/ReGIS training
packages. Specific application's overlay are
provided with these packages which dramatically
improve their ease-of-use.
(7) GIGI keyboard overlay is economical and
easily created by the user. There are two overlay
types available: (a) Keypad overlay and (b) full
keyboard overlay.

FEATURE	DYNAMIC CHARACTER SET MEMORIES

$$\Box\leftarrow{}'T(A',(\tau O\neq\Box TT),')'$$

APL

GREEK

FIGURE

SYMBOL

ILLUSTRATION

FEATURE: Dynamic Character Set Memory. GIGI speaks your
discipline symbology.

BENEFITS	DYNAMIC CHARACTER SET MEMORIES

— INFINITE NUMBER CHARACTER SETS

— DISCIPLINE SYMBOLIC COMMUNICATION

— INCREASES COMMUNICATION EFFECTIVENESS

— IMPROVES USER ATTENTION LEVEL

— SCREEN DISPLAY EASILY CONTROLLED

— ENTIRE KEYBOARD EASILY IDENTIFIED

User Benefits:

(1) Enables user to ultilize up to approximately 400 different characters on the display at the same time. (Three definable character sets of 96 characters each and the standard ASCII set)

(2) Infinite number of character sets available since they are down line loaded based on the application.

(3) Enables the user to communicate in the *language of the application* ,ie; music notes, chemistry elements, APL, Russian, Greek, Math symbol sets, engineering symbols, etc.

(4) Broadens interest-level in the display and increases user effectiveness to communicate. For example, characters can be combined into mosiacs and represent pictures themselves,ie: oil wells on a data graph, formula manipulation, etc.

(5) Character output/input easily controlled by the application program,ie: language translation.

(6) The entire keyboard can be easily identified through the use of the GIGI plastic keyboard overlay. The overlay is easily removed and, therefore, can easily adopt to each new terminal user.

(7) Dynamically expands application/user interface possibilities.

BENEFITS	RAMP

— LOW BMC— $10/MONTH

— 94% CHECKOUT/POWER-ON

— 6% SEMI-AUTOMATIC CHECKOUT

— DEC TELEPHONE SERVICE CENTER

— MODULAR DESIGN

= *INCREASED USER AVAILABILITY*

User Benefits:
(1) LOW monthly service charge— B.M.C. $10/month

by a return to depot service program.
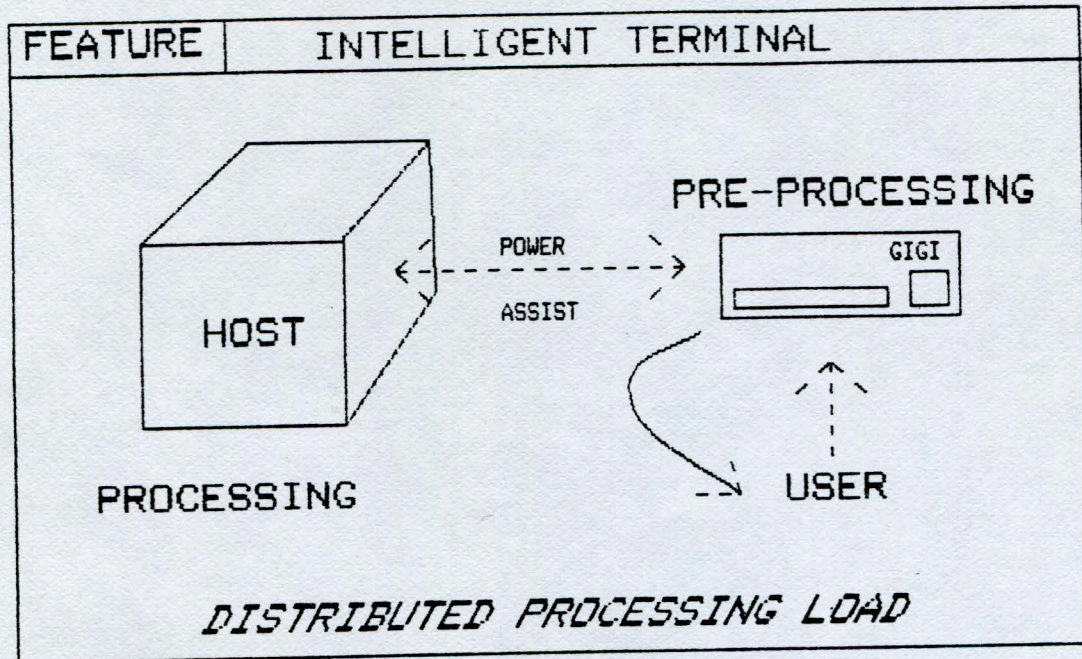(2) GIGI checks 94% of it's functionality automatically every time it is powered-up. The remainder 6% is validated by specially provided diagnostics for the host system.
(3) GIGI application software is supported by DEC's telephone support service. Quick answers to questions by experts specially trained in the product.

(4) Modular design— 3 elements which reduces time to repair and costs while improving MTBF.

BOTTOM LINE IS INCREASED USER AVAILABILITY.

FEATURE	INTELLIGENT TERMINAL

PRE-PROCESSING

POWER

ASSIST

HOST

GIGI

PROCESSING

USER

DISTRIBUTED PROCESSING LOAD

FEATURE: Intelligent Terminal. GIGI is a *power assist* to the main processor.

BENEFITS	INTELLIGENT TERMINAL

— DISTRIBUTE HOST LOAD

— ENABLES APPLICATION 'PERSONILIZATION'

— INCREASE CPU EFFECTIVENESS

— SERVICE MORE USERS

User Benefits:
(1) Off-loads the host processor and allows distribution of processing tasks into the terminal. Enables faster user response; ie error debugging, data validation, data analysis, forms control, etc.
(2) Enables up to an 8K byte BASIC program to execute at the terminal and simultaneously communicate with the host and the display. Seperates application development into *key* elements: host oriented and terminal oriented functions. Thereby reducing CPU costs and increasing CPU processing power.
(3) Typical application uses: data-entry, administrative systems, forms control, CAI, etc.

Special user interface systems
where **personalization** is key for ease-of-use,
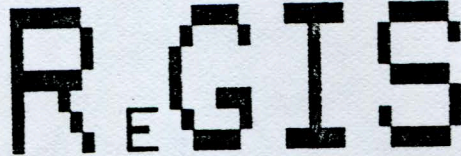productivity and/or CPU processing load.

SERVICES MORE USERS-ENABLES APPLICATION "PERSONALIZATION"

expand.
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terminal but lower cost than graphics and intelligent
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GRAPHICS

DATA ANALYSIS

LAB SIMULATION

TEXT MANAGEMENT

WPS

FORMS DESIGN

BUSINESS ANALYSIS

DATA PLOTTING

EXPERIMENTAL
                DESIGN

FEATURE: Graphics. Base element of all *future* displays. Graphics is a key element in the total communication process between man and c o m p u t e r.

BENEFITS   .   GRAPHICS

— INTEGRAL PART COMMUNICATION

— EXPANDS HORIZONS OF APPLICATIONS

— IMPROVES CONCEPT PRESENTATION

— BASE LEVEL REQUIREMENT

User Benefits:
(1) Graphics is an integral component of communication. Graphics includes graphs, charts, pictures, symbols, etc. People express ideas/concepts more readily with graphics.
(2) Graphics is a *key* element of a significant number of applications. **Instructional** (data analysis, business graphs, lab. simulation, special symbols- engineering, chemistry, etc), **text management/WPS** (almost no written material is produced without some type of graphic, picture, or special symbols- technical journals, homework assignments, class notes, professional

correspondence, etc,) **Administrative** (forms creation, business graphs), **research** (data plotting, CAD, experimental design, etc)

(3) ReGIS plus Graphics Editor makes graphics easy to use and removes the mystery of graphic development.

(4) Graphic "simulation"- animation has proven educational benefits in concept presentation and clarification.

(5) GIGI combines graphics into a general purpose terminal while still maintaining low-cost, medium resolution and incorporating ease of use.

(6) GIGI off-loads the traditional graphic host processing load onto the terminal and, thereby, reduces system degradation.
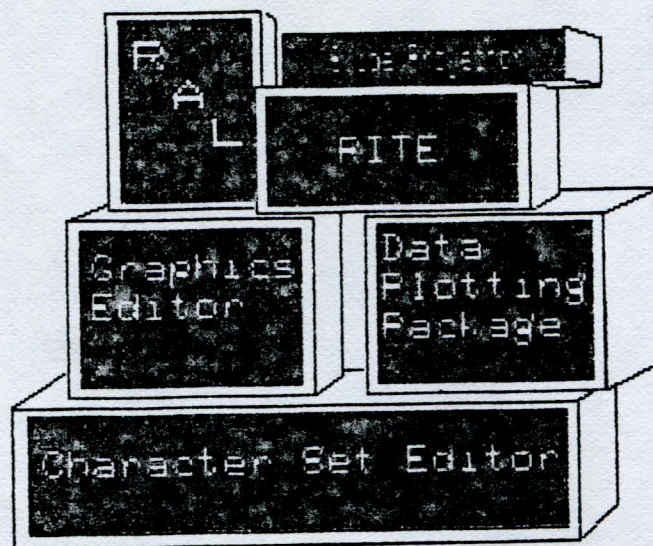
GIGI Software Packages
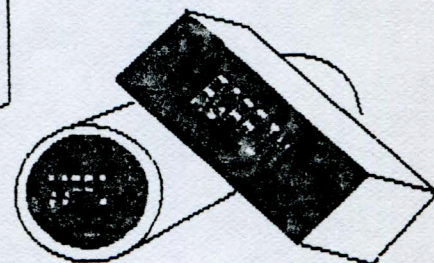
FEATURE: Specific Application Packages. GIGI by itself is only a piece of hardware. The power comes from the application software. GIGI + Application software = TOTAL PRODUCT.

BENEFITS	GIGI APPLICATION PKGS
—	IMMEDIATE GIGI UTILIZATION
	EASE OF USE
	ADDRESS KEY COMPUTING CHALLENGES
	SERVICES WIDE SPECTRUM USERS
—	BASE LEVEL PACKAGES

User Benefits:

(1) Enables GIGI's extensive functionality to be utilized immediately by a *novice* user.

(2) Addresses the traditional complete user areas of "advanced" personal communication ie, graphics, data plotting, text management, classroom utilization, symbology definition within a discipline.

(3) Enables the user to address the key educational computing challenges: graphics, text management, WPS, CBE,expanded instructional utilization,employee productivity.

(4) Day 1 effectiveness.

(5) Usable by a broad range of university users-instructors, researchers, administrators, students.

GIGI   AND

YOUR

IMAGINATION!

T