!-!-!-!-!-!-!-!
!d!i!g!i!t!a!l!
!-!-!-!-!-!-!-!

INTEROFFICE MEMORANDUM

To: See Distribution

DATE: 19 DEC 83
FROM: Sharon Henderson
DEPT: Video Products
EXT: 223-2520
LOC: PKO3-1/20A

SUBJ: VIDEO COMPETITIVE REVIEW

On Nov 15, 1983 a Video Competitive Review Meeting was held to discuss the following in reference to Video Business Strategies:

- Video Competition
- Product Evaluation and Technology
- New Products
- Implications

Attached are copies of presentations given during that review.
Feedback:

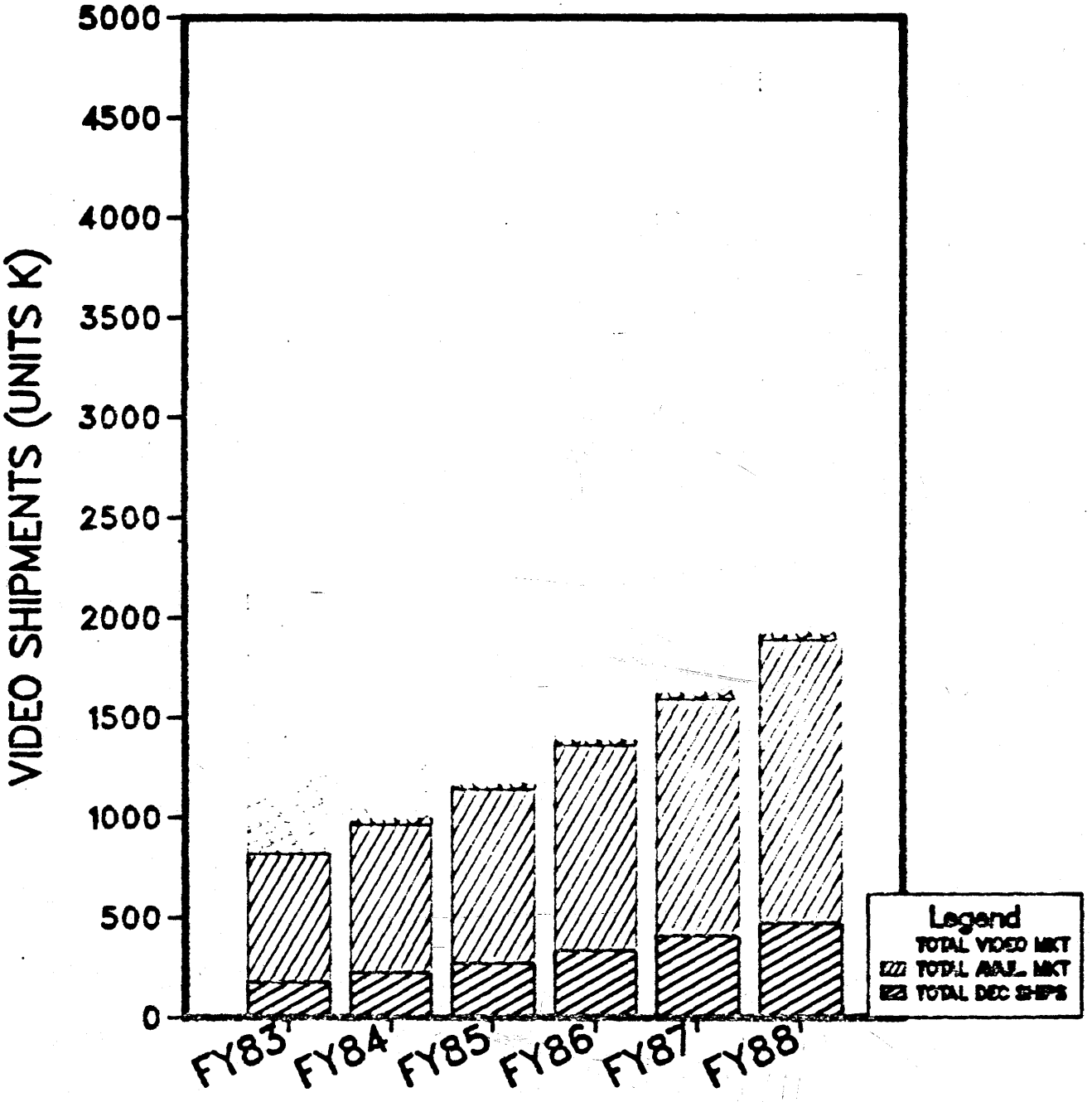
- The group identified the correct competitors.
- Dec appears to be 10 to 20% above competition.
- Users do not percieve Dec quality/reliability to be as high as we think.
- To date we do not fully understand competitive strategies.
- Not clear as to what business we're in. Add On to CPU's or Dec or Terminal Supplier?
- We are vulnerable to surface mount technology products; products are engineered for a geography vs. universal products. This technology is not new, by the time we get products to the market this technology will be out dated.

Key issues to better understand:

- Competitive Cost (real) vs. our perception of their cost.
- No real integrated competive strategies.
- No <u>one</u> focus responsible for terminals business.
- Time to market
- We don't leverage our strengths. (Eng, Mfg. Distr.)
- What are our marketing strategies? What are we trying to do? Are we all things to all people and is that okay?
- How do we pull the organization together by focusing on "what does the customer want" and then how do we balance manufacturing resource and investment to maximise the effect of using our people, our vendors, new technology our information flows and our material at any point in time to create a competitive advantage?

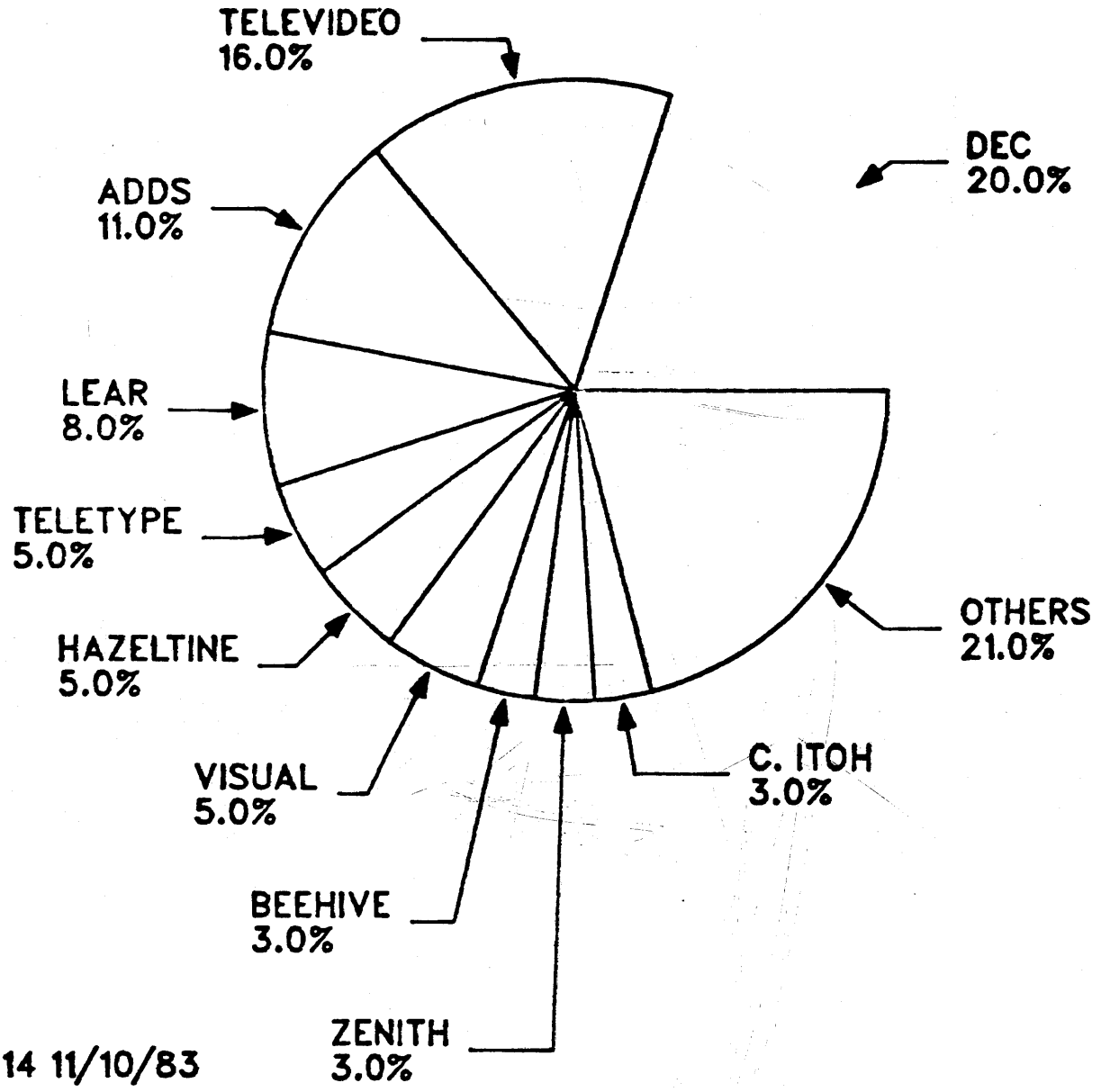
This was a very interactive and productive start.

MARKET SIZE



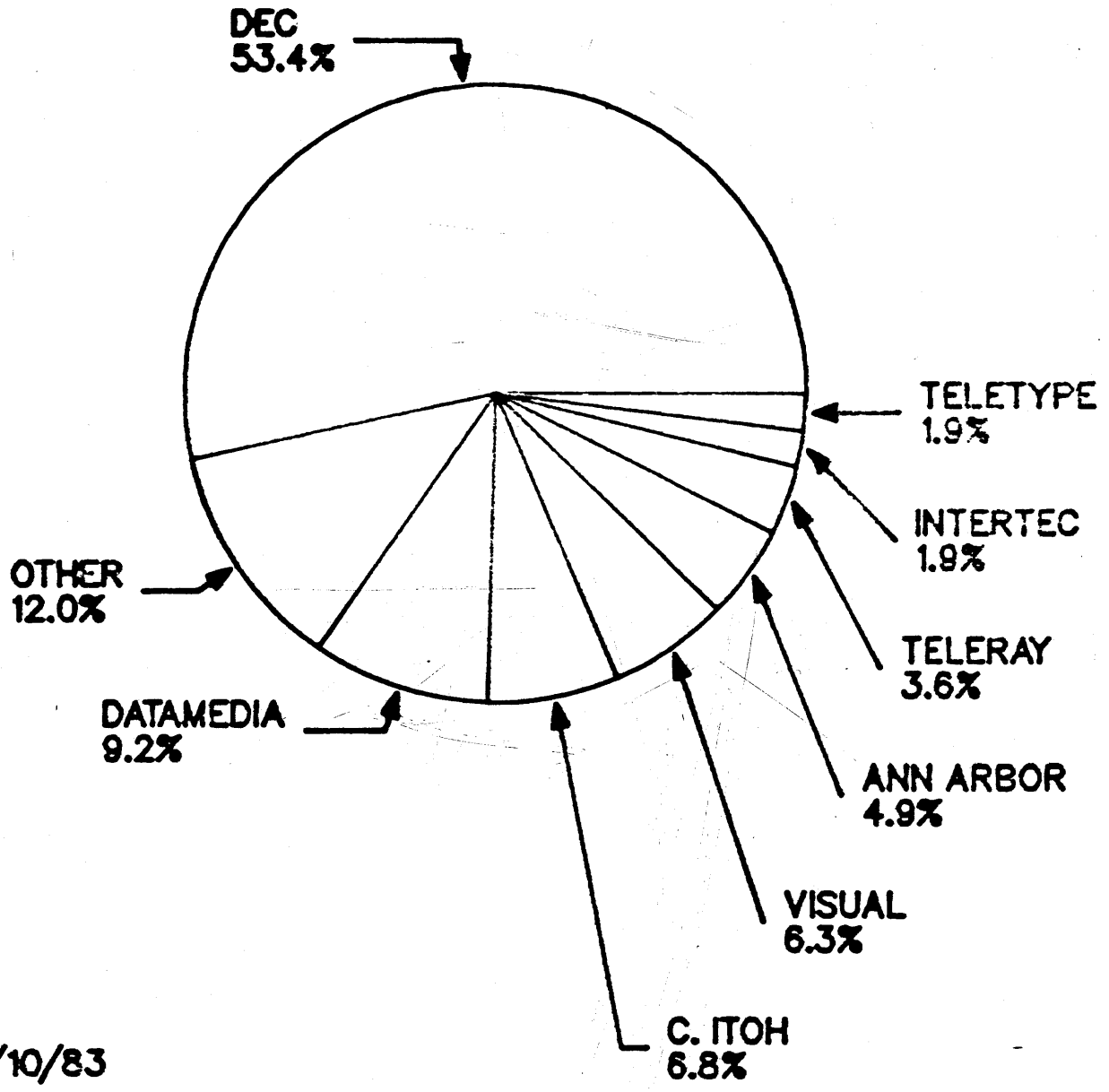
BILL.15 11/11/83

MARKET SHARE FOR TEXT TERMINALS



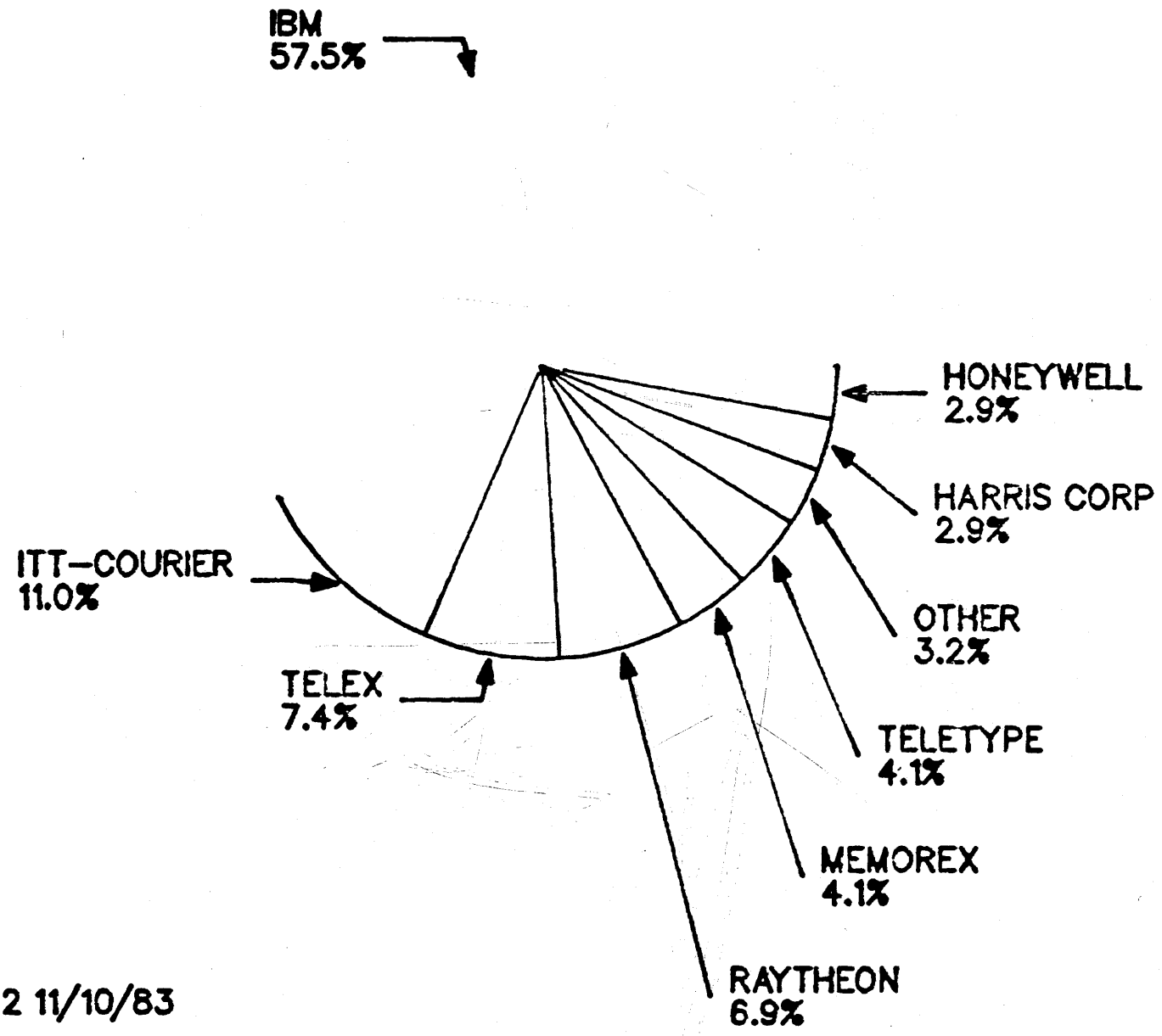
BILL.14 11/10/83

DEC COMPATABLE CRT TERMINALS (1982 INSTALLED BASE)



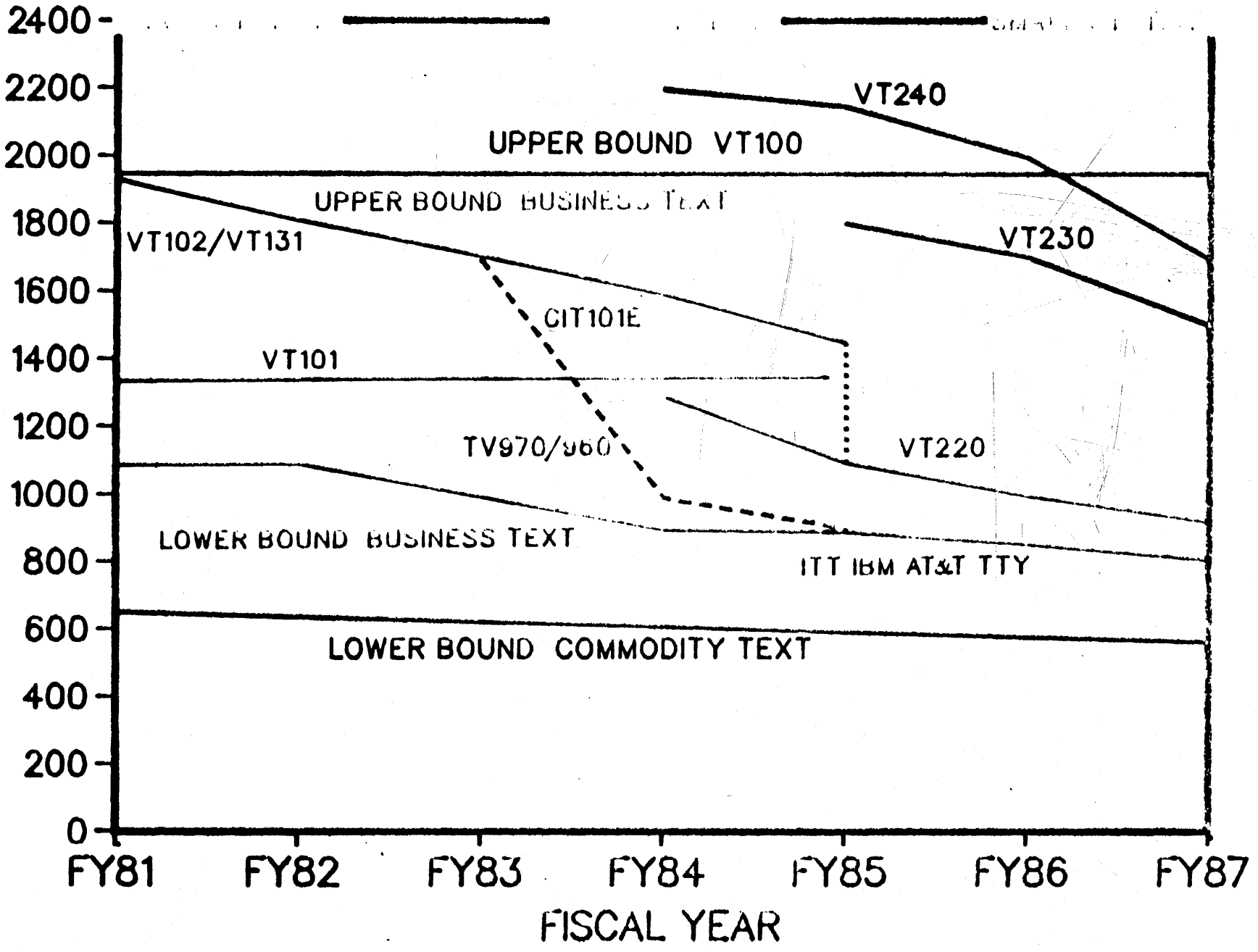
BILL.3 11/10/83

IBM COMPATABLE CRT TERMINALS (1981 INSTALLED BASE)

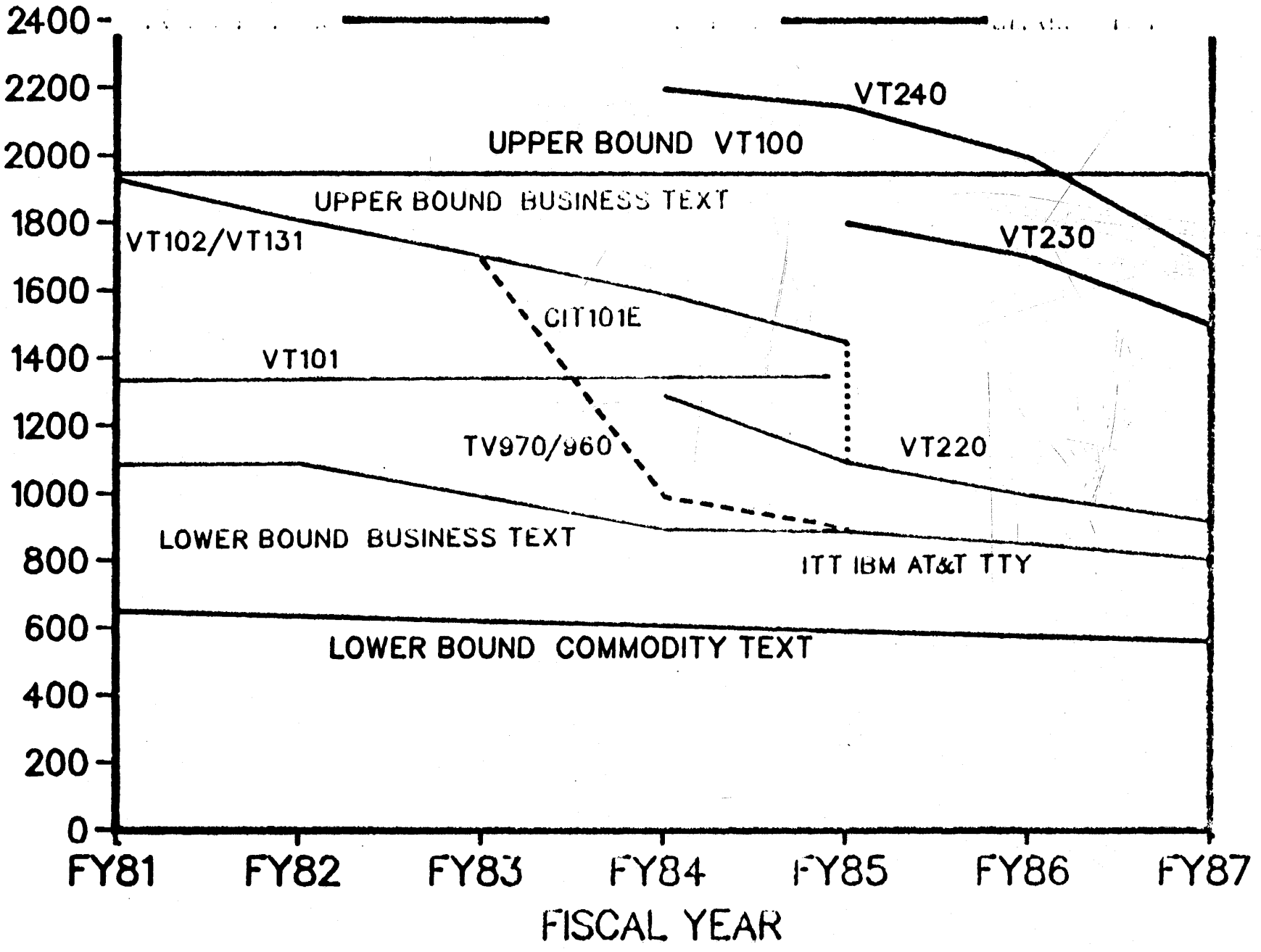


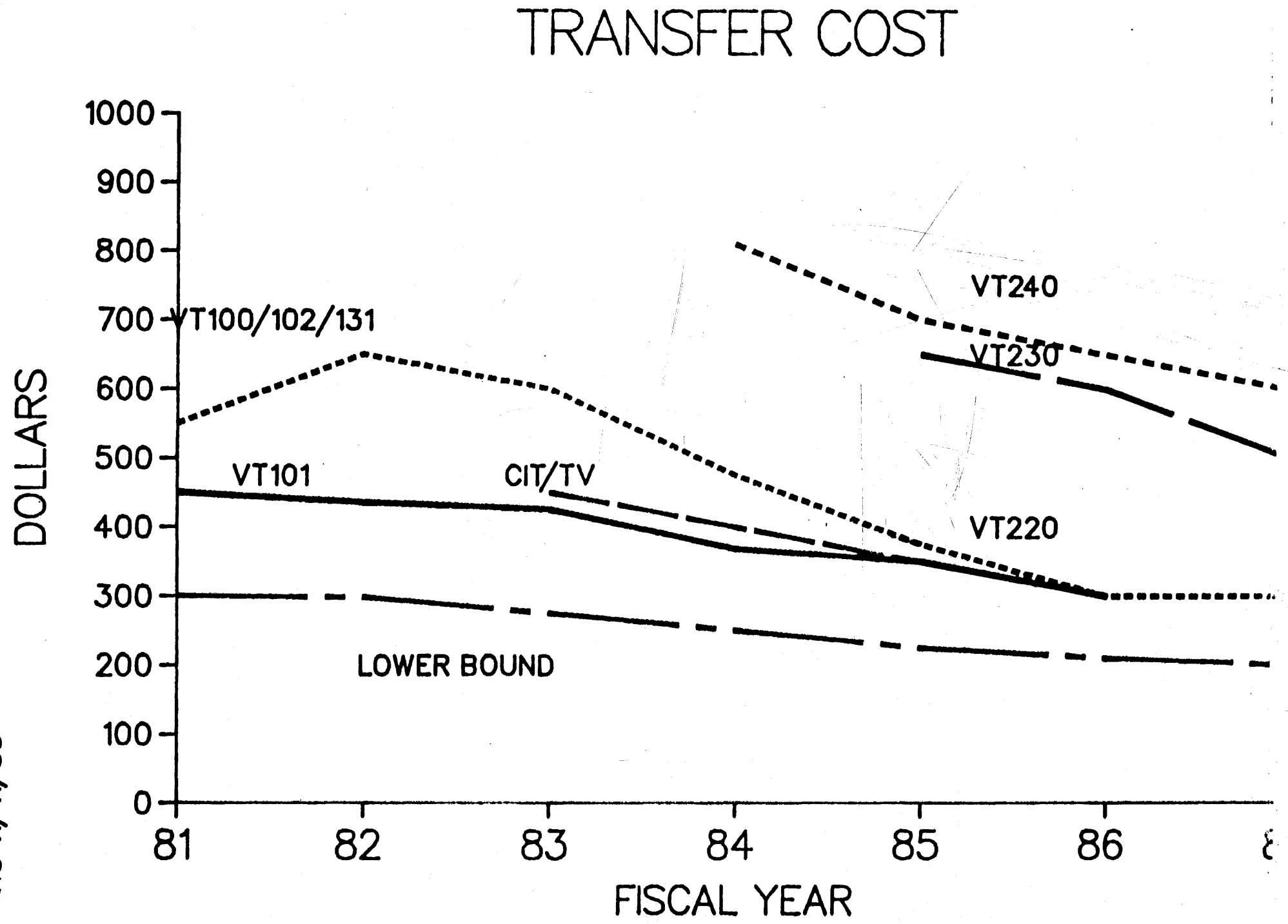
BILL.2 11/10/83

COMPETITIVE LIST PRICE



COMPETITIVE LIST PRICE





COMPETITORS - CLASSIFICATION CRITERIA

- PRESENT
  - o DEC VT100 COMPATIBLE OFFERING
  - o % OF INSTALLED TERMINAL BASE
  - o YEARLY SHIPMENT TRENDS
  - o PRICE

- EMERGING
  - o RECENT PRODUCT ANNOUNCEMENTS IN DEC VT SPACE
  - o SHIPMENT TRENDS
  - o COMPANY SIZE
  - o PRESENT MARKETS/PRODUCTS/CHANNELS

- POTENTIAL
  - o ABILITY TO "OWN THE DESK"
  - o PRESENT MARKETS/PRODUCTS
  - o CORPORATE STRATEGY (MERGERS, ACQUISITIONS, AGREEMENTS)

COMPETITORS - WHO ARE THEY?

- PRESENT
  - C. ITOH (CIE TERMINALS)
  - VISUAL TECHNOLOGY
  - DATAMEDIA

- EMERGING
  - TELEVIDEO
  - QUME (ITT)
  - TELETYPE (AT&T)

- POTENTIAL
  - o LARGE U.S. CORPORATIONS IN:
    - COMPUTER BUSINESS
    - COMMUNICATIONS BUSINESS
    - BOTH

      IBM, NCR, HP, HONEYWELL

      NORTHERN TELECOM, ROLM, MITEL, AT&T, RCA
  - o LARGE NON-U.S. CORPORATIONS

    HITACHI, FUJITSU, PHILIPS, SEIMENS
  - o OFF-SHORE THREAT
    - TERMINAL MANUFACTURERS

      TAIWAN - LIBERTY ELECTRONICS CORP. LTD.
      SHINLEE CORP.

      JAPAN - KOKUSAI (HITACHI)

      S. KOREA - TAIHAN ELECTRIC WIRE CO.
      SAMSUNG
      GOLD STAR

KEY COMPETITORS

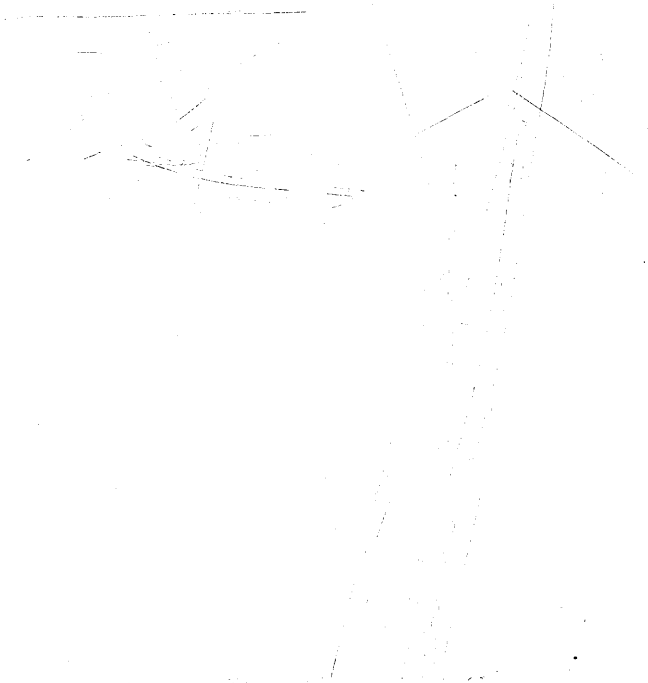
- PRESENT
  - o C. ITOH
    - SALES $51 BILLION/LARGEST JAPANESE TRADING CO.
    - 403 SUBSIDIARIES IN 81 COUNTRIES
    - FORMED CIE TERMINALS - MAY 1983
    - MANUFACTURE - GENERAL
    - MIMICS DIGITAL VT100 AND IBM 3270 PRODUCTS
  - o VISUAL TECHNOLOGY
    - 1982 EARNINGS $2.8 MILLION (44% ABOVE 1981)
    - MANUFACTURING:
      - . SPECIAL OEM PRODUCTS IN U.S.
      - . TEXT TERMINALS - TAIWAN WILLIAMS COMPUTER CO.
    - ACQUIRED ONTEL (PC MFG.) IN 1980
    - CHANNELS DISTRIBUTORS /OEMS
  - o DATAMEDIA
    - TO INCREASE OFF-SHORE PRODUCTION
    - MARKETS TEXT TERMINALS/PC'S TO LARGE OEM'S (RECENT $25 MILLION ORDER FROM TELERATE)
    - NEW PRODUCT FOCUS ON COLOR TERMINALS AND PICK BASED SMALL BUSINESS SYSTEMS

KEY COMPETITORS (CONTD)

- EMERGING
  - o TELEVIDEO
    - 1982 EARNINGS $12.7 MILLION ON SALES OF $98.5 MILLION
    - REVENUES 55% SYSTEMS/45% TERMINALS
    - MANUFACTURING:
      MAJOR SUBASSEMBLIES - ORIENTAL PRECISION, KOREA
      FINAL ASSEMBLY - U.S.
    - PRODUCT FOCUS:
      INITIAL - LOW PRICED TEXT TERMINAL
      RECENT - DEC VT100 AND MICROCOMPUTERS
      FUTURE - PORTABLE TERMINALS
      DISPLAY PHONES
    - TO EXPAND MARKETING CHANNELS
      - DIRECT TO MASS MERCHANDISERS
      - DIRECT TO FORTUNE 1000
      - LARGE PRIVATE LABEL OEM'S

KEY COMPETITORS (CONTD)

- EMERGING (CONTD)
  - o QUME/ITT
    - RECENT ENTRY IN TEXT TERMINALS
    - BUILD ON PRINTER DISTRIBUTION CHANNELS
    - MANUFACTURING CAL-COMP ELECTRONICS, INC., TAIWAN
    - FOCUS SPANS LOW END TO DEC COMPATIBLES
    - FUTURE - COLOR
  - o TELETYPE (AT&T)
    - SLOW GROWTH/FLAT EARNINGS
    - IBM 3270 AND DEC FUNCTIONALITY TERMINALS
    - FOCUS - UNIX BASED FUNCTIONALITY
    - DEREGULATION IMPLIES:
      - . BROADER DISTRIBUTION CHANNELS
      - . DIRECT END USER SALES SUBSIDIARY



KEY COMPETITORS (CONTD)

- POTENTIAL
  - o WHO'S GOING TO OWN THE DESK?
  - o EFFECTED BY BOTH VERTICAL AND HORIZONTAL APPLICATIONS
    - OFFICE (TEXT AND GRAPHICS)
    - TELEPHONY
    - INDUSTRY/GOVERNMENT SEGMENTS
    - SPECIFIC JOB FUNCTIONS
  - o UNIVERSAL TERMINAL TRENDS
    - IBM 3270
    - DEC VT100/200
    - TELEPHONE

VIDEO TERMINAL COMPETITORS

VENDOR/ LOCATION	MANUFACTURER/ LOCATION
C.I.E. TERMINALS (C. ITOH) LOS ANGELES, CA.	GENERAL, JAPAN
VISUAL TECHNOLOGY TEWKSBURY, MA.	TAIWAN-WILLIAMS COMPUTER CORP. TAIWAN (VISUAL 50, 55, 100, 102) OEM SPECIALS IN U.S.
DATAMEDIA PENNSAUKEN, N.J.	U.S. LOOKING TO INCREASE OFF-SHORE
APPLIED DIGITAL DATA SYSTEMS (ADDS) HAUPPAUGE, N.Y.	U.S. GOING OFF-SHORE
LEAR SIEGLER (DATA PRODUCTS DIV.) ANAHEIM, CA	TECO ELECTRIC & MACHINERY TAIWAN (ADM 22) ALSO MAKES HONEYWELL 7201
TELEVIDEO SUNNYVALE, CA	ORIENTAL PRECISION CO. SOUTH KOREA (MAJOR SUBASSEMBLIES) U.S. (FINAL ASSEMBLY)
GENERAL TERMINALS TUSTIN, CA	SONO ELECTRONICS MFG. CORP. TIJORNA, MEXICO
TEC INC. TUCSON, AZ	U.S.

VIDEO TERMINAL COMPETITORS (CONTD)

KIMTRON CORP. SANTA CLARA, CA	GOLD STAR LTD. SOUTH KOREA
DIGITAL EQUIPMENT MAYNARD, MA	TAIWAN/SINGAPORE/HONG KONG
QUME (ITT) SAN JOSE, CA	CAL-COMP ELECTRONICS TAIWAN (QVT 102, 103, 108)
ESPRIT SYSTEMS GREENLAWN, N.Y.	ADVANCED DATUM INFORMATION, INC. TAIWAN (ESPRIT) SAMSUNG ELECTRONICS SEOUL, SOUTH KOREA (EXEC 10)
BURROUGHS DETROIT, MI	KOKUSAL ELECTRIC CO. LTD. JAPAN
H.P.	TAIWAN SUBSIDIARY
AMPEX	TAIWAN SUBSIDIARY
WYSE TECHNOLOGY	TAIWAN SUBSIDIARY
LIBERTY ELECTRONICS	TAIWAN SUBSIDIARY
ZENITH DATA SYSTEMS	TAIWAN SUBSIDIARY
FALCO DATA PRODUCTS	TAIWAN SUBSIDIARY

TELEVIDEO 970

ANNOUNCEMENT: JUNE 1982
LIST PRICE: $1495
RELIABILITY: VERY GOOD

KEY FEATURES

DEC VT100/102/131 COMPATIBLE
+ 14" MONITOR
- GREEN PHOSPHOR
+ CHARACTER AND BLOCK TRANSMISSION
+ BIDIRECTIONAL PRINTER PORT
+ 25TH STATUS/USER LINE
+ 3 SCREEN PAGES OF MEMORY
+ 256 ALTERNATE CHARACTER FONT

UNIQUE FEATURES

- ENCLOSURE
+ 16 PROGRAMMABLE FUNCTION KEYS
  SHIFTABLE TO 32 - NON VOLATILE MEMORY
+ LEFT/RIGHT SCROLL
+ PC UPGRADE
+ OEM SPECIALIZATION

-- VISUAL TECHNOLOGY 102

ANNOUNCEMENT: OCTOBER 1983
LIST PRICE: $1095
RELIABILITY: VERY GOOD

KEY FEATURES

DEC VT100/102 COMPATIBLE
\+ 14" MONITOR
\- GREEN PHOSPHOR
ERGONOMIC DESIGN

UNIQUE FEATURES

\- 8 PROGRAMMABLE FUNCTION KEYS
SHIFTABLE TO 16 - NON VOLATILE MEMORY
\+ GRAPHICS EXPANSION CARD OPTION ($895)
(768 X 293 PIXEL RESOLUTION)

C. ITOH 101E

ANNOUNCEMENT: MAY 1983
LIST PRICE: $1595
RELIABILITY: VERY GOOD

KEY FEATURES

DEC VT100/102 COMPATIBLE
+ 14" MONITOR
+ 3 SCREEN PAGES OF MEMORY
+ BI-DIRECTIONAL AUXILIARY PORT
ERGONOMIC DESIGN
WHITE/GREEN/AMBER PHOSPHOR
ALTERNATE 128 CHARACTER SET

UNIQUE FEATURES

+ TIME OF DAY CLOCK
+ HEXADECIMAL KEYPAD MODE
QUICK RELEASE MODULES
NO CUSTOM LSI DEVICES
+ GRAPHICS EXPANSION CARD OPTION

DATAMEDIA EXCEL 60

ANNOUNCEMENT: NOV. 1981
LIST PRICE: $1250
RELIABILITY: EXCELLENT

KEY FEATURES

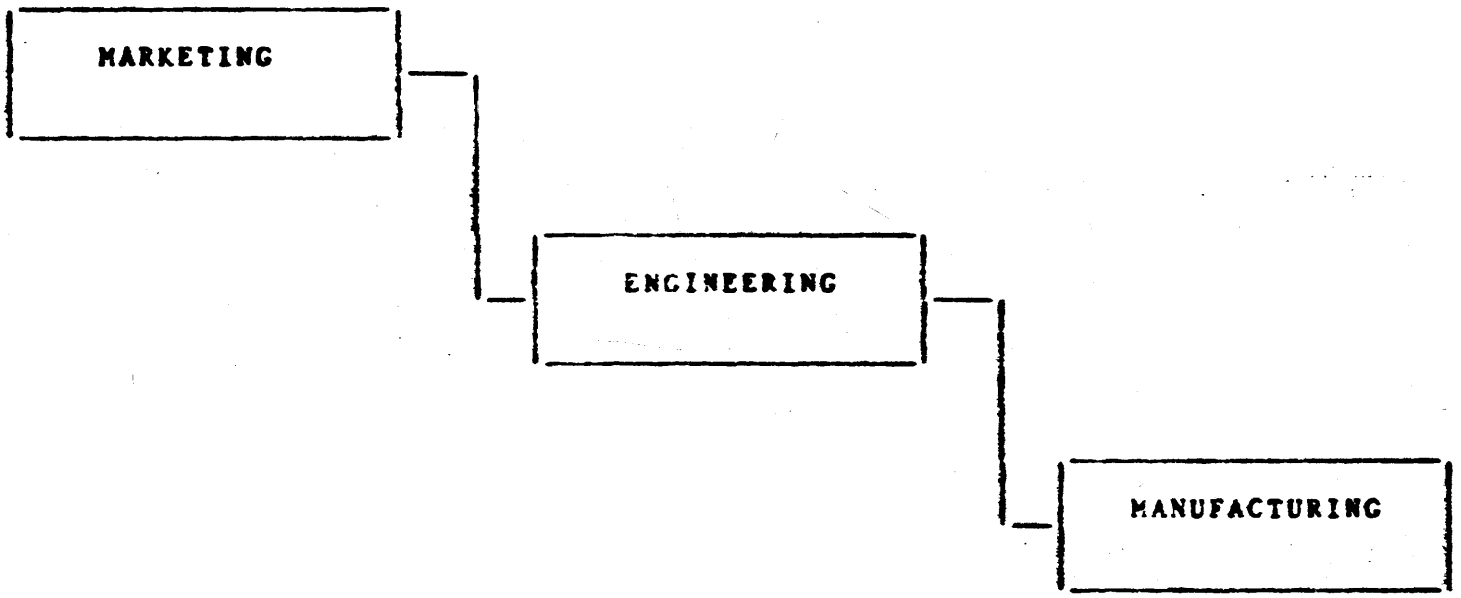
DEC VT100/102/131 COMPATIBLE
+ 12" MONITOR 14" OPTIONAL
WHITE OR GREEN PHOSPHOR
+ CHARACTER AND BLOCK MODE

UNIQUE FEATURES

- 12 PRE-CODED FUNCTION KEYS

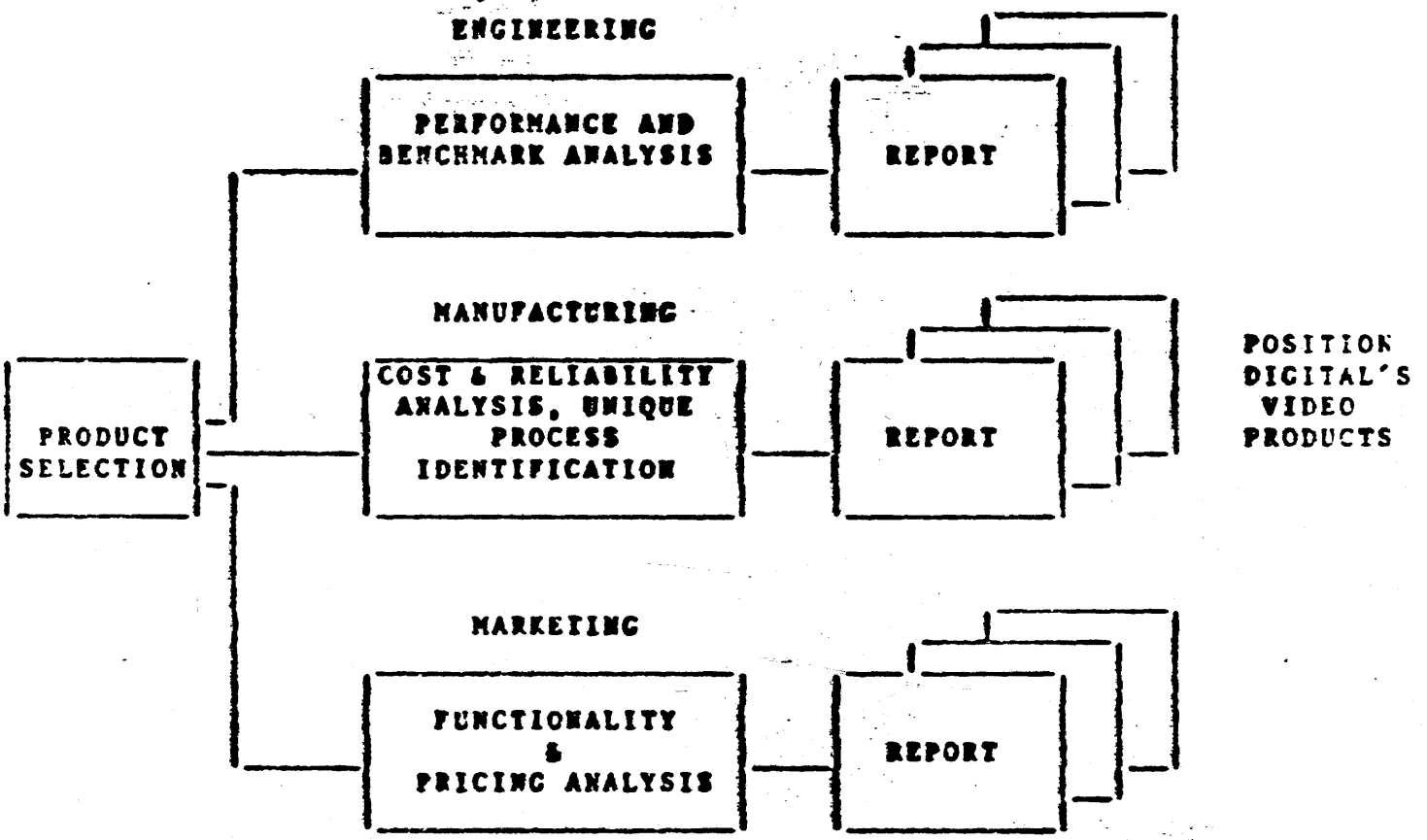
COMPETITIVE PRODUCT ANALYSIS

"THE REVIEW CYCLE"



COMPETITIVE PRODUCT ANALYSIS

"WHAT WE ARE LOOKING FOR"



COMPETITIVE ANALYSIS
PRODUCT "TEARDOWN"

1. FOR EACH MAJOR ASSEMBLY/SUB-ASSEMBLY (SUMMARY DATA)

   - Description
   - Make/Buy
   - Place/Date of Manufacture
   - Labor Hours
   - Material Costs

2. FOR EACH SUB-ASSEMBLY (DETAILED PART LEVEL INFORMATION)

   - Part Description (Elec/Mech Computers, FAB, plastics, labels, etc.)
   - Quantity
   - Cost Each
   - Total Cost
   - Tooling Cost
   - Operation Description (Assy, Test, Inspect)
   - Operation Labor Hours
   - Unique Processes/Features

3. QUALITY ASSESSMENT

   - Safety (UL/CSA, etc.)
   - Regulatory (FCC, etc.)
   - Workmanship Overview
   - Installation Procedures/Documentation
   - Warranty Information
   - Reliability/MTBF Prediction (calculated)
   - Reliability Demonstrated

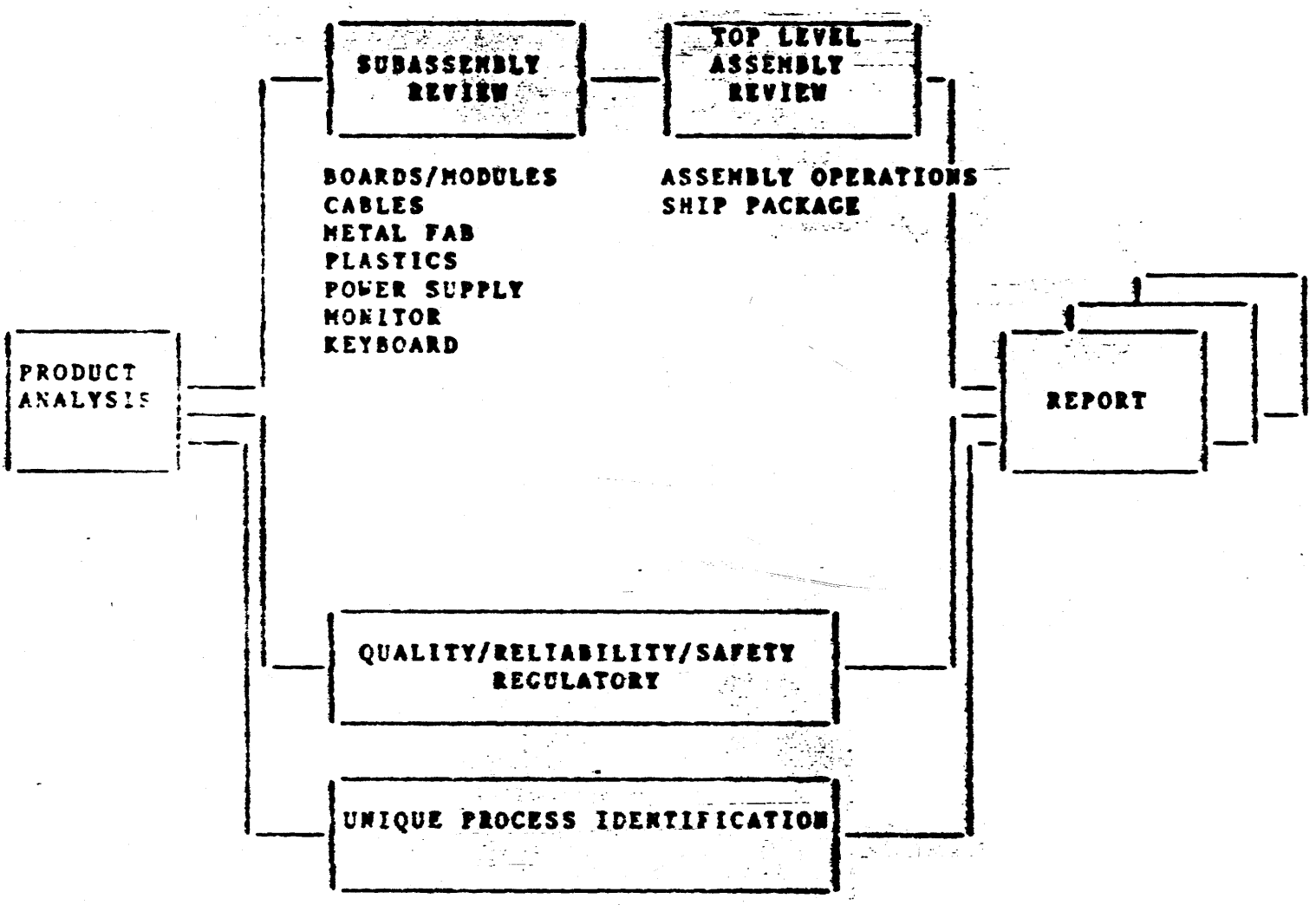
4. PRODUCT PACKAGING (SHIPPING)

   - Description
   - Cost

5. ASSUMPTIONS

COMPETITIVE PRODUCT ANALYSIS

"THE MANUFACTURING ANALYSIS PROCESS"



COMPETITIVE ANALYSIS

Video Tech./Systems Lab & Architecture
Project Members: TBD

TECHNICAL, FUNCTIONAL & PERFORMANCE EVALUATIONS of Competitive Video Products.

TECHNICAL

- Architectural Organization
- Implementation details & Design Tradeoffs

FUNCTIONAL

- Hardware Specifications
- Features: Comparison, Innovative details

PERFORMANCE

- QA/Certification Testing, e.g:
  - VT100 compatibility
    - runs edt?
    - escape sequences?
  - Tektronix emulation
- Comparitive & absolute performance numbers with existing benchmarks
  - Text
  - Graphics
- Human Engineering
  - Display evaluation
    - Font quality
    - Usable screen size, legibility, flicker
  - Ease of usage
    - Soft keys, set-up assists, NVR preferences, documentation
    - Keyboard layout and quality
    - Packaging (footprint, detatchable keyboard etc.) portability

MAJOR PRODUCTS

PRODUCT DEVELOPMENT

	BUDGET $ FY 84	FVS
TERMINALS		
VT220	.3	SEPT 9, 83
VT240	.8	OCT 19, 83
VT220 C.R.	.5	Q2 85
VT240 C.R.	.6	Q3 85
VT230	1.5	Q2 85
WORK STATIONS		
VC101	.8	Q4 85
VC102	1.1	Q3 85
QVSS	.6	Q3 84
MONITORS		
VR241	.1	SEPT 6, 83
VR242	.5	Q1 85
VR210	.5	Q3 84
VR260	.5	Q3 84
VR100	.04	DEC 83
VR300	.4	Q4 84
DATA COMM		
220 MODEM	.3	JAN 84
240 MODEM	.3	DEC 83
TMS I	.2	OCT 83
TMS II	.2	DEC 83
DECNA	.3	Q3 84
NI (VC101)	.4	Q4 85
ALT COMM (VC102)	.4	Q3 85
VT PHONE CONTROLLER	.3	Q3 85
MICRO-X	.3	Q3 85
VOICE MODULE	.6	Q3 85
VSS		
RAINBOW GRAPHICS	.1	SEPT 16 83

VT230

A medium resolution conversational text cell video terminal

- VT220 Functionality plus!
- Full cell DRCS
- 2-way printer port
- 512 bytes of UDK memory storable in NVR
- Medium resolution 15" monitor
  - 24 or 36 line mode
  - 19 x 10 character cells (double VT230 resolution)
  - Status line at bottom of screen
- Off screen memory
  - Up to 6 pages at 24 x 80
  - Configurable in 80, 132 or 256 columns
  - Displayable in 80 or 132 columns
- Local editing and VT131 compatible block mode
- Option slot
  - Integral modem option
  - Provision for options such as 3270, Hebrew or KataKana
  - Under consideration: provisions for
    - Kanji
    - VT125 style graphics board
    - Eurocard
- European national replacement character sets (If needed)
- Logical display support (limited windowing)
- 2 box packaging
- Transfer cost near $650
- FCS 15-Mar-85

MONITOR PRODUCT DEVELOPMENT

	SIZE	MONO/COLOR	REFRESH	RESOLUTION	HORZ. SCAN	COST	FRS
VR201	12"	Monochrome	60_{HZ}	800 X 240	$15K_{HZ}$	$108	Q1 FY83
VR241	13"	Color	60_{HZ}	800 X 240	$15K_{HZ}$	$520	Q1 FY84
VR242	13"	Color	60_{HZ}	800 X 240 800 X 480	$15K_{HZ}$ $31K_{HZ}$	$350	Q2 FY85
VR210	15"	Monochrome	60_{HZ}	800 X 480	$31K_{HZ}$	$212	Q3 FY84
VR260	19"	Monochrome	60_{HZ}	1024 X 864	$56K_{HZ}$	$450	Q3 FY84
VS100	19"	Monochrome	60_{HZ}	1088 X 864	$54K_{HZ}$	$525	Q2 FY84
VS300 (I)	19"	Color	30_{HZ}	1088 X 864	$28K_{HZ}$	$2000	Q3 FY84
(II)	19"	Color	60_{HZ}	1088 X 864	$54K_{HZ}$	$2500	Q3 FY85

VC1XX - WORKSTATION TERMINALS

STRATEGY AND POSITIONING:

The VC100 bridges the terminals and workstations marketplace as our lowest cost entry into the integrated workstation market and as a windowing graphics terminal.

MARKET MESSAGES

* We're building on our VMS base.

* We have better engines and displays for UNIX based software.

* We are a leader in distributed workstations.

* We provide compatibility between our multi-user time sharing hosts with windowing terminals and our singe-user workstations.

QVSS - SIMPLE, TIME-TO-MARKET GRAPHICS OPTION FOR SEA HORSE WORKSTATION

Goals:

Time to market

System performance through simple software interface

FCS - May 11, 1984

Cost - $450

Description:

Standard Quad Q-bus (Q22) Option

256 kbytes bit map memory directly addressable by CPU
2 full pages or 4 half pages

Mouse and Keyboard interface

Scan Line map for scrolling and off-screen bit map manipulation

Cursor independent of bit map

Supports both VR210 (15") and VR260 (19") monitors

VC101 - DISKLESS WORKSTATION WITH uVAX, QVSS SOFTWARE COMPATIBILITY, AND NI

Goals:

- Time to market (gated by uVAX chip)
- Low Risk (S/W)
- FCS - Q3 FY85
- Cost - $1750

SYSTEM BOARD:

- uVAX
- FP
- II32
- 1 Megabyte RAM
- Boot ROM
- QVSS Graphics
- NI

INPUT DEVICES:

- Corporate Mouse
- LK201 Keyboard

OPTION CARDS:

- 2 Megabyte RAM
- Alternate Comm

MONITORS:

- VR210
- VR260

BOX:

- VI240 (Modified?)

VC100 PRODUCT SET

VC102 - HIGH-END GRAPHICS TERMINAL OR LOWEST COST ENTRY INTO DISKLESS WORKSTATION MARKET

Goals:

Cost

Performance

Competitively Agressive

FCS - Q4 FY85

Cost - $1300

SYSTEM BOARD:

uVAX/FP

II32

256 Kbytes RAM

NVR

Boot ROM

Dragon Graphics

INPUT DEVICES:

Corporate Mouse

LK201 Keyboard

OPTION CARDS:

2 Megabyte RAM

Terminal ROM

NI

Alternate Comm

Extra Video Planes

MONITORS:

VR210

VR260

VR242 Color

BOX:

VT240 (Modified?)

WHY INTEGRATE VOICE AND DATA ?

- o MARKET OPPORTUNITY
  - CUSTOMERS NEED INTEGRATED VOICE/DATA SERVICES
  - VOICE/DATA INTEGRATION CAN BE ACCOMPLISHED
    - * BY BUILDING ON DIGITAL'S STRENGTH IN TERMINALS AND MINICOMPUTERS
    - * WITHOUT INNOVATING ANALOG VOICE TECHNOLOGY

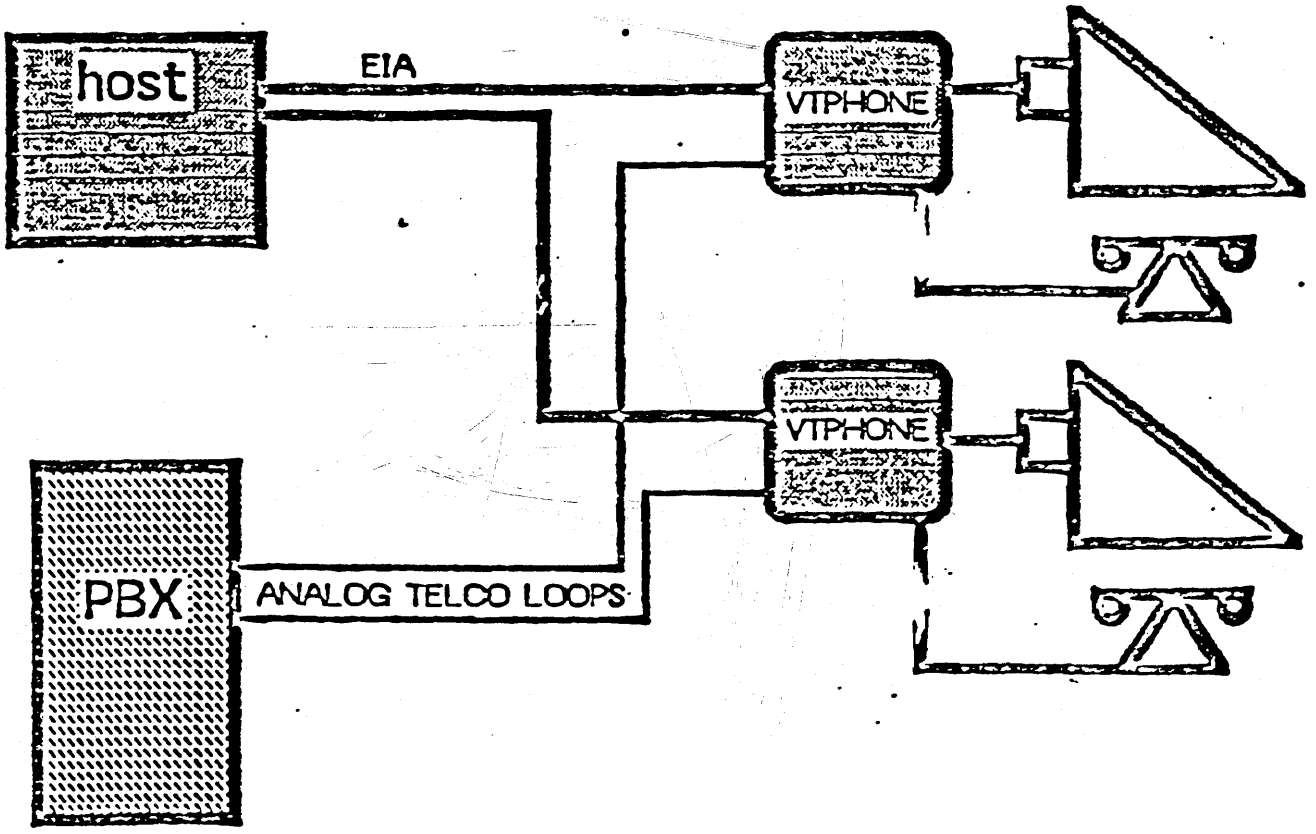
- o COMPETITIVE RISK
  - VOICE VENDORS
    - * INTEGRATED TERMINAL TELEPHONES
    - * OFFICE AUTOMATION APPLICATION PROCESSORS
  - DATA VENDORS
    - * VOICE STORAGE SYSTEMS
    - * PBX VENDOR AGREEEMENTS

LOW END VOICE/DATA INTEGRATION PRODUCTS

- o VTPHONE -- VOICE OPTION FOR TERMINALS. SINGLE USER PRODUCT.
- o MICRO-X -- VOICE OPTION FOR MINICOMPUTERS. DEPARTMENT LEVEL PRODUCT.
- o VOICE UNIT -- DIGITAL LOOK TELEPHONE. PROVIDES THE IMAGE OF AN ALL DIGITAL DESK.

VTPHONE CONTROLLER

- TERMINAL ADD-ON
- PROVIDES AUTODIAL FUNCTIONS UNDER HOST PROGRAM CONTROL
- EASY TO PROGRAM
- WORKS WITH ANY TERMINAL
- WORKS WITH ANY TIP/RING TELEPHONE
- PRICE OF VTPHONE PLUS A VT TERMINAL IS COMPETITIVE WITH TERMINAL TELEPHONES (E.G. NORTHERN TELECOM DISPLAYPHONE)
- TRANSFER COST GOAL $100
- MLP $300
- FVS 3QFY85



MICRO-X

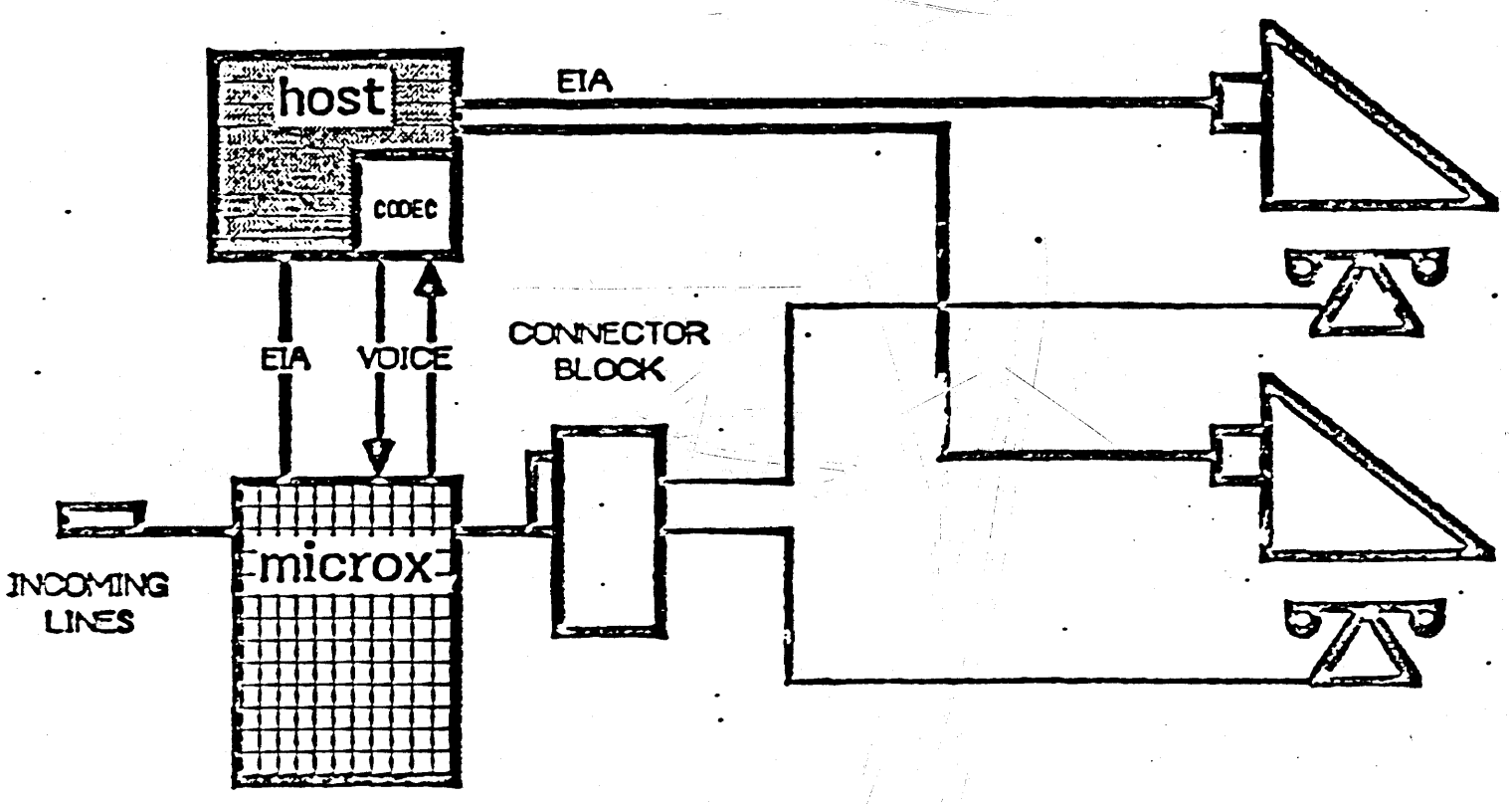
- DEPARTMENT SIZE HOST ADD-ON (MAXIMUM OF 16 USERS)
- PERFORMS TELEPHONE SWITCHING FUNCTIONS UNDER HOST APPLICATION CONTROL
- SUPPORTS INTEGRATED VOICE/DATA SERVICES
- FITS INTO THE OFFICE WHERE KEY TELEPHONE SYSTEMS GO TODAY
- NO SPECIAL DRIVERS REQUIRED -- WORKS WITH ANY HOST
- WORKS WITH ANY TIP/RING TELEPHONE
- TRANSFER COST GOALS

BASIC CONFIGURATION (4x8)	$700
MAXIMUM CONFIGURATION (16x16)	$1245

- MLP

BASIC CONFIGURATION (4x8)	$2400
MAXIMUM CONFIGURATION (16x16)	$4050

- FVS 3QFY85



VOICE UNIT

- "DIGITAL LOOK" TELEPHONE
  - TWO PIECES (HANDSET AND BASE)
  - TOUCHTONE ONLY
  - COMMERCIAL QUALITY
- FAR EAST BUYOUT TO MEET TRANSFER COST GOAL
  - VENDOR'S STANDARD ELECTRONICS
  - DIGITAL SPECIFIED PLASTIC
- TRANSFER COST GOAL $15
- MLP $50
- FVS 3QFY85

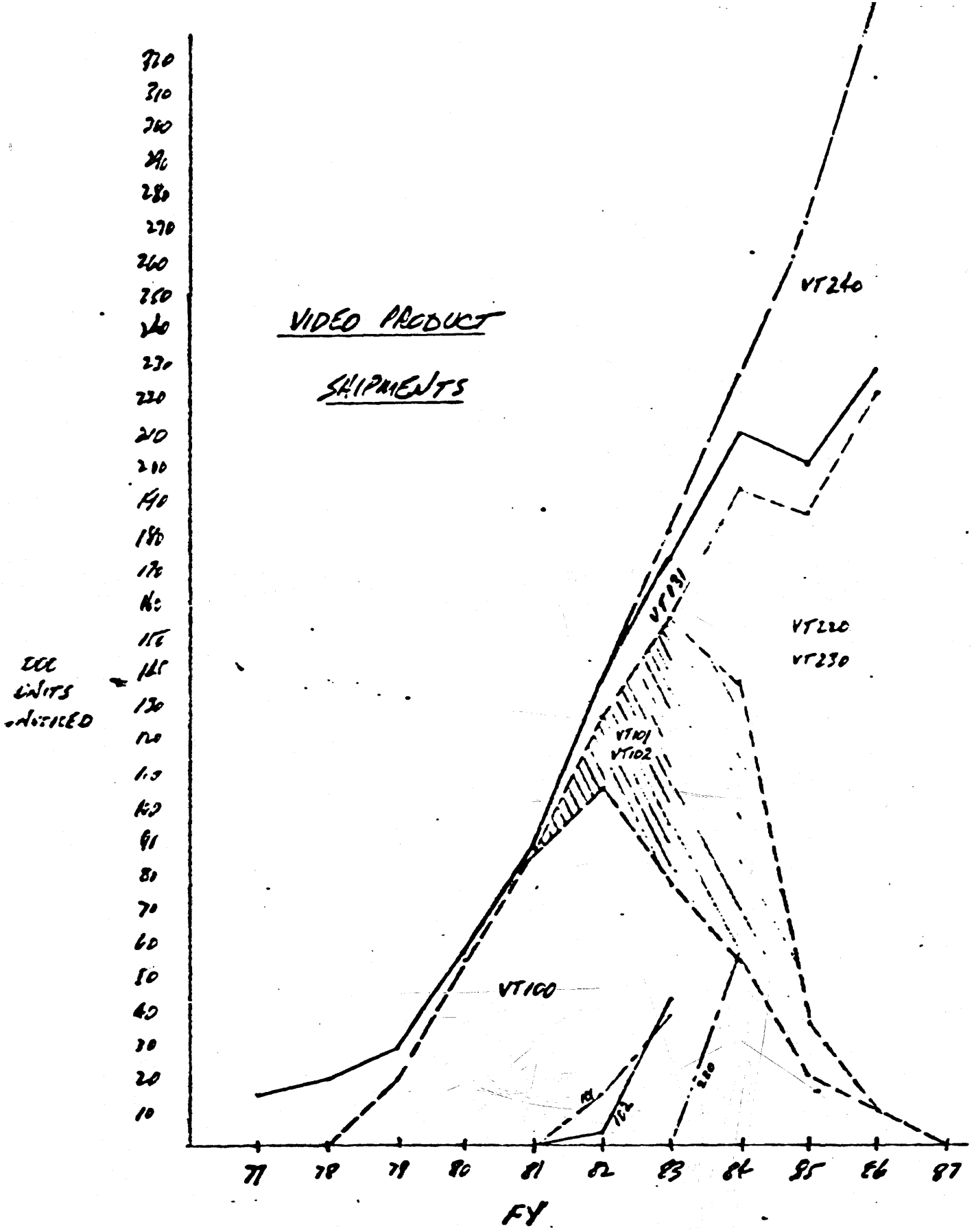
MAJOR STRATEGIC QUESTIONS

1. HOW LONG WILL OUR PRODUCT-DRIVEN BUSINESS STRATEGY BE THE RIGHT ONE?
2. SHOULD WE CONTINUE TO IGNORE THE IBM INSTALLED BASE?
3. WHAT ARE THE KEY RESOURCES OF THE BUSINESS, AND WHERE IN THE WORLD SHOULD WE POSITION THEM?
4. OF ALL THE TECHNOLOGIES WE ENGAGE, WHICH ARE MOST VITAL TO OUR FUTURE SUCCESS?

VIDEO PRODUCT SHIPMENTS

GEOGRAPHIC DISTRIBUTION

	FY84	FY85
US	66%	55%
EUROPE	25%	35%
GIA	9%	10%
TOTAL	100%	100%
UNITS	210K	270K


VIDEO PRODUCT
SHIPMENTS
VT240
VT131
VT220
VT230
VT101
VT102
VT100
000 UNITS SHIPPED
FY
77
78
79
80
81
82
83
84
85
86
87

EUROPE

COUNTRY	AREA (SQUARE MILES)	POPULATION
[redacted]		
NORWAY	125,181	3,893,000
SWEDEN	173,665	7,978,000
FINLAND	130,128	4,706,000
DENMARK	16,614	4,912,865
ICELAND	39,768	204,578
[redacted]		
SPAIN	194,896	33,290,000
PORTUGAL	35,510	9,560,000
[redacted]		
SWITZERLAND	15,941	6,230,000
GREECE	50,548	8,833,000
TOTAL	1,354,625	328,343,000

[redacted]

THE BRITISH ISLES 'SILICON VALLEY'

1. IRELAND

THE I.D.A. PROJECT THE FOLLOWING EMPLOYEMENT FIGURES IN ELECTRONICS INDUSTRIES:

1975	5,000 JOBS (ON TARGET)
1980	10,000 JOBS (ON TARGET)
1985	30,000 JOBS

WITH THE FOLLOWING MULTI-NATIONAL COMPANIES

NIXDORF	DATA 100	VERBATIM
ERICUSON	BRAUN	ECCO
DATA PRODUCTS	WANG	PRIME
AMDAHL	APPLE	MOSTEK
ANALOG DEVICES	MEMOREX	KRUPP
WESTINGHOUSE	FUJITJU	NIPPON ELECTRIC
MEASUREX	PLESSEY	TECHNICON
UNITRODE	E.I. CO.	DOCUMATION
COMPUTER AUTOMATION		DATA TERMINAL SYSTEMS

AND DIGITAL

2. SCOTLAND

SCOTLAND HAS THE FOLLOWING MULTI-NATIONAL COMPANIES (No. OF EMPLOYEES IN BRACKETS):

IBM	(2500)	HONEYWELL	(3000)
BURROUGHS	(3000)	HEWLETT PACKARD	(800)
PYE-PHILIPS	(3500)	FABRI-TEK	(230)
FERRANTI	(2500)	MARCONI	(2,200) 7000
MESL	(300)	A.E.I.	(350)
PLESSEY	(700)	NIPPON ELECTRIC	(?)
NATIONAL SEMI CONDUCTOR	(1700)	DIGITAL	(600)