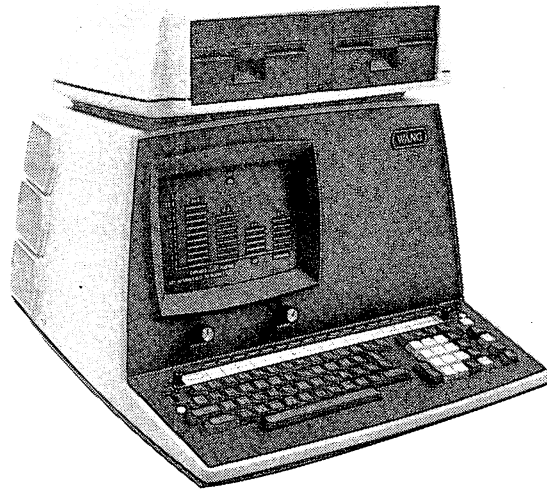


PRODUCT BULLETIN NO.187

THE PCS-III



INTRODUCTION

Wang Laboratories, Inc., is pleased to announce a new addition to the 2200 Series Product Line -- the PCS-III. The PCS-III, based on the popular PCS-II, is a programmable computer system powerful enough to meet the specialized needs of the most demanding user. In addition to all the features of the PCS-II, the PCS-III combines the following enhancements:

- . 32K-byte Random Access User Memory
- . Single-Sided, Double-Density Minidiskette Drive
- . Optional Disk Multiplexer Controller

The following is a brief summary of other PCS-III features that also exist on the PCS-II.

- . 2200T Central Processing Unit
- . Single, Compact Portable Console
- . User-Oriented BASIC

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LABORATORIES, INC.

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- . Software Applications
- . A 9-inch (22.9 cm) 16x64 CRT Screen with a 1024-Character Display Capacity
- . Typewriter-style Keyboard, with a Numeric Keypad, Special Function Keys, and Program Control Keys.
- . Edit Mode Operations
- . Telecommunications Capabilities

MARKET POSITION

The PCS-III can be positioned in the following three separate markets:

- . First-time user
- . Major account user
- . Scientific/engineering users

SMALL BUSINESS COMPUTER MARKET

The PCS-III provides the first-time user with a powerful, portable processor dedicated to a specific task. Leveraged as a "solution sell" capitalizing on vendor supplied, supported, and installed software, the PCS-III will further enhance Wang's position in both the vertical (retail, insurance, F&I) and horizontal (general accounting) markets.

Sales Strategy

A managerial aid -- The PCS-III aids managers in their informational role by reducing the time and activities required to collect, absorb, and disseminate information. Benefits to the managers of small businesses or organizations include increased performance and productivity in their leadership and decision making roles by providing them with current, easily accessible data.

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MAJOR ACCOUNT MARKET

The PCS-III equipped with multiplexing and communications options provides the major account with a powerful, cost-effective replacement for non-intelligent data capture devices.

Sales Strategy

A dedicated processor -- The PCS-III provides large corporations or organizations with a single, stand-alone processor dedicated to a specific operation within a department. Benefits include increased control over functional data processing operations.

A cluster of intelligent terminals -- Up to three PCS-IIIs can access a single data base and provide the ability to communicate with the company's host computer system for disbursed data entry. Benefits include the ability to provide the small remote sites with economical, convenient, high level systems to maximize net productivity.

SCIENTIFIC/ENGINEERING MARKET

The PSC-III equipped with either Option 65 or Option 67 interface controllers provides the scientist, lab technician, and engineer with the ability to collect test data, perform calculations, and monitor test equipment.

Sales Strategy

An instrument monitor -- The PCS-III runs laboratory instruments, and collects and processes data. Benefits include more efficient usage of the researchers time to analyze and interpret data.

A desk top problem solver -- The PCS-III performs tedious, complex calculations in seconds at either local or remote sites. Benefits include the ability to transport processing power wherever it is required.

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THE CENTRAL PROCESSING UNIT

The PCS-III contains a 2200T central processor with a standard 32K-byte Random Access User Memory. Since only 700 bytes of memory are utilized for system overhead, all remaining memory is accessible to the user. A BASIC language interpreter contained in a separate 48K-byte control memory translates and executes Wang's BASIC language instruction set.

THE MINIDISKETTE UNIT

The PCS-III has either one (standard) or two (optional) single-sided, double-density minidiskette drives to provide high-speed, direct-access, on-line storage. Since minidiskettes are removable, a user's off-line storage is limited only by the number of minidiskette platters. Files can be maintained on these minidiskette drives in one (or both) of two modes: Automatic File Cataloging mode and Absolute Addressing mode.

DISK MULTIPLEXING CAPABILITIES

In addition to the self-contained minidiskette storage, the PCS-III can contain a disk multiplexer controller (Option 105) that enables access to either a Model 2260B or a Model 2260BC fixed/removable disk drive. When connected to a Wang 2230MXA-1 master multiplexer controller installed in a 2200T, VP, or MVP CPU, the PCS-III may then access the disk attached to this master controller, as well as the built-in minidiskette drive. The PCS-III cannot be multiplexed to the Model 2280 Disk Drive. A maximum of three PCS-IIIs can be linked together to allow shared use of common disk files, yet provide independent processing and local storage capabilities to users at each PCS-III site. When expanding computing needs dictate the purchase of a larger Wang 2200 Series system, the multiplexed PCS-III can be used as a disk workstation to share a common disk data base with the larger system, thus preventing obsolescence of equipment.

The PCS-III has two connectors available for printers and plotters. If the multiplexing option is selected, one of the existing printer controllers is removed and replaced by the jack of the multiplexer controller. Therefore, when the multiplexing option is installed on the PCS-III, only one printer/plotter can be supported.

TELECOMMUNICATIONS CAPABILITIES

By including an optional communications controller on the system, a wide range of data transmission and reception capabilities will be added to the stand-alone computer capabilities of the PCS-III. By using one of Wang's microprocessor-based communications controllers, separate tasks related to data transmission/reception can be performed concurrently by the central processor and the communications controller. The Option 62 Asynchronous Selectric Typewriter terminal. Alternatively, the Option 62B Synchronous/Asynchronous Communications Controller, which supports batch data transmission to or from a host system via IBM's 2780, 3780, or 3741 Binary Synchronous Communications protocol is available.

OPTIONAL EQUIPMENT

- . Option 60 - Keyboard Clicker, Audio Alarm, and Auxiliary CRT Connector
- . Option 60A - 24 x 80 CRT
- . Option 62* - Buffered Asynchronous Telecommunications Controller
- . Option 62B*- Synchronous/Asynchronous Telecommunications Controller
- . Option 65* - IEEE-488 Standard Interface
- . Option 67* - I/O Interface Controller (8-bit parallel)
- . Option 103 - Additional Minidiskette Drive
- . Option 105*- Disk Multiplexer
- . All 2200 Series printers currently available

* These options are mutually exclusive.

COMPETITION

The Table appearing on the following pages provides a comparison of the PCS-III with our major competitors. This information is designed to give an insight into the positioning of our new product.

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Product Specifications -- Wang PCS-III and Competing Systems

	Wang PCS-III	Qantel 210	Texas Instruments DS 990 Mod I	Datapoint 1500	IBM 5120
<u>Memory (bytes)</u>	32K (user)	16-32K (user)	64K	32-60K (user)	16-64K
<u>Storage</u>					
<u>Type</u>	Minidiskettes; disk multiplexing	DSDD diskettes	DSDD diskettes	Diskettes	DSDD diskettes
<u>Capacity</u>	286K + multiplexed disk option	1.3 - 2.6 MB	2.4 - 4.8 MB	500K - 1 MB	2.4 - 4.8 MB
<u>Other Peripherals</u>	Plotter, instrument interface				
<u>Printers</u>	30-200 cps; 220-600 lpm	45 cps; 50, 300 lpm	30 cps thermal; 150 cps	80, 160 cps	80, 120 cps
<u>Languages</u>	BASIC	BASIC	BASIC, Fortran	Databus	BASIC, APL
<u>Communications</u>	2780/3780, 2741, TTY	BSC, asynchronous	2780/3780, TTY	2780/3780, 3275, TTY	2770, 3741, 2741
<u>Price</u>	\$10,400 (32K 2 DSDD diskettes 120 cps printer)	\$18,350 (32K, 2 DSDD diskettes, 50 lpm printer)	\$13,595 (64K, 2 DSDD diskettes, 150 cps printer)	\$9,700 (32K, 2 DSDD diskettes, 120 cps printer)	\$13,015 (32K, 2 DSDD diskettes, 120 cps printer)

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PRODUCT BULLETIN

NO.187

Product Specifications -- Wang PCS-III and Competing Systems (continued)

	Wang PCS-II	Durango F-85	Hewlett Packard 9835	Digital Equipment Co. DEC Station 78	Datascystem 150
<u>Memory (bytes)</u>	32K (user)	12-28K (user)	64-256K (user)	48K	32-60K
<u>Storage</u>					
<u>Type</u>	Minidiskettes; disk multiplexing	Minidiskettes; fixed disk	1-2 diskettes; cartridge tape	1-2 diskettes	1-2 diskettes
<u>Capacity</u>	286K + multiplexed disk option	473K - 3.78M dis- kettes; 10-20 MB hard disk	1 MB + cartridge	384-768K	500K
<u>Other Peripherals</u>	Plotter, instrument interface		Paper tape, card reader, plotter, digitizer, instru- ment interface		
<u>Printers</u>	30-200 cps; 220-600 lpm	165 cps	30 cps; 480 lpm thermal	45, 180 cps; 300 lpm	180 cps
<u>Languages</u>	BASIC	BASIC	BASIC	BASIC, Fortran	Dibol
<u>Communications</u>	2780/3780, 2741, TTY	2780/3780, asynchronous	Asynchronous	2780/3780, asynchronous	2780, asynchronous
<u>Price</u>	\$10,400 (32K 2 SDD diskettes 120 cps printer)	\$13,385 (28K user memory, 2 diskettes, 165 cps printer)	\$17,450 (64K, 2 500K diskettes, 30 cps printer)	\$11,295 (48K, diskettes, 180 cps printer)	\$10,900 (32K, 2 diskettes, 180 cps printer)

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PCS-III Specifications

Unit Size

Height 18.8 in. (47.7 cm)
Depth 20.5 in. (52.1 cm)
Width 19.8 in. (50.3 cm)

Weight

62 lb. (28.2 kg)

CRT

Size 9.0 in. (22.9 cm) diagonal measure
Capacity Capacity
Standard 16 lines, 64 characters/line
Optional 24 lines, 80 characters/line

Character Size

Height 0.125 in. (0.32 cm)
Width 0.125 in. (0.32 cm)

Keyboard

Upper/lowercase BASIC/alphanumeric with full-typewriter, full numeric pad, mathematical function keys, arithmetic operators, 16 Special Function keys, Edit keys, on/off switch, central processor busy light, upper/lowercase light.

Minidiskette Drive

Tracks 35
Sectors/Track 16
Total Sectors 560
Bytes/Sector 256
Total Bytes 143,360
Average Access Time 180 ms
Average Latency Time 100 ms
Speed 300 rpm
Transfer Rate 250 kilobits/sec (31,250 bytes/sec)

Minidiskette

5.25 in. (13.3 cm) diameter with write-protect notch

Operating Environment

Relative Humidity
35% to 65% noncondensing (recommended)
20% to 80% noncondensing (allowable)

Temperature

° ° ° °
50 to 90 F (10 to 32 C)

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PCS-III Product Statistics

Model Number: PCS-III-8
Release Date: April 21, 1980
Availability: August 1, 1980
Classification: Mechanical
Warranty: Standard
Commission: 5%

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MARKETING RELEASE

WORD PROCESSING SYSTEMS

TO DISTRIBUTION	PUBLICATION #
FROM TINA CASTEN - 2200 SYSTEMS MARKETING	DATE APRIL 1980
SUBJECT PCS-III	DISTRIBUTION
SRM FILE #	REORDER FROM:
THIS RELEASE SUPERSEDES:	DESTROY SUPERSEDED INFORMATION <input type="checkbox"/> YES <input type="checkbox"/> NO

WANG'S PCS-II GROWS UP!!

The PCS-III represents the latest in advanced technological design, compactly packaged in a single, desktop unit, powerful enough to meet the specialized needs of the most demanding user.

Advanced technological design features include one single-sided, double-density mini diskette drive (standard) or two single-sided, double-density mini diskette drives (optional) for increased storage capacity and an enhanced disk processing unit for faster access to data and programs.

Benefits to the Sales Force

The addition of the PCS-III to the 2200 product line places you, the Wang salesperson, in a position unique to the industry.

No other vendor offers its sales force a family of computers which span the spectrum of the 2200 series in comparable price and performance.

Supported by the 2200 product line, you have something for everyone.

What Can the PCS-III Do for You?

The PCS-III can:

- Increase your penetration of the small business computer market.
- Initiate your penetration of the major account market.
- Reactivate your penetration of the scientific/engineering market.
- Enhance your penetration of the computer services market.

Market Position

The PCS-III reinforces Wang's commitment to the small business computer market, the major account market, the scientific/engineering market, and the computer services (vendor/system house) market.

According to International Data Corporation, expansion of the data processing industry will occur into smaller and smaller businesses and organizations as technology makes available functional computer systems at ever-decreasing costs.

As a result of this expansion, the demand for functional data processing systems is expected to increase 78% by the year 1983. In terms of units, this 78% increase in demand represents well over a million units installed worldwide by 1983.

What is interesting to note, however, is that of those million plus units, 68% will be small business computers.

Maintaining its current share of the 2200 product mix, the PCS-III represents roughly 20,000 units sold and installed worldwide by 1983.

???How Can the PCS-III Help???

- . Increase your penetration of the small business computer market.

The PCS-III provides the first-time user synonymous with the small business computer market with a powerful, portable, processor dedicated to a specific task.

Leveraged as a "solution sell" capitalizing on vendor supplied, supported, and installed software, the PCS-III will further enhance your sales in both vertical (retail, insurance, F&I) and horizontal (general accounting) markets.

Benefit to you - a shorter sales cycle returning dividends with decreased costly hand-holding and support.

Benefit to user - a managerial aid to managers of small businesses or organizations increasing their performance and productivity by providing them with current, easily accessible data by reducing the time and activity required to collect, absorb, and disseminate information.

- . Initiate your penetration of the major account market.

Today, major accounts are characterized by a recent trend to disperse their data processing activities functionally by task, geographically, by site, and organizationally by department.

This dispersion can take the form of a distributed or a decentralized function.

The PCS-III, equipped with multiplexing and communications options provides the major account with a powerful, cost-effective replacement for non-intelligent data capture devices in a distributed environment.

The PCS-III can also perform in a decentralized environment as a standalone processor dedicated to a specific task unique to a particular department.

Benefit to you - the unique position of being able to propose a Wang product to all facets of a major account.

Benefit to user - increased control over functional data processing operations and increased productivity in geographically or organizationally dispersed sites with the ability to access a single data base.

. Reactivate your penetration of the scientific/engineering market.

The PCS-III programmed on Wang's BASIC language which supports extensive mathematical functions is ideally suited for the problem-solving requirements of the scientific/engineering market.

Equipped with optional interface controllers supporting a wide range of peripheral and instrument devices, the PCS-III can collect and process data and monitor sensitive laboratory equipment.

Benefit to you - the PCS-III provides you with a system solution to the requirements of research, engineering, and medical laboratories. A high performance, cost-effective alternative to service bureaus.

Benefit to users - more time to analyze and interpret data, immediate feedback of critical test results or calculations, and the ability to transport that power wherever it is required.

. Enhance your penetration of the computer services market.

The computer services market (vendors and system houses) is projected to grow at a rate proportionate to the small business computer market.

The addition of the PCS-III to the 2200 family offers vendors and system houses a complete line of computer products, positioned in all segments of the market that are available from a single source.

In addition, the PCS-III offers current Wang vendors an enhanced price/performance replacement for the PCS-II, IIA, T, and WCS-15.

Benefit to you - broadens your vendor base maximizing your selling time and effort.

Benefit to vendors - full product range, service and support from single source vendor enhancing vendor's offering of complete system solutions in vertical/horizontal markets of expertise.

PCS-III Feature

In addition to a T-based processor, the PCS-III features:

- A nine-inch CRT with a 1024 (64X16) character display capacity (standard) or a 1920 (80 x 24) character capacity (optional).
- A typewriter keyboard, with a numeric keypad and Special Function Keys for simplified data entry and program control.
- A minidiskette drive for high speed, random access data storage operations.
- A printer/plotter connector.
- An optional disk multiplexer controller for interface to additional 2200 series disk drives (except the model 2280).
- An optional micoprocessor-based communications controller or an instrumentation interface controller.

PCS-III Q & A

1. Q - Is 32K the only memory configuration available on the PCS-III?
A - Yes, the PCS-III is restricted to 32K bytes of user memory.
2. Q - Does the PCS-III support all 2200 series printers currently available?
A - Yes.
3. Q - If I have the disk multiplexer option 105 on the PCS-III, how many printers can I have?
A - The PCS-III has two connectors available for printers and plotters. However, when the multiplexing option is installed on the PCS-III, only one printer can be connected.
4. Q - Equipped with the multiplexing option, can the PCS-III access a 2280 disk drive?
A - No. The PCS-III can only access either a Model 2260B or a Model 2260BC fixed/removable disk drive.
5. Q - Is software developed on the PCS-II or IIA transferable to the PCS-III?
A - Software developed on the PCS-II and IIA is transferable but not transportable to the PCS-III. The minidiskette drives are not compatible. To transfer software, use the disk multiplexing option 105 to copy PCS-II and IIA software to PCS-III single-sided, double-density diskettes.
6. Q - What is the storage capacity of the minidiskette?
A - Each single-sided, double-density minidiskette holds 140K bytes of information.

Documentation

PCS-III Data Sheet 700-5916
PCS-III Product Bulletin
PCS-III Sales Strategy

Pricing and Sample Configurations

1. 32K CPU with Single Minidiskette Drive	\$6,500
2231-W-1 Matrix Printer	<u>2,900</u>
	\$9,400
2. 32K CPU with Single Minidiskette Drive	\$6,500
Additional Minidiskette	1,000
2231W-1 Matrix Printer	2,900
Op-62	750
Multiplexer Controller	<u>200</u>
	\$11,350



WORD PROCESSING SYSTEMS

TO	DISTRIBUTION	PUBLICATION #		
FROM	TINA CASTEN - 2200 SYSTEMS MARKETING	DATE APRIL 1980		
SUBJECT	PCS-III SELLING STRATEGY	DISTRIBUTION		
SRM FILE #	<table border="1"> <tr> <td>COM</td> <td>SUB</td> </tr> </table>	COM	SUB	REORDER FROM:
COM	SUB			
THIS RELEASE SUPERSEDES:		DESTROY SUPERSEDED INFORMATION <input type="checkbox"/> YES <input type="checkbox"/> NO		

Wang's PCS-III can:

- Help you achieve higher quotas.
- Increase your penetration of the small business computer market.
- Initiate your penetration of the major account market.
- Reactivate your penetration of the scientific/engineering market.
- Enhance your penetration of the computer services market.

The formula?

PRODUCT (PCS-III) + STRATEGY (SYSTEM SELLING) = Success.

By applying this formula you are guaranteed of success.

You've got the product, the PCS-III, compactly packaged in a single desktop unit, powerful enough to meet the specialized needs of the most demanding user with a price/performance ratio unparalleled in the industry. You've got the company - Wang - offering single source responsibility for service and support. You've got the solution - software - developed and installed by a network of highly qualified, industry specialized vendors.

All you need is the STRATEGY!!

Today's selling climate is charged with the sophistication of today's prospects, the competitiveness of today's products, and the potential of today's market.

Today's sales force must adapt its selling strategies to accommodate today's climate.

Q. Why?

A. In order to be successful.

Let's look at the facts:

First, the sophistication of today's prospects. Today, prospects are evaluating computer systems in relation to the total needs of their business environment. Planning the data processing work load and optimizing its processing is becoming one of the most important activities in the management of an automated office.

Yesterday, you were successful selling products. As a seller of products, the only requirements were knowledge of the product, its technology, its cost, and the customer's specifications and purchasing preference.

Today, in order to be successful, you must be a seller of systems. Let's define systems. A system is a way of selling a product. It is not simply the product that is for sale, but the profit improving effect of the system that contains the product that is offered for sale. To sell systems, you must know a good deal more about a customer's business. To meet today's customers' demands for a solution to the total needs of their business environment, you must know where the major cost centers are that the system you propose will affect.

You need to know customer costs so that the customer profit can be increased as a direct result of reducing these costs with a system.

That is the critical difference in today's selling climate.

The second reason to sell systems is the competitiveness of today's products.

Products are undergoing increased standardization. Hardware and software are imitated by competitors, depriving you of product differentiation as a selling edge.

With the systems sales approach, you become identified with profit improvement rather than with products.

As a systems seller, you present your product as the optimal solution in cost-benefit terms that will solve a problem. This separates you from the competition without even mentioning product. Selling systems as a solution is your new selling edge.

The third reason to sell systems is the potential of today's market. Translated, this means higher quotas.

Selling systems helps you meet those higher quotas because, for one thing, there is the opportunity to make a larger sale because there is more to sell.

With system selling, you acquire a far more interesting and profitable job.

Q. How do I sell "systems" with a PCS-III?

A. Via a system strategy comprised of market selection and prospect source.

Preparation for systems selling begins with identification of the key customer accounts who are the best prospects for systems.

By definition, a key account is a principal source of profitable sales revenues.

In developing a sales strategy for the PCS-III, consideration must be given to your quota, your time.

Since quotas and time are major considerations, your PCS-III sales strategy must involve an account that will contribute the maximum amount to your PCS-III sales volume with the minimum amount of your time.

In order to meet this criteria, this account must be able to install the product (PCS-III), add to it, and expand the utilization of it on a consistent, long-term basis.

What type of account meets this criteria?

An established vendor with a stable work force, both sales and systems, who has expertise in one or more vertical markets.

An active "key" account of this type will generate revenues for you with minimum demands on your time.

What is your level of involvement with this "key" account?

Based on your knowledge of the area and selling climate, you select the markets for penetration and educate your "key" account on the applicability of your product in that market.

In addition, you aid your "key" account in finding potential buyers by conducting prospect seminars attended by at least thirty prospects from a selected market requiring a specific solution to a shared problem.

For example: The Small Business Computer Market and the PCS-III.

The PCS-III provides the first-time user, synonymous with small business computers, with a powerful, portable processor dedicated to a specific task. Leveraged as a "solution seller" capitalizing on vendor supplied, supported, and installed software the PCS-III is applicable to both vertical (retail, insurance F&I) and horizontal (general accounting) markets.

Sales Strategy

- A managerial aid - the PCS-III aids managers in their informational role by reducing the time and activities required to collect, absorb, and disseminate information. EASYFORM, a software solution available on the PCS-III, provides data entry, inquiry, and response capabilities.

High speed, random access, low-cost magnetic storage provided by removable single-sided, double-density minidiskettes offer the manager of a small business immediate access to critical data and the ability to maintain that data simply and conveniently. Benefits to the managers of small businesses or organizations include increased performance and productivity in their leadership and decision-making roles by providing them with current, easily accessible data, and increased profit through the availability of timely data.

The Major Account Market and the PCS-III

The PCS-III equipped with multiplexing and communications options provides the major account with a powerful, cost-effective replacement for nonintelligent data capture devices.

Sales Strategy

- . A dedicated processor - the PCS-III provides larger corporations or organizations with a single, stand-alone processor dedicated to a specific operation within a department. Benefits include increased control over functional data processing operations.
- . A cluster of intelligent terminals - up to three PCS-III's can access a single data base and provide the ability to communicate with the company's host computer system for disbursed data entry. Equipped with the Option 62B communications controller, the PCS-III can emulate the protocols of IBM 2780, 3780, or 3741 with multi-record blocking and automatic retransmission with complete transparency to the user. Benefits include the ability to provide small remote sites with economical, convenient, high-level systems to maximize net productivity.

The Scientific/Engineering Market and the PCS-III

The PCS-III equipped with an interface controller provides the scientist, lab technician, and engineer with the ability to collect test data, perform calculations, and monitor test equipment.

Sales Strategy

- . An instrument monitor - the PCS-III supports industry-standard RS-232-C and IEEE-488 to interface with a wide range of peripheral (digitizers, plotters, tape drives) and laboratory instrument devices.
- . A number cruncher - the PCS-III's average execution time of an add/subtract operation is 0.8 milliseconds using random number arguments with 13 digits of precision.
- . A desktop problem solver - the PCS-III programmed in an enhanced version of BASIC, the language preferred by the scientific/engineering communities, performs tedious, complex calculations in seconds at either local or remote sites.

Benefits include available statistical and mathematical software packages and the ability to transport this processing power to wherever it is required.

The key to successful implementation of systems selling with the PCS-III is your "key" account.

The 2200 Systems Marketing group offers a vendor recruitment seminar developed by Charles Magliato, a most welcomed new addition to our staff.

We can provide you with the support you need to be successful in today's selling climate.

Let's hear from you.

Good luck and happy "Selling Systems."

Computers

TO Distribution	PUBLICATION #
FROM Tina Casten - 2200 Systems Marketing	DATE April 1980
SUBJECT PCS-III Competitive Comparisons	REORDER FROM:
THIS RELEASE SUPERSEDES:	DESTROY SUPERSEDED INFORMATION <input type="checkbox"/> YES <input type="checkbox"/> NO

Contained on the following pages are seven competitive comparisons prepared by Barbara Mende and Wendy White of our Competitive Analysis Department.

The purpose of these comparisons is to provide you with current, accurate, "inside" information to best leverage yourself, your company and your product, the PCS-III, in any sales situation.

This information is organized by company profile, product line overview, competitive model, marketing strategies (their's and our's), comparative specifications and selling knock-offs.

We chose Datapoint's 1500, Digital Equipment Company's DECstation 78 and Datasystem 150, Durango's F-85, Hewlett-Packard's 9835, IBM's 5120, Qantel's 210 and Texas Instrument's DS990 Mod 1 for two reasons.

One, they provide a geographically dispersed representation (a competitor's strength varies with location) and two, their products are similarly packaged and priced.

After review of all seven, not only does the PCS-III offer a better price/performance ratio (Datapoint comes closest in price, Texas Instrument's, in performance) it also conveys a better image.

The PCS-III's ability to interface with the rest of the 2200 family via the disk multiplexor option, its wide range of communications and peripheral support and its strong and diversified following established by its predecessors the PCS-II and IIA, project the PCS-III as an enhancement to a growing, proven family of computer products, rather than a novel reaction to market pressure.

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DATAPOINT

Corporate Abstract

Revenues 1979: \$232M
No. Employees: 5,066

Originally a terminal supplier, Datapoint has realized a revenue growth of \$47M in 1976 to \$232M in 1979. Their growth can be attributed to various configurations that stem from basically one product: a small computer/intelligent terminal.

Marketing Organization

. locations: 51 major U.S. cities

Due to a weakness in "people management" within the organization, they have had frequent personnel changes in the sales force.

Product line

Datapoint CPU's, from the 1500 desktop to the 6600 which allegedly supports 24 users on 256K memory, are small and low-powered. A Datapoint user who wants to expand can acquire an ARC, a high-speed coax network of small "file" and "application" processors which can share files (an extension of what Wang calls disk multiplexing). Every Datapoint CPU except the 1500 can attach to an ARC.

The 1500

It has one outstanding feature: the price is the lowest anywhere, although we come close. The other frill is Datapoint's so-called word processing package. That's it. The 1500 shares the slow performance and proprietary language with the other systems; it lacks their choice of peripherals, ARC compatibility and standard compilers.

Marketing Strategies

- . 92% of U.S sales are to end users.
- . Concentrate on major accounts.
- . Lack of success in the small business market has led to a lack of commitment to their end users.
- . The lease rather than the sale has been encouraged.
- . Heavy discounting - the pitch is the price for quantity rather than the price for quality.

Wang's Strategy

- . Financing options: purchase, lease or rental.
- . Optimum price/performance.
- . The PCS-III can spiral from the first-time user to the sophisticated larger account - and still offer simplicity and ease of use.
- . The PCS-III can cross virtually all company size boundaries and provide continuous sales and service commitment to the end user.

Comparative Specifications

	1500	PCS-III
Memory (bytes)	32-60K (user)	32K (user)
Storage Type	diskettes	minidiskettes + disk multiplexing
Capacity	500K - 1 MB	286K + multiplexed disk option
Other peripherals		plotter, instrument interface
Printers	80, 160 cps	30-200 cps; 220-600 lpm
Languages	Databus	Basic
Communications	2780/3780, 3275, TTY	2780/3780, 2741, TTY
Price:	\$9,700 (32K, 2 DSDD diskettes, 120 cps printer)	\$10,400 (32K, 2 SSDD diskettes, 120 cps printer)

PCS-III vs. the 1500

- . Higher performance
- . Industry standard language
- . More application software available
- . Line printers available
- . Disk multiplexing capability
- . More versatile

DIGITAL EQUIPMENT CORPORATION

Corporate Abstract

Revenues 1979: \$1.8B
No. Employees: 13,000 (U.S.)

DEC, the largest minicomputer manufacturer: \$1.8B revenues in 1979 and still growing. Presumably, their growing pains will be familiar to our prospects: long lead times, slipped deliveries, unacknowledged orders, lack of software support, and the vanishing customer engineers.

Marketing Organization

No. Employees: 2,450 (U.S. Sales)

- . Their marketing umbrella includes several sales organizations who sell varying configurations of the same product.
- . OEM company
- . Dealer network - often competing with each other and DEC itself.
- . Expanding in company-owned retail stores.

A new program of "authorized" distributors has begun in response to the uneven quality of support. There may be some disruption in the ranks before it's in place.

Product line

You name it, DEC makes it. It has many products and many divisions, and the dividing lines are not always clear. Two divisions may sell the same box under two different labels (see the Datastem 150 below). A rough cut of the computer line:

- . PDP-11 bread-and-butter mini, which comes in many sizes; and its predecessor the PDP-8.
- . LSI-11 microprocessors, also in several sizes.
- . Big machines: the VAX supermini and timesharing DECsystems.
- . Datasystems - packaged configurations of the various minis, tied together by their own operating system and the "DIBOL" language.
- . Terminals; word processing; scientific and commercial desktops.

Desktop products

They come in many flavors. The DECstation 78 and the Datastem 150 featured here are common commercial packages. The WD 78 found in retail stores is a DECstation lookalike with a word processing package, based on a PDP-8. DECstations also come in 88's, with a hard disk and slave terminals. The Datastem 150 (LSI-11 based) is found in other settings as a PDT-11/50 terminal. There's a new variant in the stores, too - the Datastem 408. Another popular DEC desktop is the MINC, designed for engineering use. You can't tell the players without a scorecard.

Marketing Strategy

- . Sell to small/medium accounts
- . DEC prefers to sell through third parties, who handle most of the support.
- . Datasystems, in particular, are generally marketed indirectly. The OEM provides all the application software.
- . Desktops also marketed through company retail stores, which try to sell them with packaged software.

Wang's Strategy

- . Sell to small, medium and large accounts.
- . Strong service support organization.
- . Wang and vendor expertise in end-user support.

Wang cares. We sell total systems and don't forget our customers after the sale.

Comparative Specifications

	DECstation 78	Datasystem 150	PCS-III
Memory (bytes)	48K	32-60K	32K (user)
Storage Type	1-2 diskettes	1-2 diskettes	minidiskettes + disk multiplexing
Capacity	384-768K	500K	286K + multiplexed disk option
Other peripherals			plotter, instrument interface
Printers	45, 180 cps; 300 lpm	180 cps	30-200 cps; 220-600 lpm
Languages	Basic, Fortran	Dibol	Basic
Communications	2780/3780, async	2780, async	2780/3780, 2741, TTY
Price:	\$11,295 (48K, diskette, 180 cps printer)	\$10,900 (32K, 2 diskettes, 180 cps printer)	\$10,400 (32K, 2 SSDD Diskettes, 120 cps printer)

PCS-III vs. the DECstations

- . Higher performance
- . Part of a family; upward growth path
- . More printers and peripherals available
- . Disk multiplexing capability

PCS-III vs. the Datasystem 150

- . Industry standard language
- . Easier to program
- . Full line of printers
- . Disk multiplexing capability
- . More versatile

DURANGO

Corporate Abstract

Durango is a privately held company. Deliveries began in June, 1978 with 1,000 units sold to date.

Marketing Organization

- . Quota for sales people is one unit per month.
- . Half of the software is done in-house, the other half is modified to meet customer's needs.
- . Direct sales thru dealers.

Product line

The F-85, not to be confused with the airplane of the same name, is it.

The F-85

An unusual and probably inflexible design for a desktop computer: the printer is integral with the keyboard (like a typewriter) and the screen's detached. It's a fairly good performer; it can support 4 additional CRT's and a hard disk; but it's still tied to the printer - and it's still the whole product line.

Marketing Strategy

- . Units are sold off the shelf.
- . Sell to wholesale distributors.
- . Software package available to independent insurance agents.

Wang's Strategy

- . Established industry reputation.
- . Sell to end-user.
- . Vendor support network
- . Full service organization

Wang has solid experience with small and large users. As a full service organization, we can assure the first-time user of continued support and upward mobility to meet any future equipment needs.

Comparative Specifications

	F-85	PCS-III
Memory (bytes)	12-28K (user)	32K (user)
Storage Type	minidiskettes fixed disk	minidiskettes + disk multiplexing
Capacity	473K - 3.78M diskettes; 10-20 MB hard disk	286K + multiplexed disk option
Other peripherals		plotter, instrument interface
Printers	165 cps	30-200 cps; 220-600 lpm
Languages	Basic	Basic
Communications	2780/3780, async	2780/3780, 2741, TTY
Price:	\$13,385 (28K user memory, 2 dis- kettes, 165 cps printer)	\$10,400 (32K, 2 SSDD diskettes, 120 cps printer)

PCS-III vs. the F-85

- . Part of a family; upward growth path
- . More application software available
- . Line printers available
- . More versatile

HEWLETT-PACKARD

Corporate Abstract

Revenues 1979:

\$2B

H-P is best known as an instrument company, however almost half of its \$2B revenues are minicomputer-related.

Marketing Organization

- . Recently organized a third-party marketing group to sell to OEM's.
- . New users will find little application software and an organization unfamiliar with supporting them.
- . New to small business market.
- . Engineering oriented.

Product line

H-P is probably the company whose product line is the closest match to ours. Its computer families are:

- . HP 3000 - large interactive commercial minis, VS competitors.
- . HP 1000 - the scientific processor family.
- . HP 250 and HP 300 - small business systems.
- . The 98xx (Systems 35 and 45) family of number-crunching desktops.

The 98xx line

Systems 35 and 45 are the current models of this established series of desktops. Like ours, they use a firmware BASIC interpreter. Their natural habitat has been the lab and the engineering department, so their power and much of their software are geared to number-crunching. They can attach many kinds of peripherals, including a hard disk in the case of the 45, but they can't be clustered and aren't compatible with other HP products.

Marketing Strategy

- . Traditionally sells to technical end users in large companies.
- . H-P 98 targeted mainly to labs and scientific users, although some business software is offered.
- . Trying to establish image of "friendliness."
- . Sold with specialized hardware and software features.

Until recently, its marketing thrust has been toward engineering and plant-floor applications. H-P has not been successful in penetrating the OEM market, thus the need to revamp their third-party marketing group.

Wang's Strategy

- . Proven success with the small user- first-time or distributed.
- . Wang systems have always been "friendly" and price/performance is an added bonus.
- . Address a wider range of applications, including scientific/technical community.
- . H-P's level of support is no match for ours.
- . Solid vendor network and software compatible.

The PCS-III should be able to cross most vertical market boundaries since Wang has not attempted to get locked into any one specific area. Sell the performance - stress our service - and a lot more at a better price.

Comparative Specifications

	9835	PCS-III
Memory (bytes)	64-256K (user)	32K (user)
Storage Type	1-2 diskettes, cartridge tape	minidiskettes + disk multiplexing
Capacity	1 MB + cartridge	286K + multiplexed disk option
Other peripherals	paper tape, card reader, plotter, digitizer, instrument interface	plotter, instrument interface
Printers	30 cps; 480 lpm thermal	30-200 cps; 220-600 lpm
Languages	Basic	Basic
Communications	async	2780/3780, 2741, TTY
Price:	\$17,450 (64K, 2 500K diskettes, 30 cps printer)	\$10,400 (32K, 2 SSDD diskettes 120 cps printer)

PCS-III vs. the 98xx series

- . Part of a family; upward growth path
- . More commercial software available
- . Full line of printers available
- . Disk multiplexing capability
- . More cost-effective
- . More versatile

IBM GENERAL SYSTEMS DIVISION

Corporate Abstract

Revenues 1979: \$21B (IBM total)

Marketing Organization

- . 5120: Sold through IBM retail outlets as off-the-shelf products. GSD sales force is also selling this product on the street. A "Hot Line" number is available to call for hardware and software questions.

Lack of unified support and cohesiveness with the new product offerings reflects the "musical chairs" movement among divisions.

Product line

Formerly products for small and medium users, now getting to be a grab-bag:

- . System/3 - IBM's largest selling computer ever, now near the end of the line.
- . System/32 and System/34 small business computers (S/32 fading, too).
- . System/38, the big one, not yet installed.
- . Series/1, the plain vanilla mini.
- . The 5520, GSD's entry into the automated office.
- . The 5280 intelligent terminal.
- . The 5120 desktop (replacing the 5110).

The 5120

A 5110 without the old 5110's most glaring faults: the small screen and the high price. IBM is trying to catch up. The screen is still limited to 1024 characters, but you can see them now. There's no growth path for this product; in typical GSD style, it has no compatibility with any of the larger systems.

Marketing Strategy

- . 5120: Selling on price.
- . Selling this as a new product.
- Heavy consumer advertising on local radio stations.

Wang's Strategy

- . The PCS-III is a full service, cost effective system in contrast to the partial solution offered by the 5120.
- . Sell first-time and DDP user with growth path.
- . Provides reputable support and service to all users regardless of the product line sold.

Wang has coordinated marketing efforts to support all levels of sales.

Comparative Specifications

	5120	PCS-III
Memory (bytes)	16-64K	32K (user)
Storage Type	DSDD diskettes	minidiskettes + disk multiplexing
Capacity	2.4 - 4.8MB	286K + multiplexed disk option
Other peripherals		plotter, instrument interface
Printers	80, 120 cps	30-200 cps; 220-600 lpm
Languages	Basic, APL	Basic
Communications	2770, 3741, 2741	2780/3780, 2741, TTY
Price:	\$13,015 (32K, 2 DSDD diskettes, 120 cps printer)	\$10,400 (32K, 2 SSDD diskettes, 120 cps printer)

PCS-III vs. the 5120

- . Part of a family; growth path available
- . Line printers available
- . 1920-character screen option
- . Disk multiplexing capability
- . More versatile

QANTEL

Corporate Abstract

Qantel is a privately held company which has only achieved profitability in recent years.

Marketing Organization

- . Relies heavily upon dealer organization.
- . Most of the software is dealer developed.

Product line

Three lines of BASIC-language small business systems: the 210 desktop, the 900 series and the 1400's. They run the full range in memory, disk storage, etc., but are uniformly slow: the speed quoted for the "high speed processor" isn't too swift. Qantel's products are hard to track; a product may be announced and then drop out of sight (example: a WP package).

The 210

The entry-level system - and it's quite a jump from there to the larger hard-disk systems.

Marketing Strategy

- . Sell to small business
- . Primary applications: accounting, payroll, inventory control
- . Support is negligible
- . Sell features that have yet to reach fruition, i.e. word processing

Wang's Strategy

- . Established industry reputation
- . Sell to end-user - any size account
- . Vendor support network
- . Full service organization

Wang has the solution to meet virtually all business needs; not just today, but for tomorrow too.

Comparative Specifications

	210	PCS-III
Memory (bytes)	16-32K (user)	32K (user)
Storage Type	DSDD diskettes	minidiskettes + disk multiplexing
Capacity	1.3 - 2.6MB	286K + multiplexed disk option
Other peripherals		plotter, instrument interface
Printers	45 cps; 50, 300 lpm	30-200 cps; 220-600 lpm
Languages	Basic	Basic
Communications	BSC, async	2780/3780, 2741, TTY
Price:	\$18,350 (32K, 2 DSDD diskettes, 50 lpm printer)	\$10,400 (32K, 2 SSDD diskettes, 120 cps printer)

PCS-III vs. the 210

- . Higher performance
- . More cost-effective
- . Disk multiplexing capability
- . Wider choice of printers and peripherals
- . More versatile

TEXAS INSTRUMENTS

Corporate Abstract

Revenues 1979: \$3.2B

Besides processors, the well known semiconductor giant's product lines include a wide line of printing terminals and the DS 990 and FS 990 small computer series.

Marketing Organization

- . Large supplier of OEM printers and printing terminals.
- . Due to difficulties with OEM's, they are now on campaign to recruit a dealer network.
- . Sales locations have been selected at random.
- . Support, previously geared to terminal servicing, is being strengthened.
- . DS 990 Mod 1 sometimes seen in computer stores.
- . In-house development of system software, including programming aids, is another thrust.

At this stage of market development, application software and support are only as good as the dealer of OEM - and it's not likely to be abundant.

Product line

Most of TI's packaged computers and intelligent CRT's have been consolidated into the DS 990 line. They use the 990 and 9900 minis that TI formerly offered at board level. The line slices roughly into three parts:

- . DS 990 Models 1 and 2 - small, inexpensive, microprocessor-based, OEM-oriented; limited in software and peripheral support.
 - . 990/10 based systems - a range of languages, user aids and peripherals; can support 8 terminals in a pinch.
 - . 990/12 based systems - cache, more processor power, more storage.
- There's some upward compatibility through the line.

The DS 990 Model I

A close relative of the 770 intelligent CRT's, it's based on the 9900 microprocessor, the baby of the TI family. There's some upward compatibility, but the package that comes with Model 1 is a small one.

Marketing Strategy

- . TI is relatively new to the commercial market
- . Sell on low price, but
- . Maintenance pricing is unusually high.

Wang's Strategy

- . Strong service organization.
- . Sell direct to end users.
- . PCS-III provides greater flexibility and expandability.

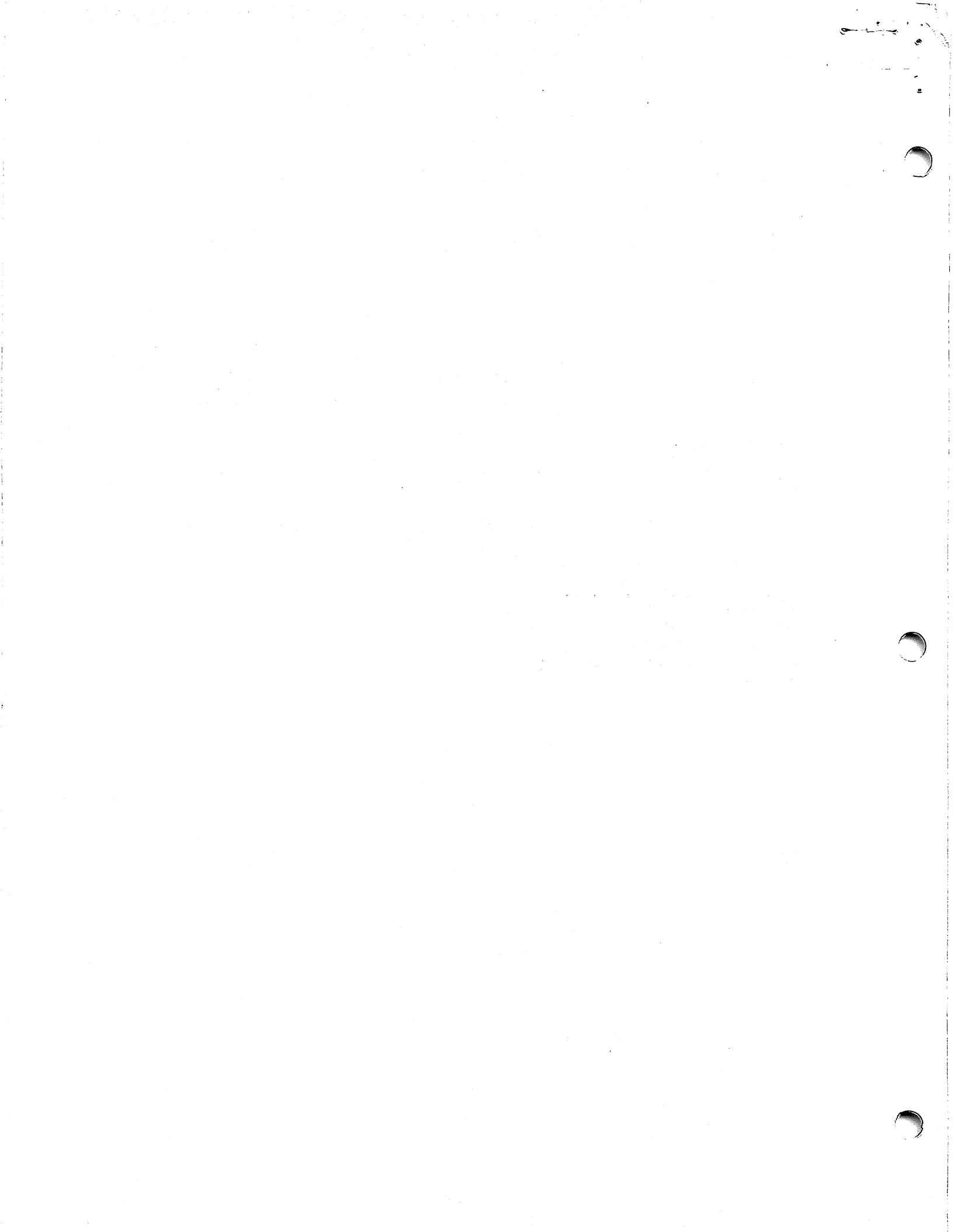
Wang has established itself successfully selling to the first-time user and major accounts.

Comparative Specifications

	DS 990 Mod I	PCS-III
Memory (bytes)	64K	32K (user)
Storage Type	DSDD diskettes	minidiskettes + disk multiplexing
Capacity	2.4 - 4.8MB	286K + multiplexed disk option
Other peripherals		plotter, instrument interface
Printers	30 cps thermal; 150 cps	30-200 cps; 220-600 lpm
Languages	Basic, Fortran	Basic
Communications	2780/3780, TTY	2780/3780, 2741, TTY
Price:	\$13,595 (64K, 2 DSDD diskettes, 150 cps printer)	\$10,400 (32K, 2 SSDD diskettes, 120 cps printer)

PCS-III vs. the DS 990 Mod 1

- . Higher performance
- . More cost-effective
- . Line printers available
- . Disk multiplexing capability
- . More versatile



Documentation

PCS-III Data Sheet 700-5916
PCS-III Product Bulletin
PCS-III Sales Strategy

Pricing and Sample Configurations

1. 32K CPU with Single Minidiskette Drive	\$6,500
2231-W-1 Matrix Printer	<u>2,900</u>
	\$9,400
2. 32K CPU with Single Minidiskette Drive	\$6,500
Additional Minidiskette	1,000
2231W-1 Matrix Printer	2,900
Op-62	750
Multiplexer Controller	<u>200</u>
	\$11,350

