

SPERRY UNIVAC UTS 400 Text Editor Marketing Guide

Company Confidential-C

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INTRODUCTION

1 INTRODUCTION

Sperry Rand Corporation has a long history of diversification in the manufacture of a wide range of products spanning consumer, agricultural, industrial, commercial, and government, markets. It is significant that many of these products, and other corporate activities, demand a high degree of expertise in a broad spectrum of demanding technology. The prominence of Sperry Univac within the high technology oriented corporate family of Sperry Rand is additionally significant.

The extreme flexibility of the computer products manufactured and marketed by Sperry Univac has naturally resulted in a wide application of this equipment in the business, professional, and government, communities. Employing technical expertise typical of the corporate capability, Sperry Univac continuously extends the utilization of computers into new, and increasingly complex, application areas. The broadening experience in the use of computer equipment has bred an understanding and appreciation of the capabilities represented far outside the professional data processing field, creating a demand for highly developed, specialized applications.

The development of real-time computer systems employing communications terminals as the user interface to the system has intensified both the demand and technical requirements for specialized industry oriented requirements. Increasingly, the emphasis in system design is shifting from data processing orientation to industry orientation; necessitating the development of specialized marketing capabilities to satisfy the requirements of industry.

Current trends have resulted in the development by Sperry Univac of complex application software in response to the needs of identified industry markets that Sperry Univac is committed to serve. Experience gained in this activity has indicated the need for specialized products to optimize system design, performance, effectiveness.

The commitment of Sperry Univac to the Printing and Publishing markets has led to the development of software designed to provide this market with production systems capable of capturing text information for publication, accessing the stored text for modification, processing the text for reproduction on typesetting machines. A key consideration in the design of these systems is the extensive use of communications for input/output functions, maximizing the flexibility of the system, rendering the system insensitive to the location of the host processor, isolating the user from the host processor.

The primary user interface for the management and manipulation of text, and control of the system, is a visual display terminal. General purpose terminals can be used to perform these tasks, but, have a number of limitations:

- Manipulation of text is performed interactively with the host processor, degrading overall performance of the host, incurring excessive and varying response times, substantially increasing host memory requirements.

- The limited display capacity makes editing of text difficult. "Paging" of text to review the content of a file is distracting and slow. Referencing of various sections of contiguous text must be done interactively, which is inherently cumbersome.
- A wide variety of text management functions require keying and transmission of multi-character commands to the host for execution.
- Standard character sets are unsuited to printing and publishing use.

Recognizing the limitations imposed by the use of a general purpose terminal for text editing, Sperry Univac undertook the development of a specialized terminal product to totally satisfy the requirement of the industry.

The SPERRY UNIVAC® UTS 400 (Universal Terminal System) Text Editor represents a reaffirmation and extension of Sperry Univac commitment to the Printing and Publishing market. Further, it confirms the determination of Sperry Univac to apply the extensive technological resources of the company to the task of providing the tools required by industry markets.

GENERAL DESCRIPTION

2 GENERAL DESCRIPTION

The UTS 400 Text Editor is basically an applied version of the UTS 400. Sufficient differences exist in the hardware components of the terminal to make it unique from the UTS 400. The most apparent physical difference in the product is the keyboard, designed specifically for use with the Text Editor. Other major differences in the unit are a unique character set and an expansion of the refresh memory and display capacities to a maximum of 20K bytes. The most significant characteristic of the terminal is the embodiment of a factory programmed text editing application contained in Read Only Memory installed at the time of manufacture. Other characteristics of the Text Editor are identical to the UTS 400, with regard to communications standards, line protocol, and peripheral support. Standardization of communications control allows a mix of Text Editors with other Sperry Univac display terminal products on a single host system; within the constraints of available host application software. Use of the text editor with standard system software is via the UNISCOPE 100/200 support capacity.

2.1 FUNCTIONS

Design of the terminal application incorporates all of the capabilities required for efficient editing of large bodies of text matter. Considerable attention has been given to human factors to minimize interference with the operator's ability to concentrate on the task of creative editing. To accomplish this objective, functions have been logically divided into groups, by type, accessed with a minimum effort by the operator. Most operations are initiated by single keys dedicated to specific functions.

Six major types of functions are represented:

- Text Definition
- Text Manipulation
- Text Management
- Text Style Control
- Terminal Control
- Auxiliary Control

2.1.1 Text Definition

Color coding of keys has been employed, as required to define a separation of functional groups. The text definition keys are utilized for identifying text to be manipulated or emphasized for special treatment.

2.1.2 Text Manipulation

Text manipulation keys are utilized to allow continuous insertion, block insertion, deletion, transposition, copying, of text. Additionally, occurrences of unique strings of characters, within the confines of the refresh memory, can be located for reference, replacement by other character strings, or deletion. Defined character strings may also be inserted at selected points in text. A major capability is split screen operation of the terminal for simultaneous editing of two different bodies of text. All text manipulation functions can be performed on both bodies of text. In addition, blocks of text may be merged from one body to the other.

2.1.3 Text Management

Communication with the host processor is accomplished with the text management keys; providing the operator with a simple, efficient means of managing the text files maintained by the host system. Each key generates a unique scope character sequence transmitted to the system, initiating specific management routines assigned in the host software. Several modes of operation are possible with the text management keys. A control byte associated with each key, alterable from the host system, is utilized to establish the operating mode desired. The definition of a mode is purely an operating consideration, transparent to the terminal.

2.1.4 Style Control

Text style control is provided by a cluster of 12 keys that generate a two character sequence consisting of a unique delimiting character followed by a different standard text character for each key. The keys are shift sensitive, providing a total of 24 style commands. The commands are transferred, interspersed with the text, to the host processor. Software associated with the host system interprets the style commands to produce output conforming to the style required. Additional keys included in the standard typewriter array supplement the style command cluster. These keys are utilized to indicate required line terminations, fixed spaces, end of text. Unique characters are displayed for each command. The line termination commands are display sensitive, interacting with the terminal program to produce a representation of the line termination requested. End Paragraph, End Text, Flush Left, commands cause lines associated with them to be displayed flush to left side of the terminal screen. Flush Right produces a flush right condition, Center Line results in centering of lines in the display.

To improve the readability of the text display, the line termination, space, and end text, commands can be suppressed at the discretion of the operator. A switch is provided for this purpose. Line termination can also be disabled, utilizing a switch.

2.1.5 Scrolling

Terminal controls allow virtual scrolling of all text contained within the refresh memory. Scrolling is bi-directional. Two dedicated keys are available for continuous scrolling up or down. Cursor movement up from the first or down from the next to last line in the display will also induce scrolling, within the limits of text. Automatic scrolling to the beginning or end of text is accomplished by upper function use of the cursor controls. Standard up, down, left, right, cursor control is provided. A unique feature allows high speed cursor movement when the shift key is depressed. Additional controls provide, upper function use of text management and manipulation keys, function reset, character/line insertion and deletion, backspacing, and tabbing.

2.1.6 Auxiliary Control

Control of auxiliary read, write, print, operations is accomplished by three keys assigned to these functions. All standard auxiliary devices are supported with the UTS 400 Text Editor.

2.2 APPLICATION PROGRAM

Except for the utilization of a special keyboard and character set, all of the editing capabilities of the UTS 400 Text Editor are attributes of the pre-configured microprogram. Three modes of operation are made available by the program, full screen, split screen, format. In split screen mode, the unit operates as two logical terminals, allowing separate text file segments to be edited simultaneously. Format mode is used to manipulate unique character strings.

A uniform procedure for all text manipulation operations of similar characteristics is a major feature of the program. This design approach was employed to simplify the operation of the equipment and to maximize its efficiency and capacity. The technique contributes extensively to the overall flexibility of the unit.

All operations on text are initiated by reverse video definition of the segment of text to be affected. Reverse emphasis is applied on a word, sentence, paragraph, defined block basis. The following operations are performed on the text defined in normal full screen or split screen mode.

- Delete
- Copy
- Move

In split screen mode an additional function is available, unique to the mode.

- Merge

Format mode employs an additional function of this type.

- Replace

Other capabilities of format mode operation follow a uniform procedure. Ten eighty character fields are provided for loading character strings. The format functions employ a single digit modifier following the command.

- Load
- Search/Global Search
- Replace
- Locate/Global Locate
- Call

Mass insertions to text are made using either one of two methods provided. An insert mode function allows continuous insertion of text with automatic displacement of text to the right of the cursor. Text can also be opened at a selected point to allow insertions within the limit of available refresh memory. A close function restores the contiguity of the text when the insertion is complete. Three instructions are available for insert operations.

- Insert Mode
- Open
- Close

Four types of video emphasis are utilized with the text editor. Reverse emphasis is reserved by the program defining text blocks to be manipulated. The other three types, blink, underline, reduced intensity, can be utilized to mark text for special handling. Variations in type style, such as bold face, italic, small caps, can be identified by selected emphasis. Combinations of emphasis

are possible. All types of emphasis are specifiable by character, word, sentence, paragraph, defined block. Four functions are used to select emphasis.

- Define
- Blink
- Underline
- Reduce

To minimize keystrokes for text manipulation operations, reverse video emphasis (define function) is a default selection of the word, sentence, paragraph, block definition, functions in lower function mode. Upper function use of the text definition keys allows selection of the derived emphasis.

The editing program is designed to protect the user from accidental or inadvertant loss of text. Blocks of text to be deleted are always defined first by reverse video emphasis, giving the operator an opportunity to visually review the block before deletion is initiated. Deletion is allowed as an upper function only further reducing the possibility of accidental destruction of text. Displacement of text within a line during insertion operation, causing line overflow, results in wrapping of text on a full word basis within the display until adjustment is achieved. Text contained within the refresh memory is continuous. Line formatting is a function of the display routines within the program.

To further protect the integrity of the text, and to simplify the task of editing, style commands may be inserted in text without the manual creation of space. The insertion of these commands causes automatic displacement of text to accommodate the commands. Normal text characters can, however, be altered by overstriking.

In normal single screen mode displayed text is configured by the program into 23 lines of up to eighty characters. Word breaking is not allowed by the program. Words overflowing an eighty character line are displaced to the succeeding line. In split screen mode, word integrity is maintained within 39 character lines. Line overflow is not allowed in format mode.

The top line of the display is reserved by the program as an eighty character information line. Two fields of twenty characters on the left half of the screen are used by the program for operational and diagnostic messages. The right half of the line contains two twenty character fields available to the host system for the display of operational and control messages. This powerful feature of the program is designed to further simplify operation of the terminal, by assisting the user in the selection and utilization of functions, reporting of function errors, display of equipment diagnostic messages.

2.3 TEXT MANAGEMENT OPERATION

The text management keys function as the operator interface to the host system. Sufficient keys are provided to initiate many required management functions of the host software without recourse to multiple keystroking of command identifiers. Utilizing the control bytes associated with each key, the host software can "program" the operation of the keys to functionally alter the characteristics to create operating "modes". Typically, modes can be readily identified for operations during display of the system directory, while the terminal is active creating or editing text, when the terminal is idle between assignments. A convenient example of how the text management keys are utilized is found in considering the function of the Edit key, used to retrieve text data from the host system files for review and modification. In directory mode, the content of a log file is displayed on the terminal listing the identification for text file segments, or takes, within the host system files. To simplify the task of selecting a take for editing in this mode, the control byte for the Edit key is set to cause transmission of the line containing the

cursor. This allows the operator to select a take for editing by placing the cursor at the front of the line in the display containing the identification of the take to be edited and depressing the Edit key. In text mode, while the terminal is active creating or editing material, the Edit key control byte can be set to disable the key, preventing the transmission of an invalid request to the host. If the terminal is idle between tasks, it is considered to be in "command" mode. The control byte for the Edit key is set to display a fifty byte area of refresh memory reserved for entry of command "adverbs" or modifiers, in this case the take identification, with the first depression of the key. The second depression of the key will effect transmission of the "adverb" area to the host. The inherent flexibility and control provided by this technique is readily apparent. Manipulation of the control bytes by the host software allows accommodation of a wide variety of requirements without modification to the terminal application program. Assignment of individual management key function is an attribute of the host software. All fourteen text management keys have an upper function capability allowing expansion of the text management functions or the assignment of destructive functions to upper function mode, reducing the possibility of accidental destruction of text file segments.

MARKET REVIEW

3 MARKET REVIEW

3.1 INTRODUCTION

The total market for the UTS 400 Text Editor encompasses the printing and publishing industry; engineering, insurance, and legal firms; highly technical industries; and federal, state and local government, including both civil and military agencies.

In the Printing and Publishing industry, the largest market segment, in terms of dollars spent on text editing equipment, is Newspaper Publishing. There are 1777 daily newspapers published in the United States alone. In 1975 newspaper publishers spent the major share of 32 million dollars invested in the acquisition of display terminals for text editing and entry. By 1980 annual sales of display terminals for text entry and editing are projected to reach a peak of 1100 million dollars, in the U.S. market alone. Significantly, an increasingly large share of the dollars spent will come from in-house users of text editing systems. Approximately thirty percent of the previous 1100 million dollar figure will come from the in-house segment in dollars spent. It is anticipated that the in-house share of the market will exceed that of newspapers by 1985.

In Western Europe, the value of the market is expected to equal approximately eighty-five percent of the U.S. market by 1980. Other countries will have a market value approximately forty-five percent of the U.S. market.

3.2 MARKET ENVIRONMENT

The basic market for the UTS 400 Text Editor is the Printing and Publishing Industry. As previously stated, the newspaper segment provides the greatest market potential within this industry. In the same industry, commercial printing represents the second largest market segment. Market potential within other segments of the industry is considerably below the two major segments. Primary users of text editing terminals in a newspaper organization are editorial personnel; utilizing the equipment in the modification of material acquired from reportorial and wire serve input. Although display terminals are frequently used in the creation of news stories, the primary source of input is OCR equipment associated with a host system. Wire service lines are connected to a host system for direct acquisition of wire service news. Selection of text editing terminal equipment is strongly influenced in a newspaper environment by the editorial staff under the leadership of the Managing Editor. Normally, the terminal equipment is considered as an intrinsic component in the selection process for a complete Text Editing system, comprising a host processor, display terminals, suitable application software, support capability for selected communication printers, phototypesetters, OCR equipment. The complexity involved in a selection of this magnitude results in the need for extensive evaluation of proposed systems by personnel in different areas of expertise. Consequently, representatives from the Data Processing, Production, Advertising, departments are frequently active in the selection process; evaluating the overall characteristics of the system. It must be emphasized, however, that the

acceptability of the display terminal equipment to the editorial staff, is a key factor in the successful marketing of the entire system.

In the Commercial Printing segment the principal marketing activity, with regard to the capabilities of the terminal and associated host system, is normally centered on Data Processing and Production personnel. Production Department personnel are the primary users of display terminal equipment in commercial plants. It is not uncommon in either segment of the industry for Data Processing specialists to be organizationally associated with the Product Department. The nature of the work performed by a commercial printing establishment is an important consideration in evaluating product potential. Only printing firms dedicated to typesetting, or with an integral typesetting operating can be considered as prospects for text editing systems.

The requirements for a text editing capability in firms that are not industry related can best be assessed by approaching Data Processing management. Generally, in-house use ideally involves a number of different departments within a single organization; resulting in a need for coordination by the Data Processing department, or by a committee consulting with the Data Processing department. A significant amount of new business can be anticipated in the in-house market area, due to extensive changes in printing technology, typified by electronic editing systems.

In all environments, the role of business and executive management in the selection process should not be ignored. The leadership in the process of evaluation and selection of Text Editing systems is increasingly provided at this level of management, frequently by the assignment of staff specialists to this activity.

3.3 MARKET TRENDS

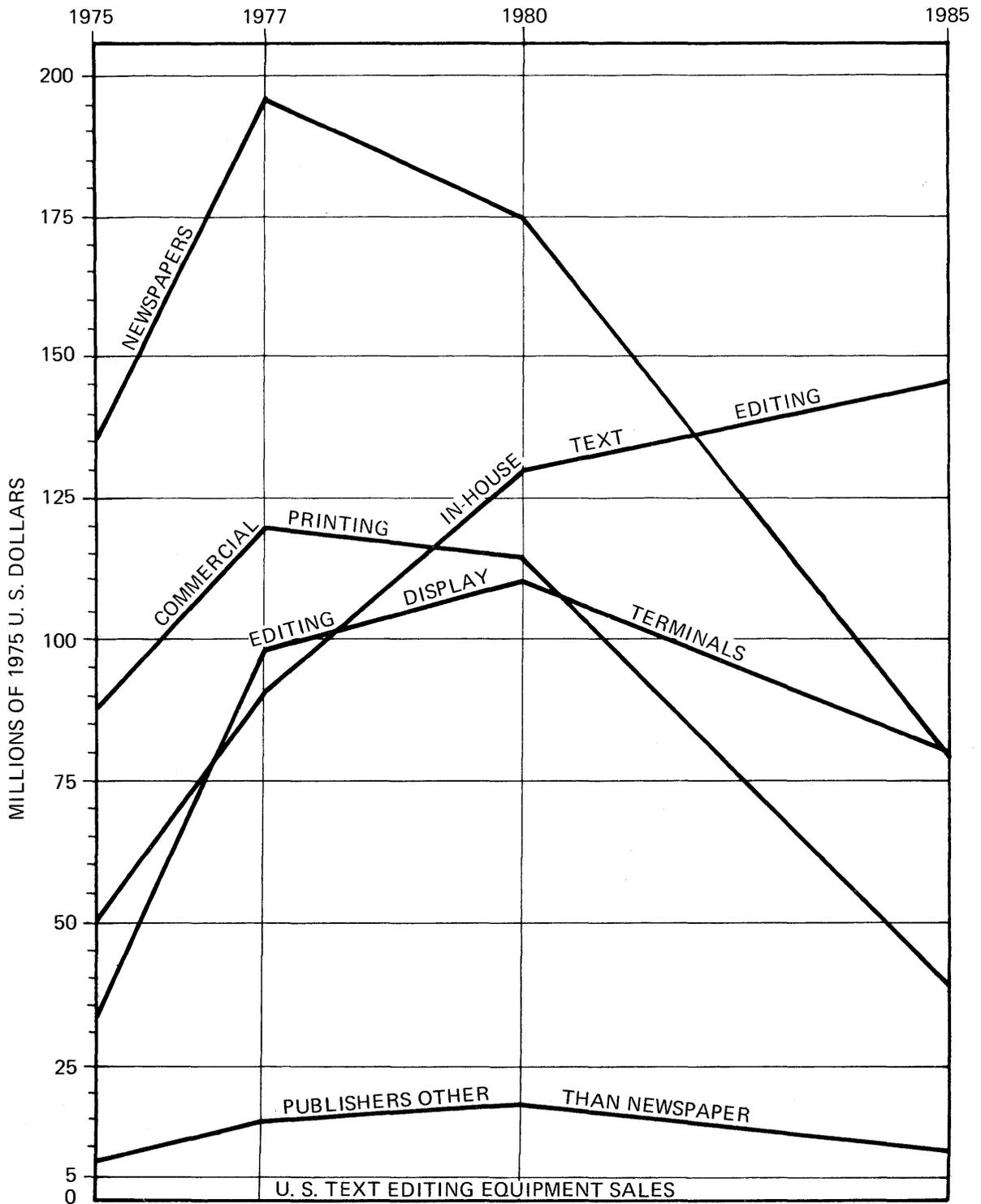
Rapid growth is anticipated in all segments of the text editing market through 1980, followed by a leveling out of the market in the Printing and Publishing Industry. A continuing growth pattern is expected to persist in the in-house sector of the market, at least, through 1985. By 1985 the largest dollar share of the text editing equipment market will be spent in the requisition of editing display terminals, reflecting considerable expansion activity in existing installations.

The following chart shows the overall pattern in market growth in the U.S. by industry segment, through 1985. The figures used represent yearly sales for all electronic editing equipment. A separate line shows the display terminal share of these dollars for the same period.

The anticipated growth trend in Western Europe approximates that expected in the U.S., trailing by about three years. In other countries, a continuing steady growth is projected through 1985. In Europe, total editing equipment sales, for the entire market, are expected to peak in 1980 at 365 million U.S. dollars. Approximately twenty-five percent of the total shown is anticipated to be the display terminal share of the European editing equipment market. Projected total sales in other countries is expected to reach 250 million U.S. dollars by 1985 with approximately twenty-five percent of this figure expended on display terminal equipment.

The total world market sales value for all text editing equipment in 1980 is estimated to be 990 million U.S. dollars. Approximately 248 million to this total represents the anticipated editing terminal market share.

Technically, electronic text editing is in an evolutionary state. Few systems are marketed that could be called "true" text editing systems. A contributory factor to this circumstance has been the unavailability of suitable display terminal equipment at a justifiable price. This has resulted in the introduction of compromise systems utilizing host system programming to accomplish text editing tasks interactively, or intermediate processors interposed between terminal clusters and



the host processor to assist in the performance of text editing tasks. Characteristically, the prevailing conditions have led to the offering of systems employing terminals that are too costly, systems that are deficient in performance or capability.

The advent of microprocessor controlled terminals has made it possible to produce text editing terminal equipment at a reasonable cost capable of performing text editing tasks internally, increasing the efficiency, extending capability, reducing the processing burden of the host system. Clearly, the programmed display terminal provides the means to achieve optimization in the design of electronic text editing systems.

Utilizing the distributive processing capability provided by the microprocessor, the primary editing tasks can be performed directly within the terminals, freeing the host system to perform more appropriate file management tasks related to the application.

This aspect of design concept gains significance with an increase in the use of text editing systems in the in-house segment of the market. The printing and publishing industry segments are characterized by a need for dedicated systems to perform text editing tasks; most particularly in the newspaper segment. The in-house market typically will require the capability to perform text editing tasks in a share environment. Here, the advantages of the stand alone capability of the programmed terminals are most evident. Removal of the primary editing tasks allows other processing to be executed unimpeded by activity at the terminal itself.

Another consideration relevant to the in-house environment is the high degree of workstation dispersal to be anticipated. Again, the stand alone capability of the programmed terminal provides marked advantages; allowing off-line modification of text, transfer to intermediate peripheral mass storage, local reproduction of hard copy on associated printers for review. Ultimately, the text editing terminal could conceivably be used in this environment to perform word processing chores completely off-line, with suitable peripheral equipment, and operate on-line to create and maintain stored text data bases. The potential represented adds significantly to the marketability of both the terminal itself and related systems, through maximum utilization of the terminal equipment.

3.4 MARKETING STRATEGY

Basic strategy for marketing the UTS 400 Text Editor is related to system marketing. All of the major marketing divisions of Sperry Univac have some installed base and/or prospect activity utilizing, or requiring, a text editing capability. Supported application software is available for both SPERRY UNIVAC 9480 and 90 Series equipment designed specifically for text editing. Special emphasis should be placed initially on identifying viable prospects in the newspaper segment of the market, since the greatest activity is, at present, in this market segment. Extension of the base in the newspaper industry at this time, will have the added benefit of encouraging present users of competitive systems to consider upgrade to Sperry Univac systems. Many of the currently installed systems are approaching obsolescence and have been installed for a period sufficient to allow write-off in the case of purchased systems. Many of these systems are not readily upgradable, a condition conducive to replacement. Additionally, the potential for rapid expansion of the base because of intensive activity in the newspaper market provides the basis for extensive expansion sales of terminals in a relatively short time frame.

Opportunities in the commercial printing field should be pursued in parallel with marketing activity in the newspaper industry. Although this segment of the market is considerably smaller in dollar value (aggregate market) individual sales opportunities in the commercial segment have a value at parity with system sales in the newspaper segment. Another consideration is the paralleling of peak market activity in the newspaper and commercial printing fields. It is important that extensive marketing efforts are made during the present period of intense activity in the printing and publishing industry.

Publishers of material other than newspapers can be included with the in-house segment of the text editing market for practical purposes. Two approaches are recommended for marketing to this segment. Initially, the existing Sperry Univac base should be canvassed to identify text editing requirements in existing accounts. This will uncover opportunities for expansion business and provide an initial exposure to the nature of in-house text editing requirements, and a "feel" for the type of environment where these requirements exist. Secondly, the text editing capability can be utilized routinely as a marketing tool in prospect activity, when it is appropriate to do so. The two major requirements for an effective value judgement in this type of marketing situation are the identification of a need for a text editing capability, and the suitability of host applications software in fulfilling the need. The UTS 400 Text Editor is a very power marketing tool; because of the readily demonstratable, easily perceived, capabilities of the unit.

An effective approach to marketing Sperry Univac systems for text editing use is to arrange demonstrations of the Text Editor with hands on participation by prospect personnel who would be operating the equipment and their first level management. The functional capabilities resident in the terminal itself are sufficient to generate a degree of enthusiasm that is capable of pre-disposing a prospect to the selection of Sperry Univac as a system vendor. This characteristic should be heavily exploited, when the opportunity to do so is presented.

Special emphasis should be placed on the uniqueness of the Text Editor as a product designed specifically for use as a editing tool, totally integrated, by design, to interact with supported software in the host system. It is not a terminal appended to a computer, adopted to work with associated software. The terminal is an integral part of the total system.

The modularity of the terminal should also be stressed, with regard to the flexibility in memory size and peripheral options. This is particularly important in the in-house environment, where considerable variations can exist with regard to memory requirements and extensive use of peripherals is anticipated.

3.5 PRODUCT LINE IMPACT

A major factor in consideration of the product impact related to the text editing terminal is the prior absence of suitable equipment in the Sperry Univac product line; a serious impediment to marketing efforts in the Printing and Publishing Industry. Although limited success has been experienced in the marketing of SPERRY UNIVAC UNISCOPE® 100 terminals to this market, acceptance of the equipment has been reluctant. The primary motivation in purchasing the terminals has been a desire to utilize Sperry Univac systems, which implied the need for UNISCOPE 100 terminals; as the only terminal supported by the application software available.

A strong positive impact is anticipated on host system sales related to the UTS 400 Text Editor.

The availability of the terminal for use with SPERRY UNIVAC 9480 and 90 Series equipment, supporting application software designed for text editing, will greatly enhance Sperry Univac's competitive position in the printing and publishing industry, and other industries with extensive documentation requirements.

The advantage gained will be twofold. The obvious superiority of the terminal itself will stimulate an interest in related systems and the distributive processing accomplished by the terminal will relieve the host system of the demands of text manipulation; effectively improving the efficiency, performance, and operational characteristics of the entire system.

To maximize the competitive impact of the terminal, it must be considered as an integral part of the total system. Competitive vendors offer single systems that enjoy a significant cost advantage over typical Sperry Univac configurations. This advantage is offset to a large degree by the need for multiple processors to service the needs of an average user and provide effective backup. This is compounded by the relatively high cost of companion software. The aggregate system cost resulting is generally lower than a suitable Sperry Univac configuration, but sufficiently high to provide Sperry Univac with an opportunity to compete on the basis of performance and cost effectiveness.

The proper role of the text editing terminal in this marketing environment is to provide a plus factor to the performance and cost effectiveness of the system. The greatest proliferation of equipment in a system of this type is in display terminals. As the number of terminals increases, the competitive position of Sperry Univac improves. In this context the terminal is utilized as a marketing tool; enhancing the ability to establish a cost competitive position in the marketing of the total system. In a sense, the concept is to view the terminal as a part of the product offered, not as a product entity.

3.6 RELATED SOFTWARE

The Text Editor is totally compatible with the SPERRY UNIVAC NEWSCOMP application software. It is also capable of being supported by the GTMS application software that is very actively marketed by the European Division.

In brief, the NEWSCOMP and GTMS applications are used in the collection, modification, correction, of text data for typeset reproduction. Text information is entered in the system from a variety of terminal devices operating in a communications environment under control of a communications program. GTMS employs MCP or Mini-MCP to perform the control function. A unique communication control program is utilized by NEWSCOMP, operating independently of other module programs. Information acquired by the CCP is passed to an editing program that records the data in a disk resident file. A separate directory file is utilized for the identification and retrieval of the text data. Text Editors will be employed to retrieve data stored in the text files by display of and reference request from the directory file. Transmission of a reference request to the host system elicits the transmission of the requested text to the originating terminal, allowing display and alteration of the entire content by vertical scrolling of the data buffer.

Additions, deletions, duplications, transpositions of text are accomplished within the terminal; utilizing the keys provided for the manipulation of text. Other keys are employed to insert or alter comments that instruct the host software in the preparation of output for operation of typesetting equipment. Additional keys provide a means of communicating with the host software to accomplish a variety of text management functions such as: purging, combining, departmental transfer, release for output, of text file segments.

Text released for output is processed by a third program that configures and translates the text for transfer to a media suitable for operation of specific typesetting machines. The media generally employed are paper or magnetic tape and on-line transfer of data via a communications line.

Other programs are employed with the system for specialized requirements.

COMPETITIVE REVIEW

4 COMPETITIVE REVIEW

The SPERRY UNIVAC UTS 400 Text Editing Terminal provides a competitive entry in a terminal market dominated principally by firms specializing in graphic arts equipment products. True text editing terminals are marketed in both single station and multistation configuration, within separate product lines. The most powerful units are offered only as single station terminals.

An effective comparison of competitive products does not require an evaluation of all display terminals utilized with computer composition systems; many of these systems are not intended, or suitable, for use as text editing systems. This analysis will therefore be limited to a relatively few terminal products; specifically intended to be used for the comprehensive editing of test data. The criteria for selection of terminal products for review are the unique functional characteristics identified with text editing terminals:

- Large data display capacity in excess of screen display limit; utilizing vertical scrolling to view file content, rather than paging of text.
- Extensive complement of function keys for the manipulation and management of data, as opposed to the use of keyed mnemonic or verb instructions.
- Block manipulation of text data, within the terminal, in addition to character manipulation.

Competitive products selected for review are variously, hardwired, software, firmware, programmed. Few vendors in this market seriously offer customization of terminal programming as a regular option.

A major objective in the design specification of the UTS 400 TE was to provide a functional capability of such magnitude that the potential requirements for frequent, or extensive, modification of the program would be reduced to a negligible level. To accomplish this, an effort was made to provide capabilities in excess of those available with any single competitive product. Additionally, the editing process was examined in detail to insure that the terminal was capable of performing every function required in the process. The stated objectives have been accomplished, within the confines of limited technical restraints. There are no known impediments to the successful, efficient, use of the terminal as a "man/machine" interface to a host computer in an editing environment. It is functionally superior to any contemporary competitive product.

A detailed comparison of competitive hardware features and design characteristics is not an important consideration in the context of an applied version of a display terminal. Detail emphasis is placed on the comparative functional attributes and storage capacity of the competitive terminals represented.

Price comparisons on a per unit basis are difficult due to the extreme variations in the design and source of terminal intelligence, varying from self-contained programmability to dedicated program memory in a host computer. Consideration of terminal peripherals will be ignored in the analysis, since other vendors do not offer the ability to support ancillary devices with text editing terminals.

4.1 COMPETITIVE TERMINALS

Harris Systems 1100

A self contained single station terminal with hardwired intelligence. The Harris 1100 was originally introduced as a stand-alone unit for correcting text data perforated in paper tape. Output from the unit was corrected paper tape. Subsequently, the unit was modified for use on-line to a host computer as a text editing terminal. The pilot installation was at United Press International. The terminal was introduced approximately seven years ago. It is considered to be the "Cadillac" of text editing terminals; extremely well regarded in the industry.

Harris Systems 1500

Recently added to the Harris product line, the 1500 is primarily a video "typewriter", offering a small screen presentation. It is included due to the fact that aside from the limited display area the unit has extensive storage and editing function capability. A micro processor provides the intelligence for this unit. Harris advertises the programmability of the terminal. User programmability is not offered.

Hendrix Systems 5700

The H5700 terminal has no integral intelligence. It is totally dependent on dedicated memory in a host system for intelligence, making it useless as a text editing terminal except as part of the total system. The unit was originally introduced as part of a stand-alone system for correcting paper tape. Subsequently, the terminal was utilized in the implementation of an editing system for Associated Press, employing DEC PDP10 processors in the host configuration. The terminal is presently marketed as part of a system using a DEC PDP11 system as a host. A fixed head drum is used for data storage. A separate memory module, attached to the system UNIBUS, is utilized for terminal intelligence.

Digital Equipment Corp. VT20

The DEC VT20, for use as a text editor, is configured as a dual station system employing a PDP11/05 as a controller. The memory of the associated PDP11/05 is utilized for both the terminal program and data storage.

Digital Equipment Corp. Text Editor

Digital Equipment Corp. is reported to have proposed a new microprocessor text editing terminal to the Worcester Telegram and Gazette. No detail is available for this unit.

Megadata

Megadata provides intelligent terminals for use as text editors with a system offered by Composition Systems, Inc. No detail is available on the unit.

Ontel Corporation

This company has announced a microprocessor text editing terminal with 12K data memory. The terminal is not known to be associated with a particular system. No specific detail is available for this unit.

Computek

Computek units are supplied to Systems Development Corporation and Talstar Systems, Inc. for use with their respective systems. The terminal manufacturer has considerable flexibility in the configuring of terminal requirements. Single and multiple station arrays are possible with this equipment. Peripheral capability is available for the support of a variety of printers and mass storage devices. The unit is controlled by a programmable microprocessor.

4.2 COMPETITIVE POSITION

At present, the principal vendors of text editing terminals are firms dedicated to the marketing of systems and equipment to the Printing and Publishing Industry. The single exception to this condition is the VT20 terminal offered by Digital Equipment Corp., which is not primarily a product designed for the application. It is, however, customized for use as a text editing device. Competitively, it is inferior in capability to other terminals designed for text editing.

All of the terminals characterized as text editors are marketed in conjunction with specific systems designed to support text editing requirements. The nature of these requirements, in relation to the hardware most frequently used as a vehicle for the systems, results in a highly inflexible terminal support capability, compared to typical communications oriented terminal networks. In most cases, the use of remote terminals from an exterior location is highly impractical, if not impossible, to support. None of the systems offered normally use communications hardware in configurations supporting text editing. Consequently, some of the terminals utilized are incompatible in a communications environment; employing neither ASC11 or RS232 standards.

Current interest in the acquisition of systems for text editing is very high, throughout the industry, and most particularly in the newspaper segment of the industry. All of the competing vendors in the industry have installed systems extensively used for text editing, that are considered successful with the exception of Digital Equipment Corp., and Talstar Systems. Coupled to these efforts have been negotiations with related unions that have resulted in a relaxation of the rigid posture of the unions in regard to the acceptance of material for production prepared using text editing systems. The evident viability of text editing systems, and the new permissiveness of concerned unions, have accelerated interest in the acquisition of suitable systems to the present high level.

Most of the installations to date have been in relatively small plants, with limited requirements satisfied by comparatively few terminals. Interest at present is extending to many larger newspapers, with a requirement for larger numbers of terminals. Because of the design of competitive systems, response to the need for large terminal networks, requires extensive proliferation of entire systems. The utilization by Sperry Univac of standard communication procedures in the design of systems for text editing use, and the availability of suitable terminal equipment, obviates the need for multiple systems in support of large network requirements. This places Sperry Univac in a highly competitive position, in relation to other vendors. A nominal cost advantage enjoyed by these vendors is destroyed by the required multiplicity of systems in larger installations, resulting in both a cost and performance advantage for Sperry Univac.

The superior capabilities of SPERRY UNIVAC UTS 400 Text Editor, and the enhanced text management potential resulting from the use of the terminal, coupled to the cost/performance advantage provide Sperry Univac with an unprecedented competitive position in the marketing of production systems to the Printing and Publishing Industry.

FEATURE COMPARISON

FEATURE	SPERRY UNIVAC UTS 400	HARRIS 1100	HARRIS 1500	HENDRIX 5700	DEC VT20
Processor	Micro	NA	Micro	Host	Mini
Programmable Memory (Req.)	12K	NA	NA	NA	5K
Data Memory					
Basic	4K	6K	4K	NA	1.5K (per disp.)
Expansion	8K	2K	NA	NA	NA
Maximum	20K	8K	4K	NA	1.5K (per disp.)
Display Capacity	1840	1920	960	1296	1024
Character Set	128	128	128	128	160
Key Complement					
Text Manipulation	25	9	9	12	12
Text Management	14	3	3	14	4
Composition Command	12	2	2	2	1
Display Sensitive Composition Command	6	4	4	5	1
Aux. Control	3	NA	NA	NA	NA
Communication	9600bps	9600bps	9600bps	NA	9600bps
Insert					
Character	Yes	Yes	Yes	Yes	No
Line	Yes	No	No	No	No
Mode	Yes	Yes	Yes	Yes	Yes
Open/Close Text	Yes	No	No	No	No
Delete					
Character	Yes	Yes	Yes	Yes	Yes
Line	Yes	Yes	Yes	No	Yes
Word	Yes	Yes	No	Yes	Yes
Sentence	Yes	Yes	No	Yes	No
Paragraph	Yes	Yes	No	Yes	Yes
Block	Yes	Yes	No	Yes	Yes
Move					
Word	Yes	No	No	No	No
Sentence	Yes	No	No	No	No
Paragraph	Yes	No	No	No	No
Block	Yes	Yes	Yes	Yes	Yes
Copy					
Word	Yes	No	No	No	No
Sentence	Yes	No	No	No	No
Paragraph	Yes	No	No	No	No
Block	Yes	No	No	No	No
Display Emphasis					
Reverse Video	Yes	Yes	Yes	Yes	No
Blink	Yes	No	No	No	No
Underscore	Yes	No	No	No	Yes
Reduce Video	Yes	No	No	No	No
Increase Video	No	Yes	Yes	No	Yes
Define With Emphasis					
Word	Yes	No	No	No	No
Sentence	Yes	No	No	No	No
Paragraph	Yes	No	No	No	No
Block	Yes	No	No	Yes	Yes
Line	No	Yes	Yes	No	No
Dual Operation					
Split Screen	Yes	No	No	No	No
Merge Copy	Yes	No	No	No	No
Character String Manipulation					
Load	Yes	No	No	Yes	No
Search	Yes	No	No	No	Yes
Locate	Yes	No	No	No	No
Replace	Yes	No	No	No	No
Call	Yes	No	No	No	No
Delete	Yes	No	No	No	No
Move	Yes	No	No	No	No
Copy	Yes	No	No	No	No
Display/Suppress Composition Commands	Yes	No	No	Yes	Yes
Enable/Suppress Req. Line End	Yes	No	No	No	No
Scrolling					
Up/Down	Yes	Yes	Yes	Yes	Yes
Beginning/End	Yes	No	No	Yes	No
Cursor					
Up/Down/Left/Right	Yes	Yes	Yes	Yes	Yes
Home	Yes	Yes	Yes	Yes	Yes
Location	Yes	No	No	No	No
Clear					
Line	Yes	Yes	Yes	No	No
Memory	Yes	Yes	Yes	Yes	Yes
Tabular					
Set/Clear	Yes	Yes	Yes	Yes	No
Forward	Yes	Yes	Yes	Yes	Yes
Back	Yes	No	No	No	No
Aux. Device Control					
Print	Yes	No	No	No	No
Read	Yes	No	No	No	No
Write	Yes	No	No	No	No

QUESTIONS & ANSWERS

5 QUESTIONS AND ANSWERS

Q – What is text editing?

A – *Reviewing, correcting, altering text by block deletions, insertions, transpositions, to improve readability, clarity, accuracy, conciseness of the text.*

Q – Why is a special terminal required?

A – *Text editing is a creative function that must be performed with minimum distraction. An effective editing terminal allows the function to be performed unimpeded by delays and complex operating procedures that tend to interfere with the concentration of the operator.*

Q – Should clustering be available to improve pricing?

A – *The complexity of the application requires the total dedication of the terminal processor. A reduction in the capabilities of the unit to allow clustering would result in an undesirable weakening of the operating efficiency, compounded by a loss in performance due to contention within the cluster. Both of these conditions are contrary to the design objective of the equipment.*

Q – Why is the key complement so large?

A – *There are many separate functions required for local manipulation, and management of text in the host system. Sufficient keys must be available to initiate frequently used functions.*

Q – Doesn't the presence of so many keys make the terminal difficult to use?

A – *The placement and functional attributes of the keys was logically planned to simplify the task of learning to use, and operating, the unit. It is far easier to train operators in the use of a number of single keys to initiate functions than in the use of multikey instructions. Additionally, once familiarization is complete, any learning problem arising as a result of the large array of keys goes away. Multikey commands never go away.*

Q – Is the terminal functionally competitive?

A – *Sperry Univac feels that the Text Editor is superior on an overall basis to any unit currently marketed.*

Q – What assurance is there that the Text Editor truly meets the requirements of the market?

A – *The design of the SPERRY UNIVAC Text Editor reflects an exhaustive examination of requirements specified by a wide cross section of the Text Editing market.*

Q – Must prospects be “sold” on the use of display terminals for text editing?

A – *The SPERRY UNIVAC Text Editor has been introduced in response to a clearly defined demand for an adequate unit of this type for the printing and publishing industry and in-house use.*

