Considerations for a Typist Oriented, Fully Integrated Wordprocessing System

by

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Wordprocessing systems are the glamour products in today's office equipment market. However, until very recently, Wordprocessing has for the most part been ignored by Data Processing managers and personnel because they did not recognize that they could offer service to departments which by nature perform labor intensive, repetitive tasks. Typical departments which have seemed unlikely candidates for Data Processing services are Office Administration and Office Services.[1]

It is extremely doubtful that this situation can continue much longer. Without the help of today's latest computer technology, these formerly non-Data Processing departments will become buried in the avalanche of paperwork which now passes through them (Fig. 1). In some organizations, Data Processing personnel are already being called upon to assist in selecting Wordprocessing equipment or software. This really should not be too surprising, since the technologies used in Data Processing and Wordprocessing are too similar to ignore.

A few years ago, the typical office accounted for only a fraction of the total company budget, however, this is no longer true. Greater demands are being placed on office personnel and therefore higher wages are required. This has a tendency to increase the cost of all office services (Fig. 2). Without new methods, the future prospects reveal more increases in cost without any appreciable increase in productivity (Fig. 3).

On the other hand, costs within the Data Processing field appear to be declining (Fig. 4).[2] The needs of formerly non-Data Processing departments cannot be ignored. As more and more demands are placed on them, the need to apply technological expertise will be mandatory.

However, there is a significant problem. Based on a qualitative survey conducted by Starch INRA Hooper, Inc. during May and June of 1977, "corporate decision-makers are neither sufficiently knowledgeable nor comfortable" with the concept and application of Wordprocessing and they feel that "while the industry *talks* the system concept, it actually *sells* pieces of equipment."[3]
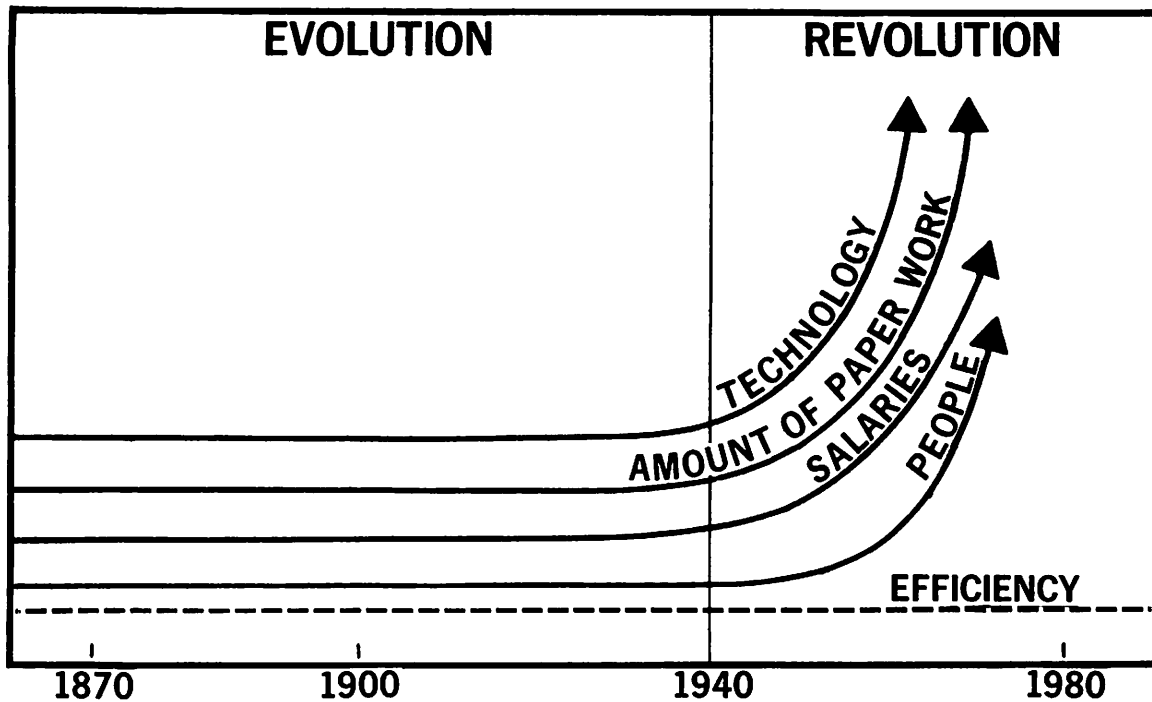
THE PROBLEM

EVOLUTION	REVOLUTION

TECHNOLOGY

AMOUNT OF PAPER WORK

SALARIES

PEOPLE

EFFICIENCY

1870　　　1900　　　1940　　　1980

Fig. 1

OFFICE COSTS

- **WERE 20% TO 30% OF TOTAL**

- **NOW 40% TO 50%**

    — **DEMANDS FOR MORE INFORMATION**

    — **PAPER EXPLOSION**

    — **RISING SALARIES**

- **AVERAGE SECRETARIAL SALARY 68% HIGHER**

- **AVERAGE LETTER COST 40% MORE THAN 10 YEARS AGO**

Fig. 2

FUTURE TREND

Salary

Attrition

Paper Work

Document Cost

Clerical Personnel

Productivity

1920   30   40   50   60   70   80

Fig. 3

CHANGING COSTS OVER
THE NEXT DECADE

PEOPLE UP 6%/YR

COMMUNICATIONS
DOWN 11%/YR
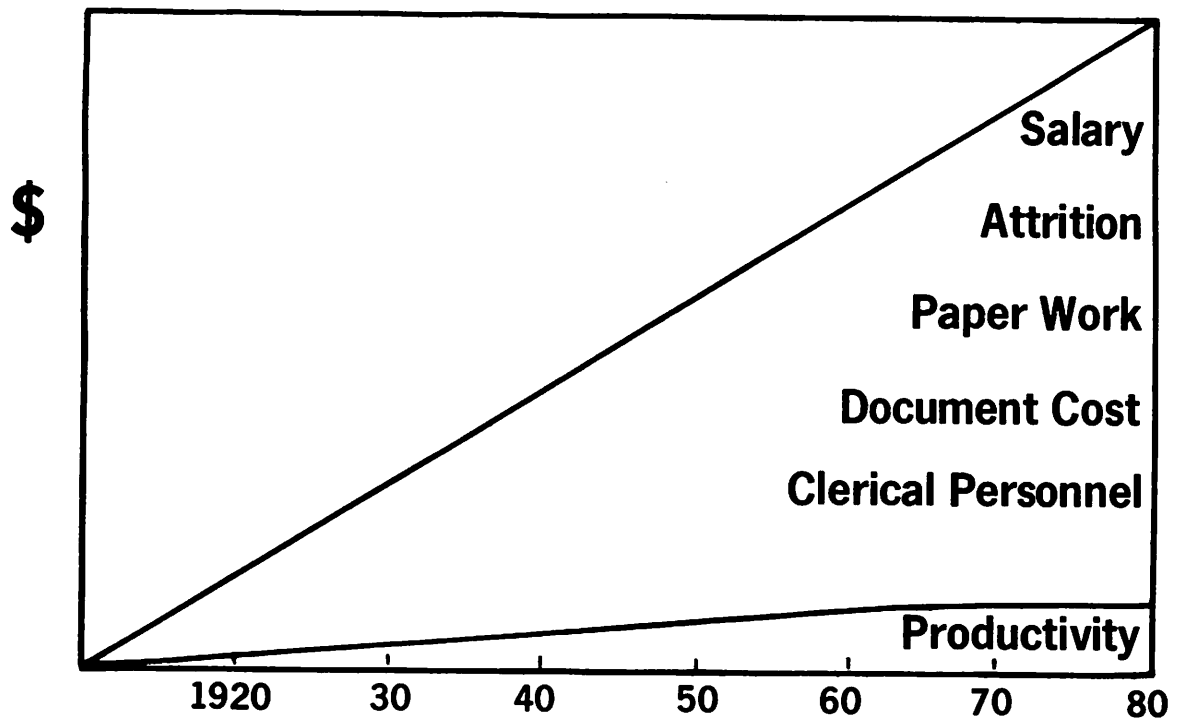
COMPUTER LOGIC
DOWN 25%/YR
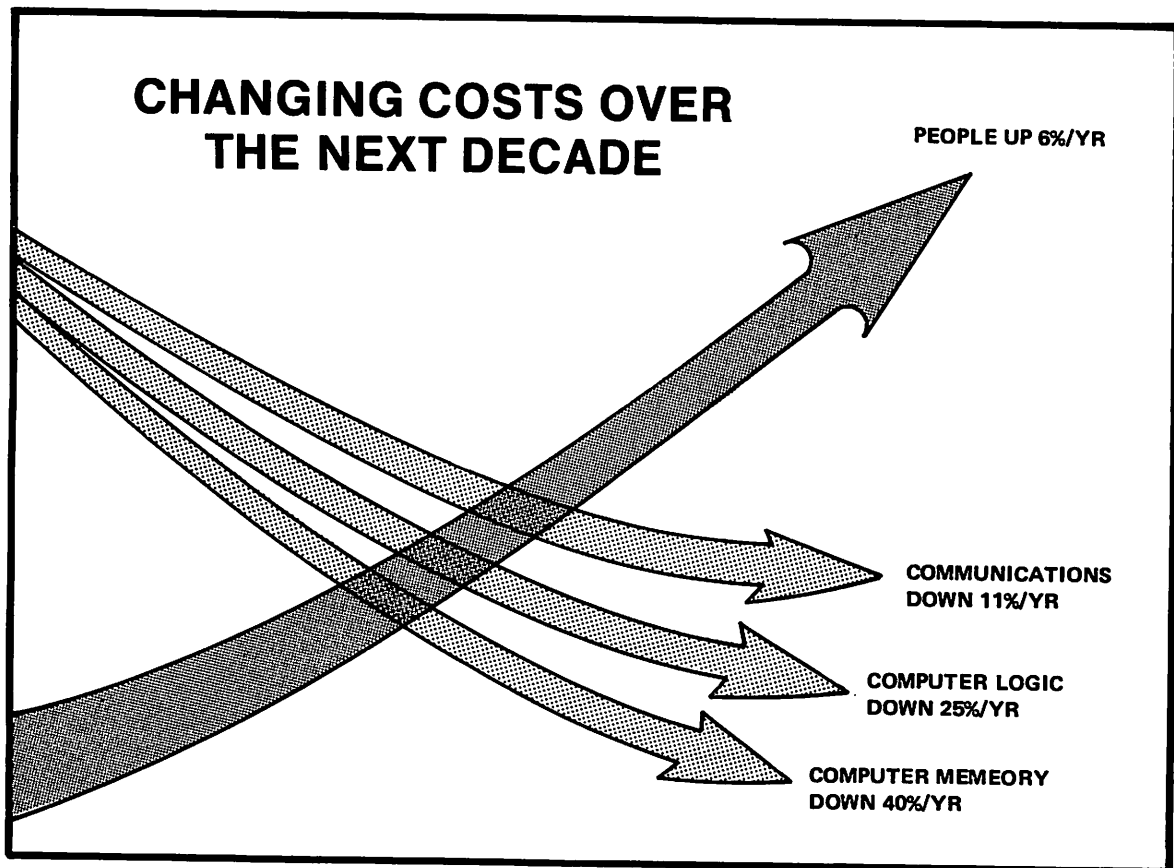
COMPUTER MEMEORY
DOWN 40%/YR

Fig. 4

When you consider that there is not even an industry accepted definition for "Wordprocessing", it comes as no surprise that management level personnel would be somewhat bewildered. At the risk of being presumptuous, I will attempt to define Wordprocessing as a "Work Cycle". This work cycle includes dictation, formatting, typing, text manipulation, proofing, revising, and printing. Based on this definition, Wordprocessing or the processing of words, exists in every office, whether it is automated or not.

Automated Wordprocessing, though, has a number of distinct advantages over the manual method. Cost saving is perhaps the most important and obvious need. It has been demonstrated time and again that Wordprocessing can return a substantial savings. One recent example appeared in the September 1978 issue of Datamation magazine.[4] The cost per page using the manual approach was listed at $11.24, whereas, with automated Wordprocessing, the cost was $6.42. This represents a savings of $4.82 per page or nearly 43%. In addition to these savings, there are real savings in time when using automated Wordprocessing. Typewriter prepared documents were estimated at 75 minutes per page to produce the first draft, coordination draft, and final copy.[4] With Wordprocessing, however, the same steps required only 27 and one half minutes per page, a savings of 47 and one half minutes per page or 63%. With today's higher paid office personnel, such savings in time represent significant savings in money. As a result, the need to hire additional personnel may be deferred due to greater individual productivity (Fig. 5).

You can appreciate that while Dataprocessing costs in 1973 were $26 billion, those of office administration processing were $42 billion.[5] This indicates that a great deal of work can be done to automate the modern office.
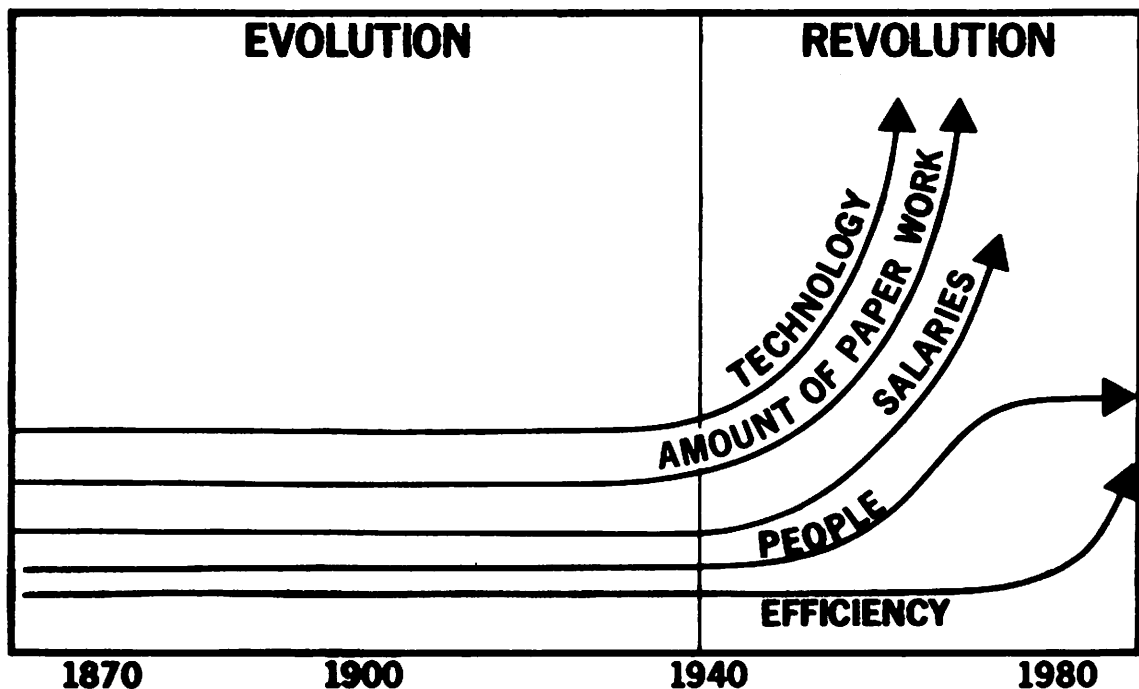
THE SOLUTION

Fig. 5

Consider also the quality and speed of a good Wordprocessing system. Not only does it produce error-free originals, but every character is captured and stored, preserving the document for future use and thereby shortening the turn-around time for revisions. Every revision cycle is apt to require progressively less and less time with every output copy being flawless.

Today's Wordprocessing marketplace has every imaginable type of product available. These range from simple standalone hardware units to massive software systems which run on the largest of main-frame computers. The technology is such that whether you are generating single page letters or complex technical publications, systems are available.[6] Your organization may or may not already be involved with one or more of these systems, but in choosing a future system, it is essential that it be an extension of techniques with which the users are already familiar.

The fact is, there are only four (4) basic types of Wordprocessing systems available today.[7] An understanding of these categories will help in evaluating the pros and cons of your existing/future systems.

1. Standalone Hardcopy-
    This includes all types of automatic typing devices that use magnetic media to capture and store what has been typed. Although the single-unit cost is modest, these systems cannot be integrated for several operators to share resources. Their capacity is limited and they are very inflexible. These units are generally used for short documents.

2. Standalone Video Display-
    This equipment possesses a video display capability ranging from part of a line to a full 66-line legal-size page. At times this type of equipment has text editing capabilities and may include some Data Processing capabilities. A number of products in this category are direct crossovers from the intelligent terminal portion of the Data Processing industry. Again, while the capabilities of this type of equipment is greater than for standalone hardcopy units, it is by nature non-shareable between users and still limited in capacity and flexibility.

3. Time-Shared Services-
    This is an arrangement in which one or more terminals (which may be owned or leased) are hooked into a service company's computer to provide an economical alternative for users who occasionally require sophisticated capabilities, or who are taking a tenative first step toward Wordprocessing technology.

4. Shared-Logic Processing-
    Several independent stations are linked to a single central processing unit for increased capability and storage at a lower cost per station. This is the type of system we might envision with an HP 3000 at the hub.

Few organizations set out to procure a computer based on their Wordprocessing needs. Instead, they quite often have an established Data Processing department running payroll, general ledger, cost accounting or other "standard" computer applications. Let's examine the benefits of adding a Wordprocessing system to this already existing hardware.

First of all, Wordprocessing allows greater use of existing equipment, which may be idle part of the time anyway. Because we are very cost conscious, this type of extra duty from hardware already in place rarely meets with criticism. And since few, if any, equipment changes would be required, no interface problems are encountered in dealing with another hardware

vendor either. A great deal of time and effort is generally consumed just familiarizing with new equipment. So, it is a real asset if the end users do not have to be retrained on a new piece of equipment when a Wordprocessing system is installed and they are more likely to respond favorably to new systems implemented on existing equipment.

When looking at Wordprocessing then, what are important considerations? Two main areas of concern are paramount:

1.   It must be typist oriented.
2.   It must be fully integrated.

At Comarco, we have been producing text editing software for the U. S. Navy for a number of years. When we undertook development of WORDWRIGHT ©, our general purpose commercial Wordprocessing system, we placed these two items at the top of our list of requirements. Data Processing personnel can get along fine with "computer" terminology. Secretaries and typists though do not (and do not need to) speak "computerese". They simply do not respond well to such systems. In terms of being fully integrated, we felt that it was important that the user not always be changing gears, so to speak. You no doubt have experienced the frustration of constantly skipping around from one "sub-system" to another. Because this situation is common, some corporate decision-makers apparently have remained cautious about Wordprocessing.

This is not to say that systems which are not typist oriented or fully integrated cannot be forced upon them, but in all fairness, wouldn't it be best to allow the dictates of the end user to determine which product will be selected? This process begins with defining the task to be performed by the equipment and software.[7] Second, consideration should be given to the organization's internal operations and established procedures. "Because of the normal resistance to change, any new technology introduced should, where possible, be an extension of techniques the user is already familiar with."[6] Not just the managers, but the people who will actually be using the system should be consulted and their views explored in depth.

Only after the above steps have been completed should an investigation of what is available be made or a design for an in-house developed system started. If you are looking at purchasing or leasing, bear in mind that special features, not available on all Wordprocessing packages, may be required to provide properly composed technical reports. For instance, automatic alignment of decimal points for tabular data, right-hand justification or automatic hyphenation. You might also require a dual pitch feature for ten or twelve characters per typed line inch.

Does the system provide for true document management? The ability of a Wordprocessing system to track existing documents and catalog names, dates and current status eliminates the associated manual bookkeeping. So, in evaluating whether the system is truly integrated, this is one area not to be overlooked. Some organizations maintain a very large text base including many documents not frequently referenced. Due to a limited amount of on-line storage, it is essential that the Wordprocessing system include some sort of archival and retrieval capability. Again, this feature may not be available on all systems.

All documents require formating. Formatting includes the setting of margins, tab positions, indentation, page lengths, etc. A big asset in a Wordprocessing system is the ability to create a standard set of formats—formats which are flexible, easy to define and use. Once defined, these formats insure style uniformity from document to document. Some Data Processing oriented systems do not allow for stored formats. Instead, the user must embed formatting directives directly into the text. This may be acceptable for some applications, but

you will find that non-dataprocessing oriented secretaries and typists will not be able to achieve the speed in inputting text for which they are being paid. A system which provides the ability to utilize stored formats reduces operator keystrokes, detail coding of text and formatting errors. It is at the user level that a typist oriented Wordprocessing system must work well.

Since many organizations produce "form" letters, at least two features must be considered. 1) Does the system provide an integrated name and address directory which can be incorporated into the body of the text? In providing this capability, is text composed around variable length inserts? 2) Are user definable prompts available for a fill-in-the-blank effect? Both of these items are valuable options which can speed form letter preparation and at the same time eliminate the need for the user to browse through the text looking for the locations of the changes.

In addition to the ability to input text with efficiency and speed, is the need for rapid error free original hard-copy. A system should provide for output on various devices. For those who require high quality character printing the system should interface to daisywheel or cup type terminal printers. When such quality is not required, such as preliminary drafts, the system should be able to drive a high speed line printer. Some users of Wordprocessing are interested in producing high quality camera ready copy. This requires the addition of a photocomposer to the basic system configuration. However, as you can see from this paper, the quality far surpasses anything which can be produced on the standard daisywheel printer or even the system line printer. The ability of a Wordprocessing system to prepare text for output to a photocomposer is quite rare on a hardware configuration like the HP 3000. If your organization's requirements include this feature, you will be able to take advantage of such things as variable character spacing and a choice of multiple character fonts and sizes.

Automated Wordprocessing has remained relatively simple to use. Systems have been introduced which vary from basic editors to WORDWRIGHT ©, which is sophisticated and comprehensive. Which one you choose will be a matter your organization will have to consider carefully. One thing is for sure—Wordprocessing is a very dynamic field. The time is right for automated Wordprocessing!

REFERENCES

1. Wohl, Amy D.,"What's Happening in Word Processing",DATAMATION,April 1977, pp.65-74.
2. Burns, J. Christopher,"The Evolution of Office Information", DATAMATION,April 1977,pp.60-64.
3. WORDPROCESSING-A Survey of Perceptions and Attitudes of Top Management by Philip F. Shannon,NEWSWEEK,New York,1977.
4. Carls,C. B.,"Getting Ready for Word Processing's Second Generation", DATAMATION,September 1978,pp.139-144.
5. Strassman, Paul A.,"Stages of Growth",DATAMATION,October 1976,pp.46-50.
6. SURVEY OF COMPUTER-ASSISTED WRITING AND EDITING SYSTEMS by P.I. Burnam, Technical Editing and Reproduction Ltd.,London,1977,pp.48.
7. Winkler, Michael W.,"A Framework for Selecting the 'Right' Word-Processing System",Technical Communication,First Quarter 1978,pp.14-17.