

Microcomputers and the Small Orthotic/Prosthetic Firm

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During the past several years, the prices of microcomputers have steadily decreased, while their capabilities have dramatically increased. Thousands of software products have become available for microcomputers, and these products, many of them comparatively low in cost and easy to use, are being continually refined to take advantage of hardware improvements.¹ These developments have made computers available to small businesses that 10 years ago would have lacked the financial and technical resources to purchase and operate data processing hardware and software. Microcomputers, for the first time, thus have the capability to increase small business productivity and efficiency substantially and to fulfill the information needs of the small business owner or manager.²

As the owner and manager of a small orthotic and prosthetic firm, I have found manual recordkeeping, accounting, and generation of bills and correspondence to be increasingly cumbersome and time-consuming. Given the size of the business, its financial constraints, and the lack of technical computer expertise among my staff, purchase of a microcomputer appears to be the most intelligent way to begin computerizing these functions. In pur-

chasing a microcomputer or any computer system, however, I am concerned with ensuring that the investment will be worthwhile, and that the computer, once purchased, will be productively used. Accordingly, this article will focus on guidelines for selecting personal computer hardware and software, and for initiating use of such a system in a small business environment.

PURCHASING THE SYSTEM

Computer experts agree that the most important step in purchasing a computer system is to begin by ascertaining user needs and constraints. For example, what functions or procedures does the business wish to computerize? Can standard software packages perform these functions? Is access to public data bases desirable? How much memory is necessary? Who will use the system? What special features are necessary? How much can the business afford to spend on a computer system?³

All of these factors should be considered before investigating specific hardware and software products. Many first-time personal computer purchasers fall into the trap of simply buying the most popular equip-

ment and "hot" software packages and assuming that these will perform the required tasks.⁴ Often, this assumption proves untrue, and the buyer is left with an expensive piece of equipment that is used little or not at all.

Next, the current micro-computer market should be thoroughly surveyed. In the case of hardware, features, costs, and available software for various models should be compared. In the case of software, "user friendliness" and thoroughness and clarity of documentation should also be evaluated. Many prospective buyers spend too little time on this step, perhaps because they are intimidated by the size of the market, the rapid changes occurring in it, and their ignorance of the technical terminology used by computer salesmen.⁵ Nevertheless, a "consistent step-by-step evaluation of alternative offerings" is necessary if one is to avoid "acquisition of an ineffectual . . . system."⁶

Once appropriate hardware models and software packages have been identified, availability of technical services and advice from manufacturers and vendors should be ascertained. Many vendors and manufacturers provide assistance with needs assessment, help with selection of hardware and software, and user training and advice.⁷ Such services may be critical to successful installation and continued use of the system, particularly for the small business that lacks in-house computer expertise.

A final and related consideration for the personal computer buyer is the viability of the company that manufactures the equipment.⁸ Today's computer market, while huge, is relatively new, with numerous large and small companies competing for dominance. Most analysts predict that many of these companies will fail or drop out of the market during the next few years. The business that has purchased a computer from such a company may be left without technical follow-up or without the ability to upgrade a system or to purchase compatible software. In this situation, it may be worthwhile to spend a bit more on a system manufactured by a company that

appears likely to survive the fierce competition of the next few years.

USING THE SYSTEM

How the small orthotic and prosthetic business manager sets up and begins using a personal computer is an important factor in determining the computer's ultimate contribution to business productivity and effectiveness. The most common problem leading to failure of a microcomputer to perform effectively is unrealistic user expectations. Too often, users expect a computer to be a "cure-all" that will solve all of their business problems, an expectation that is reinforced by much of the advertising for microcomputers. As Richard Byrne points out in the June, 1985 issue of *Personal Computing*, however, business problems can be solved only by effective business planning and management: "computerizing a sloppy situation will likely result in nothing more than a sloppy, computerized situation."⁹ The computer is only a tool to enable the user to augment his own skills. It cannot substitute for the ability and effort to make intelligent business decisions, to recognize and react to changes in the business environment, or to perceive and take advantage of new opportunities, although it can help in all of these areas.

Another common mistake related to unrealistic user expectations is to attempt to do too much too soon with the new system. Often, overly eager computer novices purchase expensive and sophisticated equipment and software and attempt to put all of the system's capabilities to work immediately. Such users—and their employees—may become quickly discouraged when problems are encountered, with the result that the computer is underutilized.¹⁰ This type of situation can be forestalled by careful planning and needs assessment in the pre-purchase stage.

The key to successful implementation of a microcomputer system is to progress one step at a time. Managers and employees should begin with a program that is comparatively easy to learn, such as a simple

and user-friendly word processing or spreadsheet package, and then work their way up.¹¹ Once users have become familiar and comfortable with the computer, more important business activities or "critical success factors" should be identified and computerized, one at a time.¹² Byrne suggests that managers use a personal computer to "leverage" what they do best, not to compensate for areas of weakness: "to take something that you are doing poorly and begin doing it with a computer may only intensify the problem."¹³

Finally, if lower-level employees, such as secretaries, are to be primary users of the system, they should be involved, as far as possible, in the needs assessment, evaluation, and selection processes. Such involvement can help employees to understand how the personal computer will benefit them, and can ease any fears they may have about learning new procedures, or about being "replaced" by a computer. If feasible, training should be made available to employees.¹⁴ Further, in choosing the system, physical features such as key size, screen angle, flickering of screen image, and character size and color should be evaluated for comfort and attractiveness. Once installed, a more comfortable system will help to improve employee morale and reduce error.¹⁵ It is also important for the employer to understand that use of the new system may disrupt routines and decrease productivity temporarily.¹⁶

Once users—whether management or staff—are introduced in this gradual fashion to working with the computer, they will begin to see how computerization can facilitate basic business functions, such as accounting and inventory control, and will "inevitably find other ways for the computer to make life at work easier or more productive."¹⁷ At this point, the stage is set for the computer to develop naturally into a tool with many more uses than originally imagined.

SUMMARY

Today's microcomputer is a powerful business tool with numerous applications

beneficial to the small business firm. It can be used to handle billing, accounting, and tax planning, to maintain and update records on inventory and clients, to generate mailing lists, and for word processing. Increasing the efficiency and accuracy of these essential functions can contribute greatly to business effectiveness and success.

Despite these impressive capabilities, however, personal computer purchases must be planned and products evaluated thoroughly and intelligently. Expectations for computer functions should be realistic; a microcomputer is not a "cure-all" for business problems, nor a substitute for good management.

Finally, users with little computer background should acquaint themselves gradually with the computer's operations and capabilities, working up from simpler to more sophisticated programs. In this manner, the small orthotic and prosthetic facility can derive maximum returns in efficiency and productivity from its microcomputer investment.

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- ⁵Hussain, p. 542.
- ⁶Adam and Stanojev, p. 68.
- ⁷Hussain, pp. 544-545.
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- ⁹Byrne, p. 43.
- ¹⁰*Ibid.*, p. 43.
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- ¹²Byrne, p. 45.
- ¹³*Ibid.*, p. 45.
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¹⁵Hussain, p. 371.

¹⁶Op. cit., p. 49.

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