

COMPUTERIZED ASPECTS OF NURSERY MANAGEMENT

JOHN JENKINS¹

151 Barney Street
Armidale, New South Wales 2350

This paper will discuss briefly, the following topics: first, the evaluation, purchase, and use of computers for nursery management; *second*, the need for financial and production budgets and how they can be facilitated by the use of spreadsheets; *third*, some of the types of systems currently being used by an increasing number of nurseries; and *finally* the need for the use of modern technology in the efficient operation of many businesses.

EVALUATION, PURCHASE, AND USE OF COMPUTERIZED SYSTEMS

Pressures exerted on nurseries because of factors such as fluctuating demand, the dynamic nature of consumer trends, and the improving technologies in production and office administration, have resulted in increasing competition in the market place and therefore increasing competition for business survival. Therefore, it is essential for nursery management to forecast as accurately as possible these fluctuations and changes, while, at the same time keeping up-to-date with the growing numbers of plant cultivars, continuing improvements in available technologies, and other modern developments. Hence, accessibility of information relating to a wide range of fields is of paramount importance, and one way of improving such access is through the use of computers. However, it is not in a company's interest to implement a computerized system if the application cannot be justified practically and/or economically.

Massey and Cooney (1) suggested that 6 questions need to be answered in the initial stage of evaluation of the use of a computerized system:

1. Do the expected benefits exceed the costs?
2. For what types of applications (e.g. word processing, accounting, etc.) should a microcomputer be purchased?
3. To what extent should obsolescence be a concern?
4. Will you need a general-purpose or single purpose computer?
5. Is leasing a microcomputer more cost-effective than buying?
6. Is a maintenance agreement cost-effective?

¹ Full-time student, Bachelor of Arts with Honours programme, University of New England, Armidale, N.S.W.

In assessing each of these questions it is important to consider first, how well staff will adapt and appreciate a computerized system of nursery records, making training an important consideration; and secondly, how well can the perceived operation and function of the nursery be accommodated by the system.

If after evaluating the above it is decided that a computerized system is required, then a careful examination of available systems should then be undertaken. There are three possible approaches in the purchasing of any computer system.

a) Go straight out and purchase the hardware and software and then adapt the business functions to that system;

b) Purchase the hardware and software which has been altered to meet the most important business functions; or

c) Have a specialist design a software package which will function within the bounds of your current operation.

In analyzing the software and hardware a further series of questions presented by Massey and Cooney (1) need to be answered.

In evaluating software:

1. Does the program produce correct answers?
2. Will the software handle the volume over a two-year investment life?
3. Is the software user-friendly?
4. Is the documentation adequate?
5. Will the vendor provide training and advice?

In evaluating hardware:

1. Will the software actually run on the system?
2. Is the purchase from a mail-order house or local vendor?
3. Will the vendor install the system and provide start-up training to employees?
4. What is the expected turnaround for repair work?
5. What kind of printer should be bought?

Having outlined a procedure for analyzing the relative merits of installing and selecting a computer and the desired software, some of the areas for the direct application of computer technology in nurseries will now be discussed.

Several nurseries have now incorporated computer-based systems for many reasons including the following:

- Accounting procedures—e.g. simple cash analysis, the maintenance of creditors and debtors files, profit and loss statements and trial-balance presentation.
- The receiving, selection, invoicing and dispatch of orders—e.g. at Tubegrowers and Forest Native Nursery, a stocktake is performed each month and plants deemed ready for sale subse-

quently coded. As each customer's order is picked out on the computer which designates the location from where the plants are to be selected, stock inventory is automatically updated. Staff working with such "picking lists" are required to quickly check the number of each species that should be left in the appropriate location, and any alterations as a result of deaths, etc. are sent back to the office for editing. Therefore, the success of the system relies heavily on the accuracy of staff reporting.

- Payroll management—whereby a single employee of one nursery group is able to completely process the pays of approximately 350 employees in only 2 to 2½ days. This figure will vary depending on the use of modern banking facilities, the need for employees to be paid by cash or cheque and other variables.

- Database management of plant production and maintenance. Production records are updated at each stage of growth or potting and so current stocks are known and readily available for scrutiny at any time.

One of the great benefits of computerized management systems is that the information required to run the business is always available. Collating and storing information using a central computer system allows the nursery to operate in a cohesive manner. If the necessary information is processed correctly and without unnecessary delay then the smooth operation of the business is virtually assured. Having said this, the benefits of training additional selected staff in using the system in their field of expertise or responsibility must not be ignored. Consequently, if the owner or manager is absent from work due to illness or other unforeseen circumstances, the business can still operate efficiently. Not only that, but employees are certainly more likely to adhere to instructions and procedures if they have some idea of the reasoning behind those operations.

BUDGETING AND THE USE OF SPREADSHEETS

Whereas junior managers are generally required to be involved in only one section of the business, senior management is required to undertake a variety of supervisory tasks such as stock control, the processing of orders and invoices, supervision of plant production and plant maintenance, payroll, and so-on. However, in many instances little attention is paid to the importance of financial forecasting and cash-flow management. Too often, crucial management decisions are ad-hoc or spur of the moment responses to changes in short-term expectations. Budgets and plans outlining longer-term goals allow progress to be monitored objectively and any changes in expectations relating to the development and success of the operation are more readily quantifiable and account-

able. I wonder how many managers responsible for the overall planning and operations of nurseries around Australia have readily available budgets relating to, for example, the percentage of wages as to total sales or production, the costs of each factor of production, or even the cost of each unit of production. One computer programme which allows this type of management facility is the programme Lotus 1-2-3. Spreadsheets such as Lotus 1-2-3 are an excellent facility for carrying out routine job costings and budget projections.

As most of the businesses which would find Lotus 1-2-3 useful are large and would use the programme on a regular basis, it is important to have a structured approach to spreadsheet development. Only then will documentation be efficient and effective in the long-run. Anderson (2) suggested that the development process can be broken down into three phases:

1. *Preliminary planning*—Analysis of the problem and development of a general approach to the solution;
2. *Spreadsheet development*—actual creation and testing of the spreadsheet;
3. *Documentation*—Adding identification and operating instructions to the spreadsheet and creating an external printed description of the system.

The initial development of such a spreadsheet is a laborious task; however, the range of possible manipulations of the data on completion can only be described as comprehensive. Nevertheless, like any other computer function, the manager must know exactly how he/she wants to be able to use the spreadsheet before its development and therefore the planning process is of paramount importance.

WORD PROCESSING

Word processing is a function which helps speed up document preparation and revision, and can provide a filing system for the firms correspondence (1). I currently use Microsoft® Write Version 1.0 for the preparation and revision of papers. My hardware consists of a Macintosh Plus with one internal drive, an EMAC-20D Hard disk drive with 20 MB capacity, a Macintosh Mouse, and a Panasonic KX-P1081 Dot Matrix printer.

Microsoft Word Version 1.0 has many functions, of which some of the most notable are:

- A function for spelling checks of words or whole documents. Write automatically checks the spelling of any words throughout a document against the main dictionary and or any other user dictionaries that you may have developed.
- Character formatting which is as simple as the push of a

button and allows the operator to either change a characters font and size; apply character emphasis formats to make characters bold, underlined, shadowed, etc.; raise (superscript) and lower (subscript) a characters position relative to the line of text in which it appears.

- A cut/copy and paste command which enables text to be deleted or copied and transferred to other parts of the text, or other documents not only from Write but also from other packages such as Cricket Graph and StatView 512+.

CONCLUSIONS

The success or failure of a business may well depend on how willing and able its senior management is to adopt modern technologies in the production of its products and in the administration of production. Computers provide an efficient and, in most cases, an economic means of collating, storing, and presenting information quickly and accurately. Nevertheless, no computer system or any other modern form of office automation can work effectively and efficiently in a disorganized work environment. Before contemplating the purchase of modern technologies such as computers, their designated use and applicability must be predetermined. No doubt, those nurseries making the best use of such technologies in the future will be the ones which succeed.

LITERATURE CITED

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