

Application and Capability of a Computer Program for Municipal Animal Control

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ABSTRACT

The administration of urban animal control requires the management and analysis of large amounts of financial and historical information. Computers are an obvious tool to assist this administration task and, with the availability of increasingly low cost hardware and tailor-made software, private enterprise and even smaller councils without in-house computing resources should be considering this technology to more efficiently manage animal control. Netvet Pty Ltd has been working with veterinarians in Australia and New Zealand for over five years using personal computers to efficiently manage client-patient information and believes this experience has direct relevance to the use of computers for animal management by councils or private enterprise. This paper provides an overview and broad guidelines for the development and introduction of a Municipal Animal Management Computer System for use by smaller municipal councils and private enterprise.

INTRODUCTION

Any suggestion of introducing a computer to help with an employee's administrative job tasks usually strikes fear into the heart of anyone out of the school system longer than about five years. Myths abound about the power and complexity of computers. These myths are perpetuated by an electronics industry filled with "buzz" words and groups such as children eager to maintain their superiority over technology-shy parents.

There is nothing magical about computers. They are very dumb pieces of componentry entirely dependent on the ingenuity of humans to program them to perform certain tasks. Once programmed they then wait with infinite patience for information or data to be entered for manipulation by that program. It is important not to forget that humans can do anything a computer can do, only we will be slower and less efficient at completing these tasks. The computer will happily repeat many tasks and unlike humans do so with no error.

The use of computers in business to help manage tasks and analyse information is now well accepted but the task of implementing a system involves many decisions. Making decisions such as the choice of hardware and software and who will help if things go wrong, is still very daunting to most organisations.

Computing has also become cheaper and the software available for the average personal computer is now simpler to use and more powerful than only a few years ago. Computer programmers, those logical thinkers who develop the software, now also have access to development tools that enable them to develop very specific customised software easily and in a much shorter time frame.

The good news is that this means that computers are now a commodity item available at a cost acceptable to most businesses and that the specialised software programs (such as municipal animal management software) that are required can now be cost-effectively and quickly developed.

The bad news is that personal computing in business still requires periodic technical assistance and systems analysis to ensure the systems continue to operate correctly over time and meet often changing expectations and requirements. In a commodity marketplace that has introduced many unprofessional and untrained entrepreneurs unable and unwilling to offer the long term service and assistance required, the challenge is to ensure your business chooses to work with professional organisations able and committed to meet your future needs.

This paper is primarily directed at the smaller councils and private organisations who may become or are involved with urban animal control and who wish to better understand the full range of considerations necessary for the introduction of a computer system in this task. For larger councils with in-house computing resources, it is more likely that the administration needs of animal controllers will be integrated with the council computer system providing one consistent client database and profile. This is the ideal but is not always available for the smaller council or private company contracted for the single task of municipal animal management.

Netvet has developed its expertise in the area of system development and support while servicing the needs of what is now over 200 veterinary practices throughout all regions of Australia over the last five years.

From our Melbourne office we have developed skills which help us provide software assistance and coordinate computer hardware maintenance for our clients throughout Australia. Netvet operates in what is called a vertical market meaning that our product is only sold to one marketplace; we are known as a "valued added reseller" or "VAR". We have recognised that although computer hardware is now cheaper and our software very specialised, our real long-term value to our clients is in the continuing relationship we have with them, helping them to continue to use their computer to meet their ever changing requirements.

We believe that this type of computer supplier, service orientated and focused on specific markets or products, is the way of the future and that the lessons we have learnt are very relevant to councils or business seeking the supply and development of a specialised municipal animal management computer system.

ADVANTAGES OF A COMPUTER MANAGEMENT SYSTEM

Municipal animal control involves a significant amount of administration: tracking animals and their owners; issuing registration notices and following up with reminders; logging infringements and issuing notices; recording a history of complaints by animal and owner; and searching for an animal by tag number, breed, location or a range of other criteria.

All these tasks can be handled by an electronic organiser or computer and have the following key advantages:

- fast retrieval of information
- no misplaced paper records
- central data storage accessible to many system users
- automatic generation and tracking of registration notices
- automatic generation of reminder notices and tracking of reminders forwarded
- centralised owner/animal history
- once only entry of client and animal details
- flexibility of searching for an animal or owner by a range of criteria
- availability of a database of information that can be analysed for statistical reports of common problems/animals/owners
- integrated accounting
- instant access to a full suite of financial and analytical reports.

The old adage still remains for any information system - "garbage in equals garbage out". Notwithstanding this fact the management of information can be very efficiently handled by a computer.

SYSTEM REQUIREMENTS

For any computer system or, for that matter any manual administration system, the key task is to be clear on the capabilities and objectives of the system. The following is our understanding of the requirements of a computer based Municipal Animal Management System (MAMS) which we do not present as being exhaustive and which we expect will change and be enhanced over time.

Owner details

Each owner will be described by their name, address, status eg pensioner, and have a file number linked to that address. The file number may be accessed by entering client name, address or animal details. The file number and address references each property with a description of all resident animals including their tag number and details.

Animal details

Each animal will be described by their name and/or tag number and be given a status such as obedience trained, problem animal. Details displayed will include owner's name, address, phone number, where the dog is kept, sex (neutered), description and age.

History of owner/animal

Calling up either owner, address or animal will also display the following information:

- history of complaints against the owner by category such as noise, fouling, attacks and biting, animal at large and other miscellaneous complaints. All these complaints will link to details of any infringement notices served.
- history of ownership of the animal
- history of previous impounding of the animal
- legal action pending against the owner
- details of any correspondence to the owner including registration reminder notices.

Registration

- Registration notices will be automatically generated according to the charging structure of each council which might typically include pensioner and neutered animal discounts.
- Registrations made on time will be flagged and an appropriate discount may be applied.
- Reminder notices may be easily generated in a variety of format through the computer word processing package.

Infringement

Infringements forwarded to the owner such as barking, attacks, roaming, fouling, traffic hazard, stock hazard will be recorded in the owner/animal history and automatically generate an infringement notice. Charges made to the owner as a result of the infringement will accrue in the accounting system as a debtor amount to be paid.

Accounting

Fully integrated with the system should be a debtors and creditors package able to fully account for all debtor and creditor transactions. Billing would optionally be automatically generated to all or specific categories of clients or to specific clients for by-law infringements.

Reporting

A full suite of accounting and analytical reports should be included. These might typically include:

- owner/animal lists selected by criteria such as tag number, post code, address, owner/animal status, animal sex, description
- owner list by legal or other action pending
- outstanding debtors
- outstanding creditors
- analysis by infringement giving a list of owners and animals over any date period
- query reports such as what type of owners and what breed of animals cause the biggest problems.

Document generation - word processing

The system should be equipped with a well-known word processing package such as WordPerfect or MicroSoft Word fully integrated with the Management System software to ensure that letters and notices can be simply generated (merged) to owners, and details of this correspondence be automatically linked to the owner/animal history. Using high quality printers and the merging ability of the word processor and database, personalised letters can be generated that typically ensure a higher reminder response rate.

System management

A variety of system management functions should be provided which might include:

- information backup/recover functions onto tape or diskettes
- purging of unwanted owners or animals by various date or history criteria
- exporting of information to other computer formats for the easy transportation of information to other computers
- communication functions to link the system to other computers via modem.

Querying

One of the biggest advantages of personal computer management systems is the flexibility by which information can be generated from what becomes a very large and useful database of information. Traditionally computer systems have been excellent information managers but not very good information providers. With modern database software there is normally the ability to query the computer with a variety of criteria upon which it might present a report, in this case outlining all the owners and animals meeting that criteria.

For example the computer could be asked to provide a list of owners with their address details who own Alsatian castrated male dogs who are registered and have been presented with an infringement notice more than once in the past 12 months. This information would be impossible to ascertain quickly with a manual system but the computer could generate this report in a matter of minutes.

The ability to search and query the database can provide the council or animal control organisation with important statistical information and can help animal control officers target their efforts according to variables such as area, client type or breed of animal.

COMPUTER SYSTEM HARDWARE AND SOFTWARE CONSIDERATIONS

The selection of appropriate software program should always be the first consideration prior to any decision on hardware. Then the logistic needs of the organisation can be coupled with the hardware required by the software to form the basis of the hardware specification. A professional software supplier will be able to define exactly the hardware needed to correctly operate the system and their advice should be sought in the first instance.

Other considerations on the amount and type of computer hardware required might be as follows:

- number of staff ie number of workstations
- cost constraints, both initial and recurring
- quality of printing required ie normal dot matrix or laser printer quality
- environmental considerations such as printer noise - quietness of laser versus the noise of dot matrix
- space - where it will all fit.

Single user or multi user operation?

The Management System might be run on either a single personal computer or a number of computers or workstations linked together in what is called a network. To allow each computer or peripheral to talk to others, special networking software is also required. The Novell Netware software is a standard in networking software, is very widely used and should be considered by your software supplier. Very simply a network of computers allows operators to perform their own tasks on their computer but share the common database of information between all computers. Each computer and any peripheral unit such as a printer is linked to the network for common use by anyone on the network. This is shown in Figure 1 below.

The advantage of a network is that the owner/animal history and financial profile can be made accessible to anyone connected to the network thereby efficiently making this information available to other council departments as required. Networking computers can be just as practical in a small office allowing access to information by

Figure 1. Computer network

a number of workstations reducing the bottleneck of activity around any one screen. Networks are a little more complex to manage over time and so access to reliable and responsive support from your suppliers is most important.

Computer hardware

The type and specification of computer(s) to be purchased should only be made after the software program is chosen and decisions made about single or multi user operation. It is important to coordinate the purchase of hardware with your software supplier as they will be able to advise on the appropriate hardware specification to run the software they have developed.

Considerations in the hardware specification will include the following:

- 386 or 486 computer
Without wanting to be too technical this is like buying a six-cylinder or eight-cylinder car. Unless you are running a large network then from a price perspective a 386 level of computer should be more than adequate. 486 computers are falling in price and will increasingly become very price competitive offering higher speed of performance for your dollar.
- Computer memory or RAM (random access memory)
This should generally be at least 1 MB (megabyte) and is typically 4 MB.
- information storage - hard disk size
Talk to your software supplier because this main storage device will be sized depending on the likely amount of information needing to be stored. Expect to install anything from a 100 MB to 200 MB hard disk.

- colour or monochrome monitor
Colour monitors are now almost standard when purchasing a personal computer and many software packages rely on a colour screen. Expect to buy what is called Super VGA quality.
- network interface cards
These circuit cards interface your computer to the network cabling and will be dependent on the network software being used. Refer to your software supplier for advice.
- streaming tape backup unit
This is like an oversized cassette tape and can store several hundred megabytes of information (roughly 50 000 typed pages). It is important that your system use a high performance backup tape unit and that backups of all data is performed regularly (daily) in case of computer failure.
- uninterruptible power supply (UPS)
In most areas power failure or even short term interruption is always possible. A UPS unit not only filters the power to your computer but provides battery backup of typically 10 to 60 minutes in case of power failure. Power problems are the main source of long term data corruption or loss.

Finally, let me stress again it is particularly important that computer hardware is supplied by a reputable dealer who has a proven reputation of strong after-sales service. We prefer to work with computer hardware that can be supported by one of the larger service companies such as 3M (Australia) or Honeywell (Australia) because we know they are likely to remain in business in the long term.

Software maintenance and support

Because computer software is easily changed and the requirements of the application usually grow and change with time, it is important that your software supplier is sympathetic to the likelihood of changes being required in the future. With software written for a specific application and not subject to worldwide scrutiny and definition, the need for change is highly likely.

There is no such thing as perfect software that performs ideally under every possible combination of events; hence it is also important that once again your software supplier is willing to address necessary bugs as they are discovered.

Software suppliers will often offer a software maintenance contract under which, for an annual charge, phone and software maintenance will be provided over a period of time. For example Netvet provides phone support six days a week via a 008 phone hot line and provides several software updates a year in response to new client requirements, necessary problems fixes and the availability of new system software that might add value or additional capability to the overall system.

Many suppliers will also offer modem support. A modem is a small device that connects your computer to the standard telephone network allowing your supplier to connect into your computer directly from his or her office. In this way software assistance can be provided directly to your computer without even the client's assistance.

EXAMPLE - NETVET'S MUNICIPAL ANIMAL MANAGEMENT SYSTEM

Some initial work by Netvet has been put into the screen design and database development for a suitable Municipal Animal Management System with the main owner/animal information screen layout with sample pull-down menu functions also displayed. See Figure 2.

The operation of the system would be by menu selection via cursor or mouse control. In the example screen shown selecting an owner displays each of the owner's' animal details and brief Contact History summary. Selecting a history entry then displays further detail about that contact with the client and/or animal.

Figure 2. Example Program Screen Layout

The displayed Reports pull-down menu shows the typical method of selecting another function. Other main functions include File management, Viewing expanded file details, Accounting functions, System Administration and Help. At any point in the program, selecting Help would provide further assistance on the action being performed at the time.

CONCLUSION

Personal computers lend themselves ideally to the efficient administration of animal control information by local councils or private enterprise involved in urban animal management. With an emphasis on reputable backup and support by professional suppliers, the choice of computer hardware and software need not be difficult and can be very cost-effective relative to the administration efficiencies achieved.

It should also be recognised that the development of the software required would be assisted by the uniform acceptance of this technology by a wide base of organisations involved with urban animal management. Common agreement of the requirements of the software program would then allow a standard Municipal Animal Management System to be developed with the resultant economies of scale helping to reduce software and support costs to the end user.

ACKNOWLEDGEMENTS

I would like to thank the following people for their time providing background information for this paper:

Mr. Max Jennings, Senior By-Laws Officer for the Nunawading City Council, Melbourne.

Mr. Terry Cowan-Hackett, Superintendent of Traffic & Local Laws, Box Hill City Council, Melbourne.

Mr. John Dix, Ranger for the Brighton City Council, Melbourne.

Ms. Jenny Brennan, Animal Control Contractor for the Mt. Isa City Council.

Dr. Dick Murray, Urban Animal Management Consultant for the Townsville City Council.

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For over nine years I worked as an industrial computer control Systems Engineer for an American company in Australia, the United Kingdom and United States. First as a Systems Engineer and then in Systems Marketing, increasingly my interests lay with the optimization and effective support of computer systems.

In 1988 after successfully completing a business course focusing on entrepreneurial planning skills I accepted the offer to join the fledgling Netvet company as General Manager with the aim of establishing the company as a leader in computer management systems for the veterinary profession.

I am proud to say that with over 200 veterinary practices using Netvet-supported systems we are now meeting that aim with a reputation for product quality and responsive service and support distinguishing our product offerings from our competitors. I remain keenly interested in the development of a service culture in business as a powerful marketing tool and believe that particularly in the competitive personal computer industry only those that adopt a service culture will survive.

[UAM 92 Index Page](#)