

# QUESTIONS ABOUT THE USEFULNESS OF MICROCOMPUTERS IN 1980s AUSTRALIA

## Abstract

*Relatively cheap, low-end 8-bit machines were embraced by hobbyists interested in computing in the late 1970s and early 1980s. But what were these early computers good for? Opinion was split as to whether these early computers were useful, and what for. As early adopters, hobbyists were in the vanguard of inventing new uses for computers. To date, their pursuits have tended to be overlooked or dismissed as insignificant. This article focuses on consumption in the early microcomputing period and considers the Australian history of computing in terms of several interrelated questions about utility. Based on extensive archival research, it discusses doubts about the usefulness of these computers, the actual uses to which these micros were put, the invention of new uses by hobbyists and factors behind the change in perceptions of computers' usefulness in the latter part of the decade.*

From the late 1970s through to at least the mid-1980s, low-end microcomputers such as the TRS and System 80s,<sup>1</sup> the Commodores, the Spectrum and the Sega SC3000 were purchased by Australians interested in the new potentials of computing. Small and cheap compared with their mini-computer siblings, the arrival of microcomputers – a little over three decades ago – heralded the moment when computers came within reach of laypeople. This is relatively recent media history, and yet so much in computing has changed that these computers can seem very distant to current users. The history traced by this article begins at a time when Microsoft was still developing DOS, and the Macintosh GUI hadn't yet appeared. Indeed, the term 'personal computers' (or 'PCs') hadn't yet entered the lexicon. And while now-recognisable brands of computers – IBM and Apple – were available to purchase from the late 1970s/early 1980s, these were expensive compared with the 'all in one' microcomputers, most of which simply plugged into an existing television set. These low-end, 8-bit machines provided many with their first taste of computing.

This article focuses on questions of use in relation to such early microcomputers during the 1980s. 'Use' should be understood here in terms of the cultural and media studies concern with practices of consumption. I am influenced particularly by the work of Michel de Certeau, who attends to the uses that are made of products by consumers.<sup>2</sup> My research has revealed that discourses of computers' utility, usefulness and uselessness were recurrent ones during this period in Australia. Adopting utility as a lens allows me to examine several – at times interrelated – issues around the wider cultural reception of computers during this decade, including perceptions about microcomputers, anxieties about their claimed usefulness, and the invention of new uses for computers by users. The entry of digital computers into domestic spaces was a highly significant moment. A mere 30 years on, it is clear that personal computing has affected almost all aspects of our daily lives, including the ways we socialise and create culture. But in the late 1970s and early

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1980s, few people outside of research labs had had the chance to get their hands on a computer, let alone spend time with it in their home. As such, users were still getting accustomed to computers. Usage hadn't yet acquired a habitual element, and for most users computing's potential was still to be discovered. This article addresses the moment when this now taken-for-granted technology was new, considering some of the hopes, anxieties, confusion and experimentation that surrounded it. It does not address computers in business, except where business use of microcomputers was invoked at the time.

This article is based on review of an extensive range of Australian primary source materials, including general and specialist computer newspapers (the *Sydney Morning Herald*, *Australian Microcomputer Magazine*, *Australian Computer Weekly*, *Pacific Computer Weekly*, *Australian Microcomputerworld*), computer magazines (*Your Computer: Magazine for Business and Pleasure*, *Online: The Microbee Owner's Journal*, *The Australian Commodore Review*, *The Australian Commodore and Amiga Review*, *The Australian Apple Review*, *Australian Home Computer GEM*) and early code books. My focus is on the decade of the 1980s; however, references to microcomputers and digital games sometimes saw me read beyond this period. I am aware of a range of possible approaches to the history of personal computing such as that of software historians (e.g. Campbell-Kelly, 2003; Philipson, 2004), ethnographic researchers interviewing users (e.g. Lally, 2002), and theoretical frameworks such as the social construction of technology and actor-network theory (e.g. MacKenzie and Wajcman, 1985; Oudshoorn and Pinch, 2003). However, here I am concerned primarily with issues of use and the users of early microcomputers, as these are represented in published textual material. The article covers some similar ground to Leslie Haddon's (1988) 'The Home Computer: The Making of a Consumer Electronic'. Haddon's focus, however, is firmly on the marketing discourses surrounding particular brands of microcomputers, and how marketing and related decisions situated these computers, in the British and US contexts. Hobbyists are mentioned, but only in passing. By contrast, my main concern is with use and users. As Nelly Oudshoorn and Trevor Pinch write in their 'Introduction' to *How Users Matter*:

[S]cholars in the fields of cultural and media studies acknowledged the importance of studying users from the very beginning. Whereas historians and sociologists of technology have chosen technology as their major topic of analysis, those who do cultural and media studies have focused primarily on users and consumers. (Oudshoorn and Pinch, 2003: 11–12)

In addition, in this research I was concerned to see what local (particularly New South Wales-based) publications revealed about local microcomputing and games histories, a subject on which there has been very little research. I was also concerned to go beyond histories of 'well-known' software in order to chart examples of software titles that were not widely known, and to examine perceptions of the micro's usefulness held by users and non-users.

Today, the idea that the computer is a useful piece of technology is deemed to be so obvious as to not even be worth debating. However, it was not always thus. As Philipson (2003) writes, 'many people who bought expensive and underpowered PCs wondered what to do with them'. In this article, I critically examine some of the questions, responses and ambivalence that attended the concept of early microcomputers' 'usefulness'. I write 'usefulness' in scare quotes not only to reference people's doubts about the usefulness of these computers, but because I argue that early microcomputers were a technology in search of a use. I begin by reviewing perceptions of the usefulness of these computers, then proceed to consider one of the biggest uses for early computers: the playing of games. Next I detail uses invented for computers by users themselves. Finally, I consider the factors that helped to change perceptions of computers in the latter part of the decade

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to the point when non-hobbyist members of the population began to see computers as something that could be quite useful, if not yet something that they needed.

In the first half of the 1980s, microcomputers were almost exclusively the domain of hobbyists or enthusiasts – those people who liked tinkering around with electronic gadgets or who enjoyed logic problems. Indeed, as Christina Lindsay (2003: 33) notes regarding the Tandy Radio Shack computer, the inventors of this machine envisioned users who were ‘(electronics) hobbyists like themselves’. Many hobbyists were young. While it is difficult to find statistics on computer ownership and use during this period (the earliest ABS data collection covering computer ownership is the 1994 *Household Use of Information Technology*), Ironmonger et al. (2000) provide data on computer ownership from the middle of the decade. In 1985, only 6.6 per cent of households (or 13.8 per cent of households with children) owned a computer. In 1990, ownership was estimated at 15.1 per cent of households (or 26.3 per cent of households with children) (Ironmonger et al., 2000).<sup>3</sup> From these figures, we can say that in the late 1970s/early 1980s, computer-owning hobbyists comprised only a small fraction of the population.

## **Computers: What were they (supposed to be) good for?**

Most hobbyists did not need convincing of the wonders of computing, but those around them often did. In this section, I ask what these early home computers were said to be useful for. This is aligned to what they might have been *used* for, but it is not quite the same. While there was a reasonably widespread ‘commonsense’ expectation that computers should be useful, the question of whether early, low-end home computers were actually useful generated quite a bit of discussion. Clearly, much doubt existed in some people’s minds.

Why did people doubt the usefulness of microcomputers? The expense of the purchase was a major reason. Though relatively cheap compared with a mini-computer, a micro still required a considerable outlay of cash in the early days. In the 1980s, Katharine Neil – now a professional game developer – was an adolescent who dabbled with coding. The following excerpt from our 2006 interview helps to put the financial outlay of a computer purchase into context:

I remember my parents saying, ‘Well, we can either get a microwave, a video recorder or a computer’. Those were the luxury items, the new luxury items, and if you wanted to be an up-and-coming household, you’d get those things, or one of them. So we chose a computer. But it was ... outrageously expensive. (personal communication)

While Neil is speaking of the New Zealand context, owning a computer was not a necessity in either Australia or New Zealand 30 years ago. It was a discretionary purchase. Given the expense, it’s not surprising that people wanted to know what it would be useful for, what it would do for them. Letters pages in magazines attest to the doubts some expressed. Spouses are irate that discretionary income is being expended on something they often don’t understand. And if one spent too much time at the computer, Wideman wrote, ‘Friends and relatives [would] start to forget what you look like. Spouses and lovers take up other interests.’ For this reason, he counselled against the idea of buying a basic computer with the intention of adding on to it later:

[A] computer that doesn’t really do very much, and consumes a large amount of your time, is even less well accepted by those associates or other members of the family who might have some say in further expenditure ... don’t just go for the cheapest starter outfit. Pay attention to the overall cost of a system expanded to the

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point at which it is going to be most useful, which inevitably includes software.  
(1982: 90, 92)

Perhaps the claimed uses of computers did not help much. In the early 1980s, all sorts of claims were made for what microcomputers would be good for in the home. These included such unlikely tasks as recipe filing, the preparation of household budgets and auto maintenance scheduling. For Rudi Hoess, microcomputers were allegedly changing the image of computers to ‘that of a friendly servant capable of educating and amusing the children, keeping the family budget, helping with the cooking and many other useful abilities’ (cited in Rowlands, 1978). However, while colleagues have told me of friends who were keen to use a micro for just such ends (organising their hobby of choice on the computer), I find it difficult to believe that tasks such as household budgeting and recipe filing would have persuaded many prospective purchasers that the computer was, indeed, a useful piece of technology.<sup>4</sup> These were far from the ‘killer app’.

Doubts as to computers’ usefulness persisted well into the 1990s. In its 1996 *Household Use of Information Technology* study, the ABS reported:

Of the 4.4 million households which did not have computing facilities, 40% gave ‘no use for one’ as the main reason for not having a computer, 30% said ‘costs are too high’ and 14% said ‘no one in household interested in computer’. (1996: 6)

If there were doubts about the computer’s domestic utility, there was considerable ambivalence about their usefulness in the workplace. A number of articles appeared, questioning whether cheap micros would be any use in business settings. Reviewers in *Pacific Computer Weekly (PCW)* pronounced on the ‘line between the toys and real business systems’ (Unnamed reviewer, 1983). Like most of the computing periodicals written for the computer business, this publication showed little interest in micros: they were not part of its core business – at least not at this moment. On occasion, descriptive ‘case histories’ appeared on a particular business’s adoption of a microcomputer (as in Richardson, 1985a, 1985c, 1986, who aimed to show that a cheap micro could be useful in small business).<sup>5</sup> However, the recurrent, derisory comparison of micros to toys indicates that they were deemed to not be sufficiently *serious* computers for business use, a theme that is also clear in Frank Lee’s (1985) review of four low-end microcomputers. Usefulness was thus equated with seriousness, and seriousness is about computing power and whether the computer was fit for the purpose for which it was envisaged. The *PCW* article concluded that micros were getting more powerful, and so it really came down to the software and whether a computer did what was required. This is significant, as micros were often released before a range of software was available for them. As Philipson writes: ‘Without software computers are useless. The story of the computer industry is as much about programmers and the software they write as it is about the hardware.’ (2004: 16) Thus it was entirely possible that a purchaser might not be able to use their computer as envisaged because of a lack of software. But now also evident in these business newspaper and other musings is the assumption that the tasks the computer would perform were already known. Little scope was allowed for other, new uses being discovered along the way.

## What were computers actually good for?

Another way for consumers to ask about the usefulness of early microcomputers was to ask: What will they do, or what are they good for? I pose this question now to consider the actual uses to which early computers were put by their owners. One thing that early microcomputers were good for was playing games. Games feature heavily in the *Australian Microcomputer Magazine*’s best-seller list of software for 1983, occupying all ten spots on Atari’s list (though it does differ by distributor – the Apple and IBM

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lists predominantly feature productivity software, with some games) ('1983's top sellers' 1984). This corroborates Campbell-Kelly's claim that 'Games accounted for about 60 per cent of home computer software sales' (276),<sup>6</sup> as well as later ABS research that found games were played in 62.1 per cent of Australian households where a computer was used frequently (ABS 1994: 2). Why were early microcomputers good for playing games?

In 1978, Rudi Hoess, the Managing Director of Electronic Concepts Pty Ltd (a computer shop), offered an answer to the twin questions that he said had been most prominent regarding computers: 'What will it do?' and 'Can it do something other than play games?' His answer directly ties use to playing games:

[I]f one analyses what computers do, the answer to the introductory questions are simple.

For one, computers make logical decisions based on a pre-arranged (programmed) path taking into account variables supported by the user – and that is exactly what is happening when you play a game (computerised or with human partners) – the rules are set (programmed), while the inputs are based on player inputs.

Indeed, the game is the most readily accepted way to make use of the new capabilities suddenly offered by new personal computers. (Hoess, 1978)

Digital games were a new cultural form, one that was indigenous to the computer and took advantage of its abilities. 'To play games' was a common reason for purchasing a computer, even in the face of claims that it was really for 'programming' or 'educational' uses (Haddon, 1988, 45–48; Swalwell, 2008, 2010). Games software was commonly bundled with hardware, as can be seen in Figure 1, an advertisement for the Commodore range of computers. In this ad, purchasing a Commodore machine is pitched in terms of the familiar adage of 'keeping up', as John Laws intones that it is one of the best ways to 'introduce your family to the world of computers'.

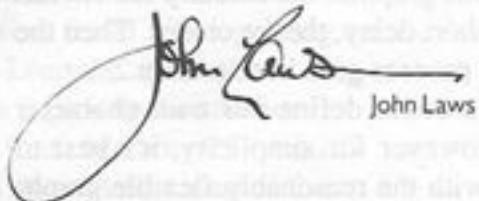
Of course, not everyone thought games qualified as either an example of computers' usefulness or a particularly good use for computers. In the 1980s, the view that playing games was a waste of time was expressed frequently, as in one reviewer's comment that he had 'wast[ed] the statutory hour playing games' (Lee, 1985: 20). However, gaming is clearly one use for computers, and claiming that time spent playing games is time wasted is not the same as saying that computers are useless, though playing games might be seen as a non-profitable or anti-productive use.

Despite the view of some that playing games was a waste of time, people learnt a lot about computers in the course of playing games. Indeed, early games hold an important place as one of the great computer familiarisers, introducing people to the then-new technology (Birss, cited in Swalwell 2010, p. 165). Such introductions could be fun (Butterfield, 1978) and non-threatening (Mendham, 1986), because games were pleasurable to play. In drawing attention to the element of fun, Mendham and Butterfield each observe a puritan ethic at work around computing, with Butterfield writing: 'There seems to be an underlying feeling that there's something wrong with enjoying yourself.' As a computer retailer, Hoess was clearly hoping some of the visitors having fun with the games in his shop would translate this into an abiding interest in computers. Interviewed by journalist Grant Rowlands, Hoess made it clear that people were welcome to come and use the computers on display:

Mr Hoess believes that by letting teenagers play games on the computers he is doing more than just entertaining them.

The children will begin to learn what a computer is all about and how rewarding it can be, he says.

# "THE 3 BEST WAYS I KNOW TO INTRODUCE YOUR FAMILY TO THE WORLD OF COMPUTERS"



John Laws

John Laws

**\$399**

RRP.

#### The Commodore 64C Family Pack

Including: The Commodore 64C, the world's largest selling computer with over 7 million units sold worldwide and thousands of software titles available.  
• 2 joysticks  
• 5 software programs for games, entertainment, education and finance management: Wizard of Wor, International Soccer, Visible Solar System, Magic Desk, Financial Advisor.  
• Superbly illustrated book on Australia's history.



**\$649**

RRP.

#### The Commodore 64C Pro Pack

The total personal computer package:  
• Commodore 64C computer  
• 1541 disk drive, enabling storage of information, and access to thousands of additional software programs  
• Joystick  
• GEOS Software to enable use of a mouse or joystick, making learning easier and faster.  
• 15 software titles for games, entertainment and utilities.

**PRO  
PACK**

By Commodore



**\$999**

RRP.

#### The Commodore Amiga 500

From the revolutionary Amiga range of computers, the Amiga 500 is the ultimate in home computing with superior graphics application. The Amiga 500 puts the fun back into computer learning.  
• 512K internally expandable to 1Mb  
• 4096 colours  
• 4 independent stereo channels, built-in music and voice synthesiser  
• Capable of multitasking (runs more than one program at one time)  
• Hundreds of software programs available



**commodore**

Available at all major department stores and authorised Commodore computer specialists.

ARE YOU KEEPING UP WITH THE COMMODORE?

\*Monitor extra

John Singleton Advertising COM022

Source: *The Australian Commodore and Amiga Review*, vol. 5, no. 2, February 1988, p. 11.

Figure 1: Advertisement for Commodore computers featuring John Laws

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'They will see how easy a computer is to operate and program and want to learn more ... Today's fan is tomorrow's hobbyist and quite possibly the day after tomorrow's businessman.' (Hoess, cited in Rowlands, 1978)

Early computers' limited memory and processing power are further considerations. As Andrew Farrell notes: 'Smaller computers like mine don't have a lot of use in the business world because they're so limited.' (cited in Filatoff, 1983, p. 30) Games were one of the things that these low-end micros *were* good for.

Users typically learnt some simple programming while playing games, especially in the early days, as in order to play a game you either had to type in the source code, or type commands to load and run it. Many hobbyists began to write games (Swalwell, 2008; Campbell-Kelly, 2003: 277). This allowed them to develop their programming skills, and it was fun. In her potted history of the Microbee computer, Sharon France notes:

In the beginning the first pieces of software to appear on the market for the Microbee could be broadly classed under the heading 'Games'. Many of the titles were written by enthusiasts and were submitted to Applied Technology for appraisal, tidying up and an eventual view to marketing. (1985: 24)

Capable hobbyists took advantage of the opportunity to cash in on the release of a new computer for which there was not much software. Natalie Filatoff's 'Class of 1982' profiles a number of industrious teenagers who were making money writing programs for computers. Michael Fackerell, Garry Epps and Martin Foord were Dynamic Software. Fackerell explains: 'It happens quite often ... that computers are released before they have software ready.' The trio had experience writing programs for the Apple, TRS and System 80, Compucolour and the Microbee, and were considering getting a VIC machine. 'We've now got about eight programs for the Microbee ... We're working all the time. They're mostly games at the moment.' (Filatoff 1983: 27) Programming games marked the beginning of an Australian software industry according to Owen Hill (1984: 35), and certainly helped to drive the uptake of early low-end micros (Birss, cited in Swalwell 2008). Several of Australia's earliest game developers got a start at this time, including Beam Software, Microforte and SSI.

## What else might computers be good for?

I now consider other uses invented for computers by users themselves. While some technologies' uses are implied by their function, early computers were effectively a technology in search of a use (or uses). Programming was the only use that was indigenous to the computer. As Katharine Neil puts it:

You couldn't really do much with computers back then unless you learnt a bit of code. You'd do really dumb, primitive things, but ... In those days ... the coolest thing was to write stuff yourself. In those days, you bought a computer and you bought a book on how to program it, and there was only one way you could do it! And if you didn't do it, then what was the point of having a computer, because it didn't do anything, it didn't do anything for you? (personal communication)

In Australia, a whole genre of 'how to' programming guides emerged in the late 1970s and early 1980s. Such books typically promoted the ease of programming a computer, providing self-study resources and the encouraging message that anyone could do it. While there were also books focusing on the craft of programming (Muller, 1985), and some that addressed a particular professional or vocational sector – such as programming for accounting (see Scorgie and Magnus, 1985) – most were written for the home user. Many began with how to turn the computer on, while others assumed 'only that you've

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read enough of your User's Guide to be able to turn your computer on and that you're familiar with the functions of the various keys' (Oliver, 1984: 5). There was an absence of 'computerese' (Chalmers, 1985: Preface) and a pride in using 'simple, logical, no-nonsense' language and a 'light conversational style' (Wolff, 1982: Preface). Monro, for instance, confessed his long-held desire 'to write a real computer book for real people' (1982: Preface). The philosophy underpinning most of these titles is one of freedom, fun and self-correcting learning.

As already mentioned, many hobbyists taught themselves to program, typically in BASIC. Here I want to articulate the wider significance of this activity on the part of computer users. I argue that these hobbyists were engaged in inventing uses for computers, in a context where – apart from digital games – the range of software was limited and rather unimaginative. Hobbyists were able to do this because, as the authors of a 1981 book on the TRS-80 wrote, they brought their own 'avocations' and were able to see new uses for computers:

Today's microcomputers, such as the TRS-80, have created an opportunity for nearly everyone to own, use, and master the 'mysteries' of a small computer. The small computer is finding its way into the home, the school, and the small business. Thousands of programs are being developed for these machines to perform a wide variety of educational, recreational, and business-related tasks.

With the steady increase of programs and computer users, the number of new applications for these powerful tools will continue to grow. New users bring new interests and avocations that lead to different problems to be solved. Everyone benefits as new solutions are discovered and shared, opening up new areas to apply the tool. The cycle feeds on itself, and everyone has an opportunity to be an inventor and creator in this rapidly growing field. (Inman et al., 1981: 2)

Users who developed new programs were innovators in two ways. The first was the mundane sense that something had been created where previously there had been nothing. It is the second sense that most interests me, however, whereby a program was created by someone who brought their interests and 'avocations' to the task of creating software. This is consistent with Hoess's characterisation of the computer fan or hobbyist as 'someone who appreciates the options, fun, excitement and fiendish fascination of computers' (Hoess, cited in Rowlands, 1978) and also with Philipson's earlier cited allegation that 'many people who bought expensive and underpowered PCs wondered what to do with them'. I assume the latter comment is intended to be derogatory, but it can also be taken literally: 'wondering what to do' with something frequently leads to experimentation and to new uses being found. Such wondering on the part of hobbyists enabled them to see opportunities for developing new programs that would be useful in a field of their own interest or expertise.

While it is difficult to say just how many users wrote their own programs during this period, computing magazines attest to the interest such efforts attracted. Hobbyist titles were frequently discussed and often featured in articles. An example is Filatoff's profile on programs for constructing family trees (1984). Meanwhile, several intriguing creations of Robert Bowden (US) were editorialised in *The Australian Commodore Review*. 'Period' was claimed to be 'the first software program that can be used as a guide to determine when a woman is most likely to conceive'. 'Planning Tanning' was a program where the user 'tell[s] the computer the month, time of day, your skin type, sky condition and the type of tanning lotion you're using'. Then the computer would tell you 'an exact tan time for each side of your body'. Finally, 'For Ectomorphs only' was 'a program to help you gain weight and increase your strength and muscle mass. [It] will also help skinny people pick out the most flattering clothes by demonstrating how colour, style, and pattern affect

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appearance.' ('Birth Control via your C64', 1988, p. 4) While some of these program ideas now seem bizarre, they highlight the argument I am making that hobbyist programmers developed software for which *they* could see a use. At times, a shared 'commonsense' view of what people were *likely* to find useful is also evident in magazines. In passing on a request for astrology software, the editor of *Online* notes that a number of people have expressed an interest in this: surely *someone* must have written a program along these lines, or would like to do so? (Editor, 1984: 3)

Australian software written during this period includes the output of Armidale entity ArComPro, which developed an extensive list of software programs, including: auction lots, bar file, radio operator's logbook, beef stud file, pony jamboree, showjump, genealogy, warranty recorder, weight recorder, sharemarket and squash controller. The State Library of New South Wales holds documentation for two of its games, 'Olympic Gold' and 'Quizmaster'. 'Compu-B' by John Schellens and James Roe was a horse racing analyser distributed by Dreamcards, a business run by Lindsay R. Ford, a lawyer from Victoria. In 'reviewing' the program, Ford writes that it is 'probably the only Microbee program that can *truly* claim to be capable of paying for itself' (1985, p. 21). Ford's own programs included 'Psychotec', a 'computer psychiatrist' program with artificial intelligence, and 'Merlin', an adventure game.

Hobbyist authors had a number of opportunities to sell their work. Particularly during the early 1980s, advertisements were placed by magazines and software houses soliciting hobbyist authors to sell their software creations. Others marketed their programs themselves. Though a number of businesses were formed in this way, programming was a culture as much as anything during this period. As Ford joked, he was no 'software magnate', and 'anyone intending to write commercial software [needs to know] that it's a great hobby, but a terrible way to make money' (1984). He saw the recent label of 'funware' suggested for some software that was 'non-industrial, non-professional, non-commercial, or non-academic in character' as apt (Goriunova cited in Rackham, 2010).

This is not to say that there were no 'serious' applications developed. Several interesting local software examples emerged, such as the 'Arbor Data' database and 'Bushtronics' remote borehole monitoring system. 'Arbor Data' was a database developed by Stuart Pittendrigh of Carlingford, New South Wales, which 'allows horticulturists and landscape architects to present a number of parameters to their Microbee and then within a couple of minutes the system provides a full listing of all plants that are suitable for a particular environment' (Derkenne, 1984, p. 5). The Bushtronics system was profiled in the November–December 1984 issue of *Online*:

Another unusual use for the microbee has come to our notice recently with the development of a rural borehole telemetry system by the Canberra firm Bushtronics. The purpose of the system is to warn graziers and property managers on large outback stations of potential problems at water tanks and troughs at remote boreholes on their properties. The system uses a microbee 16K computer as the base station to decode and interpret signals from radio transmitters at up to 32 remote borehole sites. (No author, 1984: 3)

The Bushtronics application illustrates the fact that innovation in this early computer period involved experimentation with both hardware and software. This is an important issue that warrants greater attention than is possible here.

Software historians and other commentators have frequently characterised hobbyist creations as amateurish. For instance, Campbell-Kelly (2003) observes:

The lack of significant barriers to entry led to the phenomenon of the 'bedroom coder'. Thousands of would-be software tycoons began to write games in their spare time, selling their programs through small ads in computer magazines. The

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typical game cost \$15 and consisted of a smudgy, photocopied sheet of instructions and a tape cassette or a floppy disk in a plastic bag. Most of the programs were disappointing to their purchasers. (2003: 277)

The tendency to dismiss the products of hobbyist creation during this period marginalises the often quite different perspectives that these users brought to the microcomputer. One contemporary commentator argued that the ‘different styles or cultures of programming’ needed to be recognised:

It is clear that the style of programming of a member of a large team developing a 100,000 line program for a complex defence system is utterly different from that of the lone hobbyist amusing himself with a 100 line game. It is obvious that this difference is inevitable considering the difference in requirements of the two programmers. It is important that the difference is recognised as real and that appropriate techniques are developed in the different areas. (Barnes 1982: 10)

## From hobbyist pastime to home entertainment

Most of the hobbyist and other software examples I have cited thus far date from the early to mid-1980s. In this final section, I turn to the latter part of the decade and ask what gave non-hobbyists an appetite for a computer, lifting the domestic penetration of computers in Australian households from 6 per cent in 1985 to 15 per cent in 1990 (Ironmonger et al., 2000), 34 per cent in 1996 (ABS 1997) and beyond. I briefly recount some of the developments from the middle to the end of the decade, including the rise of professionally developed software, alongside changing perceptions of usefulness.

While people continued using early micros well into the latter part of the 1980s, a ‘crisis’ of low user numbers was being reported by mid-decade. In his August 1985 column, Eric Lindsay explicitly links the low penetration of micro-computers to the perceived uselessness of computers in the home:

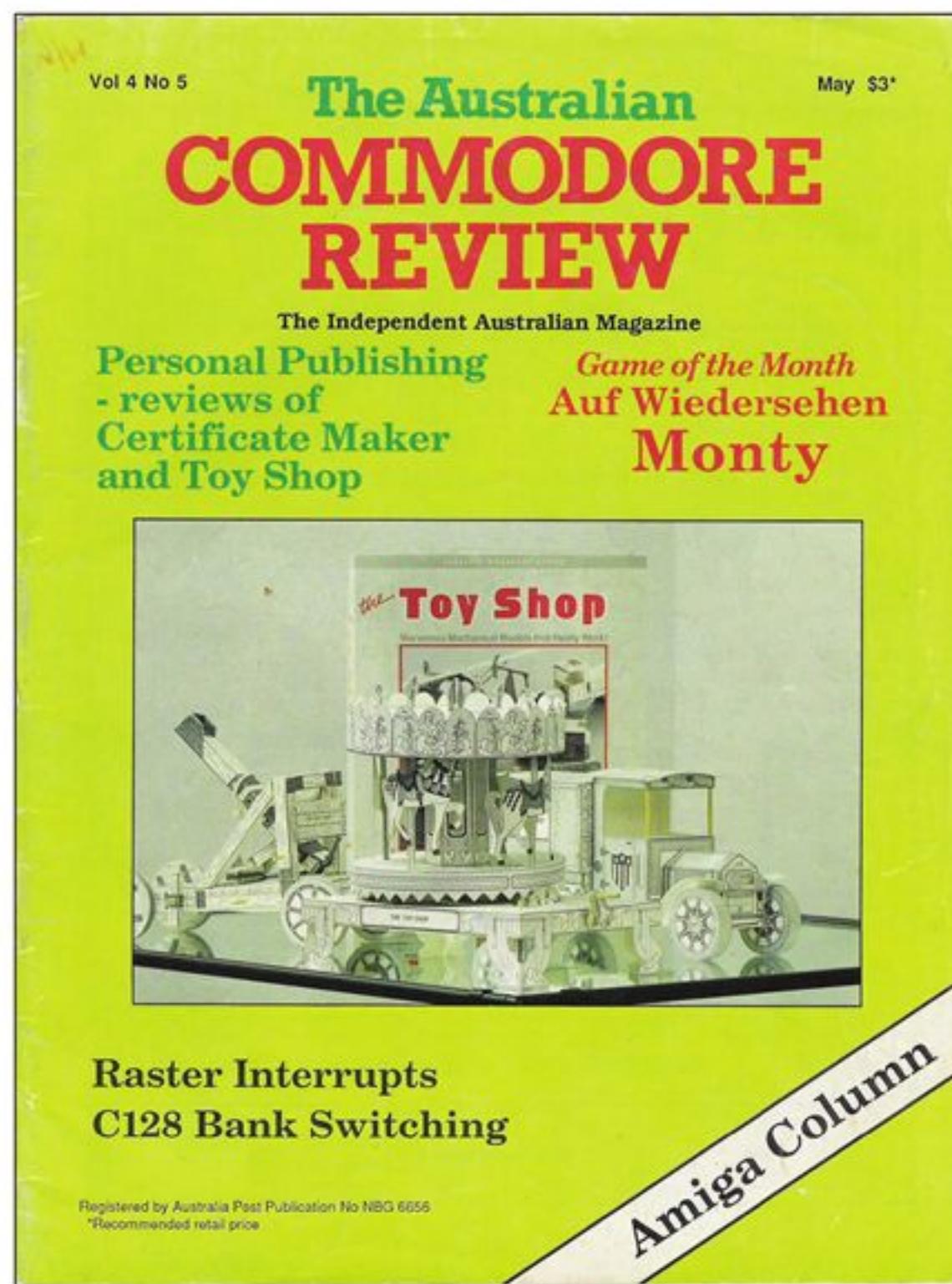
In home computers [in the United Kingdom], there were over five million in use, or an estimated 25% market penetration ... Micros just aren’t going to sell the way TVs or toasters do. Less [sic] than one person in ten is likely to ever get a micro, unless it is included in an appliance. I personally believe that without fairly fierce advertising, and pressure on parents to buy micros for school children, the totals would have been even lower. Perhaps the razzle dazzle companies are finally running into their natural limits, and the micro market may be ripe for a return to purchases only when the micro has a use, and is evaluated on the basis of value for money. (1985: 40)

Changes were afoot that would shift the public’s perceptions of computers, and play a part in computers becoming more widespread. I will detail three aspects of this shift. First, the computer increasingly was presented as a communications tool, with magazines profiling the coming ‘communications revolution’. Telecom’s Viatel began operations on 28 February 1985 (see Figure 2), and Paul Zabrs began writing a semi-regular column on the basics of ‘computer communication’ the following month for *The Australian Apple Review*. BBS listings became frequent in magazines.

Second, users no longer had to know how the computer worked. Journalist and publisher of several Australian computer magazines Gareth Powell writes:

In most communications sessions using a personal computer, you really don’t have to know how the modem or the software works.

There is no operator’s test as there is in ham radio.



Source: *The Australian Commodore Review Annual*, 1988, inside front cover.

**Figure 2: Advertisement for Telecom Viatel**

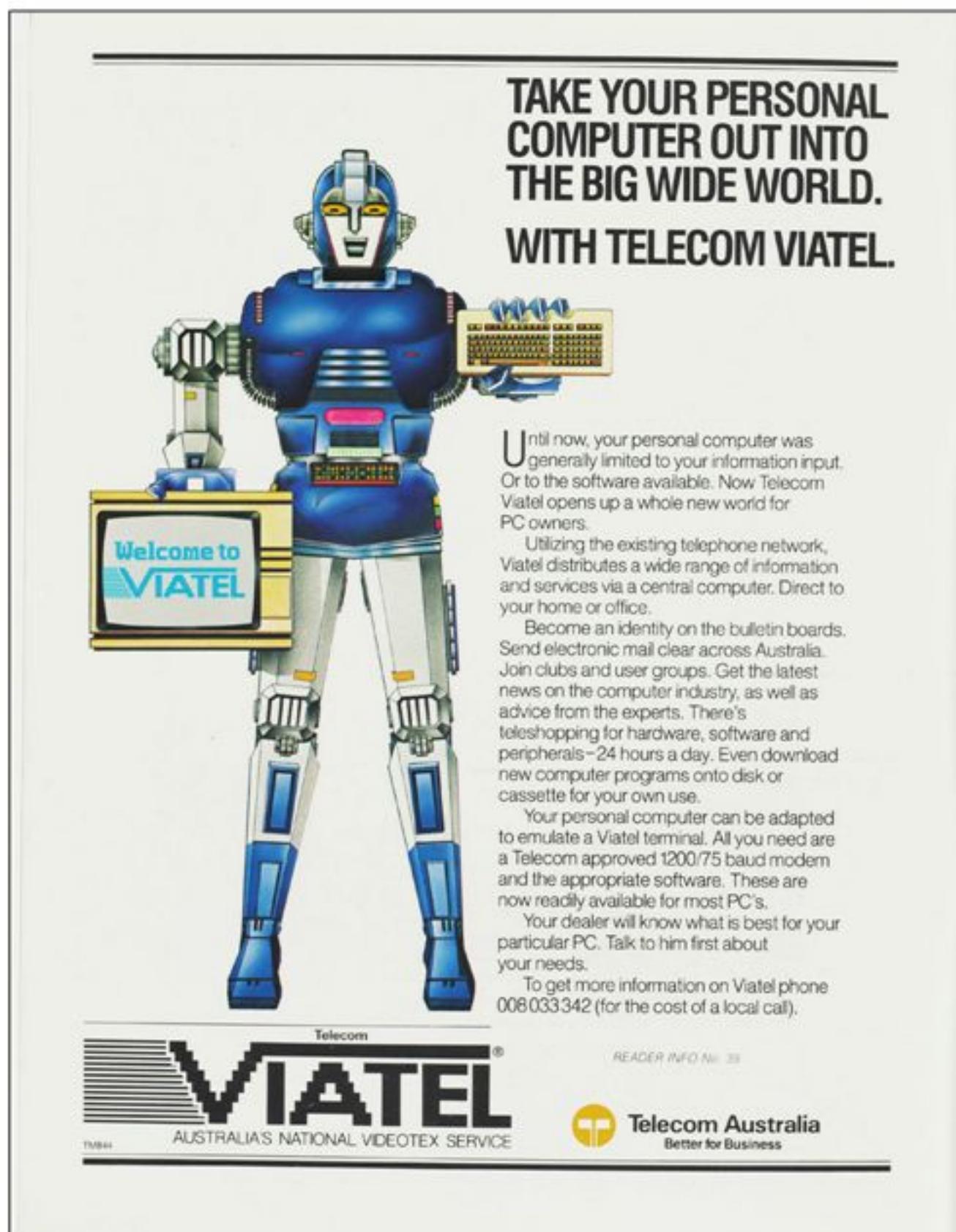
You truly do not have to be born with a soldering iron in your hand to be able to communicate with a computer. (1986: 46)

As a pragmatic user himself, Powell noted that he was less interested in how it all worked than the fact that it *did* work. Powell's stable of magazines all attempted to explain computing from a beginner's point of view. Very aware of the size of the untapped market, they tried to guide the reader through what they needed to know in as non-technical a manner as possible. Though production values were not high, the editors successfully managed to convey the idea that computing was accessible to those new to it, with columns such as 'New to Computing?', and 'Especially for Beginners' (Farrell 1985: 2). In August 1986, Powell launched the non-brand specific magazine *Australian Home Computer GEM* – GEM stood for Games, Entertainment and Music. Magazines such as *GEM*, together with *The Australian Commodore and Amiga Review Annual*, represented a new type of computer magazine: no longer were they just addressing those interested in the computer as a programming platform; instead, they were at pains to point out that in its new guise as the locus for various forms of entertainment, the computer was for everyone.

Third, by the middle of the decade, a range of new, software-based user activities were being discussed. Increasingly, the music, graphics and art capabilities of computers were highlighted (Richardson, 1985b). Powell wrote an article on desktop video editing, detailing what he did to the opening scenes of *Psycho* (1985). At the turn of the decade, desktop video was being talked about in Amiga magazines. The computer became associated with entertainment, with the computer as 'software player' (Haddon, cited in Veraart, 2011: 57). There was now a diminished focus on individuals developing programs for new uses

that they could see, and a greater emphasis on industry-developed software. What came with this – inevitably – was a growing standardisation of software. In turn, this governed what (non-technically literate) users could do with their computers.

Desktop or personal publishing arrived as one such software-based activity. Such ‘productivity software’ (as it was billed) allowed home users to produce personalised stationery, publish newsletters, make certificates, invitations and banners, and print out just about anything they wanted – or so the marketing spiel went. You could create cartoons with Garfield, and begin to manipulate photographs with Graphics Utility Programs such as ‘Cockroach Graphics Utility’. Software packages offering these functions received glowing reviews and were credited with generating ‘an enormous upsurge of interest in programs that actually “do something”, particularly with a printer hooked up’ (*‘Personal Publishing’*, 1988). Ironically, it seemed that paper’s materiality trumped all: the front cover of *The Australian Commodore Review* in May 1987 featured programs for mechanical toys to print out and assemble, as seen in Figure 3. This range of programs boosted the perception that a computer in the home was indeed a useful purchase. By 1990, computing was more graphical, more mouse driven (complete with discourses of ‘intuitive’ interfaces) and, in the eyes of the purchasing public, more useful.



Source: *The Australian Commodore Review*, vol. 4, no. 5, May 1987.

**Figure 3: Cover image featuring printed and assembled toys, from the ‘Toy Shop’ software package**

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## The shift to envisaging computers as useful

Anxieties about the perceived usefulness (or not) of early micro-computers were a recurrent feature of 1980s discourse on computers in the home, and this anxiety affected uptake. Hobbyists seldom had any issues, already being convinced of the computer's 'fiendish fascination' (Hoess, cited in Rowlands, 1978). Beyond the hobbyist realm, opinions were split as to whether early micros were not useful (useless), or whether they were effectively useless in their (then) current form because of a lack of software, for instance. I have suggested that at the beginning of the 1980s, this was partly because none of the claimed early uses adequately caught the public's imagination. Writing and playing games was (and is) a use for which computers were ideally suited, but it was not a use that satisfied the criterion of usefulness for all. Hobbyists and others invented new uses for computers by experimenting: the software titles such hobbyists wrote were instantiations of their ideas of how the computer could be put to use. Many of these were niche applications, however, and those who had already decided that computers were not for them were not listening. It seemed to take the release of applications with widespread appeal (such as telecomputing, music making and desktop publishing) in the latter part of the decade to start to turn perceptions around, and get non-technical users interested in what computers could do for them. Very practical applications such as printing personalised stationery seemed to strike a chord with the wider market.

The gulf of understanding between hobbyists and the rest of the population was also due to a conceptual issue. Hobbyists could see the computer as a machine that could do myriad things, and therefore be useful in multiple ways – what Haddon (1988: 25) calls a 'universal machine'. This was a new way of thinking about technology: as Lindsay memorably observed, 'a computer is not a toaster' (1985). The intended use of a toaster is obvious – indeed, it only does one thing – and, as long as you have electricity and some bread, it is immediately usable. The situation with early microcomputers was more complex. Given that some degree of coding was required to run one, a computer was not immediately usable: some saw this as a sign of uselessness, while others simply could not envisage how they might make use of a computer. As Wideman (1982) put it:

the average consumer is just not interested in a box that he can program, no matter how expandable, how many K of RAM you can stick in it, or how much imagination he is limited by; in other words, very few people are interested in the machine itself. But Mr. and Mrs. A. Consumer are dead interested in many of the machines that the computer can pretend to be. (1982: 91)

In the ensuing years and decades, non-hobbyists would be required to make a conceptual shift to envisage computers as a technology that could be *made* useful to them, through the configuring of particular software applications.

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### Notes

- <sup>1</sup> TRS stands for Tandy Radio Shack, the electronics store that designed and sold this machine. The System 80 was a closely related computer, sold in Australia by Dick Smith Electronics.
- <sup>2</sup> Michel de Certeau – probably the key theorist of user productivity in Cultural and Media Studies – makes no mention of computer users, despite the fact that at the time *L'invention du quotidien* was published (1980), Commodore, Tandy and Atari (to name but a few brands) had all had micros on the market for some years. Ironically, the early microcomputer user is

one of the best examples of his insight that users and consumers are makers and producers of culture (de Certeau, 1984).

<sup>3</sup> Ironmonger et al. (2000) used Roy Morgan surveys of consumer purchasing choices from 1985 until 1995 in their research.

<sup>4</sup> Figures from subsequent studies indicate that preparing family budgets was the main use of the computer in only 1.5 per cent of Australian households where a computer was used frequently (ABS, 1994: 6), while keeping personal or family records was nominated by only 6 per cent of users as the activity on which most time was spent (ABS, 1996: 47).

<sup>5</sup> He concludes by admitting that his piece is ‘a conscious effort to get you, our enthusiastic games players and programming hobbyists, to use our familiar friend [the Commodore 64] for much more rewarding benefit IN THE WORKPLACE’ (1985a: 37).

<sup>6</sup> The provenance of these sales figures is not given, but they are likely to be Northern Hemisphere figures.

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