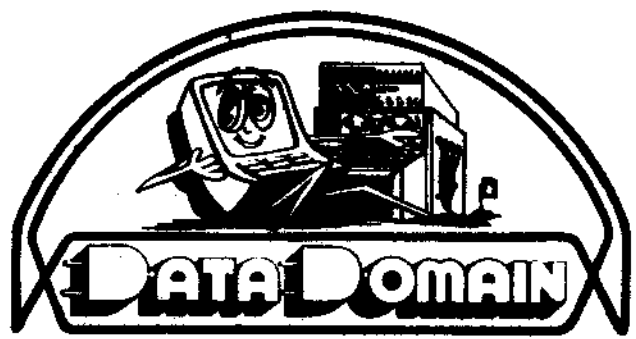the ⟨DATA DOMAIN⟩ inc.

September/October 1982

NEWSLETTER

apple computer
Authorized Dealer

NEWS FLASH

I.U. FACULTY AND STAFF

Now, receive a 10 % discount on any hardware purchase or software purchase over $25.00. Present your Indiana I.D. at time of purchase. If you have any questions, talk with David Olinsky, the computer consultant for Indiana University.

From the Apple Pit

Well it's time for another issue from The Apple Pit. Lots of interesting news has occured since out last edition. The Appli-Card that we mentioned last time has been delivered into our hot little hands. The 6 Mhz version is Faaaaasssssttt! The people at Personal Computer Products, Inc., who make the Appli-Card have taken a look at Osborne's marketing methods and have taken up bundling themselves. For example, if you buy the 6 Mhz card, you can add the program FMS-81 for $15. They have similar options with WordStar and/or dBase II.

Now joining the ranks of the large Ramcards is a new product which we mentioned last time, the MPC bubble memory card. Its price has now been announced at $850. That is high as Ramcards go, but remember that it's data is not volatile so it has some interesting possibilities that are not possible for Ramcards.

If you have missed the last two meetings of IndianAPPLEUS, you may not be aware that the user group is now meeting in the Apple Orchard (Room 221) of the IU School of Education. The November meeting will be at 8:00 pm on the second Wednesday of the month. We are attempting to get a demonstration and talk on an Apple-Video Cassete Recorder interface and software.

If you have been curious about Pascal, but not enough to spend $250 for the software, JRT Pascal has a deal for you. Would you believe $29 for an Apple Pascal System? We will report on the comparisons to other systems next time after a chance to play with the software.

John Prather

But Won't It Be Obsolete Next Year?—Microcomputer Operating Systems

Even the casual reader of popular magazines, or publications such as The Wall Street Journal, knows by now that the microcomputer industry is a highly competitive and rapidly changing business. While this makes the industry fun to watch, anyone thinking of purchasing a microcomputer has a difficult time choosing a machine.

In this Newsletter we have a strong interest in helping people make reasonable decisions about the kind of microcomputer equipment and programs —the hardware and software of computer jargon— that will solve particular sets of problems for more or less typical users. Even so, microcomputer professionals continual-ly receive questions that indicate complete confusion about the differences between microcomputers, pro-grams, and attached equipment.

Perhaps the most confusing characteristic of the microcomputer world is its constantly changing appearance. Every issue of the microcomputer magazines carry announcements and advertisements for new computers, print-ers, disk drives, memory units, and other accessories that promise radical improvements in performance or reductions in price. Many people contemplating their first purchase of a microcomputer find this most unsettling because it would appear that anything purchased today will be completely obsolete and impractical tomorrow. Since the purchase price of a microcomputer is still not a trivial matter, this lack of stability in the microcomputer business can lead the novice to give up in despair.

Don't quit yet. Although the advertisements and magazines indicate enormous variety and innovation in the microcomputer field, all that activity represents less real change in the fundamental structure of the business than you would think. Part of the reason for this situation is that hardware innovation is relatively easy to achieve. New gimmicks that make screens, keyboards, printers, and disk drives fancier, bigger, quicker, or somehow more desirable appear with bewildering frequency. My guess is that 90% of these innovations are important for only about 1% or less of microcomputer users, and usually not first time users. Moreover, a large fraction of what appears as major innovation in the advertisements, becomes, on closer inspection, simply old wine in new bottles with a better label.

A second reason why the proliferation of special, fancy equipment should not cause anyone excessive concern for premature obsolescence is the overwhelming importance of software for microcomputer users. When all is said and done, it is the programs that make the equipment useful, and program change and innovation is a much slower process than equipment change. Of course many new programs appear every week in the trade press, but these are what are called application programs. They will run on most machines, whether new or old. The only programs that have a major impact on whether the machine you buy will have a long and productive life span are the complex programs called operating systems.

Operating systems organize the equipment resources that constitute your microcomputer including screen, keyboard, memory, disk drives, printers, and other accessories. The operating system serves as the inter-connecting supervisor between the application program that does something, such as calculate your taxes, and the hardware equipment that accepts the data, processes it, and displays the results. Because there are only a few more or less standard operating systems, but many different arrangements of hardware, it is possible to write only one application program that can run happily on a very large number of micro-computers. Thus, those who produce microcomputer hardware make it possible to manage that hardware with a standard operating system. Those who design application programs write them to work with a standard oper-ating system.

The consequence of all this is that the choice of an operating system is often more important than the choice of a computer brand.

There are three more or less standard microcomputer operating systems: CP/M, Apple DOS, and UCSD Pascal. Each of these has advantages, and many machines will accept two or all three of these operating systems. Indeed, one of the reasons for the persistence of the Apple II as a successful microcomputer long after it has been technically surpassed in terms of its hardware is that it can be made to use any of these three systems, thereby providing it with one of the largest software bases available for any single machine. Most computer users, however, do not need three operating systems unless they expect to engage in extensive programming or experimentation.

Which is best? That, of course, is partly a matter of preference, opinion, and prejudice. It is also often a matter of what is available in the store, what the salesman or consultant knows most about, or what the author's programs use. There are, however, some general guidelines.

First, CP/M is the general standard for business and wordprocessing applications. It also supports an extremely wide software base that is deficient only in the area of arcade style games. If you don't need games, I recommend CP/M as the operating system of choice.

Second, Apple DOS has a very wide software base, much more varied in subject matter than CP/M, and very strong in arcade games, other games, and educational uses. However, Apple DOS is a primitive operating system that does not handle complex business problems as well as CP/M. Indeed, when Apple designed the Apple /// with the business market in mind, it invented an entirely new operating system. Apple DOS also has the disadvantage that it only works with Apple II hardware, Apple II imitations, and under most condi-tions on the Apple /// in a special emulation mode.

Third, UCSD Pascal is a combination of operating system and programming language. It has been implemented on a very wide range of microcomputers and there is a considerable software base written in UCSD Pascal. However, practically no microcomputer uses only UCSD Pascal. Most have UCSD Pascal and then one or another operating system. Even computers with special, proprietary operating systems such as Apple /// SOS will also implement UCSD Pascal. Pascal is an excellent language for many purposes, and if the purpose of the microcomputer system is to write programs of considerable complexity, then the UCSD system has many advan-tages. To be sure, it is possible to acquire the Pascal language without the UCSD operating system to run on CP/M machines.

John V. Lombardi

How Many Bits? Eight, Sixteen, and Thirty-Two

The current controversy in microcomputer magazines concerns the relative merits of what are called 8 bit or 16 bit or 32 bit microprocessors. While the technicalities of 8 vs. 16 vs. 32 bit machines can become complex, the issues are not that hard to understand. The reference to 8 bits involves primarily the amount of information that can be managed in one operation by the computer's central processing chip. The more bits of information that can be handled in each cycle, the faster the machine and the more memory it can efficiently manage. In addition, the chips that are 16 or 32 bit also have more powerful processing capabilities.

Computers such as the Apple II, the Osborne I, or the Televideo 802 are 8 bit microcomputers. The IBM Personal Computer is sort of a half-and-half computer in that it works partly like a 16 bit machine and partly like an 8 bit machine. In the case of the IBM, the best description is to say that it can manage its memory as if it were a 16 bit computer but it processes its information as if it were an 8 bit machine. So with the IBM PC you get a big improvement in the size of the memory efficiently managed but not much improvement in the speed of information processing under most conditions. There are now new machines from many manufacturers that contain dual processors that will run both 8 and 16 bit programs because they have both 8 and 16 bit chips inside the machine. These, however, tend to be somewhat more expensive.

If you need lots and lots of scientific or engineering mathematics and expect to process lots and lots of information with this mathematics, then you might need to consider the various advantages of 16 or even 32 bit machines. But if you need wordprocessing or ordinary kinds of financial programs, if you need data base applications such as mailing label processing or other filing applications, then the added speed and capability of the 16 bit or 32 bit processor is mostly, if not entirely, wasted. These applications spend most of their time either waiting for keyboard input (very slow for computer chips) or waiting for disk accesses (medium slow for computer chips).

Unless your application is very demanding, you would be best served by buying the closest you can get to a standard system with the most software of the kind you expect to need. In most cases this means a CP/M machine (8 bit processor) such as the Televideo, the Osborne I, or any of the similar brands available. However, it is possible to get almost everything by purchasing an Apple /// with a Z-80 SoftCard that permits CP/M programs. This gives you Apple II DOS, Apple /// SOS, UCSD Pascal, and CP/M in one machine. That may, of course, be overkill.

If the essential piece of software you need is only available for a 16 bit machine, either the pseudo 16 bits of IBM or the real 16 bits of other micros such as the Cromemco, then get the machine that runs your software but consider purchasing the option that gives you standard CP/M in addition. The 16 bit machines can also use CP/M, but while it looks like standard CP/M for 8 bit machines, it is not at all the same and is incompatible with standard CP/M. To separate the two CP/M operating systems, the standard is called CP/M-80 and the 16 bit CP/M is called CP/M-86. The 16 bit environment is also complicated by the IBM operating system called IBM DOS. Most 16 bit machines, however, will run both CP/M-86 and IBM DOS, so that shouldn't cause serious problems.

In short, any standard machine you buy now is likely to be useful and well supported for at least five years. If you buy a CP/M-80 or CP/M-86 machine, you should have no trouble keeping your software current, even if next week the super computer of all time is announced in Byte magazine.

John V. Lombardi

The Data Domain Cast of Characters

Ray Borrill—President and Technical expert. Founder of The Data Domain. Time with The Data Domain: 6 years. Experience too numerous to list.

Kris Brittain—General Manager. Graduate of Indiana University. Excited about the growth of the microcomputer industry. Handles personnel, product line, and other duties. Time with The Data Domain: 3 months.

Bill Doner—Assistant Manager. Purchaser of inventory. Indiana University computer science senior. Time with The Data Domain: 1 year.

Wayne Blankenship—Exterior Computer Consultant. Handles sales in territory from Columbus to Louisville. Previous employer, Software Clearing House of Cincinnati. Time with The Data Domain: 1/2 month.

Tim Bridges—Programmer. Handles programming improvements with store Alpha Micro. Available to interested customers for programming. Time with The Data Domain: 1 month.

Chris Elmore—Computer Consultant. Our show room salesperson. Most knowledgeable about Osborne I. Good technical person. Time with The Data Domain: 1 year.

Dennis Elzy—Inventory Controller. Maintains all inventory. Processes all shipping and receiving. Knows when orders come in. Time with The Data Domain: 2 months.

Nancy Mohnseen—Bookkeeper. Handles all accounts. Knows how to process credits for refunds. Time with The Data Domain: 2 months.

David Olinsky—Exterior Computer Consultant. Handles our professional market for dental, medical, and legal packages. Also our representative for the Indiana University campus. Time with The Data Domain: 2 months.

John Prather—Computer Consultant. Leading authority on the Apple. If you have a question, ask him. Time with The Data Domain: forever.

David Schuster—Exterior Computer Consultant. Handles University of Illinois campus and Champaign area. Time with The Data Domain: 5 months.

Ron Schwomeyer—Computer Engineer. Handles repair on all systems sold by The Data Domain. Makes on-site calls. Time with The Data Domain: 2 months.

Mike Vander Wyden—Exterior Computer Consultant. Handles our business market. Knowledgeable about Apple III and Profile. Time with The Data Domain: 1 year.

Osborne I—Software, Software, Software, and More Software

As the Osborne I user group continues to expand rapidly and enthusiastically, the software base available in Osborne I format also expands. Most CP/M software houses produce their programs on Osborne I compatible disks unless the programs require more disk storage than is currently available. The Osborne Computer Corporation also distributes a select list of software for the machine. In a previous issue of the Newsletter, WordStar, SpellStar, MailMerge, SuperSort II, and DataStar were featured. These exceptional applications programs provide a powerful set of facilities for wordprocessing and data management.

Another set of tools for microcomputing work are somewhat more specialized but nonetheless valuable. For example, Disk Doctor reclaims damaged diskettes and recreates accidentally erased files. Damaged disks can be fixed and bad sectors removed from use. Disk Doctor can also certify new disks to determine if the disk is completely sound, and if not, remove bad sectors from use.

Osborne also recommends two phone communications packages. The Micro Link sends and receives files from other computers and permits the Osborne to be used with electronic bulletin boards, information services, and other remote computers. BSTAM is a CP/M file transfer utility that sends and receives files with complete error checking. A copy of the program is required for each side of the transfer.

Of course, within the CP/M operating environment, one of the major applications is data base management or file management. Perhaps the most powerful and flexible programs of this kind is dBase II produced by Ashton-Tate, Inc. This superb package has a relatively easy to use program building language. It is available for Osborne I computers, and best of all, for new purchasers of an Osborne I system the program will be included free with the system.

Apple ///:   The Business Apple

Apple Computer's Apple II microcomputer did as much as any other machine to popularize the notion of the personal computer. It is an extraordinary machine, flexible and accessible. But as a mainstay of business microcomputing, the Apple II has a number of shortcomings. Its memory is too small for many applications, its keyboard is not as complete as it could be, and it requires a significant number of accessories to function as a full-capacity business microcomputer.

Recognizing the need for another machine, Apple produced the Apple ///. This computer has none of the limitations of the Apple II, and a significant number of exceptional features. It can manage 256K of memory, has a full 80-column screen and a full keyboard. But although its hardware is impressive, it is the operating system and associated software that makes the Apple /// such an attractive choice for many business applications.

The Apple /// operating system is unique. Called SOS, Sophisticated Operating System, it manages the hardware resources of the Apple /// and any peripheral equipment attached in a very flexible and creative way. Practically any computer peripheral can be attached and managed efficiently. This is an important feature because businesses have differing hardware requirements, and SOS allows them to implement their hardware choices without major modifications of the software designed to run them.

The Apple /// comes with one disk drive of modest capacity. The best solution to mass storage for the Apple /// is, of course, the Profile hard disk. This is a disk drive that uses a rigid disk, spinning at a high speed within a sealed unit. Because of its construction, hard disk units of this kind can store very large amounts of information; in the case of the Profile the capacity is five megabytes or five million characters of storage. Profile with the Apple /// constitutes a most cost effective means of managing large data files for business.

Another advantage of the Apple /// is that it will automatically use Apple II software in an emulation mode that makes the /// operate just as if it were a II. Only a few very specialized arcade game programs will not run on the Apple ///. The /// can also be set up to accept a Z-80 card that permits CP/M operations within the Apple ///. The result is a very competent machine, expandable and flexible, with a growing software base.

A complete Apple /// personal computer system for managers and professionals would consist of the following items. The Apple /// with a full 256K of memory with the Sophisticated Operating System and the Apple II emulation mode. A built-in floppy disk drive. An Apple 12" green screen monitor for 80-column display. The package also includes Quick File ///, an electronic filing system that can handle a many types of data management tasks including mailing lists, customer lists, phone numbers, contact files, and the like. VisiCalc /// is a version of the very successful and powerful spreadsheet program that offers extensive data manipulations and modeling capabilities. The results of this program can then be used by the Apple Writer /// wordprocessing program to prepare reports and analyses that include tables and charts prepared with VisiCalc. Apple Writer /// includes help functions, split screen capability, and all the sophisticated wordprocessing features available in any competing program. This package also includes training materials, documentation, and other information to improve your use of this system. This package can accept many additional accessories. Most business applications will require a printer and there are many fine printers available with a variety of features ranging in price from $800 to $3000 or more depending on the features and speed.

Of course, the Apple /// can accept additional floppy disk drives, although significantly better mass storage can be achieved with the Profile five megabyte hard disk drive.

The Data Domain Magazine Rack

Among the many magazines available at The Data Domain, three general purpose magazines and one special interest magazine deserve emphasis here. Many new owners of microcomputers find that these magazines offer some of the best information about the field and about programs or equipment for their needs.

All of the general purpose magazines have similar features and articles, but each has a different style and emphasis. Personal Computing, for example, has the traditional sections with book reviews, software reviews, and hardware features. In addition, it contains eight or so feature articles. Because it is a general audience magazine, the articles are not really oriented towards any specific machine or operating system but focus instead on topical categories such as Professional/Managerial uses for microcomputers, Business uses, Special Reports on topics such as memory expansion, Home uses, Educational microcomputing, and Advanced programming topics. The magazine has a relatively non-technical style and many items of interest.

As is the case with most of these magazines, the reviews tend to be informative but not very critical.

Interface Age: Computing for Business is a general purpose journal with a focus on business applications. Its articles are more technical than those in Personal Computing but still quite accessible to the non-technical reader. As you would expect, the regular features include hardware and software reviews but with emphasis on the critical business functions of wordprocessing and data communications. Interface Age also follows the education and entertainment fields. The features are focused on reviews of equipment and programs to a large degree, but the items covered have a strong business orientation. A recent issue had a special report on the new 16-bit generation of microcomputers and one on cryptography for securing data files.

Creative Computing bills itself as "the #1 magazine of computer applications and software." It, too, is a general purpose magazine, but one dedicated to people interested in hardware, software, and programming for the fun of it rather than as tools for other purposes. As a result, there is a strong hobbyist and home computerist slant to the regular features. For example, there is a regular column on the most popular hobbyist computers: Apple, Atari, IBM, PET/VIC, and TRS-80, in addition to columns on Graphics and Logo. Special features include hardware and software reviews, programming hints and examples, and discussions of programming languages. A recent feature compared the computer languages Ada, Pilot, and Pascal and had a review of JRT Pascal, ZBasic 2.2, and KDOS. Somewhat more technical than the two previous magazines, Creative Computing is still mostly accessible to relatively inexperienced computer users.

These three magazines have very extensive advertising scattered throughout the pages. For many microcomputer fanatics, the advertising of new products, equipment, software, and books is as important as the substance of the issue. While none of these approaches the advertising density of Byte, the journal of record for microcomputer users, they nonetheless provide a good guide to what is available at what price.

The Portable Companion is a special interest journal for Osborne I users. It is published by and on behalf of Osborne Computer Corporation, and its style and tone are the result of Thom Hogan, an Osborne executive formerly from Bloomington's Data Domain. Obviously, the magazine talks about the Osborne I and its various features and foibles. It is relentlessly favorable to the Osborne, although there are many useful bits and pieces of information available in the magazine. As a new journal, it has yet to develop its definitive format, but because it includes advertisements and technical features related to the Osborne I, it serves as an excellent source for current information on the plans for new products or new software for this very popular machine.

The Data Domain Sale of the Month

OSBORNE SPECIALS

With the purchase of a new Osborne I receive a **free** copy of dbase II and Tutorial. This represents a savings of **$675** on the price of the Osborne I. This sale begins October 4, 1982.

Christmas Software Special Package

Spellguard	$ 295.00	
Documate	$ 125.00	ALL OF THESE POPULAR OSBORNE I PACKAGE PROGRAMS FOR THE SALE PRICE
Footnote	$ 75.00	
Math*	$ 49.95	OF
Grammatik	$ 149.00	
TOTAL	$ 693.95	**$ 295.00**

Osborne I Powr-Pac

This is a 7 lb. 5 oz., lead-acid battery plus a DC/DC converter. The cord, which will plug into the Osborne I, is equipped on one end with a special connector that allows attachment to the battery itself for portability, or a connection to an auto mobile battery via the dashboard cigarette lighter. Price: $345.

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