

## **How to Intimidate Computer Salespersons (or ways to be sure you at least get kissed)**

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Often, prospective computer owners are diverted to the purchase of computers before selecting programs. I did so, paying a penalty in frustration and unnecessary expense. For those of you who are considering buying a computer, I offer a light hearted rationale for buying programs rather than computers and some irreverent observations about the character of computer owners.

Are you considering buying your first computer? There is a secret to buying computers. If ignored, the consequences are frustration and a thinner wallet. The secret is that computers are trivial. Only programs are significant. Novices, and many owners, are unaware of the secret. If it were not so, discussions would center on programs instead of hardware. Since computer owners dominate most discussions, a few words about owners may give you a perspective about computing in general. I will explain the secret later.

Two kinds of people own computers. One kind considers them no more than tools to make life easier. The rest acknowledge computers as tools but it becomes rapidly clear that they are also an avocational pleasure and an addictive curse. I am one of the latter. If you are considering buying a computer, you will have to decide which kind of owner you will become. If you do not want to become an addict, you must first learn to ignore computer jargon. It is only valuable for us junkies. It is the worst place to start. You don't need jargon any more than you need to know how the rear axle ratio of your car interacts with its mileage, load carrying ability, top speed, and acceleration. All you need is a clear idea of what you want to do with a car or a computer. The simplest way to find about a car is to test drive it. I will tell you how to test drive a program later. First, consider the reasons computers are trivial and why some of us become junkies.

Computers are trivial. The fact warrants repetition. Further, the differences among them are insignificant. The claims made for this model's

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superiority over that one are boldfaced lies. Any computer on the market today is capable of doing anything you require. There is one and only one crucial qualifier; any computer is capable if, and only if, it is programmed to meet your needs. Without a program, every computer is nothing more than an elegant exercise in soldering.

Computers are trivial because they only do what they are told. They do it over and over at blinding speed, insuring that errors are systematically and accurately repeated at blinding speed. Therein lies their fascination for junkies like me. It started my first night with a computer. The manuals said that the program I wanted was named something like "supertype" and was located at a place called :0. To use it, I was to type S, U, P, E, R, T, Y, P, E, :, 0. But first I was to see if the program was there. To do so, I was to type D, I, R, :, 0, or so I thought. After all, there was no space between the program name and its location. Why should there be one in this case? I tried for 15 minutes while the screen blinked "error". I finally figured out that the correct sequence was D, I, R, >SPACEBAR<, :, 0. I was also hooked.

There are two reasons why the addiction takes place. The first is idiosyncratic. There are some of us who cannot accept the fact that there are mysteries beyond us. We will master or we will die. The obstinacy of a machine that cannot see the functional equivalency of "DIR:0" and "DIR :0" arouses a love-hate relationship matched only by the antagonists in *Who's Afraid of Virginia Woolf?* The second is sociological. We do not have the ego strength to ignore what is patently stupid if it gets enough press coverage. Could *Time* magazine have been wrong when it named a computer Man of the Year?

Computers are trivial. Programs are crucial. Computers do only what they are told to do by programs. But programs have limitations. They do efficiently only what must be done repetitively. My brother helped set up the computer system that builds a large proportion of the bras made in this country. He helped set up the system that handles most of the medical insurance claims in our second most populous state. He got a home computer to play with. He did not use it to balance his checkbook. In three months it would take more time to start the computer, run the program, and enter the data than to write three years worth of checks with a pen. There was nothing in the house he could do faster with the computer until he tried to double check my mother's hospital bill. I hope you have never seen one after an extended surgical stay. They charged per dressing used. An insurance company and the federal government were involved along with one hospital, an outpatient clinic, and three groups of physicians. It took a program to insure she did not have an inadvertent hemorrhoidectomy. The problem involved multiple, interlocking pieces of information that had to be reviewed, cross checked, and updated regularly. Programs solve problems requiring the repeated manipulation of numbers or words.

What can programs do for you? Among other things, whatever you do at

your typewriter. Several years ago, "at my typewriter" included more than keystrokes. It included patient notes, forms, a dictionary, a bottle of white-out, and carbon paper. Could that activity be programmed? Repetitive steps are ideal tasks for programming. Let's see. Insert the proper form in the typewriter. Eyes to patient information on the audiology worksheet. Store information. Hands to typewriter. Eyes to keyboard. I am not a touch typist. Strike keys. Eyes back to worksheet. Check information. White out. Retype information. You get the idea. While some of the steps in report writing are unique, most are rote. An ideal program would contain every necessary form. It would obtain patient information from an admitting office program. Test results would come directly from a programmed audiometer. Standard phrases would come from a prestructured memory. I might get away with typing a single sentence indicating the probable site of lesion.

What about numbers? I am working on a technique to analyze tympanograms and project the likely etiology of any middle ear dysfunction. The problem is that I need to take 100 data points from a tympanogram, put them into a curve fitting equation, determine the probability that the resultant best fit comes from each of two family of curves, and compare the probabilities. This is a lot of numbers to crunch. Since the steps are rote, a program would be ideal.

The first step in becoming a program user, instead of a computer addict, is deciding what to program. It turns out that there are common adjectives used with "program" that approximate most applications. The adjectives are:

ACCOUNTING  
 COMMUNICATIONS (among computers)  
 FILING (more commonly DATABASE MANAGEMENT)  
 GRAPHICS  
 SPREAD SHEETS (generally numbers)  
 STATISTICS  
 WORD PROCESSING

Accounting is unlikely to be one of your major concerns unless you are in private practice or have reached the point in your career where you are a clinic director. A brief description of an elaborate program should suffice. Starting with patient and employee names, sources of funds, and mechanics for disbursing, the program would accept information like salaries, patient procedures, and bills for supplies and rent. It would print patient bills, checks, and periodic financial summaries, including tax reports. It would print every form you use and address envelopes. Information would be typed only once. Paper files would not exist. Even the simplest computers put the equivalent of 50 double spaced sheets of paper in a space no bigger than a single 45 rpm record.

Communications programs allow you to exchange information among computers. Complex ones do it automatically, down to periodic redialing the phone number of another computer when the line is busy. I have a simple one in a computer no larger than a loose leaf notebook. I type patient reports at my desk. When the text is correct, I press two keys. The program telephones the report to the secretary's computer. Her program formats the report, adds the salutation and closing, checks my spelling, and prints the report, copies, and envelopes. Within five minutes, I sign the report and it is mailed. We no longer keep paper copies. Everything is stored on disks. With an appropriate program, I could communicate with my tympanometer and have tympanograms printed as part of the report. I am told there are audiometers with similar capabilities.

Filing programs can be simple, as in the equivalent of a box of 3 x 5 cards, or complex. I am reviewing one that manages patient information, resident clinical hours, staff activities, and research data. We would enter patient information, including the names of residents and staff who see the patient, what services were provided, and a diagnosis. The program would produce lists of charges, resident and staff hours by type of patient, and patients by diagnosis. Charges would be sent to the billing computer, resident information to their certification files, staff information to our administration, and patient information to any residents or staff that want to review what happened to specific classes of patients. The degree of detail is almost unlimited. Depending upon how we structure the filing options, we could obtain a list of stapedectomy patients seen last June by third year residents, learn how much their hearing improved, and if they paid their bills.

Graphics programs are what the name implies. A powerful feature for us is that anything can be generated, from tympanograms to publication quality figures.

Spreadsheet programs are fun. Remember the television commercial where the monk projects how much wine he could drink if he had two more acres of grapes. I may not have the details straight. Anyway, that was a spreadsheet program. Spreadsheets store anything you put in rows and columns. The nice feature is that you can mix and match numbers in columns and rows. Column A values can be set to equal the square root of column B. Row X can be set to equal the sum of columns A through W. Replace numbers with letters and you have a schedule book.

Statistical programs are also what the name implies. Type in data, vomit out reams of numbers.

The most common programs process words. Simple programs force a printer to mirror every keystroke. Complex programs check spelling and keystrokes so that you cannot type the wrong date without the screen blinking "Do you really want to date this letter 1884?" They check for sexist language, tell you the average length of words, and ask you if you meant "affect" or "effect". They pull information from other programs. You could merge

gross collections from your accounting program and students' hours from your filing program when writing an annual report.

So how do you get into this wonderful world of programs? By the way, the steps I am about to describe may have to be repeated until you are satisfied. The more times you repeat them, the better chance you have of reaching computer heaven. Think of anything you do daily. Remember the amount of time it took to understand the functional capabilities and limitations of cars and audiometers? I do not mean their mechanics or electronics. The following steps will take at least a week out of your life. So did learning to select and use an audiometer.

Start by going to your office. Lock the door, tear out the phone, and think. Your problem is to list what you do every day in the order you do it. If you do it at 8:00 AM and every hour on the hour, list it nine times. I assume you work until 5:00 PM. In particular, examine the list for duplication. If your short sabbatical takes less than an hour, you either do not need a program or have not thought in enough detail. Remember, computers do the same thing over and over at blinding speed. Programs tell computers what to do. You must find programs that do what you do. But you cannot look for one until you know what you need. Do not shortcut this step.

What do you do with the list? Run down to your computer store and buy a program? Wrong! You have reached the major obstacle to becoming a user rather than an addict. When you get there, someone will try to sell you a computer. You must not buy or even talk about computers. You must talk programs. If no one will, go somewhere else.

Refusing to talk about computers confuses most salespersons. They have a financial interest in making the biggest sale possible and computers generally cost more than programs. Beyond that, they have, you want. They know, you are ignorant. They are accustomed to computer junkies. Junkies believe that programs exist to give computers someone to play with. Salespersons become intimidated when you demand information on your terms, hence the title of this sermon.

When you find someone who will talk programs, show your list and ask to see programs that do what you want done. If there are any, do not, under any circumstances, submit to a demonstration. Ask for the instruction manual and a place to read it. That manual is second in importance only to the program. If several types of programs have been suggested, request the manual for the program you need most. Scan the introduction and the first chapters up to one with a title like "getting started". Do not read to learn how to run the program. Judge readability. Granting that some of the nouns will be strange, would the instructions make sense if they were familiar? Is the manual written in logical order? Are the table of contents and index complete? Is there a glossary that includes the words you do not know?

Now ask for a manual for any alternative program that might be available. Judge it. When you have scanned all the available manuals, thank the

salesperson, go to at least one other store, and do the same thing. Go home and ponder. Did any of the programs really meet your needs? As importantly, should you revise your needs? If you are still in the market and have found an instruction manual that makes sense, call the office and take the next day off. It will be a dilly.

You are now ready for a demonstration of the program with the clearest manual. Afterward, ask for the manual, for the opportunity to use the program on a computer, and to be left alone. All alone, like you will be after you buy the program and a computer. First run through the typical short demonstration included in most instruction manuals. Then go back and do it again with one important change. Do everything wrong! On purpose! With malice aforethought! Making errors with pencil and paper is easy. That is why there are erasers. Making errors in a program can jam the works, destroying everything you have done. Particularly if you are new at the game, good error handling will save you when you are tired and it is only three hours to Labor Day weekend. Now get an alternate program and do the same thing. There is only one thing you must not do. You must not buy anything.

Go home. If you still think a program can help you, call and ask if you can buy an instruction manual or borrow one for a few days. Read it cover to cover. In particular, determine how much information the program will handle and if it will transfer information to other programs you need. There is nothing more frustrating than finding out the word processing program limits text to 30 pages when you are writing a book. The frustration becomes unbearable when you discover that all the bibliographic entries in the filing program will not transfer to the reference lists and you must type each one over again. When you finish, the rest will be easy. All you have to do is shop for computers that run the program, buy both, and go to work.

Why have I asked you to take so much time looking for a program? For two reasons. First, programs are written by humans and no two think alike. You want a program that fits you. Let me give an example. I have three word processing programs. To make corrections in one, I type over the errors. If there is not enough space, I press a key to insert additional material. Key strokes in the other two are always inserted. If I type a misspelled word correctly, both words are left on the screen. I delete the misspelled word with two key strokes. There is no rule which says that automatic strike over is better than automatic insert but some prefer one over the other.

Second, there is no excuse for bad manuals. They make me wonder if the programming is bad. I am not alone. The computer literature is rampant with criticism of instruction manuals because bad manuals are rampant. There is a company using something like the following in their advertisements for programs. "Before computers, you could design a form, write a report, and file a copy without reading 200 pages. You still can." They claim their

programs are so clear that no manual is necessary. They must think there is a need for such products. I do. One of my word processing programs has a 200 page manual. It took me about 10 hours of reading to use it. I once lost pages of text by pushing the wrong button. Another has complete instructions on 10 pages, then presents concrete, unambiguous alternatives as I use it. I used it 15 minutes after opening the package and have not been able to screw up since. This is also the one that telephones my reports to the secretary. Guess which one I will sell, cheap. At least someone is making money from bad manuals. One company now offers to answer, for a fee, questions about how to make other companies' programs work. Another company offers seminars, at not so nominal fees, to teach registrants how to use programs other companies sell. Buy nothing unless the instructions are coherent.

There is one last thing to remember about buying programs and equipment to run them. The "federales" (as they say in Texas) may pay part of the bill. If you buy a package for work, the cost is likely to qualify as a direct subtraction from your income rather than an itemized deduction. For example, if you are single, if your taxable income after deductions will be \$20,000.00 this year, and if the tax rate is the same as last year, your income tax will be \$3,369. Suppose you pay \$2,000 for a word processing program, computer, and printer. You reduce your income to \$18,000. Your taxes would then be \$2,865. You get to keep \$504 that would have gone to Uncle Sam. That is 25% of your cost. The larger your income and the greater the cost, the more the savings, up to a maximum cost of \$5,000.

Programs and computers, like cars, are a blast and do good work. Like cars, they have me hooked. Some of you still have a chance to be boss.