

Making Computers Earn Their Keep: Four Case Studies

Mention computers to a contractor and the response may range from "Don't waste my time with that hype!" to "I can't imagine doing business without them."

In covering computers for the last several years, we've discovered that both responses have merit. Yes, the computer field is rife with unrealistic promises about how the new electronic brains will save you loads of money, spit out flawless estimates instantly, and whip your business into organizational perfection — all while you're out fishing. And a number of buyers who bought those claims wholesale have been disappointed. But a much larger number of contractors who had more realistic expectations, and who have invested the time and money needed for training, now find their electronic tools indispensable.

For many who have worked at it, computers have enabled them to reach levels of financial control, office organization, and business growth they could not envision achieving otherwise. And almost every user, even the guy who uses his computer only as a glorified typewriter for form letters and contracts, attests to the professional image that computers foster. For that function alone, a modestly priced system can pay for itself.

To help give you a realistic idea of what you can expect from computers, we've sought out four small to mid-sized contractors who have brought computers — both IBM and Macintosh — into their businesses for varying uses and with varying levels of success. Here's what they've learned from taking the leap.

Seth Melchert: Running the One-Man Office

Company: Master Builders;
Oakland, California.
Market: Residential remodeling.
Number of Employees: At least four in the field; no office help.
Volume: \$300,000 - \$400,000.
Computer Hardware: IBM-compatible 286 with 40MB hard drive, modem, mouse, and color monitor. Dot-matrix printer.
Computer Software: Lotus 1-2-3, Wordperfect 5.0, Quicken 4.0.

Like many small residential remodelers, I'm not only the owner of my business, I'm also the accountant, estimator, secretary, and even foreman at times. I don't want to get much larger, because I can operate my business thoughtfully at this size and produce work I'm proud of. But it requires me to be very organized and to have systems in place I'm completely comfortable with. My computer is at the center of this organization.

I shopped around for about six months before buying my computer — I knew they weren't going to go away. I didn't really know what I'd be using it for, but I had a sense it was the way of the future. I also knew I needed to step into the world of "real" accounting very soon, and I figured I might as well do it with a computer.

Hardware

I went to a number of seminars, spoke with friends, and looked around the stores before I bought a basic, IBM-286-compatible on sale. I did splurge on a top-of-the-line Sony color monitor with a graphics card, figuring if I was going to spend a lot of hours in front of this thing, I want-



ed it to be as pleasant as possible.

I never agonized much about the Mac versus PC question; I figured I couldn't go wrong either way. The cost of Macs was one major factor against them. Now that PCs have Windows software and Macs have better prices and more business software, I wonder if the debate won't just fade away.

I also bought an IBM Proprinter II, a 9-pin dot matrix printer that's inexpensive and does my work just fine. In all I spent about \$3,000 — in 1987. The only hardware change I've made is to add a modem and a mouse.

Software

It's true that your greatest investment in a computer system is not the hardware or the software, but rather the time you take to learn how to use it. I'm glad that I bought my computer when my business was smaller and I had the time to learn and practice. I was also fortunate to have a neighbor who makes his living setting up

computer systems and tutoring their users. Without the help of someone experienced in computers I would have been lost.

All of my software is standard, off-the-shelf stuff: Lotus 1-2-3 for a spreadsheet, Wordperfect 5.0 for word processing, Quicken 4.0 for my general ledger, Procomm for modem use, and some utilities. I've looked at a number of large, expensive integrated programs for contractors, but as a remodeler, I really need something that I control and change to suit different situations.

Word processing. I use Wordperfect more than anything else. I write bids, invoices, memos, contracts, correspondence, and business forms on it. I see three great advantages of using a computer here:

- First is presentation quality. My bids are detailed, extensive, and professional, with a nice cover page and sections like Scope of Work, Work Not Included, Logistics, Subs, Schedule, and Refer-

ences. Even when my bids are turned down I receive very positive comments and offers to pass my name on.

- Second is the filing capability. I can refer back and forth between documents — notes to myself, bids, contracts, schedules, correspondence, employee lists, phone numbers — all within seconds, and create still another document from them if I choose.
- Third is being able to create standard forms and documents instantly. I have standard invoice forms, job cost summaries, letterheads, fax cover sheets, time sheets, punch lists, and so forth.

Number crunching. I use two programs for keeping track of the business: Quicken and Lotus 1-2-3. Quicken is a simple and inexpensive (\$49) bookkeeping package that works great for me. I enter every check I write into the general ledger, and assign it to its account and sub-account. It will then give me a balance sheet, profit and loss statement, and cross-referenced summaries of what I've paid in what account, to whom, and when. I can even set budget totals and compare these to what I actually spent. I do not use Quicken for writing checks, but it has that capability too.

I use Lotus 1-2-3 for estimating and job costing. Lotus is a complex and powerful program, but it's easy to learn to start using it. I use only a fraction of its capability.

I've built a Lotus spreadsheet that is suited to my needs for estimating remodeling. It includes a dozen sections, from General Requirements to Finishes. Within each section I build the particulars that a specific job will need. While a retaining wall job will have little carpentry and no millwork, an attic

addition will have a large carpentry section with stairs, closets, floor beams, siding, etc.

Each section is split in two halves: one for labor and one for lump-sum costs of materials and subs. I select the crew members who will do the job and the hourly costs of their wages and burden; then I estimate the hours to perform the particular work. If I choose to estimate a task by the lineal foot or square foot, I can do this too. Each line item and section gets subtotaled, and the whole sheet gets totaled. At the bottom I add a percentage margin for profit and overhead.

For job costing I use an identical spreadsheet next to the one I used for bidding. Each week as a job progresses I punch in the purchases and each worker's hours for each task, and I can instantly see how it compares to my bid. I can keep track of the total job cost to date, and see how far ahead or behind the payment schedule is running.

This spreadsheet system suits me precisely because it's so flexible. Rather than having to enter a fixed unit cost, I can see how a 50¢ per hour raise for someone affects the overall job, or what might happen if I reassign framing responsibilities to an apprentice instead of a journeyman. However, because I have cus-

Lumber On Line

An important part of my computer use is a unique service provided by my local lumber company, Truitt & White, in Berkeley, California. They have created a special program called "Modem to Lodem," or M2L, that provides builders direct access to the store computer via modem. Through it, I can look at a list of every item they carry in stock, what quantity is on hand, the list price, and my discounted price. I can also look at all the purchases made on my account in recent months.

At the heart of the program is the quote entry. This allows me to write up a quote, just as one of their clerks would, which I can then use in a bid, knowing the prices will be honored. Later I can release it to the store to be filled and delivered. While I could always go through the salesmen to get quotes for jobs, M2L allows me to do my bidding at night and on weekends when the store is closed but I'm not busy putting out fires in the field.

Using it requires a modem, but it's relatively easy. As I plow

through an estimate on Lotus and come upon the framing line, I simply transfer to M2L and do the take-off. As soon as I complete the list, I print up the quote and return to the spreadsheet with the total.

Another feature I find handy is the Keyword Scan. When I enter a word or description, it calls up every product that is related to it or contains that word. For example, if I enter "hinge" I will see everything from a 35mm Forstner bit to the hundred or so varieties of hinges in stock.

With M2L, I can also play "what if" with different materials. It's easy to find out which is cheaper for closet shelving, No. 2 Pine or ABX plywood. I can look around for materials I hadn't even thought of; it seems as if every month there is a new line of primed casing available that I didn't know about before.

But best of all, there is no shuffling through old invoices to find out the (sort-of) recent price of an item. For accuracy in bidding, M2L is unbeatable.

— S.M.

tomized it to the way I operate, it probably wouldn't work well in a larger setting where it had to be

taught to an office staff.

Originally I used Lotus for payroll also. Now I use a payroll service

— it's inexpensive, fast, and most important, breaks out workers comp categories and automatically figures my tax payments and reports. These features should save me several thousand dollars a year; contractors with a lot of variety in their work should look into it.

Other software. I have a calculator program, Pop Calc, resident in memory that I can pull up while in any program. I use it frequently and I highly recommend it. I have never tried Critical Path scheduling programs, but I have seen them demonstrated, and this will be my next purchase.

I originally had the idea of using Autocad to develop a design/build capability in my office. I found that it is extremely complicated, takes a lot of time to learn, and is simply not for me. I also tried a simpler CAD program, the IMSI Designer. It is easy to use and fast, but it lacks accuracy and I haven't used it much.

When I'm asked by other contractors about the benefits of "computerizing" I admit that I don't know anymore what it's like to be without one — I've developed my whole business around it. As a result, I think of it in the same way I do the telephone and my pickup truck: They've gone beyond tools to being simply "how I do things." □

Paul Eldrenkamp: Rx for Growth Pains

Company: Byggmeister Inc.; Brighton, Mass.

Market: 85% residential remodeling, 15% commercial remodeling.

Employees: three employees (down from six a year ago).

Volume: 1990 sales: \$761,000, 26 jobs.

Projected 1991 sales: \$550,000, 20 jobs.

Computer hardware: Macintosh SE, 20 MB hard drive, 4 MB RAM.

Computer software: Microsoft Excel, Microsoft Word, Quicken.

I bought my computer so I could have more up-to-date financial information about my business. In addition, I felt it would help me present a more professional image to prospective clients. It has given me both those things, and their value has been even greater than I expected.

Finding the Right One

I knew I needed a computer for a while before I bought one. Finally I assigned an employee to do research and make recommendations. On his advice, in March 1989 I bought an Apple Macintosh SE with a 20 megabyte internal hard drive and one megabyte of memory. Within ten months I added another three megabytes of memory so I could run more than one program at once. I



also bought an Apple Imagewriter II (dot matrix) printer.

Though I paid lip service to the standard advice of choosing software first, then a computer to run it, I confess I never looked closely at IBM-compatible software. I was so wowed by the friendly interface of the Macintosh. Although the IBM world offers a wider variety of small construction software, I find that to be of

limited importance, for two reasons: First, the software gap is narrowing, and there is now a variety of good packages for the Macintosh. Second, it is much easier to learn a wide variety of tasks on the Mac.

Software

My first major software purchase was Microsoft Office, a package that included Microsoft Word (a word processing program), Microsoft Excel (a spreadsheet program), Powerpoint (for presentations), and Microsoft Mail (for inter-computer communications). I don't use Mail or Powerpoint, but the package cost less than buying Word and Excel separately.

Word and Excel have become vital parts of my business operations. I use Word for all my correspondence and business documents. With a little study I have learned to use Excel — a powerful but initially difficult

program — for effective, accurate estimating, job-costing, and lead-tracking.

Other software I use frequently includes Acta, an outliner, and InTouch. InTouch is a desk accessory for tracking names, addresses, phone numbers, and contacts — a computerized rotary file. It's easy to use and effective, but not ideal; I'd like, but haven't yet found, a powerful program to track the status of leads and proposals.

False Starts

My biggest problem has been finding good estimating and accounting software.

Rough estimating. One of my first software purchases was the Turtle Creek collection of estimating and accounting software: MacNail (a set of "templates" that runs on Excel) and HyperEstimator, which runs on Hypercard, a general-use program that comes free with every Macintosh. Although these were easy to learn and use, I was disappointed in the way they handled overhead and profit, resulting in unrealistically low estimates. (In fairness I should add that since then, I've heard and read that MacNail's updates have gotten better and better.)

To get estimates more in line with the way we do business, I decided to write my own templates for Excel. This involved learning the niceties of Excel, which took

some time. But I now have an estimating program tailored to my own business and way of estimating.

Balancing the books. Finding a suitable accounting package also proved difficult. But it taught me some important lessons.

I do my own books, with quarterly assistance from a tax accountant, so I wanted something that would let me do them on computer. After dropping MacNail, I bought an expensive and powerful accounting program called Computerized Classic Accounting. It turned out to have too many capabilities for me to learn and sort through effectively, given my limited knowledge of accounting.

I finally decided to start at the bottom. I had been doing my personal checkbook functions with Intuit's Quicken, an inexpensive checkbook program. It lacks true accounting features, but is easy to use. So one morning I transferred my current business ledger to Quicken, and I've been using it ever since. (See "Keep-It-Simple Accounting for the Mac," January '91).

This will amuse accounting sophisticates. But using Quicken as my first computer "accounting" package has provided real advantages. For one, it's easy: It takes me

only five minutes a day to keep my records current. And it's flexible enough to get useful information from. With a little trial and error, I set up my chart of accounts in a way that enables me to get vital information about where my money is going quickly and regularly. For more sophisticated calculations of profit/loss ratios and other important percentages, the program allows me to export data to the more powerful Excel.

I've since concluded that a good strategy for choosing software is to start off cheap and easy, then develop increasingly advanced — and expensive — capabilities as your expertise grows. With Quicken, for instance, I could do adequate record-keeping immediately and easily, and in the process get a sense of what capabilities I still needed. I was able to do useful work and learn at the same time, rather than having to learn a complete system first — a luxury most small business people can't afford.

I have since advanced from Quicken to MYOB (Mind Your Own Business), another inexpensive financial software package, but one that comes closer to a true accounting package. Eventually I plan on moving from it to the more

expensive accounting program I bought initially.

How It's Changed the Way I Work

A computer initiates a sort of vicious cycle of increasing business sophistication, but higher administrative costs. Budgeting, financial planning, and job-cost accounting are all things that can be, but rarely are, done manually. With a computer you can do these tasks quickly and accurately. When you do, you get a better handle on your true cost of doing business — which turns out to be much higher than you suspected.

So you raise prices. Which means you get fewer jobs. So you start using the computer to enhance your image to attract enough work to cover what you now realize is your real overhead. Which keeps rising, because while you were once in the field driving nails for minimum wage because of the lousy bids you submitted, you're now doing sales and administration for minimum wage (which is more than you were paying yourself to do them before), and you've replaced yourself in the field with a \$16-an-hour lead carpenter who wants vacation and holiday pay.

Eventually, of course, you have to lay your carpenters off, because you

can't compete against the bids from builders who don't have computers and don't know how much money they're losing. That's how buying a computer changes the way you work.

This exaggeration makes a point. People think computers save time by helping you take care of business matters faster. But the reverse is true. You actually spend more time on business, because as getting organized becomes more possible, you suddenly see its importance. I never did job-costing before, for instance, but I do now because it's easy. Maybe my costs went up, but so did my awareness of them, and I can now account for them and charge accordingly. Fortunately, your value to clients goes up along with your prices, and if your marketing is effective — which can be helped greatly by computers — you'll get the business anyway.

My \$3,600 computer has helped me grow from a small company doing a few jobs a year to a small company doing 26 jobs a year and \$750,000 worth of business. That's called "no-man's land," that area of business volume between \$500,000 and \$1,500,000 where it's supposedly impossible to prosper. But I am. And there's no way I could do it without a computer and have any other life at all. □

Stephen King: Mastering the Numbers

Company: Common Vision; Hamden, Connecticut.

Market: Design/Build residential remodeling.

Number of Employees: Six in the field; part-time bookkeeper.

Volume: \$800,000 - \$900,000 each of the last five years.

Computer Hardware: IBM-compatible 286 with 40MB hard drive, math co-processor, and color monitor.

Wide-carriage dot-matrix printer.

Computer Software: Master Builder 5.0, Quattro Pro, Word Perfect 5.1, Act! 2.0, Generic Cadd, and a custom marketing database.

In order to run my remodeling company effectively it's critical that I have up-to-date, accurate information — bank balances, job costs, accounts payable and receivable, etc. — at my fingertips. In the early years of my business I'd spend weeks at the end of a year trying to sort out what had happened. Did we really make a profit, and why? I hated bookkeeping and office work.

When I heard there was a computer software program that could give me systems to stay organized daily, I decided to take the plunge. I knew nothing about computers, but I imagined them to be the miracle I needed to survive and grow. Perhaps because I knew so little, I didn't bother to study the situation but impulsively bought a computer instead.



Buying a System

I turned to another small business for help, run by a woman who provides office support of all kinds and is a rep for Master Builder software. She worked with a local computer dealer on the hardware side and came up with a complete package — an IBM-compatible, Epson 286 with a 20MB hard drive, a monochrome monitor, a basic Epson printer, and the Master Builder integrated software. The best news was that we could do all of this on a lease. This eased cash flow and removed the stumbling block of having to put out \$7,000 or \$8,000 for a product I knew very little about.

We were up and running within a few weeks with the help of training

visits from our rep, but it was still tough. Since we were starting midway into our fiscal year, we had to enter the past six months' data. We learned the programs by following the screen prompts, and using the help windows and program manual. Even with superb telephone support from Master Builder, it took much of the year — and a lot of voided entries and journal transactions — to get comfortable.

But the frustrations of learning were worth it. At the end of the year I had easy access to our accounting numbers, could rapidly turn out accurate estimates, and was tracking our job costs daily. During the first year of owning a computer, I doubled the company's volume without hir-

ing extra office help. I did have to steal a lot of time from my family during that first year of learning, but for the last couple of years, the computer has more than made up for the lost time.

Upgrading

I view upgrading as a necessity, since computer technology and one's business needs are always changing. Within the first year, we upgraded to a NEC Multisync color monitor (easier on the eyes), an Epson LQ2550 wide-carriage printer (to print out spreadsheets), a math co-processor (for a CAD program), and a 40MB hard drive (you can never have enough storage). I figure we'll be using a scanner (which can transfer drawings from paper to electronic computer files) in another year, as well as taking power and speed up a notch by networking with a 386 system.

As I grew more comfortable with our computer I also bought more software packages. I purchased Word Perfect 5.1 to do our invoicing, contract specs, and letters; even so, I barely utilize its capabilities.

I also bought Quattro Pro, a spreadsheet program that will do more sophisticated financial reporting; Norton's Commander and Utilities for DOS management; a custom designed database for direct mail; and Generic Cadd for computer drawings. All together, between hardware, software, training, and consultants, we've spent about \$18,000 in the last three years. This

may sound like a lot until you realize that the computer has allowed me to avoid hiring another office person, and has eliminated the manual errors in bidding that used to frequently cost me my profit. All this for \$6,000 a year is not bad.

How We Put It To Use

Master Builder is the core of our system. It's a business management system specifically designed for remodelers by two former remodelers in California. It includes accounting, job costing, estimating, scheduling, and other utilities that interface with each other — an integrated program. The current version is an improvement on an already good system; it prevents you from making common entry errors and has an outstanding manual.

Integrated system. On Monday, we do payroll, Wednesday is general ledger and accounts payable and receivable, and Thursday we enter invoices for job costing. Russ, my bookkeeper, spends less than 15

hours a week in the office running a company that has eight employees and does an average of \$830,000 volume a year.

In the first year, I used the "Budgeting & Bids" capability of Master Builder for estimates. This is basically an electronic version of stick bidding. But as we got all of our data from past jobs entered, we switched over to "Power Take Off," which uses these numbers for unit calculations. Either way, the program eliminates all the careless errors that compound in a bid when you are presenting four or five refinements of a design/build estimate to a client.

Spreadsheet. I use Quattro Pro for custom financial reports or to enlarge Master Builder reports (they are limited to an 8½ x 11 format). These aren't a necessity, but I feel a lot more comfortable if I'm able to track my company from a lot of different angles. This spreadsheet program allows me to find in minutes answers that would take dozens of hours of calculating.

It will also produce this data in all kinds of graphs.

For instance, to use Quattro Pro for budgeting, I take my profit/loss statement categories and compare projected numbers to actual figures each month. But unlike some builders, I don't like the spreadsheet for standard estimating, job costing, etc. That's what Master Builder does quickly and without complication.

Custom database. In our slow Northeast economy, we've turned to direct mail marketing to help stimulate job leads. We had a consultant design a database to handle our list of 9,000 potential clients. The program has a number of features, like an automatic search for duplicate entries, that save us a surprising amount of money.

Job leads software. I also use Act! 2.0, a personal contacts and job leads database. I enter in job leads with all pertinent information, and can track communications with our clients from week to week. It prints reports

that show which marketing and advertising methods worked best, based on numbers of leads generated and dollars spent. Act! also categorizes and tracks the types of jobs we've done — bath, kitchen, additions — throughout the year.

CAD program. This is an area where I'm still a little disappointed. As a design/build firm, I do a lot of drawing, and most of it is still by hand. There has been some improvement in lower cost CAD programs in the past few years, but they're still not user-friendly, nor do they contain drawing templates for common items like Pella and Marvin windows. I'm hoping those will be available in another year.

I still feel somewhat computer illiterate, but I'm very comfortable with the systems we have in place. They offer greater accuracy than I had before, access to information that allows me to actively steer my business, and an efficiency that allows me to keep office overhead way down. □

John Call: Mac Marketing Drums up Business

Company: Home Energy Consultants; Haverhill, Mass.

Market: Energy-efficient design/build.

Number of employees: three

Volume: \$133,000 last year, down from \$327,000 in 1988.

Computer Hardware: Mac IICX with 40MB hard drive, 5 megabytes RAM, color monitor, letter-quality printer.

Computer Software: Microsoft Works (integrated package), Claris CAD, Pagemaker.

When our sales fell almost in half in early 1989, I knew we needed to start doing something different. During the 1980s, we had grown from an insulation and replacement window company to a remodeling company centered on energy-efficient remodeling, with a few spec houses mixed in. We were running three crews, one each for weatherization, insulation, and carpentry.

But in early 1989, our business fell dramatically. The recession brought a general slowdown, and Massachusetts gutted the low-income weatherization program that provided much of our work. High land prices drove us out of the spec-build market. And we had two homes we couldn't sell. The markets we had been succeeding in were largely drying up.

To Market, To Market

We realized we needed a marketing plan and marketing materials — something beyond the yellow page advertising and occasional mailing that had taken us through the boom. We decided to concentrate on the remodeling market, specifically on



energy-efficient additions and solar spaces, and to develop appropriate marketing literature to emphasize our experience in those areas. We wanted to be able to produce these materials ourselves, so that we could revise them often, and so that we could tailor presentation materials to particular clients.

These needs, and a conversation with Bill Smith of Coastal Computer of Portland, Maine, convinced us to buy a Macintosh. We figured the Mac's desktop publishing capabilities would give us the flexibility we needed in developing our marketing materials.

So in August 1989 we bought a Mac and a letter-quality printer. For software, we bought Microsoft Works, which combines a word processor with a database, a spreadsheet, and a telecommunications module. We also bought Claris CAD, a sophisticated drawing pro-

gram; an estimating program; and Aldus Pagemaker, a page layout program.

Early — and Lasting — Success

We got to work right away. We used the word processor to create the first copy of our newsletter. With the database we compiled a client list. We used the spreadsheet to develop an inventory of equipment and stock. We then put this information together into a loan proposal to establish a credit line, which we got.

Excited over these quick results, we put more energy into our presentation and marketing materials, hoping to woo customers as successfully as we had the bank. We used the Mac not only for the newsletter, but to develop more professional-looking letters, memos, and proposals.

We soon began incorporating drawings from our CAD program into these materials. These profes-

sional-looking drawings have become an important part of client presentations, and also help greatly with our own planning, and with change orders once the job is under way. If you have to make a change and get approval, you just go back to the office, make the change, and print it. These drafting capabilities alone make the computer worthwhile.

But it is the newsletter, generated on Pagemaker, that has brought the most return in terms of sales. It goes out to the past, present, and potential clients we keep on our mailing lists, which are easy to print out. It includes information about our company and stories about the energy situation and home energy efficiency. In addition to informing and maintaining contact with clients, the newsletter forces us to constantly reevaluate our advertising and marketing programs, and to define both ourselves and the market we are trying to sell to and build for.

It has paid off. We just completed a \$47,000 addition that is directly attributable to the newsletter. We're now putting together a presentation book, complete with graphics and drawings of our previous jobs.

We see our Mac as a valuable tool box. The marketing tools it gives us are valuable during the most crucial time, when business is slow. We can use it not only to plan and take care of correspondence for existing business, but to generate new business. In addition, we plan to make use of the computer in estimating and accounting, but have not gotten far in these areas.

Why sit around and wait for the phone to ring? I think our Mac is the best piece of equipment to have in a sluggish economy. ■