

LESSONS FROM THE TRENCHES

George Martin

Never Miss an Opportunity

Getting the Most Out of Your New Product Ideas

Not every opportunity is golden, and unfortunately, neither is every idea. However, George shows us that, by following a few simple steps, we can weed out the bad from the good, and therefore, know which ones to run with and which to leave behind.



My mother's home has electric hot-air heat/air conditioning unit. It was built when electric homes received a discounted electric bill. The AC failed recently, so I started calling around to get an estimate on what it would take to either fix or altogether replace the AC. It was nearly impossible for me to get anyone to come out and look at the system. Apparently, because I'm not an oil customer, I don't appear in anyone's computerized system. I finally got one oil company to send out a service man, but that was only because I gave them my credit card number first. Ninety-five dollars bought me a service man to come out and tell me it's broken, a fact I already knew, so I'll consider whether or not that bill will be paid.

Starting again, this time I asked for a quote on a new heating system. Out of the many calls I made, only one supplier returned my call. He was organized, efficient, and knowledgeable, and his company is installing a new system today.

I write about this not to air my

complaints but to ponder a question—why did all the companies that have ads in the yellow pages and offer 24-hour service fail to even take the opportunity to quote my project? Are they too busy or just not organized? Is there no profit in my project?

I could go on, but my point in all this is to ask you one question—did you or your company pass over any opportunities last year? Did you look at everything that came across your desk? Did the receptionist misplace any calls? How much is that one extra customer worth today? When times are good, I think we overlook some important opportunities.

The electronics industry is in the tank. It's seeing one of the largest declines ever recorded. The senior members of our group will be familiar with these declines and know how to get through them. However, it doesn't make much sense to worry about the decline now, because it will be over soon anyway. But because we are where we are, let's talk about new products. It's a great time to think about them and perhaps even build some prototypes.

I'm sure each of us has said "I wish there was a..." But, how many of those ideas have actually come to fruition? Here are a few of the products or ideas that I have come across in the past.

ANOTHER ONE BITES THE DUST

Many years ago, a linguist compiled the phonemes of speech onto an integrated circuit based on the works of Richard Gagnon. The VOTRAX SC01 Speech Synthesizer transmitted building blocks of speech into words. The original inventor was from Scandinavia, and a slight Swedish accent is detectable in the output. If you've heard of Sir Stephen Hawkin, then you've heard of this product. Steve Ciarcia and I worked on a later enhancement, the SC02, which added

inflection to the SC01. However, I never saw this device offered commercially. So, maybe a speech product, with either hardware or software implementation or both, would be a good idea.

Many good product ideas have come and gone over the years without ever really seeing the light of day.

How many phone lists have you had, and how many do you maintain today? I've never found the right phone book software for my needs. A project like this would be a good shareware candidate.

We all have retirement plans of one sort or another, whether through IRA or 401K plans. Some of us even attempt to self-direct these investments. Portfolio tracking software would be ideal for tracking your investments. Software that allows you to simply enter the purchase price and number of shares or dollars invested to track the current value, true rate of return, and performance as compared to a major index would be valuable.

Another software program that has been phased out is Source Print, which is used for documenting software (I use it for outlining and formatting). The company that made Source Print no longer exists, leaving a void for a Windows-oriented product that does source printing, cross referencing, and general documenting of software.

Available today are VCR and TiVo-type products for television but nothing of a similar sort for radio. Imagine, if you will, a radio with a cassette recorder hooked up to a computer. Radio programs could be time-shifted and recorded for later playback.

A PLAN OF ACTION

Although I believe in my new product ideas, you may not. That's OK, come up with your own plans. And by all means, feel free to use any of mine. Just send me a dollar and it's yours!

Seriously, if you've been reading Circuit Cellar for any length of time, you've read about what the experts think the steps are in design and developing products. A basic strategy

looks like this:

- Develop a set of requirements
- Schedule the design effort
- Budget for the design effort
- Make a marketing and sales plan
- Detail the production phase, including pro forma income statements

What is all this paperwork good for? It's a road map, and as with any journey, it's going to change as you encounter roadblocks, detours, and interesting sights along the way. Also, you need a formalized plan just to make sure you're constantly working on the next most important step. It's just like with any design, but now you need to consider everything.

You're able to look at a schematic and understand what the design is all about, but can you look at a income statement and understand what that is all about? Why not, not interested? Well, you had better be. I don't believe you can escape the financial end of the electronics business. In my first company, we never understood cash flow. We were so successful, we ran out of cash. I had no idea that could happen.

I also believe completing and understanding the five-step process will make you a better engineer. Wouldn't it be fun to ask marketing some pointed questions? Think of it as a big game of Monopoly. Even if you're never going to take all the steps to develop a product on your own, doing this on paper will give you insight as to how the real world works.

Questions arise that you've never had to think about before. Did you include office supplies in your budget? What is a good number for phone expenses? What if the product costs 10% less or 10% more to build? Divide up the tasks among your friends and review each others' work.

RUNNING WITH A GOOD IDEA

If you read through this article and actually concoct a plan, you'll soon realize that sales are the most (only) important detail. In fact, if the project is small enough, you can simply release your product and see how it's accepted. If you can't keep up with

the orders, it's time to get serious. If, on the other hand, you can't give them away, it's then time to investigate why. The shareware aspect of software makes it tempting to get started. You dream about selling 100,000 copies at \$25 each. But, believe me, it's a little more involved than that.

If you need tools to set up a project, that will mean investing your money, not only your time. You should have a plan for those dollars or you could easily waste them. Why pay for parts, printed circuit boards, assembly, cased and silk screening, labels, and the so on? Consider simulating it on the PC, and then shop around for potential buyers.

If you need money, backers, or financial experts as partners, there are investment clubs such as MIT Forum and Connecticut Venture Group, which meet and review business plans. If you've never attended any of these, check out one. It's more business oriented than technical (so you'll be a star), and you meet a lot of people who are looking to fund good ideas and good companies. Ask a lot of questions. There are also investment fairs, but I've found these too large to be of much value to us little guys.

There are also books about writing business plans, and even software to generate them automatically. Don't go too far down this path unless you understand each line item in the financial section. If you don't, you'll soon be exposed.

This is a brief article, but your plate should be full. Let me know how you make out. Send your comments, questions, and quarterly shareholders reports to either of these Newsgroups, local.cconline.trenches or local.cconline.chat. I monitor both of them. ☒

George Martin began his career in the aerospace industry in 1969. After five years at a real job, he set out on his own and cofounded a design and manufacturing firm. Typical systems that George designs include servo-motion control, graphical input and output, data acquisition, and remote

control. George is a charter member of the Ciarcia Design Works Team and most recently, he's been working on the people-tracking system for Bill Gates' new house. You can reach him at george.martin@worldnet.att.net

Circuit Cellar, the Magazine for Computer Applications.
Reprinted by permission. For subscription information,
call (860) 875-2199, subscribe@circuitcellar.com or
www.circuitcellar.com/subscribe.htm.