

Marketing Plan

For

HP's High End Calculator Line

A User Community Analysis

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Invent or Reinvent?

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EXECUTIVE SUMMARY

Long time HP Scientific Calculator users are unique in that they are technical people needing a personal and portable computational tool. They have watched HP “reinvent” itself several times in the last 28 years. These customers are relatively constant; it is HP that always seems to be changing. The apparent driving force for HP is ever increasing sales numbers required to “stay in the business” with high school and college students providing the largest group of customers requiring a quality, reliable, and especially rugged mathematical tool. The critical element of this “Analysis” is the apparent requirement that HP displace TI as the predominant school calculator supplier. With HP’s history of excellence it is difficult for us to accept the “Me Too” type of product that is required to effectively compete with TI, Casio, and Sharp.

HP has two choices. 1) Join the “Me Too” club with a “Me Too” very low cost product, or 2) Leverage from the past “image” and continue to provide leadership with quality, excellence and service. HP’s obvious marketing and product development effort, reinforced by the outline prepared by ACO’s manager Chris Wallin, isn’t very convincing to us that HP is on the right track. HP utilized the support of its devoted and loyal user community to develop the HP49G. Perhaps it is also useful to try and do the same with the marketing of the product. We want HP’s product line to continue because of the special qualities of the Scientific Calculator described in this analysis. HP understands that a calculator is designed with a “key per function” philosophy that makes calculators an unusual implementation of a computer. Normal “computer trained” professionals are too frequently unable to relate to this unique perspective.

We believe that HP should continue to build a quality hardware product with the necessary service to provide *solutions*. This may require *display cover* and *keyboard changes* and an *increase in the selling price*. While HP reestablishes itself as a leader by first dominating the college student and third party applications markets, it can increasingly challenge TI at the high school level. This may be the present plan, but the decisions made on the hardware doesn’t convince us that the mindset qualities described in this Analysis were considered as very important. It appears to us that a competitor to the TI high end model was the primary basis for the HP49G design. Poor keyboard readability, omissions of a keyboard overlay capability, AC adapter plug, and other third party developer requirements illustrate the point. A lack of **teacher support** at NCTM is another example that ACO is not thinking strongly enough about solutions. Specific recommendations are:

1. **Establish** a marketing **pricing** strategy that allows for all resellers **to support selling** the machine.
2. Define all machine functions in a **printed manual with a complete index** of all symbols, functions and terms.
3. Outsource printing with a special publisher agreement that **printed manuals will always be available**.
4. **Beef up the HP Calculator magazine** to serve teachers, students, users. Publish more frequently.
5. **Develop Teacher seminars for NCTM** attendees presented in a “Let’s help you” facilitated manner.
6. **Provide a new supporting product every six months**, ROM updates on a published schedule, every Q/2Q.
7. **Beef up Internet support** making it personal with support person’s photo, direct answers to questions etc.
8. **Initiate student involvement** with contests (magazine, Internet) that appeal to the general student not nerds.
9. **Hire a Technical Support “Czar”** who gathers and provides the support necessary for true service.
10. **Create School Visit Team to train teachers** and help students advance Science & Technology.
11. **Develop practical teaching materials**, use the teachers, give recognition, provide service.

See additional suggestions starting on page 18. Also see the conclusion on page 33.

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INTRODUCTION

This document consists of four parts. Part I is the Basis for the Analysis. Part II is Specific ACO Suggestions from the author. No claim is made for complete originality. Part III is Specific ACO Suggestions from long time users of the HP community. Part IV is the recent Casual Comments from members of the community relating to HP in general terms.

This document lacks the “spit and polish” of a formal Marketing Plan and it doesn't deal with costs and budget. This “plan” does eliminate unrestricted blue-sky desires most HP calculator customers have for infinite support. This, of course, stems from the *inspirational affect* HP's machines have on their users.

BASIS FOR ANALYSIS

PREFACE

Hewlett-Packard's Scientific Calculator business is sluggish. I use this vague term because I don't have sales details. If I am to state the obvious I should use terms like terrible or disastrous. It is the user community's concern for what appears to be an impending disaster that inspires us to address this issue. We want HP's high-end Scientific Calculator line to continue. It is so important to us that we will contribute substantial effort. HP has a superior product; shouldn't sales likewise be superior? We are not here to criticize or complain, we will offer specific suggestions that HP should consider to better address the present market situation. We justify this approach encouraged by the “new” HP.

The “we” as used here involves the United States. It includes HP's Dealers, User Group Members, and the active HP users of the HP Calculator News Group. These people are HP's serious users. These people are the ones who vigorously “sell” and “defend” HP's machines in the United States. These people are Doctors, Lawyers, Businessmen, Professors, Teachers, Mathematicians, Engineers, Managers, Software Developers and students. These people are HP's loyal and devoted customers.

Since HP hasn't done very much that's obvious to us to promote calculators we will assume that funding is very limited. We will keep this in mind as we offer a few suggestions to increase sales.

INTRODUCTION

When Hewlett-Packard created the Scientific Calculator Market with the Introduction of the HP-35A calculator in 1972 there was a great internal debate as to what was the best method of marketing the new product. Technology was in a state of great change as integrated circuits were on the horizon and hybrid technology was very expensive for a consumer product. Yet this new technology was essential to make a machine the size of HP's recent Desk Top Scientific Calculator fit into Bill Hewlett's shirt pocket. This story is a legend in the calculator world. When HP committed to the development of the Scientific Calculator it was doing so in a position of *leadership*. This was easy in the beginning.

I have closely watched the development of HP's high-end calculators since the beginning. I have even consulted for HP in the area of User Applications for many of the high-end machines. As the Editor of a Newsletter/Magazine dedicated to HP's Calculators for ten years, and founder of an International Users Group for these machines, and as Technical Support Manager for one of HP's outstanding dealers for ten years, I have learned the following.

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HP's Scientific Calculator Users are relatively constant, it is HP that keeps changing.

This is the heart of the issue. Why is this? In the 28 years that I have been deeply involved with HP calculators and their users I have probably written, edited, and published more material on HP calculators than any non-HP person. HP (past or present) doesn't seem to understand that the type of person who uses an HP Scientific Calculator is unlike other "customers." Words like *quality* and *excellence* frame the idea. Remembering that a Scientific Calculator is a *mathematics tool* keeps the issue in perspective.

Mathematics is an area of human thought that is just too difficult for most people. Mathematics is *abstract* and *exact*. These two states of human activity are only attractive to a very small percentage of the population. For those people who need a serious mathematics tool the issue of machine selection naturally involves quality and excellence. Add programmability and personal size to the mix and you have the core ingredients to define the needs of the HP Scientific Calculator User. A clear understanding of this customer has eluded HP Marketing from the very beginning. That there was something special about a product that encouraged customers to form a users group is obvious. But to understand the *passion* that the customer develops for a *machine* has historically been beyond the ability of HP Marketing to know and use to full advantage. In this context let's attempt to define the market and how to address it. But first . . .

A LITTLE HISTORY

In the early days of scientific calculators, HP and TI defined the market place. Each manufacturer had its idea of how a machine should be designed to provide the user-machine interface for a personal portable mathematics tool. HP took the high ground and studied the problem and arrived at a user interface that was based on *efficiency*, the most efficient way to solve a math problem. This user interface was the result of a *scientific study*, not a marketing study. This is but one example of HP's excellence. HP stunned the world with the concept that calculator keys could be put on half-inch centers and still be useable. The industrial design standards of the day said that it would not work. Another example of excellence is the concept of *practicality*. Not only was this the idea behind the choice of user interface, but the basis for design of the whole machine.

The objective was to provide a useful tool. A tool, like a hammer, is something the serious user isn't supposed to think much about. It has a defined job and it does it hour after hour, year after year. If the hammer is designed for the job it is simply a matter of selecting the right manufacturer and model. That task is easy; just look at what the other serious users use and buy it. *Cost* is not the major issue; *performance* is. Remember our mindset here:

Inspirational affect, leadership, quality, excellence, mathematics tool, abstract, exact, machine, passion, efficiency, scientific study, practicality, cost, and performance

From the "Eleven Rules of the Garage" it appears that Carly wants to be reminded of the principles that made HP the recognized leader for its products. Forgive me if I am personal, but this (topic and the machine) is *personal*. Add that to the mindset list.

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When the HP-65A, HP's first programmable machine, was introduced HP planned on user support. A percentage of sales, 3%, I vaguely remember, was budgeted for a newsletter, accessories, a user program library, and lots of applications programs and program pacs. A customer support group answered questions about HP's machines and programs. In order to keep HP's customer support group in tune with the engineering group each engineer was assigned to "work the phones" in technical support for two weeks each year. This helped to provide a better understanding of the customer and it helped train technical support. All of this took place at the Corvallis Oregon facility. The synergism of this group was substantial. The ACO effort is spread across continents. Being modern and getting the job done are not the same.

TI saw the personal computer coming and jumped into the business with the TI-99-4. This machine drained TI's resources to the extent that they left the calculator business in favor of the more lucrative market of the masses. Every American could use a personal computer. The *sales numbers* were just too attractive. When TI realized that they made a mistake they returned to the scientific calculator business and had an uphill battle. Casio and Sharp filled the vacuum and TI needed to work very hard to get back into the business. They designed three high-end models before they came up with a winner. I have those machines in my collection as a result of working with them at the time. One, the TI-88, was the first machine with a user interface that had a YES and NO key for the user to respond to prompts. It didn't go into production.

TI studied the market and realized that their expertise was high volume and marketing. They defined the biggest market as the student market and designed a Marketing Program and machines to address that market. They invested in people to convert the teachers of America from the position that a finite state machine has no use in the mathematics classroom to calculators being necessary for teaching math. The general idea being talked about today is that we should be using "more technology" to teach mathematics.

Historically speaking it is interesting to note that while HP "created" the initial market with the first product, TI "created" the current market. The method TI used is questionable, but if you study the history you will see that major change is possible if the passion of individuals is supported. This is a good example of having a *vision*. HP's vision for all of the qualities mentioned above for hardware design is obvious and unquestioned. We speak of marketing here.

As the need for volume increased to justify development costs HP decided to use the TI model. This is a natural and obvious decision for a company that has grown as HP has. Historically speaking, however, there is a problem. HP also "left" the market place. Now HP has to come back and displace TI in the student calculator market. I am not an expert in marketing, but from what I have read, the odds, historically speaking, of doing this are very very low. TI "came back" because they defined a "new" market and developed it. HP was more concerned with selling calculators to Engineers and Surveyors. This situation is the basis for the perceived potential disaster mentioned in the Preface.

In the early days of the HP-65A, HP's first Programmable Calculator (January 19, 1974), there was a big debate over the idea that the machine was actually a computer. The "definition" of computer and calculator has changed many times over the years. One of the most important differences is the mindset of a "key per function" that is vital to a calculator. That perspective is difficult for a computer-trained person to understand, especially because of the influence that Microsoft has had on the industry. This is but one more reason the HP Calculator User Community wants to see HP continue perfecting calculators. The scientific handheld calculator is a *unique* implementation of a computer.

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WHAT IS THE MARKET?

HP Marketing has the sales numbers. We don't claim to have their knowledge. Our expertise, as users however, does give us insight as to why we are loyal to HP. Some of the people I have spoken with over the last couple of years sometimes speak bitterly of HP because they feel that HP has become another "Me Too" company. They complain that HP has been dishonest with them. The cause, the spark, that started this "User Analysis of HP Marketing" is Jim Lawson's letter explaining why he no longer sells HP Calculators. This is not an isolated case. We had similar experiences with HP at EduCALC involving the palm tops as well as calculators. These people are no longer proud to be HP customers. I suspect that Carly is sensitive to this about HP as a whole and she is trying to stem the tide of mediocrity.

Historically HP "created the market" with the first scientific calculator. One question to ask is: "Which came first, the scientific calculator or the customer?" If you think it is the calculator you are missing the point. In the years I have been associated with electrical engineering - ranging from quartz wafer based low frequency tuning fork crystals to change the watch industry to micro miniature electronic medical implants - I have been "close" to marketing. I have learned a very important lesson. The customer is far less interested in how the product works than what the product will do for him or her. The engineer is proud of the technology and it is natural to sell the technology. The student is struggling with learning science, mathematics, statistics, engineering, or analysis. He or she is most concerned with the easiest and fastest way to solve a problem.

ACO correctly sees the students of the world as their market. ACO has said that the US does not represent the growth they need. I suspect that TI is the main reason. In fact, I have heard that the majority of the ACO marketing budget is allocated elsewhere, not the US. We can only address the US market, but I suspect that the principles described above apply worldwide. When I travel to HP User Group meetings in foreign countries I notice something very interesting. I am in a foreign country with a foreign language and customs, yet the users are the same. The meeting atmosphere and interests are the same in Los Angeles, Mexico City, Chicago, London, Philadelphia, or Sweden. When speaking to these groups, with or without a translator, the questions, problems, and issues are similar. I have always felt at home with these people no matter what their backgrounds are. They are HP Calculator Users. They have strong character, and similar interests in technical and scientific endeavors. Much has been written about the character differences of HP users compared to TI, Casio, or Sharp users.

To define the market as selling every student an HP Calculator is not very realistic. As Technical Support Manager at EduCALC I met with marketing and engineering representatives of hundreds of manufacturers. We had over 1200 Hi Tech handheld related personal products in our catalog and they all wanted us to add their product. After all, we printed and distributed a million catalogs every year and that is good exposure for any manufacturer. We evaluated the calculator products from HP, TI, Casio, and Sharp. We sold them all. I always asked the same question. Who is the customer? If the answer was vague and general I became worried. How can a product be marketed if the customer is not well defined? The difficulty with specifically defining the customer is that you must *understand* that customer. Using vague or general terms allows you to skirt the issue. How does the student know he or she has bought the right machine if the product promotion and support is not directed to them?

One of the lessons we learned at EduCALC was that the customer is smarter and more intuitive than we want to believe. I could give you dozens of examples of HP's past marketing decisions that "backfired"

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because HP thought they could “control” the market. Such folly. Customers may be ignorant about the product or the market, but they are spending their own money for a Scientific Calculator and they want value for their money. New products with displays and keyboards are introduced so frequently these days that a high level of public attention doesn't happen today like it once did. A new calculator is only one of many similar products and it is nearly impossible to promote a complex product like a Scientific Calculator to the general public. TI sells the teachers and lets them sell the students. They have done a superb job at addressing the student's needs as perceived by teachers. TI has spent a great deal of money for many years to accomplish this.

One of the questions I was asked a dozen times a day at EduCALC was, “What calculator do you recommend?” Since I wasn't selling calculators (I was selling service) I asked the customer a very important question, “What calculator do your students' friends and classmates use?” I knew the answer. Then I asked, “Is your son or daughter the type of person who easily goes alone or does he or she feel that he or she must be part of the group?” I am not being cute here; this is the day-to-day issue with potential HP calculator customers. Of course I sold more HP calculators than I sold TI or the others. Of course I always sold a GX over a G. I sold the promise of HP. I sold excellence and performance, and all of the qualities described above.

HP doesn't sell to individuals any more. Just as the debate raged over HP selling the HP-35A direct from their Sales Engineer or through a dealer 28 years ago, the debate about the best way to sell HP Calculators still rages today. Technology appears to be the driving force that makes marketing decisions. The question to ask, and the question we as HP customers get confused about, is: what is ACO selling?

The high-end Scientific Calculator must be thought of as a portable mathematics tool. The question is, of course, should that tool be smooth, shiny, tempered, and tough? Or, should it be a cheap knock-off piled high on the bargain table? We hope that is the decision that ACO is in the position to make. You can't have it both ways. But, that is the impression that the market place gets from the current marketing plan. The Internet is the bargain table. It offers very little but information and price. EduCALC strived for the middle ground. We offered competitive prices with knowledge and service.

1. What should ACO be selling? ACO should be selling solutions, not just a calculator. The HP49G is far too complex for it to sell itself. ACO cannot immediately compete with the teachers selling the TI machines and the mass marketers hanging them in their stores. When the Internet is the only place calculators are sold the cost of sales drops to almost nothing. That makes everyone in the market equal. The cost of sales for TI is the teacher support. What is ACO doing to support the teachers? Some say that ACO is making them feel stupid. ACO exhibits at the annual NCTM conferences, but the word often heard from teachers (and programmers) describing ACO of late is “arrogance.” ACO should spend less on expensive booths and more on meeting room rentals for teachers to attend “how to” sessions using HP machines. The teachers spend for the travel and time, take advantage of it. TI does.

HP (the previous group, not ACO) got a little taste of what is needed in teacher support when they tried to go head to head with TI with their teacher training seminars. HP was trying to convince teachers to adopt the HP-38G. I attended one of these sessions and it was GREAT. It was a two-day affair and done in HP's top-notch style. The trouble with these sessions is that it is like trying to catch raindrops with a glass. You don't get very much water from the effort no matter how fast you move and no matter how good the glass is. HP didn't stand a chance against TI's effort.

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If ACO is to sell solutions instead of hardware it has to provide adequate printed manuals and reference materials. This is so obvious that we, the user community, wonders who made the decision *not* to write a proper Owner's Manual or User's Guide, - what ever name you want to give it. In the "old days" we complained that HP didn't number their pages in some of their documents, or that humor was missing. Today there are too few pages to number and the humor is all negative.

The Internet is supposed to answer all questions at little or no cost to either HP or the customer. Many years ago I took a drafting class in high school. One of the "lessons" I remember is the justification for making a formal drawing. The draftsman spends the time to make the drawing because many people will refer to it in all stages of the product from engineering to marketing to customer usage. If an added view saves time it was justified. Has the value of time changed? If anything, the value of time has increased. We all want top dollar for our time.

Is the student's time of less value? Each year technology and knowledge increase at ever-faster rates. With instant communication and computers it is no wonder that the student of today has to learn more in school. HP wants to use modern technology like the Internet because it is "cheap". Have you ever used the Internet to search for information?

Here is a challenge for the reader. Here are two real world questions that came up recently. (1) How good is the random number generators used for the TI-86, TI-89, and HP49G? Is it not reasonable to have this information? What type of generator is used, is a seed used, and how is the seed generated? (2) Most spreadsheets, engineering programs, etc. do not have the ability to round to a given number of significant digits. The HP49G does. Do the TI models offer this feature? You must seek the answers to these questions on the Internet (you can't find the information in any user manual), and it is not as fast as you think. Imagine the student searching the Internet to learn how to make a calculation on his or her calculator for each home work problem. **HP has to produce proper printed manuals.** Yes, put them on the Internet. Yes, make them available on CD's. Yes, sell them on the Internet, but, most importantly, print them in a convenient size and provide an **adequate index**. This is a solution and it provides service. This is so obvious that it scares the hell out of the user community because it is one more indicator that ACO has lost all sense of what it is doing to provide a quality product.

The first reason limited resources may not have been expended to produce written manuals is the belief that the "paperless society" is right around the corner. This was predicted twenty years ago and the predicted year has come and gone. I believe that we are still more than a decade away for the following reasons. The first reason is the media. I attended an academic conference on education at Long Beach State recently. One of the sessions addressed the physical life of the media used for electronically storing information. Our beloved CD's have a very short life, less than fifty years for the best materials. This life is for specially stored and protected media, not normal usage. Paper is still the best media we have readily available.

The second reason is that we will be a paper-based society until the "electronic media" is as common as paper. Electronic media will not become the dominate media until universal-format standards are adopted. Only then will electronic media become as common as paper. At the 2000 Winter Consumer Electronics Show in Las Vegas various manufacturers showed portable CD players for viewing a full-length movie. Of course that technology could be used to read documents. New battery technology, screens, and media are just beginning to be mass produced that show us that we can eliminate paper for

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documents, books, etc. Still, every company believes that it has the most effective format for their application.

We are still a very long way from a paperless society. In my opinion it is a “marketing excuse” to use this concept to justify not producing printed manuals. Until the student can afford a CD player and the book companies release their textbooks in CD form, our students will have to continue to see their doctors for back (pack) strain as is done too often today.

A survey I made just before EduCALC discontinued its electronics business was stimulated by a comment made by TI's dealer representative. At that time it was obvious that neither TI nor HP could support dealers like us because we only represented sales of \$10M per year. Their visits had gone from monthly to annually over the years. The mass retailers represented many times that business and their time was best spent with them. I was told that I could call a TI telephone number and request teacher materials on their school calculators. I was flabbergasted when I received a two-inch thick collection of articles, lesson plans, programs, and tips from many different sources. TI was just acting as a clearinghouse for information. It was WONDERFUL. I had been advocating this idea for years. Who else but the manufacturer is to do this? HP was too hung up with “What will the lawyers say?” or “The information isn't up to HP quality”, or “The information has not been verified.” That was the day I knew HP was no longer seriously “in the business.”

Direct selling is a good example of wanting your cake and eating it. In the past HP has had lots of supporters that wrote books and shared information. Why did these people do this? Was it for the money? Few book authors made any money. I know, I dealt with them. I sold their books. I know the numbers. Mostly HP books were written because of the *pride* of ownership that HP owners had. Add that to our mindset list of words to explain the principles that have been used to make HP great. A couple of years ago I made a formal survey of the books and manuals available to the high-end TI owner and the high-end HP owner. The ratio was 20:1 in favor of TI. What happened? Up to that time HP always had 20 times more written materials available in the market place. We can't blame Kahw; from what I heard he was ordered to ignore calculators. Thanks, Chris, for giving us a second chance.

2. How should ACO be selling? If ACO has an “education” program it is possible to sell only on the Internet. Why have third-party warehouses across the country? Just ship from ACO's warehouse when ordered. ACO could always be on top of its inventory. They will have full “control” of the market. ACO has discontinued the concept of dealers so why not just sell direct? Why use the Mass Merchandisers at all?

As an engineer I actually believed for many decades in the old adage “Build a better mouse trap and the world will beat a path to your door” Isn't ignorance great? Growing up in Detroit working in my Fathers Discount Store after school gave me my first insight. I could not believe that 1/3 of the price went to a seller who just took orders! I learned the term “middle man.” I developed an inherent distaste, at age 14, that I as a customer, gave 1/3 of my dollar to the “middle man.” This was an attitude my father taught me without his knowing it. You can imagine that it took me a long time to realize why we use(d) a two tier marketing system in the US. Wholesalers and dealers earn their percentage. They add value. Of course the value may or may not be the value HP desires. We, at EduCALC were told that we did. HP was proud of our support of their products.

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Another hard lesson I have learned about selling is that buying is an emotional experience. It is not an experience based on reason. Is the HP Calculator customer any different than the average customer? In my experience, and this was a most difficult lesson to learn, probably not. Because of the nature of the product, however, I believe that there is a stronger rational component in the HP Calculator customer's character. A good quality tool will be praised and sold by personal recommendation. While the normal selling methods must be used, ACO should also take advantage of the special character of its customers. Don't treat them like children even though you have aesthetically designed the machine as if they were. Designing the keyboard to be less intimidating to the student is fine, but to abandon the rules of good readability and contrast is degrading to the concept of HP traditional practicality. I believe that you must use the fluff to sell the machine, but you must take advantage of the customers desire for quality and provide at least 20% stuff. Historically HP has shown full head-on views of the keyboard and display. Today HP is being "cute" by cutting off the machine at the edge of the page. I know that this is a modern marketing technique to get the reader's attention, but it degrades the product. It would be forgivable if this wasn't the only view the reader had of the machine's keyboard. Leave the cute stuff to less discriminating manufacturers.

Much has changed since the post WWII days of price keystoneing. The cost of sales has dropped, but the value added that helps the customer decide what is the best product at the time of sale still needs to be reckoned with. TI has solved the problem politically; what genius. No wonder the SAT folks were threatened with a lawsuit if they didn't change their ways. How tempting it is to think we can have our cake and eat it too. TI certainly doesn't. They pay a high price for all their "wining and dining" teacher support. Should HP compete head to head with TI? That is just plain stupid. From what I know of the business, even HP cannot afford to take TI on head to head - at this time. The market is just not big enough. And, judging from what we see, or cannot see, ACO isn't. That is the problem. We, the serious, mostly non-student, users can't see that HP is doing very much to promote and support Scientific Calculators.

I have described the HP Scientific Calculator Customer but there is another aspect of these machines that has been obvious to me from the beginning. What surprises me is that there has been so little study done of the psychological relationship between the user and the handheld. Holding something in your hand gives you security and strength. This is a very different interface than sitting at a keyboard. You may crunch up in a chair, or sit on a swing. You may move about and use several of your senses as you struggle with a problem. Using the Scientific Calculator is a very personal experience. Machine manufacturers want to make the machine bigger and bigger. The palmtop designers represent this group. An excellent recent marketing example of what I am talking about is the Palm Pilot. Size is an important aspect of the machine and it was the basis for forming the first HP Calculator division. There is something special (even emotional) about a handheld machine.

HP took advantage of their loyal community of users to help design the HP49G; why not do the same to help market it? All too often the manufacturer perceives a conflict between its interests and that of the customer. The HP community of customers is quite different. Hewlett-Packard Company, as a whole, enjoys a special position in the world of commerce. Using the unique customer qualities described above by our mindset list it should be clear that the traditional HP calculator market is quite different from other markets. One of the purposes of writing this analysis is to try to convey what we, the user community, know very well. The mindset is so obvious to us that we are astounded that HP professionals cannot get a grasp on it and use it for a more effective sales.

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This discussion has attempted to describe the character of the customer who is inspired by the qualities of Hewlett-Packard calculators. When the scientific calculator was new 28 years ago it was many times more expensive than it is today. Only the very serious technical types even considered spending the high price for such a tool. For these people, and those not so talented but interested in technology, the calculator was an equalizer of sorts. Anyone could buy a machine and make complex calculations, not just those who could use the slide rule or those who had access to a room-sized computer via a terminal. A similar role exists for today's calculator users. Today it is not the haves and have nots, it is the have HP's and the have TI's.

The HP calculator serves as an educational inspiration and teacher for these users. While HP does not consider itself in the education business the customer wishes it were. You spend a couple hundred dollars for an HP personal portable computational tool and you are inspired. What is the mod function? What is special about taking the square root of minus four? These questions come about because the user wants to explore the capabilities of the machine and learn the math. It is this aspect of the handheld that causes these users to ask about books written for the calculator. If the topic is Mechanical engineering the eager student wants a book that equally covers the subject integrated with the use of the calculator. In all the years I have been involved with calculators I have seen very few books written half application and half explaining the machine.

The reason, of course, is the requirement that the author be equally knowledgeable of the calculator and the subject of interest. This special person has to be inspired enough to even think of the task and be able to take a year out from his or her life to write the book. Having all of these ingredients together in one person with the necessary writing skills is a rare combination. Yet, that is the type of book most asked for by the calculator user. HP may not be in the book writing business, but HP needs this level of support for a complete product. Does Stanley provide a book describing how to frame a house with the hammers it sells? Of course not, and I could not justify the argument that it should. After 28 years – the total history of the product – it is clear to me that this is a natural and inherent part of HP Scientific Calculators.

I have one more point to make as to why HP should listen to the “fringe” customers represented herein. One analogy is the issue of having the machine programmable. HP has internally debated whether to include this “feature” in many of their high-end machines. What value is it to provide a feature that everyone pays for, and much less than 1% of the customers will ever use? It is very simple. If the HP48 were not programmable there would not be an HP49 today. The contributions that this “fringe” group of users make to the product is many times greater than what the other 99% of customers make. I have always found that you learn more from those who disagree with you and can defend their position than you learn from those who are like-minded.

You cannot use history to predict the future, but what else do you have? Human nature hasn't changed much over the centuries, but those who cannot understand why things were the way they were are most likely to make the same mistakes. Unfortunately the old and loyal fringe group remembers HP making the same mistakes over and over again. Just review the history of HP keyboards for a real world example.

S P E C I F I C A C O S U G G E S T I O N S

The discussion above has been general and philosophical in nature. The reason for this is to inspire the Marketing of the product to follow the vision of the Engineering of the product. Yes, I know that Engineering was given the power to “do their thing”, but now is the time to turn the focus to Marketing. Engineering must now be totally in support of marketing for the next 8 to 12 months. No new high end model development work. Establish the success of the HP49G first. How may the 49 be made better, presented better, and documented better? Marketing must believe in the product. Marketing must believe that the HP49G is better than anything on the market, and they must stand ready to defend and prove this. Does HP Marketing agree with the following?

1. Traditionally HP's calculators have appealed to a special type of customer and this hasn't changed. To be effective HP must understand and continue to appeal to this (age independent) type of customer.
2. TI owns the High School market. These students continue to use their TI machines in college.
3. HP cannot expend the resources to displace TI's market position. The market for Scientific Calculators is not big enough for this kind of competition and investment. Any displacement will take place over a period of many years.
4. HP has to realistically address the market it traditionally has and provide the support that these customers want by providing the leadership demonstrated in the beginning.
5. HP has to accept that they have to price their machines accordingly. Do not participate in the high volume price war that TI, Casio, and Sharp does. Leadership means taking the high road.
6. HP has to abandon the concept that they should “control” the market. Stop attempting to set the sales price for the product. Forget about and stop discussing “street price.” Leave the street price on the street, not in your sales strategy.
7. The complexity of the Scientific Calculator requires personal selling. The margins for the retailer must be maintained to insure that there are resources for this selling. This may have to be done on the Internet. The solution is to take advantage of the qualities of the mindset and the machine and make it personal.

HP must personalize its message to students. Being personal is a good thing, and it is in line with the “new” HP way. I believe that this is seldom done because employees are not in the same position very long. While the young person is more pliable and changeable I still believe that they also want something solid to “believe” in with regards to products. Have you ever heard of Scientific American or Edmund Scientific? What comes to mind when you think of these companies? Mathematics doesn't change with time, it is constant. Use this to advantage. HP and calculators have been and should continue to be respected as the best, most reliable, most accurate, and always there. While this kind of support is very costly it can be done at acceptable levels if efficiently managed. It can be done if HP adds the student/customer to the loop. What has been described in the “philosophical” part of this “Plan” is to attempt to explain the personality, the type of person, who has traditionally bought and used HP calculators. This type of person is quite different from the typical users of TI, Casio, or Sharp machines.

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This latter group should not be excluded in the customer definition. Traditionally it has been said that the TI market is different from the HP market. A TI sale, however, removes a potential customer from the market place. Traditional marketing thinking only makes sense if you are engaging in “Me Too” product marketing. Stop following the pack.

IF I WERE THE US MARKETING MANAGER . . .

I will accept the fact that converting the teachers is long term. I will take advantage of the devoted user community in getting their contributions into the Marketing program. I will:

1. **Establish a uniform product pricing policy.** HP Village and all other direct sales from HP will be at a published price. If the cost of sales dictates that HP ships direct to resellers a discount from the the published price will be adequate - at least 25% - for the reseller to provide some kind of point of sale support. The discount may be greater for high volume customers. This provides a **level playing field** for all resellers of HP ACO products. The “discounted” or “street price” will be set by those who want to sell ACO's products. Publicized special promotions could violate this pricing policy and will apply to all. The reason for this policy is the decades of personal first hand experience, long before the decade I was “in the business”, of HP not living up to its stated policy. This is vital if HP is to recover a reseller presence in the market place.
2. **Ask Engineering to provide a definition of every function in the machine.** A complete set of properly indexed written manuals will be produced as soon as possible. The index is very important. Every symbol and important term on the box should be included in the index. Every page has at least three or four important words or terms on it. As an index quality test multiply the number of pages by three and then count the number of entries in the index. An average mark is given if it is three times the number of pages. A high mark is given if it is four times. With computers to do the work there is simply no excuse for an inadequate index.
3. **Set up an alliance with a small publisher/printer.** This company will handle all printing and selling of HP's manuals. This company will guarantee the availability of manuals and be designed to publish third party books supporting HP's machines. The methods of sales and form of the books are determined by modern business practices. The cost of being given a wonderful business with an immediate market is that they always make everything available, even if a ten year old manual that only sells one copy per year. This is essential to support the quality and value of the hardware. Rebuild an existing relationship?
4. **Increase the frequency of publication of the HP Calculator “magazine.”** It should be published at least six times per year with the intent of being monthly. A nominal fee may be charged. The first years subscription will be free with the machine when the registration card is returned. The publication will have a specific editor who “works” with the community. Topics of the “magazine” will be dedicated to regular columns such as *Teacher's Notes* (solving classical problems), *Programming*, *Hardware News*, *Student Activities* (scholarship news, scientific accomplishments, career stuff, featured student, etc). The publication will have a “formula” that is followed for each and every issue. Advertising and third party coverage is to be developed as readership grows. The editor and staff shall be HP, printing and mailing will be by “our” publishing company (3). The costs of printing and distribution (mailing, Internet version, etc.) will be reader supported. This will be a user oriented publication. Alternately, if the economics can be worked out, a third party could do the publication with payment for the first year provided by HP. Each issue will

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be at least 12 pages. *Note. Content is not an issue with a good editor. I published a similar magazine for ten years and I always had three times more material to publish than I had space and the format was small print at 2,200 words per page.* The paper and quality will be adequate for information conveyance, this publication will **not** be in a slick selling format. This will be the kickoff means of reaching the future customers of HP. Anticipated startup: 30 days once an editor is found.

5. **Develop one hour (published, planned for 90 minutes) teacher training sessions.** These will be offered to the teachers attending NCTM and other teacher gatherings. These sessions will be given in a “facilitator” format, not a “we know best” format. No two sessions would be the same. They will be teacher attendee driven. Evening sessions will also be offered if needed so no teacher who wants to attend will be “left out.” These will be at no cost and hands on with minimum theory. Special “how to” examples will be provided in printed form to take home. This includes lesson plans. The intent is two fold. The first is to make them feel comfortable with the machine and to show them its capability. The second purpose is to answer specific questions with their applications in class. A specific requirement and capability is to have the TI competition side by side and every problem worked on both machines. When you are the best you have no problem “giving each machine its due.” The concept here is to provide an advancement in the teaching of mathematics, science, and technology. By working with this attitude and believing in this goal we provide leadership. Sales will naturally follow. We are selling excellence in math solutions.
6. **Only allow HP49 ROM updates to be quarterly or semiannually.** These will be posted on a published schedule. Beta testing will be by invitation by a known group (open) of supporters, only the released ROM is made public.
7. **Beef up Internet Support.** The HP Internet page will have several features that support the HP49G.
 - a. Technical support will be covered by a person. This person’s photograph will be posted. This will be a full time calculator advocate, a personality, a user. Email questions or problems will be answered by this person daily. This person will also participate in presentations at trade shows and teachers’ conferences. Perhaps this person was a teacher at one time. This person will be very knowledgeable and provide Internet references (links) to specific pages and paragraphs that provide the answer. A standard FAQ would be developed and standard answers could be given this way. Only the question and answer of concern would be given with the reference to the site that has the full FAQ. A critical element of this activity is that the customers feel that they have received an answer to the question asked, not just information. How? See #9.
 - b. An Internet automatically mailed “students newsletter” will be offered. This will be weekly, and short. It will provide information about new products, resources, timely issues, etc. It will be emailed from a list of students that sign up on the web page with their postal address so they may be contacted by third party calculator product suppliers, etc. A critical element is the variety of topics so at least one “tidbit” is interesting to each student. How? See #9.
 - c. Owner registration with the unique machine ID included. This gives the customer the free year of the printed newsletter, etc.
 - d. Recommended “help-your-fellow-student list” This program is started and supported by the magazine. It encourages students who are especially interested in the machine to register as “assistants” and “proctors” whose email address and possibly phone number is “published”

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for each school. Benefits for the participants could be linked to the number of students they actually help. This makes the student-to-student help program personal. A special letter and certificate of participation in the program will be issued for each school year (or quarter?) of participation. This is intended for the student to use when applying for work or college as an accomplishment on their resume.

8. **Initiate student contests with significant prizes.** Examples are airline tickets, books, concert tickets, etc., stuff they are interested in. HP premiums that they would actually use that promotes *problem solving excellence* without a nurd stigma. These could be programming, essay writing on a specific scientific, technical, or mathematical topic, or the most efficient way (keystrokes) to solve a common student problem. The latter is great because the idea that that any problem solution is only one keystroke away on HP's customizable machine can be touted. This is but one area where the wiz kids in engineering will be supporting Marketing.
9. **Hire a Technical Support "Czar."** This person is not a manager in the classical HP sense. He is a central clearing house for information on the product. If he doesn't know it, or know where the information is, it is unknowable *by definition*. Every person at ACO connected with the product will know who this person is and will keep him instantly informed. This is the person who will breath "life" into the support of the product. This is the person who will follow the product at all levels. He will follow web sites that have HP information, he will have everything in print. He is the person that everyone will want to keep informed because he can provide great exposure for the excellence of the machine. This will not be an easy person to find. This is not a "suit" position, it is a T shirt and genes "hands on" position.
10. **Start a School Visit team to train teachers and help students.** TI initially financed a Math Professor to "hit the road" to visit schools to promote the calculator in the class room. I will equip a motorized vehicle designed for calculator support to travel across the US and visit two schools each day. A visit team of two people will be needed. The first session of the "visit day" could be with the teachers. Structured like #5, these sessions allow the "team" to be prepared to provide the support the teachers need and want. Presentations could be in small groups in the vehicle. Carts to carry overheads, computers, lots of calculators, handout materials etc. will allow a quick set up at any room on campus. A person "back home" coordinates the tour. Details of this are provided on the web, of course. It won't take long to determine what the schools need in terms of help. The purpose is to help teachers. This team will provide all kinds of information, recommend books, where to buy, educator programs, etc. The purpose is to make it personal. One year of this could equal two to three years of TI's efforts. It won't be easy, and it will take at least five people on this team go keep schedules efficient. Offer help to teachers and they will invite you to visit. What a great way to talk to teachers, to build a list, to develop rapport. Bring material not normally seen. Include unusual things that make learning fun. Include a flavor of "Mr. Science" in topics of coverage. Visit the high schools. These teachers and students have a busy schedule, but I believe that the team can fit in. The team must be prepared to start before classes and be there after classes. Talk to the teachers. Find a "hook" for the program to be appealing and easily understood. The format will be different for each school public or private. Flexibility is vital for the team. Get the maximum use of electronics Technology.
11. **Develop practical teaching materials.** These will be low cost printed giving credit to those who author them. The driving force is NOT sales directly, it is developing a better understanding of technology, mathematics, and science through the discovery process of personally using the (HP)

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machine to explore solutions to problems. There is nothing wrong with emphasizing the strong points of HP's machines. While HP is not in the education business it may certainly be in the clearing house business to simply act as a focal point for calculator applications information. Put the HP logo on it and convey the idea that while it may not be from HP the information is available because of HP. This is one way HP could get it's user community into the marketing loop.

A specific example is the classroom poster of the calculator. Every classroom needs one. When we taught the calculator in our informal classes at EduCALC we used HP's HP48GX poster. This was clearly justified as a "sales" item because it was in color, etc. While we were very happy to be able to tape it to the wall we were not pleased with it. What we wanted was a black and white LARGE line drawing layout of the keyboard with a complete representation of the elements of the display. The most common use of the poster was to point to the machine with a laser pointer, now readily available retail for \$5 to \$10 (\$4 in volume, check the Internet), while the class problem is shown on the overhead. These could be given free to the teachers. *I asked our AutoCAD designer (with my HP49G in hand) to estimate the time for him to make this drawing. His estimate was four hours for a 36" x 76" drawing. This is for a 10X line drawing (machine outline 34" x 72") of the machine. We could print this on our large HP plotter of course. Cost is not the issue, helping teachers is the issue.*

Remember that many students like to sit at the back of the classroom. Take advantage of the resources of the HP user community!

I have only emphasized a few areas I believe are important. See the next part for additional suggestions. The reader may request copies of the following Word 97 documents that address this issue. There is very little duplication of material. Richard J. Nelson.

rjnelson@aemf.org

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SPECIFIC ACO SUGGESTIONS FROM THE US HP USER COMMUNITY

From Jake Schwartz, Software Engineer, Philadelphia PA, User Group Leader, Long time HP User, 3/6/00

I suppose I do have a handful of suggestions to increase sales...

1. First and foremost... don't kill off the enthusiastic dealers - Keep them happy! Allow them to sell EVERYTHING (accessories, books, etc). Don't sell directly to customers at any price below MSRP. Improve ways HP can direct buyers from the HP web site to dealers.

(other suggestions below not in any particular order...)

2. Return to soliciting third parties to write applications books for the machines (a la HP41 days). HP can promote these ready-made applications for the machines, which should attract buyers. (Sell them total solutions, as you mentioned earlier)
3. Offer printed versions (or CDs) of documentation offered in electronic form on the web site. Allow dealers to sell these.
4. Perhaps offer training sessions, videos, interactive web pages, etc. for learning how to use the machine(s). Encourage expert users to contribute this material and have HP promote it.
5. Don't purposely remove design features which keeps developers from utilizing the machines for their applications - such as removing the capability to attach a keyboard overlay onto the top surface.
6. Consider doing a full-blown high-end calculator emulator for their Jornada vertical-format machines. Make this compatible with the calculator so information may be freely exchanged between them.
7. Don't push RPN to the "back of the bus". HP shouldn't deny its past, simply because of what some teachers happen to think at the moment. For all we know, the NCTM group is full of people solely exposed to TI's pitches over the past several years, while HP was de-emphasizing calculators.
8. Go somewhat back to HP's roots and offer a mid-range RPN machine, perhaps with around 8K of RAM, an HP41-like instruction set and PC connectivity. Many engineers will probably go for this if it's inexpensive (\$50.) and RPN based. Not everybody wants to write structured programs, simply to solve a quick repetitive problem.

I am sure that I will think of a dozen other things later on... Jake

From Megha Sham, businessman, Corvallis OR, Ex HP Manager and HP Dealer. He now runs da Vinci Technologies Group, Inc. 3/8/00

Richard, I agree that Chris's response is somewhat flat. I decided to write a lengthier response as my trip to Dallas was rescheduled for next week.

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NCTM is an interesting place for presenting HP products. Over the past 10 years I have been able to attend 4 of them in various parts of the US. Here is my assessment of it.

NCTM attracts mostly high school teachers who attend the annual meetings. My observations from these trade shows are:

1. Attend training workshops offered by technology companies.
2. Attend training sessions offered by college professors who have developed new methods of teaching or curriculum development.
3. Almost all teachers attend this using the so called "Eisenhower money", a grant from the Dept. of Education in Washington DC, as part of their professional development.
4. Over the years, HP introduced the 48G/GX, the 38G, 48G+ at this show.
5. They have been unable or unwilling to sponsor a large number of workshops at this annual meeting. To give you an example, TI typically sponsors 10 to 15 workshops with handsets made available at these workshops. I have only seen HP sponsor one workshop at the Boston meeting in 1995. Unfortunately, the software being not ready, all the applets they distributed at that meeting were non-functional when the product was available later that year.
6. HP made a wonderful splash at the Washington DC meeting in 1998; I was part of the booth. The booth was high (almost 50' x 50'), had the usual prompts for attracting crowds - free giveaways, demos, new product introduction (48G+ was the new product). I got the impression that they were doing this just to ensure that they were back in the business. In fact Dave Stone of TI gave me a TI 89 at that meeting that HP was very anxious to see and get their hands on and TI had no problem with that. I felt good as I wondered around the trade show, how people talked about HP. The audience felt good that HP was making their presence known.
7. In Washington's meeting, HP made a good attempt to demo applets on HP 38G. In fact Jean Yves, and Gerard (?) were there, along with a teacher in Perth Australia. They had invited nearly 15 teachers and professors from around the US and Europe to come and make presentations expounding HP calculators. They all did their best as I saw most of their presentations. They were very good. When the HP engineers were attempting to show the applets, they were attempting to show off the Gee Wiz aspect of the products, which threw the audience into a loop. From these presentations, the audience came away a little scared of using the product. To reach the targeted audience, it seems to me that instructors who you are trying to influence must feel good and secure in handling the product, and not just be blown away by pizzazz of the product. Communicating to the customer at "his/her level" is one of the most important aspects to have a level playing field is very important. This is where listening to the customer is a "weak spot" for HP.
8. At the Washington meeting, I was also impressed by the fact that Chris Wallin did booth duty several days for 3-4 hours each day. However, there has been little follow through with the teachers. The training sessions offered have not been well attended that summer, and I'm not sure if HP ever reflected on why this has been so?

To my way of thinking, HP needs to identify who their customers are -

1. Science and engineering students at colleges?
2. Technical professionals?
3. High school students? Brighter HS students who take AP Physics or Chemistry tests?
4. High school students taking calculus and math?
5. Community colleges programs?

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6. Then there is the HP fanatics and their followers.

Each of these market segments represent different challenges. My experience shows the following.

A large majority of the student users are not interested in programming; they just want to go from Point A to Point B quickly. They rarely pontificate about problem solving method A, B, C, D or E. I always get amused when some software types at HP boast on the HP machines that a given problems can be solved in 5 different ways because of the elegance of software. Guess what, most users want the answers not how many ways to get there.

Science and engineering students at colleges - purchases made at the college bookstore, electronics superstore and the Internet. Decisions made by word of mouth and word from friends. Campus presence periodically helps a great deal.

Technical professionals - need to reach them by providing packaged solutions to make their job easier and efficient.

High school students? Brighter HS students who take AP Physics or Chemistry tests - This is a market of that is growing (200-250 k /year). Growth is enhanced by software options. Purchases driven by teacher recommendation and these days on exposure from the Internet. This involves new application software. The better place to influence the teachers is regional shows or state wide shows. California has one of the biggest. The northwest states combine to form a regional meeting, Texas, Florida, The Carolinas, Kentucky and Tennessee, all present wonderful opportunities.

High school students taking calculus and math? - This is also a huge renewable market. (nearly 300K/year) and need a lot of hand holding with the teachers who need very good familiarity with the types of problems and how they can solve it on the products and teach principles of calculus. See comments made in previous paragraph.

Community colleges programs? - this is a large renewable market (5-600k/year). Instructor recommendation is key. Community college instructors meet in each state at an annual meeting and spend 2-3 days looking at technology. For example, this Oregon Community college group meets on the Coast in April. They like to see work shops with a broad theme (not a sales perspective - teachers are funny about that; they essentially put on two faces; one wanting to look holy by limiting you to only present only in generalities about the product, and at the same time they are eager to get freebies from the manufacturer as much as they can get). It can be described as a dance of the teacher and the manufacturer. I have done presentations at these meetings; HP has received almost no interest, and TI is king. This is a very difficult barrier to cross.

Then there is the HP fanatics and their followers - active and vocal on the Internet; somewhat boisterous and sometimes very egotistical, but represent a very small portion of the market. They can influence the market place if they come across more objectively, otherwise they are seen as fanatics and nothing else. I would expect HP to pay little attention to a group that is to the right of the 3 sigma point.

HP has a tough task to break into the market that is controlled in many ways by TI and their marketing muscle. One thing I have learned from TI is they make an effort to listen to their customers who they see as teachers and professors who recommend their products to their students. At every trade show, you will

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see a Vice president for Educational products of TI doing booth duty. This is a \$ 500 M business for them and growing. I have seen them at every regional trade show, and court the teachers. At the northwest trade show in 1996, I renewed contact with Tom Ferrio, their VP. He has been very generous of his time, and has visited two years in a row in Corvallis. I can tell you how much effort it was to have a lunch meeting with Dan Terpack in Corvallis and we met once. I must say that ACO folks have been much better.

It seems to me that HP has to make a strategic decision; either focus in one area and excel in it and pour resources to make it happen or get out of the business. Trying to cover too many bases (and I understand why) hurts efforts unless more resources are committed and backed up with reliable and consistent support.

Well, these were the things on my mind. Megha

From Joseph Horn, Mathematics teacher at St. Michael's Abey Lake Forrest CA, HP calculator Book author, 3/8/00

Hi, Richard!

Joseph, In your experience, what is the strongest factor that influences the student in his choice of calculator to buy?

The numbers in front are my best guesstimate of the ranking:

- 1 What the teacher uses (most important by far; see below).
- 2 Features (requirements of the class).
- 3 What his best friend uses.
- 4 What's Cool.
- 5 Cost.
- 6 What is easily available.
- 7 What his parent wants.
- 8 Same manufacturer as his old model (not important to teens).

In my experience, the most-bought calculator is whatever the majority of the class will be using (as if that weren't mathematically obvious!) and *that* is determined BY THE TEACHER. If the teacher says, "You can buy any scientific calculator, but the Casio FXYZ is on sale at Gadgets Inc for \$1.95 and it's what I'll be using all year," then you can bet (a) most first-night buyers will buy one of those, and (b) everybody else who waited (to see what everybody else got) will also get one.

If HP doesn't sell their machines to teachers, they won't sell them to anybody. Gotta sell 'em to the *teachers* first and foremost! Do that, and the sales to students will follow.

-Joe-

From Ted Kerber, Surveyor, Fresno CA, producer of HP Survey Applications software. 3/10/00

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Dear Chris,

I read your response to Richard Nelson's letter. I understand your marketing strategy, and don't disagree with it, but would like to throw in my comments regarding the things that affect me, as a third-party developer of software for your calculators. I know that some of these concerns have been addressed, or are being addressed, but what about the HP49 users who have already purchased the calculator?

With reference to the hardware, the soft plastic of the display cover scratches too easily and reflects a lot of light, making the display hard to read. A lot of us have removed the cover just to avoid eye strain while programming on the 49. Since our applications are for Surveying and Engineering, the majority of our users are working with the calculator out of doors, and I know you are aware of the "rainbow" effect that also makes the display hard to read under field conditions. Again, once these problems have been fixed, will a user be able to get a replacement lens?

A number of our regular users who want to upgrade from the 48 to the 49 change their mind when they find out that it doesn't print to an I/R printer. Keeping a hardcopy of your work is important in surveying. A reasonably low-cost serial printer that is portable would be an acceptable solution, but nobody, to date, has been able to suggest one that will work.

At the last conference, we were told that the reason that I/R wasn't included on the 49 was because schools in Europe don't allow their use in classes if they have I/R. An attachment would have been one solution, but another would have been HP contacting those schools and explaining the distance limitations involved. We had a similar problem with the Boards of Examiners for Surveyors and Engineers in several states, but did the task of explaining this to the various Boards ourselves. Marcel Flipse has developed a prototype of an I/R attachment for the 49, but will probably not be able to produce it commercially as an individual, and probably could have used HP's help in developing software to do the conversion for the printer.

The HP 48 serial cables we already have will work with the 49G through the use of a 4-pin to 10-pin adapter, which is not a major consideration for serial connection to a PC, but does affect our users who have cables to connect the HP48 to their surveying instruments. An adapter (I have one with part #CONNE-80003 and another with part #1252-6635) seems to work with existing 48 cables, but apparently is an 100/200LX part and is no longer available. There are also cables available that connect the surveying instrument to the 100/200, but I haven't had a chance to test one (a test is scheduled for the 24th of this month). If they will work on the 49G, we still have the problem of getting the manufacturer of the cables interested in continuing to market them now that the palmtops they fit have been discontinued.

Speaking of the 200, I know a vendor that was assured by HP that some were available in stock still, ordered them, took orders for them, and now can't get them. This is the same item that played a large part in EduCALC having to shut it's doors.

Software: A lot of the "hackers" describe the 49G as "a calculator designed by kids, for kids". I know that it meets the needs of students, and in effect added the MetaKernel and Erable (written by hackers) to the 48 o/s, but nobody seems to have thought ahead, to all the other uses your calculators have besides school. Since the HP41 series, surveyors use the HP calculators because of their power and memory. This isn't HP's primary market, but the needs for uses other than school should have been considered

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in the design.

Getting our applications together was not a lot of fun. Whit Hickman and his staff, here in the States, have been extremely helpful where they can, but I have, since last May, NEVER received ANY answer to queries addressed to Tanya Brooks or others at HP ACO. At the present time, I have 3 completed application pacs and another in final beta-test. I have been holding them, waiting for the operating system to stabilize (one new beta version is released at approximately weekly intervals, the latest I've received was 1.17-B). The last list I have of known glitches still has over one-hundred items in it, some of which affect my applications. There are still reported problems with the serial interface, and I'm told, the connectivity pac. I'm still using raw Kermit directly in our downloading and installation programs, because I'm afraid of using (or recommending) the published connectivity program.

In your letter to Richard, you mentioned the magazine, HPc. That is published to educators who (if they know about it) request a subscription to it, not distributed to all HP dealers and distributors like the old "HP Keynotes" was. We used to be able to place a short description of our products (free) in the inserts that were included with the calculators. Now this is a commercial thing, farmed out, that costs an advertiser more than a comparable ad in a trade magazine. A side note, this guide was used by HP support to answer questions about third-party products available for the calculator. If you don't advertise in it, your products were never brought to the attention of the support people. Later, they had a list of "HP approved third-party products".

In order to advertise our products, I had to also send HP49G press releases and pictures to the two trade magazines here in the States to let surveyors know that the 49G even existed. An HP booth at the major Surveying Conferences would have been very helpful, as was done with the HP48 when it was introduced.

As far as I know, we are the only ones who have, so far, developed commercial applications for the HP49G, and at this point in time, I have three and a half applications sitting on hold while I am back-ordered to both private users and vendors, and we have had to advertise the calculator, as well as the applications where we could, by sending releases to magazines, giving seminars on the calculators regarding their potential, etc., while waiting for the calculator to become stable.

From a follow-on communication on 3/13/00

I just read through the report, and do have a few more comments.

Applications: The original HP41 became popular with surveyors (as did the HP65, 67, 97 before them) because application software was available with them. With the advent of the HP48, HP decided to go with third-party software instead of their own (inexpensive) products. The result was, for surveyors, only one product initially available at a price of \$500 and it didn't even do much along the lines of surveying calculations, it was primarily a data collector. It was also released at the same time as the calculator and touted as the "HP" surveying pac - related to by surveyors in the US as being the replacement for the HP41 Surveying Pac product. The fact that it cost \$500 instead of \$45 was shock enough. Those who purchased it were also somewhat surprised to find out that it didn't do half of the calculations the HP41 version did, and with the surveying instruments in use at the time, most surveyors didn't need the data collection part of it.

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When I was first shown the 48 at HP in Corvallis, I (not knowing that one was being prepared by another company) offered to write or collaborate with HP on a Surveying Pac and was told that the software would be third-party. I am a licensed LS in seven states, and felt this would keep the cost to my fellow surveyors reasonable. After seeing the price of other third-party surveying applications reach \$2500 over the last 9 years, I made the same offer to ACO on the HP49 when I first saw it. I never received a reply at all.

You'll remember how the sales of the HP42S increased once we produced application solution books for it. It did what our market needed, ran fast and wasn't bogged down by complexity. It only had a two-line display, but the numbers were big enough to read. It would have been nice to have had a HP42S2, with more memory, and maybe even the inclusion of a programmable chip for applications. Instead it was discontinued, and we constantly get calls from people still wanting to buy one, despite the need for hand-programming.

Applications being available sells calculators to non-student users. Looking again at the students; in school, they are required to learn the formulae, work the math and find solutions. This is absolutely imperative, or we would have surveyors and engineers who had no idea of why what they were doing worked. After school, though, they wouldn't be able to hold a job if they tried to do all of the required calculations "longhand". That's what applications are for, fast solutions to problems under field conditions.

A comment in one of your report's exclusions that we may have to go back to a book-type format calculator that I should comment on, again from the perspective of our market; the 28 was not friendly for field use, too hard to handle while working with other equipment. The same applies to palm-tops, and field use is just as easy with a lap-top.

Back to the HP49G. There are so many reported problems with this ever-changing product (from the application standpoint) that we are putting our existing products for it on indefinite hold, notifying our vendors and back-ordered customers that we will notify them when we feel the product is dependable for what we need, and running ads to that effect in the trade magazines.

I would still make the same offer to HP regarding a HP49G Surveying Pac; I already have the applications and manuals written, would love to GIVE it to them to sell as an HP peripheral application and let them market it on the web like TI does with the applications they had written for them. Our company could contract with them to handle the support, on-line or by Internet, and users would be able to talk to a surveyor when they have questions. Let's make a deal.

Respectfully,
Ted J. Kerber, PLS
Software By D'Zign

Vern Lindsey, Firmware Systems, Corvallis, OR, 3/16/00

rnj- Have you been following the concern of HP's marketing not doing its job? I believe I emailed you twice on this topic. Yes, I know you are busy, but...

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Yes, we were very unhappy here to see those messages. But, is that a new problem? It seems the *new* problem is the perception that the product is no longer up to snuff. In the past the quality of the calc sold itself in spite of the poor marketing -- with both legs missing the project is a basket case.

Rjn-We NEED HP to stay in the calculator business.

As has been mentioned before, our NEED has been reduced by so many other neat products; wizz-bang PCs under \$1K, LX palmtops, and all those PDAs. Twenty years ago the HP41 was all of those things for me and everything it could do was within my time and ability to make use of it. Now my horizons have expanded far beyond my ability to explore. Just the Open Source movement offers vast possibilities to support real projects with real programming or something as mundane as documentation or tech support or so much fun, so little time.

Rjn-Can you make any suggestions, from your perspective, of how HP can sell more Scientific Calculators?

We discussed this in the office and agree that the Saturn processor is far too slow. HP's only hope is to leap-frog the 68K in the TI calcs with a new line based on the StrongARM processor. The user community has long discussed the features desired in a perfect calculator. Do we need more than a speedy HP48/49? What? Why will calculators not follow the inexorable merging of everything digital into a wireless handheld computer/cellphone/browser/PDA as predicted by George Gilder? How long will it be before we can download ad lib any feature we wish to a handheld wireless computer, including a wide selection of calculator models. Not very long, I think.

Rjn-I would like as many inputs as possible before I send this to Chris Wallin. We have his "ear" these days and I want to take advantage of it.

This reply has taken 3 days of tinkering, enough. I spoke to Jeremy last night. He intends to send a comment as well. I am CCing him to remind him to do it.
cheers,

Vern

Jim Lawson (off line) via Jake Schwartz. 3/16/00

The only input from Jim Lawson was a long shot, but he felt it could make HP some fast cash: That was to re-facilitate the calculator manufacturing assembly lines which currently build the HP12C and HP17B-II to crank out some HP-15C, HP42S and HP27S units. There are buyers all the time for these, it seems. His additional point was that these would have to be made available through the knowledgeable DEALERS, who know how to use and support them. He received many inquiries about those machines, right up to the recent past.

From Jim Carter, Businessman, Laguna Niguel, CA, owner and founder of EduCALC, HP premier Calculator Dealer for 20⁺ years. 3/14/00

Why do people buy calculators?

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People frequently make the decision to buy a calculator based on one or more channels of communication. They become convinced that using a calculator will solve one of their problems easier or cheaper or faster.

1. Formal advertising.

This may be the first hint that life could be easier.

2. Word of mouth advertising.

This is the most powerful because it is face to face and contains an emotional appeal. A dealers recommendation, if believable, goes a long way.

3. A job requirement.

This becomes a done deal.

4. Magazine or newspaper articles.

This apparent unbiased testimonial could be the spark that ignites the buying decision.

Where would they buy it?

1. Least expensive.

2. Most convenient.

3. Most knowledgeable.

4. Most helpful.

5. Most visible.

Calculator Superstore Concept -

It has been suggested that HP wants to sell calculators wherever the consumer wants to buy them. This is great verbiage, however, it sounds like HP is willing to offer calculators for sale where ever sales show up. This then becomes what the customer wanted.

I would suggest that HP should put its resources where they will maximize their long range returns, not just the whim of the market.

First, HP needs to advertise to get that “why a calculator will change my life” spark started. I remember an ad showing a student dorm with a light in the room of a student staying up all night, the caption read “some students haven’t discovered HP”. This is the start of the emotional appeal.

HP needs to work with several dealers to provide a calculator superstore concept. HP could require technical knowledge, stocking requirements, perhaps an Internet site ... and in return HP would provide, literature, preferred shipments, feedback on the products, accessories, perhaps better margins and a voice in promotions...

This would be a store where the sales personnel would be more than happy to point out why an HP calculator could change your life.

This would probably end up as the most helpful, knowledgeable, convenient and perhaps least expensive for a large percentage of potential customers.

Promotions-

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HP web site –

Partnerships –

> Hello Eric,

$$>$$

> Using your experience, how would you describe the factors that determine what calculator students
> buy?

$$>$$

> I have listed a few that come to mind in no particular order. What order would you put them in? Add
> others? Delete some as not relevant?

$$>$$

> What's Cool	What his best friend uses
<ul style="list-style-type: none"> • Apple <ul style="list-style-type: none"> • iPhone • iPad • Mac • Google <ul style="list-style-type: none"> • Gmail • Google Maps • Google Drive • Facebook • Twitter • Instagram • YouTube • Netflix • Amazon • Spotify • Uber • Lyft • DoorDash • GrubHub • Postmates • Instacart • Shutterstock • Adobe • Canva • Unsplash • Pexels • Freemove • Shutterstock • Adobe • Canva • Unsplash • Pexels • Freemove 	<ul style="list-style-type: none"> • Apple <ul style="list-style-type: none"> • iPhone • iPad • Mac • Google <ul style="list-style-type: none"> • Gmail • Google Maps • Google Drive • Facebook • Twitter • Instagram • YouTube • Netflix • Amazon • Spotify • Uber • Lyft • DoorDash • GrubHub • Postmates • Instacart • Shutterstock • Adobe • Canva • Unsplash • Pexels • Freemove

> What the teacher uses	Features (requirements of the class)
<ul style="list-style-type: none"> • Textbook • Handouts • Classroom materials • Classroom equipment • Classroom environment • Classroom management • Classroom assessment • Classroom communication • Classroom interaction • Classroom participation • Classroom engagement • Classroom motivation • Classroom discipline • Classroom safety • Classroom health • Classroom well-being • Classroom culture • Classroom climate • Classroom community • Classroom relationships • Classroom norms • Classroom expectations • Classroom standards • Classroom goals • Classroom objectives • Classroom outcomes • Classroom impact • Classroom legacy 	<ul style="list-style-type: none"> • Classroom management • Classroom assessment • Classroom communication • Classroom interaction • Classroom participation • Classroom engagement • Classroom motivation • Classroom discipline • Classroom safety • Classroom health • Classroom well-being • Classroom culture • Classroom climate • Classroom community • Classroom relationships • Classroom norms • Classroom expectations • Classroom standards • Classroom goals • Classroom objectives • Classroom outcomes • Classroom impact • Classroom legacy

> Cost What is easily available

> Same manufacturer as his old model What his parent wants

$$>$$

> Any other ideas on how HP should be selling THEIR calculators to students?

$$>$$
$$> \mathbf{X} < > \mathbf{Y},$$
$$>$$

> Richard

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of the students in calculus (about 40 students in my school district of 11,000 students), math seems to be only the secondary purpose of graphing calculators.

Last year the TI-86 is the single most popular calculator in my school. I don't know about this year, since I'm taking calculus at the college (it's not offered in the high schools, so the 40 or so of us take it at the community college), but I'm guessing it's the same. I can tell you, however, that I am the only 49G owner in the school district (and possibly in the entire town of 55,000). I think the most important factors (not in any order) are what a friend uses (in order to get games; this is why the 86 is extremely popular), what the teacher recommends (the 83 is recommended by most upper-level math teachers, so it is the second most popular calculator), and what is easily available (HP calculators weren't even sold in my town for a few years, and only for the past year and a half have a few select models--the 48G, 48GX, and a few business calcs--been sold).

Cost does not seem to be a big issue in my high school; students will just buy the "best" calculator for their "needs." TI-89's are just beginning to show up, because last year a few stores started carrying them, but no one seems to have any games for them so they aren't popular. I'm sure that once students discover the amazing grayscale games for the 89 they'll become more popular. Perhaps money is less of an issue simply because of the high school I attend; students at my town's other public high school probably have less money and it is more of an issue.

I don't know if "coolness" is an issue. If it were, then why do so many students have 82's and 85's? I personally dislike the color of the 49G. Maybe the color increases sales, but I'll never know until we get a store that actually sells the 49!!! No one will mail-order a calculator unless they have a specific reason to do so (virtually all of the people who I know at my school who have 48's have them because I recommended the model and told them how to order them).

I think previous calculator manufacturer is not very important. Students will get any brand of calculator, so long as they've heard of the brand. That is the problem with HP. Would you believe that some of the math teachers at my high school don't even know that HP makes calculators? The feature set is somewhat important. Most calculators can do most things, so it really isn't a problem, but I did come across one shortfall. We needed to do polynomial regression in Calculus I last semester, and our professor explained how to do it on the TI-82 or TI-83. However, the HP48/49 don't have this feature! I had to load a program onto my 49 (and several friends' 48's) to do this.

Parental recommendations also seem to have some effect, but not a lot. I know one person who got a Casio because a parent wanted the color screen. I know another person who got an HP48 because a parent was an engineer and had an 11C. But typically, I don't think this is a big issue. Another minor issue that you didn't mention is speed. Some students disliked my 48GX (and, to a lesser extent, the 49G) when I showed it to them because it was so slow. When you work with equations/graphs on the TI's, the windows (Y=, plot, table, etc) come up instantly. Not so on the 48/49: you have to wait a LONG time for them to come up. Although the 49 is better than the 48, it's still slow in comparison to the TI's. Working with the stack was also slow on the 48 because of screen redraws, though the 49's does a much better job. Also, since no one else has a 49, this isn't a complaint, but I think that the long garbage collection times of the 49 would turn away buyers; TI's don't seem to have this problem.

If you want to ask me (probably not a good idea ;), I can think of several things HP should do to improve sales. First, they need to *make* the calculators for all groups of students. The 49 is a good model for

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college students, but what about a new sub-\$100 calculator for high school students? These student calculators should be fast and easy-to-use and have all the capabilities students need (yes, that includes polynomial regression). Next, they need to make the calculator *seen*. This means putting it in stores! I know that some long-time HP fans will hate me for saying this, but if HP wants sales, they need to put calculators in Wal-Mart (they have NONE), Staples, Office Depot, etc. And not just the business calculators--they need the student calculators in these stores! Finally, they need to make the calculator *known*. HP needs to advertise the calculators. I've seen TV ads for TI calculators but never HP calculators. This also means getting coverage for them in the newspaper ads (in my town, that means the Staples and Office Depot flyers). HP also needs to make the teachers aware of the calculators. I've seen TI posters in my school but never HP posters; maybe HP needs to get posters to teachers too. Just a calculator on a poster looks too much like an ad, though; make it a poster that has the calculator as the secondary purpose. I don't know the best ways to tell teachers about HP calculators, but it would be even better if they learn them.

One teacher of mine received a 38G at a math conference several years ago. It's the *only* 38G I've ever seen. However, HP's seemingly good idea of giving away 38G's was a bad idea. My teacher was never taught how to use it, so it's just been sitting in a drawer for the past 5 years or so. Technology requires education before it can be of any use. Hopefully what I have said can help HP. It's more a bunch of random thoughts than a well thought out response, but I think it serves its purpose.

Regards,

Eric Rechlin
Bismarck, ND, USA
eric@hpcalc.org
<http://www.hpcalc.org/>

CASUAL COMMENTS

Richard Schwartz, K6YVL, businessman, Los Angeles CA, long time HP Calculator user, served as PPC Treasurer, now dedicating his life to the mathematics of thin glass telescope mirror supports. 3/7/2000.

I feel sorry for the guy who tries to present our viewpoints to HP management. We all know how "open loop" they can be.

In my opinion, the main difference between HP and TI machines, the difference that gives HP its overall superiority, is between the ears of the user. Twenty years ago HP's adoption of postfix and TI's adoption of algebraic enabled TI to sell more machines to the "commoner". This left HP the elite user market. This differentiation continues today.

In my opinion, the advent of the Palm computer at \$300 is something that HP is unlikely to beat in hardware. So HP must offer something so vastly superior that those who do not have it will be handicapped. In my opinion, HP should consider a strategic alliance or possibly a hostile total takeover of MathSoft Corporation, and incorporate MathCad technology into the latest HP calculators. A properly structured deal would keep MathCad out of the hands of HP competitors. This will blow away TI for the high-end user.

To accommodate mathcad, HP will have to make some physical changes to the machine. Connectivity is vital; I do not think we need to worry about French professors who are concerned about cheating. A wireless or IR communication link between the HP calculator and the world (other calculators, desktop machines, the Internet, and Palm computers) is an absolute requirement. The interface must comply with established industrial standards and must NOT be an HP proprietary scheme that is incompatible with everybody else.

Another physical change is the need for a larger display. Most likely, there would be a return to something like the HP-28 (opening book) layout.

Another physical change is the need for a more comfortable keyboard. HP keyboard technology peaked with the HP-97, and has been going downhill ever since. Didn't they learn anything from the Commodore PET and its lousy membrane keyboard? At the very least, the keys should be slightly concave so as to distribute pressure over the entire fingertip; the convex keys used on the HP-49G can become painful to operate because of the way a convex surface concentrates pressure at its center.

That is my humble opinion. I am glad that I am not going to offer it to HP. I would end up flying out the door at greater than escape velocity.

From Dale Thorn, professional programmer, Los Angeles CA, long time HP user (Notebooks, Palmtops, Calculators, and Lap Tops) and past seller of HP's machines. 3/8/00

I presume the objective of this group [ACO] is to have the "personal programmable calculator" always as a separate device from the "other" device, whether cellphone, CE/DOS computer, etc. I also presume that

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this group does not want the programmable calculator to have state-of-the-art Windows-like software facilities, or state-of-the-art communications facilities, and other such things that the CE/Palm machines are incorporating.

It takes imagination to make a "programmable calculator" attractive enough in the year 2000 to justify a high price, but I for one (and speaking for people I know who would pay the price) would like to see such a thing.

1. Richard Nelson has stated many times that the ideal personal computer (HP-65, HP-71, HP-48, etc.) is something you carry with you at all times.
2. There are current articles on the merging of several handheld technologies into a common device in the not-distant future, built around a cellular phone or variation thereof.
3. While \$2500 (in y2k dollars) might seem absurd for a calculator, back in 1974, I didn't carry a cell phone, a pocket PIM or Windows computer, etc.
4. The price of the state-of-the-art handheld/pocket computing device has remained more-or-less constant for most of the past 25 years.
 - a. 1974: HP-65 (\$2500 y2k dollars).
 - b. 1985: HP-71 with 384 kb add-on RAM - \$2700.
 - c. 1995: HP-100/200/1000 with 85 mb flash card - \$3000.
 - d. 2000: HP-200 or WinCE with 440 mb flash card - \$2200+.

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C O N T R I B U T O R S

This Analysis is the result of the contributions of the following people. The form of the contribution is via email, web site postings, and the HP48 Newsgroup. The DOC column lists the referenced documents of their inputs. See the note below.

#	Name	DOC	Title	Telephone (day)	Email	Address
1	Jim Carter	a c	Businessman	949-582-2631	jimeducalc@tio.com	27959 Cabot Road, Laguna Niguel, CA, 92688
2	Gary Friedman	c	Businessman	818-896-7875	Gary.Friedman@E2Solutions.com	14144 Dickens St. #116 Sherman Oaks, CA 91423
3	Jim Horn	c	Elec. Engineer	707-795-7955	jimhorn@svn.net	PO Box 937 Penngrove, CA 94951-0937
4	Fr. Joseph Horn, O.Praem	a c	Teacher	949-858-02222 Ext. 209	joehorn@jps.net	Saint Michael's Abbey 19292 El Toro Road Silverado, CA 92676
5	Ted Kerber	a c	Surveyor	559-297-8725	tjkerber@email.msn.com	23795 Tollhouse Road Tollhouse, CA 93667
6	Jim Lawson	a c	Businessman	732-928-9528	Email c/o Jake Schwartz	686 Cassville Road Jackson NJ 08527
7	Vern Lindsey	a c	Software Eng.	541-758-5217	vlindsay@peak.org	1030 NW Fillmore Ave. Corvallis, Oregon 97330
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20	Brian Walsh	c	Mech. Engineer	847-382-8433	bpwalsh@xnet.com	715 Braeside Place Barrington, IL 60010
21	Bob Wilson	c	Businessman	—	rgwv@southwind.net	Email unanswered

Note: a – Marketing Plan, b – Jeremy Smith's superCclc ideas, c – Jim Lawson's letter with response.

CONCLUSION

Many of HP's traditional Scientific Calculator users see HP's return to the calculator business as an attempt to compete with TI in the high volume market place. Historically it is very difficult for any company to enter a market from a position of essentially no market share to compete head to head with the leader. While HP is having success doing this in the computer market place the volume of the calculator market doesn't justify the resources required.

HP continues its excellence for hardware design and its present high end product is superior with a few relatively minor weaknesses. HP took advantage of its loyal and devoted user community in creating the HP49G and this Analysis recommends that the same be done to more effectively market the machine.

The differences in the character of HP calculator customers compared to "Me Too" product calculator buyers is discussed. The inherent nature of a personal handheld machine is described with the mind set qualities of HP's attracted customers detailed. These are:

Inspirational affect, leadership, quality, excellence, mathematics tool, abstract, exact, machine, passion, efficiency, scientific study, practicality, cost, and performance

These mind set qualities include the psychological relationship that is little studied but very powerful in a personal handheld product. Add to this the special nature of mathematics and the marketing of HP's machines has to be different. This is based on the concept that HP should not compete directly with TI in the "Me Too" category of products. A superior product naturally commands a higher price.

The message developed is the importance of retail selling with adequate margins for retailers and proper support for teachers. The over all inspiration provided by this analysis is a vision of increased sales by demonstrating a superior product that is well supported. Twenty one authors contributed to this analysis. Dozens of specific suggestions are provided with eleven detailed recommendations. It is economically efficient to utilize the community at large for increasing sales. This will require making the support more personal and being more honest with resellers and customers.

EPILOG — IGNORING HISTORY HAS ITS PRICE

Recently HP has introduced three new models (HP30, HP39, HP40). From the information available it appears that these are more stop-gap models designed to "send a message" that HP is still "in the business." What is the business? That is the marketing question we all are asking based on the hardware decisions illustrated by these models. Hardware design and what is needed for a student machine must include solutions that the student needs *in addition* to the wonderful traditional math HP functions. Even the traditional math functions have room for improvement. An automated triangles solving program is long overdue.

A student will carry just one machine. Shouldn't that machine meet all the electronic computational *and* information needs that a student has? The *next generation* product should come from HP, not TI. The three new models only address what TI has done. They are more reactionary than leading products. A good student calculator should have an address book, and an appointment book application built in. It should be fast, very fast. Specific hardware recommendations, however, must be reserved for another "Analysis." Perhaps "Designing the Ideal High School Student Calculator" would make a good theme for the annual HHC conference.

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Exhibit A

Marketing Plan for HP's High End Calculator Line

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Exhibit A

This is part of a document titled *Marketing Plan for HP's High End Calculator Line – A User Community Analysis*. The complete “package” is broken into smaller files for email and interest purposes. The related documents are listed below.

#	Title or Description	Pgs
1	Marketing Plan for HP's High End Calculator Line	33
2	Exhibit A -Jeremy Smith's view of the Super Calculator.	5
3	Exhibit B - An Internet posted letter started this Analysis. Jim Lawson's letter with “community” feedback.	18
4	Exhibit C - Chris Wallin's response explaining HP's current plan	3
5	Exhibit D - Eleven Rules of the [HP] Garage. Suggested reading by an HP employee.	1

**From Jeremy Smith, HP calculator fanatic, author, user, commentator, programmer, since 1979.
3/20/00**

Hi Chris,

I accept your invitation:

As far as communicating your disappointment or constructive suggestions, the most effective way is to contact me directly. You can do that by replying to this message or sending email to chris_wallin@hp.com

Comments about the 49 (HP 49G)

- The 49 is an excellent machine, and the producers should be proud

Despite all the hoopla, some of which I may have addressed below, I want to open by saying that the HP 49 is an astounding accomplishment. It's like an improved 48 plus some really neat applications built in, and all produced in an amazingly tight deadline. I was astounded that this project was pulled off. Congratulations to all involved. I love the machine.

- Unfortunately it has some fatal flaws

Not serious, not bad, fatal.

The keyboard sucks (press a key and get zero or more responses).

The OS regularly warm starts during routine operations. For this reason, I can't trust the machine to do serious programming tasks on. It makes using the machine as frustrating as hell. It's a love/hate thing.

- These can and should be fixed

The keyboard should be replaced with one like the HP 48.

The OS is being stabilized, so that may already be fixed. (I admit that I am using the OS that came out of the box. But so probably are most ordinary users.)

- Good job to HP for trying out some new ideas. So some failed, fix them and all will be ok

Even though the keyboard sucks, I am glad that HP gave it a shot. In general, I'd rather HP try things out and occasionally fail. It makes room for better success.

Comments about recent comments

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- The recent comments were frustrations about the lack of communications. Ideally, there would have been some problems, there would have been an open discussions with HP, things would have been resolved, and everyone would have been happy.
- Two reasons why this didn't happen were HP had incompetent response, and HP has a privacy policy about future products.

rjn (Richard Nelson) has been bitching about HP's lack of open communication with users for decades, and it hasn't changed. There are many reasons for this, some permanent and some due to the situation at the time.

It's been proven (Kenneth Arrow) that you can't please all the people all the time, and so there will always be dissenters. However, HP's privacy policy does seem too rigid, in that it gets in the way too often. This, or something, creates a virtual wall between HP and users/dealers. This needs to be reworked so that HP can continue to protect the secrecy of their new products until some timely moment, and at the same time, they can be open to the user community in terms of a sense of what we might expect in the future, difficulties HP might be having, status of ideas that HP may have received from the user community.

One simple example is, this note. Why am I sending this to Chris Wallin, via rjn, as a private letter, rather than contributing to a public forum somewhere.

The calculator situation is something special. Perhaps this user community (the ex-PPC user group) is in a rut. If we glance at a broad history of HP (high-end) calcs: HP-35, HP-65, HP-41, HP 28, HP 48, HP 49, we can see that there was a continuous line of HP calcs starting with the 35 up till the 48, despite the calc division moving from Silicon Valley to Corvallis Oregon. And we grew used to a new, innovative machine coming out at regular intervals. (I'm using the colloquial 'calc' to refer to high-end calculators, generally by HP.)

Then the calc division was moved to Singapore, where the ball was completely dropped. And the fact that ACO exhumed the HP calc and formed a division in Australia is amazing in itself, but the continuity was lost. And during this time, one could expect little communication concerning calcs because HP calcs was retooling.

To be an HP dealer during this time would be brave, and certainly frustrating if you were not aware of the inside continuing saga. Either way, perhaps it is naïve to expect HP to crank out innovations regularly.

Which naturally brings us to something I personally have been badgering HP about for years – the future of HP calcs.

Comments about calculators

- In an ideal world, HP would be making a full range of calculators, from the cheap four-banger to the high-end programmable scientific. HP would **also** be making a range of handheld computers (see SuperCalc below), both competing head-on (or partnering) with the likes of the PalmPilot and also exploring new interesting handheld solutions (cell phones, GPS, pocket webs, yada yada yada).
- HP has definitely dropped the ball in regards to calculators, but that is remedied by making a new machine that's simply better than anything else out there - the (fixed) 49 is an excellent start.

"Do we need another calculator".

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rnj asked at a conference in August 1998 if the world needs another [high-end] calculator.

Answer: **No!**

As suggested above, HP should continue to have a full line of generic calcs (which includes the likes of the HP 49), and should **also** continue to invent the SuperCalc, a device which is a superset of a calculator, and (conceptually) defined below.

Why should HP make the SuperCalc, and not, say, Sharp, Casio, TI, PalmPilot (3Com or HandSpring) or anyone else. Don't worry, they will. PalmPilot and HandSpring are. These days, anyone can make a calculator. But HP has 2 distinct advantages: HP has the reputation (makes the world's best calculators), and HP knows how to do **all** the steps (hardware (including keyboard), OS, interface, design, and all the support).

Most of the world still doesn't know that HP's reputation is now being seriously challenged: for instance, TI has some outstanding calcs these days. Also, because of the 48 – 49 discontinuity mentioned above, HP is playing catch-up. I think that HP should invent the future, not ask what it should be. If you ask that, then you make silly calculators to compete with TI (urghh!).

I envision HP getting by on a solid line of 'ordinary' calcs, and using those profits to fund an R&D SuperCalc department, with the expectation that a good 90% would fail, but the successes would be one step beyond.

Perhaps HP is considering getting out of the calculator business. Even if HP's calc business made money, it's still a drop in the bucket considering HP overall. In the old days, the HP calc in the classroom turned into HP brand awareness, confidence, and product usage in industry. Something like that is still of immeasurable value and I personally think it worth HP suffering a loss in the calc division on occasion to continue to reap the overall benefits (to us all).

[unsubstantiated rumor mode on]

For instance, I heard that there were plans to make a new machine with a new CPU (to replace Saturn) but that this has been dropped.

[unsubstantiated rumor mode off]

Clearly the next calc would use a new CPU (StrongARM or 68000 spring to mind). The Saturn is dead, and only endless praise can go to all the folks that managed to coax so much out of it, from the HP-71 up to the present calculators.

Although I personally am pushing for the SuperCalc, it does occur that HP's present 'line of ordinary calculators' is an eclectic mix from many different calculator families past and present, and it might be worth working on a new revamped line with a more consistent presentation or interface.

Assuming that there are new directions, then cool. If there are not any new directions, then HP is finished in the calc market.

To reiterate but from a different perspective, 'market-driven' means the market defines the machine, and I think this should only drive the existing calcs. 'HP Invent' defines the next machine, and this applies fully to the SuperCalc.

So what the heck is this 'SuperCalc'?

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SuperCalc

Disclaimer: Just in case HP is worried that there might be a product description here, I refer them to the 'public domain' declaration at the end of this document.

- HP Invent?
- HP Innovate?
- Essence

The SuperCalc is a superset of a calculator. In other words it does what a calculator does (mathematical calculations at the push of a button), but more. The more is crucial, and to find out what that is to explore what the calculators are, and what they could become.

The SuperCalc is also a large innovative step beyond existing devices, and defines a new genre, and is **not** the answer to some requests from the user community. I feel strongly that the highlight machines I mentioned above (35, 65, 41, 28/48) were not built to answer some user requests but were built to the dreams of some unwitting visionary engineers, which in hindsight appeared to be the answers and solutions to everyone's needs, and the next obvious thing.

Bill Wickes described the vision of the 28/48 as an electronic back of an envelope. In essence, the SuperCalc is basically the same thing...

Consider a scientist or engineer working on a problem today. He has a paper and pencil, white board, desktop computer (web and email enabled) with various mathematical, graphic, and note taking software, and a calculator. Whatever that picture – that is the SuperCalc. Exploring and modeling our world from the palm of our hand. An electronic back of an envelope.

Is this dream too big? People are already building cell phones into hand-held computers, or computers into cell phones. You can plug into a HandSpring Visor (equivalent to a PalmPilot) a GPS, MP3 player, digital camera, full-sized keyboard, wireless modem, **or** Dictaphone. And TI built Derive into their calcs.

Focusing on the pencil and paper, and whiteboard, the SuperCalc combines the usefulness of existing technology into a intuitively useable tool. It's still a (damn powerful) calc, but you can easily draw and write on it, and manipulate the objects you create in it.

- wish list I am using this opportunity to mention a few things on my wish list.

Color screen

It's a platform! This means that it's wide open for development by the world, and thence, it sells itself. It implies the platform is so neat, it's copied, emulated, and co-opted.

It's language – the never ending challenge to create a language that's both ignorable by the DUM (dense unwashed masses) and useful to the cognoscenti. I envision a cross between Perl, RPL, Java, and OpenGL. The key is something where you can do most things without thinking, but still do real development, all from the cramped seat of a business-class airliner.

Multi tasking – these days, high-end calcs can and do run programs that take more than 5 minutes to run. So while it's running, you still need to use the only calculator to hand to do other off the cuff calculations. So there is a need to at least suspend a program, which can then be restored later. It can be restored

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perhaps, like garbage collection or the off mode, automatically after a period of idleness. At most it could time slice many programs simultaneously at different niceness levels.

Help – The present HP calcs are probably the only computer systems today that don't have a help button, and where you can't create in-line comments in your code.

Forget completely about backward compatibility. Whip out a translator after the machine is made.

Comments about SuperCalc

Today, in general, people want an answer. They don't reach for a calculator, they ask an expert or consult the web. So, apart from specialist (engineers, scientists, students ...) people don't specifically want a calculator.

The calc replaced the slide rule, and so for decades people have reached for a 'calculator'. But now, people don't reach for a calculator. We reach for one out of habit; it's the tool we're used to for solving certain kinds of problems.

That's why Palm Pilots are more the mind of handheld device that people want. Combine that with the web, and plug in specialist solutions, and you've got the device of the future. This is already happening with the HandSpring Visor, a Palm spin-off.

Jeremy |-) jeremy@peak.org

I've said all this before, so ultimately, this is just another prod to get HP to make me the machine I dream about, but a dream that came about because of HP calculators.

All comments are my own viewpoint, and don't necessarily reflect reality. Any perceived flippancy is quite deliberate, but doesn't necessarily invalidate some of the points made.

I, Jeremy Smith, hereby proclaim that this entire document is in the **Public Domain**. All use, re-use, and abuse of any or all of this document is entirely welcome. A rainy Sunday afternoon 19th March 2000 in sunny Corvallis Oregon.

p.s.

The color screen is a red herring. It was always openly spoken about in the past as a generic feature to be implemented someday, but in reality, technologically infeasible at that time. Technology is still a limiting factor in making the perfect dream machine, but it is drawing close. This deficiency is still an advantage to those who have the skills to tweak the most out of it, as HP has ably demonstrated many times.

Exhibit B

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Exhibit B

This is part of a document titled *Marketing Plan for HP's High End Calculator Line – A User Community Analysis*. The complete “package” is broken into smaller files for email and interest purposes. The related documents are listed below.

#	Title or Description	Pgs
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2	Exhibit A -Jeremy Smith's view of the Super Calculator.	5
3	Exhibit B - An Internet posted letter started this Analysis. Jim Lawson's letter w/ “community” feedback.	18
4	Exhibit C - Chris Wallin's response explaining HP's current plan	3
5	Exhibit D - Eleven Rules of the [HP] Garage. Suggested reading by an HP employee.	1

HP's Calculator “Business”

I received the write up below from Jake Schwartz. As an old HP customer, I bought my first HP calculator in 1972, and I have used all their high end models since then. I probably have talked to more HP customers than most through my activities as User Group Organizer since June 1974, and Technical Support Manager at EduCALC for ten years until they too were forced to “Go Out of Business”. What Jim says below is accurate. I would even say that it is understated. When you look at the business side of what HP is doing it makes sense if *all* you care about is the business. The HP engineers have always been passionate with their designs and that is what has made HP machines exceptional. Marketing, however, has had difficulty with their “vision” of how to market their products. The issues are challenging, but not impossible to over come. The question really is, “Do I want to be another ‘me too’ supplier of calculators?” At the moment, the answer for the new division, is yes.

I personally have experience with ACO's attempt to understand the history of HP machines. Ignorance is not the issue. Passion, love of the product line, and understanding of the customer are the issues. HP Marketing has not done well in grasping their traditional customers. These customers want excellence. Not all customers have this as a purchase criteria. *That is the problem.* HP isn't satisfied with these users as their only customers. They are too few. In today's market volume is God. It is difficult to have excellence *and* volume.

The masses will not pay for excellence. One of my selling points in the past was to ask the customer, “How many products do you own that you can honestly say you have the very best?” The price should not be an issue. I know one student who sold his car to buy an HP-65A. That is how expensive the early models were relatively speaking. Not today. It is difficult to get personal service over the internet. Is there room in the market place for the personal service that Jim Lawson strives for? Can a company as large as HP grasp this idea? Is it possible? From the results, the answer is clearly NO!

I am afraid there is no solution to this dilemma — except one. HP will eventually realize that they can't compete with TI in the only sizable market for calculators. It could sell its calculator business to a small company who will make the product to sell and support it the way it must be in order for excellence to survive. These people will conduct their business will love, passion and support. The profits will be small, but the excellence will be worth the effort. Count me in if that time comes. I will put my very small life savings into the venture because I still believe in the goal of excellence. Thanks Jim for sharing *your* passion.

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Richard J. Nelson
February 16, 2000
rjnelson@aemf.org

Handi-Calc goes out of business after eight years!

This announcement has caused quite a surprise among my many customers, and I feel that it is worthwhile, as well as cathartic, to share what has led up to this decision. It is only a little bit due to the changing circumstances in my life (which includes a recent divorce); it is mostly due to the changes in the business environment caused by Hewlett-Packard itself. I once felt a sense of pride in being associated with HP, but the events of the past year or so have changed the feelings to embarrassment, annoyance, and even bitterness. Hewlett-Packard is not supporting the manufacturer-reseller relationship at all, and in fact seems to be actively antagonistic to it, and in addition it is doing as little as it possibly can to support the manufacturer-customer relationship. Let me explain.

As you all know, HP started retailing its calculators about a year ago on their Shopping Village. They chose to heavily discount their retail prices, instead of selling the calculators at the Manufacturer's Suggested Retail Price (God forbid they should price them as they suggest!). Clearly this was not an effort to supplement the reseller community by providing a source for those customers who could not locate a conveniently located reseller; it was an effort to compete directly with the resellers. (You can guess who has the resources to win that competition.) HP has been quoted as saying that they wanted to sell the calculators at a fair price, but the fact is that most of their prices are below what retailers can realistically afford to sell the products for. This has caused a dramatic drop-off in business for retailers such as myself; this drop-off coincided exactly with the opening of the Shopping Village. The only time I can make decent sales these days is when a new model comes out. I have a history of having new models in stock before any other retailer, as was demonstrated last year with the HP6S Solar, the HP6S, and the HP49G. Sales on these models were very good up until they became available at HP's Shopping Village, at which point the sales dropped precipitously to insignificant levels, far lower than my historical average.

As the year wore on, I listened to more and more customers complain that they couldn't get to talk to a real person at HP about their calculators. They kept getting bounced around from one menu to another, the process almost never leading to a real human being. A few people reported that they actually did get to talk to a real person, but invariably that person hadn't a clue about the calculator product line, and the customers were left feeling very frustrated and angry with HP.

A little later in the year, I received a call from an individual named Sean at Calculating Edge, indicating that there had been a question (about whether I serviced calculators) in a conversation he had with a lady at HP's "KICS" facility. He explained that "KICS" stands for "Keep Incoming Calls Short." No kidding. For those of you who had acquired the impression that HP did not want to waste any of its precious time talking to you, their very own customers, here's your proof. It's a matter of intentional policy. (I spoke to the lady at the KICS facility, and told her that I don't do servicing. But that isn't the point here. Their call system, by its very name, indicates HP's desire to Keep Incoming Calls Short. That includes your calls, my friend.)

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Yet later in the year, I tried to obtain from HP a battery cover for an HP28S, which was owned by a rather famous customer of mine who had co-developed the FFT algorithm. I called HP Parts, and the lady who handled my call gave me a 48-xxxxx part number. I explained to her that the HP28S had a completely different package design than the HP48, and the battery covers for these two models were definitely not interchangeable. She clearly had no knowledge about these models. She transferred me to another person who ostensibly handled discontinued models, and he rather gruffly told me that HP doesn't support that model any more. He even refused to obtain a part number for me. He said that I could probably get help at another number, and, as he was giving it to me, I realized that it was the Calculating Edge number. He confirmed that it was, and told me that I had no other choice. So, to continue to play this sad game, I called Calculating Edge, and my call was answered by someone identifying himself as Sean (sound familiar?). I didn't tell him who I was, and I'm sure he didn't recognize my voice. I asked him about obtaining a battery cover for the HP28S, and he immediately announced to me that the HP28S was the same thing as the HP48G, and that I could use the battery cover for the HP48G. Really, can you believe this? Needless to say, I was never able to get a battery cover, but the incredible thing is that not one person I spoke to in this whole episode had the foggiest notion of what the HP28S calculator was, and how it differed from the HP48G, and I am galled that HP could not be bothered to even provide me with a part number. Imagine the poor customer who doesn't know any better and calls them up for help, and believes what they tell him or her, orders the part, gets it and realizes that it is wrong, and then has the hassle of trying to return it for a refund, eventually realizing that the return shipping cost exceeds the value of the part. The HP experience for this person will be an enormous annoyance that will not be forgotten.

I had another customer call me who had become so very aggravated trying to get coherent information from HP related to her calculator, that she will never again purchase another HP product of any sort. She was so fed up by her experience with HP that she went out and bought an Epson printer for her PC rather than an HP printer, solely because of the hassle she went through with HP about her calculator. So, the way HP calculator customers are being treated are affecting sales of their other divisions, too. Not nice. I am not proud of HP at all any more.

In August, the HP49Gs came out. The product was not anywhere near being ready. It had bugs, of course, but the inexcusable problem is that significant advertised features did not work properly, even doing elementary things. I have never before sold an HP calculator that was refused and returned to me by a customer because it didn't work properly. But it happened with an HP49G. He had called HP customer support and they worked his problem through, and they agreed that the calculator didn't work right. They also told him that there were lots and lots of problems with that model. The customer stopped payment on his check and mailed the HP49G back to me, stiffing me on the outgoing shipping charges. The calculator clearly was not ready for release, but HP released it anyway, no doubt because marketing insisted that the calculator be available for the fall college semester. It is ludicrous to think that you can develop a product like this in six months. Even a year's development time is very optimistic, and, indeed, software updates were still coming out regularly at the one year point. I recall hearing the comment recently that the HP49G was "getting stable" - this is the kind of comment one makes about Microsoft operating systems, not about HP calculators, right? Not any more.

And the HP49G owner's manual (excuse me, the User's Guide - HP doesn't provide "manuals" any more, only "guides") continues the decline of what were once universally regarded as the industry's best manuals. Frankly, the decline began after the really excellent HP28S manuals, but it didn't get really bad until the HP38G owner's manual (oops, User's Guide), which was an unmitigated disaster. (And the

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HP6S guide was so poorly proofread that I felt compelled to provide my customers with a synopsis of how to operate the calculator, and this information appeared on my website as well.) In the HP49G User's Guide, the first mention of how to do a simple arithmetic operation does not appear until the seventeenth page (not counting the preface and the table of contents), and the next few examples of simple calculations are much further along, on the thirtieth page. Pity the person buying the HP49G as his first HP calculator, wading through the excessive volume of "preliminaries," the content of which will no doubt confuse, annoy and frustrate all but experienced HP48 series users. All of this stuff is unnecessary to getting the inexperienced user started, and I bet that more than a few will give up before finally being shown, however grudgingly, how to do simple stuff with the calculator. HP obviously has no concept of how to structure an instructional guide for a first-time user. Lately, I've had the feeling that the manuals (er, guides) are simply afterthoughts to HP, and are not properly regarded as important development items in and of themselves. HP is not what it used to be. This is embarrassing.

In September, HP escalated their war on the calculator retailers. They decided that they would no longer allow the resellers to carry any of the books (reference manuals, owner's manuals, etc.), and I have recently heard that this has since spread to the accessories (printers, plug-in cards, etc.) as well. I have often been able to make the add-on sale of the books when customers order their calculators, and it is really for the customer's benefit as well as mine and HP's. When customers order their calculators from HP's Shopping Village, they aren't likely to hear about these books, and the add-on sale obviously won't occur, which is bad for the customer as well as for HP. Amazingly, I continue to get calls from customers who complain that they cannot obtain the books (owner's manuals in particular) from HP! The customer right now is completely cut off from any way to get them. HP has so little concern for the needs of its customers that it will lose those customers - for good.

This is not the HP way. I can no longer make excuses for HP's behavior when the subject comes up in a conversation with a customer. When customers tell me their plight, I agree with them that HP has become a lousy company with which to do business. I used to think very highly of HP's organization and its products, and after one level of frustration and/or embarrassment followed by another, and another, and another, with sales plunging to levels that aren't worthwhile, it's time to get out. I prided myself in being thoroughly knowledgeable about all of the HP calculator products, including the operation of all of them in detail, and in giving honest, correct, and relevant information, advice, and help to my customers. Needless to say I don't feel good that there is no longer any place for customers to go to get competent technical support. (Incidentally, HP has referred quite a few people to me for tech support.) All of the significant HP calculator retailers have gone out of business. I would find it incredible that HP's intended business model for this product group is to retail the products individually to the customers. But that is what it is coming to (with the obvious exception of college bookstores, which have the luxury of captive customer bases).

I want to thank my many customers (numbering in the thousands) over the past eight years, a great many of whom made many repeat purchases, for their business, of course, but also for their kind words of satisfaction with dealing with me, and their encouraging words of support. It's been really nice for me, too. I'll miss it, in many ways. But it simply isn't worth it any more, thanks to HP (or, perhaps more correctly, what's left of HP). Unfortunately, the business environment that Hewlett-Packard is now forcing on its calculator resellers is untenable (direct retail competition with undercutting prices, and

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denial of access to major product categories). Any relationship requires the support of both partners in order to succeed, and this includes the manufacturer-reseller relationship. In this case, the manufacturer has made it impossible for even an enthusiastic reseller such as myself to justify continuing the effort. Hewlett-Packard will win the war against its resellers, but it will lose the war against its customers. HP may never be able to remove the tarnish that has so damaged its reputation.

Thanks again to all for your support. May the new millennium treat you kindly.

Jim Lawson

Feb. 13, 2000

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I sent the above file to about 60 close friends who have been involved with HP calculators as users and sellers. Here are a few *unsolicited* responses from the following people.

Jim Carter	Jim Horn	Jake Schwartz	Bob Schlesinger
Megha Sham	Brian Walsh	Paul Nelson	
Gary Tenzer	John Meyers	Bob Wilson	
Dale Thorn	Doug Mecham	Joseph Horn	
Gary Friedman	Chris Wallen	Carl Volkmar	

From **Jim Carter**, Owner and General Manager of the most famous HP Dealer — EduCALC.

2/16/00

Subject: Re: HP's Calculator Business

We could see something like this coming a few years ago, but I never thought it would go this far. I am sure that the HP calculator division has a mission statement and a strategic plan, it would have been invaluable to have seen what it said a few years ago. Perhaps some of the dedicated dealers could have seen what HP was thinking and modified their business plans or even better they could have pointed out the flaws. After all, at one point only a few years ago the HP marketing group didn't have anyone who had sold a calculator directly to anyone or who could explain RPN. On one visit to the calculator marketing group in Santa Clara I was asked "what was the big deal with RPN". Even now that strategic plan could help those dealers use their resources more effectively or perhaps not waste what we still have as a marketing resource.

HP seems to have lost its ability to use its dealers as a resource. At one point I was asked by the mobile computing marketing manager what they could do to make me more successful. This resulted in a face to face meeting in Corvallis and the divisions promise to keep their inventory levels at 93% in stock, we in turn promised to keep ours above that. Those days seem to be gone. It must feel like HP is using its dealers as a stepping stones to some other position.

Good luck to CalcPro and the other dealers that continue to hold the banner high.

Jim Carter

+++++

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From **Megha Shyam**, Owner and Manager of Calculating Edge. He tried to pick up where EduCALC left off.

2/16/00

Thanks for keeping me posted on Handi-calc. I am sorry to hear about Jim.

We seem to have survived some of the issues with HP 49. I have asked Brian Maguire to help me port some of our applications to HP 49 in the near future and we will make it available only through our website after taking control of the 49 and finding out its ID. We will be testing this procedure in March and release the some products in April time frame.

I am glad to have been able to develop business relations with TI. This has worked to be a great opportunity for us as we embark on major efforts to sell software this fall.

What is HP up to? I am not sure any more. They tend to be very secretive and don't care to keep in touch. They offer good lip service but little follow through.

Take care and stay in touch.

Later in the day . . .

Richard:

I have refused to participate on the internet as I found the quality of the product was so poor and people were behaving like 6 year old kids bashing each other. I was sorry to see the arrogance shown by the SW team from ACO.

I see the noise and the bugs still do not seem to have gone away, and they still keep releasing the ROM release of the week (or sometime a day), and there is no way I would commit to porting applications to the platform. There are a lot of things I like about the machine, but the stability of the OS is a real concern. I do not think the HP folks have any idea that using an internet like this for a world wide beta testing in an open forum has really done any thing positive for HP. People are just plain mad. I drafted a letter to Carly Fiorina and have not sent this yet as I still like to continue to work with them.

I did not know about the foolish behavior of jean Yves. he blacklisted me also because he did not get his way about Meta kernel. Of course he never bothered to acknowledge that the team has been fully paid. I am very disappointed in him and his arrogance. I only hope that now that he has become a salesman for HP in Europe, he has better manners with his customers.

Last year, when HP made a big splash at the ASEE meeting in Charlotte, NC, they sent all their hackers to talk to the audience. Just imagine 22-25 years olds wanting to engage in a dialog with the audience. It backfired as professors were not impressed with these guys who they felt were just hackers and they were not interested in a hackers machine. I was at the TI booth and many of the professors talked with me about this as they had seen me at the HP booth in the past.

Megha

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From **Gary Tenzer**, Financial Broker, former HP Consultant and Beta Tester.

2/16/00

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Richard

This is a very compelling letter from Jim Lawson. I agree with everything that he has said. It is sad to see such a valuable franchise squandered. With the change in management at HP (Carly Fiorina) and their new approach to business (Wall Street has bid up the stock 75% in the past several months) the company may be in a more listening mood; they are re-inventing themselves to get back to the core that they were in past glory days. I would urge that you and Jim send letters to Fiorina's office and try to reach her; from everything that I've read about her and learned from hearing her interviewed, she is going to be much more receptive to these issues than the Lew Platt era. I would start at the top and work down to the division level rather than working up; I always find that a more effective way of influencing companies.

Gary M. Tenzer

gtenzer@gspartners.com

www.gspartners.com

Later in the day

I've got to believe that you can get at least a public email address for her if you call her office. I had to contact Lew Platt's office in the past, at that time his numbers were 415-857-1501 / 415-857-8987, you may want to start there. I think that the letter should be slightly revised to give more background on your experience with HP, PPC, CHHU, EduCALC, etc. You may want to drop some names from the past but I wouldn't make the letter too long; short and to the point. You may want to suggest that you have a core group of hardcore users that would be all to happy to act as a focus group to help in the design goals. I wonder if she knows the glorious history of HP calculators and the quality that they used to exhibit. I'd be glad to look at the letter for you before you send it.

Another thought you may want to add to your letter. In my experience, I became aware of HP as a brand when I coveted and eventually bought my HP-35. It made me an HP loyalist. Even today, I only buy HP computers, printers, calculators, palmtops, etc. If you look at other consumer brands, consumer loyalty is created when people are young and it can carry through for the person's lifetime. It is more likely that a student will purchase a \$75 - \$100 calculator than a \$1000 computer or \$500 printer. Does HP want to leave those buyers of a bad impression of the company that would last a lifetime. I could argue that in the interest of creating brand loyalty, they could cut margins to the bone on calculators to give excellent value and quality and customer service, thereby creating the brand loyalty that captivated me 25 years ago.

Gary M. Tenzer

+++++

From **Dale Thorn**, avid critic, user, and ex seller of HP products for many years. Dale has spent more money than most of us on HP products.

FYI (you probably already know) HP is now selling the 49's through all of the schlock dealers.

+++++

From **Gary Friedman**, author of a book on HP IL Applications and Founder of E2 Solutions, and HP PC Applications Business for Installed Solutions.

Marketing Plan for HP's High End Calculator Line

A User Community Analysis – April 17, 2000

Richard,

I read all 4 pages, and while I too am very disappointed, HP is changing its channel and distribution strategies with ALL of its products, all in the name of not allowing themselves to be left behind in the internet revolution. The high-level business folks who make these decisions will probably dismiss Jim's letter saying "Sure, there will be problems in a transition, but I'm sure they'll be worked out in time. Look at the big picture!"

I think your 1-page summary is concise and dead-on, and I like the idea of the calculator division being spun off to restore the quality. The price on the calculators will have to return to their formerly traditional High Price to make up for low volume and the significant cost of proper customer service. Count me in as well if that ever happens (I'll make sure they put a damn I/O port on the next model!! :-))

I definitely think that a condensed version of this letter should be sent to HP's new CEO, who probably has no idea of the jewel they're suffocating.

(Actually, our own local gathering could probably do an outstanding job of running the spin-off - just look at the talent we have to contribute).

Richard Nelson - User Interface design issues.

Joe Horn - "Bug Magnet" testing, and friendly user manuals.

Dave Marsh - Hardware and Software guru (to advise the guys down under).

Dale Thorn - Customer Support, PC application development.

Gary Friedman and Dave Marsh - General business, promotion, deal making,

Roger Hill - All-around advisor/guru for user interface, algorithms, marketing, and "how things ought to be".

Jake Schwartz - Algorithms and Accounts Receivable :-)

John Fedel - Marketing and application guides.

Jim Donnelly - (Guess!).

Harry Bertucelli - Honorable Curmudgeon (posthumus title).

Sell it over the web only; run large ads in mathematics journals showing what this machine can do that no other can do; re-capture the market that HP once owned.)

Okay, now back to work. :-)

-Gary

Gary Friedman

E2 Solutions -- Your Extended Enterprise (tm)

(818) 349-5060 x101

FAX: (818) 349-4955

Gary.Friedman@E2Solutions.com

++++
From **Jim Horn**, Ex HP Electronics Engineer (non-calculator), HP Calculator user, PPC Contributor.

Marketing Plan for HP's High End Calculator Line

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Hello, Richard!

Thanks for the note. As depressing as the current HP calculator business situation is, I can't help but believe that the presence of those who know how much better it has done in the past will help either HP to straighten out its act -or- get someone else to fill the void. I wonder what the new CEO would think of this dismal slide in her company's performance?

I'm also curious about how HP's Jornada sales policies compare. And their printers - which are almost similarly priced and aimed at new users in massive quantities (albeit with the difference that HP can make their profits in *that* market via the consumables - ink and paper).

Unrelated note - I'd still like to see ACO do a minor recode of Casio's calculator "databank" watches and sell them as HP RPN models - more performance than the '01 at minimal ROI.

Best wishes as always, Richard -

X<>Y,

Jim Horn

++++
From **Brian Walsh**, long time HP Calculator user/User group Organizer, etc., etc. CHIP is the Chicago HP Calculator Users Club.

Thanks, Richard. This should make for poignant discussion at tonight's CHIP meeting.

I've recently purchased a Handspring Visor Deluxe (Palm OS 3.1, with expansion slot, etc.). Pretty impressive so far.

Brian

++++
From **John Meyers**, prominent HP 48 News Group contributor, Top notch HP48/49 programmer.

Thank you for including me in your mailing of 08:16 AM 2/16/2000 -0800.

I have received the mailing, but my old mailing address may become discontinued; my current email address is jhmeyers@mum.edu If anyone besides me does not have Word8, the "rtf" (rich-text) format is backward-compatible with a wide variety of word processors (I have made do with a Unix string extractor-reformatter, which isolates most of the plain text).

Thanks again for forwarding the letter.

At least there's some quality left in the newsgroup ;)

With best wishes from: John H Meyers <jhmeyers@mum.edu>

++++

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From **Doug Mechan**, founder of the Original HP3000 Users Group (now Interex), an HP employee and consultant.

To: "Richard J. Nelson" <rjnelson@aemf.org>

Subject: Re: HP's Calculator Business

You are right - HP will probably sell off the calculator business; try Agilent? With HP profits up 14% over last quarter they are not too interested in "old" products ... unless you can put an "inventive" spin on it. That is the key. I think HP is shooting to re-invent themselves in some way versus just keep going and wither with the same old products and loyal following. They must do something different. So some creative thought is needed that will re-invent AND maintain the HP Way of quality and focus on customers, tough.

From **Chris Wallen**, HP ACO Manager.

Hello Richard

Thank you for forwarding this message to me. This is very disturbing information and I have asked our Customer Care Manager to investigate the claims made by Jim.

Chris

2/20/00

Hello Everyone,

First of all, I am the General Manager of HP's Calculator business worldwide and have had the chance to meet some of you. I am very sorry to see some of the comments that have been made about our business practices. I could not claim that we never make a mistake, we certainly do, but these comments seem to point to a much worse situation. That is a surprise to me, and as I replied to Richard, I have asked that we investigate the situation.

As far as communicating your disappointment or constructive suggestions, the most effective way is to contact me directly. You can do that by replying to this message or sending email to Chris_wallin@hp.com.

Based on what we are finding in our investigation, I am happy to reply to you with our conclusions. Be assured that we want happy customers, NOT unhappy ones. If there are things that we can do better we want to do just that.

Best Regards,

Chris Wallin

+++++

From **Jake Schwartz**, founder of the "Philly Chapter", one of the last three of the US clubs still active from the "old days".

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Hi Richard - I also have responses from Paul Nelson and saw the first response on comp.sys.hp48 as well yesterday afternoon. I spoke to Jim Lawson last night and he is somewhat comforted that everyone so far has come out on "his side". He wonders out loud (as do I) whether any HP folks who see the comp.sys.hp48 posting (or on the conference mailing list where you sent it) will have any sort of meaningful response. Thanks for helping to elevate the issue....

Jake

2/17/00

No problem. One thing I only remembered to do AFTER sending you a copy of Jim Lawson's original file was to add his address and telephone number at the end, in case people wanted to get in contact with him directly. (I included this on the comp.sys.hp48 version and also the version I put up on my website at:

<http://www.waterw.com/~jake-s/handyclc.htm>)

Just in case someone contacts you asking how to get in touch with Jim, his pertinent info is:

Jim Lawson
686 Cassville Road
Jackson, NJ 08527

phone 732-928-9528 evenings and weekends

I'll collect the newsgroup stuff and forward it.

+++++
Via. Jake Schwartz: From CalcPro founder **Paul Nelson** who is trying to pick up where Calculating Edge left off.

Thank you sending this to me. I had not seen this. Very sad and actually pathetic. I feel for Jim and hope the best for him. The most depressing side of this is that it is true with no exaggeration.

I am now in the business but quite honestly looking for CalcPro's next life. Only in the last year there have been many changes making it very difficult to sell the calcs, let alone trying to start a business selling them.

I am looking on but for now I have to concentrate on what I have today and do my best to simply provide a source for the products.

Thanks again and I do appreciate any and all thoughts.

Sincerely,
Paul

CalcPro
33890 SE Eastgate Circle, Corvallis, Oregon U.S.A. 97333
T: 541-752-8414 * F: 541-752-8452

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email: sales@calcpro.com

++++
Via the CHIP chapter. From **Bob Wilson**, long time club member and HP user. Bob crunches numbers around the clock working on numerical methods (series & sequences) problems.

Dear Chip,

I am forwarding this document to you for edification. I know personally the first person and am acquainted with the second. Many of us business owners who today buy computers, servers, Laser Jets, scanners and printers started our relationship with HP while we were still students. I pray that this trend cited in the letter does not continue. I have owned an HP 110, two HP 110+, HP 150, HP 486 Vectra (still in use at Kansas Paint as its print server and its BIOS passed the Y2K check!), HP 45, HP 45A, several HP 41s, HP 71, two HP 71Bs, etc. Well, you get the idea. I love and am loyal to the HP line of products. Besides all of the calculators I have bought, there has been the innumerable accessories. My only regret in the past with HP was not buying the HP01. It would be a collector's item today. My love for math was rekindled by my association with the HP User's Group. As you may recall, I wrote the standby navigational software for the 'Voyager Project' (Dick Rutan and Jeane Yeager's trip around the world without refueling) on the HP 41C and adapted it to the HP 71B. If you have any input, try to arrest this slide into mediocrity.

Sincerely yours,

Robert G. 'Bob' Wilson v,
Ph.D. ATP / CFI and the President
of Kansas Paint & Color Co., Inc.

++++
From **Joseph Horn**, Famous for his cutting edge articles and the Goodies Discs. He has written a book on the HP-71B and is currently working on a new book.

Maybe it's a jinx to sell HP stuff and have the name "Jim". :-(

I *totally* agree that excellence is the highest goal. That "vision" has been totally lost at HP.

HP was a prominent player in the book "In Search Of Excellence". But that was many years ago. Now they are only in search of market share, which is all well and good, but NOT if it necessitates making mediocre or downright crappy products, as they've been doing. After decades of building up a reputation for excellence, they are now feeding that reputation into the paper shredder. That is a well-proven path to temporary increase in the bottom line followed by an irrecoverable decline. First they screwed their dealers, and now they're screwing their clientele. It's myopic in the extreme.

++++
From **Carl Volkmar**, founder of the Las Vegas PPC Chapter, meeting organizer and host.

I agree.

I will no longer buy anything with HP on it. I started with the 35 and can't remember how many calculators and Omnibooks I have bought since then. Trying to get a CD to work with the Omnibook finally made my mind up.

.x<>y and out

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Carl Volkmar PPC 816

++++
From **Bob Schlesinger** who must of received an email from **Bob Dobkin**, one of the founders of Linear Technology.

Very good idea...and obvious. Yes if every one of us wrote a note, maybe things would improve; I'm still waiting to get a hard copy users manual that they promised me would be available back in August 1999.

I believe that the calculators are under HP and that Ms Carly Fiorina is the new president. My wife is a journalist did an interview of Carly about five months ago for a national newspaper and was very impressed with her. She indeed gets things done. She will either fix the calculator business or "blow it away" but is not likely to let it limp along.

cheers Bob Schlesinger

BobDobkin@aol.com wrote:

> Is the calculator business with HP or Agelint? Why not forward the letter (in printed form) to the
> current president. Neither president was directing the company until recently
>
> Bob

++++

Jake reads the HP48 News Group daily. I asked him to forward me the "chatter" regarding the posting of Jim's "letter". What follows is those postings.

Newsgroups: comp.sys.hp48

From: "Alejandro Cedillo" <alejandro.cedillo@worldnet.att.net>

References: <38AAD762.37C4@waterw.com>

Subject: Re: Please Read: HandiCalc Closes Its Doors

NNTP-Posting-Date: Thu, 17 Feb 2000 02:23:38 GMT

Organization: AT&T Worldnet

Xref: rQdQ comp.sys.hp48:114435

I have been using HP calcs since my collage days, but now my admiration and loyalty is starting to ware out (I have a HP41CV, HP 48GX and HP49G). I have also been using natural gas analyzers from their Analytical division now Agilent) and their service department sucks!, it takes forever to repair or service an instrument, and their service charges are very, very!!! high, in this particular analytical instrument we just have to deal with it since no one outside of HP provides service. I believe either Mr. Hewlett or Mr. Packard is living in retirement, I hope HP calls him back, I bet that will put HP back on track.!!!

Cheers

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From - Thu Feb 17 09:53:06 2000

From: Stephen J Thomas <BYEsjthomas@netrox.net>

Date: Wed, 16 Feb 2000 18:04:09 -0500

Organization: Posted via Supernews, <http://www.supernews.com>

I have watched as HP has moved from supporting their dealers, to competing with them. It is sad that the situation has come to this, as has also happened in other fields (try to find an "independent" Celestron Telescope dealer these days!) Some of these same factors detailed by Jim Lawson also contributed to EduCALC closing its doors.

HP no longer seems to realize or care that by essentially dismissing their dealers, they are also going to lose customers. The HP dealers have often taken up the slack when HP's own customer service began to decline many, many years ago. There is no real HP calculator customer support anymore, other than those employees who choose to help out in this newsgroup.

In recent history, I think that it was a grave mistake after the company split to assign the ACO group to HP, rather than to Agilent. I don't think things are going to get better.

At any rate, I thank you, Jim, for your support of our obsessions over the years -- especially since EduCALC closed. I have always been happy with the service you have provided, and the knowledge you have shared.

Stephen J Thomas

(Please remove the capital letters from my reply-to address for email.)

Subject: Re: Please Read: HandiCalc Closes Its Doors

Date: Wed, 16 Feb 2000 12:42:43 -0500

From: Vince Tessier <vlt@home.msen.com>

Organization: Great Lakes Empire

Damn. Eighteen months ago, after I had purchased my first new HP calculator in ten years, I poked around and found HandiCalc on the web. Jim talked with me for over an hour about HP calcs present and past, and sold me the memory card I wanted. He made the add-on sale, too; I bought another \$50 worth of books based on his recommendation, plus an HP-logo knapsack.

I hadn't realized the situation had become as bad as Jim describes. I'll miss him.

--

take care, -- vlt

Vince Tessier <vlt@home.msen.com>

"It takes a compassionate man to covet a three-legged dog, and it takes a sorry son of a gun to name that dog 'Flat Tire.'"

-- Gamble Rogers (Requiescat In Pace)

<http://www.gamblerogers.com>

Date: Thu, 17 Feb 2000 11:25:35 -0600

From: "Barry" <barryem@yahoo.com>

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Organization: Verio

I've seen this sort of thing happen to a company from the other point of view, too. It's a sad but kind of inevitable product of growth.

I worked for 12 years as a programmer/system analyst for what was one of the smallest mutual fund holding companies in the country, when I started. When I retired for health reasons it was one of the world's largest. I saw it go from 65 employees to a few thousand.

They grew because they were good. Kind of like HP did. Part of the reason they were good was one of the reasons HP was good. They encouraged and rewarded ingenuity. There was plenty of politics, but they always made it easy to avoid the political issues. They knew some people thrived on politics and some people were much more productive away from them. If you could make a positive contribution, you were ok.

We were too small when I started there to have any kind of organization where computers were concerned. We had an 18 station network and a small mini and about 30 desktop computers, XT's and 286's, and 3 people in the MIS department, including the department head, who was a CPA. We flew by the seat of our pants. We constantly fought fires.

We did that for a long time. Our growth was very slow compared to the company's growth. When they were 10 times larger than when I came there, we had 6 people in MIS. And a few hundred desktop computers and 2 large minis, all networked. And we made things work.

When upper management finally realized just how dependant they were on computers and just how at risk they were with the way we were doing things, they brought in people to make MIS grow up and become more structured. Little by little I watched it turn into the kind of place where ingenuity and initiative were dangerous. They actually fired someone for handling an emergency that might have cost a couple of million dollars left unhandled. He had exceeded his authority and not gotten permission first. I had handled a similar emergency a few years before and I was given a substantial bonus and the CEO personally thanked me.

But what happened was inevitable. They grew up. They reached the point where our methods were dangerous. It was true. Any one of us on any given day could slip and cost millions. We were doing transactions at that point of about 5 billion dollars a day. They were just too big. They had to overreact. We were too accustomed to our old ways of doing things.

I suspect that something like this is happening at HP and I doubt that they have any more control over it than my company did. They're making bad decisions but they're in new territory. They bring in new people to solve old problems and these people don't know the traditions. And they wouldn't be able to do the job that needed to be done if they respected the traditions.

So HP will probably lose some customers and some fine traditions and its reputation for excellence as it tries to find out how to survive as a lumbering giant. They can't help it any more than we can. But they probably will survive and their shareholders will make money and that's really what it's all about. When you're that big.

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HP isn't doing this to us. We did it to them. We bought their products and made them too big. So lets not hate them for it.

Barry

Date: Fri, 18 Feb 2000 04:17:42 GMT

From: Dave Hicks <daveh@hpmuseum.org>

Organization: bCandid - Powering the world's discussions - <http://bCandid.com>

I think that with the rise of the online superstores that operate out of a single warehouse (or less) and provide no support, a lot of manufacturers have asked: What do we need them for? We can ship straight from our factory and keep the markup.

These direct online sales only compete with educated / specialized dealers if most of the consumers are unwilling to pay for the support that the small dealers provide. When you compare the number of posts asking for the cheapest price on X to the number of posts asking where to find the best-educated salesmen for X and when you consider that Handicalc's business "dropped precipitously to insignificant levels" when a cheaper zero-support alternative became available, I think we consumers are sending a clear message to the industry. It looks to me like HP (and Celestron and others) are giving us what most of us are asking for.

--

Dave Hicks (daveh@hpmuseum.org)

The Museum of HP Calculators

<http://www.hpmuseum.org>

Subject: Re: Please Read: HandiCalc Closes Its Doors

Date: Fri, 18 Feb 2000 08:47:56 +0200

From: "Veli-Pekka Nousiainen" <vp.nousiainen@eiffel.fi>

Reply-To: "Veli-Pekka Nousiainen" <remove_this_vp.nousiainen@eiffel.fi>

Organization: Eiffel Oy

Newsgroups: comp.sys.hp48

Hi, Dave !

That you !

You gave me an idea! For lousy \$5 per minute I will give the poor calc users phone support and this business would have been not possible with out the latest happenings in sales field. Thanks to direct on-line sales and the (lack of) documentation I will became incredible rich beyond my most luxurious dreams.

I think I'm gonna hire some clerks right away.

Thanks!

;-)

Regards, VPN

Veli-Pekka Nousiainen ; e-mail= vp.nousiainen@eiffel.fi

Sokinsuontie 3 A 1, FIN-02760 Espoo, Finland

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TEL, WORK= +358 (9) 859 2025 ; (WORK2= +358 (3) 4728 300)

Eiffel Oy ; URL= <http://www.eiffel.fi>

HP25,HP28S,HP41CX,HP48SX,HP48GX,HP49G,HP71B,HP75C & TI89

<http://www.hpmuseum.org/journals/71curve.htm>

Vote for the "82484A Curve Fit for HP71B" => HP49G !!!

Subject: Re: Please Read: HandiCalc Closes Its Doors

Date: Fri, 18 Feb 2000 09:38:57 -0600

From: "Barry" <barryem@yahoo.com>

I know you're joking but there are businesses offering online support for charge for a lot of different equipment. I suspect we've been talking about the reasons for this.

Trying to remember I think most of the ads I've seen for these companies are directed to people buying new home computers. They provide them with phone support for their OS, hardware, installations and a lot of applications.

Barry

Veli-Pekka Nousiainen <vp.nousiainen@eiffel.fi> wrote in message
news:88irvh\$7v\$5@tron.sci.fi...

Subject: Re: Please Read: HandiCalc Closes Its Doors

Date: Fri, 18 Feb 2000 16:50:17 GMT

From: "Steve" <redled@earthlink.net>

But to blame the consumer for corporate policy seems to me misplaced. Yes, consumers will always tend to look for the lowest price. Perhaps we are spoiled particularly when it comes to computer technology since prices seem to fall continually. But a company is reflected in the products it sells, and in the support it gives to those products, and in the support it gives to the consumers of those products. I'm not saying a company should be expected to put unlimited resources behind each product it sells, but there is a right and wrong mix to the amount of support a given product should have. Price is not the main issue if a company has the philosophy of providing a quality product to an educated customer. When the HP-65 came out in 1974 it cost \$795, the equivalent of \$2500 today, it's true the technological environment was different then and no one will spend even \$795 on a calculator today but they will spend an appropriate amount on a product they sense has their best interests in mind and does not insult them. Why is the HP-49 what it is? it's not because the customers would not have waited another year, we had already waited six years. It's not because we wanted it at the cheapest price and for that price that is all we can expect, we would have paid more for it if it had what we wanted. Why was it rushed to market and underdeveloped? Because HP chose to do nothing for 5 years. They had a lack of real concern for their customers. They chose to lose sight of the driving force behind the product while focusing on the short-term bottom line. By trying to reduce everything to a number and trying to increase short-term (always short-term, poor babies) profits by marketing feedback formulas they have appeared less human, and insulting their customers. All this may work for a while but inevitably leads to ultimate and unrecoverable disaster for the company as customer after customer gets disappointed, pissed off, insulted and finally has such low expectations of the company that no amount of money spent on advertising

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hype, rhetoric, or outright lies can rescue its permanently damaged reputation. Look out HP, can't you see it coming??

Steve Borowsky

Subject: Re: Please Read: HandiCalc Closes Its Doors

Date: Fri, 18 Feb 2000 02:04:21 GMT

From: "Alejandro Cedillo" <alejandro.cedillo@worldnet.att.net>

The fact that I'm starting to see HP as a company where their products, service and customer support are not as what they used to be is not "hate", I'm actually "sad" to see this happen, not only with HP but with other companies. In general, I hope products, service and customer support does not get worse with so many companies merging.

Dave Hicks wrote:

When you compare the number of posts asking for the cheapest price on X to the number of posts asking where to find the best-educated salesmen for X and when you consider that Handicalc's business "dropped precipitously to insignificant levels" when a cheaper zero-support alternative became available, I think we consumers are sending a clear message to the industry. It looks to me like HP (and Celestron and others) are giving us what most of us are asking for.

I don't believe that the participants in this newsgroup are an accurate cross-section of the HP calculator user market, and therefore not an accurate gauge for HP's stance on customer/dealer support. Jim Lawson has never had an email address, having basically done all his business via word-of-mouth and other traditional advertising (until I put up a web page for him). Several people who contacted him out of the blue discovered that there was a great deal more to buying a machine than 'which dealer has the cheapest price'. Even determining which machine is the best is something that many folks have difficulty performing. Jim wouldn't hesitate to sell someone a cheaper model if it was a better fit than the one which was first thought to be the best choice. And when HP discontinued printing any sort of informational brochures for their calculators, Jim created his own for this purpose, plus created and mailed his own newsletter to customers.

But as the saying goes, no good deed goes unpunished.

To me, it's not such an issue of HP curtailing its support and such. It's their attitude that the small, helpful dealers mean so little that HP must steal the business from them by competing with them for price disallowing them from even offering the most basic calculator accessories. After so many shots in the same foot, you'd think they should start paying attention to the wounds.

Jake Schwartz

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Exhibit C

Marketing Plan for HP's High End Calculator Line
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Exhibit C

This is part of a document titled *Marketing Plan for HP's High End Calculator Line – A User Community Analysis*. The complete “package” is broken into smaller files for email and interest purposes. The related documents are listed below.

#	Title or Description	Pgs
1	Marketing Plan for HP's High End Calculator Line	33
2	Exhibit A -Jeremy Smith's view of the Super Calculator.	5
3	Exhibit B - An Internet posted letter started this Analysis. Jim Lawson's letter with “community” feedback.	18
4	Exhibit C - Chris Wallin's response explaining HP's current plan	3
5	Exhibit D - Eleven Rules of the [HP] Garage. Suggested reading by an HP employee.	1

Dear Richard,

Thank you for your thoughtful and heartfelt messages regarding HP and specifically, the calculator business. We would like to address your collective concerns regarding 1) channels and pricing strategies, 2) support, 3) product quality, and 4) parts/accessory accessibility:

Channels and Pricing Strategies

To support our relationship and inform you regarding our markets and products, we offer the following:

1. ASEE Booth

Last year, top HP engineers and technical marketing personnel were made available to communicate about HP's calculator products, including the 49G. It is difficult to respond to the stated impression that the HP representatives were “hackers” without being informed of specifics beyond their ages. Knowing that we are a marketing organization, we pride ourselves in staffing our trade show booths with knowledgeable professionals representing those target markets.

2. Annual Hand Held Users Group Meeting

This 2-day event is sponsored and financed by HP to provide you with opportunities to input meeting content, and receive information regarding new products along with updates regarding ACO and the calculator market. Information sharing may be limited for audiences that include industry competitors. Other than ASEE, this was the first group to see and hear about the 49G, and those of you in attendance received a complimentary 49G and our thanks.

3. HPc Magazine

Distributed 3 times each year, this free publication was designed as a communication vehicle for you.

Our channel strategy is to target those outlets where the majority of our target market would choose to shop, including the Internet and retail channels. HP Shopping Village was primarily a response to those consumers who complained that HP calculators were very hard to find. The advance of the Internet also brings more technically-savvy shoppers who expect to find and purchase products online. Rather than pricing to compete with mass retailers, we offer a comparable price plus a shipping fee. Because HP Shopping Village currently represents only a small percentage of total sales, we believe that we are meeting specific consumer needs without unduly impacting channels.

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Support

Please know that HP is intensifying its commitment to customers by a major reorganization that focuses 2 of 4 new units on customers (business and consumer). Beyond that, there is a top-down initiative to improve the “total customer experience”, which includes the many interactions that customers have with our company, people, products, and services.

Some of the customer specifics mentioned within your messages are a consequence of previous internal structures, where multiple divisions operated as separate businesses. This sometimes complicated the environment for customers who had to navigate among disparate call centers and web sites to obtain the level and type of support that they needed. Although we have much to do in this area, there have been significant recent initiatives to simplify the external experience:

1. Call Center Simplification
 - an initiative to consolidate many support call centers and reduce call phone numbers
2. KICS (which stands for Keep Incoming Calls Simple)
 - an internal drill-down directory designed to help agents accurately re-direct incoming calls to the specific service that the customer requires. It should be emphasized here that this tool is to simplify the customer experience, contrary to the conclusions within your message. The ACO support call center does not limit call length at the expense of customers.
3. CTI
 - computerized telephony integration tools that send customer information with re-directed calls so that customers don't have to repeat this information.
4. Published Standards and Guidelines
 - to improve unification and the customer experience on hp.com and VRUs
5. Published Support Phone Numbers in Product Manuals and on Web sites

The cases described refer to KICS, HPParts, sequential VRU menus, and frustrating responses or misinformation regarding calculators. These references are indicative of customers who were ultimately unable to reach the ACO Support Group at (970) 392-1001. In a “blind” test call that we made to ACO support, for example, we were able to receive a battery door for the HP28S (a 19BII door) immediately at no charge. In fact, ACO support frequently receives letters from customers who highly praise the level of support that they have received. Regardless, however, of customer entry points, we have regrettably let some customers down, and are committed to eradicate these frustrating scenarios with our renewed emphasis on the customer and the customer experience, and an organizational structure that will facilitate this focus.

Product Quality

Specific references to the 49G have prompted us to launch a customer survey within the US and Europe. We will query a significant sample of our mainstream target market (college/university students, high school calculus students) who have purchased this product to obtain feedback regarding both the product and accompanying manuals. While bug-free software is a rarity in a product as comprehensive as the 49G, we do strive for this, and perform procedures and quality tests in accordance with HP standards. High-powered users or those with very detailed knowledge of previous versions (e.g. HP48) may detect more obscure defects than those detected in a reasonable software-testing regime. While we have released new ROM versions, there have been a total of 3 (1.05, 1.10, and 1.16).

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Manuals are always prepared with the targeted user market in mind, with initial chapters modeled after other “user friendly” manuals, both HP and non-HP. Again, some users with a high degree of knowledge of our previous models may find this frustrating. While we regret this, we do need to keep in mind the target market that needs this help. More complex elements for the 49G were included in a separate Advanced User's Guide for high-powered users. The 49G manuals have also been corrected for issues that were initially identified, and updated versions now complement our solid, robust product. We will be interested to see whether the previously described user differentiation and our corrections were well received by the users that we survey.

The 38G User's Guide, launched years ago, did have some quality problems, however, the current 6S market does not indicate an issue with the 6S manual. We will continue to poll our customers regarding their satisfaction of our products.

Parts/Accessory Accessibility

Manuals are generally packaged with calculator products, and hardcopy replacements are available to anyone through HP Parts. Electronic versions are available on our web site for newer products. Our strategy is to make all of our manuals available in electronic form, since our customers expect this and can receive up to date information at no charge. This practice is becoming standard within the industry. For those who prefer it, we will continue to offer hardcopies through HP Parts.

Products and accessories are both available through our normal channels, and customers can also order these on HP Shopping Village. We would appreciate hearing more about your inability to acquire them.

We sincerely hope that we have been able to help you to understand our channel and pricing strategies, support plans, product qualification, and product accessibility. We thank you for giving us the opportunity to hear about your collective perceptions, experiences, and issues. This type of feedback contributes to our consideration of strategies and improvements, and has prompted us to seek further feedback regarding the 49G. We believe that HP is on the right track by reorganizing to intensify the customer focus, and look forward to the day that all customers are delighted with their experiences at HP.

Sincerely,

Chris Wallin
General Manager
Australian Calculator Operation
Hewlett-Packard

Exhibit D

Marketing Plan for HP's High End Calculator Line

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Exhibit D

This is part of a document titled *Marketing Plan for HP's High End Calculator Line – A User Community Analysis*. The complete “package” is broken into smaller files for email and interest purposes. The related documents are listed below.

#	Title or Description	Pgs
1	Marketing Plan for HP's High End Calculator Line	33
2	Exhibit A -Jeremy Smith's view of the Super Calculator.	5
3	Exhibit B - An Internet posted letter started this Analysis. Jim Lawson's letter with “community” feedback.	18
4	Exhibit C - Chris Wallin's response explaining HP's current plan	3
5	Exhibit D - Eleven Rules of the [HP] Garage. Suggested reading by an HP employee.	1

Hewlett-Packard Company:

RULES OF THE GARAGE

At the end of her most recent memo to Hewlett-Packard general managers, HP President and CEO Carly Fiorina included a list of practices for the new HP that will serve "as a reminder to ourselves of what we stand for."

These "Rules of the Garage," she said, "signify a new way of engaging with each other, a new way of cooperating. I believe these rules represent the essence of who we are and how we will work together in the future."

Here are the eleven "Rules of the Garage":

- o Believe you can change the world.
- o Work quickly, keep the tools unlocked, work whenever.
- o Know when to work alone and when to work together.
- o Share -- tools, ideas. Trust your colleagues.
- o No politics. No bureaucracy. (These are ridiculous in a garage.)
- o The customer defines a job well done.
- o Radical ideas are not bad ideas.
- o Invent different ways of working.
- o Make a contribution every day. If it doesn't contribute, it doesn't leave the garage.
- o Believe that together we can do anything.
- o Invent.



"We're in the midst of one of the most exciting times in the history of HP," she said. "We are re-inventing this great company by eliminating barriers and re-igniting our sense of purpose. With everyone on board, we can unleash the tremendous energy and spirit of HP's people and attack our chosen markets with strength, invention and a clear understanding of what we need to do to win big."

HP Communications