



PALO ALTO RESEARCH CENTER
Systems Science Laboratory
LSI Systems Area
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To: Bert Sutherland, Alan Kay, Lynn Conway, Chris Jeffers, Ted Strollo
From: Doug Fairbairn
Subject: Whither NoteTaker?

stored: notetakerkick.memo

NoteTakers work. I know. The rough draft of this memo was written on a NoteTaker. The machine sat on my dining room table - and there was still enough room for dinner, a few magazines, and all the other things that find their way to such a table. The point is that NoteTakers are small and portable and very powerful besides. However, the NoteTaker project is slipping towards disaster. We, and I include myself, have been weak in our commitment to the program and this weakness will delay the program into oblivion if we are not careful.

Both the people who help develop the machine and its future users sense this lack of commitment. SPG has felt this weakness more than anyone. They have been forced to make unexpected cutbacks in their manpower and to reassign their personnel to non-existent jobs. They have no true idea what our plans are and morale is very low. They sense our lack of commitment. The same is true of the manufacturing group who are now unsure when or whether they will have a program. Those who have expressed interest in NoteTakers and are willing to put up their money for them can sense the indecision. I can't tell them when to have their purchase orders in because I don't know when the build will start or how much they will cost. They aren't sure if NoteTaker is real. There have been innumerable visitors passing through who have expressed interest and asked "when can I get one"? Answer?? It's time to decide. It's time to make a plan and stick to it. Its time to make a plan and tell others what it is. It's time to put NoteTaker first. We need a commitment that everyone in SSL understands and supports.

My recommendation is that the issue be discussed with all group leaders as well as SPG as soon as possible. SSL must as a group make a commitment to this program and pledge that it will have priority when it comes to allocating budget. As a development program it cannot stand the uncertainties of some research programs. There are many outside suppliers and customers who must be scheduled and accounted for in our plans.

With NoteTaker, there are a number of very interesting applications to investigate and opportunities to capture. Education, LSI test bed, field service, and remote communications are some of the applications which have been discussed. All have as a common goal the idea of teaching us and the corporation what portable computing is all about. On a parallel track, John Titsworth once asked ASD if they had ever considered doing a probe in the *homes* of the top Xerox executives.

NoteTakers might be an ideal vehicle. Intriguing. All these ideas, dreams, and speculations will remain so much hot air unless we finish the design, finish the initial software, and start up the production lines. It really won't be until NoteTaker is handed off to a manufacturing group that people will be sure it's for real and start to factor them into their plans. Until then, it's all hypothetical.

What exactly must be done?

- Decide how many expense dollars can be committed to NoteTaker in 1979 and *commit them*. If we think we have \$80K plus \$25K from WRC, then we should write a transfer agreement for \$105K immediately. This will allow for the most efficient planning and insure the manpower will be there when required. This sort of up-front commitment is necessary to maintain morale as well.
- Decide how many expense dollars are required for completion of the program in 1980 and *commit them* at least verbally to ourselves and SPG. Travel, tinker, and part-time employment budgets will then become the variables rather than NoteTaker.
- Decide how many NoteTakers to purchase out of the first build and *write a purchase order for them*. All other buyers must do the same.
- If SPG cannot deliver finished NoteTakers within the budget we agree on, we must pledge to make up the difference ourselves, whether it means designing and debugging hardware or writing software. This principally applies to the E&S group, LRG, and myself, but others might also be involved.

The date I suggest for the first delivery of NoteTaker IIs is April 15, 1980. I believe this is the earliest possible date *if we act now*. Once we agree on a date, we must do our utmost to stick to it.

As background for our discussion, let me summarize the current state of NoteTaker reengineering:

- The package design is nearly complete. A day-by-day schedule for completing design, tooling, and production hangs in my office. It calls for production parts by March 1. The proposed April 15 delivery date allows one month slippage in these plans.
- The Ethernet design is underway with completion scheduled for October 1. One stitch-weld version for NoteTaker I will be fabricated and tested by November 1. Additional boards for the rest of the NoteTaker Is will be built and debugged during November and December.
- The error correction chip which Ted Kaehler has designed needs to be laid out and tested.
- The memory controller has to be redone to simplify the design and accommodate the above chip. I have started this job but significant work remains.
- The other boards in the system need various changes incorporated in them and the new pc layout done and tested.

- We are expecting a quote on 8/29 concerning modifications to the power supply which include relayout of the boards to fit the new chassis and a major simplification of one of the three output regulator stages.
- We have received quotes on tooling and piece quantities for keyboard production by Micro Switch. They await a go-ahead.
- We have received quotes for displays from Ball Bros. They await a go-ahead.
- A significant amount of testing and debug software must be written to support the manufacturing and field service personnel.

I would like to discuss this plan with whomever is interested on Wednesday . I will be out of town on Monday and Tuesday but will have my NoteTaker so I can be reached via msg. We then must await the return of Chris to analyze the budget and tell us what level of support is possible. During the week after Labor Day, I would like to settle the issues discussed above and get the program moving.