

The Appliance Computer, Circa 1977

by Carl Helmers

With the beginning of the new year, it's time to return to the theme of the "ideal" personal computing system, the ne plus ultra in terms of design finesse, convenience and low price. In short, a quality packaged product ready to be programmed by the user . . . the same concept found in the programmable calculator, but applied to the general purpose computer system instead. This product is on the way. My "authoritative" pronouncement on the future of the field during 1977 is that 1977 is to be the year of the "Appliance Computer." Now that I've made my pronouncement, you ask in reply "now how can Helmers make a crazy statement like that?" The rest of this month's commentary concerns the reasons for this summary of the coming year, a view from the root node of an information tree.

Quite simply, the "appliance computer" is the concept of a true finished product desk top general purpose computer which can be purchased at your local dealer, a complete package of hardware with supporting systems software at a reasonable price. It is the software experimenter's dream machine, a computer where the only concerns are the generation of programs and the hardware is just assumed to exist and work properly. It is the starting point of applications and systems programming experimentation. The appliance computer is the personal computing system which does not require that its owner own an oscilloscope, a complete electronics laboratory, or have experience in the repair and tuning of hardware.

The systems hackers and hardware hackers will of course complain about the very concept of the appliance computer, which is fine. "You're too constrained by someone else's choice of compatible options." "You're limited by a particular style of engineering." "In my perfect system, I'd do this instead." "I wouldn't be caught dead with such a kluge in *my* system." There is no doubt that there is a lot of pleasure to be gained from the ego involvement of hardware creation and system design. The appliance computer hardly eliminates that pleasure — for those who are sophisticated and knowledgeable enough to enjoy it. They simply avoid buying appliances.

But consider the appliance computer in

analogy to the musical instrument. Most of us musicians (amateur like myself, or professional) get our jollies out of playing the instrument, not out of building it. Sure, I do some weird things like designing an attachment to my baby grand player piano so that my computer programs can play it too; but I do so to enhance my ability to play music, and then I do a custom design only because there are no commercial products. I am primarily a user of the piano, not the builder or designer of the piano system. The builder of the piano, some craftsman at Steinway circa 1910, simply put together a very specific and well designed set of hardware which I program with my own software creations, via my finger tips (and later via rolls or solenoid valves in the pneumatics).

So why is it appropriate that 1977 be termed the year of the appliance computer? I have inputs from numerous sources to tell me that the personal computing products are shaking down into finished systems. For example, just take a look at the class and quality of the new Digital Group cases — they're the kind of finished product professionalism one would expect on a computer table in the livingroom of a home. Now, if only Robert Suding's brainchild were completely assembled and tested at the same price. As another example, take a look at the level of case design sophistication and engineering quality represented by the new Processor Technology SOL systems. Again, it's still a kit, but it augurs well for the coming year. Take a look as well at the STM BABY computer. Here is a finished product, not a kit, which is initially a bit more limited in scope as a general purpose system than some of the other products, but which before the year is out will have a complete set of options including mass storage and a high level language. Then there is Steven Jobs' and Steve Wozniac's Apple Computer, presently only available in single board form without case, but soon to become a finished product item at dealers coast to coast, with a case as previewed at Atlantic City last September. There are others as well, firms which have yet to advertise but which have exciting products we may see at dealers in the near future. These include the Gremlin

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computer and the computer brainchild of a bunch of MIT beavers who call themselves ECD Corporation. Then there is of course the much rumored Heathkit entry into the market (again as a kit, but certainly to be exhaustively engineered and documented) and the rumors of Japanese imports aimed at the 1977 TV games market but actually consisting of general purpose computers with minimal interfaces and video output.

My "ideal" target of an under \$2000 finished product machine which is complete with video interface, mass storage on dual audio cassettes, keyboard input, 8 K of memory or so, systems software in ROM and a high level language capability is well within sight. It can be purchased in kit form over the counter right now. By the end of the year, we can expect to see the fully assembled and tested versions appearing, again well under \$2000 in price, and even lower for stripped down versions in mass production. The wealth of products now on or about to enter the market suggest that the appliance computer is the computer of 1977, and the desires of users are sure to support this appraisal of the market. ■

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