Previewing the Digital Decade (J. Woram)

By now, surely everyone has read at least one story in which digital audio is solemly proclaimed to be the cure-all for the various and sundry afflictions which beset our old friend analog. It seems that everything from tape hiss to lousy pressings is to become a thing of the past, once the "digital decade" of the 80s gets up-to-speed.

If half the prophecies come true, we shall be in for some impressive sonic revelations indeed. With tape and pressing noise banished, perhaps we shall, at last, be able to hear air-conditioner rumblings, and maybe even the traffic outside the studio !

In other words, the hardware isn't the only thing that will change -even studio design will be influenced by digital technology. Of course, acoustical consultants have spent years getting the noise level down, and many of them are more than ready to confront the demands of the DTR. (Digital Tape Recorder)

As the recording hardware gets more sophisticated, and studio designs more exacting, we can expect a new generation of computerized test and measurement devices will be required, to verify the performance of studios and systems. We suspect that the Badap audio micro-computer, described in our first story, may be typical of much future design work – and in areas beyond tests and measurement as well.

But, how can a system that professes so much versatility get by with so few controls? Why, there's nothing but a small collection of pushbuttons on the face plate, and no sign of a potentiometer anywhere ! In fact, most of the pushbutton functions aren't even labelled. What then do they do? Well, that depends. What would you like them to do? It turns to you that their function depends on the type of measurements you wish to make. The particular function at any moment is indicated on the CRT display. As your requirements change, so does the display. One button takes the place of many. There are no irrelevant controls to get in the way. If you need something, it’s there -if you don't, it goes away. In other words, sophistication and simplicity at the same time.

The system also lets the user pretty much deterrmine his own display format. For example, amplitude may be represented by a vertical line, a horizontal bar, a changing color - you decide what's needed , and it’s there.

Will this sort of technology eventually find its way into other hardware? For example. what about a console fader that controls level, equalization or reverberation , depending on the needs of the moment? On a tape recorder, who needs a Play button when the transport is already moving (or a Stop button when it’s not) ? On a 32-track machine, wouldn't it he nice to have just one set of controls, to handle record and playback equalization ? On second thought, make that a single knob that

will do everything. Well, why not ?
Speaking of tape recorders brings us to our next feature, on the Mitsubishi Digital Audio System. At the heart of the system is of course the digital tape recorder, but eventually the system should expand to include everything, from just after the microphone, to just before the monitor system.
Just now, attention seems to be drawn to the tape recorder itself but it seems to us that eventually, it may be the digital everything-else that finally eclipses analog audio. Elimination of analog tape hiss, wow and flutter and such is certainly impressive. But, what about the signal-crunching capabilities that can be realized once the audio is transformed into a series of 1s and 0s? This is where digital can offer possibilities that are completely beyond analog capabilities. Once the DTR becomes a bit more accessible, we may indeed see and hear some exciting new sounds, made possible through digital signal processing.
Of course, there must be a convenient way to edit digital recordings, before we can expect to see a large--scale swing away from analog. Here. digital technology promises to become more than just a replacement for analog's razor blade and splicing tape. Our feature on electronic digital editing outlines some of the similarities, differences and future possibilities. Not the least of the advantages is that edits may be previewed and changed again and again. without the necessity of making endless cuts and splices.
And of course, the DTR and its editing system will certainly be used in conjunction with a computerized recording console, of the type described in our next feature. It's one more example of what we can expect to see. as the digital decade gets moving.

It’s tempting te speculate on what we may expect to see as this new decade draws to a close. Perhaps by 1990, the tape recorder, its editing system, and the studio console will have lost their separate identities. and be merged into a single recording « system ». We have already seen tape recorders that include console functions and consoles with tape recorder functions (See our August, 1979 and January, 1980 issues). As the technology evolves, surely there will be very much more of this, and eventually, perhaps a recorder editor console in an all-in-one package, since there's really little need for redundant control functions. Besides, it’s expensive!
As the Badap micro-computer illustrates so well, when systems become more complex, it’s also possible –and indeed. practical- for the human interface to become simpler, without sacrificing flexibility. In fact, flexibility may be greatly enhanced, since system design is no longer "frozen" when the manufacturing process begins. As any computer

maven can assure us, once the basic hardware is on board, the user can keep on updating by writing new software. Therefore, the system can be continually improved, to keep up with the demands placed on it. Just try that with analog!

Of course, the complete digital recording/ broadcast/ home entertainment system won't happen overnight.

There will surely be a lot of "cutting-and-trying" as we try to tailor the emerging digital technology to meet the demands of this digital decade. It should be an interesting period, so stick around, and we'll try to learn about it together.