

POTENTIAL USE OF MICROCOMPUTERS

THE THREATS TO TECHNICAL PERSONNEL, MANUFACTURERS AND OWNERS

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Abstract

The two-edged sword of microcomputers is becoming apparent to many cable television technical personnel, managers and owners. While the potential uses abound, microcomputers are threatening cable television. The way systems are evaluated is threatened. The lack of programs for cable television threatens this industry. Microcomputers threaten the present methods of electronic design. And the competition will use microcomputers to threaten the industry. The impact of microcomputers could be as much or more than the impact of satellite distribution if the challenges are met.

The problem is the computer. No, they're not expensive any more. That may be part of the problem. No, they're not difficult to use. And that may be part of the problem. And no, they're not unreliable. And this too may be part of the problem. But they do pose a threat.

THREAT TO PRESENT WAY OF EVALUATING BUSINESS

The advance of electronics has brought a variety of marvels. The introduction of satellites to cable television by Home Box Office and RCA threatened the previous ways of doing business in the industry. Now it is standard procedure to consider satellite reception as part of any cable television system. Regardless of whether an earth terminal for receiving satellite signals is already used in the plant, the value of the system is affected by this technology.

With microcomputers the previous ways of doing business are likewise threatened. Just as most technical personnel may have thought that HBO's decision to distribute

via satellite would never effect them or their cable system, the same is probably true about how you think about microcomputers and cable television.

Cable television is in the forefront of satellite distribution. Now public television, radio networks, and some broadcast television syndicators are joining in. And broadcast television networks are not far behind, perhaps just waiting for AT&T. But, the people in this industry have kept pace with the developments in this technology and this has produced results.

THREAT OF COMPUTER SOFTWARE

With microcomputers it appears that several people are also concerned. Many are so concerned that they have spent their own hard earned money to buy a microcomputer. Several small systems have purchased them. And some of the larger companies either have purchased or are considering purchase of microcomputers for their personnel.

Articles in the trade press, like my column "On Computers" in CATJ, and presentations and papers like this one support computer users. Each month in my column a short program is listed which helps solve a cable television problem. To date these programs include: "Geostationary Satellite Finder", "Cable Power Design", "Feeder Design", "Coordinate Distance Calculation", and a "Feeder Design for Sylvania Amplifiers". Users of microcomputers are supporting this effort by contributing programs. And I thank them.

But most owners of microcomputers are searching for more programs. Like I said in the opening, the problem is the computer. It is fairly inexpensive to purchase, operate, and maintain. It almost seems too easy to do.

But this is part of the threat. The

computer is deceiving because it is only half there. The other half is the computer program. Besides articles in the trade press, there are few other places to turn for programs. This is the threat which may impede the development of microcomputers in this field.

No computer manufacturer is going to offer cable television software to this industry. The industry must develop the programs itself. Manufacturers have much to gain. They could offer programs which show how to simply design plant with their equipment. Or how certain equipment operates. Or how to properly adjust equipment. Both educational and useful programs are necessary.

Microwave and satellite earth station suppliers have much to gain by providing microcomputer programs. Designing and planning either type of station requires a variety of calculations to be performed. While programmable calculators can do some functions, microcomputers provide a better means to both explain the necessity of the calculation and make the computation. One company has an excellent program on a programmable calculator comparing the cost of various earth station equipment. Such a program on a microcomputer would be even more effective and would interest many owners.

An opportunity exists for any company or individual in the microcomputer field. An important part of any business is to be recognized as a leader in the field. With an excellent program, any manufacturer or person can easily gain an excellent reputation. For years they could be recognized as having the best program and this can add to their success.

THREAT TO ELECTRONIC DESIGN

Cable television is a vital part of the electronics industry. And as any casual observer knows the field advances quite rapidly. This industry is a leader in both satellite communications and optical fibers. Such new technology requires both the technician and engineer to constantly learn about new developments.

In electronics the vacuum tube was once king. With the advent of the transistor, tubes are used very little. And now integrated circuits, sometimes known as black boxes, are replacing transistors. But the most fundamental change is the microprocessor.

The microprocessor is part of the threat. Without the microprocessor, small computers like the Radio Shack TRS-80 would be impossible. They can

substantially reduce the costs and size of electronics packages. They make the design of electronic products dependent on programs and very little on test circuits and soldering. This changes the way of doing "business" for most engineers and technicians.

For example, Cliff Schrock recently wrote an article about his "Blue Sky Box" in "Communications - Engineering Digest". "Security, Energy and Pay-Per-View", describes an elegant, flexible and relatively low-cost method of providing auxiliary services on a cable television system. Cliff states that "the real breakthrough in design cost and flexibility came with introduction of the single chip microcomputer." And all special services will be digital.

COMPETITION WILL ATTACK WITH MICROCOMPUTERS

And this is a threat. Unless an engineer or technician has an appreciation for microcomputers, it would be very difficult for them to make such necessary services available on their system. For the industry to continue its progress technical personnel and owners must become aware of the microcomputer and its implications.

With the assistance of General Instruments, the parent company of Jerrold Electronics, Matel Electronics, better known for their games, recently introduced their limited microcomputer called Intellivision. (What is television now stupivision?) There was much speculation in 1978 that Jerrold was going to introduce such a microcomputer to mate with cable television systems. Such a device is necessary.

In Europe, and on an experimental basis in the United States, the vertical blanking interval is being programmed. More information is being provided with that brief "time" in the television transmission than is available in most daily newspapers. It makes the "data" services provided on cable systems look amateurish. While it does require a special home decoder, its cost should be quite low when mass produced for the millions of U. S. television homes. This too is a use of microcomputers.

Several companies, including Digital Broadcasting in McLean, Virginia, and the Digicast Project in California, are offering or planning to offer computer services to consumers using broadcast facilities. It appears that if cable can not offer such "blue sky" services, the entrepreneurs are approaching

broadcasters. The competition with
broadcasters remains.

Microcomputers effect the future
development of cable television. First,
they threaten the present way of
evaluating a cable television system, and
technical personnel should be aware of
this. Second, there is currently a lack
of programs in the cable television field
which threatens microcomputer development
and provides an oportunity for companies
and individuals. Third, it is important
that microcomputers are understood because
many new advances in electronics have them
at the heart of their design. And feurth,
the competition in this electronics industry
is already starting to provide digital
auxiliary services which has important
consequences for cable television. In
order to compete, technical personnel,
managers, and owners must understand
microcomputers.