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late-filed comment / ex parte

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OFFICE OF THE
GENERAL
COUNSEL

Ms. Marjorie S. Reed,
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Office of General Counsel,
Federal Communications Commission,
Washington, D.C. 20554

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Federal Communications Commission
Office of the Secretary

Dear Peggy,

Thank you for your letter of 2/1/89 with all the supporting material. You obviously went to a lot of trouble to assemble it and I do appreciate it. After talking with you I began a search of the technical literature on the subject of HDTV and quickly discovered that in the twenty years I've been away from active participation in technical work, I've gotten quite rusty and out-of-date. I now realize that it is quite unlikely that I could contribute technically to the problem.

I am, however, very interested in the question of active governmental participation in the development of HDTV. This type of activity has been a significant topic of discussion in my MBA Course, C004, Society and Technology. One of my colleagues strongly favors such participation along the lines of the Japanese MITI and forcefully asserts that position. When I started the Course about ten or so years ago, I was strongly opposed to the idea. I then believed in strong anti-trust law enforcement, free competitive markets, and keeping the government out of business. In this belief I was strongly influenced by two personal business experiences I had had.

The first was in the late thirties. At that time Canada had [1] a sizeable protective tariff on radio sets and tubes, and [2] an anti-dumping provision in their tariff which effectively inflated the cost of radio tubes brought into Canada from the U.S. by about five times. As a consequence of this the Canadian subsidiaries of G.E., RCA and Westinghouse organized a little radio tube manufacturer, Radio Valve Ltd., which effectively had a monopoly on the tube business in Canada. Now radio tubes at that time constituted about 10% of the cost of a table model radio set. In Canada Radio Valves profits were 90% of the entire profits of the entire radio industry. All the end product manufacturers shared the remaining 10%. And the price of a table model radio in Canada was about twice the U.S. price of an equivalent model, largely because of the inflated cost of the radio tubes.

Faced with this situation Philco decided to import tubes into Canada for its Canadian subsidiary and challenge the monopoly. It could risk doing so

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because the anti-dumping provision of the tariff required it to charge a very high price for the tubes it shipped to Canada, but it could and did internally use this very high profit to permit its Canadian subsidiary to adjust its set prices as if it had bought the tubes at U.S. prices. On this basis it could substantially lower its set list prices with a consequent dramatic increase in its sales volume.

Now Canada has no anti-trust laws, but its Patent Act does contain a provision that acts of patent pools can be subject to public inquiry. Philco's action, as you can imagine, caused an uproar in Canada. A Board of Inquiry was established, and I had the fun of being the company representative to brief our Canadian counsel on the philosophy of the Sherman Act. What the Inquiry found was that by our action the price of radios to the public was actually reduced about 30-40%; the sales volume about tripled in the two years it took to get the Inquiry going, all to the substantial benefit to the public and the only casualty was the Radio Valve Ltd. which was unable to compete in an open market. There developed, I believe, a consensus that the earlier monopoly was a bad idea, the protective tariffs were reduced and the anti-dumping feature removed and the patent litigation sort of faded away. By that time nearly all the broad patents had expired and the owners feared the inquiry provision of the Patent Act. But here was a clear case where the public interest was best served by free competition and not governmental manipulation of tariffs to protect a favored industry.

The second example happened when Philco was bought by Ford. I was one of three executives involved in the sale, and my job was to explain our company and our industry to Ford. In one presentation I made to Henry Ford II, I reviewed the post-W.W.II, price-volume history of the radio & appliance industry which showed a consistent annual reduction in cost and price, improvement in product utility and increase in volume as the products became more affordable, all for the benefit of the consumer. I was quite proud of the record. Mr. Ford's comment to me was that the industry was pretty stupid; he preferred the Detroit way in which G.M. set the price umbrellas tacitly accepted by Ford and Chrysler and everybody made a good profit. Auto prices had, in fact, consistently risen in the post War II period in contrast to the radio & appliance prices. But I believe we gave the public a much better deal. And the Detroit plan opened the way for Japanese competition with which the auto industry could not then cope.

But during the seventies our semiconductor companies were unable to compete with the Japanese. My analysis of the problem is as follows: The

transistor was invented right after WWII as a direct consequence of War research. It was not just a different kind of radio tube, but rather a different way of controlling electric signals and required both radically new manufacturing techniques and well as different ways of thinking about electric circuits and products. As a new and radically different technology new discoveries came thick and fast. The old-line tube manufacturers, who knew the market and had their distribution systems in place, were simply too mature and stodgy to cope with the very fast paced technological development which characterized the semiconductor industry. Only G.E., RCA, ATT and Philco etc., who had research facilities and interest in both components and end products, even tried seriously to be in the business. But this technology required very large capital investments and with the fast pace of technological change, these investments had to be written off in two or three years. My associates at Philco simply could not understand how different this business was from that to which they were accustomed. It really took young, brash, technology-oriented entrepreneurs to accept such risks. And these risks became an order of magnitude worse with the technological development of integrated circuits, where the development costs of just one product could be several hundred million dollars. In the U.S. not one old line tube manufacturer successfully made the transition to semiconductors. Instead a bunch of new, entrepreneurial-type, small companies moved into the field. They were fiercely competitive, not too well financed, and not too clear on just what their customers really wanted. They were all trying to push the technological frontier. Generally they had very strong technical leadership but were weak in marketing and finance. So in this area our free enterprise economy provided a rather chaotic situation; considerable difficulty in defining components to meet the real need of the end users, who were not very sure themselves what they wanted, and great financial risks. By contrast, in Japan, MITI rather forcefully made the component suppliers and end users agree on component specifications and also provided the necessary financial backing and security. I believe that is the principal reason for their success. In this situation our anti-trust laws and emphasis on competition did us in.

Belatedly, we have recognized this with the establishment by governmental action of the industry consortium Sematech which is supposed to provide the industry with coordinated development and standardized component designs. By concentrating all the technical effort in one place we hope to outperform the Japanese. This is really the first attempt by the Government to establish a significant industrial policy and represents a fairly drastic change in economic policy for us. It is yet too early to tell just how well this will work.

However, this experience has given me pause, and I now have to agree that there may be situations where unbridled, free enterprise may not be ideal from the point of view of the public, and there may be, in some special situations, a proper role for the Government in managing the development of a new technology. I am not sure that HDTV is one on them, but I shall be very interested in following Governmental efforts in this area.

It does seem clear to me that the Advanced Research Projects Agency of the Defense Dept. DARPA has a valid and legitimate reason for promoting the development of high resolution TV displays for military purposes just as the military provided practically all the funding for semiconductor and computer research in the forties and fifties. But that same funding diverted industry attention from possible civilian use and, I am sure, held up the development of civilian applications. For example, in the late fifties, I had a small internally funded project to develop what has now become the typical check-out counter at supermarkets but I had perhaps a hundred times as much effort devoted to command and control systems for NORAD, computers for NSA and other intelligence agencies, and similar defense programs all funded fully by the government. It was more rewarding to find new military uses than civilian. In addition, in the past DARPA has generally liked to fund competitive developments where there is a clear end objective as is the case here. In any case I plan to follow this situation closely.

While I am being philosophical, let me suggest that it would be worthwhile for the FCC to take a little time to think seriously about the longer term future of broadcasting. I am inclined to believe that in the not too distant future TV broadcasting as presently practised will be obsolete and will have been superceded by a single fiber optic cable to the home which will supply all kinds of communications and messages including the present TV services. Its a good question whether this service will be provided by the phone companies or by cable TV operators, but the message capacity of such a cable will far exceed that available by broadcasting and the information needs of the future homeowner will far broader and more specialized than those now provided by broadcasting. Even today, for example, my TV and that of all my neighbors is delivered by cable both here at Waverly and formerly at Blue Bell. I pay a nominal price for this simply to get a better signal even tho I am only a few miles from all the major Philadelphia TV transmitters. In the Poconos where cable is not presently available and probably will not be for the foreseeable future, the present broadcast service is technically unsatisfactory and I doubt if it would be economically sound to invest the money necessary to fix it.

There is an historic precedent. In mid-century the railroads became uncompetitive with trucks and aircraft due in part to the rapid technological advances in the latter services, but also due to the fact that the railroads were regulated and the regulators [the ICC] simply were oblivious to the technical situation and would not let the railroads do what was necessary to try and be competitive with these new modes of transportation. The monopoly the railroads once enjoyed and which was the basis for regulating them was eliminated by technological advances but the regulators refuses to recognize this fact.

The new technology of broadcasting began in the twenties and at the time was an exciting new service. It spawned a tremendous new industry of which I was fortunate enough to be a part. It required the use of a portion of the radio spectrum, then unexplored public property. In accordance with our U.S. economic and political philosophy it was decided that the service should be provided by private interests, but since public property was involved it should be regulated and the FCC was established to do so. But now new technology has provided an alternative and actually superior way to provide not only broadcast service but a number of others as well. The need and reasons for regulation are now quite different. We really should reconsider the mission of the FCC.

Thanks again for providing me with all the material. It will keep me busy for quite a while.

Sincerely,

David B. Smith