

On Predictions

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Visions of the Future Supersession

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The future is not predictable. Only forecasts based on past actions have any validity. We can say that the sun will rise tomorrow morning or that there will be a total solar eclipse visible in the continental United States in 2017 because of previous analyses of the motions of celestial orbs. But the future's unpredictability hasn't silenced "experts."

"Everything that can be invented has been invented." That spectacularly erroneous supposed prediction, attributed to Charles H. Duell, U.S. patent commissioner, in 1899, is, alas, nothing more than legend. But there have been plenty of actual useless predictions, even considering only those related to our business.

They fall into three categories: incorrect predictions, accurate predictions so far ahead of their times that they are of no value, and predictions that just happened to come true even though concurrent predictions from the same predictor did not. Of course, no one can say any positive prediction without a fulfilment date is erroneous; it just hasn't happened *yet*.

David Sarnoff confessed to the head of RCA Laboratories that his success as a predictor was based on predicting everything and calling attention only to those predictions that came true. In 1951, he "predicted" home video recording; at the same time, he also predicted flashlights powered by nuclear fission.

Great insight into the uselessness of predictions was exhibited by Renville McMann, who was president of Thomson-CSF Laboratories when I interviewed him for *Videography* magazine in 1982. Asked when he thought HDTV would reach homes, he responded, "Within five years. But, if you'd asked me five years ago, I'd probably have said then, 'within five years.'"

Enjoy this collection of predictions of the past.



Philco's Predicta TV, 1958

- George Du Maurier supposedly predicted mural TV in "Edison's Telephonoscope" in *Punch's Almanack for 1879*, December 9, 1878:



Accurate production? Here's "Edison's Anti-Gravitation Under Clothing" from the same artist in the same issue of the same publication:



- Albert Robida's television news, *Le Vingtième Siècle* (*The Twentieth Century*), 1883:



He also depicted home shopping, education, and even pornography via video mechanisms. Accurate predictions? Here's the cover of the same book:



"One image disappears and instead another appears arranged in another way, and thus seems each gesture to change; for you must understand that this takes place in the quickest time." Prediction of motion pictures? You decide.

- Titus Lucretius Carus, Roman poet & philosopher, *De Rerum Natura* (*The Nature of Things*), c. 60 B.C.

"The only thing that needs to be invented [to make television happen] is a means of transforming this energy absorbed by the plate into electric currents which then recombine the image. This transformation is not to be regarded as impossible."

- Adriano de Paiva, physics professor, March 1878

"It may be well to intimate that complete means for seeing by telegraphy have been known for some time by scientific men."

- John Perry and W. E. Ayrton, April 22, 1880

"Inventors who at the present time assert that they are able to transmit... the picture of a head or an even more complicated object... and make it appear a fraction of a second later at a distant place are not to be taken seriously."

- Arthur Korn, fax transmission expert, 1909

Of his own perfect description, first published in 1908, of an all-electronic television system, right down to synchronization signals, picture tubes, deflection coils, and scanning circuitry: "It is only an idea with which I am concerned, and such an apparatus will never be built following these principles."

- Alan Archibald Campbell Swinton, electrical engineer, 1912

"I do not think every home will have its own projecting machine, although the wealthier people will possess them, no doubt."

- Thomas Edison, 1913

"Dare we expect a camera with automatic focusing, automatic aperture adjustment, a camera recording in full color, with bi-visual stereoscopic effect, developing the picture instantly, telegraphing the pictures, exactly as recorded automatically to be filed, and with mechanism for instantly locating any film without index, and exhibiting it immediately, a camera with self-sensitizing plates on which no separate pictures but a continuously changing picture is formed and erased after being telegraphed to the storage room?"

- Henry D. Hubbard, Secretary of the National Bureau of Standards, "The Motion Picture of Tomorrow," *Transactions of the SMPE*, 1921

Of narrowband FM, the discovery that would eventually make video signal recording practical: "This type of modulation inherently distorts without any compensating advantages whatsoever."

- John Renshaw Carson, chief theoretical mathematician, Bell Telephone Laboratories, February 1922

"The real difficulty in [television] is that it is probably scarcely worth anybody's while to pursue it."

- A. A. Campbell Swinton, electrical engineer and television visionary, 1924

"While theoretically and technically television may be feasible, commercially and financially I consider it an impossibility, a development of which we need waste little time dreaming."

- Lee DeForest, radio pioneer, 1926

"The elaborateness of the equipment required by the very nature of the undertaking precludes any possibility of television being available in homes and offices generally."

- Walter S. Gilford, president of AT&T, April 7, 1927

"...it is known that the human face can be satisfactorily reproduced by a 50-line screen."

- Herbert E. Ives, "Television," *The Bell System Technical Journal*, October 1927

"Some new uses for television: For the toilet -- enabling the televisioner to see the back of his head when brushing his hair."

- *Television*, March 1928

"The public is not going to buy picture receiving apparatus [only] to have itself exploited by advertisers."

- "Picture Broadcasting Must Contain No 'Ads,'" *Radio Broadcasting*, May 1928

[Video recording is] "merely a scientific curiosity."

- Sydney Moseley, "Television To-day and Tomorrow," 1930

"It may be said without fear of contradiction that the pleasure and satisfaction of a telephone conversation are enhanced by the ability of the participants to see each other."

- Herbert Ives, Bell Telephone Laboratories, 1930

"We have heard so much about Television lately that we are apt to forget that no portion of the apparatus used is foreign to scientists."

- J. Buckingham, "Matter & Radiation," 1930

"The over-enthusiastic televisionists are making their big mistake in thinking that television will repeat the glamorous history of radio broadcasting, when every sign indicates it will not and indeed cannot."

- *Radio Design*, Fall 1931

"There is no hope for television by means of cathode-ray tubes."

- John Logie Baird, television pioneer, 1931

"Cathode-ray tubes are the most important items in a television receiver."

- John Logie Baird, television pioneer, 1940

"All that can be done with television, short of actual and studied experience with it in the field, has been done."

- David Sarnoff, president of RCA, chairman of NBC, 1935

"The quality of television pictures, together with the cost of production of receiving apparatus for small home screens, have taken such a satisfactory turn in the last few months that... we might say that the art has now reached a state in which an intelligent man might almost take an interest in it."

- John Wilson, Fellow of the Royal Television Society, 1935

"Television won't matter in your lifetime or mine."

- Richard Lambert, *The Listener*, 1936

"There can be no doubt that high definition television is one of the most remarkable technical achievements of our times."

- E. E. B. Mackintosh, Director of the London Science Museum, 1937

"We shall stand or fall by television -- of that I am quite sure."

- E. B. White, author, 1938

"The problem with television is that people must sit and keep their eyes glued to the screen; the average American family hasn't time for it"

The New York Times editorial, 1939

"The number of lines has changed many times since 1934, and I hold the view that the 525-line standard may very easily be changed in the next few years."

- Dr. D. C. Espley, Institution of Electrical Engineers, 1945

"The supply of TV channels under the new rules exceeds the demand."

- *Television Digest*, September 1, 1945

"Television won't be able to hold onto any market it captures after the first six months. People will soon get tired of staring at a plywood box every night."

- Darryl F. Zanuck, president, 20th Century Fox, 1946

[After a TV program has been seen,] "It's gone and nothing can be done about it."

- Orrin Elmer, "The Future of Television," 1947

"Television is not really complicated but is kept in a state of confusion by the engineers who use abstruse technical terms to hide their ignorance."

- Senator Edwin C. Johnson of Colorado, October 14, 1949

"Fundamentally, television exists only at the instant of its transmission and then is gone forever."

- Richard Hubbell, "Television Programming and Production," 1950

"Television does not provide storage; film does."

- Raymond Spottiswoode, "Film and Its Techniques," 1951

"Why not pick up the new full-length motion picture at the corner drugstore and then run it through one's home TV receiver?"

- Jack Gould, *The New York Times* TV critic, April 22, 1956

"You could fill a single wall of a house with 3-D TV -- and no special glasses involved."

- George Crowley, VP engineering, Philco, in *Forbes*, May 15, 1967

Of home video: "I immediately thought of videotape but quickly discarded the idea because it would cost too much."

- Peter Goldmark, CBS inventor, 1973

"A whole audience, reacting in different ways to different aspects of the [video] presentation, probably could be satisfied with a rate of information clues not greater than a few thousand bits per second."

- Donald Fink, member of the committee that created NTSC television, 1981

"For all these reasons, the computer industry, along with key members of the Hollywood community, favors an approach through which the best standard—a single, simple and extendable format—will be developed and supported by all the affected industries. Such a standard could then be endorsed by the F.C.C. and implemented quickly."

- Eckhard Pfeiffer, Compaq CEO, *The New York Times*, October 20, 1996

"What's more, in this era of accelerating high-tech product cycles and converging voice, video and data, any effort to mandate formats is sure to impede innovation directed at new generations of digital products and services."

- same Eckhard Pfeiffer, Compaq CEO, same *New York Times* article, October 20, 1996

Not to let myself off the hook, although a case might be made that I predicted the DVD, flat-panel TV, and even the iPhone's zooming pinch decades ahead of their introductions, I also predicted entire movie libraries contained on a single matchbox-sized crystalline memory, voice control of all post production, and Telesex.

Sigh.

Maybe someday.