

Why Do Good Ideas Fail?

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AT&T squarely faced the question in 1972 when the company halted further commercial deployment of the Picturephone. A technological marvel, the Picturephone was a video communication system that worked over existing telephone lines. Management imagined a profoundly disruptive device. The “next best thing to being there,” the Picturephone would reduce the need for frequent travel yet encourage people to connect in new ways.⁸⁸ Unfortunately, although it makes an appearance in *2001: A Space Odyssey*, the Picturephone was not so long lived. Consumer uptake was lackluster. Two years after commercial distribution began in 1970, there were still only forty-six subscribers in Chicago.⁸⁹

Even prior to COVID and the turn to video conferencing platforms like Zoom, the Picturephone’s technology impresses undergraduate students when asked to examine this business history case study. They were often surprised at the product’s failure. To a generation at ease with Zoom, Skype, and other videoconferencing programs, the Picturephone is a conundrum that draws students into an investigation of the challenges inherent in innovation. While there is a great deal of mainstream discussion of innovation and its virtues, there is still much to learn about the process. By testing several explanations for the Picturephone’s failure through in-class discussion, students gain insight into the challenges inherent in innovation as well as reflect on their own experience with video conferencing and new technologies.

The exercise goes like this: the class is invited to suggest reasons why the Picturephone failed. They examine images and videos (available on YouTube) of the Picturephone but are not assigned specific articles. They are instead told the story, shown marketing materials, and asked to respond based on what they think they know about innovation.

Students quickly raise the problem faced by many entrepreneurs that an idea may be good, but the technology is not available to make it feasible. The Picturephone was, however, remarkably advanced for its time and made use of very new technologies, including the integrated circuit. Handsomely designed and sporting a 5.5x5 inch black and white screen, its camera was integrated into the unit and self-adjusted to different lighting conditions. The quality of the video transmission was judged about the same as a television picture.⁹⁰ AT&T had also designed the Picturephone to interoperate with new digital technologies coming online on its network.⁹¹

But a good technology may not always have an application. AT&T management was excited about the addition of the “visual sense” to voice technology. Market studies, however, revealed that even corporate clients had trouble finding uses for the device that would replace a voice call. This pushed AT&T to focus on the graphic capabilities of the Picturephone, adding a mirror so that document images placed on a table could be visually transmitted. Strikingly for a time when the predecessor of the internet was just emerging, the Picturephone was also able to interface with mainframe computers. In these ways, the Picturephone anticipated needs later met by the fax machine and the internet.⁹² But businesses and consumers were not responsive in 1970.

⁸⁸ Bell Laboratories Record (Murray Hill, N.J.: Bell Telephone Laboratories, May/June 1969), 135.

⁸⁹ Jon Gertner, *The Idea Factory: Bell Labs and the Great Age of American Innovation* (Harmondsworth: Penguin, 2013), 264.

⁹⁰ Bell Laboratories Record, 138.

⁹¹ *Ibid.*, 140.

⁹² A. Michael Noll, “Anatomy of a Failure: Picturephone Revisited,” *Telecommunications Policy* Vol. 16, no. 4 (1992): 290.

Students often expect that AT&T did not pay attention to its customers. Yet the company went to great length to solicit consumer feedback, commissioning numerous studies and trials over the years. But such market research is known to have several limitations, especially when applied to disruptive innovations. People may gush about the novelty of emerging technologies, but actually not be willing to use them in the long-term. They may also not immediately know what to do with radically new products (because they are so unusual). Finally, confirmation bias may shape the interpretation of decision-makers. In AT&T's case, managers focused on positive market research about the Picturephone and discounted significant evidence of consumer misgivings. Often students admit that they find very new technologies intriguing, but they are not actually sure that they would actually use them at home given the cost (i.e. 3-D printing).

The Picturephone also illustrates early adopter problems often associated with innovative products. The device was expensive, a problem common to emerging technologies until they are produced at scale. This challenge points to an issue with networked devices described by Metcalfe's Law.⁹³ Simply stated, the effectiveness of network equipment expands with its network. The problem is circular. The Picturephone had a small user base, crimping its usefulness. This may have dissuaded more customers from joining the network and so the network stayed small. Observing this dynamic can also lead students into wider conversations about why certain networks succeed, such as Facebook, and others fall into disuse (remember Friendster?).

No single explanation is necessarily correct or comprehensive – students are encouraged to debate the failure of the Picturephone as well as the meaning of failure. In a post-COVID world students can also explore their own experiences of social attachment or detachment mediated by technology. Has COVID and the turn towards video communication transformed the nature of work permanently? Building on this discussion, students might also debate “turning points” where world-historical events radically transform business and society. By raising these questions, the Picturephone case study suggests the complexity of innovation, and offers important lessons to a generation that has been encouraged to better the world by becoming entrepreneurs and change-makers.

⁹³ Gertner, *The Idea Factory: Bell Labs and the Great Age of American Innovation*, 264-265.