

The Future of the Home Video Phone? Explorations of Domestic Video Chat Usage

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The idea of a home video phone dates back to the late 1960s and early 1970s when AT&T originally developed and marketed a ‘Picturephone’: a small standalone device that transmitted audio and monochrome video to a second device over telephone lines [Noll 2002, Lipartito 2003]. The public reacted generally negatively towards the technology (and perhaps its marketing) and the Picturephone was pulled by AT&T. Despite the potential for communication success, the Picturephone’s failure was blamed on the privacy concerns of consumers, cost, market timing, and an inherent lack of need for video communication [Noll 2002, Lipartito 2003]. Yet times have changed and we now see families adopting and using video chat technologies to communicate with family and friends quite readily [Ames et al. 2010, Judge and Neustaedter 2010, Kirk et al. 2010]. This raises the question: Is there a future for a *home video phone* and, if so, how might one think about designing it?

Over the past several years, we have conducted a number of studies in our research group on the use of video chat by various demographics including parents and children [Judge and Neustaedter 2010], grandparents and grandchildren [Judge and Neustaedter 2010], long-distance partners [Neustaedter and Greenberg 2012], and teenagers [Buhler et al 2012]. We have also designed and evaluated several futuristic video chat systems, the Family Window [Judge et al 2010, Neustaedter 2013], Family Portals [Judge et al 2011], the Family Room [Oduor and Neustaedter 2014], and Peek-A-Boo [Neustaedter and Judge 2010], which are similar in concept to a home video phone, yet with the focus on always-on video. We have also evaluated a commercial video chat system called Perch that encompasses many attributes that might exist in a future home video phone.

Our research has shown that people would value the ability to video call others from within the home, and they have even found value in features that go beyond what some may consider being the core feature of a home video phone: a simple video call. These include features that allow one to determine availability information prior to connecting with someone, along with mechanisms to support connections of an always-on or long-term nature. Certainly such long-term connections are not for everyone. Our research points out very clearly that always-on or open connections will be valuable for people who share a close personal relationship. Connections with other people may be shorter video calls, or they may even be just audio calls if an existing relationship is weak or non-existent (e.g., a stranger).

Our research also paints a picture of how one might design a home video phone of the future. We see a clear need for it to be one or more dedicated device in the home that are portable and focused solely on supporting video telephony. To be successful, a home video phone would also need to ensure users felt fully in control of when and how they used it. Of course, we already see a variety of attempts to bring concepts like a video phone into the home. For example, some televisions contain video chat functionality via Skype. Some gaming consoles and set-top boxes also support video calling amidst the myriad of features that the devices support. Video calling is also easily available in the home via laptops and smartphones (e.g., FaceTime on an iPhone). Certainly people can use these devices to video call others, yet we would argue that they do not represent the ideal scenario for home users. Multi-purpose devices pose challenges for users to keep the video chat system running and available because they multi-task on them. Existing video chat technologies also do not easily support the long-term connections that our research has found to be very valuable for sharing aspects of everyday life with remote family members.

Based on our studies of Perch, we have also uncovered additional ‘bootstrapping’ issues to having families adopt and use a home video phone. In order to be successful on a large scale, a critical mass of users needs to first exist for families to call and connect to using video. Clearly any initial home video phone designs will need to work in conjunction with or be complementary to existing home telephony services. This would allow users to still connect to

their existing network of family and friends using the same technology, and gradually increase their ability to video call others as more people adopt the new technology.

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