

B. M. K. Bandara

EP 551

Physical Sciences and Technology

Sabaragamuwa University of Sri Lanka

Introduction to Holographic TV

A new breaking news came from the blogosphere about the possibility of mankind to finally achieve a real and complete hologram effect towards our screen. 3D TV is still in its infancy, and we are already looking towards the next big thing, Holographic Technology. There are suggestions that this technology could be ready for launch even before the current 3D TV tech has had a chance to get off the ground.

It seems to have been awhile since anything exciting has happened in the realm of the television market, with the long reign of standard plasma, DLP and LCD **HDTV**. In '08, there was the world's first Laser TV: a technology that utilized lasers to create an on-screen display many times more vibrant and crystal-clear than your standard HDTV. Then, there were talks of **OLED**: a super thin screen that needs no backlight, slated to make LCD TV technology obsolete, currently under development by Sony and Samsung. Take a side-step into the upcoming world of **3D TV**...it's not quite holographic, but makes objects appear in that quasi-3D way you've experienced in movie theatres...just without the glasses!

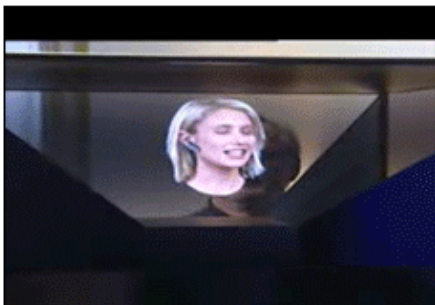
Many steps ahead, however, is **Holographic TV**. Currently nothing more than a speculation, there are theories as to what Holographic TV will be like and how it will perform.

Holographic TV Development & Progress

While in its earliest stages of development, holographic TV is a technology that is being given serious attention from Japanese technology companies, of whom are hoping to have the technology hit the consumer market by the year 2020.

In 2008, researchers at the University of Arizona were able to develop a breakthrough technology: the creation of an updateable 3D display. While this particular display could only be updated after several minutes, there is now hope that it can be further developed to eventually fulfill the need of updating that image several times per second -- a feat that would be required for holographic TV.

There are very few emerging technologies today that have developed equipment that comes 'close' to the true vision of hologram TV. Amongst them are:



- **Cheoptics360** (pictured on upper right): Developed by Vide, Cheoptics360 is a technology utilizing four hologram projectors to project an outbound image. It can be seen from all angles, and has surprisingly good contrast. This is thought of as the most advanced attempt at creating true holographic TV imagery.



- **Claro Holographic TV** (pictured in middle right): You have probably never heard of Claro, but their attempt at an early holographic TV display has been known as a breakthrough in the field. It displays an image through a hologram projector through transparent glass. While not truly "holographic," it's as close to 3D TV as seen thus far.



- **UberCoolHome Uber-Graph** (pictured on lower right): Little to no information can be found on this semi-holographic television set. Only 100 of them were made, and one was infamous for being sold on eBay for a starting bid at over \$10,400.

How would Holographic TV works?

There's not much information hypothesizing how a holographic TV set would work, but early ideas hint at a "screen" or a sheet of glass or plastic in which a **hologram projector** would draw the image through. Currently, it is thought to eventually provide a floating 3D "virtual reality" view of a motion picture image, in which the image and its components can be viewed from all angles, regardless of where you are standing in relation to the projection.

Advances in Holographic Technology could have far-reaching Implications

The applications for such a system could essentially change our daily lives. The lead researcher of the development, Nassar Peyghambarian states that "It can be a game changer in some industries." He also states that "the first that come to mind are product demonstrations and giving the ability to actually see a product in 3-D before the money is spent to build it.

It also could, for instance, immerse prospective tenants in their new office suite or show hotel mavens the interior decorators' vision for their remodeled rooms." Beyond making a milestone television viewing experience, holographic TV technology is thought to also develop major applications in the medical and military display fields, as well.

Some other applications could include 3D mapping technologies, entertainment, remote guidance during emergency situations, remote video conferencing, manufacturing, and a myriad of others. As you may have guessed, it would also revolutionize the gaming market, as 3D imagery could be rendered to display the elements of games from first-person shooters to auto racing.



Like every other advance in technology, it will take some time to perfect before it's brought to market but it seems that we may not have to wait too long. The current system only displays in one color, but it perhaps in another decade or so, commercially viable holographic television screens could start hitting the shelves.