IOSR Journal of Engineering (IOSRJEN) **www.iosrjen.org**
ISSN (e): 2250-3021, ISSN (p): 2278-8719
Volume 11, PP 40-43

A New Way of Viewing Television

Mohan Kumar[1], Manoj Mishra[2], Bhavin Shah[3], Nilesh Gode[4], Divya Sharma[5]
[1,2,3,4,5] *(Department of Electronics and Telecommunication, Atharva College of Engineering, India)*

Abstract : *Home display technology has evolved at a fast pace. In the coming years, we will witness big and unobtrusive 'lifestyle' surfaces that will be capable of covering the entire wall. With such capability we can have a better system that provides viewers with a collective and personal experience. This system will be able to adapt to multimedia.*
Keywords– *Adapt, Home display, evolved Surfaces, Viewers*

I. Introduction

When the television is switched on the size of the picture may well be inappropriate for the type of content and engagement of the occupants of the room. The wall or corner is occupied by a dark and dull object when the device is switched off. Science Fiction overcomes such concerns by assuming an invisible and scalable screen. Science Fiction has also assumed an intelligent management of presented material. In the same way today's screen, projection and graphics technologies are slowly and steadily bringing us closer to a reality of the vision of Science Fiction. We already have sophisticated devices offering touch control .and each year we are seeing ever more sophisticated gesture and voice recognition. .Our role in this opportunity space will be to create the technologies that integrate such components to produce a sophisticated and intuitive user experience that matches content and mood, and which produces pictures of an appropriate size and position for each circumstance.

II. Vision

Our vision of the future is of a viewing environment with one or more large display surfaces. Surfaces that are a) frameless, b) unobtrusive, c) ultra high-definition and d) ambient. A prototype was constructed and demonstrated at both IBC 2011 and CES 2012. This prototype has a single surface occupying most of one wall and a photograph of this is shown in figure 1. This shows a single surface constructed from six screens and one of several companion devices that may be used simultaneously to control and interact with the system.

Fig 1*. Prototype System*

III. Immersion

In our system we have introduced the concept of 'immersion'. Immersion is key to the way that the surfaces are used and the way that the content is presented on them. Examples of high and low immersion are shown in figures 2 and 3 respectively, which are screen captures taken from our prototype system. In figure 2, we see how the video roughly shares the surface with other social, voting and advertising graphics and content sources during the scene setting and build-up to the main performance. By comparison, figure 3 shows the high immersion example where the program in figure 2 has moved on to the main performance, and the related items have been removed, and the video increased in size and prominence.

Fig 2.A low immersion example

Fig 3. A high immersion example

IV. Technological Motivators

1 Displays

Display technology is continually improving. We have seen that relentlessly the average screen size is increasing year by year,

Transparent displays are starting to be developed. These would allow the blending of displays into the room environment.

2 Video Content

We are starting to see the next jump in resolution beyond HD with the advent of 4K – both in displays and in content.

3 Non video Content

Outside the display arena, we are seeing ever more related data sources, from social media through games to dedicated websites.

V. Breaking The Screen Boundaries

Content need no longer necessarily fill the display surface, and the display surface can simultaneously be used for many different components. These new capabilities mean that the traditional means of laying out video and graphics can be challenged.

1 Real Object Size

The tradition of a television picture scaling up to fill the display means that an object is effectively

displayed at an unknown size. It now seems realistic to allow an object to be displayed at its real size, regardless of the display For instance, in advertising it could be interesting to show just how thin the latest phone really is, just as is possible in print media today.

2 Content Opportunities

There are numerous areas where this technique opens up new opportunities. For example:

1. Editing could become more subtle with gentle fades, and several scenes can co- exist for longer and with less interference.
2. Content need no longer be fixed into a given size.
3. Multiple synchronized videos could be used.

VI. A Companionable Experience

The growing importance of companion devices (tablets, phones, laptops etc) to the modern TV experience cannot be understated. Such devices permit us to construct an experience which is, at the same time, both collective (involving everyone in the room) and yet personal (allowing each person to interact with the various elements as they wish).The companion devices are able, within constraints, to adapt the content on display, including adding or removing components or re-arranging the layout. An example of this is interface is shown in the iPad screen capture of the web-browser in figure 5, where, for instance, the display can be re-arranged by dragging around the icons representing the parts of the content displayed on the surface.

Fig 5. A Companion Application Interface

VII. A Surfaces System Architecture

The prototype system was built using computer with six outputs which consisted of an AMD graphics card in a powerful Personal computer. The software was built on standard HTML5 technologies such as javascript and CSS transitions. A standard browser was used. This helped in a fast and flexible development.

A high-level overview of the architecture is shown in figure 6. This shows two separate surfaces, each driven by its own client. These clients then interact with the layout and synchronisation server(s) to ensure a consistent experience across the surfaces. The diagram shows the audio driven from only one surface. This has been done to simplify the architecture.

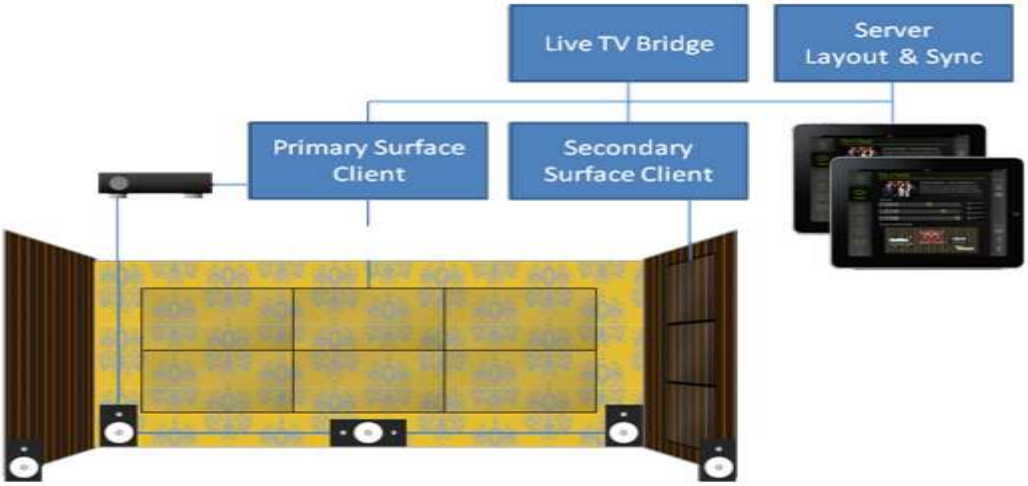

Fig 6. A New Surfaces Architecture

This architecture provides a reliable synchronization between different clients to a level that is acceptable for lip synchronization. Much of the required functionality appears to be relatively easy to implement in the proposed Web Audio APIs that have recently become available on various platforms This makes implementing the required audio architecture within an HTML5 environment simple.

VIII. Conclusion

The black boxes in our rooms will slowly disappear. Unobtrusive, frameless, ultra high definition ambient surfaces will take their place. Surfaces will require a complex automatic layout control engine. The PC based solution begins to give way to a believably scalable and cheap hardware and software architecture. The role of television in our lives has changed as other devices have fought for our time and won our attention. Families like to spend time together, sharing space and switching between personal and collective experiences. A surface is a means to explore this space. Television will not be marginalized. Families will find a new way of viewing Television.

References

[1] High-PerformanceDynamicGraphics Streaming for Scalable Adaptive Graphics Environment, SuperComputing 2006, November 11-17 2006. http://www.evl.uic.edu/files/pdf/SAGE-SC06- final.pdf.

[2] Web Audio API, Chris Rogers, W3C, https://dvcs.w3.org/hg/audio/raw- file/tip/webaudio/specification.html

[3] Of LargeLCDs,UnusedFabs,andProjectorKillers,PetePutman, Display Daily, April 9th, 2012. http://displaydaily.com/2012/04/09/of-large- lcds-unused-fabs-and-projector-killers/

[4] Responsive Web Design, Ethan Marcotte, 2011, ISBN 978-0-9844425-7-7, http://www.abookapart.com/products/responsi ve-web-design