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Multi-Option User Interaction System

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Introduction

How users interact with media devices has changed little over recent decades with the last major development being the invention of the remote control. A small keyed device which enabled users to control their media devices at a distance, the remote has proven a big success and resilient device for use across all media devices.

It isn't that technology hasn't advanced, just that the application of new technology to media devices has remained relatively stagnant with the assumption being that users should be content with remote control devices.

Red Skies Limited is working to challenge this point of view by developing new interaction devices built on ground breaking new control technologies. Such systems include the clever application of touch screen technology, gesture control technology, voice control and control via paired tablet and mobile devices. These technologies can complement traditional technologies such as the remote control and physical control panels on the device to offer more natural and enjoyable forms of interaction with a host of media devices from TV to Blu-ray players.

This whitepaper provides an overview of the media system interaction technologies being developed by Red Skies Limited for all forms of media device.

Problem Statement

There's an assumption that remote control devices and physical control panels are the best way to control media devices in all situations with little development being carried out to look at new forms of control.

Clearly this view is incorrect since there's a broad demographic of users using media devices with a range of preferences as well as disabilities that necessitate the development of new forms of device interaction.

Remote controls can be small and hard to control for some people, they can be lost and only allow a single person to interact with a device, they can have limitations of range, they can be a problem for the visually impaired and they often result in collections of remote controls being accumulated for multiple devices in the home.

Solution

Red Skies Limited is conducting a research and development program to develop a wide range of alternative interaction technologies which can be employed by electronics companies or directly by home users to improve their media access experience.

This allows users to use more natural forms of interaction depending on their individual personal preference and circumstances. Working with partners in the electronics, media, marketing and service sectors, we are helping companies to embrace these new technologies to offer richer solutions to their own customers. Red Skies Limited also provides demonstrator devices that demonstrate the potential of all these control mechanisms as well as commercial devices to the high end media markets.

- Remote Control

The remote control will remain a popular form of control for a long time to come. Our demonstrators all continue to support this form of interaction as it remains a preference for many consumers today. We believe there is scope to improve on the humble remote control concept and continue to look at new ways of viewing and using remote control devices in the home.

- Keyboard and mouse

Not traditionally associated with media devices, the keyboard and mouse can still be a useful form of control device when used in more complex media systems, especially those that also include features such as web access, gaming and rich applications such as HTML5 Metro style apps. Such devices include gaming consoles, high end home media systems and other new forms of home media system.

- Touch Screen

The more recent low cost of touch screen technology makes this a useful form of control where users are close to the display system and wish to use a device without additional control hardware. In many environments such as hotel lobbies, shops and office buildings we are starting to see an increase in touch screen technology as a convenient way to interact, whether in information retrieval kiosks or in public display and advertisement devices.

This technology however can be just as effective in the home for more traditional media devices.

Having the capability to touch an actor on screen to find out more information about the actor or as a way to quickly turn the device on or off or mute the device can be a very powerful and convenient media feature.

- ***Gesture Control***

While touch screens provide a natural form of interaction, it does suffer from needing the user to be close to the device and can have other drawbacks such as leaving marks on the screen from dirty fingers.

Gesture control technology takes the ideal of natural forms of interaction to the next level by allowing users to control devices at a distance just using programmable natural motions.

Raising and lowering the arm to control volume, motions to change channels, to mute, to pause, rewind, to switch off and any other action provide a very natural form of interaction that doesn't depend on any physical control device.

This form of control device is now starting to find its way into the home within gaming systems although the broader application to other media devices is still in its infancy.

- ***Voice Control***

While it's possible to explain to someone what you want using pictures, text or gestures, the most natural way to relay information is still by voice.

This should not be undervalued in media devices as a mechanism for controlling devices in a very natural and powerful way.

Whether sitting, standing or whether the user is able bodied or not, being able to instruct the device by voice to change channel, volume or to rewind, forward, pause, play or any other action is a truly empowering control system.

- ***Tablet and Mobile Control***

Another powerful form of control is through the use of mobile devices such as mobile phones and tablet computers. An increasing number of consumers already possess such smart devices which can replace many remote control devices through a single powerful smart control system.

As well as providing remote control features over a home network, the technology can extend to allow more advanced functions such as calling up information about running media from remote web services or remotely controlling devices while away from the home.

Red Skies Limited is actively researching and developing these and other forms of service to build on the power and availability of smart devices.

- ***New technology for control***

As well as the technologies above, Red Skies Limited is actively researching other new forms of control device such as Microsoft's surface technology and the use of electromagnetic fields to allow control to be handled by any object from a wall to a chair arm.

As well as our own research programs, we are constantly monitoring new academic research being carried out such as the combination of electronics with human nerves and brain monitoring sensors for controlling remote devices. While most of the work is not suitable for current media devices, it is likely that derivatives of this research will result in practical new forms of control device.

Time spent investigating new academic research is time well invested as new technologies develop, mature and come to market.

Future

Most of the technologies outlined in this document are available for demonstration today and can be employed in any media device to provide highly natural and effective forms of interaction and control.

Looking ahead, Red Skies Limited is committed to exploring new technologies from bio to mechanical for ever more natural forms of control.

Only by working with partners in the industry can we identify and develop the technologies that will keep people excited about new media systems.

Conclusions

We at Red Skies Limited are passionate about the development of new media technologies, including new interaction devices and we continue to be excited about the new possibilities that such technologies opens up to consumers.

Today is a very exciting time in the worlds of film, broadcast, music and videogames and we look forward to working with partners on innovative new technologies to empower users of new media devices.

Red Skies Limited is a provider of enterprise level online services and technology as well as an independent software and technology R&D company.

We are always keen to work with new partners in film, broadcasting, music, electronics, videogames and marketing on new technologies and services.

We do provide high tech demonstrator hardware to showcase technologies such as new interaction devices to help partners to identify possible areas of research and development within their own organizations.

Our goal is to help the sector to develop new technologies while opening up new media and software services that take advantage of these new technologies in the home.

This enables our partners to develop exciting new technologies while we are able to provide new services to users of such technology in the home.