Study of Sixth Sense Technology

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ABSTRACT

The 21st century depends entirely on technology. The importance of technology is everywhere such as in health, finance, education, corporate world etc. The technology which we use is constantly evolving due to which innovations takes place very frequently in today's world. Integration and collaboration of six sense technology. In this field we define what is six sense technology, its working ,component, application and its advantages and disadvantages of six sense technology.

Keywords:-

Working of six sense technology; component; application and advantages of six sense technology

INTRODUCTION

The 21st century depends entirely on technology. The importance of technology is everywhere such as in health, finance, education, corporate world etc. The technology which we use is constantly evolving due to which innovations takes place very frequently in today's world.Integration and collaboration of six sense technology in the classrooms will be a new concept over the virtual classrooms and online teaching concept. As virtual class rooms have the limitations of expensive hardware setup, this concept will help to establish the classrooms without computers, desktops, projectors etc. Infact This classroom structure can be setup without the need of internet. With six sense technology,Students without having the laptops and without being connected to internet,can do the research , can get information about any topic within the fraction of seconds.Information is basically confined traditionally on paper or digitally on screen. Six sense bridges this gap,bringing intangible digital information out into the tangible information. and allowing us to interact with them with the help of hand gesture, Sixth Sense technology (a camera combined with a light source) was developed in

1997 as a headworn device, and in 1998 as a neckworn object, but the Sixth Sense name for this work was not coined and published until 2001. Mann referred to this wearable computing technology as affording a "Synthetic Synesthesia of the Sixth Sense", believing that wearable computing and digital

information could act in addition to the five traditional senses.[8] Ten years later, Pattie Maes, also with MIT Media Lab, used the term "Sixth Sense" in this same context, in a TED talk.Similarly, other inventors have used the term sixth-sense technology to describe new capabilities that augment the traditional five human senses. For example, in their 2012-13

I. WORKING OF SIX SENSE TECHNOLOGY

The hardware structure of the six sense technology contains various components in which all the components are coupled in pendant like mobile wearable device such as

- Camera
- Projector
- Mirror
- Mirror component
- Color Markers

The hardware structure of the six sense technology comprises of a wearable pendant, mirror, camera, and projector and is connected wirelessly to Bluetooth or 3g or wifi Smartphone's that can be easily carried out in human's pocket. It has a camera that recognizes individuals, images, pictures, gestures that one make with their hands by gesture recognition. After the image is capture, it is send to smart phones for further processing. The downward projector works like a screen
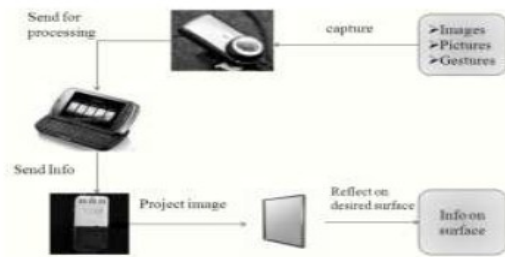
which projects output data and images.

Fig 1: Working of Sixth Sense Technology

A. Camera

This component is present at the head of the Sixth Sense Technology pendant. The function of this camera is just ike that of a human eye, the only difference being itwill

provide digital information. This camera is capable of capturing the images that fa

lls within its vision and also it provides information about the objects present in front of it The hand gestures performed by the user can be tracked with this component. Additionally, facial recognition is supported by this device. The information collected by camera is processed by the connected mobile component.
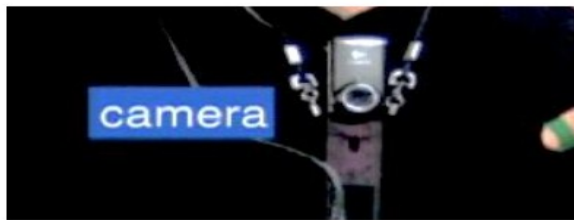

Fig 2 Camera

B. Projector

The projector is basically an output gadget which is used to display any information provided by the mobile component. Projector can project information on any kind of physical surface such as a wall, palm of user's hand, a paper etc. and the user can interact with it.

Fig3. – Projector

C. Mirror

Mirror is placed just below the projector. The projector can project the information in any direction with the help of a mirror which can be tilted in any direction as per the user's requirement.

Fig 4 Mirror

D. Mobile Component

One of the most important components of this technology is the mobile module.The function of this component can be carried out by any device such as smartphone, personal digital assistant, laptop etc. as long as it is mobile and web enabled. It is a processing engine that processes the data obtained from camera and sends the output to projector

Fig 5.- Mobile Component

E. Color Markers

This technology makes use of four color markers: red marker, green marker, blue marker and yellow marker. The user can wear these markers at the tip of their fingers which helps the camera to track hand gestures. These gestures can perform various tasks such as painting, taking a picture and many more.

Fig 6 - Color Markers

F. Microphone

This component is used only when the projection is to be done on a piece of paper. Microphone in form of a clip is affixed on that piece of paper. The information written by user on that paper is recognized by the camera by interpreting the sound of user's touch. The camera is also capable of detecting the motion of the paper held in hand

II. ADVANTAGES OF SIXTH SENSE APPROACH

Sixth sense technology features a user guide that makes it simple to use. There are important gestures using which people can easily learn without going through tutorials. There are various advantages of Sixth Sense Technology.

A. Capture Photos with Fingers

In order to snap a picture, the user has to make a rectangle in airas shown in Fig . The picture will be taken and it will be placed in memory card. A person can resize and edit it
whenever needed by projecting it on any hard surface like wall

Fig 7. - Capture images

B. Phone Dialler

Sixth sense can be added to our cell phones. Instead of carrying a cell phone in hand, a person can project the keypad on his palms and make calls just by touching the digital keys and press the keys as done in mobile phone.There will not be any limitation for screen and any medium can become an output medium Sixth sense in other words will bring the digital and real world together.

C. Read Books

In library, a person can easily check whether a particular book is interesting or not based on the rating and reviews of the book which is viewed as soon as the book is opened.This makes things easier and time efficient. People can easily decide whether to go for that book or look for another book.

D. Video Newspaper

Instead of reading a newspaper which has static images a person can view a video regarding particular newsas shown in Fig In this case,Sixth Sense pulled up a video onlineabout the same news that is published in the newspaper. This device can be used easily by all the people because it uses hand gestures which everyone uses in daily life.

Fig 8 -   Video Newspaper

E. Quality Check

In shopping malls, one can easily check the quality of food they are about to buy, quality and reviews of other products they wish to buy. This process reduces the customer-complaints list in the malls hence increasing the profits.

III.   VARIOUS APPLICATIONS

There are various applications of Sixth Sense that exhibits the efficiency, viability and flaccidity of the system.[2]

A. Make a Call:

This technology enables the user to call without using the dialer. The dialer will be projected as soon as user brings the palm in front of the device. The user does not need a mobile phone to make the call rather the virtual keypad it projected on the palm.

Fig 9 - Palm Dialer

B. Get Flight Updates:

The device can also tell the user whether the flight is delayed or is on time by looking at the ticket.

Fig 10.- Video Newspaper

C. 3D Drawing Application:

The drawing application of this device lets the user draw on any surface by tracking the tips movements of theuser's index finger.

D. The Clock:

The user just needs to make a gesture of a circle on the wrist and the clock with current time will be projected on the user's hand.

Fig 11 Video Newspaper

E. Motion Capture:

Using fingers the user can capture photos and no need to carry
an extra gadget. The box created by fingers act as a frame. These photos can be edited also or shared with people.

F. Video Newspapers:

This device also recognizes articles in the newspaper, retrieve
the latest related stories or video stream from the internet and then display them on pages for user. It had said goodbye to "dictionary and encyclopedia."

Fig 12 Video Newspaper

G. Book Information:

For book lovers it had proved to be a blessing as you just open any book and find the ratings of the book, also move to any page and get additional information. Similarly, we can find information about any product also.

H. Zoom In/Zoom Out[1]

This is the basic feature used by the students while doingcase study .The miniature content of the books can be magnified to focus more light on it. The user can zoom out or zoom in using intuitive hand movements.By the use of this technology, user can focus on deep study of the articles without using computer.Secondly, pictures can be magnified and contents can be deeply visualized.

Fig 13 Picture Zoom In / Zoom out

CONCLUSION

Use of gesture movement and speech integrated circuits has made sixth sense technology an emerging innovative idea. It provides us a smooth access to information that may help us to make crucial decisions The Sixth Sense is developed to seamlessly integrate information into real world. The future may depend upon the Sixth Sense. It can contribute an easy control over machineries and equipment's in industry. Hence, it can help in enrooting diverse applications for different developers and engineers upon how they imagine, innovate, what's their need and how they want. So, considering its widespread applications the inventor has decided to make it open source so it can be called as open source software. This technology can be a replacement ofthe 5thsense for differently abled people. This technology will bring a drastic change in the field of Science and technology.

REFERENCES

[1] Virtual Class room using six sense Technology "Meenakshi Gupta,2Shruti Sharma" IOSR Journal of Computer Engineering (IOSRJCE)ISSN: 2278-0661, ISBN: 2278-8727Volume 6,Issue4(Sep. - Oct. 2012), PP 20-25

[2] A Study on The Sixth Sense Technology and Its Various Security Threats"Aakanksha Chopra And Natasha Narang" International Journal of Information & Computation Technology.ISSN 0974-2239 Volume 4, Number 7(2014), pp. 663-670© International Research Publications Househttp://www.irphouse.com

[3] A Review Paper on Sixth Sense Technology"Jash Mehta, Nirav Nayani and Lakshmi Kurup" International Journal of Current Engineering and Technology E-ISSN 2277 –4106, P-ISSN 2347 -5161 ©2014 INPRESSCO®, All Rights Reserved Available at http://inpressco.com/category/ijcet

[4] Sixth Sense Enabled Campus-Possibilitiesand Challenges"Sindhuja Raghupatruni,Niharika Nasam,KeerthiLingam" nternational Journal of Computer Applications (0975 –8887)Volume 75–No.8, August 2013