



# JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

## SIXTH SENSE TECHNOLOGY

<sup>1</sup>Ijaz Ahammed K.M, <sup>2</sup>Dr.Sudheer S Marar

<sup>1</sup>Department of MCA, <sup>2</sup>Professor and HOD Department Of Computer Applications  
MCA,

<sup>1</sup>Nehru College Of Engineering and Research Center, Kerala, India

*Abstract : Sixth Sense Technology covers digital knowledge in the physical world and its things, to do worldwide your computer. It is not a technology intended to change human habits but what makes computers and other devices to be adaptation to human needs. It also supports multiple and multiple users touch offers. The Sixth Sense device is a small project combined with a camera and cell phone-acting as computer and your connection to the Cloud, everything information stored on the web. Current cost of model about \$ 350. The Sixth Sense prototype is used to launch several applications that have proven to be useful, functional and system flexibility. The Sixth Sense sees it objects around us and reflect related information those things in real time. Sixth Sense technology allows the user to share information hand gestures. This is a relatively effective method compared with text and visual image of the user. It has the ability to create a transparent user interface for accessing information around us.*

**IndexTerms – Sixth Sense Technology.**

### I. INTRODUCTION

We have changed for millions of years to feel the world around us. When we come in contact with something, someone or a place, we use our five senses, including the eye, the ear, the nose, the tongue, and the body to perceive information; that knowledge helps us make decisions and select the right actions to take. But no doubt the most useful information that can help us make the right decision is not naturally reflected in our five senses, which is the data, knowledge and information that humanity has accumulated and everything that is constantly available online.

Sixth Sense closes this gap, brings intangible, digital information to the physical world, and allows us to interact with this information through natural hand gestures. "Sixth Sense Technology", a new jargon that announced its presence in the field of technology. This technology emerges, which is related to the power of these six senses. Our standard computers will soon be able to sense the different emotions accumulating in the environment and it is all a gift of the recently launched Sixth Sense Technology.

Sixth Sense is a "touch-based" portable device that enhances the physical world with digital knowledge and allows people to use natural hand gestures to interact with that information. Developed by Pranav Mistry, PhD student in Fluid Interfaces Group at MIT Media Lab. A

student with a Fluid Interfaces Group degree at MIT, has created a storm with his creation of Sixth Sense. He says the films "Robocop" and "Minority Report" inspired him to create his vision of a world without computers, digital knowledge and human robots, but where computers and other digital devices enhance people's enjoyment of the world. Currently, we use our own "devices" (computers, cell phones, tablets, etc.) to access the Internet and get the information we need. With Sixth Sense we will use a non-major device there are modern phones and maybe ultimately as small as a button on our shirts to bring the internet to us so we can share with our world! Sixth Sense will allow us to engage with our world more than ever. We can get information from anything we want anywhere in just a few seconds! We can not only deal with things at a new level but also with people! A large part of the device is its ability to scan objects or people and display information about what you want.

## 2.1 What is Sixth Sense?



Figure 2.1: Six Senses

The sixth sensor in scientific (or non-scientific) terms is defined as an Extra Vision or simply ESP. It involves receiving information that has not been received through any of the five senses. Nor is it taken from any past or known experience. Sixth Sense aims to seamlessly integrate online knowledge and technologies into everyday life. By making available the information needed to make decisions beyond what we can achieve with our five senses, it gives users a sixth sense of success.

## 2.2 Earlier Sixth Sense Prototype



Figure 2.2: Earlier Device

Maes' MIT team, consisting of seven graduate students, was thinking about how one could be integrated into the world around them and access information without graduating. you have to do something like pull out the phone. They first produce a hand band that can read the Radio Frequency Identification marker so that they know, for example, what book a user has in store.

They also had a ring that used infrared to connect the beacon to smart supermarket shelves to give you information about the products. As we pick up a package of macaroni, the ring will glow red or green to tell us if the product was natural or no trace of peanuts - whichever way we plan on the system .They wanted to make the information more useful to people in real time with little effort in a way that did not require behavioral changes. The wristband was approaching, but we still had to pull out our cell phone to check the details.

It was then that they got into the idea of finding and surfing information online. So someone wearing a wristband can pick up a piece of paper from a bookstore and immediately order updates about the book, display themselves in the store or do a keyword search on the book by accessing digital pages on Amazon or Google Books.

They started with a larger toy that fitted to a helmet. But that would be difficult if someone exposed the data to a wall and then turned to a friend to talk - the data would appear on a friend's face.

### 2.3 Recent Prototype

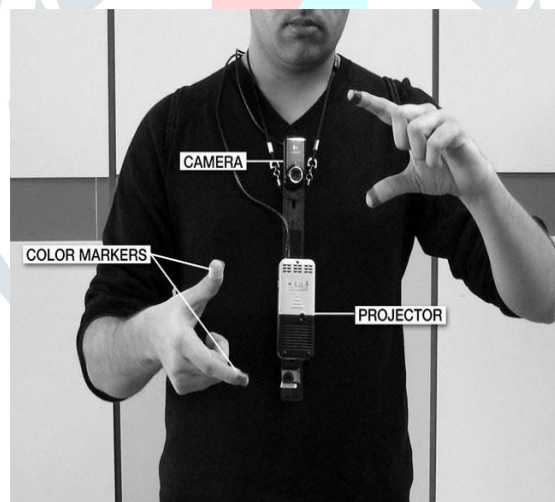


Figure 2.3: Present Device

Now they have switched to a small projector and created a pendant prototype to be worn around the neck.

The Sixth Sense prototype is made with a pocket projector, mirror and camera. Parts of the hardware are integrated into a removable hanging device. Both the projector and the camera are connected to a mobile computer device in the user's pocket.

We can really think of Sixth Sense Technology as a mix of computer and mobile phones. It works as the related device hangs on a person's neck and thus the first guess using a micro projector connected to the device. So, in reality, it turns into a computer that moves you and your fingers act like a mouse and keyboard.

The prototype is built with a standard webcam and a powerful 3M projector with a battery, and an attached mirror - all connected to mobile internet. The setup, which costs less than \$ 350, allows the user to project information from the phone to anywhere - the walls, someone else's body or your hand.

Mistry was wearing a device on the line around his neck, and the colorful four-color Magic Marker caps (red, blue, green, and yellow) helped the camera detect the four fingers and detect the touch of his hand with software created by Mistry.

### 3.WORKING OF SIXTH SENSE TECHNOLOGY

#### 3.1 Components

Hardware components are attached to the hangings as a portable portable device.

Camera

Projector

Mirror

Mobile component

Color Symbols

##### 3.1.1 Camera



Figure 3.1: Camera

A webcam captures and detects a visual object and tracks the touch of a user's hand using computer-based techniques.

Sending data to smart phone. The camera, in a sense, acts as a digital eye, detecting what the user sees. It also tracks the movement of the thumb and index fingers of both hands of the user. The camera detects objects around you quickly, with a microprojector covering information anywhere, including the object itself or your hand.

### 3.1.2 Projector



Figure 3.2: Projector

Also, the project opens up communication and sharing. The project itself contains an internal battery, with 3 hours of battery life. The project is a visual information project that allows the surface, walls and materials around us to be used as a meeting place. We want this thing to connect with the physical world in the real sense of the flesh. You touch that object and express information in that object. Information will look like part of something. A small LED projector displays data sent from a smart phone to any visible surface — object, wall, or person.

### 3.1.3 Mirror

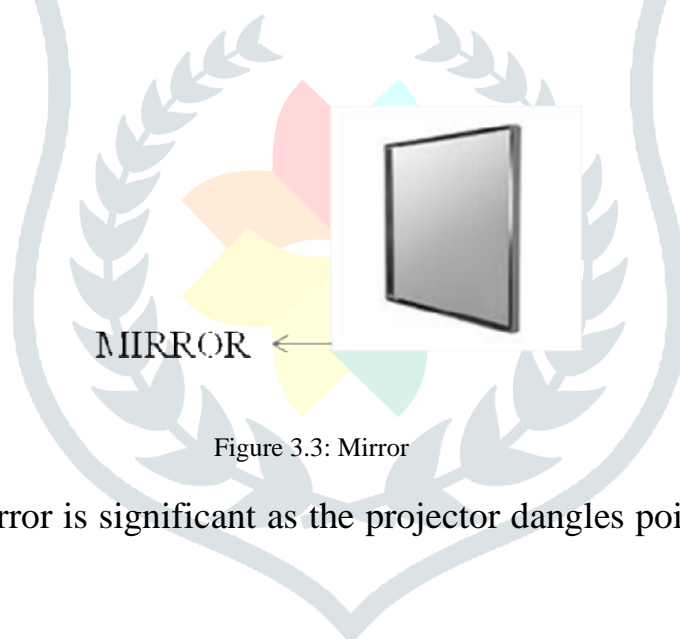


Figure 3.3: Mirror

The usage of the mirror is significant as the projector dangles pointing downwards from the neck.

### 3.1.4 Mobile Component



Figure 3.4: Smartphone

Mobile devices like Smartphone in our pockets send and receive voice and data anywhere with anyone via mobile internet. The compatible smartphone uses Sixth Sense software, and manages the Internet connection. A web-enabled smart phone in the user's pocket processes video data. Some software searches the Web and translates hand gestures.

### 3.1.5 Color Markers

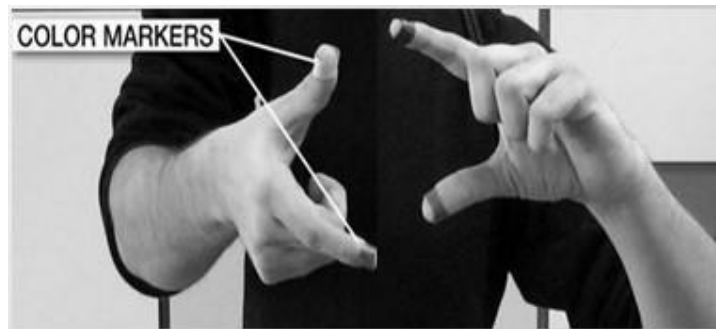


Figure 3.5: Color Markers

It is on the edge of the user's fingers. Marking the user's fingers with red, yellow, green, and blue tape helps the web camera to see the touch. The movement and organization of these creators is interpreted as touch which serves as the interactive commands of the proposed workspaces.

### 3.2 Working

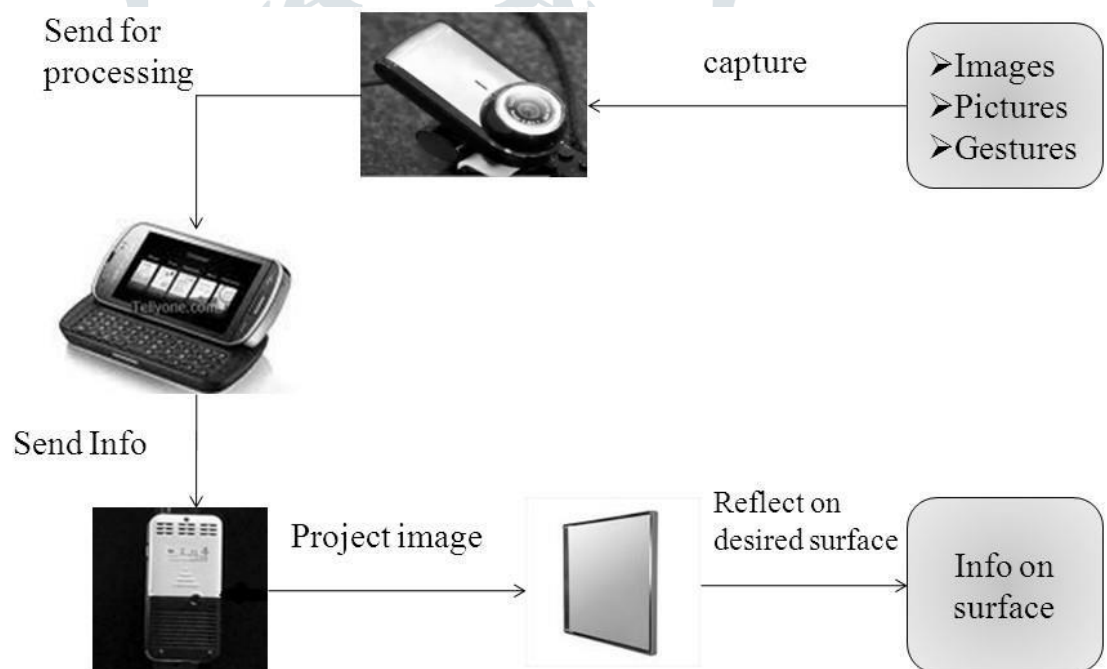


Figure 3.6: Working

Hardware that makes Sixth Sense work as a hanging connector. It has a camera, mirror and projector and is connected wirelessly to Bluetooth or 3G or wifi smart phone that can easily fit into a person's pocket. The camera sees individuals, photos, pictures, touch a person does with his hands data is sent to smartphone for further works. The downside project projectifies the image that emerges from the screen. The screen displays the image in the desired location. Therefore, digital knowledge is liberated from its limitations and placed in the physical world.

The entire hardware is connected to a portable hanging device. Basically the camera sees individuals, photographs, photographs, hand gestures and the projector helps

to expose any information from any type of environment in front of the person. The use of a mirror is important as the projector hangs down from the neck. Bringing diversity to the highest plane, in a short video broadcast to show the prototype in the world, Mistry uses colored caps on his fingers to make it easier for the software to distinguish between fingers, looking for different applications.

The software program analyzes video-captured video data and tracks the location of colored markers using a single computer visual detection technique. One can have any amount of hand gestures and movements as long as everything is identified and separated so that the system can interpret it, preferably using different and different fiducials.

This is only possible because the 'Sixth Sense' device supports multiple touch and multi-user interaction.

MIT basically plans to improve reality with a piccoprojector pendant: pick up an item in the store and the device blows the relevant information into it (such as natural statistics, for example), which can be browsed and used by hand gesture. The "sixth concept" referred to is the internet, which provides data naturally, and that can be almost anything - MIT displayed device information that reveals the person you meet at the party to that real person (pictured), to indicate the flight status at the pass, and all non-content interaction for reading email or making phone calls. Fascinating technologies, like many MIT Media Lab projects, make the wearer look like a complete dock - if the projector does not provide you, the colored finger straps the device you use to detect finger movements will certainly be possible.

The idea is that Sixth Sense tries to determine not only what a person is dealing with, but also how they interact with it. The software searches online for information that may be related to the situation, and the project takes over.

All work is in software, It should see the images you see, track your touch, and associate all the relevant details at once. "

The software detects 3 types of touch:

Multitouch touch, like the ones you see in Microsoft Surface or iPhone - where you touch the screen and make the map move by clicking and dragging.

Free touch, like when taking a picture [as in the picture above]. Or, you may have noticed in the demo, because of my culture, I made a namaste touch to start guessing on the wall. Physical touch, drawing an icon in the air. Like, whenever I draw a star, I show the weather. When I drew a zoom glass, I showed a map. You may want to exercise some physical exercises that you practice in your daily life. This program can be customized.

The technology is largely based on hand perception, photography, processing, transformation, etc. The map application allows the user to navigate to a map displayed in a nearby area using hand gestures, such as touch supported by multi-touch systems, allowing the user to zoom in, zoom out or pan using precise hand movements. The drawing app allows the user to draw in any position by tracking the movements of the user's index finger.

## 4.APPLICATIONS

The Sixth Sense prototype uses a number of applications that demonstrate the usefulness, efficiency and flexibility of the system.

The Sixth Sense device has a large number of applications. The following are a few of the applications for Sixth Sense Technology.

Call

Call the map

Check the time

Create multimedia reading information

Drawing app

Zoom features

Get product information

Find book information

Get flight updates

It feeds people information

Take photos

Check email

### 4.1 Make a call



Figure 4.1: Make a call

You can use Sixth Sense to generate a keypad in your hand, and then use that visual keypad to make a call. Calling a number will also not be a good job with the introduction of Sixth Sense Technology. No cell phone will be required, just type in a hand with your hand that acts as a virtual keypad. The keys will appear on the fingers. The fingers of one hand will then be used to dial and dial.



## 4.2 Call up a map



Figure 4.2: Map

The sixth sensor also uses a map that allows the user to display a map at any visible location and locate his destination and can use his thumbs and index fingers to navigate the map, for example, zoom in and out and create other controls.

## 4.3 Check the time

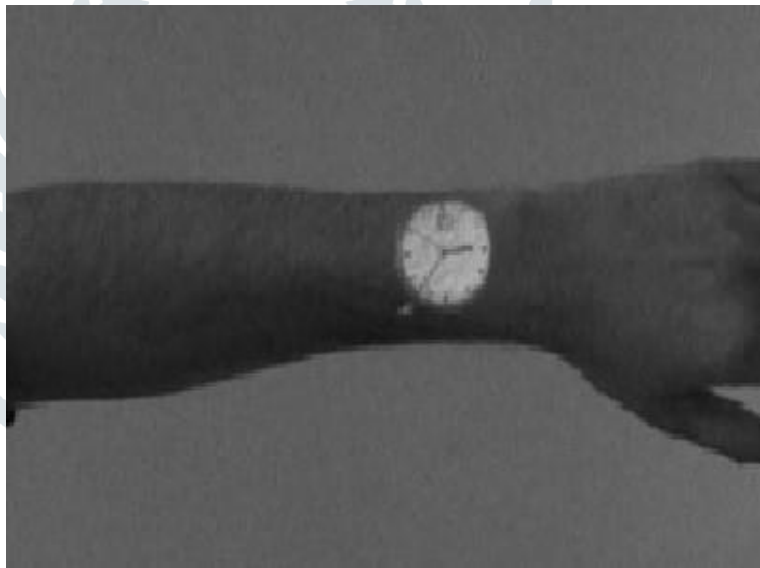


Figure 4.3: Wrist Watch

Sixth Sense all we have to do is draw a circle on our arm with the index finger to get a visual clock that gives us the right time. The computer detects a red mark or a piece of tape, detects a touch, and instructs a camera to light a clock image on his wrist.

#### 4.4 Create multimedia reading experiences



Figure 4.4: Video in Newspaper

The Sixth Sense system also augments physical objects the user is interacting with by projecting more information about these objects projected on them. For example, a newspaper can show live video news or dynamic information can be provided on a regular piece of paper. Thus a piece of paper turns into a video display.

#### 4.5 Drawing application



Figure 4.5: Drawing

The drawing application lets the user draw on any surface by tracking the fingertip movements of the user's index finger.

#### 4.6 Zooming features

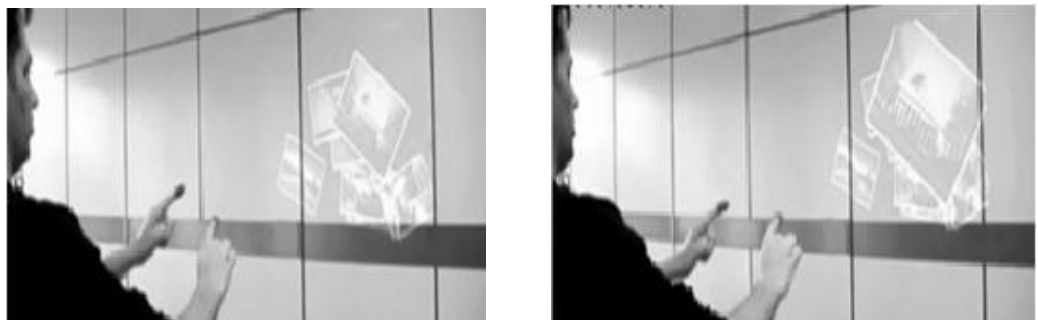


Figure 4.6: Zoom in and Zoom out

The user can zoom in or zoom out the image using precise hand gestures

## 4.7 Get product information

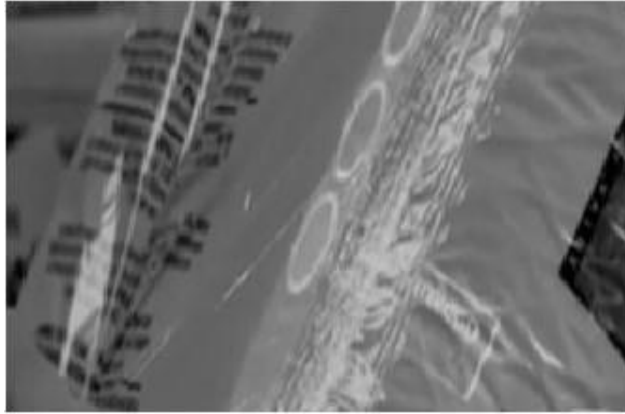


Figure 4.7: Product information

Maes claims that Sixth Sense uses image recognition or tagging technology to identify the products you select, and then provides you with information about those products. For example, if you are trying to buy "raw" and want paper towels with a small amount of bleach in them, the system will scan the product you are taking from the shelf and give you guidance that this product is a good choice for you.

## 4.8 Get book information



Figure 4.8: Book information

Maes claims that Sixth Sense uses image recognition or tagging technology to identify the products you select, and then feeds you the literature. The app can use Amazon ratings for that book, as well as reviews and other relevant information

## 4.9 Take pictures



Figure 4.9: Take Pictures

When we fashion our index fingers and thumbs into a square (the "self" "action, the system will take a picture. After taking the desired number of photos, we can display them in the space above, and use the touch to sort the images, resize them and resize them.

## 4.10 Get flight updates



Figure 4.10: Flight updates

The system will see your boarding pass and let you know if your flight is up to date and if the gate has changed.

### 4.11 Feed information on people



Figure 4.11: Information on people

Sixth Sense is capable of "highly controversial use". When you go out and meet someone, it reveals important information such as what it does, where it works, and can display tags about the person floating in his or her shirt. It can be handy if you show their facebook relationship status so you know not to waste your time.

## 5.ADVANTAGES

Sixth Sense is an easy-to-use user that integrates digital knowledge into the physical world with its elements, making the whole world your computer.

Sixth Sense does not change people's habits but makes the computer and other machines adapt to people's needs.

Uses hand actions to communicate with digital data.

Supports multi-touch interaction with multiple users

Accessing data directly from the machine in real time

It is an open and cost-effective source and we can post ideas anywhere

It is a portable touch-sensitive computer device that feeds our relevant information and transforms any space into an interactive display.

It is portable and easy to carry as we can wear it around our neck.

The device can be used by anyone who does not even have basic keyboard or mouse knowledge.

No more need to carry a camera. If we are going on vacation, from now on it will be easier to take pictures with just your fingers

## 6.CONCLUSION AND ENHANCEMENTS

Clearly, this has the potential of being a "clear" user interface for accessing information about everything around us. If they can get rid of colored finger caps and sometimes go beyond the first stage of development, that is. But as it does now, it can change the way we interact with the real world and give everyone a complete picture of our surroundings.

### ***Future Enhancements***

To remove color marks

Installing a camera and projector inside a mobile computer device.

Whenever we place a hanging device of a hanging style on the table, it should allow us to use the table as the interface for the multi-touch user.

Apply this technology to various interests such as sports, education systems etc.

To be able to follow the 3D touch.

Making the sixth sense work as a fifth sense for the disabled person.

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