Abstract

This paper is about the outrageous sixth sense technology, which is the beginning of a new era of technology where engineering will reach new milestones with a blend of many exquisite technologies. The thing which makes it magnificent is the marvellous integration of all those technologies and presents it into a single portable and economic product. Sixth sense technology has assimilated the existent world objects with digital world. The reason for this development is to compel the technology to adapt people’s environment. The appeal for this fact-finding is to explore and study about the enactment of this technique in Mouseless- the word which explains itself, Sparsh – transfer clipping of data through touch, Quickies- the intelligent sticky notes. Cloud computing used by sparsh is the practice of using a network of remote servers hosted on the Internet to manage, and process data rather than computer hardware..

1. Introduction

Sixth sense is a wearable gestural interface that enhances the physical world around us with digital information and lets us use natural hand gestures to interact with that information. It associates technologies like hand gesture to interact with that information. It associates technologies like hand gesture recognition, image capturing, processing and manipulation etc. It superimposes the digital world on real world.
Professor Steve Mann, in 1980s hypothesized that in the near future we would be living in a brand new world—earth filled with intercommunicating sensors that will generate a new layer of free digital information, superimposed on our world. It will allow everyone to communicate using the same open network of information, overlaid on our natural world. He emphasizes on how the technology in this evolution will change the way we live. First, they started with a larger projector that was mounted on a helmet, but this proved cumbersome which did not work properly. Then, this technology was developed in 1997 as a head worn device, and in 1998 as a neck worn object, but the Sixth Sense name for this work was not coined and published until 2001, when Mann coined the term "Sixth Sense" to describe such a device.

1.1 Objective
The main objective of sixth sense technology is to develop a medium for communication using augmented reality and to relate the existent world object with the digital world. This technology makes every object interactive and provides communication among all the objects.

![Figure 1: Original device of sixth sense technology](image1)

2. Proposed Model Of Sixth Sense Technology
A simple sixth sense device contains a pocket projector, a mirror and a camera contained in a pendant-like, wearable device. Both the projector the camera and sensors are connected to a coding device in the user’s pocket. The projector projects visual information enabling surfaces, walls and physical objects around us to be used as interfaces; while the camera recognizes and tracks users’ hand gestures and physical objects using computer-vision based techniques. The software program processes the video stream data captured by the camera. The movements and arrangements are interpreted into gestures that act as interaction instructions for the projected application interfaces.
3. Applications Of Sixth Sense Technology

We are furnishing an idea on how methodical several tasks can be done using the sixth sense technology. There are multiple applications of it, out of which we have discuss few.

3.1. Mouse isn’t just cordless, it’s MOUSELESS

Mouseless is a peculiar input device that provides the familiarity of interaction of a physical computer mouse without requiring a real hardware mouse. It consists of an IR laser beam and an IR camera, both of which are embedded in a computer. Mouseless proposes a number of innovative additional gestural interactions while supporting all the conventional computer mouse interactions. This allows you to interact with a computer with a mouse in the same way consistently - except that there is no mouse hardware. The researchers call it an "invisible mouse."

![Mouseless gadget](image)

**Figure 2: The Mouseless technology**

Mouseless replaces conventional hardware mouse with a set of IR laser strobe, an IR camera and image recognition software are embedded in a computer. The laser beam is optically split into a wide beam illuminating an imaginary plane above the working desk. The camera captures the pattern of invisible infrared light as it illuminates user's hand. The user rests the palm on the desk and commands the system in the same way as he or she would do with a conventional mouse. The below icon tells the representation of the invisible mover gadget. To communicate through invisible mouse we have some of the directions as shown in the below icon:

![Figure 4: Orientations of Mouseless](image)
3.2. Quickies: Intelligent Sticky Note

Quickies are sticky that have some aptness and the ability to remind us about the task we perform or to provide us at the right time with the information we captured in the past. They are portable, handy and quick. They help us to remind the records, remember things and help in managing our world better.

Quickies uses RFID, Artificial Intelligence and ink recognition technologies, can make it possible to create intelligent sticky notes that can be searched, can send reminders and messages, and more broadly, can help us to logically connect our physical and digital worlds. One of the most interesting features Quickies provide is find ability. Physical written notes are captured into a computer using a digital-pen hardware, which captures the movement of the pen on the surface of a sticky note. A software program stores the handwritten notes as images/strokes and converts the stored hand-written notes into computer using handwriting recognition algorithms. The recognized text is processed using computational techniques. This system links hand-written notes to the mobile, digital calendars, e-mails and more. At the back of each Quickie, there is a unique RFID tag, which makes it possible to locate. Later, the computer program understands the user’s context to provide the user with reminders, alerts, messages and just-in-time information.

3.2.1. Handling smart notes

i. Your child want a doll, he/she will draw it on the smart note. That will be identified by the note and sent as a reminder to your mobile, when you’re out.

ii. You will miss your friend’s number, which is written on the notes on our desktop that will be sent to your phone contact list by the intelligent notes.

iii. You want to remind your dad to take the medicine so, you write it on the sticky note. The note recognizes that this is a message to your dad, looks up his mobile number in the contact-list and sends your message him.

iv. Your daily scheduling tasks will be written on the notes, which will be sent as a message to your mobile at a particular timing.

These are some of the upcoming techniques which may be implemented in the real life that will help many of the people for smart, comfort leaving.

3.3. Sparsh: Magic Of Touch

Sparsh lets you conceptually transfer media from one digital device to your body and pass it to the other digital device by simple touch gestures. Smartphones have certain limitations, in spite of having a deluge of wireless technologies, Bluetooth, 3G, etc.--there's no simple way to transfer
clippings of data from one device to another. But a newly explored proposal called sparsh -is aiming to fix the error.

Sparsh isn't an app, it’s a tool that's supposed to be part of a mobile operating system, like undo or select all, running within apps. It creates a virtual cloud-based clipboard where any data, like a phone number or photograph, can short term until it is pasted to another device.

Sparsh runs as a background process on a device and user has the option to enable this service through the system’s main settings. For it to work, at least two devices need to be Sparsh-enabled. A user wants to share data for a copy-and-paste function. The user touches data on a device, such as a photo or text, and sends it to the cloud. The same person then touches another device instantaneously. The relevant information is pasted as it had been copied from same machine. The term cloud computing is everywhere. In the simplest terms, cloud computing means storing and accessing data and programs over the Internet instead of your computer's hard drive. The cloud is just a metaphor for the Internet.

3.3.1. Sparsh Technology:
For example: You access Gmail from different computers using merely your username and password; similarly the sparsh cloud project uses touch technology to access content stored on cloud. Whenever we use Sparsh technology in phones or devices, it sends the data to a server / cloud as soon as you touch the data on the device. Later, when you want to fetch the data from a different device, a program helps use your touch as the password to fetch it back from the server. The programs which helps to establish a connection between them via the Internet. The same technology can be used to connect all devices in the home, where each is connected to the internet. Then data can be shared between them conveniently using Sparsh technology. Sixth sense, may or may not be implemented in our real life as the main
disadvantage is not yet released in the market. So, the below explanation gives you an idea of future implementation of sixth sense.

Students can interact and learn many more things through sixth sense. The above icons tell us about the students (in India) interacting and sharing their ideas with the other students (in foreign countries). Sixth sense technology very useful in the field of medicine for better treatment. The above icon tells us about the x-ray of bones without the x-ray machines. Implementation of sixth sense in homes. The above icon let us to know the implementation in kitchen. While cooking the news is displayed on the same table where you cook. The implementation of Sixth sense in the corporate offices. The below icon will give a vision of it.

![Image of corporate office with Sixth Sense implementation]

**Figure 7: Corporate Office Implementation**

### 3.4. Benefits of Sixth Sense Technology
- Sixth sense is an unsecured informant.
- Supports multi-touch and multi-use interaction.
- Data access directly from machine in real time. It is inexpensive to construct and also connect real world and information.
- Mind map the idea anywhere.
- Can be used by anyone without even having any basic knowledge.
- It is conveyable.

### 3.5. Drawbacks Sixth Sense Technology
- The instrument is still being altered and put to test.
- The artefact is not yet released in the market due to privacy concerns.
- Health issues regarding sixth senses projection technology.
- Relevant about the pricing.

### 4. Conclusion
Sixth sense is the science of tomorrow with the aim of connecting the digital world with the physical world logically, eliminating hardware devices. Even though the sixth sense devices are in development stage and have not been used in widely, it is predictable that this technology will revolutionize the way people interact with the digital world. And as different devices have already started to come out with the implementation of this concept, it can be predicted that in near future everyone will have this device in the way they are having mobile phones now. There is no doubt
that the future of Sixth Sense technology will continue. Once this device is developed, there is no need of printing all the details of components available in the supermarket. Because this device can scan the object and show all the information, details, compositions, and even the costumers’ review.

5. References


