

**VISHVESHWARAIAH TECHNOLOGICAL UNIVERSITY**



**S.D.M COLLEGE OF ENGINEERING AND  
TECHNOLOGY**



**A seminar report on**

**DIGITAL SMELL**

**Submitted by**

**Vijayalaxmi.N.Patil**

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**VISHVESHWARAIAH TECHNOLOGICAL UNIVERSITY**



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## **CERTIFICATE**

*Certified that the seminar work entitled “DIGITAL SMELL” is a bonafide work presented by Vijayalaxmi.N.Patil bearing USN NO. 2SD07CS410 in a partial fulfillment for the award of degree of Bachelor of Engineering in Computer Science Engineering of the Vishveshwaraiah Technological University, Belgaum during the year 2009-10. The seminar report has been approved as it satisfies the academic requirements with respect to seminar work presented for the Bachelor of Engineering Degree.*

**Staff in charge**

**H.O.D CSE**

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## **ABSTRACT**

*The technology has so far targeted mainly our sense of sight and sound. To further enhance the virtual reality experience and another flavor to it, technology is now targeting your nose and tongue.*

*The application area of virtual reality is vast- from normal entertainment to the Internet and e-commerce application. You will be able to smell product before buying them online.*

*California-based Digiscents Inc. has developed the iSmell personal scent synthesizer. This small device connects through your pc via serial port and has its own driver.*

# 1. INTRODUCTION

In this modern age, computers have verified the cause of their existence. They have virtually taken over in every field of today's fast life. Gone are the days when applications of computers were limited to official use only. Today computers have important place in every household purpose, and mainly internet has taken over whole world.

There are various causes due to which computers have their own stand in our life. It provides a very good facility of fast processing, sound and picture. The **virtual reality** concept has provided very good features to the computer systems. The concept of virtual reality is introduced by the computer programmers to provide more attachments to the user. There are several concepts of the virtual reality that are available such as digital smell, virtual theater, electronics hand gloves, multipoint surround sound system, 3d goggles.

The **digital smell** is basically a hardware software combination. The hardware part of digital smell will produce the smell, and the software part will evaluate the smell equation and generate specific signals for specific smell and finally that smell will be produced by the device. The hardware device is a device like speaker, like speaker this device is also connected to the computer system. For this device there is also a driver program which will evaluate the digital equation for generating specific gas

Until now, online communication involved only three of our senses - hearing, touch, and sight. New technology is being developed to appeal to our sense of smell. DigiScents, an interactive media company, is creating iSmell Digital Scent Technology [1], new software which will enable scents to be broadcast from the Web.

Coding of aromas would be downloaded to computer similar to graphics images as audible sounds. Ultimately users will be able to create and modify their own fragrances and post them on the internet (2000). Also discussed the potential for creating smell capture cameras, which could add fragrances coding to images and sounds.

This new technology will make it possible to send and receive scented e-mails and to add scent elements to Web sites, to name just a few of its applications.

In future these devices will play very well role in our life, such as in Theater, Televisions, internet etc.

## **1.1 Evolution of Digital Smell**

### **1.1.1 How it was invented**

As we know that many scientists have started for the virtual reality from the last 5 to 6 years. As a virtual reality they have got a full concept as virtual theater. These theaters consist of an electronic hand gloves, digital smell, multipoint surround sound system, movement controllable seats, 3d goggles. From this idea the multipoint surround sound system, 3d goggles, movement controllable seats were completed. Now for the user to fill more realistic effects of movies they were introducing the very new facility of digital smell in movies or in games [1]. For example if we are watching a movie and we see burning of tier then we will fill that smell in theater or pc or television.

The basic idea for this was given by the perfume making companies for the advertisements of their perfumes.

### **1.1.2 Founders**

Founders Dexter Smith and Joel Lloyd Bellenson, experts in bioinformatics and genomics, started from the following idea: "If we can find the essence of a biological smell and build a profile, we can digitalize and broadcast it."

## **2. DIGITAL AROMA**

Traditionally one has said that we have five senses, recent studies indicate that we have at least eleven and some specialists still consider more. Of the main ones (Vista, ear, tact, taste and sense of smell), our nose is possibly the one that has more relegated in our sensitive surroundings, since all the technology and the world that surrounds to us attacks the Vista and the ear, but rare time we found some attempt to approach the sense of smell[3].

So far, computers work with only 3 out of 5 senses.

## **2.1 SIGHT:**

Our eyes are our windows to the world, thus it is no surprise that sight is used the most out of the five perceptual senses. This is why the visual presentation of advertisements is crucial to the success of the direct marketing campaign. In classic mass advertising, the goal is to generate awareness. An ad is placed in a magazine or on television in which the primitive components such as lines, colors, and shapes are combined to formulate a consumer's perception. Then the consumer either imprints this perception in their mind or totally forgets about the ad. If the consumer remembers the ad and then purchases the product, the ad is a success. It is this recognition, our ability to place an object in a category and give it meaning, that mass advertisers rely upon. Direct marketing has the advantage of presenting a product or service directly to the consumer. The consumer can instantaneously recognize what the product is and what they are being asked to do. If the piece is successful then the consumer will take action and purchase the product or seek out additional information. The phase between recognition and action is where direct marketers can influence the consumer in taking the next step to make the desired response.

## **2.2 SOUND:**

Vibrations that travel through a medium produce sound. Sound must travel through three main parts of the ear; the outer, middle and inner ear before it reaches the neural processing center of the brain.

When direct marketers are educated on how sound can affect consumer behavior it can be a very powerful tool to create effective advertisement campaigns. One aspect of sound that has always been successful in ad campaigns is the use of music. Today, music is a contributing factor to developing corporate brand identity for companies. Music fills the background and creates an identity for space. For example, British Airlines uses the new age music of Yanni to produce a sense of ethereal escape and adventure. While United Airlines uses the American musical classic, "Rhapsody in Blue" by George Gershwin to aid in creating their identity.

Today's surround sound speakers and sound cards are extremely well developed, you can hear echoes, and pretty much tell where something is from how the sounds reach your ears.

## 2.3 TOUCH:

Touch is the sensory stimulation that a person feels when something comes into contact with the skin. These stimulators perceive different types of sensations including temperature, vibrations, textures etc.

Touch is a significant factor when direct marketing is involved because it plays a role in many different aspects within the effectiveness of the marketing strategy. Any direct marketing mail piece requires the consumer to physically handle paper. This simple medium is an important tool in the overall perception of the offer. Businesses can become very particular when deciding the type of paper to include the offer on. A textured paper that is heavier in weight is perceived to be of better quality than the basic thin, light-weight paper.

Very much in its infancy, force feedback game controllers give us a small sampling of touch

## 2.4 SMELL:

Our use of scent in the environment has currently become quite an issue in society. It has become such an issue in different regions of the world, that companies are required to carefully plan the use of scent in their direct marketing campaigns. In today's advertising frenzy more companies are realizing that the major advantage of direct marketing is the ability to be a three-dimensional advertising medium, appealing to all five of the senses.

Sense of smell is the ability to detect odors. As humans, we are limited to the sensation of seven basic odors and their combinations. Although not as highly developed as in various other mammals, this perceptual sense can have a significant impact on how we perceive different objects and messages. Like Sherlock Holmes' Watson says, "there's nothing like a good sniff". Smell is the only sense that cannot be turned off. A person smells all of the time and with every breath, as often as 20,000 times a day.

There are over 400 000 odors in the world, and it has been proved that they can significantly influence individuals, and more importantly, consumer's moods and behaviors.

The sense of smell is closely tied to memory and emotion, making scent a powerful way to reinforce ideas. **"If a picture is worth a thousand words, a scent is worth a thousand pictures."**



## **2.5 TASTE:**

Taste is the physiological perception of flavor. Sweet, salty, bitter and sour are the four true tastes that we are able to perceive, and it is the combination of these different flavorful sensations that entices us to want more.

The increased complexity of a flavor tends to generate a unique and memorable experience. This means that when two or more true tastes are stimulated simultaneously, the complete flavor and sensation of a food becomes memorable and can be related toward a specific product brand. Beyond the physiological need for nourishment, food has become a direct way for people to satisfy their unfulfilled desires. Foods and flavors from around the world give people the opportunity to experience alternate cultures and to travel without leaving their home. The tastes of home cooked meals evoke happy emotions and memories of the “good old days,” while chocolate are often used as an alternative to sexual desires. Consumers now expect their food to go beyond satisfying carnal hunger but it must also create and fulfill their utmost expectations and needs. Smell is an important part of taste, someday we may be able to put something in our mouths and the computer will cause it to generate tastes.

## **3. DIGITAL SCENT TECHNOLOGY**

Imagine being able to smell things using a device that connects to your computer. Like a new language, this technology is a new set of tools for self-expression, communication, and commerce. It includes software components and a peripheral device called the Personal Scent Synthesizer.

Digiscents don't plan on designing the games and other platforms themselves. As well as the synthesizers, they've been creating the soft and hardware that game producers will need to mix and incorporate scents into their latest offerings. Part of that is "Reminiscent", a database of standard smells. These odors will be licensed to developers for integration into games, websites and advertisements and so on.



**Fig.Digital smell recorder**

Note: DigiScents(TM), ScentStream(TM), iSmell(TM), ScentWare(TM), ScentTracks(TM), ReminiScents(TM), and ScentObjects(TM) are trademarks of DigiScents, Inc. RealNetworks(R) and RealPlayer(R) are trademarks or registered trademarks of RealNetworks, Inc. All other companies or products listed herein are trademarks or registered trademarks of their respective owners.

### **3.1 Smell Synthesizer:**

The smell synthesizer means the device which is used to generate the smells. Such as ismell is device used to produce the gas using computer.

There are various types of smell synthesizers available in the market, but for computer the smell synthesizer is made by digiscents industry.

### **3.2 ISMELL:**

The *iSmell* is a peripheral device, about the size of a PC speaker that connects to a PC via a serial or USB port. It uses consumable cartridges which are used and replaced similar to the way ink jet printers use ink cartridges. It emits natural-based vapors into the user's personal space. *iSmell* is triggered either on demand by the user (via a keyboard or mouse action) or via a timed or programmed response (as is the case with a DVD ScentTrack).

The company's technology turns smells into digital codes that can be stored on laser discs or as computer files, and can even be e-mailed. The iSmell device reads a digital scent file, creates a smell from a "palette" of 128 chemicals stored in a cartridge, and then wafts into the air with a small fan.



Fig: DEGISCENTS ISMELL VERSION I

#### SPECIFICATIONS:

1. It has cartridge of 128 chemicals which is able to produce 10,000 smells
2. To active this device for computer it will require a driver program called as ScentStream.



Fig: DIGISCENTS ISMELL VERSION II

### 3.3 Cartridge:

The cartridge will contain chemicals -- either natural oils or synthetic fragrances -- that will be activated by either heat or air pressure, when you send a signal from your computer. The digital smell device could add another sensory dimension to the sights and sounds of a computer game. Currently 128 chemicals are stored in a cartridge. Similar to an ink jet printer, those oils form the core of a replaceable cartridge, which is inserted in the company's iSmell device. The oils are electrically stimulated in different combinations to create specific smells in response to software prompts programmed into applications such as Web site features, computer games, digital music, and movies. But after some time as user will be more familiar with these smells the cartridge will come in market in which you can add chemicals as many as you want. They are still investigating all the scent combinations that are currently possible with the iSmell device. As the technology becomes more refined, more and more scents and scent combinations will be possible.



**Cartridge**

"The idea would be to have a box about the size of a small speaker that would be connected to your computer and within that box is this cartridge of odors, having a hundred different small chambers in it, and then on command from the computer, you can choose various odors within that hundred, to be mixed up together and then puffed gently out of this port where you can smell it."

### **3.4 Scentography:**

Scentography is a new form of expression that allows the integration of scents with traditional digital multimedia, such as games, DVDs, and web sites. By allowing you to communicate with smells, Scentography adds a new dimension and richness to web pages and virtually any other form of electronic/digital communication. The capability to digitize and broadcast scents will enable vendors and consumers to send scented mail, make and watch scented DVDs, and play scented games and simulation.

## 4. BROADCASTING OF SMELL

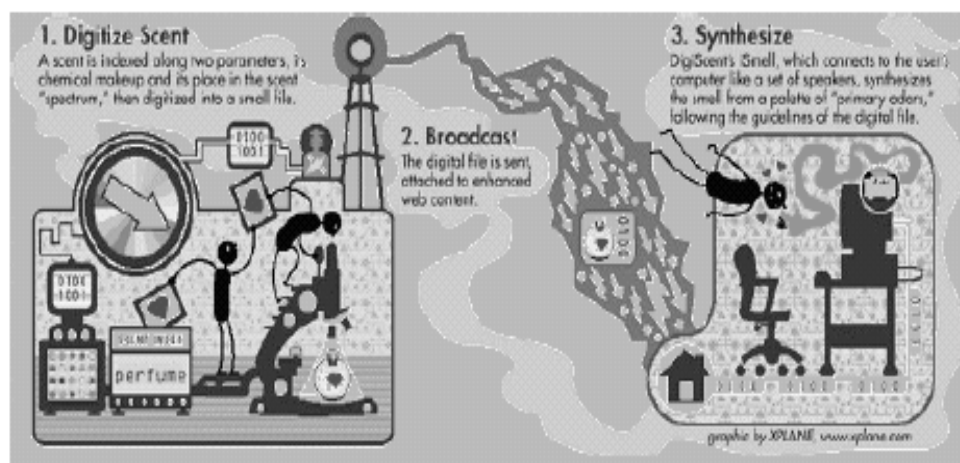


Figure 2. Principle of DigiScent's iSmell system

### 4.1 Digitized Scent:

A scent is indexed along two parameters, its chemical makeup and its place in the scent "spectrum", and then digitized into a small file.

### 4.2 Broadcast:

The digital file is scent, attached to enhanced web content.

### 4.3 Synthesize:

DigiScent's iSmell, which connects to the user's computer like a set of speakers, synthesis the smell from a palette of "primary odours", following the guidelines of the digital file.

iSmell technology turns smell into digital codes that can be stored on laser discs or as computer files and it can even be emailed. It reads the digital scent file, creates a smell from a "palette" of 128 chemicals stored in a cartridge, which wafts into the air with a small fan.

## **4.4 The complete product:**

DigiScents is developing a complete solution for scent-enabling the Internet and all forms of digital media, including:

iSmell Personal Scent Synthesizer: A computer peripheral device which recreates Scent Objects by mixing and releasing one or more of 128 scents. The device includes replaceable cartridges similar to those used in color printers.

### **4.4.1 ScentPalette Cartridges:**

Consider cartridges contained inside the iSmell device. The cartridges are filled with over one hundred different fragrant materials that are emitted alone or in combination. In addition to the general purpose of Scent Palette there is a possibility of creating industry Specific cartridges for every thing from fragrances and food to games and movies.

## **5. WHAT IS “Scent Ware” AND HOW DOES IT WORK?**

“Sentware” is a combination of SoftWare and Hardware.

There are two types of software. One allows you to “Design” your own custom fragrances, and the other allows you to receive the codes for a custom scent and have them activate a spray device so you can smell it[4].

The design software is often as simple as a web page with pictures of familiar scents (apple pie, popcorn, fresh rain, flowers) that you can “drag” with your mouse into a virtual beaker and mix. The combinations you choose can be saved as a custom fragrance, which gets stored as “codes” to be passed to a spray device.

The spray device is a piece of hardware that can be plugged into one of the serial ports of your computer, the way a printer plugs in[4]. This device has a disposable cartridge with a number of chambers inside, each containing a chemical compound that can be mixed with others to match the custom scent you’ve created.

ScentMixers are basically programs that will allow the developers to create their own aromas for multimedia. Once the product is available on the Mac platform, consumers will be able to use the ScentMixer Scent Creation Software, which allows you to create your own scents.

### **5.1 SNORTAL:**

Snortal will be the Internet's first a scent-enabled Web portal. Visiting the Snortal, you will be able to send scented e-mail, design and register your own smells, and create and share ScentTracks for your favorite movies and music.

The goal was to create a space where people of all ages can feel as though they are on vacation, having fun. The look was appropriated into all marketing collateral, including press folders and greeting cards.

### **5.2 SCENT REGISTRY:**

To ensure odor authenticity, DigiScent has created a “Scent Registry,” a digital index of thousands of scents that the company will license to developers to integrate into games, Web sites, advertisements, movies and music.

DigiScent's founders hope that by licensing their scent spectrum, they will create a world of smells for the Internet generation – perfumes you can smell online, computer games with the whiff of the jungle or the tang of jet fuel, movies that give audiences the scents of an autumn bonfire.



### **5.3 DATA BASE REMINISCENTS:**

ScentObjets can be incorporated in many applications multimedia, for which a license will be required.

Whatever the smell that we are the license for can be entered in the ReminiScents data base file.

### **5.4 SCENTTRACKS:**

ScentTracks is software. By using this software you can edit the smell, create the smell, create scented greeting cards, add smell for the movies or songs for all these operation there are some tools are given which user can use.

#### **File menu:**

In this file menu they have given new, open, close, save, save as, search, exit, etc. By these new menu of the ScentTracks user can create several new smells. He has provided certain chemical reaction and on that basic he can easily create smell. By these save and save as menu user can save these smell in the form of chemical reaction.

#### **Greeting menu:**

In this menu user has provided the tools used for greetings menu. Such as pictures as clip art, word art, chart, etc. The created smell or ready smell can be attached to the greeting. Such that when greeting opens it will produce the sweet smell.

#### **Editor:**

In editor menu they have given the editor for both the movies as well as for songs. By using this editor you can add and delete smell at a particular place in a movie or song. So that when that song continues at particular place it will produce that inserted smell. But for that we require different players. Currently they were making "Real Player" for that smell.

### **5.5 SDK:**

Set of tools to create content with aroma, includes ReminiScents Database, API and DLL of iSmell and him servant and client of ScentStream.

Digiscents Launched a **Scentware Developers Kit** -- Sdk -- at Game Developers Conference.

The SDK is incredibly easy to implement, we expect to see an explosion of scent enabled content. "Using the **ScentWare**(TM) SDK, a developer can scent enable a game within an hour," said DigiScents Director of ScentStream(TM) Technology, Cooksey Thomas, who previously developed the Sega Dreamcast's audio API. "The SDK contains all we need to create killer scented games that allow gamers to smell environments, entities, and prizes."

#### **EXAMPLES:**

Examples of scent associations that can be coded into game ScentTracks(TM) are: -- Worlds and Environments (a cave, the beach, forest, watering hole) -- Entities (Lara Croft's perfume, smell of hidden Pokemon(R), the odor of the enemy) -- Prizes (bananas, coins, elixirs) -- User Actions (invoking magic, firing a gun) -- Events (tires melting, explosion, change of weather)

#### **The ScentWare(TM) SDK features:**

- 1 Intelligent Scent Rendering –
- 2 Adjustable Scent Parameters –
- 3 ReminiScents(TM) Database of ScentObjects(TM) –
- 4 iSmell(TM) Emulator –

## **5.6 WDK:**

The ScentWare Web Development Kit (WDK) gives you the tools to provide unforgettable scented online experiences. Scenting your Web site is fast and easy with the ScentWare WDK. Using your favorite leading web editing tools, you can add ambient and click 'n' sniff scents to your web site or flash presentation in just minutes. The only hard part about scenting your web site is choosing between chocolate, orange, pine forest, the ocean, perfume, flowers, new car...the list goes on.

### **5.6.1 WDK Ingredients:**

- 2 ScentWare ActiveX controls
- ScentWare Netscape plug-in
- Flash presentation support
- RealNetworks plug-in
- Adjustable scent parameters
- Example scented web pages
- Full documentation & discussion forum and support

### **5.6.2 Technical Overview: A WDK That Makes Scents**

The DigiScents Web Developers Kit or WDK is a group of interoperable components that allow Web designers to implement click-and-sniff Web pages using a variety of methods. Components can be used within Web pages targeted for either Internet Explorer or Netscape Navigator. The kit includes a scriptable Netscape Plug-in Control that can be used to target Netscape Navigator browsers and two ActiveX Controls that can be used to target Internet Explorer browsers. As development progresses all of the media players and major browsers will be supported. The WDK v.1 release will allow web designers to experiment with the enabling technologies and prepare content now in order that it will be available when the iSmell becomes available to mass consumers. A number of licensing options are available to allow commercial enterprises of all sizes to participate in the *Revolution of the Senses™*. To allow the designers to preview their work the WDK comes with a software emulation of the iSmell device, the emulation appears as a message dialog box that names the scent emitted and its intensity. Web art can be scented in many different ways.

### **5.6.3 CLICK 'N' SNIFF**

This method causes the user's iSmell device to emit a scent when any scent-enabled element is clicked. Click 'n' sniff can be implemented by using any of the ScentWare WDK components.

### **5.6.4 AMBIENT SCENTS**

Pages can also automatically emit scents either when the page is loaded creating an ambient scent on rollover or on a timer using JavaScript.

### 5.6.5 SCENTED MULTIMEDIA

Any Web technology that supports scripting i.e. Flash, Shockwave, Director, Microsoft Media player etc.. Can use a scripted implementation of the ActiveX control. DigiScents has created two ActiveX controls to meet different web page design needs.

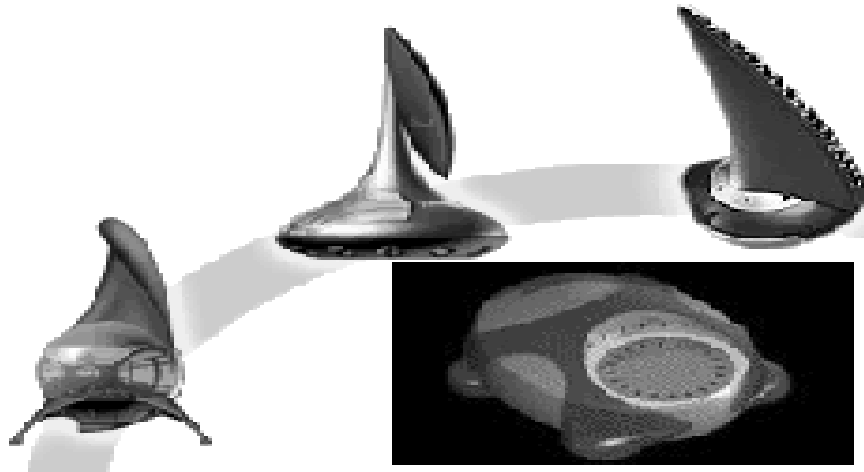
### 5.7 Smell-o-Vision!

"Smell-o-vision?" Just what are we talking about here? In the past century we became used to the transmission of sights and sounds through the airwaves and via the Internet. In essence, "transmission" of visual and auditory information relies on the electronic coding of waves of electromagnetic energy (light waves) or of waves of vibrations in a medium (sound waves), the sending of this coded information, the decoding of this information in a receiver (radio, television, computer, etc.), and the creation of new light or sound waves based on this information. But scents? Odors? Smell and taste are the chemical senses. How do we transmit chemicals via the Internet? Although the concept sending digitized scents via the Internet from computer to computer may have seemed bizarre a few years ago, a number of companies are creating hardware and software that will enable it (Biersdorfer, 2000; Poniewozik, 2000). The in-theater version emits scents from machines located under the back rows, basing the scent on the mood of the scene.



A compact smellovision machine

## 6. WHERE IS iSmell USED?



According to Brian Nelson at DigiScents, "What kind of smells can be emitted by the iSmell device? Just about anything you can imagine."

There are many applications for digital scent technology such as:

- \* send scented email
- \* watch scented DVD's
- \* play scented video games
- \* sample a perfume from a beauty product's website
- \* smell the assortment of freshly brewed coffees for sale in their online store .

### 6.1 Why Would You Want to Do This?

There are four basic types of applications that scentware seems a logic fit for at the moment.

- Marketing
- ☐ Entertainment
- ☐ ☐ ☐ ☐ Education
- ☐ ☐ ☐ ☐ Medical

### **6.1.1 Multisensory Marketing:**

Perfume manufactures are an obvious fit. They would be able to benefit from doing market research across the net, emailing you samples of some new fragrance they might be trying out to see how you like it, and using your feedback to shape the final product. And the heck with scratch-and-sniff cards in your favorite magazine. Now you'll smell their latest and greatest when arrive at your favorite women's website or online boutique.

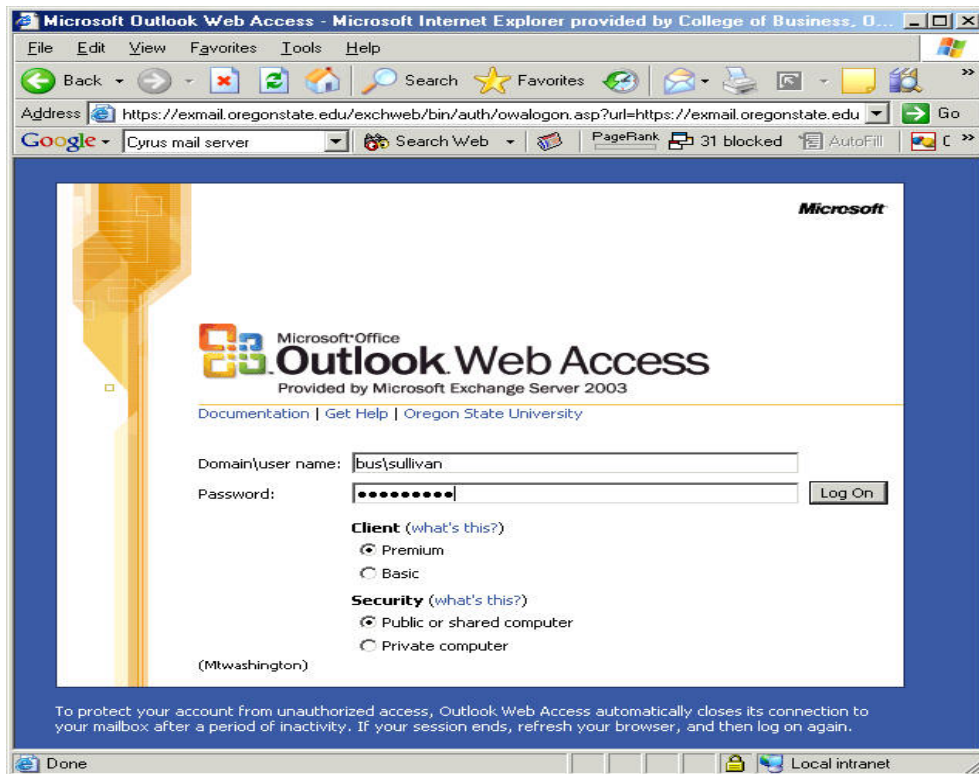
*Other companies who've taken the bait besides the cosmetics, fragrance, and health and industries? - restaurants and specialty food shops who know the smell of pizza wafting out of your PC, or may be mom's chocolate chip cookies, will just be too much too resist. It adds a new dimension to the point-of-sale marketing angle. You're visiting a website that is known to attract a large number of people from particular demographics. The heck with banner advertising when the marketer has a better way to get you hooked on what they're hocking.*

### **6.1.2 Online Interactive Games**

Imagine smelling the scent of an opponent in an interactive online role-playing game or smelling the damp cave your character is trapped in. Games with scented environments, entities and prizes are more immersive and realistic. Scented games will soon be the standard in interactive media, just as games with sound became prevalent as soundcards became common.

### **6.1.3 Communication**

Scent offers developers as well as consumers another medium for creativity and self-expression. Scented web sites, electronic greeting cards and e-mail will enliven all e-communication.



### 6.1.4 E-Commerce

Scent will bring the online shopping experience to life. Scent-enabled shopping sites will be more compelling if you can actually smell perfume, flowers, food and beverages, cigars, and exotic places.

### 6.1.5 Advertising

Vendors of food, cosmetics, home care products, and travel related services can use scent to make advertisements more engaging and memorable. Eventually, like musical jingles and graphical logos, scented banner ads will make it possible to communicate the key feature of scented products or to simply evoke a certain feeling

## 6.2 Effects of Digital Smell for Different Site

### 6.2.1 Over the Theater:

After some time the virtual theaters will come in the market. This virtual theater is basically the concept of the virtual reality. These theaters will have electronic hand gloves, digital smell synthesizer, multipoint surround sound system,

movement controllable seats, 3d goggles. From this idea the multipoint surround sound system, 3d goggles, movement controllable seats were completed. Now for the user to fill more realistic effects of movies they were introducing the very new facility of digital smell in movies or in games. For example if we are watching a movie and we see burning of tier then we will fill that smell in theater.



### **6.2.2 Over the Television:**

Now a days as new and new sound technology came in picture our home television is changing, getting more and more powerful sound with it. After some time over television will come with more clear picture, better voice as well as smell device, which will create more interest in watching the television.

### **6.2.3 Over the Internet**

DigiScents technology will be used to add a new dimension to e-commerce and entertainment technology: adding scent to movies, online advertising and interactive games are just a few of the possibilities. "Online greeting cards will be one of the first big plays. We digitize and broadcast scent over the Internet and analyze the molecular structure and sensory perception of an odor and software-code it. The iSmell is a peripheral that is the size of an electronic pencil sharpener; it connects to a USB port. Its scent cartridge would be like a color printer cartridge but with 128 scent



elements to combine. These elements will combine to make thousands of scent combinations. "Humans detect around 10,000 smells in their lifetimes. We're going to create the primaries of smell. The company is also creating a Snortal, a first-of-its kind Internet site on which people can create scented e-mail and their own custom scents. Beta testing is currently under way, and final products will be released in fall 2002.

## 7. ENTERTAINMENT

### 7.1 E-mail Alive with smell



Of all the uses for scentware, this one scares be most the ability to send emails with smells anybody can design. Sure, it'll add a fun new dimension to birthday when you can send an electronic postcard with nice music and a dozen roses that smell real, but can you imagine the legions of alternatives your friends ( and others ) will opt for? Dirty sneakers, wet dogs  
May be worse assaults to your delicate sensibilities will be within the reach of email artists and spammers alike.

*There are, however, more creative uses of scentware in bringing to life the stories we tell through more traditional mediums. Who's looking at smell-o-vision now? Movie theatres who want to top surround-sound are now looking at mounting surround-smell devices on theatre chairs. This might be great if you're watching some nice, homey flick full of gardens and cherry pie, but imagine watching one of tTom Green's latest romps, complete to the way that'll have you out of your chair.*

*Of course there are also the movies you bring home. Will your next DVD come complete with a soundtrack AND smelltrack?*

For authors and music composers the idea of adding taste and smell to their creative conjuring seems irresistible. Words can be powerful stimulators of imagined tastes and smells, but the ability to bring those exact things to life may make the electronic distribution of storytelling an even more tempting channel. Perhaps a glimpse of the evolution of mega bookstores and internet cafes?

## **7.2 Education**

It's this power that makes the addition of scent to the classroom experience such an interesting new ally.

Virtual field trips have become an invaluable tool for bringing important experience into the classroom where time or geography may otherwise prevent them. The addition of Smell is acknowledge as a tool that enhances the memory of that experience, and amount of knowledge that is retained because of it.

## **7.3 Medical**

A new Tool for Catching Degenerative Neurological Diseases Early  
Aromatherapy will perhaps be one of the big drivers of home computer scentware sales. In addition to ergonomically correct keyboards and mice, music while we work, and even computer-based workouts to help you keep fit, you can now add smell to your list of tools for increasing personal wellbeing. The benefits of aromatherapy go beyond personal pleasure. It's valued within

## **8. FACILITIES AND LIMITATIONS**

### **8.1 Facilities:**

1. As we now that user can send any type of smell so the ismell is designed in such a way that it will give protection against that smell.
2. The scent cartridges contain mostly natural materials commonly found in the cosmetics, foods and beverages you use every day.
3. There might be possibility that user has allergy from any smell so for this problem the ismell provides locking facility. So that user can lock that particular smell which he doesn't like.

### **8.2 Limitations:**

The obvious one is the price. Most home computer users won't be willing to pay the \$250-500+ price tag for the luxury of scratch-and-sniff websites. Some diehard game fans may find the olfactory add-on a worthwhile boost to their multimedia experience, but chances are this technology will find its first strong market in small kiosks and other specialty shops.

While many fragrance manufacturers will find the ability to use scentware for both market research and the generation of new sales, most of the "ScentWare" application available today operate at a very simple level and aren't capable of reproducing the very complex protein level of molecule modeling that commercial fragrances require. Specialty food marketers will face the same problem. While pizza, popcorn and apple pie are already stock smells in a number of scentware collections, exact replicas of some of the more complex "branded" foods that big distributors want to entice you with just won't be possible yet. While a few year's old, the technology is still immature, and will require a committed partners and reasonable investment to customize the results in a way that's suitable for companies whose smell is their branding.

### **8.3 The Future of DigiScents**

- Under their system a person could send an 'encoded' message from one computer to another, and then person will get the message in the form of smell. Then this smell will be cached by the input ismell device then given to the translator which will translate these release chemicals to the message form.

### **8.4 The Present**

Digiscents were awarded the “best technology “ prize during the Retail Vision 2001 ceremony, for the past ten years one of the major honor in the IT retailers industry.

2,500 developers have already applied for the ScentWare Developers Kit which was launched in March 2000 and is used to create “Scented games and multimedia applications.

## **CONCLUSION**

A Scent has a strange power over human beings. It can create a mood, such as foreshadowing or ambiance. It can intensify emotions such as fear or love. It can also give the sensation of virtual reality and suspension of disbelief.

“The Sense of smell is closely tied to memory and emotion, making scent a powerful way to reinforce ideas”.

There are several streams over which this digital smell is used, Such as over the television, theater and the web. Hence we conclude that this digital smell will revolutionized the world. And at every place we will require this device, such as for scented mail, scented movies, scented songs we must requires this device.

This device will become our need in future.

## REFERENCES

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