A

Seminar report

On

DIGITAL SMELL TECHNOLOGY

Submitted in partial fulfillment of the requirement for the award of degree
Of MCA

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Preface

I have made this report file on the topic **Digital Smell Technology**; I have tried my best to elucidate all the relevant detail to the topic to be included in the report. While in the beginning I have tried to give a general view about this topic.

My efforts and wholehearted co-corporation of each and everyone has ended on a successful note. I express my sincere gratitude to …………..who assisting me throughout the preparation of this topic. I thank him for providing me the reinforcement, confidence and most importantly the track for the topic whenever I needed it.

Acknowledgement

 I would like to thank respected Mr…….. and Mr. ……..for giving me such a wonderful opportunity to expand my knowledge for my own branch and giving me guidelines to present a seminar report. It helped me a lot to realize of what we study for.

Secondly, I would like to thank my parents who patiently helped me as i went through my work and helped to modify and eliminate some of the irrelevant or un-necessary stuffs.

Thirdly, I would like to thank my friends who helped me to make my work more organized and well-stacked till the end.

Next, I would thank Microsoft for developing such a wonderful tool like MS Word. It helped my work a lot to remain error-free.

Last but clearly not the least, I would thank The Almighty for giving me strength to complete my report on time.

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CHAPTER 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, 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.

The "Savor the World" tagline illustrates the California-based company's aims to tap into the power of scent as a communication tool. "DigiScents combines the power of science with the fact that the sense of smell is as powerful and emotional trigger as any other sense," the Web site states.

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

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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. 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 Dexster 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." They came up with the idea for the company while they were in South Beach. Using their scientific knowledge, they indexed and analyzed natural smells said to be common to South Beach such as flowers, salt water, and suntan lotion.

CHAPTER 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.

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.

Video controllers now produce 24 bit color, a far cry from the 16 color CGA monitors from the past. John Carmack wants us to go up to 64 bit color for greater visual "realness".

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.

CHAPTER 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.

The company promises that by this summer, they will be flying their flag at the world's first scent-enabled Web portal, dubbed "The Snortal". Visitors will be able to send "Scent Mail", design and register their own smells and swap aroma tracks to their favorite

music clips; just like computer gamers circulate custom-designed 'skins' for their favorite titles.

Digital smell recorder

"We're going to be the Microsoft of smell." said one Digiscents insider.

Digiscents is apparently in discussions with at least one major game developer. So we truly may be close to a time when you'll smell those zombies just as they sneak up to devour your brains.

Note to Editors: 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 mean 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.

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.

DIGISCENTS ISMELL VERSION II:-

Digiscents : iSmell (VERSION 2)

design : Scott Summit
modelmaking : Sputnik Inc

CAD : Pro/Engineer
photography : Mark Leet

What does smell look like? Possibly a drop of oil, captured in flight. Perhaps and ancient vessel with something wierd inside. Maybe a machine that we've never seen before.

This design is ready for production. Wait for a market upturn, and we'll have smell on the desktop.

CHAPTER 4
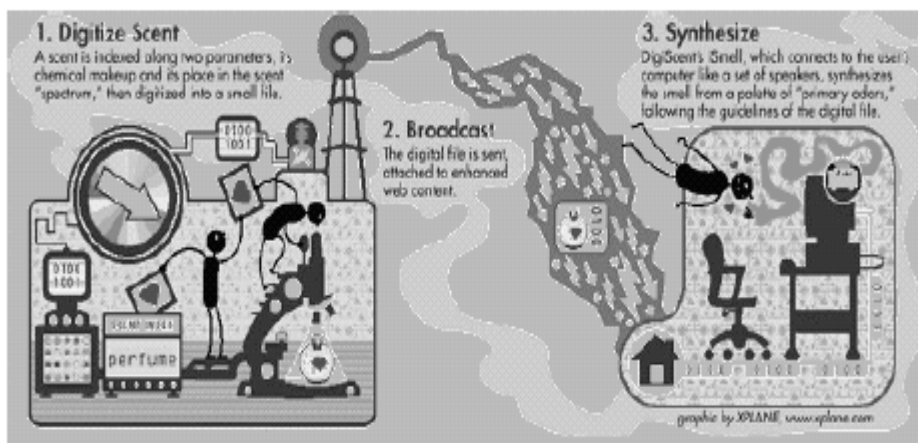
BROADCASTING OF SMELL

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.

CHAPTER 5

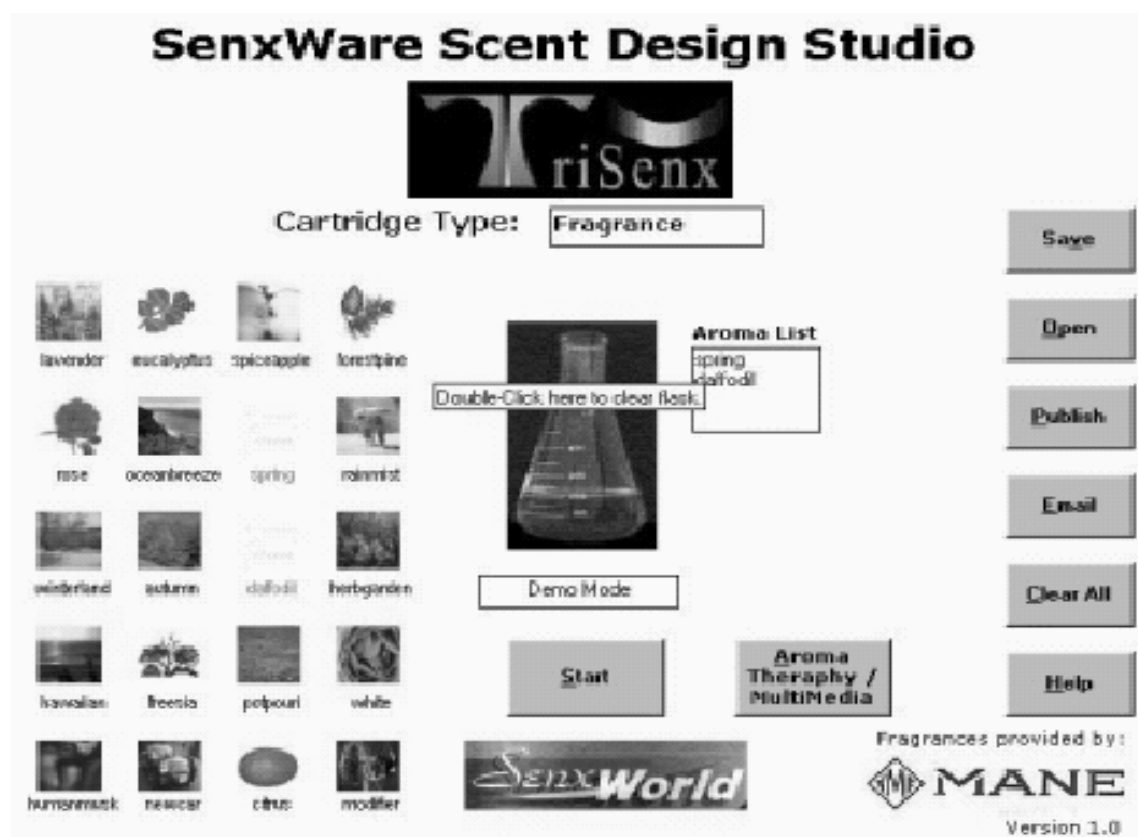# WHAT IS "ScentWare" AND HOW DOES IT WORK?

Figure 3. SenxWare software for designing fragrances

"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.

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. 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.

nortal 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 Scen

CHAPTER 6
WHERE IS iSmell USED ?
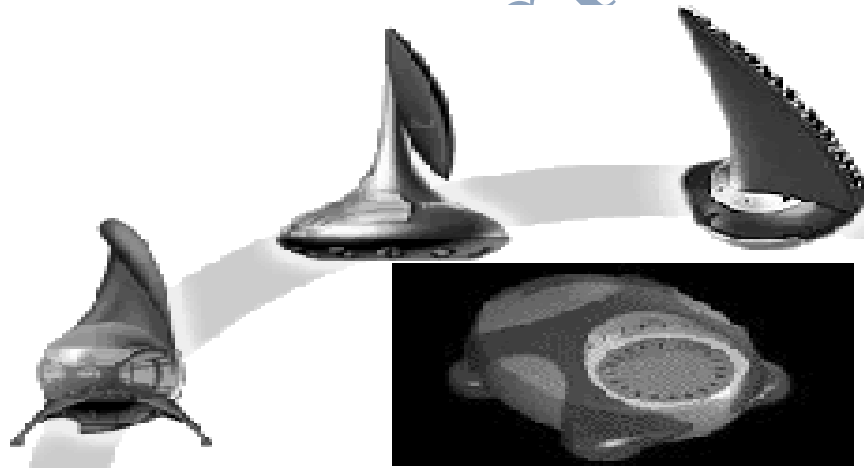
According to Brian Nelson at DigiScents, "What kind of smells can be emitted by the iSmell device? Just about anything you can imagine."

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:

Death to Banner Ads - Let the Nose Lead the WayCommerce tends to lead development, which is why some of the bigger scentware developers, like TriSenx, are partnering with companies that just plain smell. 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.

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 E-Commerce

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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.

6.1.4 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

6.2.2 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 came will more clear picture, better voice as well as ismell device, which will create more interest in watching the television.

CHAPTER 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.

CHAPTER 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.

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.

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