

Role of web enabled Digital Scent Technology

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Abstract---What if you could send the smell of amazing spice and curry with the picture? What if you open the picture of flowers on your computer and the amazing smell fills the air around you. Approximately three quarters of our emotions are affected by smell. That means smell plays a very crucial role in our daily life. The technology has been aimed mainly our sense of sound and sight. That's why we have realistic looking games, and graphics card. We can do video and audio chat online. The question arises, is it really possible to send and trade smells electronically? To build up the virtual reality acquaintance, technology is now focusing on your nose and tongue. You will be able to send and receive the scent, like smell the perfume before buying it online , smell the food to check it is fresh or not, and many more.

Keywords: Digital Scent, iSmell, smell synthesizer

I. INTRODUCTION: WHAT IS DIGITAL SCENT TECHNOLOGY?

The functional area of virtual reality is immense from normal entertainment to the online network and ecommerce application. Imagine how it would be incredible if you could experience the smell during your favorite games and movie scene. To further enhance the virtual reality experience, now technology is aiming your tongue and nose for the experience of taste and smell.

With the digital scent technology we are capable to digitally sense, transmit, reproduce and recapture smells, flavors and fragrances through the internet, smell burning tires in racing games, smell a perfume online, or sent scented ecards from scent enable websites. We can able to smell things using a USBpowered device that is supposed to emit appropriate smells at the appropriate times. This technology helps to create characters and gives an emotional intelligence of reality.

Digital scent technology brings its broad area of applications in scent-entertainment, games, movies and music, in communication which includes websites which is improved with scent. It is also relevant to E-commerce which will make online shopping fascinating and fun. In the new future you will be able not only to just see but also to smell and taste things on the internet or other application.

II. RELATED WORK

Scent over an Internet is still not very popular. The DigiScent Company that made an iSmell device burn out of business in 2001 and after two years wired magazine "that famous for its keen sense of the absurd" suggests the system might actually work. Aroma-Jet, another developer of smell based computer interface device, in 2001, they announced in a press release to successful transfer of scent over the Internet, also flopped, despite they continue to market it as an entertainment technology as well as medical use. The Company website is still up but it appears to have been a bit motionless since 2003 or so. Against the failure of Digiscent Company, one more company called "RealAroma" demonstrated the thought of scent over the internet still again in 2004 and also moves out flopped, despite the design of "Aroma Markup Language".

III. METHODOLOGY

Scent is detected by the electronic nose which otherwise act as the receiver. Like the color spectrum, there is also scent spectrum and any smell will be the indexed smell of primary smells in the scent spectrum.

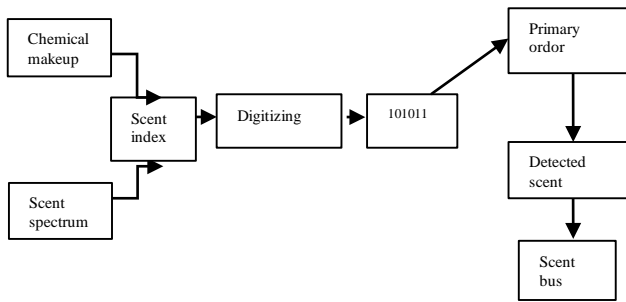


Fig: 1 Communication Model of Digital Scent Technology

As fig.1 shows the communication model of digital scent technology; with the help of these two parameters of smell; chemical Makeup and its position in the scent spectrum, e-nose detects the thousands of smells. According to its chemical makeup and scent spectrum; scent is indexed. Then each indexed scent is coded and digitized into a small file by olfactory signal processing. This digital file is enclosed with World Wide Web content or email to the recipient's computer. At the receiving end, when user will requests or activate the file by clicking a mouse or opening an email. The personal scent synthesizer will recreate the small amount of aroma and the air cannon will direct the smell to user's nose. The data about the smell is given by the digitally encoded file which is transmitted. The smell emitted will be in the form of vapors.

IV. V.
 VI. TECHNOLOGY BEHIND iSMELL

The Digiscent Company suggests iSmell; a hardware device, and ScentStream; a software for iSmell. ISmell is a personal smell synthesizer that can attach to your computer and it offers a range of smells. ScentStream is software that provides the driver and it will be connected to your Personal Computer or Laptop through a serial or USB port.

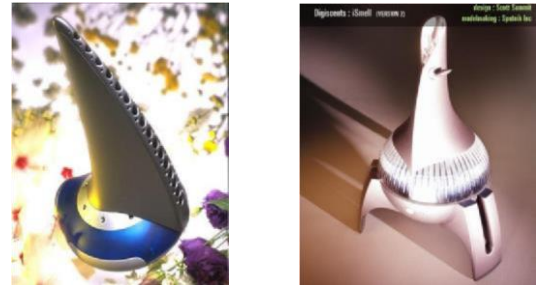


Fig. 2 the first and second version of I smell

Fig. 2 shows the example of ismell devices. The iSmell device uses a digital scent file. It produces a desired smell from a cartridge, and then transmits smell into the air with the help of air cannon. The personal synthesizers have a cartridge inside it which is disposable as the chemical inside it wear out.

The specifications are:

1. 128 chemicals are filled in this cartridge which can emit 10,000 smells.
2. ScentStream will provide driver program to active this device for computer.

C. Cartridge

The cartridge contains a palette of 128 chemicals. It stores either natural oils or man-made oils that will be energize by one of the air or heat up pressure, when a signal is send by computer. You can adjust the strength of the scent. Cartridge can be described as an "odors printer", because you can purchase a new cartridge or refill it. By mixing of these 128 chemicals or Oils, you are able to produce 10,000 smells.

program for iSmell. Scent Registry, DigiScent developed a Scent VIII. Registry to insure odor authenticity, keeps a digital record of thousands of smells for license to developers.

A. Smell Synthesizer

Scent synthesizers are devices which are used to generate the smell in accordance with the digitized file that is transmitted through the web. The scent synthesizers are interfaced with our Personal Computer over a USB port. It can be programmed or installed and it generates a small quantity of smell vapors into the surrounding that is enough to feel the smell.

B. iSmell

It is a peripheral device; a prototype of this device is shaped like a shark's fin. Ismell is about the size of a PC speaker

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4. Users can lock the particular smell which he has allergy. Ismell provides this facility.

B. Disadvantages

1. The price is one of the explicit. Why home computer users would be in favor to pay the \$250500+ price for the device that stinks. Some fanatic game fans may find this technology to boost their interactive media experience, but chances of this technology will acquisition in small booth and other specialty shops.
2. How do you ensure that the odor is systematically spread across the room or persons in a significant amount so as to be noticed by all the viewers at the same time?
3. The digital scent technology is even now under grown, and will need a dedicated partners and moderate venture, to transform the results so that smell branding companies can assurance and faith them.
4. Difficult to create olfactory process because of a set of primary odors has not been originated really.
5. The sense of smell is not well understood compare to the other senses.
6. Smells are not orthogonal.

IX.

X. APPLICATION AREAS

After a little success, the iSmell was entitled one of the "25 Worst Tech Products of All Time" by PC World Magazine In 2006, which mentioned that "few products literally stink, but this one did--or at

RESULT: ADVANTAGES AND DISADVANTAGES

A. Advantages

This technology can be used without cascade of hours, days, weeks and even months and can even mislead problems combined with the use of human panels such as individual variability, adoption, burnout mental state and liability to unpredictable material.

1. The iSmell is a condensed device and so it is easily carriageable and lightweight.
2. iSmell can distinguish simple molecules which cannot be consummate by human nose.
3. The cartridge store mainly natural materials.

- Online shopping,
- Online Movies,
- 4D cinema,
- Automated Aromatherapy,
- Smell emitting T.V and Mobile Phones,
- Play online smelling video games,
- Watch fragranced DVD's,
- Send perfumed email,
- Release food scents,
- Smell a perfume before buying them online,
- Smell the collection of just produced boiled coffees for business in their online store.

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XII. CONCLUSION

A fundamental problem includes in this technology is the complexity of smells, the unpredictability of air flows, the difficulty of managing timing and intensity. What make this technology more effortful to construct olfactory display is that there being no "primary and secondary odors" unlike three base colors red, blue, green from which we can construct any combination of colors. Odors are not orthogonal means you will not get a new one accordingly by blending two odors. Who would want to pay lots of money to be adept to smells of things?

Smells have a propensity to delay after scene change, odors might be pleasant for one thing but it can be nasty when combined. How many smells scenes do you really want to pact with? Smoke? Burning tires? Dead body?

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On the positive side, smell could improve virtual experiences such as online film and computer games. Multisensory experiences capture the attention of audiences better and olfactory provocation perfectly affects learning, mood and memory so Scent technology could help users to maintain a more calm and superb mood and an imminent in education.

Digital scent technology could enhance advertisement and swing consumer emotions towards a brand. The olfactory nerve is close to the areas of the brain both for the memories and emotions that's make it very powerful target for advertise. The potential of marketing would be huge by using scent in advertising. Despite the business, digital scent technology could help its users in a practically and intellectual way by enhancing the health and emotional happiness of its users. Aromatherapy, scientists have been justifying that include correcting the management of dementia, insomnia, headaches, and stress, indigestion, and anxiety patients.

Digital scent technology could also bring information about activities of computer like; a smell of an orange could be discharged at the same time when your file is uploading, during a shifting to a chocolate could brief you that your file has been uploaded successfully. These are called 'smicons'. This could be particularly useful for visually or hearing imperfect people who can find this technology useful in use of computer.

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XIV. REFERENCES

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