

## Smell of computer: Reminiscence of digital technological artefacts as a sensual experience

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### Abstract

*Valuing "old technologies" and some kind of digital cultural nostalgia are both generic and specific at the same time. For instance, those user groups and actors, who re-use old videogames and collect hardware and software, emphasize reminiscence and digital nostalgia. In a wider sense, this phenomenon is part of a digital retro-culture, called retro-gaming, and has been studied and considered as an emerging mega-trend in digital game cultures. But how do people recollect their relationship with digital technology in practise? How do they describe this relationship? This paper argues that role off different senses and emotional experiences are essential in recollecting process. The paper focus on one particular sense, sense of smell, and illustrates how people characterize 'odours' of their obsolete computers. The paper is based on online survey material collected in 2002–2003.*

### Introduction

"Smell of a computer component, when you take it away from the antistatic bag, it is indispensable. It is, somehow, technical and mild at the same time, 'grey coloured' smell. New laptops smell also little bit like warm and antistatic bag. And, when you install a new hard disk, there is the smell, which lasts one or maybe two minutes, which comes more likely from bearings, when you roll those golden discs first times."  
(343-M-19)

Nineteen old writer of the citation is not a French novelist Marcel Proust (1871–1922), who in his book *À la recherche du temps perdu* (1913–1927) tuned to nostalgia with a Madeleine cake dipped in linden tea. Those delights have been replaced by fragrances of computers, peripherals and their users, when young computer hobbyist recollects his IT use and anatomizes very flamboyantly his smelly computer experiences. Such high scale scent remembrance is not easy for everyone, but however, quite many people have information technological odour recollections. According to Diane Ackerman people can specify in principle about ten thousand different scents (Cit. Salmi 2001, 341–342), therefore it is no wonder why they remember also some computer related smells.

The paper is based on an extensive Finnish online survey and its open question of computer smells. I present preliminary results of the study how people recollect IT odours. How one could classify smell recollections? Is the reminiscence gender or generation specific? The aim of the paper is to

show how different senses are connected to technological recollection as well as to processes of nostalgia.

### **Smelly research?**

According to cultural historian Hannu Salmi, seeking of truth, the platonic tradition, is one explanation why history is portrayed mere as sphere of sensibility and reason not as an arena of senses. Salmi argues, however, that research on cultural history of senses is achievable and continues, that similar to the situation where gender is separable from sex, one can separate biological and cultural senses from each other.

Smelling alters from biological to cultural when people illustrate and interpret their smell experiences, compare and analyze odours related to each other and categorize them like good or bad smells. Some of those categorizations are based on biology but some of them are clearly historically and culturally constructed. Salmi (2001, 344) argues, that "sensual impressions are never loose from the social reality where sense perceptions are made."

This paper focus on cultural sense of smell, largely due to the fact that the analysis is based on literal descriptions of computer related smells written by computer users. The research material has been collected with an online survey in 2002–2003. The survey touched user experiences of information technology and it was a piece of a research project "Information Technology in Finland after the World War II. Actors and Experiences" of Department of Cultural History, University of Turku. The project for its part, was a fraction of the ProAct-research program funded by Tekes and Ministry of Trade and Industry of Finland.

The most of the survey answers appeared in February–March 2003, at the same time when the study was marketed most actively via email lists, newspaper articles, information sheets as well as in radio interviews. 744 people (515 male, 179 female, rest didn't answer the gender question) participated in the survey. The gender division is not explained neither by difference in computer use nor activity in participating in online surveys, but probably male users were more interested in specific IT related (specifically IT history) theme or presumed that they had special knowledge needed for answering the questions.

Most active participants appeared to be in the age groups between 16–35 years, even though the oldest participant was 74 years and the youngest (according to his own information) 9. Average age of male participants was 29 years and female participants 34 years. The 45 percent of the participants had an university degree and 35 percent had secondary school grade, therefore education level was quite high.

The massive online study consisted of 70 open and 19 multiple choice questions. The questions were divided into seven groups: 1) Personal information, 2) Information technological background, 3) Attitudes towards information technology and information seeking, 4) IT use and its physical and mental consequences, 5) Use of communication technologies, 6) Games, and 7) Personal computing history. (See more Aaltonen 2004.)

The survey included one open question focused on IT-odours: "What kinds of IT-related smells or fragrances do you remember? In which situations have they related?" (in Finnish, actually: Millaisia tietotekniikkaan liittyviä tuoksujia tai hajuja muistat? Mihin tilanteisiin ne ovat liittyneet?)

56 percent (n=515) of the 744 participants answered to the question. 91 of them wrote only one mark such as line (-) or answered that they don't recall any smell. And some of the participants thought that the whole question is odd:

"/ignore this humanist-stuff" (359-M-30)

"?????" (54-M-30)

"Smells!?!?!?!? nothing" (202-M-17)

For this paper, I have coded the answers with individual serial number, gender and age (during the time when answering). I have also translated answers from Finnish to English.

Because the material is collected with a survey, one can only speculate the reasons why all did not answer the smell question. The bad sense of smell or bad "smell memory" is not, however, a good explanation. I argue that most likely at least some of the participants left that particular slot empty due to first reaction for the question and length of the survey: when contributors didn't remember any IT-related smells at the first place, they jumped to a next questions.

One reason for thinking the question odd or difficult to answer might be in the general hierarchy of senses. Even though during the Antiquity the sense of smell was considered respectful and human, similar to sense of sight and hearing (comparing to non-human senses such as sense of touch and sense of taste), during the 18<sup>th</sup> and 19<sup>th</sup> century, smell was interpreted as primitive (Salmi 2001, 342–343). Like Laura U. Marks (2008, 126) express it: "Smell, the chemical communication, is uncanny because it reminds us what we have in common with pigs — and with mushrooms." Odour is a signal of such lower social classes and animals, and therefore it doesn't link to at first place to a modern and partially immaterial information technology, its users – or academic research on it. Deodoratization (to mask or neutralize an odour) is a part of civilized customs and civilization process which has growth stronger since the 19<sup>th</sup> century (see e. g. Elias 2000).

### Answer styles

There is an opportunity to classify participants on the basis of length or richness of their answers. The length does not most likely indicate personal quality of sense of smell but it reveals how eagerly people take a view to IT smells or how motivated they are participating in an IT history survey in general. From this perspective, the participants can be divided into non-smellers, listers, analyzers and connoisseurs.

The answers of the listers are the shortest – after non-smellers. Listers (or reciters) mentioned typically one or few smells, but they didn't enlighten more vigorously about backgrounds or context about their reminiscence:

"Nothing particularly. Dust, burned by electricity, perhaps... TV set has same kind of smell. Smell and taste of ink of a printer." (34-F-27)

"Burned dust" (508-M-28)

"Smell of a pizza" (509-M-31)

"Smell of electricity" (510-M-16)

Analyzers, on the other hand, described more the conditions or reasons which caused the smells or smell recollection:

"Plastic of a new machine smells always some time." (368-M-27)

"Floppy diskettes smell weird, like tape peripherals at my dad's workplace's computer centre." (693-M-25)

"In the late 80s, I made a joystick for my Amiga. That caused a little short circuit. I remember smell of burning, resembling broccoli. The smell as a matter a fact was so bitter that I managed to save my computer in time." (712-M-26)

Analysers used some adjectives and adverbs which characterized smells, but "smell connoisseurs" (only few of all answerers) specified and itemized even more carefully characteristics and grounds of odours. With this, smell connoisseurs desired either to demonstrate their ability as a smell expert or they clearly just get pleasure from making descriptions of their smell experiences. The first citation in the beginning of this paper is one fine example of this sort of attitude.

The description of IT-smell experiences was in general in many cases very positive and nostalgic thing. Also bad smell might have been nostalgic in certain cases. Positive experiences were anchored mostly in purchasing or using of new information technology, just as new home computer, peripheral device or a game. In this sense, there were even some sort of particular smell of new technology, which was almost always<sup>1</sup> pleasant of specific:

"Smell of new IT-products is unbearable, at least at a small and mal-ventilated room. Smell of silicone and plastic is first cause of headache." (246-M-20)

"Smell of burning machine in some amount... Powers of IBM Ps/2 scorched occasionally. Also that smell is in my mind, when you put a new component to your computer and take the component first time away from its plastic cover... Sniff, ooh." (251-M-24)

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<sup>1</sup> Smell of new cars have caused discussion of use of chemicals within novelties (see e.g. [http://en.wikipedia.org/wiki/New\\_car\\_smell](http://en.wikipedia.org/wiki/New_car_smell)), and there has also been online discussion on Apple computers and information technological devices' possible causes of nausea or allergic reactions < <http://forums.macnn.com/89/macnn-lounge/159077/the-apple-smell/>>.

“Regular smell of new electronics when one opens the package. I remember forever the smell of my own Commodore 64 when opening the box. Nothing is comparable to it. Well, fresh coffeebread perhaps.” (744-M-26)

“Smell of new plastic, when you buy a brand new machine or a component. The smell brings my mind technology, progress, development.” (729-F-25)

The last citation about smell and progress is very appealing, because writer connects smell of new technology to a whole life style or phase of development. This all shows that opening the package or unwrapping experience is very essential in using of novelties, and the fact is noted in marketing studies (see e. g. Wever and Del Cas 2006). Also “smell design” is one area which has been under development lately within transport industry as well as with shopping malls.

In addition, there are only few mentions of old, typically dusty technology and its special smell, but there is indeed some special odour related to obsolete technological devices. It can be identified as technological “smell of death” which has been typically connected, not to technology, but people, deceases and rot (cmp. Salmi 2001, 356) – even though the dead of a computer smells differently than departed human beings.

### **A basic division: Machine smells, human smells and ”peripheral smells”**

IT smell experiences can split roughly into two sections by their contents. They can be divided into machine based smells and human based smells. Talks about of machine based smells are many-sided, but they are very difficult to analyze and define clearly. Hannu Salmi (2001, 248) mentions that the disability to specificate is very typical for sense of smells. According to Laura U. Marks (2008, 125) smell “seems to be the least translatable and most personal of all the senses. Smells can be semantically coded, but less easily than other sense perceptions for this reason.” One can note this from research material as well: many of the participants wrote about e. g. smell of plastic, electricity or ozone. Specifically older participants mentioned also smell of sterile or dry computing centre, and smells connected to printers, diskettes, printer inks or papers were mentioned often.

One of the most common machine related smell was so called ”the action smoke”. The smell was not connected to everyday experiences of computer use but dramatic and mostly unexpected (but sometimes feared and anticipated) situations. Laura U. Marks (2008, 130) argues that we still use smell for survival reasons to recognize dangers with food, gas as well as with technologies.

Many of the contributors told stories about short circuits and malfunctions which appeared as smoke and smell of burning plastic or electric components. Also Satu Aaltonen (2004, 109), who has made a general report on the same survey material I’ve been using, has noticed that smells described in the material had been typically related to three situations: installation of the new machines, break-down of a certain part or component of the machine, or normal usage.

Participants didn’t report only that sort of smells which were directly rooted to functioning computers. They also described kind of external smells which had been attached to computers

during a long use process, meaning odours such as cigarette smoke or dust. They were typically interpreted as negative and they could be called as *side-smells*.

Human-based "IT-smells" were also typically interpreted as negative. They were related mostly to sweating or other bodily functions:

"Computers don't have fragrances, but their users smell sometimes." (50-F-37)

"Shit and sweat... One locks a bunch of guys in a room for playing digital games and forgets to ventilate." (371-M- 23)

"There was a strange smell at a mate's home. I used to visit there, because he needed a lot of my advices with his computer. Otherwise, we were not such good friends. Every time I was on their hallway, I had the feeling, that this is a strange world and I am just an instrument for them." (381-M-29)

"When you enter a university's computer class room you notice that computers have their characteristic smell. It is hard to describe it, but I guess that everyone notice it when one enters to same kind of a place. If there has been too much male crowd in the computer room, doing their practical works, then the smell is simply bad." (620-F-25)

In this case one can notice gender difference, due to the fact that if gender of the bad smelling user was mentioned, malodorous users were all male. Male and female participants both mentioned particularly smelly males, and the conceptions are dealing with common stereotype of computer nerds with bad personal hygiene which is related to machine oriented antisocial behaviour.

Although the fundamental separation can be formulated between human and machine based smells, there is also some sort of unclear "third class", which can be named as *smell of work*. It can be connected to "bad air" of long lasting videogaming or computer use, but surprisingly often, it deals with positive as well as nostalgic aspects. If users spends hours a day with computers s/he has to take care of her/his personal physical needs. From this perspective, there emerge many IT-related smells which are perceived as positive ones. The smells tied to food, beverages or stimulants, such as pizza, hamburgers, cola drinks, coffee (very often) or tobacco (this time in positive sense), occasionally even to bright summer nights:

"Hot coffee – a coffee cup is always next to a computer." (21-F-54)

"Fresh summer weather, nightly coding sessions of youth." (33-M-23)

"Smell of pizza... cold one... in which that is related? Not in to eating near computer? Of course smell of newness of computer components, and when you have sat with computer like 12 hours, it really stinks in the room when you return there after a break... yes, only just then you notice when your nose is recovered from its torpor." (304-M-14)

Even though these descriptions refer to satisfying of bodily need, it is also question of social rituals which connect individual computer user experiences to wider context of computer usage and information work. Particular drink and food can denote significations of nerd culture, and coffee

breaks and smoking in their part, are able to be related to significations of hard-work ethos, brainwork or needed breaks. Therefore, the recollecting individual does not only express his or her personal history or feelings on computer smells but also adapt the story to collective culture of information and communication technology, affects, emotions, work and work roles (cmp. Suominen 2009).

### **Reminiscence with odours**

Smell memory or at least its representation can be connected to several phases or styles of computer use. Certain smell can be constant feature of information technology or IT-work. A smell is able to be as well a characteristic of certain information technology quality or age. Often however, smell is related to a unforgettable turning point or a surprise such as getting a new special computer or destructive crash-down of the machine. Smells mark also some odd special situation related to computer use. In addition to this, odours bring computer peripherals, accessories, individual users or whole social using situations to person's mind.

There is individual, probably also gender or generation related differences in remembering smells. The differences can be based on biological factors, but they are also cultural and contextual and connected to research material collection method or subjective experience of her/himself as a sensual person.

Use of smells is one technique which helps to get touch with information technological user experiences and their reminiscence. I came to interested in the theme as a part of wider research on sensual and emotional history of computing and because I had an unused research material dealing with the topic. My interest in this paper has focused more on sensual impressions than sensual spaces and environments, which is also one subject matter of cultural historical research on senses (see e. g. Salmi 2001, 351). But how one could activate and utilize smelling in collecting research material? It might be difficult to provide stored computer smells to informants, but one could bring some artefacts or images to interviewing session for motivating an informant or even for sniffing. One could also organize interviewing sessions in computer labs or centres where informants could empathize in memories of IT use. Also, already simply talking about smells could activate informant. Laura U. Marks (2008, 125) notes, that "an odour smells stronger when the smeller knows what it is." She also argues (2008, 126), that "[e]motionally intense experiences (not all experiences) are likely to cement an association between the emotion and the odour associated with the event (hence the olfactory imaginary), even if the event itself is forgotten."

Smells have been manipulated thousands of years already for giving certain personal impression or for example for religious and cult purposes. For this perspective, cultural research on smell reminiscence has also possibilities for applications. It is not clear how much technology producers already utilize smells in product making and marketing already. Laura U. Marks (2008, 131) argues, however, that during the last few decades is occurred an explosion of sensuously pleasing consumer products. This twist of odorization can be extended more heavily to information technology in the future.

When I presented the paper in Graz in May, I received a comment from the audience where it was suspected that Apple perfumes already its products. Also, from online discussion forums one can find messages where users describe with enthusiasm smell of their Apple creations:

May 4, 2003, 05:23 PM

Originally posted by off/lang:

**Is it just me, or is there an Apple Smell? I mean, whenever I open a new Apple product or goto the various Apple Stores, there's always a consistant smell.**

**I noticed this today after getting my new 15gb iPod.**

**Am I crazy?**

Oh my god, I'm not the only one!!!!!!

When I got my iBook, it had this great wonderful Apple smell...it doesn't anymore, but sometimes I think of just buying a new PowerBook just to get that smell back...



My own study on culture and cultural history of IT smells will go further on. In the future, I will continue towards synesthetic or multisensory analysis on computer user experiences and technological nostalgia.



## References

### Primary material

Apple smell -discussion (May 4 2003), Applenn-forum. Retrieved June 11 2010  
[<http://forums.macnn.com/89/macnn-lounge/159077/the-apple-smell/> ].

Tiesu – online survey material 2002–2003 (744 participants) . Archived in collection of Department of Digital Culture, University of Turku, Finland.

### Literature

Aaltonen, Satu (2004), *Tunteita, tulkintoja ja tietotekniikkaa*. “Milloin kuultit ensimmäistä kertaa tietokoneista?”-kyselyn tuloksia, Tietotekniikka Suomessa toisen maailmansodan jälkeen: toimijat ja kokemukset -projektin julkaisuja, Turku: Turun yliopisto.

Elias, Norbert (2000), *The civilizing process*, Translated by Edmund Jephcott, Rev. ed, Oxford : Blackwell.

Marks, Laura U. (2008), ‘Thinking Multisensory Culture’, *Paragraph*, Volume 31, Number 2, July 2008, 123–137.

Salmi, Hannu (2001), ‘Onko tuoksuilla ja äänillä menneisyys? Aistiympäristöjen historia tutkimuskohteena’, in Immonen, Kari & Leskelä, Maarit (Eds.), *Kulttuurihistoria. Johdatus tutkimukseen*,. Tietolipas 175, Helsinki: SKS, 339–357.

Suominen, Jaakko (2009), ‘Computer as a Tool for Love – A Cultural History of Technology’, *Proceedings of 8th Annual IAS-STIS Conference “Critical Issues in Science and Technology Studies”*, 4th–5th May 2009. CD-ROM. IAS-STIS, Graz. [Retrieved from: [http://www.ifz.tugraz.at/index\\_en.php/filemanager/download/1558/Jaakko%20Suominen.pdf](http://www.ifz.tugraz.at/index_en.php/filemanager/download/1558/Jaakko%20Suominen.pdf)].

Wever, Renee Wever and Del Castillo C, Alejandro (2006), ‘Thinking out of the Box; the Unpacking Experience of Consumer Electronics Products’, 15th IAPRI World Conference on Packaging, Tokyo, Japan, 2006 [Retrieved from: [http://repository.tudelft.nl/assets/uuid:68a05837-b13a-4f2c-894b-24dcd9994712/wever\\_unpacking\\_experience.pdf](http://repository.tudelft.nl/assets/uuid:68a05837-b13a-4f2c-894b-24dcd9994712/wever_unpacking_experience.pdf)].