Using Multi-sensory Design to Improve Human Experience

The smell of damp woodland after autumn rain, the sound of birds high up in the trees and leaves covering the surface as a gentle fog rolls towards me. Picking up the silver leaf, its weight and smooth surface feels satisfying in my hand. I look down at the miniature mushroom landscape presented in front of me, beautiful to the eye, almost too good to eat. Taking a scoop I close my eyes and I'm transported to another place, somewhere from a long forgotten childhood fantasy...

In a split second I'm back in the room, surrounded by 7 other diners, on the top floor of a warehouse in the middle of High Barnet; I'm at Kitchen Theory’s Gastrophysics Chef's Table, course 8 into a multi-sensory immersive dining experience hosted by Chef Jozef Youssef and his talented team.
Time to re-engage...

In an age where we are constantly surrounded by technology and screen based interactions this proved to be a refreshing and thought provoking experience, putting our most natural and most precious resources as humans in the foreground. I was experiencing complete multi-sensory design, a carefully crafted manipulation of my senses to influence my perception of flavour. While this form of ‘sensory wizardry’ is more common in the food and beverage industry, architecture, interior design and even automotive; how much is multi-sensory design really considered in the development of consumer electronics today? I’m not talking about smell-o-vision, but delightful little physical & sensorial human to machine interactions (HMIs) that allow us to re-engage with the real world; physical immersive experiences that coexist with the digital ones!

‘Touch’ got a digital make over...

The sense of touch, once predominately down to carefully crafted material & finish design, has taken on another dimension over the past decade through haptics. Early versions featured in gaming devices and simulators, followed by laptops and mobile phones; now largely seen in wearable devices where their proximity to the body/skin and increased desire for discretion of technology has given rise to a more sensory approach. The Apple Watch was probably one of the most notable products for leading the change in this multi-sensory approach in wearables with their ‘Taptic Engine’; using haptics as an alternative to visual and audio notification, the linear actuator inside the watch creates a gentle ‘tap’ on the wearers’ wrist giving the technology a more discreet and ‘human touch’. Apple have since
tied this feature into a range of other functions; when combined with the GPS and fitness, cycling or way-finding apps, the watch can relay directions and route instructions though a series of ‘taps’ to the wearers writs - great to see technology supporting ‘heads-up’ and engagement with our surrounds.

The sense of smell is a relatively under severed in consumer electronics, while there have been past explorations by manufacturers into using scented plastics on mobile devices, a combination of technical challenges and subjective nature of scent preference has meant that it hasn’t moved past exploration and niche applications. Exploiting the ubiquitous nature of sensors in our daily lives and the miniaturisation of the technology; start-up eScent® are developing a wearable that emits scent (e.g. perfumes, essential oils, insect repellent, hormones, pheromones, pharma, etc.) based on sensing various consumer factors such as context, emotional & mental state, biofeedback & sound. Pitched as a “resilience builder” and “mood booster” the wearable is aimed at a range of markets from sensory fashion-tech to beauty, wellbeing, healthcare and entertainment. “eScent® creates a unique context-dependent ‘scent bubble’ around the face that is pertinent to our own personal situation, condition or location, augmenting how we as humans interact with the physical world around us.” With a number of patents in the UK, China & USA the company are currently in the ‘miniaturisation’ phase of device development with the aim of achieving a jewellery-sized ‘sense and dispense’ wearable – one to keep an eye out for in the coming years.

So where do we go from here?

Designing for the sense is a constantly growing market across industries, with an increase in brands also utilising sensory marketing as a means to engage with consumers on an emotional level, and ultimately influence their purchasing decision. Multi-sensory design in consumer electronics is about getting the right balance between the digital and real world experiences - understand what should sit in the foreground and what should sit in the background. Context awareness, behavioural leaning and Internet of Things (IoT) pose some of the most exciting opportunities for multi-sensory design in this sector; consider how different sensory elements could simultaneously change depending on user context and bio-sensing.
It’s not necessarily about simply cramming as many multi-sensory features as possible into one device; consider how multiple connected devices within a person’s ecosystem could ‘work together’ to create more sensory everyday experiences and help people connect with each other and the real world. Imaging the sound of your device changing its ‘tone of voice’ (or pitch) based on your mood; or your phone understanding that you’re in a noisy environment so sends you alerts through a ‘nudge or tap’ via your connected wearable; or that you’re vaping a fruit flavoured E-liquid so your connected pendant releases a complimentary fragrance that enhances or changes perception of the flavour? With inspiration from other industries and a little bit of imagination the possibilities are endless...

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The juxtaposition between digital technology and multi-sensory will always exist, however, the tension between the two is easing as brands, manufacturers and ‘sensory explorers’ across various industries are finding new and exciting ways to stimulate our senses through digital technology.

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**Colouring our taste**

As the digital world is quickly taking over all aspects of people’s lives, we have come to realise that a return to the basics is a well-needed breath of fresh air

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**Digitalised senses and e-commerce**

Whether used for recreational benefits or more serious purposes; multi-sensory technology embedded into the retail scene shows how smell, taste, sight and sounds can be converted into revolutionary innovations