

# Digital “New Car Smell”

## Identifying and conveying the feeling of newness in digital products

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### ABSTRACT

Newness and the emotions related to new products have been widely discussed in the design research community. However, a debate on what newness means for digital products and services is lacking. To gather more insight on this topic a literature review was conducted pertaining to newness and innovation in the digital sector. Based on this literature review the importance and influence of the sensation of newness relating to digital products and services was identified. Based on these findings six elements that elicit the feeling of newness in digital designs have been identified: newness in aesthetics, symbolic newness or new meaning, newness in function, a pristine product, positive emotion and surprise, and new interrelatedness. These elements have been analyzed in relation to existing digital products. Conclusively, the importance of conveying the sensation of newness in digital designs is emphasized, and recommendations are given on how to utilize the six elements identified as an important foundation for long-term product-user relationships.

**KEYWORDS:** Digital Newness, Innovation, Emotional Design, Digital Design, Newness

## 1. INTRODUCTION

The importance and influence of emotional design has been well established over the last few years [1-10]. How products and services emotionally affect users has been widely researched and categorized, and there is a consensus that design for emotion will result in products and services that are more successful and pleasurable to use. Emotional design is being adapted in design courses in universities all over the world and utilized by countless design firms. As Hummels [11] points out: “The designer’s emphasis should not merely lie on creating a beautiful pleasing product in appearance, but expand to creating a beautiful, engaging interaction with a product” (p.4).

The sensation of newness is a powerful mix of different emotions, stemming from the appreciation and exploration of a new product or service, which can leave the user with a positive sense of discovery [12]. This sensation is often related to physical products [13-15], such as when driving a new car for the first time. In popular culture the term “new car smell” has become synonymous for the positive experience a person can have with a new product, and it is even possible to buy spray-cans of “new car smell” to simulate the feeling long after its original source is gone. The importance of newness has been discussed by Wood and Moreau [13], who argue: “The emotional experience of initial use is more influential for technological or functional innovations (e.g. a computer program) than for simple experiential or aesthetic products” (p.46). Talke et al. [16]

further claim that “design newness has a positive impact (on market performance) right after the introduction and persists in strength over time” (p.601). Within the digital design field research has mainly addressed aspects concerning how to facilitate and improve the end-user’s emotional connection to digital products [17, 18]. However, analyses on how to enhance the sensation of newness are rare.

Therefore, this article will discuss the sensation of newness in digital products such as websites and applications – ‘digital newness’ - as a concept and tool to facilitate the development of a strong relationship between user and product. The topic is new and more research is needed to explore this important aspect of experiencing digital designs.

After a review of literature on newness and innovation, this article identifies six elements that elicit digital newness: newness in aesthetics, symbolic newness or new meaning, newness in function, a pristine product, positive emotion and surprise, and new interrelatedness. It further recommends how to use these elements in digital designs, combining them to create a product or service that elicits newness in a way that intrigues and interests the end-user, without causing confusion or disorientation due to the level of newness being perceived as too high.

## 1.1 Background

In emotional design, Hekkert [19] provides a comparatively sufficient framework on how people experience products that presents three interrelated categories:

1. *Aesthetic experience* relates to the physical appearance of the object and the first impression that it imposes upon all the senses of its observer, properties like color, shape, texture and weight. It also ties into the product's use, and here Hekkert stresses the importance of

maximum effect for minimal means, i.e. a functional and effective product.

2. *Experience of meaning* refers to different connotations that users attach to products. This category comprises social, spiritual, and functional aspects as well as self-image, personality, and memories.
3. *Emotional experience* concerns emotions that products elicit in the user and is dependent on the two other facets.

These categories are, however, analytic, and in real life people experience products on many levels simultaneously. The hypothesis of this article is thus that the experience of newness is a complex response to a product or a service, and the further focus thereof is dedicated to exploring what might elicit this sensation.

It has been said that newness causes a “distinct, pleasurable response to the product” [20], a feeling that the author is certain everyone reading this article has experienced to a varying degree, whether it be with a new phone, piece of clothing, or application. A positive first impression can cause what is sometimes referred to as a ‘halo effect’ [21] or ‘cognitive confirmation bias’ [22]. The effect of this is that the first impression of a product or service colors the evaluation of other of its attributes, meaning that users search exclusively for confirmatory evidence supporting their initial hypothesis. Lindgaard et al. [23] found that also the opposite holds true: even though a product is highly usable it “may fail to impress a user whose first impression was negative.” These emotions are formed *before* the rational mind has cognitively analyzed the product [24] - in a manner of milliseconds - and cannot be voluntarily controlled [25].

A description of the sensation of newness is proposed by Desmet, Porcelijn and Van Dijk [3]: a ‘sensation of wow’ that is made up of a combination of three emotions:

1. *Fascination*, a pleasant sense of unfamiliarity with a product or service.

2. *Pleasant surprise*, experienced as a product is perceived as suddenly and unexpectedly matching a need or concern the user did not realize they had.
3. *Desire*, where owning or using the product or service would fulfill a goal or need in the user.

Furthermore, McCarthy et al. [12] describe a feeling of enchantment with technology that involves “being carried away by the power behind the technology,” and a feeling of disorientation that “is associated with a pleasurable sense of fullness and liveliness that charges attention and concentration (...) a sense of something not yet understood leaves us feeling disrupted but also alive, attentive and curious” (p.3). Lastly, Khaslavsky et al. [26] detail a process of seduction between product and user, the first step of which being enticement: momentarily grabbing attention and eliciting an emotional response. They argue that a product needs to differentiate itself in order to grab the users’ attention and then hold it by creating a promise of future fulfillment, be it self-realization, functional or aesthetic. This sensation is a potential first step in creating value and a long-term relationship with a product or service.

Another aspect of newness is how different people react differently to the same products. Products will rarely, if ever, be new to everyone, and the feeling of newness may vary in different situations. So-called “lead-users” [27] are users who are generally first-adopters of new technology, and their attitude can be a driving factor for product acceptance in the general market. However, these users will often have a much higher threshold than the average user for feeling a strong sense of newness. Similarly, an interaction designer will not have the same sense of newness when experiencing responsive web pages and the latest in internet technology as a casual user of the same product. In other words, prior experience and personal background will heavily influence the experience of newness. Moreover, the situation in which newness is experienced can vary wildly. If a user is actively

investigating new products, as a lead-user might, their sense of newness can become numbed, or at the very least become less powerful than that of an average user experiencing a new product or service without prior knowledge or planning. This can occur if the user is suddenly exposed to it by a commercial or introduced to it by a friend or a sales representative. These lead-users represent a small number of users, and this article will focus on average end-users, the majority of users of digital products. It will further explore how to affect newness in them when experiencing a product or service for the first time.

A closely related subject to the concept of newness is that of innovation: innovative products, by their very nature, evoke a sense of newness in the end-user, and Talke et al. [16] have demonstrated that product innovativeness is a relevant driver of new product performance (in the market). That being said, a product does not need to be an innovation to give a sense of newness. Innovative products challenge and excite users with new functionality or aesthetic dimensions that “are likely to trigger strong emotions” [15], potentially positive or negative. Innovations can either be incremental; characterized by small changes relative to the current technology, or radical; innovations that represent a fundamental departure from current standards. Cooper [28], and Kotabe and Swan [29] argue that innovation can occur within a company, i.e. a company innovates already existing products or introduces new ones to its portfolio, or in a market, i.e. products are introduced to a market in which they have never been available before. Concerning the average end-user - the target of this article - innovation in the market is most relevant.

Some authors [4, 18, 30] claim that end-users do not feel as attached to the physical digital products, such as a phone or computer, as they do to the content or function of that product. In effect, it is not the computer itself that the users love, but the things that they store on the computer, the things they can do with it, and the programs they have installed on it. Odom and

Pierce [18] state that: “with respect to digital things, participants often expressed strong attachment to what a digital thing provides but rarely if ever expressed significant attachment to the digital thing itself” (p.3795), and Turner and Turner [30] found that users “rarely expressed strong attachment to digital artefacts.” This further underlines the importance of a strong relationship to the **digital services** provided by products such as personal computers and mobile phones, relationships that often depend on the users’ first-impression of a product [23]. This is an area where digital newness can have a profound impact. In the following section some definitions that are used in this article will be provided, followed by a more detailed discussion on digital newness.

## 1.2 Definitions

### **Newness**

*Newness* will refer to the emotions elicited by a product or service when experienced by an end-user for the first time. These emotions can be both positive and negative, depending on the level of perceived newness by the end-user.

### **Innovation**

*Innovation*, when used in this article, means an aspect of a product or a service that breaks with the existing paradigm of a particular field of design in some way, be it through aesthetic, functional or symbolic means.

## 2. METHOD

This article is based on a document- and literature review on the topics emotional design, newness and innovation. The sources are journal articles, books and material from blogs and websites.

After examining what causes a user to feel a sensation of newness in a product, the article will draw examples from real-life products. In conclusion, the article will discuss similarities and

differences of newness in physical and digital products and give some recommendations for designers to create and sustain a feeling of digital newness in their designs.

## 3. NEWNESS AND INNOVATION

### 3.1 The feeling of newness

The feeling of newness arises when a user encounters a product or service that is new to him or her, and can “act as a trigger for or facilitator of the adoption process” [31] or even be its own “means to satisfy an end, such as affiliation, achievement, variety-seeking, or self-expression.” [32] Dinnin [20] argues that the feeling “creates short-term value”, and explains newness as a combination of three factors:

1. *Situational product involvement*, meaning that a user's interest in a product will be at a peak the moment he or she decides to buy or use the product - they will be excited, intrigued and more open to connect with the product
2. *A sense that the product is pristine*, implying that the product must appear unused. A distinct sense of disappointment can even occur if the user experiences the new product as used, or even simply touched, by someone else. In the case of digital products the designer must devise novel ways to simulate this experience, as digital products such as applications and software have no physical packaging or a tangible exterior which the user can judge to be pristine
3. *Physical possession* concerns the feeling the end-user experiences when the new product is finally in his or her hands. The importance of physical possession is backed up by Kahneman and Tversky [33], who state that “an object's value increases as soon as the individual takes possession of it.”

Based on Hekkert's [19] three categories of design experience, namely the aesthetic experience, the emotional experience and the experience of meaning, we can extrapolate that a user can feel newness in a number of ways:

- A product can have an innovative and new shape or materiality that invites curiosity and excitement from the user. This is typical in companies that rely on design-driven innovation, such as Bang & Olufsen, Alessi and Apple. These companies do not rely on user feedback, but rather on their designers to propose new needs and norms for the future through their designs [34].
- A product can - either incrementally or radically - improve on or change the way it functions, that is, change the user experience without changing the outcome of the product's use. This is typical for user-centered design, which aims to identify existing user-needs, and develop products that fulfill them. User-centered design is a widely utilized design methodology, used by companies like Continuum and IDEO [35], and is taught to design students all over the world.
- A product can change the symbolic and societal values attached to it through branding and advertising, or even sometimes by chance [36], and thus acquire new meaning. Verganti [37] argues that such changes stem from innovative companies who propose and push their innovations into the market, rather than from the consumers. He argues that in order for a design to have a radical innovation of meaning, it must not get too close to current user needs as these are bounded by the existing socio-cultural regime of paradigms. Instead the designer must investigate the evolution of society, culture, art and technology to better understand, create and influence new product meanings.

- Lastly, a product can change the way it interacts with its surroundings. In the age of the 'internet-of-things' [38, 39] it is a growing trend that an increasing amount of household objects are connected; to each other, the internet or both. This creates new opportunities for interconnectivity and newness that were previously impossible or simply unimaginable.

Relating this to the 'feeling of wow' [3] and Khaslavsky's [26] moment of enticement, the user must experience fascination, pleasant surprise and delight within any of the above categories, thereby garnering their attention before making a promise of future fulfillment of their needs. However, if a design displays too much newness it can have the opposite effect; the user is alienated from the product, rather than enticed into using it.

### 3.2 Innovation

Newness is closely linked to innovation and Slappendel [40] states: "The perception of newness is essential to the concept of innovation as it serves to differentiate innovation from change." Norman and Verganti [41] define four types of innovations:

1. *Technology-push innovation* comes from radical changes in technology, such as the invention of color TV. This type of innovation is driven by the advance of technology, and not by the users or designers themselves.
2. *Meaning-driven innovation*, as Norman and Verganti explain it, "starts from the comprehension of subtle and unspoken dynamics in socio-cultural models and results in radically new meanings and languages, often implying a change in socio-cultural regimes. The invention of the mini-skirt in the 1960's is an example: not simply a different skirt, but a radically new symbol of women's freedom that

recognized a radical change in society. No technology was involved” [41] (p.13).

3. *Technology epiphanies* stem from the use of existing technology in totally new contexts, and may cause a radical change in meaning. Examples include the use of motion-tracking technology in the Nintendo Wii, causing the video-game machine to change meaning from an activity for teenagers obsessed with graphics and war games to becoming a wholesome, physical activity for the whole family.
4. *Market-pull innovations* start from an analysis of user needs and develop products to satisfy them, as is normal for user-centered design. Norman and Verganti argue that this is most suited for incremental innovations.

According to the findings of Petkova and Rindova [15] innovative design has a certain degree of incongruity with what came before, which is an important factor in influencing the perceived value of an innovation. They argue that designs with a higher grade of novelty will elicit stronger emotions, but that these emotions can be either positive or negative. If the newness of a design causes frustration and disorientation because of its deviation from the paradigm of its particular field of design, it will be rejected by the users. However, if this incongruity is solved, i.e. the user understands how the product works, it will trigger strong emotions of excitement and enthusiasm. On the other hand, incremental innovations will only trigger “low-intensity positive emotions, derived from familiarity and predictability”. Finally, they conclude that moderate innovations are likely to have the highest perceived value, and that “increasing visual (and symbolic) dissimilarity is effective when it causes moderate incongruity (...) but also ensures that the incongruity created does not interfere with the taken-for-granted functionality of the product” (p.11). This is further explored by Mugge and Dahl [42] who found that evaluations of products with radically innovative function, i.e. products that offered new functionality to the

user, benefited from a low level of design newness, while evaluations of products with incrementally innovative function, i.e. products whose function had been improved or simplified, showed no difference between low and high levels of design newness.

Further promoting the cause of material (visual) innovations is Verbeek [43], who argues that: “if someone's attachment to an object is only based on the way it expresses his or her lifestyle, then the object is vulnerable to being replaced by any other one with the same sign characteristics. The same holds true if the attraction is based only on the functionality of the products” (p.225), and according to Schoorman and Robben [31], the appearance of a product is “the most prominent means to induce novelty.” In addition, Lindgaard and Dudek [44] found that when users were asked to rate the usability of two products with equal functionality but a varying degree of visual appeal, the products with the highest visual appeal would achieve the highest score on usability tests, despite having the same, often low, usability as the less visually appealing product.

This being said, to create a strong feeling of newness and attachment it is important to engage the user on several different emotional levels, as Odom et al. [4] argue: “it is often the mutually reinforcing interrelations among function, symbolism, and material qualities that contribute to the formation of a high strength attachment to an object” (p.1056).

### **3.3 Decline in feeling of newness**

The importance of the first impression of a product or service can - as shown above - be significant, but in the end, newness fades - ultimately, your *new* phone will slowly but surely become simply your phone. Dinnin [20] argues that this is caused by the dissipation of the additional value created by the newness in the first place. She relates it back to her three factors; situational product involvement, a sense

that the product is pristine, and physical possession, arguing that the longer the user is in possession of the product, the less involved in it they become - it is no longer at the front of their mind. According to Richins and Bloch [45] “once the purchase has been made, consumer arousal and time spent thinking about the product decline as purchase needs and product novelty subside” (p.280). Furthermore, the product’s pristine exterior will eventually be blemished by marks of use, or even damaged. Lastly, the feeling of finally possessing a new product is a one-time-only experience and cannot be recreated twice with the same object.

In the following section, the review of literature on newness and innovation is applied to create a framework for creating digital newness.

## **4. CREATING DIGITAL NEWNESS**

### **4.1 Elements that elicit digital newness**

#### **4.1.1 Aesthetic newness**

A way of making a digital product elicit newness is through innovative or new aesthetic choices. Aesthetic newness in digital products relates mostly to interface- and graphic design, as materiality and other sensorial aspects will be limited by the device on which the product is experienced. In addition to visual novelty, elements like sound and haptics can be utilized. As has been discussed above, for most digital products moderate newness in aesthetics will produce the best result [15]. Aesthetic newness is relevant within a product group; a design that might be perceived as aesthetically innovative in one particular field of design, may not automatically be perceived so in another. To this effect, Whitfield and Slatter [46] state that: “the design newness of a product depends on the degree to which it has visual attributes in common with other members of its category.” In addition Monö [47] proposes two possibilities for newness in products: newness relative to the company’s present product portfolio and newness relative to the firm’s product

generations. A recent example is the Windows 8 operating system, which utilizes a completely new visual template from previous Windows operating systems, designed for touch-sensitive surfaces and use across multiple devices.

#### **4.1.2 Symbolic newness or new meaning**

Newness in symbolism can be achieved through marketing or branding as a means to best control the product’s symbolic meaning to the end-user. Aside from the functional and personal meaning arising from users’ personal history with the product and a well-functioning and beautiful design, a design should also reflect the user’s values and personality. Through branding and personality a product can easily stand out from a crowd of functional but soulless products, and here newness in symbolism can make it appeal to a whole new group of users. Considering Norman and Verganti’s [41] meaning-driven innovation, newness in meaning can also be achieved through understanding and exploiting current socio-cultural trends to create a product or service that expresses a need that the end-users do not feel yet, but will embrace once faced with. This is clearly not the easiest task, but promises to be very rewarding if successful [48, 49]. Apple’s positioning in the market as the number one computer for designers, creatives and artistic souls is a good example of imbuing a personal computer with deeper meaning.

#### **4.1.3 Functional newness**

Providing the user with a new way of doing an old task can be a potent source of newness. This can be achieved through the digitization of previously physical tasks such as substituting physical mail for e-mail, or by improving and streamlining existing products through user-centered design, either to provide a new and better user experience, or to identify completely new needs and ways to fulfill them. This requires insight into the consumer’s needs and patterns of use, and is most likely to produce incremental rather than radical innovations [41]. Online music- and movie-streaming services Spotify and Netflix are two good examples of digital services providing a new, and sought after, functionality.

#### **4.1.4 A pristine product**

Experiencing a product as pristine and untouched is relatively easy when it comes to physical products, but can be a challenge with digital products. To succeed in making a digital product like computer software or an application appear pristine, the designer should ensure that the first-time experience of using the product or service is perceived as unique. The aim is to give the user the feeling of unboxing a new product for the first time. This can be combined with starting a personalization or registration process, which can be an important factor to maintain strong a relationship to a product or service [50]. Another aspect of the pristine product is beta testing: letting select users be the first ones to use an unfinished product and using their feedback to inform its final design. This is associated with exclusivity and can help create a strong emotional connection to the product by the beta-testers as well as curiosity and demand by other consumers [1, 51]. For the beta-testers, their knowing that they are the very first people in the world (developers and designers aside) to use a product or service can have its own, inherent value [32].

#### **4.1.5 Positive emotion and surprise**

Products that make people feel positive emotions are perceived as working better [10]. Campbell and Pisterman [52] found that with products that gave a more positive first impression, a user was more likely to “disregard or downplay possible negative issues encountered, [and may generously overlook] potentially negative aspects such as errors” (p.115). The same users would later rate the product’s usability as higher than less appealing products. A digital product that elicits positive emotions will make the user more willing to overcome difficulties and provide a stronger base on which to form a long-lasting relationship. To make sure the user keeps the product in the front of his or her mind, and thus elongates the feeling of newness, it is important to keep the product feeling novel. This can be achieved through layering in design elements and “surprises” that are not discovered during the users’ first encounter with the product, eliciting

fascination and positive surprise in the end-user, or taking the interaction to a new level as the user increases in experience. Khaslavsky et al. [26] argue for this sense of surprise at experiencing something novel as an important part of the product-user ‘seduction.’ They argue: “Just because you know what happens doesn’t mean the experience is no longer fun - as long as the experience keeps delivering on its promises (of emotional fulfillment). If the experience constantly makes, and delivers on new (surprising) promises, all the better” (p.47). This can also be achieved by renewing or adding elements to already existing products through software updates. However, this is a more extensive process, and no product or service should rely on future updates to deliver a satisfying experience.

#### **4.1.6 New interrelationships**

Connecting two previously unrelated products or services can not only create new functionality or simplify previously laborious tasks, but it can also open the door for new interaction design challenges and create newness in the way the end-users perceive and use a product. In the age of the ‘internet-of-things’ and an increasing number of household objects having the option to establish connections, both to the internet and between each other, new interrelationships between products arise on nearly a daily basis, and will only continue its prevalence in our lives. Connecting two previously separate products or services can be a powerful source of newness, but it requires a good understanding of the different products that are involved and what the benefits and possible pitfalls of the new interrelation will be. Norman and Verganti’s [41] technology epiphanies, using existing technology in a completely new setting, applies to this category.

While each of the elements of digital newness above can elicit a sensation of newness on its own, the best results will be achieved through an artful combination of several elements in the same product or service [4].



The next section of the article will analyze digital products according to the elements of digital newness laid out above.

## 4.2 Elements of digital newness in innovative products or services

### Google

Google has always elicited newness in the end-user with their digital designs. In 1999, when they were first launching their brand-new search engine, they invited 16 students to test their site. Upon loading the search page, the students stared at it for a full 45 seconds before being asked what was wrong: they replied that they were waiting for the rest of the page to load [53].

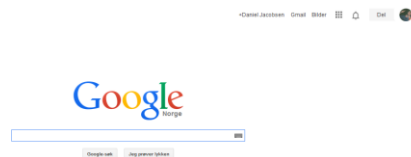


Figure 1: Google's minimalistic homepage

This is a good example of how too much aesthetic newness can act as a barrier of use: the students did not understand that what was on the screen was actually all they were supposed to see. Since then, Google's minimalist search engine has been copied by most competitors, and Google has become one of the world's largest corporations.

In addition to the aesthetic newness on display, other elements of digital newness identified above can also be found in Google's products and services: Google's search engine often changes its logo to reflect special occasions, and the search-engine itself is riddled with fun Easter-eggs – surprising and amusing secrets that are activated by specific search words or phrases [54]. This elicits surprise and positive emotions

from Google's millions of users, and keeps the service feeling new.



Figure 2: Google's logo (doodle) marking Leo Tolstoy's 186th birthday

In addition, Google has grown from being a simple search-engine to offering e-mail, map services, a social network, online storage, and more, all of which are interconnected.

### Microsoft OneNote

Microsoft OneNote is a computer program for gathering and sharing information. It can store both typed and handwritten notes, images, drawings and audio recordings, which can then be shared with other users across multiple devices [55].

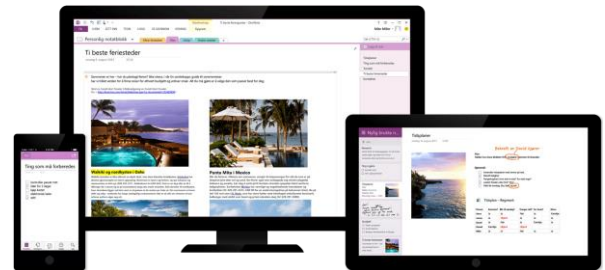


Figure 3: Illustration of Microsoft OneNote's multi-platform utility

OneNote's sense of newness stems mainly from the new interrelationships that it offers between different forms of notes, kept across multiple devices, which can then be shared with other users with great ease. There is newness both in function and in utilizing different methods of note-taking, something not yet available in competing services. While aesthetically pleasing, it is not especially innovative in that regard.

## Twitter

When Twitter was first launched in 2006 it provided a functionality that no other social-networking sites offered with the interesting twist that users could only share messages of 140 characters or less. In 2010 Twitter rolled out a complete overhaul of their website design, called 'New Twitter'. They started this process by first giving only selected users access to the new layout, and letting them spread buzz and raise the anticipation amongst the rest of the user base. Here, being the first ones to experience New Twitter led the lead-users to publicly praise Twitter and its new design [1].

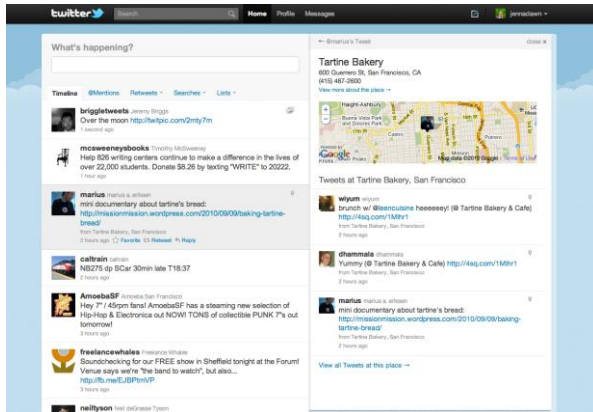


Figure 4: Twitter's "New Twitter" website redesign

Today, Twitter utilizes a unique home screen for first-time users, similar to many other websites that require users to register before use. This is a simple and easy way to give the user a sense of a pristine service.



Figure 5: Twitter's home screen

## Ello

In the fall of 2014 a new social-networking site called Ello was launched to enormous online

interest [56]. Ello promised anonymity and a website free of advertising, in stark contrast to news of massive information leaks from competitor Facebook [57], not only the world's most popular social-network, but one supported by targeted advertising of its users.

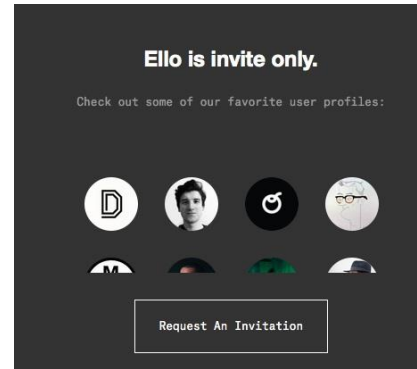


Figure 6: Ello's home screen

In addition, Ello is only available through invitation from an existing user, or by requesting an invitation which can take several weeks. Combining this with a very Spartan and minimal design without any advertising, Ello stands out from its competitors in both symbolism and aesthetics, and provides its users with a sense of exclusivity.

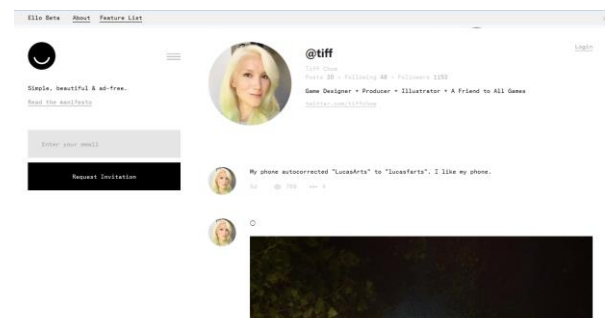


Figure 7: The profile of Ello user @tiff

## 4.3 Recommendations

As illustrated above, many successful digital services exhibit elements of newness in their designs. However, all of the examples highlighted used more than one of the elements of newness previously identified; combining several of them

to create a product or service that elicited just the right amount of newness. Moreover, too much newness can act as a barrier for new users, as illustrated by the students testing Google for the first time. Nevertheless, once this barrier was overturned, it created a very successful product.

The most immediate means of inducing newness is aesthetic newness, but - as shown above - it should be kept moderate in order for the product or service to have the highest perceived value. A design should capture a user's attention and interest, and in his book Norman [10] describes what is, to him, the perfect user reaction to a design: "In the best of circumstances, the visceral reaction to appearance works so well that people take one look and say 'I want it.' Then they might ask, 'What does it do?' And last, 'And how much does it cost?' " (p. 68).

Making a digital product or service appear pristine as well as making it elicit surprise and positive emotion is something this article would argue is possible, and indeed advisable, with almost any digital design. This does require effort and insight on the side of the designer, but may eventually lead to a better user-experience.

In today's interconnected, multi-platform, responsive world of digital design, creating new interrelations between actions and devices can be both tempting and theoretically easy. Although this can be a potent source of newness, it should, however, not be done without a clear goal in mind – it should in some way or another enhance the function or understanding of the product or service, and thus make it easier or better to use for the end-user. Interconnectivity for its own sake may only clutter what could otherwise be an efficient and user-friendly design.

Improving and streamlining the function of a product or service falls within the realm of user-experience, and is practiced by designers all over the world. Most of these improvements are incremental, and thus do not elicit a strong sensation of newness. Arguably, a break from

existing paradigms will elicit more newness, but might confuse and disorient users, leading them away from the digital design. Products or services that offer a functionality that is completely new will, by their radically innovative nature, affect a strong feeling of newness in the end-user, but are all the harder to design and create.

Lastly, new symbolism or perceived meaning can be difficult to achieve. If a design capitalizes on socio-cultural trends, such as Ello, it can receive massive interest, but, in order to be successful, insight, timing, and even luck, are required. Therefore, using branding and marketing to build an image and connect a product or service to a new user-group may be more attainable, if not always successful.

Not every product can be a game-changer like Google or Twitter. However, including elements of newness in digital designs may help facilitate stronger relationships with the end-user. When designing a product or service, one should not exclusively rely on any one of the elements identified above. Rather, the designer should combine them intelligently to convey maximum effect, and so create the foundation of a strong relationship.

## 5. DISCUSSION

The sensation of newness can be a strong factor in affecting emotion in the user. If elicited, it can be a powerful platform on which to form fruitful user-product relationships and loyal customers.

Six elements of digital newness have been identified:

- Aesthetic newness
- Symbolic newness or new meaning
- Functional newness
- A pristine product
- Positive emotion and surprise
- New interrelationships

These elements may provide digital designers with some guidelines for designing products and services that actively elicit the sensation of newness in the end-user.

Newness is, however, not necessarily a positive sensation. As has been shown by many research articles [15, 42, 58, 59] newness and innovation that is perceived as too radical can also act as a negative influence on the end-user. Schoormans and Robben [31] found that radically new designs received a high level of attention from users, but scored low on acceptance, and Alexander [58] notes that a consumer will experience greater uncertainty towards radically innovative products. Furthermore, he notes that reducing perceived product newness could strengthen follow-through on positive long-term purchase intentions. Mugge and Dahl [42] demonstrate that “a product design with a low level of design newness may be preferred over one with a high level for radical innovations,” and Linaard et al. [23] demonstrated that a negative first impression of a website could lead to lower overall rating of appeal, regardless of the perceived usability thereof. Finally Sheth [60] argues that habit leads to resistance towards innovation as “the typical human tendency is to strive for consistency and status quo rather than to (...) search for, and embrace new behaviors.”

There are numerous examples of new products and services that have failed due to, at least in part, consumer resistance to radical perceived newness, such as the Apple Cube [61] and the social networking site Friendster [62]. That being said, this article would still argue for effecting the sensation of newness through digital design, as it can, if used deftly, be a powerful tool.

## 6. CONCLUSION

The aim of this article was to identify elements of digital newness and how to elicit this sensation in digital products or services. After reviewing literature on newness and innovation, six elements of digital newness were identified and

pointed out in analysis of successful digital products. This article argues that digital newness can be a powerful source of emotion, and thus important in establishing the foundations of a strong, long-lasting relationship between end-user and product.

Clearly, this is an introductory investigation into the sensation of newness in digital designs. More research is needed on the sensation of digital newness; how to elicit it, how it can be measured and understood, and what the threshold is between an enticingly new design and one that confuses and disorients. In a time where design for digital platforms is becoming increasingly prevalent and more and more products and services become digitized, digital newness has never been more topical.

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