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**Can usability theory by Jakob Nielsen
be applied to online entertainment design
or do better alternatives exist?**

Abstract

Today the Internet exists as information and entertainment platform.

Jakob Nielsen is renown for his guidelines on usability design, but those guidelines are not quite enough when designing online entertainment.

Online entertainment is about generating affective reactions in its audience, a notion that needs to be taken into consideration when designing online entertainment products.

Jakob Nielsen's usability theory is based on cognitive science and is meant for designing information based websites. When applying his theory to online entertainment it does not regard affect as a main factor and therefore might not be the best solution.

When looking at Donald Norman's theory on emotional design it becomes clear that he considers affect as a major factor when designing any day-to-day product. Maybe his theory would be more suitable approach for the design of online entertainment.

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I Introduction

At first the Internet was created to exchange factual information stored as files over a network. It was using protocols such as Gopher or FTP so that the user could view pages of scrollable text linked to other pages of scrollable text. Already then it was possible to download and watch small movies, typically short animations demonstrating molecular configurations. When in 1993 the graphic orientated browser *Mosaic* was released, text began to be augmented with images and sound. Later applications such a *Shockwave* allowed the creation of even more versatile content.

At the beginning the Internet was used for publishing and sharing information by major universities and high-technology organizations. Not until the mid 1990s was the Internet used for applications such as marketing, advertising, commerce, or entertainment.

With the release of the graphical based web browser *Mosaic* the graphical user interface started appearing. Today the Internet enables web pages to include images, text, animation, video, sound, and dynamic content. This diversity led to a new area in web design and opened the door for online entertainment.

For a long time the Internet was perceived as a source of information and the entertainment industry has taken quite a while before developing content for the Internet.

At first the it developed promotionally related marketing material such as film trailers, television schedules, and online press kits. However, once it was realized that the Internet was going to be a major media distribution and entertainment platform, countless divisions dedicated to creating Internet entertainment content, ranging from online screening rooms to integrated web shows, emerged.

Harries (2002)

Online entertainment headed for a massive start and today has become a huge branch of the Internet.

Next to information based websites, there are now sites that experiment with the notion of linear and non-linear narrative, projects that use the network for staging mixed reality games involving physical and virtual environments, games that can be played alone or with several other online players, which can be experienced over the Internet by visitors worldwide, or virtual gallery spaces that exhibit art works online, to name only a few.

Today the Internet is a place where information and entertainment meet and merge.

As a consequence of this development, two very different opinions have formed over what the web should be. On the one hand the Internet is perceived as a medium to obtain information and to carry out certain tasks, on the other hand it is seen as a medium that can convey experiences, which can inspire, excite, or entertain just as television or film can.

Burgoyne and Faber (2001)

Today a lot of theory and plenty of guidelines exist on how to design the ideal information space, but not much about how to shape the space dedicated to entertainment.

Can the same rules be applied for both sides of the Internet or do we need new guidelines for designing successful online entertainment? Does the scientific approach of usability design fit the design of entertainment products for the Internet or do we need something more?

Jakob Nielsen is a big name when speaking about usability for the Internet and about how to design good websites. It seems though that he left out the sector of entertainment and has focused upon information spaces only.

Donald Norman is known for the guidelines he created about designing everyday objects and for his theory on considering human emotion when designing products.

When designing for online entertainment, should we follow what Jakob Nielsen has established about web design or would it be better to incorporate Donald Norman's new theory on emotional design?

II Jakob Nielsen's Usability Theory

Jakob Nielsen is renowned for working in the area of usability design for the Internet and has defined a set of values after which in his opinion websites should be built. The usability guru *'holds 73 United States patents, mainly on ways of making the Internet easier to use.'*

(<http://www.useit.com/jakob/>)

'Nielsen defines usability as supporting the user's task, i.e. making it easy for people to do what they want to do.'

Burgoyne and Faber (2001:9)

For him, everything on a website that gets in between the user and his goal should be eliminated.

'Nielsen advocates standardization in web design. If you can't improve the site's usability 100 per cent by deviating from the norm, then don't deviate, he says.'

Burgoyne and Faber (2001:10)

He believes that all sites *'must tone down their individual appearance and distinct design in all ways such as visual design, terminology and labeling, interaction design and workflow, and information architecture'*.

Nielsen (2000:<http://www.useit.com/alertbox/20000723.html>)

For the sake of usability those kind of sites are mostly text based and include very little imagery such as for example his own site <http://www.useit.com>, a site, which is not very aesthetically pleasing and looks like its design has not been updated since 1995.



Image 1: Homepage

He states:

'In the future, first of all, websites will be designed by my guidelines... for the simple reason that if they don't, they are dead.'

Nielsen (Catapano) (2000:<http://www.wired.com/news/business/...>)

If we were to follow Nielsen's guidelines and comply with his rules of uniformity, all website would look exactly the same and only differentiate in their content. Like that the web would soon become a very boring place to be.

Not all websites are suitable for being designed following the same set of rules. There are sites with different purposes, some can be purely information based and some can be meant for entertainment. In both cases the user will visit a site for a specific reason or because of a particular motivation, which should be catered for in its specialized way.

To say that content alone should distinguish different kind of websites is contradictory in itself. Most content is very different and unique from others so that it is impossible to design a universal mold to fit all varieties of content into.

It seems that when Jakob Nielsen talks about web design he is only concerned in websites or web applications that are information based or help the user to fulfill a task such as buying something or finding a specific piece of information. He does not perceive the design process from a creative or artistic point of view, but from *'the engineering ideal of solving a problem for a customer'*.

Nielsen (2000:11)

'Jakob Nielsen tends to build his argument around those websites, which have a commercial imperative – the Amazons, eBays and Yahoos of this world. But the web is not just about buying things and looking up information. Of course, that's where much of the money is to be made, but what a dull place it would be if all sites were either ecommerce operations, news services or search engines – just as television would be insufferable were it to consist of nothing but commercials, news and shopping channels.'

Burgoyne and Faber (2001:11)

In his theory Jakob Nielsen neglects any emotional impact a site could have and all aesthetical aspects that could come with it, and so is ignoring the side of the Internet dedicated to entertainment, which is feeding on those aspects.

At the very beginning of his work he even discouraged the use of any visual stimulation such as images, graphics, or animation. He felt that those design elements should be used at an absolute minimum rate and only to enhance the main subject matter of a site, since otherwise they might distract from the website's core content and slow down downloading times. The use of Macromedia Flash, a tool often used to design entertainment based websites, at that time seemed almost criminal to him. In his Alertbox '*Flash: 99% Bad*' from the 29th of October, 2000 he describes current Flash technology as a discouragement for usability because it makes bad design more likely, breaks with the web's fundamental interaction style and consumes resources. He states:

'About 99% of the time, the presence of Flash on a website constitutes a usability disease. Although there are rare occurrences of good Flash design (it even adds value on occasion), the use of Flash typically lowers usability. In most cases, we would be better off if these multimedia objects were removed.'

Nielsen (2000:<http://www.useit.com/alertbox/20001029.html>)

In 2002 Jakob Nielsen worked together with Macromedia to develop Flash into a more functionality-oriented application and helped it to comply with usability design. Although he probably enabled Macromedia to raise the potential of what the newer version of Flash, Flash MX, can do, he still is neglecting the fact that the software can also generate very meticulous animation, which is very suited for being published on a website and for the distribution via the Internet for entertainment purposes. Again it seems that to him entertainment is not worthwhile.

When he compares television to the Internet in 1997 he says:

'Where TV is warm, the Web is cold.'

Nielsen (1997:<http://www.useit.com/alertbox/9709a.html>)

At that point he feels that the Internet is not an emotional medium such as television is, although already then products from the entertainment industry are a small part of web content.

The way he approaches usability design today still seems to neglect a the part of the Internet, which is dedicated to the user's entertainment. As the Internet grows and technology evolves, its potential to also become an emotional, warm environment, is very likely and already a reality. For Jakob Nielsen though it seems to still be a mainly task orientated user space rather than an entertainment medium as well. In reaction his theory today still concentrates upon those aspects and results in a theory that probably cannot be applied to the entirety of the Internet.

III Donald Norman's Three Levels of Design

Donald Norman is known for defining a set of fundamental guidelines for designing everyday products.

At the beginning of his work he focused on behavioral design, which is based on usability. Behavioral design is not concerned with appearance or rational but with performance. He describes the four components of good behavioral design as *'function, understandability, usability and physical feel'*.

Norman (2004:70)

Later in his work he recognizes that design should not only concentrate upon the behavioral aspect but also consider aesthetic and emotional values. He suggests that good design is when beauty and usability are in balance.

'Why not beauty and brains, pleasure and usability?'

Norman (2002:<http://www.ind.org/dn.mss/Emotion-and-design.html>)

He feels that the behavioral aspect is an important factor to consider for designing any kind of product, but realizes that we all have emotions, which will emerge at some point regarding any given product.

'Sure, utility and usability are important, but without fun and pleasure, joy and excitement, and yes, anxiety and anger, fear and rage, our lives would be incomplete.'

Norman (2004:8)

Our lives would be incomplete without emotions, and those emotions are what will build our relationship to any product. Therefore they should not be neglected during the design process, especially when designing online entertainment products, since those are dedicated to directly generate emotional reactions in the audience.

Today Donald Norman divides design into the three aspects of visceral, behavioral, and reflective design.

'Visceral design concerns itself with appearances. Behavioral design has to do with the pleasure and effectiveness of use. Reflective design considers the rationalization and intellectualization of a product.'

Norman (2004:5)

1 Visceral Design

Visceral design plays with the unconscious and pre-thought.

The visceral level is what forms the first impression about a product, or anything else, regarding appearance, touch, smell, sound, or feel. The visceral reaction is instinctive and does not depend on thought or reason. It is what triggers defense mechanisms or evokes joy or trust at the level of first contact. The visceral reaction is mainly based on physical features of what opposes us and is the result of the initial stimulation of our senses, to which the nervous system reacts subconsciously.

'Effective visceral design requires the skill of the visual and graphic artist and the industrial engineer. Shape and form matter. The physical feel and texture of the material matter. Heft matters. Visceral design is all about immediate emotional impact.'

Norman (2004:69)

Imagine a friend sneaks up to you and suddenly loudly says 'boo!'.

Your first reaction would be fright and shock. The reason for this is that the visceral level of your brain immediately reacts to the predominant sonar information, alerting the nervous system, which in turn tenses the muscles of your body in preparation to deal with the given threat and possible danger. The visceral level has focused you onto the surprising event in disregard of thought or reason.

After reflection, your brain has picked up the information that it just was your friend who scared you, so your muscles relax and you are at ease again.

The entertainment industry constantly plays with our visceral level. It uses the brain's visceral reaction to scare us in a horror movie, to tense our muscles during suspense scenes throughout a motion picture, or to enhance the level of difficulty in the course of a video game because it is perceived as dangerous.

Visceral design can also be used on a positive level via pleasant smells, visuals, sounds, or textures. Those will trigger positive emotions and if very intense can lead to exaltation and excitement.

2 Behavioral Design

Behavioral design concerns itself with the use and experience of a product and has many facets such as function, performance, and usability.

The function of a product denotes what activities it supports and what it is meant to do. If a product has functions of no interest, the product has little value and becomes irrelevant. Performance is about how well the product accomplishes the contained functions. If performance is low the product fails again because it will frustrate the user. Usability regards how easy it is for the user to understand how to get the product to perform.

'Confuse or frustrate the person who is using the product and negative emotions result. But if the product does what is needed, if it is fun to use and easy to satisfy goals with it, then the result is warm, positive affect.'

Norman (2004:37)

Good behavioral design understands how people will use a product and what they need the product to do.

Concerning online entertainment, behavioral design also plays a significant role. If the online piece does not perform well or its navigation is too complex so that the user cannot explore the product, then the piece fails.

3 Reflective Design

Reflective design, as the name describes, is about reflection.

'It is all about message, about culture, and about the meaning of a product or its use.'

Norman (2004:83)

The reflective level is where consciousness and the highest level of feeling, emotion, and cognition come into play. It is where the impact of thought and emotion are experienced. The difference to the unconscious visceral level is that the reflective level consciously interprets all information the brain receives.

'Interpretation, understanding, and reasoning come from the reflective level.'

Norman (2004:37)

The reflective level is where an overall impression of a product is formed. It is when we think back and remember the experience. At this point all factors are taken into consideration and some, whether positive or negative, might outweigh others.

'Minor difficulties might very well be overlooked in the overall assessment – or enhanced, blown all out of proportion.'

Norman (2004:88)

The reflective level is the determining factor whether we will return to a product or never interact with it again.

In the entertainment industry this notion is unimportant for products that may only be enjoyed once. In this case the visceral level is far more important. Immediate emotional impact will define the degree of instant entertainment. On the other hand the reflective level plays a role for entertainment products that can be enjoyed repeatedly, that last over a period of time, or evolve with time.

A video game for example can seem difficult to play at the beginning. At first the player might want to abandon the game but following reflection the idea of being able to master the skills the game requires and the achievement of a certain goal, such as winning, might be the decisive factor that enables the player to pursue the activity and return to the game.

For products intended to be frightening, such as horror movies for example, the reflective level plays a very different role.

If the movie were so scary that the visceral level immediately informed the brain about the perceived threat, our natural reaction would be to leave the location, protecting ourselves from the possible danger. The reflective level stops us to do so since it recognizes that the situation is artificial and that we are actually not endangered. The visceral level will tense our muscles, but the reflective level is so powerful that it can take control over our instinct and leave us exposed to the simulated threat.

After the experience of an entertainment product, another level of reflection comes into play. Remembering the intense sensation the product might have provided us with will generate positive affect and trigger a positive rather than negative memory about the experience. The ability of the product to touch our deepest fear, apprehension, sadness, or concern will let us value it in a positive way. Since it made us think, remember, and overall experience strong emotion, we will appreciate it just for that factor. This notion is true for scary, funny, joyful, sad, depressing, or any other successful entertainment product.

In general it could be said, that if the audience has not been able to reflect upon a product generating positive affect via this process then the product has failed.

The reflective level is also what makes us identify with certain products rather than others. Because of cultural background and the subjective interpretation of meaning, the reflective level will define whether we would like to, or not associate with certain products.

To use the example of cinema again, some of us appreciate certain kinds of movies more than others.

The reactions triggered by the visceral level are unconscious, therefore automatic and identical to all human beings. They are genetically programmed and meant for basic survival. The behavioral level is about motor skills, the manipulation of things and the accomplishment of tasks. All these can be enhanced and improved by training and repetition. The reflective level is highly subjective and formed by a person's individual experience depending on factors such as age, personal likes and dislikes, cultural and ethical values, or education, which all heavily influence how our reflective level reacts.

'Visceral, behavioral, and reflective: These three very different dimensions are interwoven through any design. It is not possible to have design without all three. But more important, note how these three components interweave both emotion and cognition.'

Norman (2004:6)

IV Affect and Cognition

Affect and cognition are both information-processing systems of the brain, but with different functions and parameters.

1 Cognition

The cognitive system is a way for our brain to process information relying on logic through knowing, thinking, learning and judging.

'The cognitive system interprets and makes sense of the world.'

Norman (2002:<http://www.jnd.org/dn.mss/Emotion-and-design.html>)

Jakob Nielsen's usability theory is based on cognitive science.

In web design cognition is an important notion. Cognition is what helps us to understand how to get around websites. All navigation and content is made up by a specific code that we can make sense of via the cognitive system. Through accumulated knowledge, logic, and reason we manage to comprehend the visual and verbal language a given site employs and therefore can find our way around its content.

For online entertainment this notion is important, since all entertainment based websites have some kind of navigation as well, which the user needs to understand to be able to explore the product. Whether this code is following Jakob Nielsen's rules of usability or not, it is cognition that helps us to comprehend the site's semiotics.

For online game design this notion is especially important. If the cognitive system is not able to understand how to handle the navigation or how to progress in the game, the game is unplayable. Cognition is what will help the player to engage with the difficulties, trying to overcome them, solving the riddles, completing the course, getting to the goal, winning.

On a more general level cognition helps us to understand the different concepts represented by the various entertainment products. It lets us set the product into a specific context and helps us to understand its message or value.

2 Usability Design

Jakob Nielsen is known for his theory on usability design.

Usability design is based on cognitive science and exists for products to be made usable. This means that the product can be used with a minimal, or no explanation as to make it function. The product should, by itself, indicate how it needs to be manipulated for the user to obtain the desired result.

Products that exist to support serious tasks, which require a precise method of solving, are best designed emphasizing function and minimizing irrelevancies. The accent should be on behavioral design and cognition, not on visceral or reflective design, neither on affect.

These products should exist to function, not to generate emotions in the user.

Usability design is about designing task orientated products. The task of entertainment is to generate affect. Even if a piece of online entertainment is very easy to use, if it does not generate any emotional response in the user, the product will not fulfill its task to entertain and therefore result as useless and irrelevant.

'The field of usability design takes root in cognitive science – a combination of psychology, computer science, human factors and engineering... The danger is to neglect areas that are not easily addressed in the framework of science and engineering'

Norman (2002:<http://www.jnd.org/dn.mss/Emotion-and-design.html>)

3 Affect

Another way for our brain to process information is via the affective system. Affect is the neural system for triggering emotion.

In contrary to Jakob Nielsen, who is working in the field of cognitive science only, Donald Norman has based his theory about emotional design on both factors, cognition and affect.

'Each system impacts the other: some emotions – affective states – are driven by cognition, and cognition is impacted by affect.'

Norman (2002:<http://www.jnd.org/dn.mss/Emotion-and-design.html>)

The affective system generates emotions assessing the situation or environment rapidly and effectively for positive or negative valence.

Affect can be generated because of many factors. First it can be created because of visceral impulses. We can be disgusted, scared, or excited because the visceral level engenders a reaction from the immediate confrontation with our environment.

Affect can also be formed via reflection. Just thinking about a sad or happy memory can generate positive or negative affect. No physical information or outside impulse is needed.

'Affect and emotion constitute a complex subject, involving all three levels, with the most complex emotions dependent upon just how the reflective level attributes causes. Reflection, therefore, is at the heart of the cognitive basis of emotions.'

Norman (2004:140)

Affect is resulting from a complex mixture of neural activity and a combination of external and internal information or impulses, which can generate an infinite variation of emotional states.

'With positive affect you are more likely to see the forest than the trees, to prefer the big picture and not to concentrate upon details. On the other hand, when you are sad or anxious, feeling negative affect, you are more likely to see the trees before the forest, the details before the bigger picture.'

Norman (2004:26)

In the state of negative affect, such as when feeling nervous or endangered, the brain processing is narrowed. Focus entails concentration upon detail.

'Focus refers to the ability to concentrate upon a topic, without distraction, and then go deeper and deeper into the topic until some resolution is reached.'

Norman (2004:25)

Focus is very important for survival because it shuts all irrelevant information out and helps us to resolve a given problem without distraction.

In online entertainment, gaming lends itself as a relevant example.

When playing a game, as the level of difficulty gets higher the player's focus will narrow down enabling the solving of the concerned stage within the game. Here the difficulty has generated negative affect, which helps the player focus. This state of negative affect is not too high generating frustration, but if augmented it eventually will, with the possible consequence of the player abandoning the game.

Positive affect in turn widens our focus. In the state of positive affect we are more likely to embrace interruptions and welcome new events or ideas. Positive affect stimulates curiosity, creativity, and learning.

The entertainment industry uses positive affect to inspire us and leave us content or satisfied. If an entertainment product leaves us in the state of positive affect, we are more likely to embrace its repetition and look forward to new products of the same type in quest for more positive affect.

It is clear that we welcome the state of positive affect since we all are striving for a life filled with happiness.

The main, if not only reason, for the existence of the entertainment industry is to fill us with positive affect, to make us high on emotions, excitement, and joy. This might sound controversial since some products by the entertainment industry actually make us experience negative affect in the first place. But as mentioned above, even here the momentarily strong negative emotion on reflection will transform into positive affect.

The interpretation of emotion is very complex and personal to every individual and therefore what might have affected someone might have failed to affect someone else.

4 Emotional Design and Entertainment

'Fun and pleasure, alas, are not topics often covered by science. Science can be too serious, and even when it attempts to examine the issues surrounding fun and pleasure, its very seriousness becomes a distraction.'

Norman (2004:100)

Until now, from a scientific point of view the arts and the value of aesthetics have been regarded as irrelevant. Especially for the development of products such as software or other computer related products, where science is of major importance, aesthetics and emotional impact have been neglected.

'We recognize that in these early days of digital communication, ease of use is a very important factor – for some applications it is the only factor – but we believe that there must be better ways of designing digital communications. There is no reason why a piece of design cannot be both practical and beautiful.'

Burgoyne and Faber (2001:12)

Today, more and more people are realizing that pleasure, enjoyment, and emotional perception have great importance in how we design day-to-day products, and that it is now time to consider those factors in the aim of creating complete products.

Already in Greek philosophy, Aristotle claimed that happiness is the aim of life and he believed that the major function of art is to provide human satisfaction.

Encarta Encyclopedia (<http://encarta.msn.com/find/concise.asp?z=1&pg=2&ti=761576304>)

John Maeda, a respected member of the MIT, an institution mainly preoccupied with computer science, states:

'I believe that the biggest breakthrough will be the realization that the arts, which are conventionally considered "useless", will be recognized as the whole reason why we ever try to live longer or live more prosperously. The arts are the science of enjoying life.'

John Maeda (2003:<http://www.nytimes.com/2003/11/11/science/11VOIC1.html>)

Until now, all solutions that have made products more aesthetically pleasing or emotionally enjoyable have come from the arts. If attributing more value to aesthetics and emotional impact when designing products, a merge or closer relationship between artists and scientists should be a fundamental step to take.

Donald Norman's theory on emotional design, which includes the factors of visceral, behavioral, and reflective design could be a starting point when aiming for the creation of more complete products, which do not only function but also can be enjoyed on the affective level.

Every individual product needs its specific combination and dosage of these design elements and a good enough justification for the exclusion of any of those elements does not exist. Even products with the main factor being behavioral design should apply visceral and reflective design, if it is just to generate desirability.

'Do I really want to explore the product? This is a very personal question. It goes beyond the utility of the product and beyond issues of usability.'

Desirability plays an important and often decisive role in product selection. Does the product speak to me in a "voice" that makes me comfortable and that, just by its tone and quality, builds a bridge of identification and trust with me?'

Burgoyne and Faber (2001:18)

If no one desires a product, it is quite likely that no one would like to own it. What is the point of designing a product that is excellent on the behavioral level, if no one will ever use it?

'Technology should bring more to our lives than the improved performance of tasks: it should add richness and enjoyment. A very good way to bring fun and enjoyment to our lives is to trust in the skill of artists. Fortunately, there are many around.'

Norman (2004:101)

Concerning online entertainment, the collaboration of artists and scientists is absolutely necessary. Here the artist is needed, since online entertainment is about products where pleasure and emotional impact must be a quality of the product itself. Because online entertainment is computer-based, the scientist neither is indispensable, as it is dealing with products created via computer science.

Online entertainment exists to emotionally involve its audience and create affect. To conceive a successful piece of online entertainment the design guidelines need to cover the aspects of emotional involvement and affective reaction, and therefore take emotional design into consideration.

The reason for which we go to the cinema is in the first place to be entertained. The emotional value of the movie is important to the viewers since they are there to laugh, cry, be scared, feel with and for the characters, hence to be emotionally affected. The more the individual viewer has been affected by a movie the greater the buzz when leaving the cinema. This buzz is not felt because the movie has been shot over three years, has cost one million dollars, or involved a certain set of actors, directors, or producers, but comes from the emotional value transmitted by the motion picture itself.

Online entertainment works after the same principals.

V Online Entertainment

Entertainment based websites are there to stimulate the audience's affective system. Those websites exist to provide us with enjoyment for its own sake and to entertain us. They are not there to inform or execute given tasks, but to provide us with an affective experience via visual, auditory, or verbal communication.

'The line between entertainment and everything else is getting very vague these days.'

Rokeby (1997:29)

One step before pure online entertainment is infotainment.

1 Infotainment

The kind of online entertainment that is mostly linked to the Internet when considered as an information space in infotainment.

Infotainment is where the information and entertainment space on the web overlap and, as the name states, a mixture between information and entertainment.

The task of infotainment websites usually is to inform their audience about a given subject in an entertaining way, trying to raise awareness about the matter, engaging the user on the affective level. Such websites usually are visited on a one off basis, so that the content has to leave a long lasting impact on the visitor. If the site manages to stimulate the audience's affective system it will do so that the audience will feel touched and concerned on a personal level.

The individual who is navigating a purely information based website is until now called a user, because those websites are designated to fulfill a given task or provide requested information, hence to be useful.

Infotainment websites could be compared to documentaries, which explore a certain topic, with the difference that the audience gets some control over how to view the content.

With infotainment sites the user merges with the viewer, since the site still is useful in an informative way but is also being watched like a documentary or movie would be.

An example of online infotainment, where the overlapping of information and entertainment becomes clear is the Life Switch website.

The Life Switch website, <http://www.lif SWITCH .org>, is a portal to the website of the charity organization Christian Aid, <http://www.christianaid.org.uk>.

The Life Switch website has the user fill in a questionnaire to find out the ideal location for the participant to get involved into a development program in a third world country.

Throughout the questionnaire a Flash animation of a realistic, confidence inspiring gentleman guides the user through each section, always with the promise of a positive result.



Images 1, 2 and 3: confidence inspiring gentleman

The coaching of the depicted personal guide and the dynamic animation that occurs when moving on to the next question is so engaging that it becomes really entertaining to fill in the form and answer all the questions.

From a usability point of view, this method seems to work, since the user is constantly guided, step-by-step through the procedure of the site without having to question where to go next. Since every individual user probably will only visit the site once or twice, the strong use of sound and animation would not become irritating such as the use of those elements described by Jakob Nielsen. When describing the use of animation, Jakob Nielsen would only allow it if it considerably enhances the site's content, but he never would see it as content by its own right.

Nielsen (2000)

When he talks about banner advertisement on websites, he might be right when describing those animated elements as irritating. Wrongly though he draws a general conclusion from this and states:

'Often people will look less at a design element the more it animates.'

Nielsen (2000:146)

In the contrary it seems like the Flash animation on the Life Switch site really can affect the user in a positive way and generate motivation to follow through the questionnaire.

At the end of the questionnaire the expectation to get a pleasant and colourful description of the ideal place where to take part in a development project is so great that the result is rather surprising and shocking.



Images 5,6 and 7: disturbing animation

Instead of a joyful portrayal of the anticipated place the viewer is confronted with an animation describing the terrible situation in the suggested third world country. The presented facts are so powerfully negative that the viewer might feel quite concerned for the issue.

Surprise and shock are excellent methods for stimulating the affective system. The generated negative affect will focus the viewer onto the issue and leave a lasting emotional impact. It is rather sensationalist, but it works.

At the end of the animation the user is invited to donate money towards the cause of the described third world country. If the user accepts and is willing to donate, the site reroutes the user to the Christian Aid website, from where the more serious transaction is dealt with.

The switch from the entertaining and emotionally engaging website to the more serious and dry website is a great example describing how websites are most effective if tailored to their intended task.

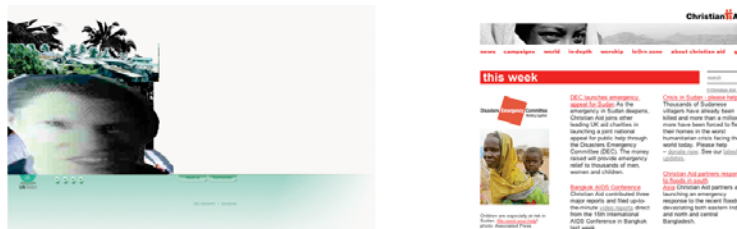


Image 8: Life Switch, Image 9: Christian Aid

The Life Switch site is there to raise awareness, evoke pity, and the feeling of guilt in the user, the Christian Aid site is there to represent the charity organization in a serious manner.

The Life Switch site manages to bring the intended information across and to generate awareness in the user, who now could easily be convinced to donate money to the cause. But which site would you pay the money too?

2 Entertainment

In contrary to the mainly text based websites meant for the distribution of information, and against Jakob Nielsen's guidelines, entertainment based websites use a lot of imagery, animation, video, and sound to compose their visual code.

'When you move into a picture, you consciously discover details you can name. The picture sets things into motion and creates further pictures that merge from scraps of information, ideas, and ways of providing meaning. They can be used as a form of language, without necessarily using written or spoken text.'

Buckley (2002:299)

Because of their very visual interface and content, these sites usually are emotionally richer and therefore able to trigger an affective reaction in the user. For those sites the audience no longer only uses the cognitive process to understand the product but also and mainly the affective process to experience the site.

The importance for online entertainment does not lay in knowing but in feeling.

A large variety of pure online entertainment products exist, which can be divided into two main categories being narrative and games.

In online narrative the user, who, as in cinema more likely becomes a viewer, can navigate through the storyline. Not quite as in cinema the viewer here has received the power of exploring the product through interactivity and view it from many several angles, whether it is via different timelines, viewpoints, or other, and therefore could also be called explorer.

Games also could be classified as narrative, but with a fundamental difference. Interactive narrative can be viewed and explored, as one would do when discovering new territory. Somehow this territory is predefined and the explorer can only look at the storyline from an observational point of view. Games give the user the chance to participate in the creation of the narrative. Games usually come with the notion of attaining a given goal or to win. The user here, as in all games becomes a player.

Looking at the Requiem for a Dream website, <http://www.requiemforadream.com>, it becomes clear how usability theory has not considered the user as a viewer, explorer, or player and that designing against usability guidelines sometimes works in favor of affective entertainment.

This site is based on the movie *Requiem for a Dream* by Darren Aronofsky, and explores the theme, the emotions and the general mood the motion picture transmits. It deconstructs the film's linear narrative into a non-linear interactive narrative where the viewer can explore its different parts through navigation.

During the actual movie, the characters experience strong feelings of euphoria, fear, anxiety, and sadness, which are the affective states the website tries to transmit via the rich use of imagery, text, video, animation, sound, and interactivity. The website exists not to inform the audience about factual information concerning the motion picture but about the emotional value the movie transmits.

The navigation, against all rules of usability, sometimes is purposefully confusing, occasionally generates long incomprehensible error codes, and sometimes randomly imposes the user to play with an online gambling facility or to undergo a web addiction test, which reflects the movie's general theme of addiction.



Images 10, 11 and 12: Frustrating navigation

Because of these features, the explorer is purposefully exposed to his own negative affect through emotions such as frustration or confusion. The site therefore not only informs the user about the mood represented by the movie but also gets the explorer to feel and live it via his very own affective state.

Jakob Nielsen surely never suggested to make a website difficult or complex for the user to navigate, when talking about information environments.

'Navigation interfaces need to help the users answer the three fundamental questions of navigation: Where am I? Where have I been? Where can I go?'

Nielsen (2000:188)

The Requiem for a dream website purposefully does have some difficulty within its navigation, since not knowing where to click or how to proceed through the narrative is part of the experience the site is trying to transmit.

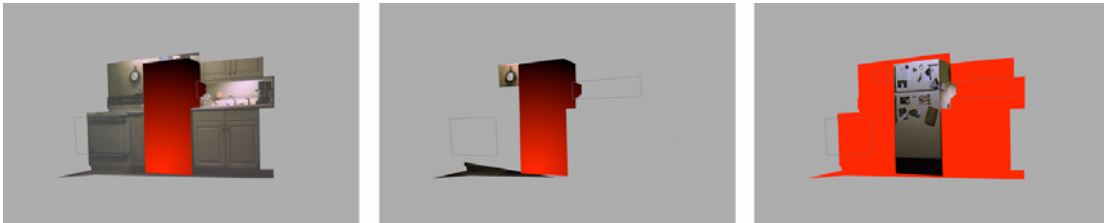
'Interactive media has a huge scope for play and for exploration. It is not always a satisfying experience to know exactly where you are and where you going as soon as you reach a website. For some applications, mystery, surprise, even frustration, can all add considerably to the user's enjoyment.'

Burgoyne and Faber (2001:12)

The interface of the Requiem for a Dream website is completely different to the ones of information based websites.

Both types of interface rely on the cognitive process but not both follow what usability design dictates, where the interface usually consists of lists of verbal links representing concepts, which indicate the content of the pages that lay beneath. In serious information landscape the navigation is there for the user to get from one part of the site's content to the next.

The cognitive process in an information environment lets us understand the intellectual concepts behind the naming of the links and so guides us through the information structure. In the Requiem for a Dream site the cognitive process guides us through the content in a more exploratory manner and the navigation becomes part of the content itself.



Images 13, 14 and 15: Navigation as content

'One is cast into a different way of experience where one can encounter with amazement, enchantment and terror: figures, animals, images and ghosts floating in a sea of uncertainty. Interactive media can offer us moments of enchantment, when images and objects can come from dark to light, space and language. The viewer no longer needs to operate inside the sealed jar of literalism, ..., but rather, enter into a mythical quest of discovery. Objects and pictures speak wordlessly to deeper recesses of being. The viewer engages with objects on the screen, as if they were stones to overturn and reveal what's underneath.'

Buckley (2002:303)

The explorer can investigate the screen, as if touching a physical surface. The sense of touch is virtually recreated through this interface in contrary to the text based interfaces created when following Jakob Nielsen's theory. When he describes in his guidelines how to create a link he states:

'Users shouldn't have to guess or scrub the page to find out where they can click.'

Nielsen (2004:<http://www.useit.com/alertbox/20040510.html>)

For the Requiem for a Dream website the whole point is to *'scrub the page'*. The search for a link or clickable item is what makes this website ground for exploration and therefore distinguishes it from user orientated information environments.

For the Requiem for a Dream site it is sometimes important that when finding a link it will be indicated by some kind of visual, sonar, or other reaction, when the curser passes through it, so that the explorer knows, the narrative might develop from here.

Jakob Nielsen though states:

'There is no need to use special colors or other visualizations when the cursor hovers over a link. Doing so only makes the page appear more cluttered as the user moves the mouse across the screen.'

Nielsen (2004:<http://www.useit.com/alertbox/20040510.html>)

Sometimes though the Requiem for a Dream site is not indicating certain links at all. When the curser passes through those links, the narrative develops, but the explorer is not directly informed about having caused this reaction. Those invisible links engender more intended confusion, which is all part of the experience the site is transmitting.

Using invisible links is a technique that can enable a narrative to be presented differently each time the relative site is visited. Since the explorer often does not realize the reactions caused by moving the cursor around the screen, no navigation pattern can form through revisiting the site.

When an information based website is revisited, the user will apply a navigation pattern picked up from visiting this site and other similar sites before. It seems that Jakob Nielsen suggests standardization for online environments, so that a universal navigation pattern can be applied to all sites. Using the same pattern for pure task orientated and information based environments would make sense, since users could visit after visit master the skill of navigating any online information space. This scenario would not benefit sites that are meant for triggering affective responses since the notion of exploration would be lost.

'The brain naturally adapts to repeated experiences. If I were to show you a series of repeated images and measure your brain responses, the activity would diminish with the repetitions. Your brain would respond only when something new was presented. Scientists have shown that the biggest responses always come with the least expected.'

Norman (2004:108)

The purposeful use of confusing navigation by the Requiem for a Dream website therefore enhances the experience, even after many visits.

In games navigation also plays a fundamental role. It is what lets the player advance in the narrative the game is generating. Here interactivity does not only serve for exploring a predefined sectioned storyline but is the tool via which the storyline is written.

To proceed through the levels of a game and attain a set goal, whether it is to solve a puzzle or score points, is what will motivate the player to pursue the game.

'That motivation spurs much of the interaction that takes place.'

Iuppa (2001:181)

It is very important that game designers do not exaggerate the difficulty level of navigation, so that the player is still able to win, but also need to implement some amount of difficulty to present the player with a certain challenge. This difficulty level should not be too high, neither too low. If it is too low the game will be perceived as unchallenging and pointless. If it is too high, the game will generate too much negative affect and be experienced as frustrating so that the player will give up.

'The task in other words, should not be too difficult – just as the plot of a thriller should not be over-intricate, otherwise many viewers will be unable to follow and "turn off" inwardly. If writers of interactive stories want to involve players in their plots, they need to provide them with ways of moving forward, to keep open a "side-door" for times when all else fails – so that the game remains fun and players can identify with the product.'

Ward (2002:177)

Some games might be quite difficult and might require some training before the skill required to play can be mastered.

If the player surpasses this challenge and manages to win, rewarding positive affect, such as the feeling of pride, satisfaction, accomplishment, or gratification is generated. Positive affect is mostly the only award online gaming has to offer, but seems worthwhile and rewarding enough for the player to engage with a game and follow it through until the end.

Giving the player a goal to pursue, such as winning, is creating a very powerful way of engaging the user on an emotional level.

When looking at online entertainment in general it becomes clear that the affective state those products can transmit, is the main motivation for us wanting to experience them.

VI Conclusion

What is described above is only a fraction of possible techniques to be employed when intending to design effective online entertainment products, but is not a fixed set of guidelines to be followed. Such guidelines for successful online entertainment design, resembling those by Jakob Nielsen on web usability, do not exist yet.

What is described above demonstrates that when designing entertainment products for the Internet, the main focus should be on generating emotional responses and affective reactions in the audience, since this is the intended task of those products.

In regard to the continuous development of new technologies for the creation of online products and the constantly augmenting speed of the Internet on the home market, the creation and distribution of websites with heavier multimedia content has been made possible.

'The future of wired delivery relies on diastolic changes in bandwidth and compression; as the bandwidth of the digital pipe expands, images and sounds will stream through it slimmed down by ever-more efficient compression algorithms.'

Friedberg (2002:36)

The entertainment industry has and will embrace this development and continue creating more powerful and richer online products always using more abounding media elements than before.

'As convergence occurs and the Internet becomes capable of delivering genuinely rich content at acceptable speeds to the majority of the population, those brands that make entertainment their business will demand a totally different design approach to today's scrolling, text-dominated websites.'

Burgoyne and Faber (2001:12)

Jakob Nielsen has defined a solid set of ground values, which are without a doubt worth considering when designing any kind of online product.

The application of usability theory is important for any kind of Internet based product, since it is what will enable the audience to use the product, but it is only based on functionality and understandability.

Jakob Nielsen's theory is based on the Internet as an information space, not a medium that exists to generate emotional impact or affect in a direct way.

Looking at Donald Norman's theory on emotional design with its three levels of visceral, behavioral, and reflective design, it seems like it is a better starting point when designing products that are meant to directly generate affect.

His theory is not neglecting factors represented by usability theory but acknowledges that any given product can generate emotional impact and affect.

Since the entertainment industry is built on generating emotions, Donald Norman's theory might be the better approach. Jakob Nielsen's theory only concerns itself with cognition. Donald Norman considers the interplay between both, cognition and affect, cognition and emotion.

Donald Norman's theory is not a set of fixed rules such as usability theory by Jakob Nielsen but a more general way of approaching the design process.

Donald Norman's theory surely is a more complete approach when designing for online entertainment and can be a better starting point when creating those missing guidelines, which then can be applied to successful online entertainment design.

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