Articles on Experiences 4

Digital Media & Games

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Lapland Centre of Expertise for the Experience Industry (LCEEI)
The Experience Institute project

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Digital media and games are knocking on experience economy's door, and they are becoming more and more connected to experience production and to the field of experience industry. Gaming and storytelling via different channels have through the ages been an important part of our everyday life as well as a form of entertainment. During the recent years, game design and digital media productions have also become an increasingly significant business sector with remarkable growth rates. However, discussion on experience economy has neglected to a great extent this new form of experience production that is present on most business sectors as well as a branch of its own.

This collection of articles – Articles on Experiences 4 Digital Media & Games – will contribute to widening and deepening the discussion on experience economy as well as for emphasizing the great potential of integration of digital media and games to other forms of experiential consuming.

The 4th Articles on Experiences introduces seven articles under the topic of digital media and games. Especially digital media in marketing, game-based applications supporting experience production, cross media as a resource in experience industry, tomorrow's product development and products, and different design approaches are highlighted.

Lapland Centre of Expertise for the Experience Industry (LCEEI) with its Experience Institute project wishes to take the discourse further by highlighting experiences not only from the economical, market-oriented and structural side but from cultural, social and emotional side as well. In addition to the most often mentioned tourism, cross-sectoral point of view is considered as vital for keeping academic debate side by side with the progress of experience business. This collection aims to understand a certain field of experience industry, namely digital media and content production through the eyes of experiential elements, symbolism and experience production.

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Why We Are Here: Articles on Experiences 4 – Digital Media & Games

Digital media and games are becoming more and more connected to experience production and to the field of experience industry. Gaming and storytelling via different channels have through the ages been an important part of our everyday life as well as a form of entertainment. Maybe games and game-playing can be evaluated even as being-in-the-world for us humans (see e.g. Langdon 2000). Meaningful experiences have always existed, but now with elaborated theorizing and conceptualization of experientialism and further understanding of the logic of experience economy totally new tools are available for analyzing gaming and digital media production. These two global and multifaceted progressions – the rise of digital production, especially game industry, together with discovery of experience economy – intertwine in a fascinating way.

However, discussion on experience economy has neglected to a great extent this new form of experience production that is present on most business sectors as well as a branch of its own. This collection of articles – Articles on Experiences 4 Digital Media & Games – will contribute to widening and deepening of the discussion on experience

economy as well as for emphasizing the great potential of integration of digital media and games to experiential consuming.

Digital media, especially game industry, is recognized as an essential business sector for connecting three forces of contemporary economies: technology, economy and content. In a way, game industry is an innovation catalyst in the society. (Behrmann 2006.) When taking a wider perspective, also other experience business sectors, for instance tourism holds a similar position. It can be seen as the mirror of consumer behaviour as well as standard of living. Also experience economy is crossing borders between economy and culture (see e.g. Jensen 1999; Government 2003; Kylänen 2006).

Computer games intertwine solidly with creative industries as well. They accelerate consumer consumption regarding home electronics. Games may also reflect on the newest consumer technology and behaviour, values and practices. Games form a bridge between consumers, especially early adopters, and technological and social innovations. In addition, game industry is more significant in terms of entertainment and culture industry than for instance film and recorded music industries (see also Screen Digest 2003; Creating Growth 2006). Because of the various interfaces between game and other industries, it boosts new companies to the sector. Game industry grows also in the future for its widening usage in education, marketing and politics. Markku Eskelinen (2005) sees games and game-playing not only as pastime or amusement but as a firm part of our everyday surroundings. Therefore it can be forecasted that gaming will gain a special cultural, social, economic and aesthetic value and status in our Western societies. (Eskelinen 2005, 18-19.) The crossroads position of game industry as well as of the whole experience industry enables spill-overs between sectors, which may lead to discovery of new interfaces. As examples of these possible interface parties Eskelinen (2005,

86-98) mentions toy business, sports, arts and different forms of storytelling.

As a whole, more cross-sectoral discussion on digital media is needed in the context of enterprises, public sector and academic research – both in terms of amount and quality. Hopefully, this collection will contribute to fill in that need.

Digital Media & Games as Business

During the recent years, game design and digital media productions have also become an increasingly significant business sector with remarkable growth rates. In Nordic countries game industry is growing with high pace, and there is still a huge potential. For instance in Sweden there are 100 game industry companies, and in Finland the amount is just over thirty. Sweden holds the biggest market share in Nordic game industry. In total, there are just over 200 companies with about 1000 employees in the Nordic game industry. The Nordic market is estimated to be the sixth or seventh biggest in global game industry with total sales of 400 million euros. However, the US market together with Japan, Great Britain, France and Germany are steadily ahead with significant market shares. On the contrary, for instance Benelux-countries are considered as the ninth biggest market in Europe. (Robertson 2003, 46, 52; see also Gelter 2006b, in this collection.) In Finland, game industry employs over 600 people and the turnover was estimated as 40 million euros in 2004 and 65 million euros in 2005 (Finnish Game Companies 06 2006, 11-12; cf. Robertson 2003).

Digital media and entertainment and leisure software industry has transformed from enthusiastic hobbyism to serious business. For instance in the UK entertainment and leisure software market beat growth records with a total size of 1, 35 billion £ in 2005 (see also Robertson 2003, 52). The

global market of computer and video games was about 25, 4 billion £ in 2004 which is 11 % more than the previous year. (Creating Growth 2006, 23; see also Eskelinen 2005, 24). According to another study the size of the global market of interactive leisure software is to some extent smaller, although still significant: 14-15 billion euros (see Robertson 2003, 52; Screen Digest 2003). This difference is probably due to different categorizations of sub-industries included into the studies. However, both studies claim that the world market for video games continues to grow at a faster rate than ever before (Screen Digest 2003; Creating Growth 2006). According to Creative Growth (2006) it is enforcing its position as one leading sub-industry of creative industries in the UK. This is also the case in Finland where game industry is the fastest growing sector of creative economy (Finnish Game Companies 06 2006, 8). During the past years the sector has grown by over 100 %, as the comparing rates for cinema box office and VHS/DVD rental were 30 % and 14 %. Music retail has fallen by 4, 5 % over the same period of 1997–2003. The UK is world's third biggest market after the US and Japan. The significance of Great Britain can be described with a fact that the UK console software market is larger than both France and Germany combined, despite the double population of France and Germany compared to Great Britain.

Digital Media & Games in the Light of Experience Production

Digital media & games can be analyzed as forms of experience production. A special model for understanding critical elements of an ideal experience product as well as the progress of customer's experience has been developed in Lapland Centre of Expertise for the Experience Industry (Tarssanen

& Kylänen 2005; Kylänen 2006). *The Experience Pyramid*[1] is illustrated and used as an analysing tool in the case of games in couple of articles (see e.g. Vallius et al. 2006, in this collection).

Laura Vallius, Tony Manninen and Tomi Kujanpää (2006, in this collection) show the distinct nature of digital media products in terms of experience co-creation. Some of the six elements of an ideal experience product and the forming of experience, as a whole, presented in the Pyramid model are re-evaluated when observed in the digital media context. Also Hans Gelter's (2006a; 2006b) articles give new perspectives to meaningful experiences.

Digital media based experience production can be understood in two ways. First, digital product, say a game, can be considered as a primary experience product *an sich*. Here, the game is producing experiences and is the specific experience product. When this is the case, the phases of experience co-creation should be highlighted from motivational level, to physical level, and again to intellectual level. If the game product meets the requirements of different critical elements – individuality, authenticity, story, multi-sensory perception, contrast, and interaction – on different levels of customer experience, the player can undergo an emotional experience (emotional level) that may lead to a personal change (mental level) of a subject person (see Tarssanen & Kylänen 2005). This is when the digital media product is the one to be enforced with other dimensions or even platforms.

Secondly, digital products can act as *secondary* experience products. In this situation e.g. a game can form a solid

[1] The name of the model has been changed for illustrating its logic more properly. Instead of the term triangle that refers usually to the relationship between three corners or angles, the authors wish to highlight the presence of six experiential elements on different levels of guest's experience, and the progress of one's experience. Therefore the term Experience Pyramid can be seen as more appropriate one.

part of a holistic *experience chain*, but the primary product may be something else, for instance a film, a cultural event or a tourism destination or service. As part of a wider experience chain (see e.g. Boswijk et al. 2006) the game can be seen as enforcement for the primary experience product. In services marketing and relationship marketing perspectives this refers to different levels of a product. At least a core product, actual product, and augmented product can be identified (see e.g. Kotler 1994; Ravald & Grönroos 1996). The key question is that what kind of benefits or value this whole episode represents to the customer (Ravald & Grönroos 1996). Especially this second perspective – where digital product, e.g. a mobisode, is part of the holistic episode – points out the potential and wider benefiting from integrating technology to tourism and culture industries. The perspective also emphasizes the possibilities of widening the usage of technology from information to selling and again to creation of virtual communities boosting the customer experience as well as the revenues of producers.

For demonstrating the possibilities of digital media in experience production it is important to establish the boundaries of experiences. Nathan Shedroff (2001, 4, 8), one of the leading experts of digital experiences, sees that most experiences have edges that divide them into separate phases of start, middle, and end. The main parts of experience product, and thus the main targets of experience design, can be defined as attraction, engagement, and conclusion. So, digital media – when thought as a secondary product with an enforcing premise – can be used especially in raising interest and in building attractiveness, in seducing customers. It is possible, Shedroff (2001, 4) reminds, for an experience to have an extension for prolonging the experience. This refers for instance to post marketing and storing or saving of experiences (digital camera photos, DVD material, gaming, virtual community, sharing experiences).

For illustrating an experience chain where digital media is used for enforcing the primary experience – as an extension of experience (Shedroff 2001, 4; see also Partanen & Tiainen 2005) – I will use film production as an example. So, a film is the primary product here. It is the question of continuing the story in different platforms: a film – a game – items sold in a store – a destination. A film is one platform as well as a game, for instance a mobile game, and then the story presented in the film and continued in the game can be given to items such as clothes, bags, books etc. This may affect positively to brand building. A customer who has seen the film and played the game can purchase some special merchandise for widening one's perspective and imagination, and most of all, for shifting from a sudden and short-time sensing to a more comprehensive and holistic, even transformative experience, from snapshots to a big picture. Especially this may be the case if the story of the film, the game and the items is shifted to a real-world destination and places that may have formed the setting for the previous platforms and storytelling. For instance a tourism destination can make use of the successful appealing story of the film and take it to another level; restaurants under the same brand, activity products based on scenes and personalities of the film, to mention but a few. Actually, the extension of experience is multi-dimensional; tourism destination can work as an extension to the film and to the game, but items and digital media productions extend the destination experience as well. To be specific, it is hard to define where the process starts and where it ends as well as the status (primary – secondary) of different platforms. It is also notable that the experience chain includes various interests between actors, producers. The customers and end-users may differ significantly from producer to another. However, this creation of a seamless experience chain may boost the visibility, acceptance, profitableness and experientialism of single products included into the whole, as well as the total brand.

Games seem to follow completely *the progression of economic value*, a perspective presented by B. Joseph Pine II & James H. Gilmore (1999, 166). The games illustrate how goods, services, experiences and transformations can and should all be included into the process of experience production. Let's think, for instance, about an educational mobile game targeted to children as a good or as a manufactured offering. In the following phase the company provides several services for the user for giving him/ her access to loading of mobile games, sharing of playing experiences with others, ranking and possible prize winning, and support for playing. Through expert design of products and services the company is able to stage game-based experiences that engage the individuals even more. Eventually, if everything goes as planned, the player undergoes an experience, a multisensoral, positive and comprehensive emotional experience (see Tarssanen & Kylänen 2006; Kylänen 2006). Depending on the story or the message as well as on the level of engagement of the game the player can face a subjective change of some kind or s/he can learn something new, – good beats bad, precious values for everyone to absorb or love your fellow-men – or can gain a widened world view.

In the next and the final phase of progression of economic value the offerings are about the customers' transformations. The customer is the product, where transformations are being marketed and sold for creating demand towards the experiences, services and goods offered by a firm. (Pine & Gilmore 1999.) Presumably, the role of games will increase in this phase. Games can offer the player out-of-world experiences that may lead to one's subjective change (see Tarssanen & Kylänen 2006).

Pine & Gilmore (1999; Gilmore & Pine II 2002; see also Schmitt 1999) point out that Experience IS the marketing. Experience economy is about experientializing goods and services, and about creating demand to one's goods and ser-

vices. It is also about staging experiences so engaging that potential customers are eager to pay attention and eventually buy exactly from you. So, it is not about the means or ends but about both as well as about the outcome; not about the safety of cars or banks but about the peace of mind the customers feel as a consequence (see Schmitt 1999, 69-70).

This is where digital media comes in. By using digital media and different kinds of technologies companies can create experiences for customers (see Schmitt 1999, 90-92), or to be specific create the *setting* for customers' experiences (see e.g. Tarssanen & Kylänen 2005). Games evoke strong imaginative responses (Langdon 2000), and this brings them closer to tourism and other experience sub-industries as well as to marketing. Bernd H. Schmitt (1999, 73-74) illustrates web sites and electronic media as one specific component in experiential marketing and in implementation of *sense, feel, think, act,* or *relate* campaign.

As a whole, Schmitt's (1999) holistic view on experiences captures visual/ verbal identity and signage, product presence, co-branding, spatial environments, web sites and electronic media, people, and communications as vital tools of experiential marketing. Although spatial environments are recognized as one component of key experiential providers, the discussion is targeted only to physical spatiality. This is a big loss. Virtual and/ or digital point of view is totally ignored. It also shows, however, that experience economy is changing and reforming rapidly due both to internal and external causes. The field is growing constantly, and therefore also definitions become obsolete quickly. So, in a way, it is understandable that Pine & Gilmore (1999) and Schmitt (1999) have not taken this digital media growth into account[2].

[2] Although, it must be noted that there are some hints (see e.g. Pine & Gilmore 1999, 31) on digital media as well as digital media oriented experience product examples in both books, but no deeper discussion on the potential or the utilization process. Also B. Joseph Pine II has been pointing out digital media and technological development throughout his expert presentations given after publishing the book.

On the other hand it is surprising for them not to have paid more attention to the possibilities of emerging digital technologies in experience production. This raises expectations towards their further writings and way of thinking.

Using games in advertising was quite trendy in the turn of the 21st century, but then faded away. Now after couple of years, advegaming, newsgaming and edugaming are coming back. Even politics is exploiting games in election work. (Eskelinen 2005, 99-107; see also Thijssen et al. 2006, in this collection.) The clue in integration of marketing and games is mostly *time*, as Thomas Thijssen, Albert Boswijk and Ed Peelen (2006, in this collection) emphasize by comparison of TV and cross media (including games) campaigns. The latter reaches the target group better, is more cost-effective and most of all, engages the customer for nine times longer period of time. The media consumption of youth is rapidly changing from passively watching television to more interactive ways of communicating. Also Jarno Salonen's & Petri Ruutikainen's (2006, in this collection) article points out the possibilities of game-based approach in web design for engaging potential customers. And after all, it is not only youths who are interested.

Digital media products seem to fit perfectly to practices of the experience economy. Whereas in service business the customer pays for the intangible assets included into the product, in the case of experiences they pay for the time spent with the service provider or the product (see Pine & Gilmore 1999, 2; Eskelinen 2005, 73-75). Eskelinen (2005, 73-80) categorizes the ecology of games with five elements important to analysis of games: time, space and spatiality, players, rules and resources. When talking about the business models of games, at least three alternatives emerge; 1) selling games, 2) selling gaming and 3) pay per play. Especially the second option – to sell gaming, to charge for shared experiences and for building of communities and identities

– follows the logic of admission fees given by Pine & Gilmore (1999, 61-68). Laura Vallius, Tony Manninen and Tomi Kujanpää (2006, in this collection) also emphasize the differences between games and other experience products with Experience Pyramid perspective in addition to Flow discussion. They also point out the limitations of using a single perspective in analysing experientialism of games.

For illustrating the logic of experience production and consuming I attach to the metaphor presented by Hans Gelter (2006a, in this collection) – experience producer and his/her skill repertoire as a sound mixing board. This example helps to clear the paradox of producing experiences; how to produce someone else's experiences. Each feature directed with the mixing board represents the skills of the producer or the stager, and the more experienced and skilful the person, the more controls are available, as it is the case in film and music industries. On the contrary, a less skilled experience producer has only a few qualities of the experience design to take into account – and therefore a smaller mixing board to use.

This mixing console example can be also used in analysing the experience repetition. Why would a customer repeat one's experience? What is the relationship between awareness of the customer and the strength and intensity of one's meaningful experience? Why to play the game once again? What is the role of the producer in giving the customer tools for better awareness of the product as well as its additional qualities? I assume that a first-time player of a computer game knows less about the game than an experienced one. Therefore the less experienced player has a smaller mixing board to use in terms of game qualities. However, this may affect positively to the level of engagement, surprise and attraction (see also Vallius et al. 2006, in this collection). In contrast, player with higher skills to play and know about the game "plays" with a larger mixing board. Obviously, this

gives another view on the role of the producer (as well as the game designer); the games should offer the player tools for educating oneself and for becoming more aware and thus demanding towards the game.

Despite the learned authors and articles collected here, the work is still widely to be done. In addition to discipline based and specific debate in both media culture research, ludology and experience economy discussion, also multidisciplinary, assembling discussion needs to be engaged and further developed. Hopefully, this collection will bring different debates closer to one another for forming an enlightening view on the relationship between digital media sector and comprehensive experience industry. This collection also aims at combining digital media and experience production competencies in business practices. Already these articles show the potential in integrating digital media based applications and expertise on both experiential product design and experiential consuming.

For giving ideas to present and future research and for further understanding the digital media production, several topics can be found. As Pine & Gilmore (1999, 15-16) state, more attention should be paid to the understanding of user experience in order to have concrete background for experientialization of goods and services; for instance *game-playing experience* should be further discussed. Especially the analysis on practices, values and motives in playing represent an important field of academic debate (see e.g. Kozel 1998). In this collection (see Aula et al. 2006, in this collection) sociocultural contexts of consuming and of products are re-evaluated. These would speed up the perspective of holistic experiences. Also important is to widen the view in both research and business from doing marketing and managerial practices to understanding of markets (see e.g. Venkatesh & Peñaloza 2006). The field calls for an extrended view on marketplaces. Discussing digital media production in the context of experi-

ence economy may help to attain a multidisciplinary forum from sociology to technology and from business economics to arts, and again from consumer research to game research. It is quite stunning that in the turn of the 21st century software industry of billions of euros still lacks systematized academic research (see Eskelinen 2005, 55-56). Nordic countries seem to operate as forerunners in this process, with Digital Game Research Association established in 2002.

Markus Friedl (2002) in his prominent book *The Online Game Interactivity Theory* points out that extensive research on past, current and future approaches is as crucial for multiplayer game development as it is for any other product development. But obviously technological limitations as well as possibilities have to be highlighted for bringing in the always-so-enlightening basics of game and technological applications design (see e.g Ylikerälä & Kuukkanen 2006, in this collection).

Multi-Platform as Potential and Challenge

Digital media and Games operate in a triangle of *Users* (socio-cultural context, usage cultures, motives, usability etc.), *Technologies* (new technologies, interoperability, possibilities and limitations of technologies, multi-platforms etc.) and *Business* (business models, integration of competences and industries, networking, distribution channels etc.). These dimensions also illustrate the fragmented but wide field of digital media production in terms of both research and development work.

However, the field is in constant transformation. Ubiquitous computing, ubiquitous communication, cross-platforms, cross-media distribution, interoperability issues, the possibilities and limitations of technologies in choosing the appropriate media, user involvement in design (see e.g. Iivari

2004), game development in networks, intellectual property rights in creative industries, and formation of usage cultures as well as building of communities (see e.g. Toiskallio 2003) within multiplayer environments bring considerable future trends to the field.

Creative Lapland seminar held in Rovaniemi in 2006 introduced some of these themes in addition to e.g. user-created content, copyrights in new distribution channels, and digital distribution as a whole. Financing instruments and targets need to be re-evaluated for meeting the needs of the changing landscape of content business. In addition to the focus of academic research old-fashioned structures have to be re-shaped.

Seven Articles

There are fifteen authors from Europe, three from the Netherlands, and one from Sweden, and eleven from Finland. The collection is written completely in English. The book is aimed at different audiences: researchers, teachers and students as well as managers and developers. Digital Media & Games collection brings digital media & games to the sources of experience production by intertwining both media culture and game research and experience economy discussion. It also helps the reader in forming a solid, multifaceted view on meaningful experiences as a whole.

The 4th Articles on Experiences introduces seven articles under the topic of digital media and games. The articles will offer viewpoints from using digital media in marketing to game-based applications supporting experience production and again from cross media as a resource in experience industry to tomorrow's product development and products as well as to different design approaches.

Articles on Experiences 4 continues on the path of the previously published Articles on Experiences and Articles on Experiences 2 and Articles on Experiences 3 – Christmas Experiences. The book is meant to widen and deepen the scientific thinking and discussion regarding experience production, experience economy or industry and experiencing. It also aims at giving developers and practitioners some new ideas for their work.

All articles are collected on the basis of invitations and contributions. They have been collected in spring 2006. The authors represent different fields of science from arts to business economics, from game research to information technology and from management to design. All articles are copyrighted (©). References are asked to make as following:

Author 2006: The name of the article. In Kylänen, Mika (ed.): Articles on Experiences 4 – Digital Media & Games. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, pp.

The collection starts with a mapping the field and discourse of experience economy by a Swede Hans Gelter. Gelter works for Luleå University of Technology, especially Piteå School of Music that is specialized for instance in experience production oriented education in media, culture and tourism. Gelter guides the reader to various academic discussions on experience. Especially the categorization of different kinds of experiences gives new insights to experience offerings.

Laura Vallius, Tony Manninen and Tomi Kujanpää observe widely the problematic of playing together in collaborative computer games. The researchers at the University of Oulu, Finland, use LCEEI's Experience Pyramid model for analysing sharing experiences – a critical element of gaming. The article discusses how group of players form shared ex-

periences in a virtual game and how different approaches in game design affect the experience of playing together.

The third article written by Jarno Salonen and Petri Ruutikainen from the Technical Research Centre of Finland (VTT) illustrates using game-based design elements in electronic services. They show how "e for ebusiness and electronic" can be transferred to "e for experience". They present the game-based design approach as a method of generating positive user experience in the context of complex services in the electronic environment, namely eInsurance.

Thomas Thijssen, Albert Boswijk and Ed Peelen from the Netherlands, representing the Amsterdam-based European Centre for the Experience Economy, have written a joint article to the collection on cross media communication offering meaningful experiences through experience co-creation. They explore the relationship between meaningful experiences and cross media through a new lens. Especially managerial perspective is highlighted with a proposition of adopting a new mindset to fully understand experience economy.

The fifth article, Hans Gelter's second in the collection, captures experience production in digital media and games. Gelter exploits Pine's & Gilmore's theory of the four experience realms in the light of customer participation: entertainment, educational, aesthetic, and escapist. Also interesting definitions and perspectives on digital media are offered. Gelter connects nicely experience economy, education, digital media, and business perspectives for creating a holistic view on digital media based experience production.

Pertti Aula, Piia Rytilahti, Minna Uotila and Kati Vehmas discuss strategic design and end-user knowledge in experience production. They lean on to two specialized projects implemented in Faculty of Art and Design (Department of Industrial Design, and Department of Textile and Clothing Design) at the University of Lapland, Rovaniemi, Finland: a) Future Finders and b) Luxury. They illustrate product de-

velopment on different levels from strategic to tactical and again operative level. Product development and design is taken deeper with a high-quality method, FF Tool, which considers socio-cultural context of products and consuming. The article presents the significance of end-user knowledge when designing new products as well as a tailored model for managing and using new knowledge in product development.

The closing article is about 3D stereographic graphic design, and it is written by Markus Ylikerälä and Hannu Kuukkanen. The researchers of the Technical Research Centre of Finland (VTT) focus on specific computer technologies, stereographic and anaglyphic design. They offer the reader enlightening view on basic issues in graphic computer design by observing the relationship between phenomena such as light and biological limitations of for instance a human eye. As a conclusion they refer to VTT-based technology concept that enables the transformation of 2D applications to 3D form.

Lapland Centre of Expertise for the Experience Industry (LCEEI) with its Experience Institute project wishes to widen and deepen the discourse by highlighting experiences not only from the economical, market-oriented and structural side but from cultural, social, and emotional side as well. In addition to the most often mentioned tourism, cross-sectoral point of view is considered as vital for keeping academic debate side by side with the progress of experience business. This collection also aims to understand a certain field of experience industry, namely digital media and content production through the eyes of experiential elements, symbolism and experience production.

The Articles on Experiences offers an accumulative international forum for versatile, high quality scientific-academic debate on experiences, experience economy and experience production as well as research. The editor recom-

mends the book to several audiences. Researchers, teachers and students as well as entrepreneurs and developers will find interesting viewpoints for their own work on the field of digital media.

The Future of AoE

The AoE series have gained a special status in the field of experience industry discussion. LCEEI aims at publishing still two more collections of articles: AoE5 and AoE6. The next, Articles on Experiences – Arts & Experience, will be published at the end of the year 2006. An invitation for contribution can be found from the last pages of this collection. The closing issue, Articles on Experiences 6, will focus on experience cocreation and modelling of experiences production perspectives. Especially the Experience Pyramid is highlighted.

The discussion on digital media will be continued soon. Department of Media at the Faculty of Art & Design of the University of Lapland and Mediapolis Innomedia project will publish a multidisciplinary book on player experiences in early 2007. The book will be a compilation of peer-reviewed articles. Respecting the Department of Media's tradition of combining research with design, the book aims to piece together contemplations from researchers, designers, and those in-between, within or outside the academia. The working title or a catchphrase of the book is *"Extending Experiences"*. Extending is understood in two ways. Firstly, the extending refers to creating games that allow new kinds of experiences or are more emotional, maybe by innovativeness in e.g. gameplay, graphics, sound or the interface. Secondly, the extending takes place concept-wise. In the wake of new forms of games and playing new types of players get introduced to digital games. Thus, the concept of player experience has to assimilate very different takes on how,

where, when and why games are played and experienced. The collection will concentrate on *games, players* and *methodological challenges for research and design*. Further information will be available at: http://www.ulapland.fi/contentparser.asp?deptid=21565.

The door for debate on digital media & games is still wide open for upcoming debate. The 4th Articles on Experiences wants to leave a positive imprint to the discussion on digital media experiences. Enjoy your reading!

References

Aula, P., Rytilahti, P., Uotila, M. and Vehmas, K. 2006. Strategic Design and End-user Knowledge in Experience Production. In Kylänen, M. (ed.): Articles on Experiences 4 – Digital Media & Games. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 152-162.

Behrmann, M. 2006. Introduction. European GameDevelopers Federation EGDF. Workshop on "Game development technologies and networking". Directorate D - Network and Communication Technologies. Networked Audiovisual Systems. Information Society Technologies. European Union. Community Research & Development Information Service, CORDIS. April 5th 2006. Bruxelles.

Boswijk, A., Thijssen, T. and Peelen, E. 2006. A New Perspective on the Experience Economy – Meaningful Experiences. In Kylänen, M. (ed.): Articles on Experiences 3 – Christmas Experiences. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 84-108.

Creating Growth 2006. How the UK can Develop World Class Creative Businesses. NESTA Research Report. London.

Eskelinen, M. 2005. Pelit ja pelitutkimus luovassa taloudessa. [Games and Game Research in Creative Economy.] Sitran raportteja 51. Sitra. [The Finnish National Fund for Research and Development.] Helsinki.

Finnish Game Companies 06 2006. Employment and Economic Development Centre for Uusimaa. Report. SILE project and Neogames. Helsinki.

Friedl, M. 2002. The Online Game Interactivity Theory. Charles River Media. London.

Gelter, H. 2006a. Towards an Understanding of Experience Production. In Kylänen, M. (ed.): Articles on Experiences 4 – Digital Media & Games. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 24-46.

Gelter, H. 2006b. Experience Production in Digital Media and Games. In Kylänen, M. (ed.): Articles on Experiences 4 – Digital Media & Games. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 132-151.

Gilmore, J. H. & Pine II, B. J. 2002. Experience IS the Marketing. A Strategic Horizons White Paper. Strategic Horizons LLP. Aurora.

Government 2003. Denmark in the Culture and Experience Economy – 5 New Steps. The Danish Growth Strategy. Copenhagen.

Iivari, N. 2004. Enculturation of User Involvement in Software Development Organizations – An Interpretive Case Study in the Product Development Context. Seminar Paper. ACM International Conference Proceeding Series; Vol. 82 archive. Proceedings of the Third Nordic Conference on Human-Computer Interaction. NordiCHI '04. October 23rd – 27th 2004. Tampere, 287-296.

Jensen, R. 1999. The Dream Society. How the Coming Shift from Information to Imagination Will Transform Your Business. McGraw-Hill. R. R. Donnelley & Sons Company. New York.

Kotler, P. 1994. Marketing Management – Analysis, Planning, Implementation and Control. 8th Edition. Prentice-Hall. Englewood Cliffs.

Kozel, K. 1998. Re-Thinking the End-User's Experience. EMedia Professional, 11(2), Feb, 61-67.

Kylänen, M. 2006. Enlightening Christmas Experience – Reflections on the Experience Triangle. In Kylänen, M. (ed.): Articles on Experiences 3 – Christmas Experiences. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 110-134.

Langdon, K. 2000. What Is a Game? Available at: http://www.polymath-systems.com/games/whatgame.html. Cited 29.6.2006.

Partanen, J. & Tiainen, T. 2005. Digitaalinen media elämystuotannossa. [Digital Media in Experience Production.] Lapland Centre of Expertise for the Experience Industry. Rovaniemi. DVD.

Pine II, B. J. & Gilmore, J. H. 1999. The Experience Economy. Work Is Theatre and Every Business a Stage. Harvard Business School Press. Boston.

Ravald, A. & Grönroos, C. 1996. The Value Concept and Relationship Marketing. European Journal of Marketing, 30(2), 19-29.

Robertson, E. 2003. Datorspelindustrin 2003. [The Computer Industry 2003]. Mötesplats upplevelseindustrin Karlshamn.

Salonen, J. & Ruutikainen, P. 2006. E for Experience – Using Game-Based Design Elements in Electronic Services. In Kylänen, M. (ed.): Articles on Experiences 4 – Digital Media & Games. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 84-104.

Schmitt, B. H. 1999. Experiential Marketing. How to Make Your Customers to Sense, Feel, Think, Act, Relate to Your Company and Brands. The Free Press. New York.

Screen Digest 2003. The UK Interactive Leisure Software Industry - Facts & Figures from ELSPA/Screen Digest/Chart-Track. The Entertainment & Leisure Software Publishers Association (ELSPA). Available at:
http://www.screendigest.com/reports/ils04/press_releases_31_08_2004n/view.html Cited: 29.6.2006.

Shedroff, N. 2001: Experience Design 1. New Riders Publishing. Indianapolis.

Tarssanen, S. & Kylänen, M. 2005. A Theoretical Model for Producing Experiences – A Touristic Perspective. In Kylänen, M. (ed.): Articles on Experiences 2. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 130-149.

Thijssen, T., Boswijk, A. and Peelen, E. 2006. Meaningful Experiences & Cross Media Communication. In Kylänen, M. (ed.): Articles on Experiences 4 – Digital Media & Games. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 106-130.

Toiskallio, K. 2003. Mitä sosiologi voi sanoa mobiileista sisältönsä tuottavista yhteisöistä? [What Can A Sociologist Say About Mobile Communities Producing Content?] In Repo, P. & Aro, J. (eds.): Teknologian yhteiskunnallinen ja kulttuurinen tutkimus. [The Social and Cultural Science of Technology.] Työselosteita ja esitelmiä 75. [Seminar Papers.] National Consumer Research Centre, 26-27.

Vallius, L., Manninen, T. and Kujanpää, T. 2006. Sharing Experiences. Playing Together in Experimental Collaborative Computer Games. In Kylänen, M. (ed.): Articles on Experiences 4 – Digital Media & Games. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 48-82.

Venkatesh, A. & Peñaloza, L. 2006. From Marketing to the Market: A Call for Paradigm Shift. In Sheth, J. N. & Sisodia, R. S. (eds.): Does Marketing Need Reform? Fresh Perspectives on the Future. M. E. Sharpe Publishers. Armonk.

Ylikerälä, M. & Kuukkanen, H. 2006. Pluggable 3D Stereographic. In Kylänen, M. (ed.): Articles on Experiences 4 – Digital Media & Games. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 164-172.

Towards an Understanding of Experience Production

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Background

The Swedish concept of experience industry, *"upplevelseindustri"*, was introduced in 1999 to define the contemporary experience society (Kelly 1998; Jensen 1999; Pine & Gilmore 1999; Caves 2000; Davenport & Beck 2002; Florida 2002; 2005) also called dream society, cultural industry, creative industry or entertainment industry. In Sweden the conceptualization of experience industry has been defined as including creative areas such as architecture, design, film/photo, literature, art, media, fashion, music, gastronomy, market communication, performance art, tourism, and experience based learning (KK-stiftelsen 1999; 2001; 2002; 2003; Wahlström 2002) but also sport events and health business (AMS 2001). Understanding this wide area of different creative businesses, their special management and product development, the new experience based marketing, the emergence of a new creative class and the generally increased experience consumption

within the experience economy has resulted in a new academic discipline with education and research about and for this new cultural era called experience economy.

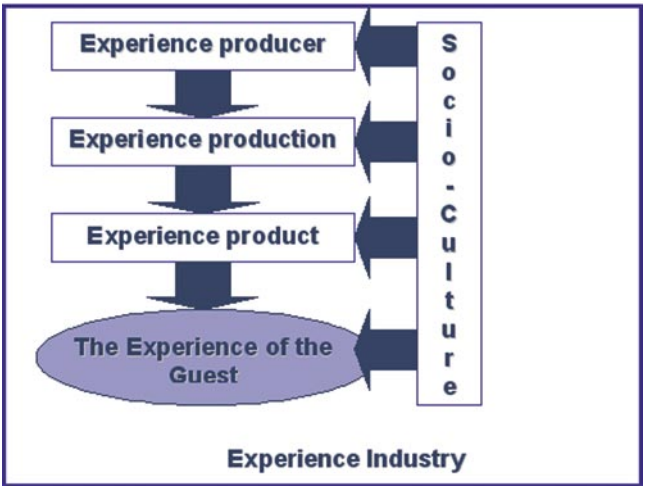

Figure 1. The five areas of academic interest in Experience Production.

This new academic area named as ***"experience production"*** (www.upplevelseproduktion.com) at Luleå University of Technology can be divided into five sub areas of academic interest (Figure 1), the experience industry (economics, socio-culture, cultural geography, development and trends etc.), the experience producer (competence areas, entrepreneurship, creativity management etc.), the experience production (production process, staging experiences, product development, process management, quality management etc.), the experience product (marketing, pricing, selling, bench-marking, quality assessment etc.) and the consumers experience of the product (material and immaterial aspects

of the experience phenomenology, qualities and categories of experiences etc.). These five areas have to be understood in a human socio-cultural context as social and cultural trends strongly influence the every-day life of consumers and their desire to enrich their lives with experiences. Within each of these five areas of interest theories and models have to be developed for contributing to our understanding of the experience industry and experience production.

The Experience Industry

Our human culture has evolved through transformations from a hunting/gathering society through the agricultural and industrial society to present post-modern society. This cultural evolution involves increase in complexity manifested in the many different labels of our contemporary society such as the information-, communication-, knowledge- technology-, dream- , post-modern-, post-industrial- and experience society. The evolutionary pace of this cultural transformation has increased with time and yesterdays "new economy" from the information era has become today's "experience economy" (Pine & Gilmore 1999). Here the major economic offerings are not commodities (as in the agrarian economy), goods (as the in industrial economy) or services (as in the service economy) but experiences, personal memorable sensations staged by a company such as in edutainment, eatertainment, shoppertainment etc. But already a new "transformational economy" is evolving. The focus is turning to changing and "fixing" individuals for new appearance or lifestyles is the new offering (Pine & Gilmore 1999). The emergence of the post-modern society with its never ending search for consuming experiences including experience loaded goods and quick fixes has fundamental implications to our contemporary relation to consumption

and the production of offerings for the experience economy.

The emergence of the experience economy can be seen as a consequence of the people in the developed countries have reached the top of Maslows hierarchy of needs to the level of self-actualization (Maslow 1968; 1971) characterized by the post-modern individualized lifestyle. Kairos Future (2004) has developed the term "Generation C" (Content) for the present generation where the values are individualism, freedom for own choices, experiences are valued more than materialism, time not money is limiting, and the strong need to be accessible through the new communication media (Fernström 2005). Another denotation of our contemporary generation is "Generation I" for individuality, informed, informal and international which constitute a better informed and more demanding and less loyal category of customers. Richard Florida (2002; 2005) has characterized a new work force as "the creative class" having new demand on work and leisure time and new values and goals in life. Davenport and Beck (2002) has suggested the term "The Attention Economy" to describe this individualization and the need for people to be seen and confirmed, especially in traditional media and in the new communications media such as internet communities, blogs, personal home pages etc. It is important to be seen in the right pace, with the right people at the right time, to do the right things and have experienced the right experiences, as a consequence of contemporary hedonic trend. "Been there, done it, seen it" consumption is the new trend with strong implications to the experience industry. Youth today sees everything in short time perspective – with "I want it now" culture. Trend analysis thus has become a key factor for being an actor within the experience economy. Recent mega-trends of the experience society have been identified as time deficiency, health issues, trust and emotions changing the contemporary market in all business (Fernström 2005).

Within experience production we prefer to address the consumer of experience products as a ***guest*** rather than as customer, consumer, client or spectator, to differentiate the experience industry from traditional service industry (Pine and Gilmore 1999). This concept was introduced by Walt Disney in his theme park to honour the individualised qualities of the experiences (Pine & Gilmore 1999; Thomas 1994). A guest is invited to an experience on a personal basis, while a customer or spectator is one among many in a mass-produced offering, and the guest concept is strongly promoted through the Swedish agency of "The Good Hostmanship", *"Det Goda Värdskapet"* (Gunnarsson & Blohm 2002).

The Experience of the Consumer / Guest

A fundamental requisition to be an actor in the experience industry is to have a basic understanding of the concept of "experience" as it is the basis for the offering on the market. Too many both academics and professionals in the experience industry use fuzzy imprecise expressions that can be characterized as trendy buzz words and corporate bullshit (Beckwith 2006; Frankfurt 2005). Empty buzz words such as extraordinary experience, memorable experience, total experience, long-lasting experience, powerful experience, extreme experience, strong emotional experience, special experience, authentic experience etc. are used to describe offerings but such superlative vocabulary is both confusing and has the risk of the concept losing its power. Even Pine & Gilmore (1999, 12) define experiences vaguely as *"memorable, rich in sensations created within the customer who have been engaged on emotional, physical, intellectual or even spiritual level"*. Lapland Centre of Expertise for the Experience Industry defines experience as "a multisensoral, memorable, positive and comprehensive emotional experience that can lead to

personal change of a subject person" (Tarssanen & Kylänen 2005; Kylänen 2006). What does it mean to have an extraordinary or memorable experience? When does an experience become extraordinary? Can the same experience be extraordinary twice? We need clearly some better clarifications.

A lexical analysis shows that the Latin word *experientia* meaning "knowledge gained by repeated trials" related to *experiri* "to try, test" has obtained a dual conceptualization in the English language while many other languages have two different words. The first is the noun experience as *erfahrung* [Swedish *erfarenhet*, Finnish *kokemus*] – the skills, practices, understandings, familiarity, know-how, etc. assimilated knowledge and wisdom that make up a human being and that can be communicated. The second conceptualization of experience, *erlebung* or *erlebnis* [Swedish *upplevelse*, Finnish *elämys*] is both a noun as an incident, encounter, event, happening etc. – what occurs in the human mind – and at the same time a verb as a feeling or emotion what we come into contact with, face, go or live through, suffer, undergo, be subject to, come across etc. – qualities that are difficult to reach. Interestingly these two sides of our experience of the world, as interconnected and interrelated they are, seem to signify the two ways our brain relates to the world through the right brain hemisphere of phenomenological comprehension (*erlebung, erlebnis*) and left hemisphere of analytical apprehension (*erfahrung*) (Edwards 1979; Kolb 1984; Damasio 1994). Thus at the same time we can both experience (*erleben*) a computer game through its stimulus of our senses as well as comprehend into feelings and modes and through our previous and at the moment acquired skills obtain experiences (*erfahren*) that guide us in future encounters (experiences) with the game. The former we have difficult to communicate while the later, is based on our time-content analytical apprehension we can tell or write down, especially if reflected on such as in experiential learning (Kolb 1984).

There are some theoretically defined experience concepts such as Maslow's ***peak experience*** (Maslow 1962; 1964) and ***flow experience*** and ***autotelic experience*** of Csíkszentmihályi (1990), as well as some common sense categories such as ***wow-experiences***, ***panic experiences*** etc. that may function as an embryo to a nomenclature of different experiences.

To understand qualities of experiences, from phenomenology we can learn that experience can be described as ***Life world*** composed of lived space, lived time, lived body and lived human relations (van Mannen 1990). From the science of hermeneutical phenomenology we can learn that experiences that matter anything to us must have significance and meaning: *"Lived experience is the breath of meaning"* (van Mannen 1990, 36). Only the person living the experience can define its meaning and significance. Any producer, be it media producer, music/ film producer or experience producer can only stage the setting and conditions for the experience. In the same manner a teacher can only stage the learning environment and learning conditions, but never create the learning of the student.

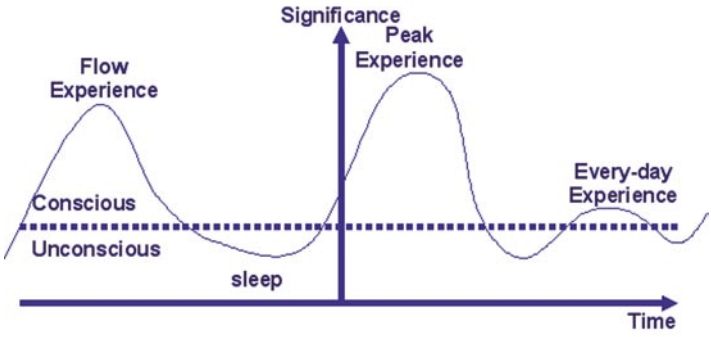

Figure 2. Experiences plotted as their significance against time as a continuum with occasional pitches of high significance and period of low unconscious experiences, as in sleep.

Experiences cannot be seen as isolated "events" as expressed in most business literature, but rather as Dewey (1938; 1958) suggested as an interconnected sequence of experiences (Figure 2). This is supported by cognitive and neurobiology (Damasio 1994; Nørretranders 1996; Hawkins 2004) showing that we are constantly experiencing from the moment our developing brain is starting to take in sensations from our senses until the brain stops functioning. We can actually talk about a conscious and an unconscious experiencing where the conscious experiences are those that are made "knowable" by out conscious attention (Kaplan & Kaplan 1989; Kaplan 1995) and thus can be reflected on. James (1890) proposed that there are two types of attention, a direct or voluntary attention and an involuntary attention. The directed attention, working as a flashlight attracted by that who is most relevant at the moment, is our capacity to focus or concentrate and requires effort to inhibit the urge to respond to distractions around us and to focus on the task at hand. The involuntary attention is spontaneous and called fascination. It evokes by an interesting surrounding and does not demand any concentration. In evolutionary terms this can be interpreted as a "stand-by scanning" of the environment like a broad-spectra radar, while the directed attention is more of an "alert" attention like a flashlight searching for potential danger in our environment (Gelter 2003). Both are essential for our experience of the external world, our internal physical world of our body and our internal mental world of thoughts, dreams etc.

These internal and external sensations make up a continuous stream of experiences, "the film of our life", where some parts have higher pitch and intensity and are therefore remembered, and other are regular everyday experiences forgotten as soon they have passed to history (Figure 2). Our experiences are filtered both through our earlier experiences remembered in the memory of body and soul as well

as through our emotions that function as a value-detector of relevance in this stream of experiences (Damasio 1994), where most experiences (such as you unconsciously experiencing your trousers or dress) are insignificant and immediately forgotten. Only meaningful and for your life significant experiences are made conscious and if really significant, memorized. To clearly define an offering as an experience product it is therefore important to clarify the start and stop to distinguish it from other experiences and trivial every-day experiences, denoted as ***contrasting*** (Pine & Gilmore 1999). Most commercial experiences have a clear start and stop in the form of a ritual or routine (entering the movie saloon, putting on the computer etc.), and designing such start and stop phases is an important part of experience production.

Another way of clarifying different type of experiences is to analyze their origin and strength in terms of physiological, emotional or mental (brain wave) response (Figure 3). Many experiences have either an internal – mental – or an external origin or a combination of both. Again some may

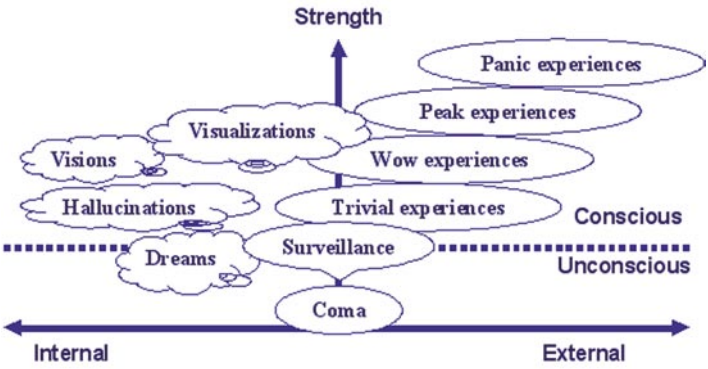

Figure 3. A preliminary taxonomy of experiences plotted as their strength against their internal or external origin.

be unconscious, and of some we are consciously aware of. Through identifying and defining different dimensions of experiences such as strength (measured in physiological response, stress, emotional components etc.), perceived significance, learning, physical activity, social activity, duration and complexity we may find a taxonomy and nomenclature to label different experience in a manner to avoid buzz words. This is a delicate task for future research even though many may object stating the impossibility of analyzing personalized experiences and that one and the same experience production may elicit different experiences among different guests. Here lies a truly future research challenge.

The Experience Producer

In the light of the personalized nature of experiences, many have problems with the concept of an experience producer, perceiving it as a paradox to produce someone else's experiences. However, this is not as strange as it first sounds if we compare to music and film producers who are staging the settings for our own, subjective music and film experiences. In the same way a staged game experience, homepage experiences or dinner experiences can be produced by an "experience producer". An experience producer can be as a metaphor conceptualized as working with mixing consol (Figure 4) where each regulator and knob is one parameter of the experience such as light, sound quality, emotions, intensity, sociality, expectations, duration, marketing aids, story pitch, anticipation etc. making it possible to design every little detail in the staging and design of the experience qualities, both material and immaterial. As with the music producer a skilful experience producer has a large mixer board with many parameters to regulate, while a less experienced and less skilled experience producer has only a few qualities of the experience design to work with (Figure 4).

Thus a professional experience producer needs several advanced skills such as practical design skills of the "stage" of the experiences, such as lightning, sound, colour design, decoration, equipment, technological aids etc. constituting the material aspects of the experience production. In addition to this, the experience producer, as experiences are personalized internal phenomenon among the guests, need to have good guest knowledge regarding their previous experiences, expectations, moods and feelings, visualisations of the coming experience based on advertising and other pre-information about the offering constituting the immaterial aspects of the experience production. For understanding the psychological, cognitive, neurobiological as well as sociological dimensions of the experience phenomenon it is necessary to harmonize material and immaterial aspects of the experience setting. To concretize these different dimensions the experience producer needs a toolbox of procedures and methods such as story telling, dramaturgies, theatre settings, rituals, symbols to mention but a few. Finally the experience producer needs a concrete work sheet as well as practical production skills such as action planning, budget and financial planning, scheduling, staff management, project management and leadership, not discussed here.

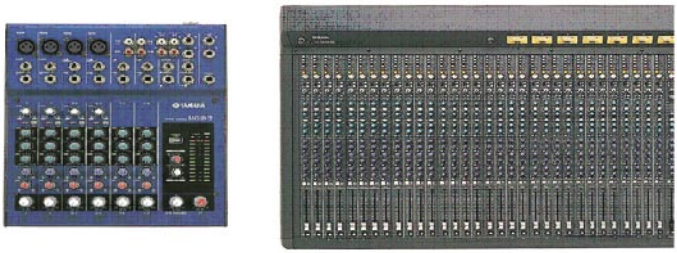

Figure 4. The mixing console as a metaphor for the experience producer where the more experienced and skilful producer has more dimensions of the experience to regulate.

The Process of Experience Production

There have been several proposals of methodology and procedures of experience production coming especially from tourism (Cohen 1979; Maher 2005) and consumer behaviour (Arnould et al. 2002; Arussy 2002; Fitzsimmons & Fitzsimmons 2000; Fernström 2005) mostly recognizing the importance of the senses and emotions in experience production, but rarely specifying *how*. Also the interaction of the guest with the "experience" has been suggested as essential in experience production (Arussy 2002).

The theory of experience production was boosted by Pine & Gilmore's theory of the ***experience realms*** (Pine & Gilmore 1999) and staging experiences as a homology to theatre staging. According to Pine and Gilmore staging experiences is not about entertaining guests, but rather about engaging them. Thus a primary dimension in experience production is that of guest engagement in the experience. The second dimension in Pine and Gilmore's experience realms describes the connecting or environmental dimension of the experience that unites the guest with the event or performance of the experience either through absorption or immersion. When combining these two dimensions, Pine and Gilmore define four "realms" of experiences; entertainment, educational, escapist and aesthetic that can commingle in different combinations to form unique personal encounters with the events in the experience. They also proposed five steps for staging the experience; to theme the experience, to harmonize impressions, to eliminate negative clues, to mix in memorabilia and to engage the five senses. By recognizing that each customer is unique, Pine and Gilmore (1999) develop the customization of mass production to the experience production by staging customer surprise through applying the theatre as a model. They suggest the incorporation of the concepts of drama (strategy), script (processes), theatre (work place) and

performance (offering) where employees are the performers and actors and customers the audience in business illustrates the practices of experience production. Much of the view is adapted from Walt Disney's concept of "***total guest experience***" (Fernström 2005) as a way of "***total quality management***" for experience production where thematization of the experience is central. Mossberg (2004) adapted the model of "***servuction system***" (Eiglier & Langeard 1987; Murray 1995) based on the interaction between the physical environment, personnel and guests. This is an analogue to Pine and Gilmore's (1999) theatrical setting with a "back stage" of administration, maintenance, logistics etc., the "front stage" of the scene and performance. Mossberg (2004) has renamed this as "***experience room***" based on Bitner´s (1992) "***servicescape***" including the physical settings as the "scene", personnel as the "actors" and customers as "audience". The front stage is the visual part of the experience production and the backstage the invisible one. Experience production according to this model is the management of front and backstage according to a theme, the dramaturgy of the experience. Here the activities during the experience are not explicitly addressed, but rather mentioned as "interactions" or performance of the actors. Thus the design and management of the actions and type of engagement and their influence on the experience have to be deeply explored to fully understand the experiences of the guests and the process of experience production.

In a similar way Lindquist (2002) has adapted Burke's "pentad of grammar of motives" as a grammar for experience production. Burke (1969) proposed that to discuss experiences, we need to have some words that names the ***act*** (names what took place in thought or deed), another ones to name the ***scene*** (the background of the act, the situation in which it occurred), we must indicate what person or what kind of person, the agent, performed the act, what means or

instruments he used, the ***agency,*** and the ***purpose*** of the act. By answering the question what was done (act), when and where was it done (scene), who did it (agent), how he did it (agency) and why (purpose) we can analyse any experience production or personal experience but also have this "experience grammar" or "Burke's pentad" as guidelines in the experience production. These basic questions of ***what, who, when, where, how*** and ***why***, the "six sisters of knowledge" are fundamental in all analysis and a basic platform for all type of productions. We can thus so far see that most theories of experience production are based on the analogy of theatre production, including some theme, dramaturgy, scene, actors and performance.

Tarssanen and Kylänen (2005) have developed a model of product-related experience production for the experience tourism, which they call the ***experience pyramid***, representing a "perfect experience product". It is an explicit tool for finding critical points or deficiencies in the product, a framework for "experientialization" of products. The model is based on two perspectives, one dimension of the client's own experience and one dimension of specific elements of the product. Influential factors on the client's experience are individuality, authenticity, story, multi-sensory perception, contrast and interaction to offer guests something memorable and unique. Attaching these critical elements into a product it is the case of ***experientialization***. They emphasise it is important that the six themes or elements are presented at all stages of the product – from marketing to going-it-through and post-marketing as well, and that the experience producer has to take into account both the conscious and unconscious levels of the customer. The second dimension consists of levels of the experience proposed to be the motivational, physical, intellectual, emotional and mental levels which have to be understood in the experience production.

There are many aspects of experience production that have to be further investigated and better analyzed. One is the temporal dimension. Although an experience is usually temporally well defined with a clear start and stop signal, such as listening to music, watching a movie or going on a vacation trip, we have to consider a commercial experience product from the first encounter of the guest with the idea, desire and advertisement of the experience product. Such pre-experience management as well as post-experience management adapted from service management (Lovelock et al. 1999) is central for the total experience of the offering.

Also the internal temporality dimension of an experience such as the sequence of impression – assimilation – expression – imprint has to be considered in experience production. How can the staged experience be internalized as an impression through our senses? There is a buzz mantra of "including all senses" in a "total experience" – but rarely addressed how? Blasting all senses at the same time will only result in over stimulation and confusion. Sometimes using only one sense may give a larger experience than "diluting" it with multiple sensations. The use of senses in experiencing has to be carefully designed and scripted in the "*dramaturgy of the senses*" by timing and pitching different senses, letting them co-work, substitute, compliment or interfere in a "*symphony of our senses*". In a similar way the assimilation, the internalisation of the staged settings, the drama, the theme, the acts and the actors have to be carefully designed and managed for preventing "overdoing" or overproducing experiences. An important part of consuming experiences is to express them, by telling one's own stories, taking memorable pictures, writing diary or reports and so on. Thus debriefing reflecting on the experience and other post-experience expressions of what has been experienced can be important aspects of the total experience management. Communicating the previous and/ or recent experiences the boasting value

of the experience, its status in the hedonistic society through its image, and capacity to build esteem in the "attention society" is an important aspect of the experience. Thus creating trust and value through the business image is as important as the actual physical staging, as it involves a kind of mental staging of the experience. Finally, it is recommendable to produce an imprint in our guests so they will remember and promote the experience product. Physical memorabilia such as souvenirs are as important as pure memories as they support and re-emerge fading memories of the experience.

Another area for further exploration is how to make a designed and staged experience with a clear theme and story comprehensible. To "make sense" the experience must elicit a "sense of coherence" (Antonovsky 1987) based on trust that stimuli from our external and internal world are structured, predictable and comprehensible. There are three components in the sense of coherence, comprehensibility (the stimuli are experiences as structured, un-chaotic and explanatory), manageability (to have resources to meet the challenges under control and a feeling of managing risks) and meaningfulness (to be motivated, the emotional meaningfulness of the happenings to invest energy and engagement). This "making sense" is the central parameter in the significance of an experience and must be carefully designed and managed.

An additional area to investigate is the habituation to experiences. Superficial experiences such as a bad movie or an ill-staged tourist experience, a sloppy exhibition or a bad dinner will prevent us from re-buying the product. Also experiences without deep and complex levels of meaning and ability to learn something new at each encounter will not trigger returning to the experience. One way to conceptualise this is to make a metaphor of a good experience as an onion where in each new encounter you may find a new level inside the previous consumed experience (Figure 5). A

"deep" and engaging movie you are keen to see over and over again. Repetition does not necessarily mean fading of the experience as long as you discover new aspects within the experience. This is the greatest challenge of experience production – to get the guests come back over and over again. Here guest knowledge is essential. Although hedonic seeking of novelty, uniqueness and adventure are the characteristics of the experience culture (Gabriel & Lang 1995) offering superficial experiences that need a constant flow of new guests may be a less profitable business than well designed experience production, where you have faithfully returning guests who are your best ambassadors and promoters.

To summarize, if adapting TQM – total quality management, and TGE – Total Guest Experience, I would like to introduce **TEM – total experience management** for emphasizing the complex and comprehensive nature of experience production. TEM includes:

- TQM – quality management in every detail – harmonizing to total experience with no disturbing negative quality impressions
- Sensation management – the design and dramaturgy of the guests' sense perceptions, to avoid over or under stimulation of the senses, to create harmonized and thematized sensations

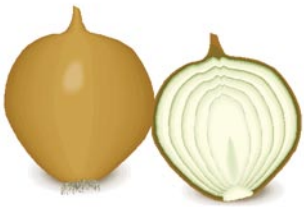

Figure 5. The onion metaphor for the experience production with deep and multi-layer experiences.

• Activity management – design and dramaturgy of the involvement of the guests with pitches of high and low activity, of absorption and immersion in the experience
• Interaction management – the design and dramaturgy of the interaction of the guests with the different material and immaterial dimensions of the experience
• Learning management – the design and dramaturgy of the learning aspects of the experience – what skills are learned, what new knowledge and wisdom are obtained, what new values are created, what to memorize from the experience
• Entertainment management - design and dramaturgy of the joy and fun of the experience
• Guest hostmanship management – the care, respect and valuing of the guest from the first moment of contact (through advertisement, word-of-mouth etc.)
• Risk management – what physical and mental risks may emerge during and after the experience?
• Temporal management – the design and dramaturgy of the pre- and post experience in addition to the experience pitch
• Ethical management – what is ethically right to produce as experiences and at what environmental, resource, human costs? When a staged experience becomes unethical? How employees should and should not act towards guests and others?
• Stage management – what is backstage – frontstage, and who is doing what?
• Information/ guide management – what information is the guest obtaining before, during and after the experience, and through what/ from whom? How is the guest guided through the experience?
• Theme management – design and dramaturgy of theme, story telling, interpretations, values, learning goals etc.

- Creativity management – how can we develop, reshape, customize, evolve, border cross and evolve new experiences?

There are of course many more aspects of TEM to be explored and included in the concept. This is only a first attempt to establish holistic approach to experience production. If we develop the TEM concept further within the experience industry as well as the understanding of the different components of experience production as shown in Figure 1 we will be able to be more explicit and precise in our communication of the experience production process, the experience products and the experiences consumed by the guests. This will contribute to not only the academic analysis of experience production, but also the experience producers within the experience industry and at the end, the consumer of experience offerings.

References

AMS 2001. Arbete för nöjes skull – var finns de nya jobben inom upplevelsenäringen? [Work for pleasure – Where do we find the new work places in the experience economy?]. Arbetsmarknadsstyrelsen. Ura 2001:3.

Antonovsky, A. 1987. Unravelling the Mystery of Health. Jossey-Bass Publishers. San Francisco.

Arnould, E. J., Price, L. L. and Zinkhan, G. 2002. Consumers. McGraw-Hill. New York.

Arussy, L. 2002. The Experience! How to Wow Your Customers and Create a Passionate Workplace. CMP Books. San Francisco.

Murray, Keith B., 1995. A Test of Services Marketing Theory: Consumer Information Acquisition Activities. In Bateson, John E. G. (ed.): Managing services marketing: text and readings. Dryden Press. Fort Worth, 10–25.

Beckwith, L. 2006. The Dictionary of Corporate Bullshit: An A to Z Lexicon of Empty, Enraging, and Just Plain Stupid Office Talk. Broadway Books.

Bitner, M. J. 1992. Servicescapes: The Impact of Physical Surroundings on Customers and Employees. Journal of Marketing 56(2), 57-71.

Burke, K. 1969 [1945]. A Grammar of Motives. University of California Press. Berkeley.

Caves, R. E. 2000. Creative industries. Contracts between Art and Commerce. Harvard University Press. Cambridge.

Cohen, E. 1979. A Phenomenology of Tourism Experiences. Sociology 13(2), 179-201.

Csíkszentmihályi, M. 1990. Flow: The Psychology of Optimal Experience. Harper Perennial. New York.

Damasio, A. R. 1994. Descartes Error. Emotion, Reason and the Human Brain. Töregård Agency.

Davenport, T. H. & Beck, J.C. 2002.The Attention Economy: Understanding the New Currency of Business. Harvard Business Press. Cambridge.

Dewey, J. 1938. Experience in Education. Collier Books. New York.

Dewey, J. 1958. Experience and Nature. Dover Publications Inc. New York.

Edwards, B. 1979. Drawing on the Right Side of the Brain. J.P. Tarcher. Los Angeles.

Eiglier, P. & Langeard, E. 1987. Servuction: le marketing des services. McGraw-Hill. Paris.
Fernström, G. 2005. Upplevelser är vägen till framtiden i rese- och turismindustrin. [Experiences are the way to the future travel and tourist industry]. Fernia Consulting AB. Stockholm.
Fitzsimmons, J. & Fitzsimmons, M. 2000. New Service Development: Creating Memorable Experiences. Sage Publications. Thousand Oaks.
Florida, R. 2002. The Rise of the Creative Class. Basic Books. New York.
Florida, R. 2005. The Flight of the Creative Class. Harper Collins. New York.
Frankfurt, H. G. 2005. On Bullshit. University Press of California. Princeton.
Gabriel, Y. & Lang, T. 1995. The Unmanageable Consumer. Contemporary Consumption and Its Fragmentation. Sage. London.
Gelter, H. 2003. Why Is Reflective Thinking Uncommon? Reflective Practice 4(3), 337-344.
Gunnarsson, J. & Blohm, O. 2002. Det Goda Värdskapet.[The Good Hostmanship]. Dialogos Förlag.
Hawkins, J. 2004. On Intelligence. Owl Books. New York.
James, W. 1890. The Principles of Psychology. Henry Holt. New York.
Jensen, R. 1999. The Dream Society. McGraw-Hill. New York.
Kairos Future 2004. Nordic Youth.
Kaplan, R. & Kaplan, S. 1989. The Experience of Nature: A Psychological Perspective. Cambridge University Press. New York.
Kaplan, S. 1995. The Restorative Benefits of Nature: Toward an Integrative Framework. Journal of Environmental Psychology 15(33), 169-182.
Kelly, K. 1998. New Rules for the New Economy. 10 Ways the Network Economy Is Changing everything. Fourth Estate. London.
KK-stiftelsen 1999. Blandade upplevelser [Mixed Experiences]. Stiftelsen för kunskaps- och kompetensutveckling. Stockholm.
KK-stiftelsen 2001. AHA-Sweden: Om Svensk upplevelseindustri och början på något nytt. [About the Swedish Experience Industry and the Beginning of Something New]. Stiftelsen för kunskaps- och kompetensutveckling. Stockholm.

KK-stiftelsen 2002. Upplevelseindustrin i Sverige 2002. Näringsliv och utbildningar. [The Experience Industry in Sweden 2002. Business and Education]. Stiftelsen för kunskaps- och kompetensutveckling. Stockholm.

KK-stiftelsen 2003. Upplevelseindustrin i Sverige 2003: Statistik och jämförelser [The Experience Industry in Sweden 2003. Statistics and Comparisons]. Stiftelsen för kunskaps- och kompetensutveckling. Stockholm.

Kolb, D.A. 1984. Experiential Learning, Experience as the Source of Learning and Development. Prentice-Hall Inc. Englewood Cliffs.

Kylänen, M. 2006. Enlightening Christmas Experience - Reflections on the Experience Triangle. In Kylänen, Mika (ed.): Articles on Experiences 3. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 110-134.

Lindquist, H. 2002. Skiss till en upplevelsegramatik [Outline for an Experience Grammar]. In O.Dell, T. (ed.) Upplevelsens materialitet. Studentlitteratur. Lund.

Lovelock, C., Vandermere, S. and Lewins, B. 1999. Services Marketing: European Perspective. Prentice Hall. New Jersey.

Maher, P. T. 2005. The nature of the sea: A Framework for Exploring Visitor Experiences in the Ross Sea Region, Antarctica. In Kylänen, M. (ed.): Articles on Experiences 2. Lapland Centre for Expertise for the Experience Industry. Rovaniemi, 54-79.

van Mannen, M. 1990. Researching Lived Experience. State University of New York Press. Albany.

Maslow, A. 1964. Religions, Values and Peak Experiences. Ohio State University Press.

Maslow, A. 1962. Lessons from the Peak-experiences. Journal of Humanistic Psychology, 2(1), 9-18.

Maslow, A. 1968. Toward a Psychology of Being (2nd ed.) Harper & Row. New York.

Maslow, A. 1971. Farther Reaches of Human Nature. Viking. New York.

Mossberg, L. 2004. Att skapa upplevelser – från OK till WOW! [To Create Experiences – from OK to WOW!]. Studentlitteratur. Lund.

Nørretranders, T. 1996. Märk Världen, En bok om Vetenskap och Intuition. [Mark the World, A Book about Science and Intuition]. Bonnier Alba.

Pine II, B. J. & Gilmore, J. H. 1999. The Experience Economy. Work Is Theatre and Every Business a Stage. Harvard Business School Press. Boston.

Tarssanen, S. & Kylänen, M. 2005. A Theoretical Model for Producing Experiences – A Touristic Perspective. In Kylänen, M. (Ed.): Articles on Experiences 2. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 130-149.

Thomas, B. 1994. Walt Disney: An American Original. Hyperion. New York.

Wahlström, B. 2002. Guide till Upplevelsesamhället [Guide to the Experience Society]. SNS Förlag AB. Stockholm.

Sharing Experiences – Playing Together in Experimental Collaborative Computer Games

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Abstract

As a form of entertainment, computer game has great potential in offering strong and meaningful experiences. Sharing the experience of playing in multiplayer environments has brought another level of experiencing within the reach of computer games. One of the main goals of this article is to gain understanding of the process through which an experience is formed in computer games. The theoretical framework of experiencing computer games together is compared to experiences of test users of three experimental game environments. These environments were designed especially to support teamplay in different ways and in different formats. The aim of this article is to discuss how group of players form shared experiences in a virtual game world and how different approaches in game design affect the experience of playing together.

Introduction

Computer games have traditionally been designed for one or two simultanenous players. Although digital gaming has been social activity since the advent of game arcades, the actual gameplay has been mainly tailored for individual controller – the player – in mind. Other participants in this play activity were more or less spectators, albeit sometimes in relatively active role. The early days of networking with bulletin board systems and Internet added another dimension into the concept of multiplayer gaming. Now it was possible to play against, or with, other people despite the geographical distances. Multiplayer gaming has evolved from small-group play into mass-activity. The play experience, however, seems to be forgotten in terms of game design. Hundreds of fellow players do not add to the experience if they do not have active role in heightening the personal experience.

In addition to the social issues, one of the reasons for the success of multiplayer games is the indeterminism of human behaviour. In multiplayer games, for example, the memorisation of a correct winning strategy is not necessarily enough. Human opponents mean that no two games are played the same way. Each experience is unique, and the outcome is based on the skill and creativity of the players (Weisman 1998). Sharing one's play experience clearly adds something to the overall feeling. But how are these shared experiences actually formed?

One of the main interests of this study is to understand how adding elements of teamplay into computer games affect the experiences of the players. For this purpose, it is important to understand how experiences are formed in general. The nature of experiences has been studied in many areas. Cognitive sciences look at experiencing as a cognitive process and research the neural and chemical actions and reactions within the brain to explain how experiences are formed (Ey-

senck & Keane 2005). Different schools of psychology and philosophy are interested in explaining the nature of experiencing from the point of view of what is experienced and why. One area of research is in understanding and explaining how a person experiences the world and him/ herself in it (Davis 2003, 46; Saarinen 1986).

In general, experiencing is seen as an elusive and individual process that cannot be fully understood or reached through any scientific methods. The nature of a person's experience can not be truthfully interpreted or shared with anyone but the person him/ herself (Kannisto 1986; Saarinen 1986). Reaching the fundamental truth of the players' experiences is, however, not the goal of this article. A process of analysing and comparing the shared experiences of the players through a selected theoretical framework is used in revealing some elements that have effect in the experiences. These elements form a basis for understanding how social interaction and teamplay affect the experiences of the players. In order to gain more insight into the shared experience, three experimental teamplay oriented computer games are analysed as experience products.

Experience Pyramid and Flow as Frameworks for Analysis

The players experience games as part of the world. The understanding of how the players experience the world in general can, therefore, be used as basis for analysing the gaming experiences. Since phenomenology studies the lived experience of human beings (Davis 2003, 46), it offers one tool for understanding experiencing in a wide perspective. In phenomenology, an experience is described as a temporal process. An experience forms in the intersection of our expecta-

tions (what will happen next) and our construction (what has happened before) (Davis 2003, 46). In this light, all the participating players have some idea of what they are about to experience. The previous experiences of playing computer games become important in defining the basis for the following experiences.

The temporal approach to experiencing the world gives us a tool for framing the lived experience. Another tool is needed to gain an understanding of how the game can provide elements that enable the construction of the player experience. A theoretical framework for this purpose is offered by Tarssanen and Kylänen (2005, 137) in the form of the experience pyramid (see Figure 1). Due to the ambiguous nature of the English term 'experience', the experience pyramid is developed to separate strong and meaningful experiences from the 'mere-experiences' of everyday being (Kylänen 2006, 112). The experience pyramid includes six elements for evaluating the experience product, in this case *computer games*. These elements form a solid basis for the experiencing phenomenon. The elements are namely: *in-*

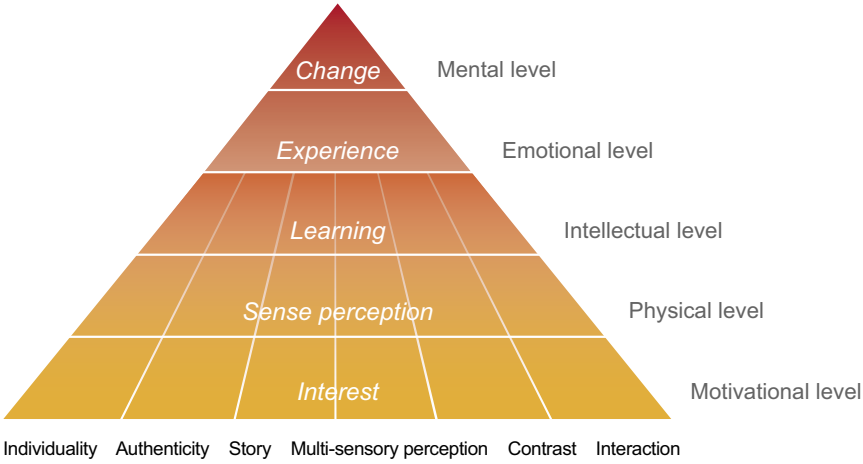

Figure 1. Experience Pyramid (Tarssanen & Kylänen 2005, 137).

dividuality, authenticity, story, multi-sensory perception, contrast and *interaction*. In addition to offering means to evaluate the product, the model presents a tool for evaluating the experience received through the product. The actual experience of the player forms through five levels of cognitive processes that start from an interest to take part in the experience and end in a life-changing experience. In other words, the player progresses through levels of *motivational, physical, intellectual, emotional* and *mental* experiencing and through processes of *interest, sensing, learning, experiencing* and *change,* he or she gains a meaningful experience (Tarssanen & Kylänen 2005, 137-144).

The theoretical framework presented above can be used in assessing the elements that enable different levels of experiencing and how the experiences are formed in general through temporal being-in-the-world. In this article the experience received through achieving the *emotional level* of the experience pyramid is seen as a strong and meaningful experience. Though the experience is defined as strong and meaningful, it is not assumed to be either positive or negative. The pyramid does not, thus, offer effective means to evaluate the nature of the experience. Understanding the nature of the experience is the elemental information needed in the further use of the results of this study. To be able to define whether the shared experiences of the players were positive or negative, another tool needs to be adopted. The concepts of optimal experience and flow experience can be used for defining the nature of the experience (Csíkszentmihályi 2002, 39-40). A person can achieve optimal experience through the feeling of complete control of what he is doing. And through this series of optimal experiences, feeling of everything going right, a flow experience is achieved. (Csíkszentmihályi 2002, 39.) Elements and obstacles that support the players in or prevent them from reaching of flow experience can be used in evaluating the nature of the players' experiences.

Games as Experience Products

Computer game is a product that contains multiple characteristics for creating experiences. A combination of the elements that form the basis for experiencing in the experience pyramid can be found in most computer games in some form. *Authenticity* relates to the credibility of the product and is strengthened by *the story* (Tarssanen & Kylänen 2005, 140-141). The concept of *contrast* refers to difference between the offered experience and familiar everyday being (Tarssanen & Kylänen 2005, 143). The game environments are in general designed to present a reality that exists only in these games to create a contrast between the real world and the imaginary game worlds. *Multi-sensory perception* of experiencing has its limitations in computer based environments. The ideal experiencing through as many senses as possible (Tarssanen & Kylänen 2005, 143) is basically limited to experiencing through senses of hearing and seeing. Computer games as virtual environments also offer a rather extraordinary form of being-in-the-world. Through the other being, the game character, the player is allowed to experience wide amount of exceptional and even unreal things inside the game environment.

Due to the nature of computer games in general, the concept of *individuality* is the most difficult element to define. All games can be seen as individual and unique in their style of presenting a non-existing world and exciting gameplay. However, the games are likely to be played several times by the same player and this can be seen as a factor that reduces the individuality of the experience. On the other hand, the experience of playing is different every time the player engages into playing. The *individuality* and uniqueness of the playing experience is further strengthened by the aspect of playing together with others (Weisman 1998).

One very important element for this article is *interaction*. In the pyramid model the concept represents the relation between the customer, the guide and the other participants as well as with the product. Personal participation in the experience through interacting with the product and other participants has a very important role in the forming of the whole experience. (Tarssanen & Kylänen 2005, 144.) Games present a group of experience products that has strong emphasis on this element. All experiencing within game worlds is based on some form of interaction. On one hand, the player interacts with the game environment through a physical interface. On the other hand, the player interacts with the mechanics of the game through the virtual interface. The interaction between the game's developer and the player can be successful through the players' understanding of what is expected of him/ her in terms of gameplay. In addition to mechanical interaction with the game environment, the player can interact with other players. This form of interaction is in a key position in this article. It can be safely hypothesised that the successful design of player interaction and communication can lead to interesting shared experiences.

Levels of Player Experience

However well the games are designed and whatever design guidelines are used, the player is the key element in the experiencing process. From the perspective of the game developer, the user (player) experience can be seen as a result of the total package – visual element, audio element and the interactive element – of the game that is presented to him/ her (Rollins & Adams 2003, 148). But how does the player experience this package?

The vertical experience levels of the experience pyramid offer one dimension for analysing the player's experi-

ence. The five levels of experiencing are *motivational, physical, intellectual, emotional* and *mental*. Through fulfilment of all these levels, the experience can be seen as a meaningful, even a life-changing one. The overall experience forms through a cognitive process that starts with an impulse via interest to partake in the event. The process of experiencing proceeds through actual undergoing and conscious processing of an emotionally rich material. This leads to forming of the meaningful experience. (Tarssanen & Kylänen 2005, 137, 145.) These levels of experiencing offer a way to consider the depth of the experience perceived by the player.

The process of experiencing requires initial interest on behalf of the player towards the game. Therefore, the game should be appealing enough (for this particular individual) to rouse his or her interest. The player is then willing to take part in the experience and the *motivational level* of experiencing is reached. The *physical level* of experiencing is offered to the player through the audiovisual content and haptic/ kinaesthetic feedback of the game. The visual and aural elements offer the player a view to the unique and individual game world. The basis for understanding what the world entails comes through interpreting the audiovisual material. The haptic/ kinaesthetic elements of the game offer a way to interact with the virtual world. In reaching the *intellectual level* of the experience, the player learns to interact with the game and make sense of the gameplay. A meaningful experience of the game is formed when the player reaches the *emotional level*. Game environments can be very effective in evoking emotions through engaging audiovisual material and intense gameplay. When emotions are present in the gaming event, they trigger specific forms of experiences. Through emotions the player can be seen as having a personal response to the gaming event. Through emotions, the experiences become meaningful for the player. In order to reach a life changing experience the player must experience the game on a *mental*

level as well. Reaching the *mental level* can lead to a change within the players view of the world, repertoire of skills and attitudes or even behaviour. (See Tarssanen & Kylänen 2005, 145-147.) How well games are prepared to do that is, however, questionable. The importance of reaching the *mental level* and changing the view of the world of the players might not be the goal of most games. The games do, in any case, have the potential to offer a variety of entertaining and extraordinary experiences for the players.

The Role of Previous Experiences in Forming the Player Experience

There are several relevant factors that the player brings into the playing situation with him/ her. The process of experiencing should, therefore, be looked from the point of view of experiencing the world in general. As noted earlier, the world is experienced through temporal being-in-the-world (Davis 2003, 46). The same idea can be applied to experiencing computer games. Every player has a construction built from previous experiences with computer games. This construction is mixed with the expectations of what the new playing event will be like. The expectations can be formed through any information the player has obtained of the new game, for example, through advertisements, stories from friends, etc. One critical element in the forming of the new experience is how the new game meets and exceeds the expectations of the player. Naturally, all players do not have the same amount of previous experience with computer games. This can lead to the players achieving very different kind of experiences. For example, the experienced player can enjoy the fine adjustments of driving qualities of a car game while the inexperienced player enjoys the scenery and mood of the game. The differences in expectations and levels of skill can,

however, add problems when these players share a playing experience.

The previous experiences can also work against the player in some cases. Generally, the contemporary computer games do not offer very much variance in the elements for experiencing, since they are limited in forms of teamplay and social interaction. Games tend to follow certain safe and tried-and-true design paths. Therefore, the constructions of an experienced player are very heavily limited as well. As a result, the expectations towards the new experience can be strongly guided by the similarities of previous experiences. This can pose a problem when dealing with highly experimental new game. The inexperienced player can be more open to the whole experience of the game because he has less constructions and expectations towards it. Also the inexperienced player can achieve emotional responses more easily. For example, very impressive audiovisual material of current computer games possibly effect more strongly on someone who has not seen many similar environments. On the other hand, if the new game lacks some grace of interaction or gameplay that another game possesses, the experienced player will be more disappointed than the inexperienced one.

Shared Experience

One of the main goals of this article is to study how a group of players share an experience in a game world. The success of multiplayer games seems to indicate that players want to share their experiences with others. Explanations to this success can be found from the social nature of humans in general. It has been argued that almost every activity is more enjoyable with other person around, and less so when one does it alone (Csíkszentmihályi 2002, 164). Throughout his-

tory games have been enjoyed in groups of players. These players choose to share the exceptional situation of the game together (Huizinga 1955, 12). Computer games are no exception. According to Friedl (2002) the players enjoy the feeling of togetherness they get in 'we versus the developer' or 'we versus those who assume to be in control' setups provided by either the game designers or the opposing human teams. This kind of teaming up in order to overcome shared obstacles can draw players together even if they normally do not have that much to do with each other. The team can be short-lived and highly contextual for specific purpose only. However, once the players have shared the experience of a glorious victory or a shameful defeat, they already know each other. This enhances the potential for future shared experiences.

As noted earlier, experiencing in general is difficult to grasp and define. When a social context is added in the game, the process of experiencing shifts towards even more complicated area. While experience is an individual reaction, it can also be constructed through social interaction. The players of a multiplayer game create the playing experience together, they "co-experience" the situation. (Battarbee 2003, 730.) Social norms affect the way people behave (Elster 1999) and, thus, social situations have great influence in the shared experience. The co-experience forms through bringing the parts of the experience in shared attention of all the participants. The individual experience of a participant is influenced by presence of others and the co-experience is the shared interpretation of the individual experiences. (Forlizzi & Battarbee 2004, 263.) Sharing the experiences and constructing a shared experience adds a feeling of "real" and more meaningful level to experiencing the game.

Co-Experiencing the Levels of Experience

All players come to play games with their individual constructions and expectations. In the context of multiplayer games, this increases the challenges of researching and designing experience mechanisms, since even the members of a same team can be on different levels of experiencing with different consequences. The experience of playing in a group forms as a combination of the group dynamics, the success of communication and the success of attaining the goal set within the gameplay. In the light of the experience pyramid, the co-experiencing process of a group of players can change the process of experiencing. The impact of one player to another can have a great value in this process. For example, a person can efficiently motivate another person to try out the game. A player can guide another player through *physical level* to *intellectual*. Learning happens fast because there is someone explaining what went wrong and why. Also sharing different tactics and strategies of how to do well within the game can be shared between players and make the reaching of *emotional level* faster and easier. Successful communication and working dynamics of the group can also lead to emotional experiencing without actually rationalising the goals of the game. The players can enjoy the environment and everything it has to offer without achieving, or even learning how to achieve any of the game's goals.

While learning how to play the game with help of others, there is an added value in the playing itself through the shared experience. The experience pyramid introduces *interaction* with others as one area needed in the product as a building block for an experience. When something is experienced together as a part of a collective, there is a feeling of general acceptance and appreciation towards the action. Also the feeling of sharing the experience as part of a special group can be strong. (Tarssanen & Kylänen 2005, 144.)

The emotional involvement plays an important part in the process experiencing. The emotional responses are strengthened by social interaction (Jacobs et. al. 1997, 104). However, the role of participation in the shared experience is the key element in the strength of emotional feedback (Jacobs et. al. 1997, 123). In multiplayer computer games several players take part in the event and participate in the action on an *emotional level* as well as on a mechanical level. The social situations, however, can create social pressure as well. Through the social involvement the actual performance of each player within the goals of the game becomes more meaningful. The opinions and expectations of other players play a big part in the overall experience (Csíkszentmihályi 2002, 167-168). As the pressure of doing well by the gaming community (the team) is higher, the reward of doing well is likewise greater. This can be seen, for example, through the increased interplayer interaction that is both meaningful and focusing on the task at hand (Manninen 2003, 303).

Cooperating or Not?

Players have an important role in supporting each other and creating positive situations in the game. Playing together can, however, exist in many forms that affect the shared experience in various ways. The players can be expected to work as a team to reach a common goal through cooperation and collaboration. Playing as a team makes the importance of successful communication and willingness to play towards a common goal very elemental for the experience. Playing together on a computer can also have other forms. For example, the players can have separate goals but are asked to find ways to cooperate to reach their individual goals. In this case the sense of a team effort does not necessarily exist at all, but the success of cooperation and collaboration between

the players can still be crucial in the success of reaching any goals. While playing together can have many positive impacts on the shared experience, there is also another side to experiencing together. Collaborative games always present a risk of the basic problems within human interaction. The players of the team might not agree on what is the best way to succeed within the game. The conflicts can happen between members of one team or between teams. According a wider definition of cooperation, all games are cooperative in a way that all the players have agreed to follow the games' rules and participate in the gameplay (Salen & Zimmerman 2004, 265). Environments that depend strongly on forms of teamplay, are also very vulnerable to the lack of it. If the feeling of team effort is not achieved and a player or players feel isolated from the team, a successful and positive experience is not likely to form (Rauterberg 2002, 317). The commitment to achieving the common goal and participation in the group effort are dependent on the players' willingness to participate the intended action. If a player or players choose not to participate and decide to play interruptively, the experience of all participants can be ruined.

Experimental Games as Experience Products

The theoretical framework presented earlier is used in evaluating player experiences of three experimental games: *eScape, AirBuccaneers* and *Castle of Oulu 1651*. These games were designed by LudoCraft to especially support playing together. The emphasis of the forms of teamplay is approached from very different perspectives in all these three games. Therefore, the overall analysis gives us clues on how the different forms of playing together shape the experiences of the players. The games were tested on several groups of players. The test situations and arrangements differed greatly between

the games. Also the target groups of the games were different. Although the different experiment designs and test setups make it difficult to draw unified conclusions, the comparative analysis of these cases offers more holistic insight into the complicated phenomenon of experience forming. The variations between the testing are noted in the comparison of the results.

eScape – Collaborative Problem Solving Game

eScape (see Figure 2) is a social action-adventure game for four simultaneous players. The game concept involves an escape story where a group of players must solve a set of problems in order to flee from an ancient prison colony. The team, thus, competes against the game system. Due to the limited duration of the experiment, the content of the game enables approximately 60 minutes of goal-oriented activities. Players interact and experience their surroundings using avatars to move and act in an atmospherically captivating virtual world. Role play and player-to-player communication are supported through non-verbal communication and a voice-over IP speech system which allows free spoken dialogue between players. The main aim of designing the *eScape* was to construct a game environment that would promote, and even enforce, collaboration between team members and

Figure 2. eScape – Closely shared experiences in strongly directed form.

help teams learn to collaborate. The game includes puzzles, or pre-defined problem scenarios, that can be solved only through the effort and commitment of every participant.

The target group of this game were non-computer game players. Groups of four strangers were invited to engage in experiencing the *eScape* adventure together. The idea was to find out how players who are not used to playing computer games find ways to collaborate and play as a team to reach a common goal. These players were not expected to have specific expectations of what the game should be like and they would be open to non-conventional gameplay solutions. On the other hand, the time needed to reach the level of learning where everyone feels comfortable with their own skills to act within the game is longer. Importance of the communicational skills and supportive attitude within the group played a significant part in achieving positive experiences.

AirBuccaneers – A 'Team Competition' Interaction

AirBuccaneers (see Figure 3) is an innovative team-oriented multiplayer game involving intense and strategic battles with hot air balloons, cannons and various other pseudo ancient gadgets. The game is a compelling combination of graceful air ballet, fierce pirate-like action and 3-dimensional tactical manoeuvring. The main theme of the game is pseudo-historical world of airbuccaneers who dwell in the imaginary land-

Figure 3. AirBuccaneers – Voluntary sharing of experiences with various groups.

scapes of Northern Finland. Thematic player models, weapons, graphics and sounds complete the unique atmosphere. The game focuses on strategic and tactical vehicle fighting emphasising on teamplay in various levels of interpersonal engagement. The multiplayer oriented design encourages and rewards co-operation and collaboration.

AirBuccaneers was developed as a part of four phased game design competition and was tested on very open conditions. The game was available to anyone interested through the Internet. The test group of *AirBuccaneers* ended up consisting mostly of experienced gamers who were interested in experimenting with modifications made for the competition. The players were offered a possibility to participate in the development process of the game through forums. They shared their experiences and ideas through those forums. The time period for testing and developing the game lasted for more than 18 months. After the game gained some reputation, players with less commitment to gaming industry participated in the tests, and the material collected from the forums show many positive and negative effects the wider community of testers brought to the shared experience. This way of testing the game opened interesting views to how a game that strongly supports teamplay is experienced by players with very different skill levels who are situated all around the world.

Castle of Oulu 1651 – Larp-like Computer Role-Playing Game

Castle of Oulu 1651 (see Figure 4) is a non-violent role-playing game set in a virtual environment that resembles an authentic historical setting. A group of up to thirty players can play the game simultaneously, while everyone aims at reach-

Figure 4. Castle of Oulu 1651 – Individual but intertwined experiences.

ing his or her specific goal. The game was created to combine social structures, freedom of narrative creation of the storyline and immediate interaction of role-playing games, the re-playability of board games, and atmospheric attraction of adventure games. The environment was set up to be a logically coherent playground for the players to use as they were attempting to achieve the goals through playing the roles of their individual game characters. Each player has a role through a game character with a position in the society, a primary and a secondary goal and special piece of information of the game world or of another role distributed to another player. To encourage social communication, the objectives were built in a way that the players need, for example, to persuade another player to do something, give information or share their opinion about something or someone. The goals were designed to enable cooperation with some players and conflict with others.

This game was commissioned by the city of Oulu and the target player group was children from ages of 11 to 16 years. The children were asked to participate in the experiment in a role of game testers. They were instructed to take part in the design process by playing the game and then evaluating the playing experience. The children played the game in groups of thirty and in most cases they had several friends from their own school class within the same group. Roughly half of the players were classmates and the other half strangers. Also mixed age groups were playing together. The group

of testers consisted of players with different levels of experience. Some had a lot of experience playing computer games and some had never played computer games. Castle of Oulu 1651 presented very experimental form of social interaction as means to achieve the goals of the game. Experienced players had more fixed views and expectations of what a computer game should entail. The less experienced players (and younger in general) were more open to experimental gaming.

Elements of Experience in *eScape, AirBuccaneers and Castle of Oulu 1651*

The experience pyramid presents elements the product should have to offer a meaningful experience. These elements can be found within the experimental games presented in this article. The games were carefully designed to be *authentic* and present unique but coherent virtual environments. The *stories* of the games were written to support the chosen theme through histories of the worlds and also thematically plausible action within the games. The *multi-sensory perception* of experiencing is offered to the player through the audiovisual content and haptic/ kinaesthetic feedback. The environments were designed to present a reality that exists only in these games to create *contrast* between the real world and the imaginary game worlds. In the case of *individuality,* all of the three games presented here are individual as products, as games. They all experiment on ways of playing together in exceptional ways and present virtual environments that can be looked as very unique in the field of computer games.

In this study, the central elements for experiencing are the forms of *interaction* within the games. The three ex-

perimental games are designed to offer interaction on many levels – both through physical and virtual interfaces. In addition, one of the most important and unique aspects of these experimental games is the implementation of social interaction in the gameplay. All of these three games have very strong emphasis on social interaction as part of receiving better or any results within the goals of the games. In the following sections the general presence of experiencing is viewed through the framework presented by the experience pyramid. The aim is to illustrate how the experiences form through the levels of experience triangle. Further issues and evaluation of the findings is provided in the Discussion section.

Motivating Test Group Players

Since these games were experimented and tested through very different methods, the *level of motivation* for the players to try out the game was presented in very different ways. In general, these games offered strong and impressive audiovisual environments that lured the players to take interest in the experimental adventures. All the players, however, had their personal motivations to take part in the playing experience. Some were interested in taking part of the development and evaluation process of the games, others wanted to experience something new within computer gaming scene. Some players were persuaded to play by their friends. On the whole, all of the games received notable interest from the part of potential test players. It can be noted, that *motivational level* for testing new computer games is generally high within the target groups of these games.

Being in the Virtual World

The *physical level* of experiencing presented in the pyramid model plays an important part in the experiencing process of computer games. In spite of the limited amount of senses that are used in experiencing computer environments, the player exists in the virtual world. The world of *eScape* was experienced one part at a time. The players found locked gates and buildings and kept searching ways to enter inaccessible areas. By solving puzzles, the players were able to open gates and enter new areas. The sense of limited access to interesting places worked well in keeping the players interested in the environment and all the elements within it. In addition, participation through speech strengthened the physical experiencing of the game. The players of *AirBuccaneers* experienced the virtual world mostly from the hot air balloons flying high above the ground. This view to the environment evoked exceptionally strong emotional responses from the players. The feeling of slowly gliding above beautiful but mystical and dangerous forests combined with the fear of falling off from the balloon to a certain death was very powerful in terms of experiencing the virtual world. The feeling of being present in it was very much experienced.

The Castle of Oulu 1651 offered the players a view to historical place that does not exist anymore. The authenticity of buildings, objects and roles of the characters made the feeling of travelling back in time stronger. The feeling being in the world was strengthened by vocal communication. The size of the environment was purposefully limited to a relatively small area. Many players found the virtual world to be very interesting but too small - at least when compared to contemporary commercial games with they open-ended worlds. In addition to limiting the virtual area, the environment was cleared of all unnecessary objects in order to guide the gameplay to the desired direction of playing a role and

communicating between the players. For this reason parts of the virtual world were given to the players in form of information. In a way part of the world existed only in the players' mind. This was an effective way to force the players to communicate with each other. The players were offered a part or a role of a co-writer and they were asked to create parts of the story as the game progressed. Due to the conventional solutions of computer game environments, this aspect of imaginary world that was shared and built by the players was very difficult to understand. Most of the players, however, were able to use the information given to them to attain goals of gameplay.

Understanding the Goals and Learning to Interact with the World

Interacting with the virtual world is one of the key elements to successfully advance in the storyline of the game. The process of understanding how to interact with the world is critical on *intellectual level* of experiencing. In addition to learning the mechanics of interaction, the players need to understand what their goals in the game are. The feeling of achieving the goals of the game is also an important source of flow experience for many players.

The target group for *eScape* was players who are not familiar with computer games. The players were given one common goal in the game: to find a way to escape from the prison colony. The players did not have difficulties in understanding the goal of play. They progressed through sub goals while working their way towards the main goal. Due to the test players' lack of game experience, the interacting with the world was made as simple as possible. The players did not experience notable difficulties in interacting with the world and the objects in it.

The main goal of *AirBuccaneers* was similarly very simple. A team of players had to fight against another team and drop more of their balloons to win the game. Since *AirBuccaneers* was designed for more experienced players, the interaction with the game world was designed to offer challenges and require some mechanical skills. The understanding and accepting the complicated process of using the balloon and dividing the process between a team of players proved to be the key to successful action within the game. The players did not at first agree with the complicated process of working with the balloon. However, the purpose of the complicated mechanisms and several simultaneous actions needed to be performed at once was to encourage teamplay. The players noticed quite quickly the advantages of working together and applauded the positive effects it had on the playing experience.

Ideologically *Castle of Oulu 1651* was the most experimental of the three games in the use of interaction to achieve the goals of gameplay. Due to the very mixed target group of the game, the mechanical interaction with the game world and between players was made as easy as possible. However, some actions that needed to be included in the game proved to be quite complicated and the inexperienced players struggled to use them properly. The idea of how to reach the goals of the game was, however, the most difficult part of the game. Many players had difficulties in understanding how to reach those goals, at least in the beginning of the game. The key to progressing within the mission was to talk to other players and persuade them to do something. This, very non-computer-game-like approach to action within a game required a lot of imaginary elements from the player's part. Accepting this way of interaction was, however, not easy for all players. Especially the more experienced players, who had a quite fixed way of seeing what computer games should be like, found this approach to be contradictory with

their expectations. Most of the players, however, found this form of interaction and playing interesting and fun. Since the gameplay was strongly built around social communication, the lack of mechanical skills did not prevent the players from enjoying the experience.

In the light of the experiences described by many players of all three games, the *emotional level* of experiencing could be reached without learning to interact with the world very well. The aspect of multiple players sharing the experience is notable. For example, some players of *Castle of Oulu 1651* found it very difficult to move their character around the castle area using mouse and keyboard simultaneously. They could, however, talk to everyone close enough and trade objects and attain some of their goals. Most importantly, they did not care about not being able to move around well, they achieved positive experiences through social communication with the other players. Similar effects were noted in experiences of the players of both *eScape* and *AirBuccaneers* even though social interaction had a different role in them. Reaching an emotional level to the experience could be a result of, for example, witnessing and surviving a fierce air battle from a balloon of more experienced team mates in *AirBuccaneers* or managing to solve a puzzle in collaboration with the other players in *eScape*. Many of these players received a positive and meaningful experience without actually successfully interacting with the virtual world by themselves.

Learning to Play Together

Reaching the *emotional level* of experiencing, however, was to a large degree dependent on the success of the communication between the players. Consequently, learning how to interact with the game and the virtual elements in it did not guarantee a forming of meaningful or positive experi-

ence. One of the most important things to learn in all three of the analysed games was how to communicate with the other players. This presents another part of progressing through the *intellectual level* of experiencing towards achieving meaningful experiences.

The gameplay of *eScape* forced the players to work as a team. All puzzles required participation of more than one player and in many cases of the whole group. All groups of players accepted this form of play easily. The large part of interaction between players was conducted through verbal communication. Although the players were strangers, they did form a communicational relationship rather quickly and worked efficiently towards the common goals. The difficulties in communication formed from recognizing who is talking to whom and finding a common language to talk about the task at hand. Through the verbal form of communicating with each other, the players were able to experience the moods and emotions of each other. The real-time verbal reactions of other players, the tone of voice, sound of excitement or disappointment, added depth to the emotional involvement.

In *AirBuccaneers* cooperation between players was not forced, but playing as a team was strongly encouraged by design solutions. Since multiple tasks were required at the same time, playing as a team presented notable advantages. The tests of this game were not as organised as the tests of the other two games. The players participated in the game from all around the world and for whatever length they preferred. However, the players were keen on finding ways to collaborate and cooperate within their team. The communication between players was mostly conducted through short written messages. Still, the forms of teamplay proved to be very efficient and functional. The collaboration within the balloon seemed to work amazingly well in some cases. Of course, players who participated in the tests a lot, learned

to play well together. The players shared different strategies and ideas of teamplay through the discussion forums as well. In this game, the greatest differences between the levels of skill could be observed. Since cooperation was not forced, in many cases the advanced players preferred to control their balloon alone – without the possible disturbance of less-skilled team mate. The team effort in *AirBuccaneers*, however, seemed to be felt in the most intensive way. One of the reasons for this is the nature of the game; the team within the balloon either prevails or dies together. Through the intense fighting scenes, a team effort is really felt by the players. The aftermath discussions on the forums and through the messengers intensified the feeling of team effort even further. On the down-side, due to the free access to play the game, several games were disturbed by players who did not want to play by the game's rules. Their only goal was to cause as much trouble as possible and they quite efficiently ruined the positive experiences of other players. Although several technical solutions were created to prevent this kind of disturbance, it never ceased to exist totally.

Castle of Oulu 1651 was more subtle and ambiguous in its requirement of playing together. The players had separate – and oftentimes conflicting – goals, but they needed the help of other players to reach them. As noted earlier, the players of this game struggled with the form of progressing towards the goals. The social aspects were, however, strongly supported by the verbal form of communication. The limited virtual environment forced the players to stay near each other and encouraged them to communicate, since the environment offered very little else to do. The free communication between players turned out to be one of the best qualities of the game according to the players. Most of the players found ways to achieve their socially attainable goals through cooperation. The most of the players of *Castle of Oulu 1651* had friends participating in the experience and the so-

cial connections from real world overrode the ones built in the game. Some players abandoned the goals of the game all together and instead enjoyed the company of their friends and explored the world together.

Shared Experiences

The elements for sharing experiences and forming of co-experiences were emphasised in the design of all these three tested games. The effect of the sharing of playing experiences can be seen as one result of reaching the *emotional level* of experiencing. The way the experiences were shared by the players was designed to be different in each game. The players of *eScape* shared the tasks of the game in the most profound way. They were dependent on each other to finish any of the tasks. In this way the co-experience was very much a common creation and the players were most likely to agree on the general nature of the experience. Due to the selective process of accepting the players and the small size of the group playing against the computer, the players did not pose any problems in terms of cooperation. No conflicts between the members of the team did emerge. In this way the emotional responses to the playing situations were mostly positive. Also the game environment did not present imminent thread to the players. The players were allowed to explore the game world peacefully, without time limits, and solve the puzzles as they chose to. This feature, combined to the rather surface-level communication of four strangers, might have lead to the absence of very strong emotional responses.

AirBuccaneers was tested on much more complicated situations. The large amount of test players and long time frame for testing lead to very different shared experiences. Even though cooperation and collaboration were not forced,

most players chose to play as a coherent team. The game provided a basis for elaborate strategic playing and many players chose to deepen the shared experience by doing so. The intensity of working as a team within a balloon made the experience strong in many ways. Successful fight surely evoked feelings of joy and pleasure and a lost fight resulted in feelings of bitter defeat and disappointment. These feelings were shared by the crew of that balloon. The shared experience of the whole team was not as well definable. The successful performance in terms of winning the game did not require good individual performances of all the players in the team. This caused an interesting dualism in the teamplay. The experiences of some members of the team could be quite negative, even though the team as a whole won the match. The form of teamplay in *AirBuccaneers* did not guarantee similar experiences to the players who shared the playing experience. In most cases the whole team did not even share the experience through communicating with each other. The team of players was broken into subteams who actually co-experienced the game.

The form of teamplay in *Castle of Oulu 1651* supported co-experiencing but not through collaboration. Even though the players did not form a coherent team, the emotional stages of all the players were very much present through the verbal communication. In a way the group spirit was a factor that had great effect on the general experiences of players. The general positive or negative factors described by the players seemed fairly analogous to each group. Some test groups agreed on a great experience of play almost unanimously. At the other end of the spectrum one group had a player whose mission throughout the play was to disturb and violate other players. The whole group agreed on that player being the cause of negative experiences in the game.

Discussion

The aforementioned analysis indicates that the *motivational, physical, intellectual* and *emotional levels* of experience were all achieved through various means and effects. The multiplayer nature of the experimental games, however, makes it challenging to delineate individual elements that construct particular experiences. While there was no concrete evidence supporting the achievement of mental levels, there were numerous examples of strong emotional experiences.

The *motivational level* of experience, while seemingly straightforward in the context of fun and games, left some open questions to be further studied. Since the tests were conducted in more or less abnormal situations, it was not possible to analyse all the intricate details related to, for example, in-game motivation. The test sessions themselves included strong motivational pull, so the journey of the players through the games cannot be unambiguously labelled on a motivational basis.

In terms of *physical level* it should be noted that many of the findings support sense perception that actually transfers the feeling of co-presence with fellow players. The being-in-the-world, in this case, should be conceptually refined to cover both the virtual environment and the corresponding players. Spoken dialogue seemed to have an enormous effect on raising the players to physical level of experience.

Interacting with the game world on *intellectual level* is needed in achieving the games' goals. The learning of how to communicate with the other players was elemental to learning how to play these games. However, simple understanding of how to interact with each other to reach a common goal, again, did not guarantee good experiences. The players had to be willing to play together and put an effort to contributing to a team spirit for the experience to become positive.

The disturbing nature of some players evoked strong emotional responses. These responses certainly delivered the players to *emotional level* of experiencing, the nature of the experience, however, was less than positive.

In general, the presence of others seemed to bring intensity and depth to the emotional responses of playing. The emotional outbursts evoked by the other players were both negative and positive by nature. The experiences of players, however, gained meaning through the interaction and shared experiences.

One important question, in terms of the analysis described in this article, is about how the perceived experiences actually fit in with the experience pyramid. While the framework offers a useful way to structure the various components involved in the experience processes, there seems to be some major limitations. First of all, the experience pyramid has been constructed especially for the context of tourism and travel products. Therefore, the experiences it covers are predominantly those of highly positive in nature. The ultimate goal – or the highest peak in the model – relates to the highly positive and even life-changing emotional experience (*elämys* in Finnish). The terminological problem of translating *elämys* into English adds some confusion in using the term *experience* as the result of reaching the emotional level of experiencing. The use of a term meaningful experience in replacing *elämys* reduces the emphasis of only positive experiencing. The more neutral approach to the experience pyramid suits the analysis of game environments. Although games can be designed for creating strong and positive experiences, they are not necessarily like the 'thrill rides' found in amusement parks. The undercurrents of these experimental games seem to be more subtle and much more dependent on the actions of fellow players.

The second possible limitation of the model is the hierarchical structure of experience elements. The notion of 'pro-

gressing through the levels towards the ultimate experience' seems to be not fully supported by our findings. According to the process of experiencing presented in the pyramid, the levels of *motivation* and *intellectual* experiencing lead to *emotional level*, where a meaningful experience is formed. In other words, the first two levels should be reached before emotional responses and, thus, meaningful experiences can form. In some game sessions the players indicated strong emotional experiences even before learning the game. For example, the audiovisual elements can evoke emotional responses and experiences before the player interacts with the world on *intellectual level*. In addition, if the player lacks the mechanical skills required to successfully perform with the gameplay, he can still receive meaningful experiences through interaction with other players or the world itself.

Despite the aforementioned conflicts, it nevertheless seems to be possible to analyse the game sessions by using a rather simplistic "level up" experience formation process. The successful application of the model, however, requires that the game session – and the gameplay itself – is structurally and functionally divided into logical components. The multiplayer aspect of these games makes it immensely challenging to delineate the actual experience processes. It is, on the other hand, possible to analyse the experience according to more specific and limited contexts.

Defining the nature of the experiences through terms of optimal experience and flow is also problematic when discussing multiplayer games. Each player can receive the feeling of control and achievement through different aspects of play. On the other hand, the nature of computer games is to create new and more difficult interaction as the player gains more experience. The feeling of flow can, thus, be exchanged to a feeling of inadequateness within an instant. The achieving of the flow feeling again requires learning something new. In this way the game can introduce an endless circle of

changing nature to the experience through shifting between flow and chaos.

Conclusions

Computer game environments are products that are more than capable of offering shared experiences for multiple players. The experiences provided by computer games are somewhat limited through the generalisation based on contemporary commercial games. The experiences of the players can, thus, be somewhat guided by the expectations built on constructions of the previous playing experiences.

The experimental games are very efficient in widening the perspective of what sort of experiences computer games can offer. For example, emphasising the elements of teamplay and social interaction between the players as basis for interaction can shift the experience towards intense co-experiences. Through new ways of playing together the players can share emotionally strong and meaningful experiences in game environments. However, shared experiences are also easily spoiled – one player can ruin the experience for all others as indicated, for example, by team-killing in *AirBuccaneers*, or "interacting by annoyance" in *Castle of Oulu 1651.*

Intimate social situations and peer pressure heightens the stakes at play – also in terms of experiences. When being constantly observed, and possibly judged, the consequences of actions become important. Furthermore, shared experiences are highly demanding in terms of participation. Although it is possible to feel strongly while observing others, the most powerful experiences require concentrated participation.

The elusive and individual process of experiencing continues to be difficult to grasp. Whether the studied experience is formed by one player or a group of players, the pro-

cess and interpretations of the event are never explicit. However, through uncovering some mysteries behind shared playing experiences, the elements of playing together can be taken into account in the design of future games.

References

Battarbee, K. 2003. Co-experience: the Social User Experience. In Proceedings of CHI 2003, April 5th – 10th 2003. ACM. Fort Lauderdale, 730-731.

Csíkszentmihályi, M. 2002 [1992]. FLOW. The Classic Work of How to Achieve Happiness. Random House. Kent.

Davis, M. 2003. Theoretical Foundations for Experiential Systems Design. In Proceedings of the 2003 ACM SIGMM workshop on Experiential Telepresence. November 7th in 2003. Berkeley, California.

Elster, J. 1999. Strong Feelings. Emotion, Addiction, and Human Behaviour. A Bradford Book. The MIT Press. Cambridge.

Eysenck, M. W., Keane, M. 2005. Cognitive Psychology: A Student's Handbook. 5th edition. Psychology Press. Hove.

Forlizzi, J. & Battarbee, K. 2004. Understanding Experience in Interactive Systems. In Proceedings of DIS2004 August 1st – 4th 2004. ACM. Massachusetts, 261-268.

Friedl, M. 2002. Online Game Interactivity Theory. Charles River Media.

Huizinga, J. 1955. Homo Ludens: A Study of the Play-Element in Culture. Beacon Press.

Jakobs, E., Fischer, A., and Manstead, A. 1997. Emotional Experience as a Function of Social Context: The Role of the Other. Journal of Nonverbal Behavior 21(2), 103-130.

Kannisto, H. 1986. Ymmärtäminen, kritiikki ja hermeneutiikka. [Comprehension, Critics and Hermeneutics]. In Niiniluoto, I. & Saarinen, E. (eds.): Vuosisatamme Filosofia. [The Philosophy of Our Century]. Werner Söderström Osakeyhtiö. Juva, 145 - 243.

Kylänen, M. 2006. Enlightening Christmas Experience – Reflections on the Experience Triangle. In Kylänen, Mika (ed.): Articles on Experiences 3. Christmas Experiences. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 110-134.

Manninen T. 2003. Interaction Manifestations in Multi-player Games – Analysis of 3D Action Game "Counter-Strike". In Riva G., Davide F. and Ijsselsteijn, W. A. (eds.): Being There. Journal of Emerging Communication Book Series. IOS Press. Amsterdam, 295-304.

Rauterberg, M. 2002. Determinants for Collaboration in Networked Multi-User Games. In Workshop Notes of First International Workshop on Entertainment Computing: 'Entertainment Computing: Technologies and Applications'. IWEC 2002 Workshop, May 14th – 17th 2002. Information Processing Society of Japan. Makuhari.

Rollins, A. & Adams, E. 2003. Andrew Rollings and Ernest Adams on Game Design. New Riders Publishing. London.

Saarinen, E. 1986. Fenomenologia ja eksistentialismi. [Phenomenology and Exiscentialism]. In Niiniluoto, I. & Saarinen, E. (eds.): Vuosisatamme Filosofia. [The Philosophy of Our Century]. Werner Söderström Osakeyhtiö. Porvoo, 111-144.

Salen, K. & Zimmerman, E. 2004. Rules of Play - Game Design Fundamentals. Massachusetts Institute of Technology.

Tarssanen, S. & Kylänen M. 2005. A Theoretical Model for Producing Experiences - A Touristic Perspective. In Kylänen, Mika (ed.): Articles on Experiences 2. Second edition. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 132-151.

Weisman, J. 1998. The Stories We Played: Building BattleTech and Virtual World. In Dodsworth, C. (ed.): Digital Illusion: Entertaining the Future with High Technology. ACM Press. New York, 463-478.

E for Experience – Using Game-Based Design Elements in Electronic Services

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Abstract

Electronic services have nowadays become a very important channel for companies throughout the world. Internet has broken the boundaries of time and place, making it possible for customers to perform most of their transactions online without ever having physical contact with the company or its personnel. The electronic environment enables the customer to collect information about a company and its products before making a buying decision and it also makes the interaction between the company and its customers possible. However, when transferring complex services, such as insurance, to the electronic environment, also additional measures are required to persuade customers to use the service and support them in their self-service process.

In this article, we present the game-based design approach as a method of generating positive service experience to the users of complex and matter-of-fact services in

the electronic environment. As a case-example we present the eInsurance service for selecting and evaluating personal insurance cover that utilizes the game-based design characteristics in a successful way. Based on a questionnaire survey made to random users of the service, we found out that game-based approach not only provides entertainment to the ordinary user, but also supports the transaction process in a way that might alter the future of transaction services.

Introduction

The World Wide Web is a remarkable channel for distributing information and handling customer service operations. It provides companies with the possibility to give information about themselves and their products to the new and existing customers, but it also makes it possible to interact with them using additional functions such as selling products in an electronic marketplace and collecting feedback from the users. After adding communication via email even Internet telephoning to the package, the electronic channel becomes a versatile channel for all kind of interaction between the company and the customer, but with transcendent features, for example the freedom of time and place. As the customer no longer has to wait for someone to answer the phone or wait in a queue to get service in the office, the service experience becomes pleasurable which may result into a permanent, profitable customership between the company and the customer.

However, Web services are no longer a novelty. According to a survey by Netcraft there are currently over 80 million Web sites (hostnames) in the Internet with an estimated increase of 17 million hostnames this year (Netcraft 2006). Even though the majority of hostnames are non-commercial, companies are facing a hard competition as they try

to develop their services more attractive than the existing competitor ones. And as services become more complex and informative, the time spent searching for necessary information or performing the transaction process increases. This may result into negative service experience. Since complexity is without a doubt the future trend in electronic service business, the environment needs novel methods of presenting the information content in an attracting and entertaining way that supports self-learning and self-service.

In the article, we approach the previously explained dilemma by introducing a game-based design approach to electronic services and comparing it with the traditional design methods that are used in graphical interfaces. The secondary objective is to establish a connection between game-based design and the efficiency of it and other measurable Human Computer Interaction (HCI) design methods in electronic services. As a case-example, we introduce a service for selecting and evaluating insurance cover that utilizes the game-based design approach for making the service enjoyable and understandable. The service was published in 2005 and the results of a questionnaire study targeted to random users after the publication represent that the game-based approach might lead to an enjoyable and appealing experience in an environment usually characterized as complex and matter-of-fact.

Theory

Electronic Services

Electronic services have nowadays become a very important channel for companies throughout the world. Internet has broken the boundaries of time and place, making it possible for customers to perform most of their transactions online without ever having physical contact with the company or

its personnel. The electronic environment makes it possible for customers to collect information about a company and its products before making a buying decision and it also enables the communication between different customers. This requires much effort from the informational content of company's Web pages and from their connectedness to the actual transaction processes.

As to complex and only occasionally used services such as insurance, the service process might require also a third dimension in addition to the previously mentioned transaction and information process dimensions. In this case the third dimension is used for inviting customers and welcoming them to the service. A definition of this dimension is "hospitality", a term first introduced by Christopher Lovelock in his taxonomy of supplementary service dimensions (Lovelock 1994). Piccoli et al. (2004) refer to Lovelock by defining hospitality in people-processing services such as a restaurant. They also define how hospitality can be achieved online, for example 1) greeting customers, 2) providing tailored suggestions, and 3) providing general suggestions, ideas, extra services or selections.

Another, even wider definition of the previously mentioned third dimension is "experience" that consists of the functionalities that help the user for example to understand and manage the service process as a whole. Fitzsimmons and Fitzsimmons (2000) define that "services are in the process of witnessing a transformation from the traditional concept of a service transaction to one of an experience". In addition, Stuart (2006) states that offering memorable experience results into loyalty and repeat purchases that lead into enhanced profitability. Therefore "experience" can be seen as a process that supports customer service operations besides the information and transaction processes.

In conclusion, Web service processes can be characterised into three dimensions; 1) information, 2) transaction,

and 3) experience. The challenge exists in combining multiple dimensions within one service, thus making it possible for the company to quickly transfer the customer from the information process to the buying or other transaction process while maintaining the customer's interest using the elements from the experience process. In the future, as the use of the electronic channels still increase, services are bound to contain elements from all these dimensions and especially in the case of complex services such as insurance, it might provide the necessary tools for approaching the customers in a suitable and profitable way.

Game-based Approach in Service Development

Although the history of digital games is not long, games have been a part of human kind from the very beginning. When glancing, for example, a dice or early board games, we realize that people have left evidence indicating that game playing and competing is a part of their heritage. Also the learning process based on playing has always been a big part of the child's growing process. (Russel et al. 2002.)

In this case, we are trying to explore and benefit from the factors that make an electronic service appealing and usable. We do not want to lose previous users of electronic services only by making a Graphical User Interface (GUI) game-like. Instead, we are trying to figure out the balance between usability and attractiveness in GUI, which is probably the most challenging task when creating a game-like graphical user interface. When developing a game we must begin by generating enough content. In addition, graphics, sounds and the user interface logic take a lot of time before we can move from the design to the implementation phase. In technologically oriented areas it is always a struggle to reason the programmers that creating audiovisual content really takes its time. An electronic service is really not only a technical structure. It is a hybrid of art and technology ele-

ments like the games themselves but at the same time the normal rules of HCI still matter in games as in the general user interfaces. GUI elements have to be represented in a clear and logical way but they still have to maintain the nail-biting atmosphere - the nature of the game. (Räty 1999.)

Games are a suitable frame to test imaginative things in user interfaces that cannot be implemented directly to general user interfaces such as Windows. Games also offer the experience of success but also the failure. These matters are the most significant game-based elements concerning the basic game playing aspects. Performing badly in a game is not prohibited, because of the nature of playing. A player can test what he can do in game or game-like service by taking the challenge and expanding the limits of the technical structure of the game. If the game design is good, the user will have the feeling of freedom, which in the western world is considered to be one of the characteristics of good game-based design. For example in Japan things might be a bit different concerning the different cultural issues, but this matter is not dealt in this article.

HCI in Game-based Services

The basic question is, how do we use these previously mentioned facts in designing electronic services? This is where the normal HCI-rules step in. We have to choose the audiovisual style and do the basic mapping according to the audience. The graphical, or even better, the audiovisual interface is what the user sees and interacts with while using the service. Graphical user interfaces have a history as long as the games, dating back to Ivan Sutherland's Sketchpad system from 1962, Douglas Engelbart's mouse from 1964, and many research systems from the 1970s. For example, graphical interfaces were not widespread commercially until 1980s. The interaction style used in graphical interfaces is direct manipulation, which is based on visual representation of the dialogue objects that are of interest to the user. This kind of approach

allows the user to control the dialogue by moving objects around on the screen and manipulating them with the mouse or other controller. (See Nielsen 1993.)

When comparing object-oriented interfaces to ancient function-oriented interfaces, the difference between them is easy to see. In eInsurance case where object-oriented traditional interface meets game-based elements the difference between interfaces is hazier. In this case, dragging objects playfully on the screen offers the user a sense of control over the interface, and the natural way to navigate in the interface is made more compelling and enjoyable by using game-based design and graphic design.

When designing a service or a product, the natural method to begin a design process is applying user centred design instead of traditional technology driven design approach. It is no longer possible only to write the requirements list and then begin developing the service. We have to start from the very beginning of the design process and every one of the crucial steps in design process. Even then, the game-based approach leaves more freedom to artist or designer. It is for the designing artist to decide what crucial user centred design method elements s/he benefits from in the design process. In addition, user centred design method differs from the technology driven approach by the involvement of customers. It concerns the involvement to customers much more than the traditional technology driven method. When using the traditional technology driven approach it is possible to collect customer requirements at the start of the project, but gather little or no input from the users during the design and development process itself. (Vredenburg et al. 2002.)

The Development of Services as a Whole

A great design is a consequence of the designers' understanding of the needs of the users as well as the technology side

of the field. This is why designers have to be aware to whom the service is targeted to. When the appropriate preparations have been made in the beginning of the development process, the design is then built on real basis and the possibility to create an understandable user interface increases. (Hackos et al. 1998.)

In the design process, we might benefit from some usability methods like Karen Holzblatt's Contextual Design. For example, the Holzblatt's usability method is suitable for understanding some of the usability issues in games like menu structures, but these methods are not usable in most of the matters concerning, for example playability and the feel of the games. There are delicate factors that make some games more enjoyable than the other in same genre that are almost impossible to measure. User Centred Design or Contextual Design is an approach for defining hardware and software systems that collect multiple user centred techniques into the design process. Data gathering has a very big role in Contextual Design method, and the collected data from the real world leads the design process. (Beyer et al. 1998.)

One of the most important issues developing electronic services is usability testing. The tests on focus groups are crucial in design process and they will signify, whether the service is usable. Usability testing helps to identify the challenges users have with the service and reveal difficult areas in the interfaces and confusing language. Usability testing is done as part of larger research series and they involve great amount of preparation and analysis. There should be a working product or a semifunctional prototype available for the designer to take the best advantage of this technique. When applicable, also a paper prototype may do well in usability testing. (Kuniavsky et al. 2003.)

The HCI main principles and guidelines still do not substitute for usability testing, but instead just supplement it. There is no guarantee that the design is good even though

the guidelines are followed, but when the HCI approach is included in the design process and HCI principles and guidelines are followed, it is more likely that fewer serious usability problems are found in the usability testing phase and later in the service. (Dumas et al. 1993.) The balance between usability and aesthetics is also a big issue in user interface design. If the designer builds an interface only with the aesthetic issues in mind, the final result can often be confusing to the end-user. In this case the product is probably difficult to use and understand, but instead beautiful and artistic.

Methodology

In this article we are trying to clarify how the game-based user interface can be utilized in novel service development and how it differs from the graphical user interfaces in general. Drawing the line between game-based user interfaces and generic graphical user interfaces is not an easy task. There are many similarities in design elements and even in the design processes that have the same kind of basic structures.

As a case-example, we present the results of the "eInsurance – Electronic insurance business and risk management" -project that was funded during 2003-2004 by National Technology Agency, a Finnish funding agency for technology and innovation. The research project was performed by the University of Tampere and VTT Technical Research Centre of Finland (later referred to as VTT). The industrial business partners were two largest insurance companies (If and Pohjola) that were the primary beneficiaries of the service concept, and two software companies (Profit Software and Emillion) that participated in the technology development and productization of the eInsurance service concept for mapping the customers' needs for insurance cover.

The development of the service concept began in 2004 by interviewing project participants and analysis of the data from surveys made earlier to different insurance customer groups. On the basis of this information, VTT and University of Tampere formed the initial framework for the service concept and developed it further together with the industrial business partners. The framework consisted of three phases;

1. information collection (user requirements),
2. suggestion of insurance cover based on the previously formed user "profile", and
3. forwarding the user to obtain further information or directly to the buying process

The service was planned to provide common information on risks and other safety related issues to the user during the service process. Due to the complex and difficult nature of insurance, the project participants decided to utilize game-based design approach in the design of the user interface. In the technological field, Shockwave technology was chosen to provide an aesthetical and artistic foundation for the content, since standard HTML was not able to provide sufficient methods for the necessary interaction and graphical elements of the service. The other alternative, Flash technology was restricted in its support for external graphics and therefore not selected.

The eInsurance service was introduced to the public in the beginning of 2005. In order to increase the customers' interest, and awareness of the existence of the developed service concept in general, the project participants organised a press conference. The press conference was followed by articles in newspapers, and interviews in TV and radio. In addition, the customers' insights about the service concept were quantitatively examined through a questionnaire study

which at the end of the service was linked together with the developed service concept. The aim was to get as many testers as possible to respond to the study with no specific focus group, but instead every potential customer that was interested in the developed service concept that was available on the Internet. Altogether 213 respondents completed the questionnaire during February and March 2005 and the results were used for measuring service concept functionalities and for developing the service concept even further.

Results

The eInsurance Service

The eInsurance service is a browser-based Shockwave application that can be downloaded from the project Web site in http://www.vakuuttaminenhelpoksi.fi ["making insuring easy" or "easy insurance"]. Internet connection is required for downloading the Shockwave application to the user's computer, but also for certain features of the service such as sending information to the insurance company for receiving an offer, obtaining additional information from the insurance company's Web site or buying insurance products from the on-line marketplace provided by the company.

Selection Phase

The first phase of the service collects information on the user. The phase is divided into three parts in which the user provides the service with information related to the following areas;

1. type of accommodation (apartment, row house or detached house)
2. family members (male, female, children and pets)
3. other assets (car, bicycle, other vehicles, summer cottage, forest and valuables)

The graphical user interface of the service displays the previously mentioned items as elements in a virtual living environment. First, the user is asked to select the type of accommodation by clicking on one of the three accommodation types shown in the window. Second, the user is required to drag and drop family members to the selected house (Figure 1) according to the user's preferences. The number of family members selected is listed in a table in the top right hand corner of the window for verification purposes and, if necessary, for removing items from the list. After making the necessary selections, the user is required to press a button in the bottom right hand corner to move to the next stage.

Third, the user is required to drag and drop different assets to a garage. Different assets such as vehicles, summer cottages or valuables are shown as graphical elements and listed in a table in the top right hand corner after their selec-

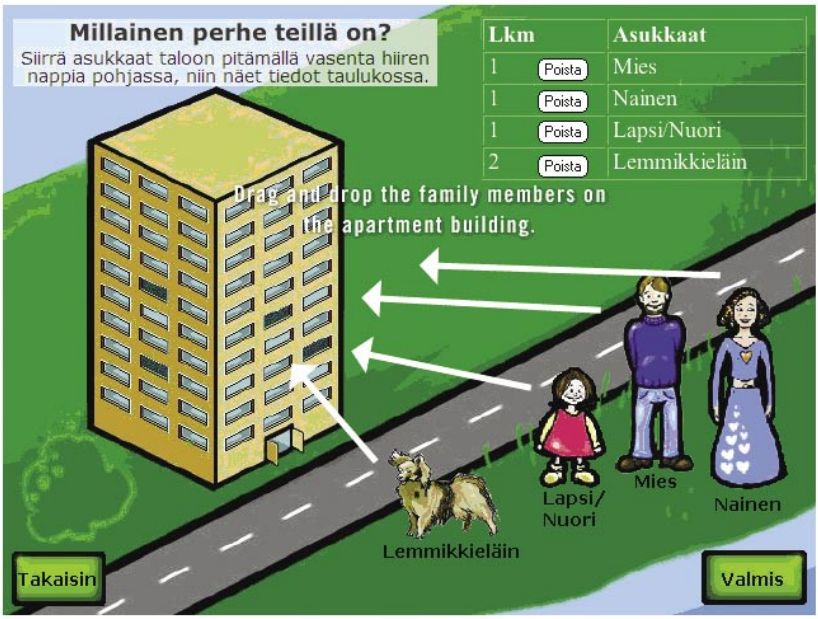

Figure 1. A view of the eInsurance service - selecting family members.

tion. After making the necessary selections, the user is required to press a button in the bottom right hand corner to move to the summary and suggestion phase.

Summary and Suggestion Phase

After making the selections, the user is transferred into the summary and suggestion phase. The window is divided into two columns in which the left column consists of the elements that the user has chosen and the right column contains suggestions on insurance products that are mandatory and/or voluntary for that certain element (Figure 2). In addition to the actual insurance product, the column also provides detailed information on the product features such as additional services. The user is also able to open the summary in a separate browser window for saving or printing the information. Later in the service, the user has also an option to send the information to an email address specified. After reading the selections and possibly saving the summary, the user is required to press a button to move on to the final phase of the service process.

Further Actions Phase

The final phase of the service presents the user with different options on further actions (Figure 3). The window contains three buttons with the following options;

1. transfer to the insurance company's Web site to receive further information on the products
2. transfer to the insurance company's Web site for buying insurance products
3. send the information to the insurance company via email to receive an offer or to contact an officer

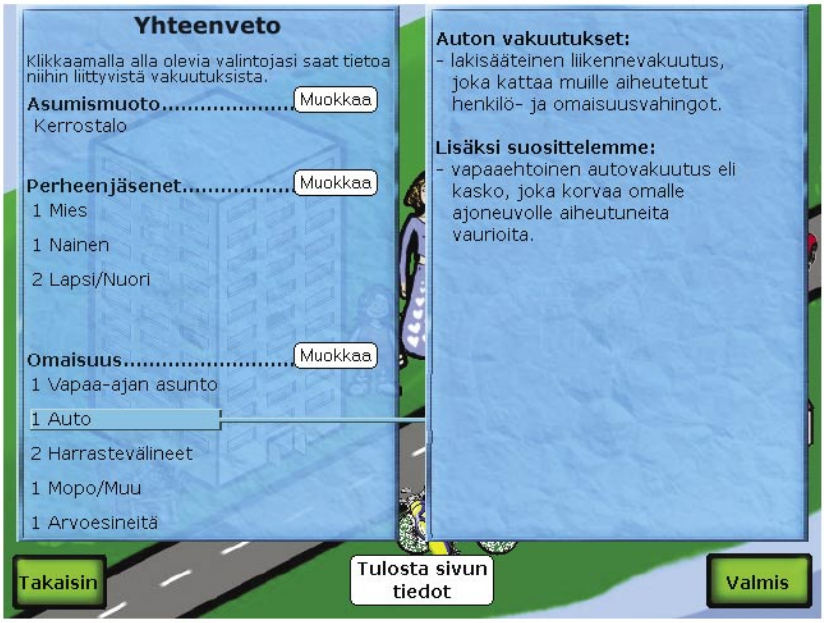

Figure 2. A summary of the selections (user profile) and suggestions on suitable insurance products and their features.

In addition to the previous choices, the user can move back in the service process by pressing the back -button located in the bottom left hand corner. The user can also end using the service by pressing the finish -button in the bottom right hand corner or closing the browser from the top right corner of the window.

The service also provides useful information related to the different risk factors in the user's life. The risk information is shown in a balloon that is shown whenever the user places the mouse cursor on top of any element in the selection phase. The balloon content consists of either statistical information for instance on traffic or other accidents or basic information on insurance products concerning that element.

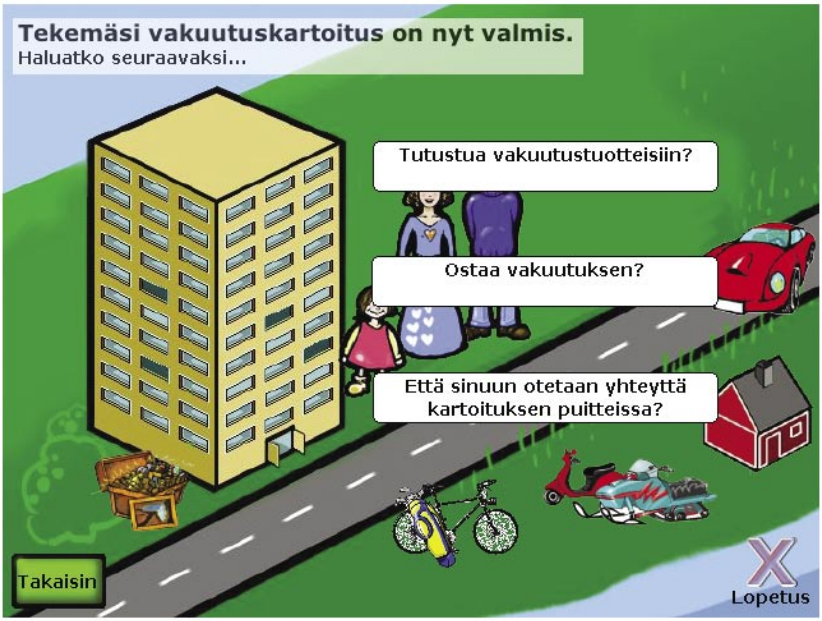

Figure 3. The further actions phase.

Measuring the users' experiences

The users' opinions on the developed service concept were measured using a questionnaire study with a scale of five different dimensions;

1. The functionality of the service (5 variables); meaning the possibility to move elements across the screen thus providing better understanding of the issues related to insurance.

2. The attractiveness of the service (3 variables); defining how interesting the service concept is and whether it motivates the users to take care of issues related to insurance.

3. The utility of the service (5 variables); defining the usefulness of the suggestions and risk information shown in balloons
4. The layout of the service (6 variables); defining the aesthetical factors (graphics, colours, buttons, overall layout) of the service concept
5. The social acceptance of the service (1 variable); defining the interest of using the service later or recommending it to a friend

A Likert-type format consisting of seven alternatives was used to measure the dimensions with the values ranging from 1 (fully agree) to 7 (fully disagree). The results of the questionnaire study indicated the following;

1. Over 60 % of the respondents perceived the functionality of the service concept as positive (selected values from 1 to 3).
2. 50 % of the respondents perceived the attractiveness of the service concept as positive.
3. Almost 60 % of the respondents reported the utility dimension of the service concept as positive.
4. Almost 60 % of the respondents reported the layout of the service concept as positive.
5. Over 60 % of the respondents reported the social acceptance dimension as positive.

Discussion

The developed eInsurance service concept revealed that game-based approach in the electronic environment is able to support the user's understanding of complex insurance matters and simplify the service process thus resulting in positive service experience.

According to the questionnaire survey, every two out of three respondents perceived the functionality of the eInsurance service concept as positive. In addition, almost two out of three respondents perceived the utility and the layout dimensions of the service concept as positive. Based on these results, we can verify the felicity of the service concept and especially that of the game-based approach, due to the fact that the layout dimension of the service was described as positive by almost 60% of the respondents.

When determining the efficiency of game-based design approach, we find out that it is not possible to benefit directly from certain design methods used in creating graphical user interfaces. The game-based service development resembles the Agile-method of creating digital products. Specification and documentation are secondary issues in the development process and, for instance the documentation should fit on a cover of a match box. This is certainly not possible in the situation of many complex cases but it is a good thing to keep in mind when managing the design process.

The most important matter that separates game-based design from the general user interface design is that the game-based service or product is thematically focused and very integral part of the user interface. Unlike for example Windows or Series-60 operating systems have to fit wider audiences than game-based products, the game-based services could be targeted to a narrow focus group. Of course this issue is not that simple to categorize, but it seems that playful, audio visual approach in user interface design has more impact in user interface design process nowadays. All-in-all, there are many game like services in the Internet and the amount is increasing rapidly. The game-based approach in service development aims to give the user enjoyment without being too challenging. The result of this is that the user is entertained and immersed in the content of the game-based UI frame.

It is often considered to be a risk or at least a challenge of using the game-based design approach in serious business fields such as banking or insurance. They both are traditional business areas and making a digital service by using a game-based design method is a daring challenge. Is the service trustful and understandable? Does it work as intended and is it efficient to use? Efficiency is clearly not the issue in games, but it certainly is in general user interfaces. When using the game-based approach in services like the eInsurance case, the question is what benefits does it bring to the user? There are no clear answers but we are trying to point out some meaningful factors that can be exploited in the future service development.

In the past, technology has always determined the audiovisual effects that can be implemented in graphical user interfaces, but nowadays technology has become invisible in that sense. Fast internet and processing power of the modern computers make sure that only imagination works as the limit of graphical user interfaces. We can implement very complex graphical tricks in user interfaces and the response time of the desired tasks is not the problem. We are learning suitable methods and areas to benefit from game-based approach in user interface design. Clearly there are fields where implementing the game-based elements in the user interface is a very challenging task, for example the interfaces used in industry applications. Primarily these applications are efficient and secondarily aesthetic and user friendly.

As a final point, we have to remember that a usable interface needs a good interaction concept. It delivers consistency and balance between the task requirements and user expectations. An aesthetic visual design adds emotional side to the interface that makes the interface unique. When adding game-based elements to the user interface, it does not change the fact that the interaction model of the user interface is the most crucial factor.

Conclusions

Complex services, such as insurance, often require additional elements for persuading customers to the electronic environment. In addition, customers might perceive insurance issues as complex and confusing which often result into a negative service experience. In this case the game-based approach might provide the service offering with the necessary elements for persuading customers to use it and resulting into a positive service experience.

The majority of the questionnaire survey respondents had positive attitude towards the eInsurance service concept. Therefore we can assume that the game-based design approach as a basis of electronic service development has potential in the future of insurance business as well as other business areas.

Measuring the efficiency of the game-based design approach compared to generic design was found to be a complex issue. Due to the narrower target group of game-based solutions, this requires further research before it can be conducted in insurance and/or other fields of business.

Research Implications

The development of the eInsurance service concept for selecting and evaluating insurance cover is being continued in a follow-up project during 2005-2007. The future service influences the insurance customership life cycle by providing support to the buying decision phase. The support consists of personalized risk information collected from the insurance company database of rejected claim notifications as well as common information on what the customer should take into account when buying insurance products and updating the personal insurance cover. The project group consists

of multiple research and industrial business partners with a common objective to develop a comprehensive electronic insurance service environment that is combined with the insurance customer service life cycle.

References

Beyer, H. & Holtzblatt, K. 1998. Contextual Design: Defining Customer Centered Systems. Morgan Kaufmann Publishers Inc. San Francisco.

Dumas, J. S. & Redish, J. C. 1993. A Practical Guide to Usability Testing. Ablex Publishing Corp. Norwood.

Fitzsimmons, J. & Fitzsimmons, M. 2000. New Service Development: Creating Memorable Experiences. Sage Publications. Thousand Oaks.

Hackos, J. T. & Redish J. C. 1998. User and Task Analysis for Interface Design. Wiley.

Kuniavsky, M. 2003. Observing the User Experience: A Practitioner's Guide to User Research. Morgan Kaufmann Publishers Inc. San Francisco.

Lovelock, C. 1994. Product Plus: How Product + Service = Competitive Advantage. McGraw-Hill.

Netcraft 2006. Available at: http://news.netcraft.com/archives/web_server_survey.html. Cited: 19.5.2006.

Nielsen, J. 1993. Usability Engineering. Morgan Kaufmann Publishers Inc. San Francisco.

Piccoli, G., Brohman, K., Watson, R. and Parasuraman, A. 2004. Net-Based Customer Service Systems: Evolution and Revolution in Web Site Functionalities. Decision Sciences 35(3), 423-455. Available at: http://63.151.43.10/customerservice/WebSite%20Functionality_DS_R1.pdf. Cited: 12.04.2006.

Räty, V-P. 1999. Pelien leikki: lasten tietokonepelien suunnittelusta sekä käytöstä erityisesti vammaisten lasten kuntouksessa. [Games Playing: On Designing and Using Children's Computer Games in the Rehabilitation of Disabled Children in Particular]. Dissertation. University of Arts and Design Helsinki.

Russel, D., Wilson, J. L., 2002. High Score: The Illustrated History of Electronic Games. McGraw-Hill.

Stuart, I. 2006. Designing and Executing Memorable Service Experiences: Lights, Camera, Experiment, Integrate, Action! Business Horizons 49(2), 149-159.

Vredenburg, K. Isensee, S. and Righi, C. 2002. User-Centered Design: An Integrated Approach. Prentice Hall.

Meaningful Experiences & Cross Media Communication

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Introduction

In this article we explore and describe the relationship between meaningful experiences and cross media through a new lens. We propose that management will require a new mindset to fully understand a new perspective on the experience economy and support individuals in innovative ways to have full access to experiences that matter. Since 2001 we have conducted interactive experiments in executive education, conducted applied research through Learning-by-Sharing (Thijssen et al. 2002) and a study of literature to be able to describe the notion of meaningful experiences and cross

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media communication in a human context and in various experience spaces.

For organisations it is far more complex to reach individuals today than fifty years ago. The media landscape has altered significantly over this period of time. New media such as telephone, facsimile, television and radio have augmented the traditional media such as personal contact, books, magazines and newspapers. At the end of the 20th century the Internet yet extended the range of possibilities for information, communication and collaboration through the IP-protocol. SMS, MMS, E-mail communication, chatting, web logs, e-commerce and on-line gaming changed the way we communicate with each other. New enabling technology together with a transformation from a supplier dominated media environment (tell and sell) to a more demand driven mode of communication impact every facet of our life. The new phenomenon of cross media, described as *an enabling multi-media platform for interaction, consisting of both traditional and new media* presents a problem for management as individuals can seek meaningful experiences using any type of medium, at any time and in any place, any where. So the question is how management can support individuals and groups in their efforts of creating meaningful experiences in a cross media environment?

In section two we will first describe the new experience landscape from the perspective of the individual and compare it to the current supply driven focus of organizations on customer transactions. It provides a full description of relevant experience contexts and experience spaces. Then, in the third section three cases are discussed and interpreted from a cross media perspective linking the efforts of individuals in creating meaning with the organization providing meaningful support. In section four the findings of the cases are analysed, and in section five the implications for organisations are formulated.

The New Experience Landscape

In a management book *The New Perspective on the Experience Economy: Meaningful Experiences* (Boswijk et al. 2005) the authors conclude that a new perspective on the economy requires a new set of spectacles and a new mindset. In other words, we need a more holistic view on society from a human perspective in interaction through media with various contexts of their lives. An economic perspective is valuable, but appears to be limiting our view. There is a growing need to include a personal, a social, a cultural and an ecological perspective. A holistic worldview can be described as an inclusive view of people in various experience contexts and various experience spaces that determine the quality of life as described below.

Various Experience Contexts

We propose that it is possible to study the personal context, i.e. the human body, and the senses in contact through media with the surrounding world (Kahneman et al. 2003) in a better way if we adhere to the more holistic worldview, as mentioned before. The surrounding world is made up of the physical and the virtual spaces in personal, social, cultural, economic and ecological contexts. The individual shapes one's life in interaction with the outside world whereby the senses are used as media channels to interpret the outside world and to act upon it to create meaning. This process of purposeful acting upon the inner and outer impulses by doing and undergoing (Dewey 1938) can be identified as meaningful experiences that aim to render value. In fact by doing so, individuals build their identity and shape their future, moment-by-moment and day-by-day.

The human capital perspective

From our explorative research experiments, questioning participants in courses and workshops in the last four years, we have learned that the most memorable personal experiences are defined by turning points and events in the family circle and with close friends. Birth of children, marriage, death, divorce, contact with parents, close friends and the event of personal achievement are often mentioned. So it appears personal experiences that we value or fear and that determine the quality of our life apparently have a social element included. We establish our identity through interactive experiences with significant others (Berger and Luckmann 1966). We seem to value both the process of doing and undergoing, and the purpose, quality of our personal and social life (Dewey, 1938). If we are socially excluded (no significant others to interact with) we value the quality of our life negatively. Quality of life from a personal perspective appears to be determined by human and social capital of the extended family. Human capital includes good health and human talents as well as the support of the extended family unit through the use of personal communication (dialogue) and often the use of new media for frequent interpersonal communication (e.g. telephone, SMS, MMS, chat and e-mail).

The social and cultural capital perspective

When asked what people consider the most memorable social and cultural experiences that determine the quality of their life, experiences in the extended family are also mentioned. Clearly, there is an overlap between personal and social experiences. On top of that the respondents describe another category of experiences as well, namely experiences dealing with travel, culture, sports, arts, and threatening experiences as abuse, riots and war situations. So experiences can affect the quality of life in a positive or painful and confronting manner. With social experiences the element of collective do-

ing and undergoing is the main focus. Quality of life also appears to be determined by social and cultural capital. Social capital is the social fabric that bonds people together in joint experiences to render value. It is about social engagement with a common purpose. The type of social experiences that we value highly deal with social encounters such as music and entertainment, sports, art, nature, leisure and travel including visits to museums and exhibitions. Often cultural experiences, as cultural capital, colour our lives. But also educational experiences are mentioned as life transforming. Educational experiences are viewed as valuable because the social constructive process of learning renders value during the process as well as opens doors for a better future. Bonding people together in joint experiences is enabled through a full range of cross media providing access to people and meaningful social and cultural experiences.

The social capital perspective in business and work

For many people the workspace or organizational environment provide both positive and negative memorable experiences. Career opportunities and meaningful social relationships in the workspace can improve the quality of our life. The loss of work, bankruptcies of the business or a major collective achievement are also considered to have a high impact on the quality of life. The organizational environment provides meaningful social contacts, often ignored in writings on the Experience Economy (Pine and Gilmore 1999), where the focus is limited to companies staging experiences for customers and where employees are defined as actors on a stage. The information and communication infrastructure in the work situation enables people to share knowledge and experiences and create value together. Again a full range of cross media is available today to work at anytime and anywhere with anyone.

The economic capital perspective

When we enter the world of economic experiences (experiences we pay for) again respondents mention education, travel, arts and culture but also other memorable experiences as buying a house, a boat, a first car or having an exhilarating ride in an amusement park or taking an exciting journey to a foreign culture. From the personal perspective these experiences do also determine the quality of life. They bring the world to us and provide us with goods, services and experiences that add value to the quality of our life. They provide us with comfort, with convenience, with safety and with pleasure. When something happens to our children or other dear ones, however, the meaning of economic experiences is all of a sudden very limited. Paid for experiences are viewed as means rather than ends to the quality of life.

We are who we are based on who we are with, our cultural heritage and our aspiration to shape our future through our achievements. Our identity is refreshed each time we encounter experiences that enhance the quality of our life, and meeting people in certain spaces and contexts plays a major role in this process. It can be defined as a process of co-creating value, innovating and shaping the future.

Combining Various Experience Contexts with Physical and Virtual Experience Spaces We Visit Daily

If we combine the various contexts (personal, social, cultural, economical and ecological) with the various experience spaces that we visit almost every day, we come to the following holistic interpretation of an experience society. Understanding the dynamics of the complex interrelationships may enable us to learn and shape the future and the quality of our life in such way that we may be able to support meaningful experiences.

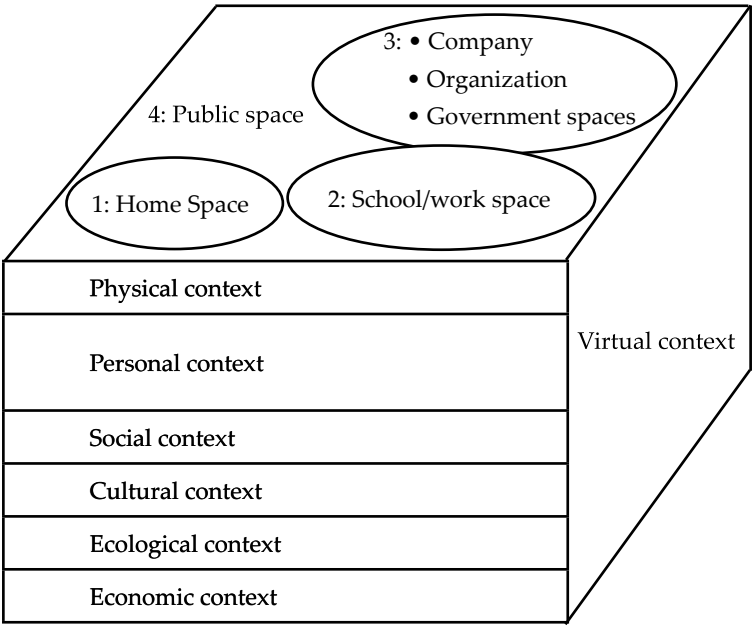

Figure 1. Experience Contexts, Virtual Context and Experience Spaces.

A holistic model on the Experience Society, with experience contexts and physical and virtual experience spaces

In this section we describe the relevance of the various experiences contexts ranging from a physical, virtual, personal, social, cultural and economic context and to a lesser degree the ecological context. The ecological context we define as nature, animals and wildlife, water supply, natural resources, agriculture, woods, lakes, forests, parks and rivers etc. Now we will turn to the physical and virtual experience spaces where we shape our daily lives.

Physical and virtual experience spaces

The relevant physical and virtual experience spaces we visit almost daily, in order of importance that follow from our explorative research are:

1) Home experience space
Our personal home where we firstly connect and share experiences with our (extended) family and secondly where our identity takes shape through meaningful experiences. We act in the role of family member. The physical space is the home where we meet in person. The virtual space is the connectedness to the extended family through new media as telephone, SMS, MMS, e-mail, chat and more recently our personal blogs.

2) School/ work experience space
Our teachers, fellow students, or colleagues and managers where we study or work, allow us to establish our identity through interaction and value production. We gain value through the application of our competencies in voluntary and paid for work. We act in the role of (knowledge) worker through a full range of cross media.

3) Company/ organization/ government experience space
When we shape our future and strive for quality of life we need goods, services and paid for experiences that we use as tools to satisfy our needs. Examples are shops, restaurants, hotels, banks and insurance companies, car companies, real estate agencies and other commercial providers where we are customers. But also organizations which support us at a fee where we can be members such as Green Peace, World Wild Life Fund, museums, concert halls, sport venues etc. Also government agencies where we are citizens who receive services such as pass ports, social security, waste disposal, building permits, police protection etc. We can visit these spaces in person and seek meaningful experiences and more and more we can access web-

sites for on-line delivery of products, services and experiences.

4) Public experience space

The fourth experience space can be described as the natural world in which we travel from home to school, to work, to company, to organization and to government. It includes our cultural heritage in the form of landscapes, cities, villages, and rural areas with our cemeteries, churches, roads, rivers, woods and other infrastructure. We act in the role of visitor, traveller, sports person etc. We stay in contact with our extended family and or colleagues through on-line communication.

The above holistic view of the Experience Society comprises both experience contexts and physical experience spaces. This model is complemented with virtual experience spaces, where we connect to other worlds and leave our body behind. The virtual context enables us to link ourselves to relevant contexts and cross boundaries of physical spaces through the use of interactive media. The issues of virtual spaces, virtual communities and virtual mobility are new to us and to management. We can be anywhere at any time and still being connected. This can be considered an opportunity for individuals for shaping their lives. For organization management it presents a problem when the individual for instance spends less time with traditional media as television and radio and spends more time with interactive media such as telephone and web based communication. We propose that the traditional model of broadcasting (tell and sell) is replaced with more interactive communication (invite and engage).

We as humans, in different roles, live and shape our identity. But in fact we are one and the same person in different experience spaces and contexts. We apply our talents to-

gether with other human beings to create value to ourselves and to others. Perhaps it is time to regard and respect the individual as human being instead of consumer, member or citizen. Individuals prefer to be recognized as human beings and not as anonymous targets of companies, organizations and governments to serve their own needs. Companies, organizations and governments are not the centre of the world. On the other hand, if they place the individual human being within his/ her personal network in the centre and choose a supportive role to enhance the quality of life of the individual, companies, organizations and government certainly cannot be missed in the Experience Society.

Transformation from 'Tell and Sell' to 'Invite and Engage'

The difficulty in understanding the transformation from 'tell and sell' to 'invite and engage' on the one hand is an issue of language and on the other hand an issue of developing a new mindset. Even the notion of demand chain management creates confusion. Demand chain management presupposes that the organisation is steering the customer demand. It suggests that the organisation steers the interaction through media based on an articulated consumer need. For example IBM uses the term Business On Demand to describe that they can help organizations to build ICT infrastructures in such a way that a specific demand can be translated to a predefined offer in an on-line transaction in real time. In this article however we consider the notion of demand driven in a broader perspective. An individual is definitely more than a consumer. Demand driven experiences are described as the purposeful process of individuals in creating meaning by doing and undergoing. Individuals shape and steer this process themselves through interaction with others through a full range of cross media. This perspective requires a new mindset and a new mental model to express that our current mindset is limited.

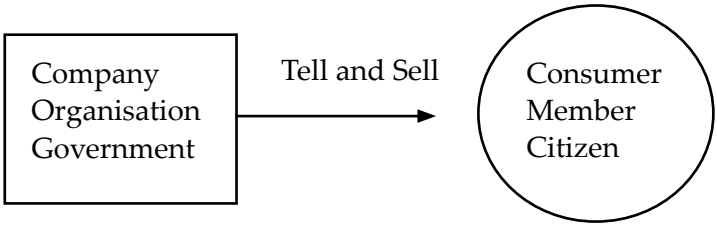

Figure 2. Traditional Mindset 'Tell and Sell'.

The traditional mindset of 'tell and sell' can be explained as follows:

- Companies see individuals as consumers to be targeted to buy
- Organisations see individuals as paying members to be targeted to join
- Government sees individuals as citizens to pay taxes and obey rules

This mindset is limited in the way of fully ignoring the personal, social, cultural and ecological context and thereby losing a great deal of the contexts in which individuals shape their life and create meaning.

The new mindset of 'invite and engage' enables us to see the individual in his/ her personal context and social/ cultural context where meaningful encounters through cross (or multi) media take place. The position of companies (1-N), organisations (1-N) and government is not at the centre of the new mindset but peripheral. At a certain moment in time at a certain space they are in a position to be of use for the individual and the individual's network. The share in the quality of life is often limited when comparing the impact of personal and social experiences with the extended family network. It explains how companies, organisations and

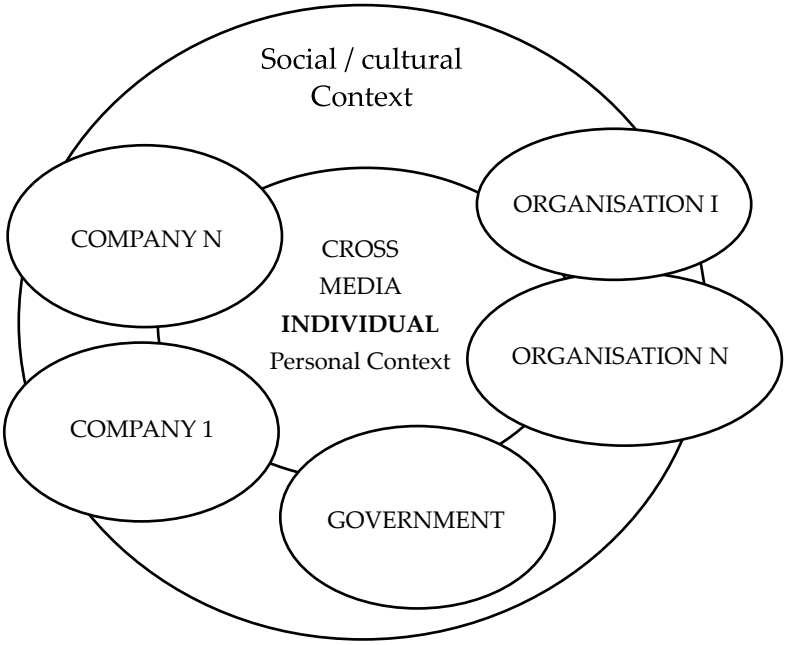

Figure 3. New Mindset 'Invite and Engage'.

government play a modest role in the process of meaning making. A modest role requires a modest approach to invite and engage the individual.

Because of the fact that companies, organisations and government see themselves in the centre of attention they increase the gap between the organisation and the individual. Our proposition is therefore that organizations play a modest role in the individual's process of meaning making and should act accordingly and aim to close the gap. Organisations should respectfully be interested in the individual in his/ her personal/ social and cultural context and invite and possibly engage the individual in meaningful encounters. These encounters can be routine encounters through cross media such as shopping, daily travel, communication and entertainment. But in some cases these encounters can

be non-routine and present experiences that matter such as a wedding, a party, a cultural event, a journey, a course, a game or exciting projects of work. It is the individual shaping one's life in a meaningful way within social network seeking value through meaningful encounters both for free and paid for. Based on the above, the principles for adopting the new mindset for organisations can be summarized as follows:

- Purpose and people: Organisations should adopt a new mindset of 'invite and engage' with respect for the individual in his/her personal network
- The context: Organisations should take into account all relevant human contexts: physical and virtual, personal, social, cultural, economical and ecological
- The spaces: Organisations should take into account all relevant experience spaces: (1) home space, (2) school/work space, (3) company, organisation, government space and (4) public space.
- The process: Organisations can build on human capital, social capital, economic capital and ecological capital to co-create value with individuals and groups. It is a process of meaningful dialogue, generative learning, co-creation of value and reflection.
- Cross media access and communication: provide easy cross media access for meaningful encounters.

In the following section we will demonstrate these principles in three cross media cases. A course for professional, a journey with information managers and a commercial advertising campaign.

Meaningful Experiences and Cross Media Cases

In this section we discuss three cross media cases to demonstrate the new mindset of 'invite and engage' where the individual and the group is at the centre of attention, through

access to cross media enabling meaningful experiences that matter.
We will use the five principles as described in section 2.3 and apply them to the following cases:

- The Experience Economy Executive Course in Value Creation in Italy, April 2006
- The Information Management Fellows Journey to Ukraine in May, 2006
- The Sportlife Deep Case comparing a traditional TV campaign and a cross media campaign in 2005

Because of the personal involvement of the authors through action research all relevant information to describe and explain the cases is available, enabling a rich description and through an interpretative study it will be possible to demonstrate the role of cross media in enabling meaningful encounters that matter. The cases vary in the use and the structure of cross media.

Case 1: The Experience Economy Executive Course in Value Creation.

Purpose and people	**Hints and cues**
The European Centre for the Experience Economy as part of the PrimaVera Research Group at the University of Amsterdam offers a one-week executive course to professionals since 2002. The purpose of the annual executive course is to provide a generative learning environment for learning-by-sharing for senior executives in changing their mental model about customer and organisation value and learn to innovate their organisation. The people involved (invited to engage) are senior lectures from universities and innovative practitioners from various cultural backgrounds and nationalities and a group of 12 executives and 3 students from university.	-Invite and engage -Generative learning environment -Learning-by-sharing -Changing mental models about value creation -Learning to innovate
The context	**Hints and cues**
The personal context and social context of all participants, the cultural context of different nationalities and the locations in Umbria, Italy, as well as the economic context (pay for your education) and the ecological context (nature, surroundings).	-Personal context -Social context -Cultural context -Ecological context
The spaces	**Hints and cues**
Participants travel by plane leaving home on Sunday and travelling back the following Friday. During the week they stay in contact with the home front and in some cases with work. Participants stay in first class accommodations such as an Abbey, a hotel and meeting facilities and enjoy the beautiful nature of Umbria.	-Home space -School/work -Company, organisation, government -Public space
The process	**Hints and cues**
As participants are informed of the course and invited they prepare for the trip to Italy and prepare their own business case beforehand to ensure personal and professional relevance. Upon arrival there is a good mix of socializing, cultural events, dining, relaxing and learning-by-sharing. The program allows for full engagement and is interactive. Learners switch roles between student, researcher, teacher and practitioner during the course to exchange knowledge and experience in an informal setting. Short lectures are input for small group discussions and for reflection on their own business case.	-Learning-by-Sharing -Switching roles between student, teacher, researcher and practitioner -To provide input, listen, discuss, share, reflect and apply to own business case

Case 1: The Experience Economy Executive Course in Value Creation (continued).

Cross media access and communication	**Hints and cues**
A full range of cross media is used to enable interactive communication: Before the course: -Invitation and program in PDF through e-mail to potential participants and section on the website -Follow up telephone and e-mail contact -Agreement and electronic payment During the course: -Personal and social contact -Course reader -Software for knowledge sharing -Power Point Presentation, beamer, video and sound and digital photography -Group discussions -Telephone, SMS and e-mail to home front and work -Paper and pen -Laptop and flip over -Sharing meals -Group excursions by bus to enjoy culture and nature After the course: -E-mail follow up -Sharing documents -Personal evaluation and feedback -Invitation to stay or become a professional member of the network	-Personal contact -Group contact -Group meals and excursions -Course reader -E-mail -Documents -Telephone -SMS -Website -Software of various types -Video and sound -Digital photography -Lap top -Paper and pen -Flip over

Case 2: The Information Management Fellows Journey.

Purpose and people	**Hints and cues**
Information management Fellows is a program of 6 encounters per year offered by the University of Amsterdam to graduates from the Executive Master of Information Management Course. The purpose of the first journey to Ukraine is to provide a generative learning environment for learning-by-sharing for information managers in comparing a developing country with the Netherlands from all aspects of human life and to widen the perspective on differences in culture, wealth, access to education and health, business, government, use of new technology etc. The people involved (invited to engage) are 9 information managers from large Dutch semi-government organisations, a moderator and various Ukraine host organisations and an interpreter.	-Invite and engage -Generative learning environment -Learning-by-sharing -Changing mental models about value creation -Learning to think out off the box
The context	**Hints and cues**
Taking into account all relevant contexts: The personal context and social context of all participants, the cultural context of different nationalities and the locations in Kiev, Ukraine, and Dnipropetrovsk as well as the economic context (pay for your education) and the ecological context (nature).	-Personal context -Social context -Cultural context -Ecological context
The spaces	**Hints and cues**
Participants travel by plane from home on a Sunday and travel back the following Sunday. During the week they stay in contact with the home front and in some cases with work. Participants stay in accommodations such as hotels and use a mini bus to visit various companies, government organisations, schools, a hospital and a theatre as well as visiting Ukrainian people for dinner in their home. The journey from Kiev to Dnipropetrovsk and back is conducted by sleeping train placing the group back some 50 years in time and travelling through public space.	-Home space -School/work -Company, organisation, government -Public space

Case 2: The Information Management Fellows Journey (continued).

The process	**Hints and cues**
As participants are informed about the journey and invited they prepare for the trip to Ukraine. Upon arrival there is a good mix of visits to companies, organisations, socializing, cultural events, dining, relaxing and learning-by-sharing. The program allows for full engagement and is fully interactive. Participants engage in dialogues with Ukrainian people in their work and home environment and exchange knowledge and experiences through Learning-by-Sharing.	-Learning-by-Sharing -Engage in open dialogue -Provide input, listen, discuss, share, reflect and apply to own situation
Cross media access and communication	**Hints and cues**
A full range of cross media is used to enable interactive communication: Before the journey: -Invitation through personal contact and group contact and a program in a word document through e-mail to Fellows and section on the website -Follow up telephone and e-mail contact -Agreement and electronic payment During the journey: -Personal and social contact -Interpreter -Journey program -PowerPoint presentation, beamer, video and sound and digital photography -Group discussions -Informal discussions -Telephone, SMS and e-mail to home front and work -Paper and pen -Laptop -Sharing meals -Presents for hosts -Group excursions to make visits to organisations by bus and by taxi to meet people and enjoy culture and nature After the journey: -E-mail follow up -Sharing documents -Sharing digital pictures -Personal evaluation and feedback -Invitation to stay as a member in the network and share the experience with other Fellows, at home and at work	-Personal contact -Group contact -Group meals -Programme -E-mail -Documents -Telephone -SMS -Website -Opera in theatre -Digital photography -Lap top -Paper and pen -Company visits and excursions

Case 3: The Sportlife Deep Case.

Purpose and people	**Hints and cues**
Leaf is an international commercial company manufacturing and selling products such as chewing gum. In the first half of 2005 a new product Sportlife Deep was introduced. The main target group is the young between the ages of 13-19. The product introduction was supported with in store promotion and television commercials. In the second half of the year the product was promoted through a cross media campaign of in store promotion, radio, web-vertising and a interactive game; Sportlife Arctic Game. The purpose was to learn whether the cross media campaign produced a higher reach and a lower cost per 1000, a higher share of heart as compared to the traditional television campaign through qualitative and quantitative research by the European Centre of the Experience Economy, the University of Amsterdam and Nyenrode Business University	-Tell and sell -Invite and engage -Learning-by-sharing -Quantitative research -Reach – as in share of mind -Active engagement – as in share of heart -Cost per 1000 -Understanding the added value of cross media
The context	**Hints and cues**
The context takes into account the personal context of the target group 13-19 watching television, listening to the radio and using the Internet for information, communication and gaming. In the interactive Arctic Game gamers could play 3 rounds in a competitive setting with other gamers and were able to win prizes. The arctic games are designed to play ice-games in an arctic setting. The Sportlife brand name is placed in the game.	-Personal context -Social context -Cultural context (youth and media consumption) -Ecological context
The spaces	**Hints and cues**
The media television, web and game are available in the home space. The radio can be heard at any space.	-Home space -School/work -Company retail outlet -Virtual space

Case 3: The Sportlife Deep Case (continued).

The process	**Hints and cues**
There are two types of processes. The first one is a passive process of watching the television commercial aimed at reach (share of mind, brand recognition and purchase intent). The second is an interactive process of using cross media (radio and web) to find and play the game and learn about Sportlife Deep, like it and possibly buy it.	-Passive watching television -Active playing the game -To find, register, play, enjoy and control the game, respond to questionnaire and find out what the score is and possibly win a prize. To form both a share of mind as well as a share of heart raising the intent to buy the product
Cross media access and communication	**Hints and cues**
The two campaigns served to introduce the product and further support the product adoption in the target group 13-19. The media consumption of youth is rapidly changing from passively watching television to more interactive ways of communicating such as SMS, MSN chat and off-line and on-line gaming. The research showed that the cross media campaign both reached the target group better, the cost per 1000 is lower and the time engaged compared to television (20-30 seconds) and the game (200 seconds) is 9 times higher. In addition the quantitative research confirmed that the higher the experience index (appreciation of the experience by doing and undergoing) the higher the brand awareness and purchase intent	-Television -Radio -Web-vertising -Arctic game -On line questionnaire

The hints and cues indicate a pattern of supporting meaningful experiences and cross media communication, as will be analysed in the following section.

Cross case findings and analysis

Our objectives of the three cases in the previous sections are to demonstrate the five principles for organisations of meaningful experiences that matter and the use of cross media. We will now compare the findings and formulate implication for organisations by reflecting on each of the five principles (1) Purpose and people (2) The context (3) The spaces (4) The Processes (5) Cross media access and communication, and discuss whether a pattern for meaningful experiences and the use of cross media can be derived.

Purpose and people: Adopt a new mindset of 'invite and engage' with respect to the individual in his/her personal network

The purpose and the people in each case are different. The first case The Executive Course in Umbria aimed at inviting and engaging executives and academics in learning-by-sharing about the experience economy, develop a new mindset and innovate their own business. The second case is focused on information managers on a life-long learning journey in Ukraine, learning-by-sharing from a different culture and from each other to enhance personal and professional development. The third case is a highly commercial case aimed at better understanding the commercial value of cross media campaigns in terms of reach (share of mind), share of heart, cost per 1000 and purchase intent to support the product launch of Sportlife Deep.

The principle of 'invite and engage' with respect to the individual in his/her network can be confirmed as an emerging pattern from these three cases. In particular the Sportlife Case confirmed statistically that the 'tell and sell' approach of the television commercial produced a less meaningful experience than the cross media campaign in terms of reach and share of heart with a lower cost per 1000. The proposition of this principle appears to be valid based on the data.

The context: Take into account all relevant human contexts: physical and virtual, personal, social, cultural, economical and ecological

All cases took into account all relevant human contexts. The first two cases on learning provide very rich environments engaging all senses. It must be said that the last case of Sportlife provided in comparison a less rich environment engaging the sense of hearing and seeing only. Also the time spent at each of the contexts is different. The Executive Course in Umbria lasted 6 days including airline travel, the Fellows trip to Ukraine lasted 8 days including airline travel and the Sportlife Game lasted 200 seconds as compared to the television commercial of 20-30 seconds. It can be stated that comparing highly time intensive experiences to little time intensive ones may not be so useful. It is demonstrated, however, that meaningful experiences can be supported when all relevant human contexts are taken into account.

The spaces: Take into account all relevant experience spaces: (1) home space, (2) school/work space, (3) company, organisation, government space and (4) public space.

The first two cases invited professionals to leave their regular space as home, work, organisation and travel to another country with a group of people sharing a common purpose. The impact on the experience of a 'foreign space' is considered high in particular for the purpose of learning-by-sharing in a social group. The Sportlife case however took into account the youth in their home space and their need for play. The impact of playing in the home space coincides with the change of time spent watching less television and spending more time with interactive media, in particular gaming. If Sportlife would not take this into account the chance of reaching the target group will diminish in time.

The process: Organisations can build on human capital, social capital, economic capital and ecological capital to co-create value. It is a process of meaningful dialogue, generative learning, value creation and reflection.

In each of the cases the process of co-creation is confirmed through inviting and engaging. The exception is the Sportlife television commercial where the process is typically 'telling and selling'. Even though there is a high degree of variation in the structure of the dialogue in each of the cases it can be said that cross media provided an opportunity for meaningful encounter. The structure of the dialogue in the Executive Course is more or less fixed in a curriculum with various ways of interacting at certain times, mainly in a meeting room, during meals and one excursion. The dialogue in Ukraine journey was far less structured; because all visits to companies, organisations, government and families where open conversations. The dialogue in the Sportlife game is a human/machine dialogue scripted in an interactive game with pre-determined games to play in competition with others. Yet the gamer decides and has control over actions taken, thereby the level of engagement and the time spent are increasing as compared to passively watching the television commercial.

Cross media access and communication: provide easy cross media access for meaningful encounters

Each of the cases indicates how rich cross media access and communication can be, and that when the individual is in control of these media together with others, meaningful encounters can be supported. The list of media is long and the art will be not to force individuals to restrict themselves over a longer period of time to a limited set of media. In contrast, the purpose is to provide freedom in choice and variation of media to support a constructive dialogue, support learning and more over, experiences that matter, through cross media access.

Implications for organisations

The concepts of the Experience Landscape widening our view from a supply driven 'tell and sell' relation with customers to a deeper understanding of human experiences in all relevant experience contexts and experiences spaces are new to most managers. It requires a new mindset to place the individual in the centre in his/ her natural habitat and a mindset of 'invite and engage'.

As long as managers put the company, the organisation or the government in the centre of attention managers will limit their view and understanding of meaningful experiences and cross media communication. We argue that a new perspective is needed to see and understand reality. That is after all the purpose of science: to understand reality. The purpose of experiences that matter is to understand how people shape their lives together with others in meaningful encounters, and position the organisation to provide support and co-create value. If we better understand this purpose, the various contexts and spaces, the people involved, the processes as well as the access to cross media we learn better to 'invite and engage' and to create value together. Through participating in learning-by-sharing and a constructive and meaningful dialogue managers are able to build meaningful relationships and support meaningful encounters.

Limiting our focus to economic capital restricts our ability to identify and capture opportunities in building on human capital, social capital, cultural capital and ecological capital. Creative combination of these forms of capital enables individuals and groups to shape the quality of life and for organisations to co-create value.

Reflecting on the content of the article we must admit that there is not yet a sound body of knowledge on the topic of meaningful experiences and cross media communication. Our research and findings to date, can only be qualified as qualitative fieldwork and a lot of continuing research to test

and validate emerging theory on human experiences and cross media communication is needed. Particularly the complex interrelationships and effects of various multi-media types are yet ill understood. The European Centre for the Experience Economy aims at grounding popular management notions of experiences in theory together with a range of international partners from the academic world, the world of innovative business and government.

References

Boswijk, A., Thijssen, J. P. T. and Peelen, E. 2005. Een Nieuwe Kijk op de Experience Economy: Betekenisvolle Belevenisssen. Pearson Education. Amsterdam.

Berger P. L. & Luckmann, T. 1966. The Social Construction of Reality. A Treatise in the Sociology of Knowledge. Doubleday Anchor Books. New York.

Dewey, J. 1938. Experience & Education. Touchstone. New York.

Kahneman, D., Diener, E. and Schwarz, N. (eds.) 2003. Well-Being: The Foundations of Hedonic Psychology. Russell Sage Foundation. New York.

Pine, B. J. & Gilmore, J. H. 1999. The Experience Economy: Work is Theatre and Every Business a Stage. Harvard Business School Press. Boston.

Quinn, R. E. 1988. Beyond Rational Management: Mastering the Paradoxes and Competing Demands of High Performance. Jossey-Bass.Inc. San Francisco.

Thijssen, J. P. T., Maes, R. and Vernooij, A. T. J. 2002. Learning by Sharing: a Model for Life-Long Learning. In Johannessen, T. A., Pedersen, A. and Petersen, K. (eds.): Educational Innovation in Economics and Business VI. Teaching Today the Knowledge of Tomorrow. Kluwer Academic Press. Dordrecht, 189-198.

Thijssen, J. P. T. 2004. Gids voor persoonlijk ondernemen en innovatie. Scriptum. Schiedam.

Experience Production in Digital Media and Games

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Introduction

In Sweden the conceptualization the creative industries (Caves 2000) as ***experience industry*** (Wahlström 2002) was introduced in 1999 (KK-stiftelsen 1999; 2001; 2002; 2003) to stimulate its growth, border-crossing between the different areas and its integration with traditional industry. It included traditional creative areas such as music, film, photo, animation-art, television & radio, performing arts, industrial design, authorship & publishing, fashion, journalism, architecture and advertising while the "new experience industry" was defined as new performing arts, arts in new media, Computer/TV-gaming, edutainment, education, experience tourism, gastronomy, nature experiences, handicraft and events (KK-stiftelsen 1999). These have later been lumped into 13 formal areas of the *experience industry* as architecture, design, film/photo, literature, art, market communication, media, fashion, music, gastronomy, performance art, tourism, and

experience based learning (KK-stiftelsen 2002). Digital media is included in the area of "media" and digital games are included in the area "experience based learning".

The expectations of the experience industry have since been high to substitute diminishing traditional industry as we leave the industrial epoch, and several of the 13 areas of the Swedish *experience industry* are flourishing while others are struggling for growth. In total the *experience industry* in Sweden increased from 1995 to 2001 with 6,4 %, consisting of 6,5 % (284 000) of the working force producing a worth of 109 billion SEK (4,5 % of BNP) in 2001 (KK-stiftelsen 2003). In 2001 media, including digital media constituted 17% of the Swedish *experience industry* being the next largest area after tourism (25,2 %) and having an annual growth rate of 1 % while experienced based learning is ranking on the 8th position constituting 4 % of the *experience industry* but with a growth rate of 13 % annually, the second largest growth rate after performing arts (25 %). The digital game area is the youngest and most promising in the new *experience industry* and constituting of only about 85 companies with 500-600 employees in Sweden. The market for digital games increases with 10 % annually in USA and Sweden (Robertson 2003). Thus the potential for growth and development of digital media and games seems to be obvious.

Digital Media and Gaming in the Experience Industry

There has been a wide range of labels for the new technological gaming such as video games, computer games, TV-games, consol games, electronic games, etc. as the technical platform for playing has changed, and I will therefore use the term digital games, as the gaming soon can be transferred between different digital platforms such as computers, play-consoles, mobile phones, digital watches, digital media plat-

forms in cars, houses and public places. KK-stiftelsen has used the word ***experience based learning***, for digital games as the area of virtual gaming is fusing with reality role gaming exemplified by the latest game developments such as "Blast Theory" fusing computer gaming, theatre, arts and performance based on the game "Majestic". In Blast Theory (Blasttheory) the player uses internet, mobile phones, gps-systems and public areas to fuse fiction and reality in a hide-and-seek game. Digital games and simulations are also introduced in science centres, museums, tourist attractions for fusing real world with virtual representations of other times and places and thereby creating a new basis for experiential learning.

A working definition of digital games has been proposed as "*interactive activities where the player has a role within an artificial world that is regulated by rules that form the challenges the player has to overcome*". But also this definition will soon be old-fashioned as the real-virtual world fusion is developing. Today over forty types of digital games have been identified such as sports, artificial life, text adventures, simulations, racing, combat, adventure, card games, quiz, strategy, puzzle, role-play etc. (Robertson 2003.) but this diversity will probably increase when more and more businesses see the potential of digital games, such as education, research, information, advertising, traditional media etc. By digital media I here refer to all traditional analogue media that has been transferred into digital form including photo, film, TV, radio, web, DVD/CD, mobile phone, gps-positioning etc.

The shift of contemporary post-modern society from the information technology society to the experience society (Pine & Gilmore 1999), attention society (Davenport & Beck 2002), transformation society (Pine & Gilmore 1999) or dream society (Jensen 1999) have profound effects on our daily lives, consumption behaviour and economical systems as well as the production within the new digital media and games. At the same time, if producers of digital media and

games can overcome conservatism, these new technologically based experiences have the potential to revolutionize our experience realms.

The concept of digital media and games already today covers a broad field of contemporary communication and entertainment. In the future it will include most of our communication systems and interaction with the machine world such as transportation vehicles (cars, elevators, trains etc.), industry and production robots, household machines (refrigerator, media centres, monitoring and security systems) and personal management technology (gps, clocks, cameras, handheld media, mobile phone and mobile internet etc.), the future potential of border-crossing, development of platform-free applications and system integrations is unlimited. Digital games with their capacity to artificially simulate real or virtual worlds will with increased computer capacity become an increasingly important learning and simulation tool in educations systems for most occupations besides being a major entertainment component. The concept of experiential learning, mostly based on Kolb's (1984) experiential learning cycle has become to embrace this whole new field of interactive learning aided by digital technology.

The digital media evolution has today become one of the fastest evolving technologies of our civilizations, and making prediction for the future more than 5-10 years seems as fruitful as making weather prognoses more then 10-20 days ahead. This technological "revolution" has in my opinion, however, been restricted by strong conservatism, in the same way as our transport revolution of cars and trains still are based on and restricted by basic concepts from the horse driven cab of the pre-industrial area. Our traditional media such as written text and photos and films have only been transferred from the cellulose area to the digital media without any transformations or evolution despite the tremendous potential for interactivity and new ways of pro-

duction within the media. In the same way traditional hide-and-seek play, war-and-fight games, race games etc. from the analogous play grounds and analogous games such as card games, puzzle games etc. have been converted to digitalized forms without any basic evolution. Of course, the power of the market and customers' conservative demands to buy "the known" strongly regulates development and evolution of new concepts, but I suspect that conservatism within the new media and game industry has in addition contributed to this restricted development.

My suggestion here is that new concepts and understandings within the area of experience production could challenge this conservatism of the digital media and game industry. Recognizing the learning aspects within digital media and games as conceptualized by *experience based learning* is a first positive step in broadening the development potential of the technology. Theories about learning through experiences have been around since the emergence of formal education (Aristoteles, Commenius etc.) and have been developed into a formal pedagogic theory of ***experiential learning*** (Boud et al. 1993; Colin & Wilson 2006; Kolb 1984; Mulligan & Griffin 1992), but need further development based on new understanding within experience production.

Experience Production within Digital Media and Games

Within the area of experience production the development of theories was boosted by Pine & Gilmore's theory of the Experience Realms (Pine & Gilmore 1999) and several attempts to find theoretical frameworks for experience productions have been proposed (Gelter in this collection). These have the potential to form a theoretical platform for a creative and border crossing evolution of the digital media and game industry. In this paper I will restrict the concept of experience

production to the proposed experience realms of Pine and Gilmore (1999) as an example of concept development for the digital media and games.

The theory of the experience realms was developed by Pine and Gilmore (1999) as a theoretical foundation for the experience industry (Figure 1). According to Pine and Gilmore staging experiences is not about entertaining consumers, but rather about engaging them. Thus a primary dimension in experience production is that of consumer engagement in the experience which will be the first dimension in our analysis of digital media and games (Figure 2).

Figure 1. The Experience Realms of Pine & Gilmore (1999, 30).

Engagement

At one end of the engagement spectrum lays passive participation where consumers do not directly affect or influence the events in the experience, but rather are pure observers or spectators or listeners of the production. This is the realm of the traditional entertainment such as watching TV, listening to radio, watching DVD-film etc. At the other end of the spectrum lies active participation where the consumers personally affect the performance or events of the experience and active create their own experience. Within digital media this can represent producing and consuming your own media production, being a "***procumer***" such as producing your own Bloggs or Flickr on the Internet or producing your own movie to be consumed by yourself in by a company offered setting, or playing a laser game.

In between these, lays an area of interactivity where the experience producer has set the stage and possible events, but the consumer by interactive actions can choose the sequence of the events. Here we find most digital games and the future of interactive media (interactive TV, interactive marketing etc.). In figure 2 you find some digital media and games along the engagement dimension. The position

Figure 2. Some digital media and games plotted along the customer's participation dimension.

along the axis is not based on any absolute ranking criteria, but rather on relative subjective criteria.

From figure 2 we can see that most digital media such as television, CD-music, DVD-movies, etc. still are on the same passive participation end of the consumers engagement dimension as their preceding analogue media. Digital media is today still passively consumed although some interactivity through mobile phones and SMS are associated to some TV-programs such as voting for and eliminating of actors in TV-drama etc. Even newscast and newspaper on the internet are still not more than traditional analogue techniques transferred to the digital media platform. Despite the evolution from analogous to digital platforms and the potentiality of digital media for interactivity they still are in the same experience realm as their preceding analogous ancestors. Thus the potential for introducing true interactive experience into media production has a high potential to revolutionize the new digital media.

In DVD-movies the guest can to some extent interact with the DVD production by choosing excluded scenes, interviews, background information, but such information is still passively consumed. Digital photo has been reshaped by the introduction of digital photo editing and filtering by photo-software such as Photoshop and others, letting the photographer interact in an active post-snapshot creation of the photography. Webpage's of the internet are still mostly passively consumed, although new webpage programming through Flash and other techniques allows for higher interactivity. Here the bandwidth connections to the internet and the development costs for high interactive webpages limit the development of the guest's active participation of the internet experience production. As the bandwidth transfer technology develops the interactivity on homepages will increase. Also digital marketing, either through television/radio or internet is still within the passive consumption realm

with the potential to develop into a future field of interactive marketing. Here experience production can open completely new ways of interactive or even consumer active marketing strategies through the digital media, where direct consumer opinions instead of scripted actor statements will be a new marketing field, already used by many internet sales sites such as amazon.com. If these presently text-based consumer feedback interactions were developed into picture based, story telling based or even game based customer feedback marketing, marketing would develop into ***marketainment***.

Digital games have developed furthermost in integrating player's activity in creating the playing-experience. From its origin of simple arcade games which basically were pure and simple entertainment games, game technology has opened for a high degree of interactivity and engagement of the player in the game performance. Even though the player can choose from an increasing number of scenarios, stories and arenas, these are still produced by the game producers, thus limiting the player to an interactive player of predefined settings and staging. Some digital games allow the player to build their own game arena such as building your own car race track or roller cast arena and then go for a ride. This will be the next step in game experience production – to create your own game worlds with your own rules, participants, stories, scenarios and even own natural laws for the behaviour of the events in the experience. Thus the next mode in the evolution of digital games would be that the players create their own universe of experiences with their own rules and the game producers only providing the tools for this.

One major step in the evolution of digital games was online-gaming, creating world-wide gaming communities, thus enabling the player to choose his or her co-player from around the world. This evolution was again initiated by text based interactions such as MUD (Multi Used Dudgeon) as technology initially only allowed text based interaction. The

thousands of MUD-communities have now through games such as Doom, Quark and others developed to graphic based internet play communities. Such LAN-gaming has become a compliment or in worst scenario substitute for social interactions among youth. This development of game communities has paralleled the development of internet communities such as Lunastorm and others and new forms such as Blogg and Flickr communities are evolving fast. In such game and social virtual community settings the person can create and switch between different personal characters or rolls. Creating and switching between multiple identities is characteristic for the transformation society (Pine & Gilmore 1999). In graphic based communities such alternative identities take the shape of avatars of celebrities, monsters or completely new creatures. These virtual communities allow the person to create their own social experiences and virtual life styles. With the use of webcams and microphones these virtual communities can interact, play games or just communicate in real person or with artificial avatars in different constellations of pre-created or through player's interaction created common virtual universes. In such complex virtual communities the simple entertainment realm has evolved and blended with both escapistic and educational realms of experiences. This development of digital game communities is evolving so fast way, and academic research and even commercial applications hardly has grasped its complexity and utility.

Within gaming and entertainment now the trend is technology fusion, where game consoles such as Sony Xbox become more and more entertainment centres with the integration of mp3-music, DVD-movies, webcam for internet communities etc. The same trend occurs within traditional computers and home entertainment equipment as well as palm computers and mobile phones. These new "media-multitasking" capabilities of the new entertainment centres enables a high interactivity with the media in the form of

easy switching between different media forms but as long as the different media components not evolve per se, it is still a kind of semi-interactivity. True interactivity and participatory experience production need an evolution within each media form such as higher interactivity in movie production, music production etc., something that traditional media producers resist to develop, as their artistic control over their productions will vanish. Technology for interactive film and movie production already exists as well as morphing functions for pictures, movies and now even music. Such highly interactive or even guest driven media productions will open completely new business areas within the traditional media industry.

Involvement

A second dimension in Pine and Gilmore's Experience realm (figure 1) describes the connecting or environmental dimension that unites the consumer with the event or performance of the experience. At the one end of this spectrum lies ***absorption*** of the experience, a person's attention to bring the experience into the mind. When watching TV the produced experience (the program) "goes in" and the consumer is absorbing the experience, like a "sponge" is absorbing water. On the other end of this dimension lays ***immersion,*** the ability to become physically or virtually part of the experience. The consumer "goes into" the experience as when playing a virtual reality game and becomes immersed in the experience. When combining these two dimensions Pine and Gilmore define four "realms" of experiences; entertainment, educational, escapist and aesthetic realms that can comingle to form unique personal encounters with the events in the experience.

Figure 3. Some present and future applications of digital media and games based on the experience realms of Pine and Gilmore (1999).

Entertainment Realm

The **entertainment experience** realm where the consumer passively absorbs the experience through their senses, generally visually and auditory is easiest associated with the digital media and games. Most of traditional media production such as TV, DVD, CD, mp3, homepages etc. is for passive media consumption, mostly for entertainment. Most simple arcade games can be included in the entertainment realm although they demand some simple actions of the player. To distinguish such media entertainment from other media forms we could use the term ***mediatainment*** for passive absorption of entertaining media experiences.

Educational Realm

Active media consumption for learning, news updates etc. would need active attention and active absorption of the information and thus be in the **educational experience** realm. When combined with joy and fun, and becoming a part of entertainment business such learning is called ***edutainment*** (Kotler 1978; Pine and Gilmore 1999). Here the consumer is actively participating in and absorbing the events unfolded before him or her in the experience. Active learning can be according to some education systems in both formal educations with pedagogic theories and more informal learning systems as in many experience based learning systems within the experience industry, such as digital games, science centres, theme parks, visitor centres etc. To learn from the experience, to improve knowledge and skills, the educational experience must actively engage both the mind for intellectual education and the body for physical training. In digital game, although bodily mostly immobile, there is still a high physical activity controlling the actions within the game. Kotler (1978) introduced the metaphor of the classroom as "theatre" and encouraged "educational packages" to be more like Hollywood film productions in providing "multimedia experiences" where students are both instructed and entertained, which he called edutainment. Within media production both film and television have long been used as educational aid. After the emergence of digital media instructional DVD programs, computer aided learning programs and educational websites became important compliments to traditional learning aids such as text books. Experiential learning through digital games has attracted recent attention, but most games are still designed for pure entertainment although learning is always associated with experiences (Robertson 2003).

Escapist Realm

The third experience realm of Pine and Gilmore is **escapist experiences** that involve the complete immersion and active involvement in the experience, often resulting in the flow experience of Csíkszentmihályi (1990) where the experience of time disintegrates. In contrast to passive entertainment experiences such as watching others act, in escapist experiences the consumer becomes the actor affecting the actual performance in the experience. The consumer becomes the producer, a "***procumer***". Often adventure is the key script of the escapist experience including the transfer to new environments, virtual or real, and the confrontation with the unknown and unexpected. If combined with having fun and play I would denote such experiences as ***adventuretainment***.

Within digital media and games the escapist experience realm will be found in virtual reality action games, chat rooms and internet communities and motion-based simulation attractions such as "Tour of the Universe" in Toronto, a flight through outer space simulation where the guest has to check-in into a future space air-port before entering the space shuffle in the flight to the moon. Several such motion simulation rides based on popular science fiction movies have been developed such as "Back to the Future: The Ride", "Terminator 2: Battle across Time" "Robocop", "Days of Thunder" and others that are based on "Now you have seen the movie, go experience the ride!" (Pine & Gilmore 1999). Today no major film movie can be released without an associated digital games shifting digital media consumption from only passively watching the movie to afterward also "participating" in the movie story through the digital game. Here entertainment is fused with escapism.

Escapist experiences not only take the guest from his or her ordinary life but also to some specific place or activity or more recently transform the guest into someone or something completely different. A frequent escapistic experience in digital gaming such as computer-based games is to let the player transform into a superstar or celebrity, may it be in sports, combat or social interaction games. Even virtual celebrities are created to be played such as Lara Croft in Tomb Raider. Thus cyberspace has become the most accessible escapist experience which today involves most young people around the world and has become a second home or a respite from the demands of the real life for many. Several Science Fiction movies have addressed the future of virtual escapist experiences ranging from taking virtual vacations to experiencing other person's life experience to actually live the virtual world as in the Matrix movies. As computer power increases, the possibilities to create realistic new virtual worlds for escapist experiences will boost, and the consequences of people withdrawing from real life escaping into virtual worlds have not yet been fully understood.

Aesthetic Realm

The fourth experience realm of Pine and Gilmore is the ***aesthetic*** where the consumers immerses themselves in an event or environment of the experience but they have little or no effect on it, leaving the environment of the experience untouched. Such experiences include visiting nature scenery, art gallery or museum or designed architectural environments where the main goal is not to learn as in educational realm, or to do as in escapist experience, or to sense as in the entertainment realm, but just to be there, being passively immersed in the experience. Such aesthetic experiences have often a touch of spiritual or existential experience (Gelter 2000), trigging

reflection and existential questions, stopping the mind, having a kind of restorative effect (Gelter 2000; 2006b), which I have called ***contemplatainment***. Such aesthetic experiences have until today few applications within digital media and games. Although some movie and TV productions as well as some music productions can have contemplative effects through aesthetics and restorative function, they are not true *contemplatainment* in this sense as there is no immersion in an environment, but rather absorption of the media. Virtual reality has however the potential to create true immersions into the experience, and the field of producing virtual *contemplatainment* through virtual aesthetic environments that have restorative, spiritual and existential effects have still not been fully explored. Bio-feedback is an increasing application and merging bio-feedback with the media or game production to truly create an immersion in the experience can open totally new applications. As an example could be the immersion into a virtual world where there is nothing to do but just to be passively immerged and amazed in its great design initiating contemplatation and deep reflections.

Another application of the aesthetic realm of experiences would be the improvement of the real world aesthetics by blending it with virtual world aesthetics improving or transforming places for experiences. By such virtual transformation or reality, in extreme cases a "blue-screen" room can take you to any place or time or even create new worlds of experiences. Digital picture frames are already on the market and digital wallpapers are soon a reality. Bio-feedback systems together with morphing techniques can respond to your mood and stress levels to optimise your physical settings at office or at home for different purposes such as creativity, de-stressing, optimal virtual meetings etc.

Integrated Experience Realms

An interesting development for the digital media and game business would be the integration and blurring of boundaries between the four experiences realms of Pine and Gilmore. Most experiences today engage primarily through one of these realms, border-crossing can open up new areas for digital media production. To cope with the demands of the experience society, especially with young people born within the digital communication society, media productions have to design rich, compelling, challenging and engaging experiences that include and explore all aspects of the experience realm.

An example on integrating *mediatainment* with *adventuretainment* could be a "***procumer-movie-house***" where each room of the house exposes one side of the story of the "movie" and by moving around between rooms different angels of the drama are revealed. The exploration of the different rooms would form the adventure. By letting the spectator interactively influence the drama the "procumer-movie house" would never have the same story or drama – every "production" would be new based on who the procumers are and what do they decide. By blending in virtual reality the experience can obtain additional depth, and by including bio-feedback additional interactivity can reached.

In a similar way a true digital interactive studio could be based on interactivity through the procumers movements, modes and feelings and brain activity scanned by bio-feedback influencing the music, the lightning, the colouring, the picturing, the film projections and other media features which are morphed according to pre-chosen themes – the interactive show theme. Again the experience would be unique at each performance, and such "***morph-house***" could be a kind of digital concert hall where the spectators, the procumers, themselves create the digital symphony experi-

ence. The aesthetics and artistry would not be in the media experience production per se, but in the staging and theming of the performance. This would be a completely new art form and experience production.

Conclusion

With the risk of "Amusing Ourselves to Death" (Postman 1985) in our experience society or entering a century of Matrix-fused real life – virtual life worlds the prospects of the future of interactive digital media and gaming are both fascinating and scaring. The downside with game and media addiction and the health problems from physical inactivity have to be incorporated in the future development of digital media and games. Therefore the physical real life games fusion with virtual reality games such as in "Blast Theory" is promising (Blasttheory). In the game "Uncle Roy All Around You" (2003) the players had palm and laptops and were directed around a city by phone calls, SMS, mails and other clues in the hunt for Uncle Roy. Similar concepts have been produced within TV-productions where actors in real-time guided by clues seek e.g. treasures. In the future, with interactive TV in combination with other media (SMS, phone, etc.) even TV-audience can have the possibility to take part in such hide-and-seek productions and in real time. With the ***five brothers of experience production***, *Courage, Creativity, Crossover, Competence and Commitment* new fantastic applications such as the morph-house, procumer-movie-house, Blast Theory games or other procumer applications can be created within the developing digital experience industry.

References

Blasttheory, www.blasttheory.co.uk

Boud, D., Cohen, R. and Walker, D. 1993. Using Experience for Learning. Open University Press. Bristol.

Caves, R. E. 2000. Creative Industries. Contracts between Art and Commerce. Harvard University Press. Cambridge.

Csíkszentmihályi, M. 1990. Flow: The Psychology of Optimal Experience. Harper Perennial New York.

Colin, B. & Wilson, J. 2006. Experiential Learning. A Handbook for Best Practice for Educators and Trainers. Kogan Phase Ltd. London.

Davenport, T. H. & Beck, J.C. 2002. The Attention Economy: Understanding the New Currency of Business. Harvard Business School Press. Boston.

Gelter, H. 2000. Friluftsliv – the Scandinavian Philosophy of Outdoor Life. Canadian Journal of Environmental Education 5, 77-92.

Gelter, H. 2006a. Towards an Understanding of Experience Production. In Kylänen, Mika (ed.): Articles on Experiences 4 – Digital Media & Games. Lapland Centre of Expertise for the Experience Industry. Rovaniemi, 24-46.

Gelter, H. 2006b. Friluftsliv as Slow Experiences in a Post-Modern Experience Society. In Hendersen, B. & Vikander, N. (eds.): A Way Home to the Open Air. Manuscript.

Jensen, R. 1999. The Dream Society. McGraw-Hill. New York.

KK-stiftelsen 1999. Blandade upplevelse [Mixed experiences]. Stiftelsen för kunskaps- och kompetensutveckling. Stockholm.

KK-stiftelsen 2001. AHA-Sweden: Om Svensk upplevelseindustri och början på något nytt. [About the Swedish Experience Industry and the Beginning of Something New]. Stiftelsen för kunskaps- och kompetensutveckling. Stockholm.

KK-stiftelsen 2002. Upplevelseindustrin i Sverige 2002. Näringsliv och utbildningar. [The Experience Industry in Sweden 2002. Business and Education]. Stiftelsen för kunskaps- och kompetensutveckling. Stockholm.

KK-stiftelsen 2003. Upplevelseindustrin i Sverige 2003. Statistik och jämförelser [The Experience Industry in Sweden 2003. Statistics and Comparisons]. Stiftelsen för kunskaps- och kompetensutveckling. Stockholm.

Kolb, D. A. 1984. Experiential Learning, Experience as the Source of Learning and Development. Prentice-Hall Inc. Englewood Cliffs.
Kotler, P. 1978. Educational Packagers: A Modest Proposal. The Futurist, August, 239-242.
Mulligan, J. and Griffin, C. 1992. Empowerment through Experiential Learning. Explorations of Good Practice. Kogan Page Limited. London.
Pine II, B. J. II and Gilmore, J. H. 1999. The Experience Economy. Work is Theatre and Every Business a Stage. Harvard Business School Press. Boston.
Postman, N. 1985. Amusing Ourselves to Death: Public Discourse in the Age of Show Business. Penguin Books. New York.
Robertson, E. 2003. Datorspelindustrin 2003. [The Computer Industry 2003]. Mötesplats upplevelseindustrin Karlshamn.
Wahlström, B 2002. Guide till Upplevelsesamhället [Guide to the Experience Society]. SNS Förlag AB. Stockholm.

Strategic Design and End-User Knowledge in Experience Production

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Product development is often perceived as a one-dimensional activity, which aims at developing the technical properties of products. Projects carried out by the Faculty of Art and Design at the University of Lapland emphasise the perspective of the end user, which constitutes the starting point for the cultural and social characteristics of products. In present-day society, cultural and social significances become emphasised as product qualities, such as in extended product ranges. (Cagan& Vogel 2002, 60.) Aesthetic characteristics, content services, interfaces and technology are used to customise products equipped with similar technical properties in order to suit varying social groups (du Gay et al. 1997, 62). On a large scale, this is what has occurred in the development of mobile phones, and a similar approach is prevalent in the automobile and clothing industries. This article presents the significance of end-user knowledge when designing new products as well as a method that can be utilised to manage and make good use of knowledge. An end-user

oriented approach is one of the cornerstones of this study (Aula et al. 2005, 9-14). End-user orientation is seen as an expanding phenomenon that does not focus solely on an individual; rather, it focuses on the cultural and social contexts surrounding the individual (Aula, 256, 2002).

Two projects form the background to this article: Emergence of Luxury, funded by the Academy of Finland Research Programme for Industrial Design, and Future Finders, funded by the DESIGN 2005 Industrial Design Technology Programme of the National Technology Agency, Finnish Funding Agency for Technology and Innovation. The objective of the Emergence of Luxury research project is to conceptualise the nature of high-end design products from the perspectives of historical and future-oriented research. The project analyses the significance of design competence and tacit knowledge invested in products as reflected in the experience of different users and communities. The first objective of the Future Finders project was to determine the value structures interlinked with future trend-setting design products and technologically high profiled products as well as the usage paths of products and services. The second objective was to focus on developing method competence from the perspective of clothing and product design.

Strategy

A corporate strategy is used with the aim of managing long-term plans in corporate activities. The decisions related to new products and product groups are key tasks on the strategic level. Technology strategies are some of the strategies to have become more prevalent and better known in recent years. They aim at shaping a clearly visible path from the present to the future and to the technological choices affecting the company. Design strategy in companies is a much

lesser known thing. Design strategy can be seen as a specific way for each company to do things, the practical effects of which are realised in marketing and production strategies. (Gross 2000, 185; Järvinen & Koskinen 2001, 33-34.) The idea of end-user orientation brings a new perspective to both strategic and design strategic thinking. End-user orientation, which is built on an understanding of socio-cultural contexts, enables forecasting the cultural and social characteristics of products alongside technological properties. The socio-cultural context is formed as the result of the daily functions and activities of consumers and end users. Changes in daily activity can be seen as cultural and social changes. As it becomes possible to model the changes in these states, it will be possible to transfer them to be utilized in product development activities. Thus, the forecast of cultural change can be assigned a strategic position in designing new products and product groups. (Hasu et al. 2004, 39-40.) Industrial design – as a strategic corporate activity – explicitly includes the forecasting cultural change (Press & Cooper 2003, 12).

The Emergence of Luxury and Future Finders projects aim at studying cultural significances in various leisure cultures of use (snowmobiling, golf, hunting and sailing) and through this, to create competence that furthers the utilisation of design as strategic competence. The research and development being conducted as part of the Emergence of Luxury project provides the basis for understanding the choices and decisions made by end users as well as those values that the varying communities underline in relation to new products that are on the horizon. The Future Finders project concentrated on strategic-level decision-making and thus, on its development through methodology and on its development through the use of methodology. With respect to strategic product development, the focus was in finding and verifying new product potential (Diagram 1). Activities focused on researching cultures of use and on forecasting

changes in them from the perspective of corporate product development strategy.

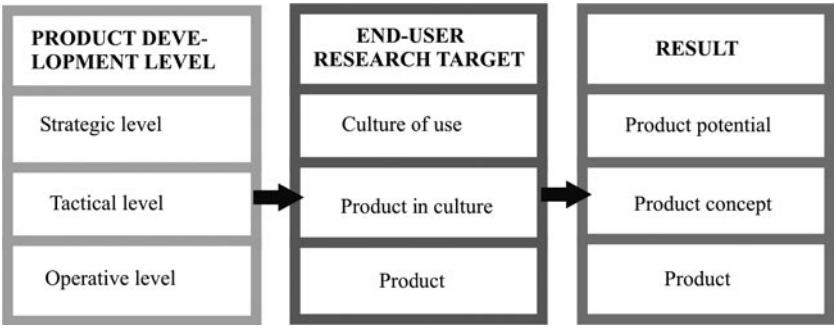


Diagram 1. Product development levels and design activities.

FF Tool Method

The objective of the project to develop method-based competence was based on the Socio-Cultural Context (SCC) model developed during the Mode project (www.ulapland.fi/mode). New example cases and data have been used in an endeavour to expand competence and perspectives, especially from the perspective of strategic design. The new tool has been named as FF Tool.

The FF Tool is an instrument that enables the systematic observation of the socio-cultural context and the forecast of changes in the future. Context factors and their variables are key elements of the tool (Diagram 2). From the perspective of the factors, the product development process determines the best descriptive variables for each case. Variables can be described in written text, words or pictures. The variables presented in Diagram 2 were created based on studies. Seven different research cases have been taken into consideration when determining the variables, each of which has included

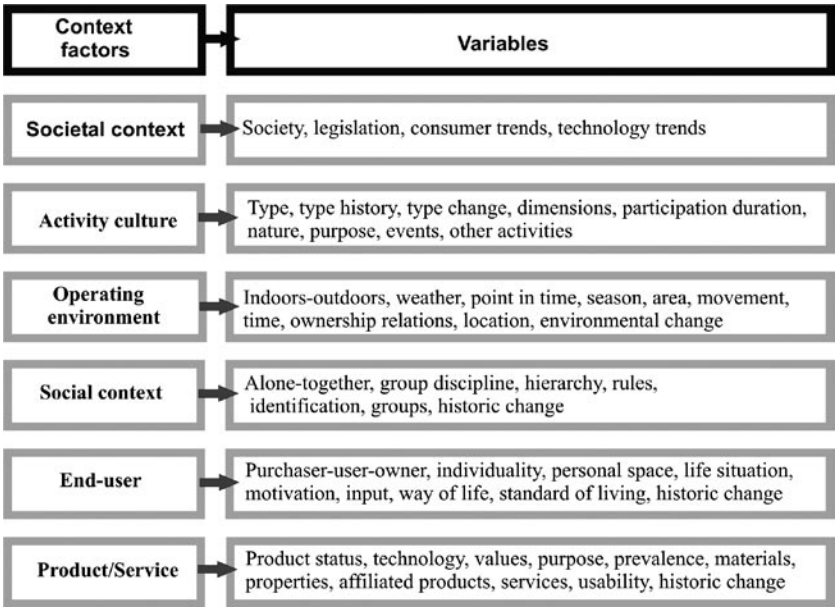


Diagram 2. FF Tool context factors and variables.

2-5 focus group interviews. For instance, the variables society, legislation, consumer trends and technology can be used when explaining societal context or they may be used to assist determining it. In turn, the variables type, type history, type change, duration, nature, purpose and other activities help determining the activity culture factor. When the model is applied, the use of the variables presented should be seen as an opportunity. It is unnecessary to find each variable from one's own data but based on the data, one's analysis may discover new variables not included in the list. Nevertheless, at its best, the list serves to assist with identifying the factors and to refresh one's memory when using the method.

FF Tool Process

The research projects have applied the method in two ways. The first approach is a relatively heavy way of working based on research knowledge and more in-depth analysis. The other approach to using the method is to utilise the context factors and variables as a quick "check list" in product development and design work. The first approach calls for more extensive research data and their analyses. In this case, it is good to turn to varying data analysis programs. This approach is good to use when the objective is to create new strategy opportunities for a company. In the lighter approach, the method is used as a checklist to ensure such things as the utilisability of different perspectives that support end-user orientation.

The FF Tool process is divided into two main parts: modelling the present and the future (Diagram 3). Context factors and variables are used as the basis to create a scenario that describes the current context of end users. Research data on users' daily lives are used as the foundation for creating the present scenario. At the same time, an image of a company's products and their interlinked strategies must be created. After the present scenario has been created, a future scenario for the desired point in time is defined for the same perspectives. The future scenario serves as the basis for such

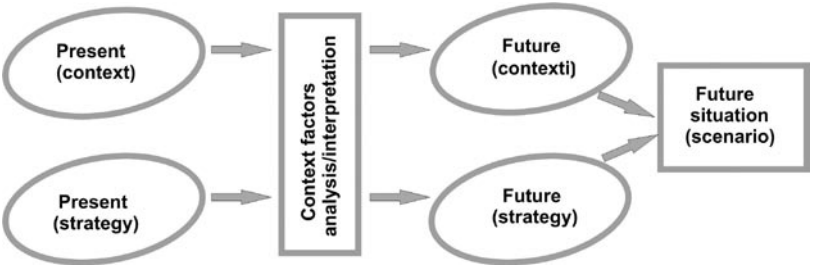


Diagram 3. FF Tool process.

things as scenario working or directly for designing products or an entire product group.

In practice, the FF Tool can be a table with space reserved for each factor and variable. The table is filled in from left to right. Terms, sentences or pictures may be used to fill in the table. The perspective of each factor proceeds via the variables and along its own row across the diagram to define the present, and again from there to visualise the future scenario. Therefore, the completed table shows the future scenario as determined from the perspective of each factor. This information can still be further adapted to a more general form.

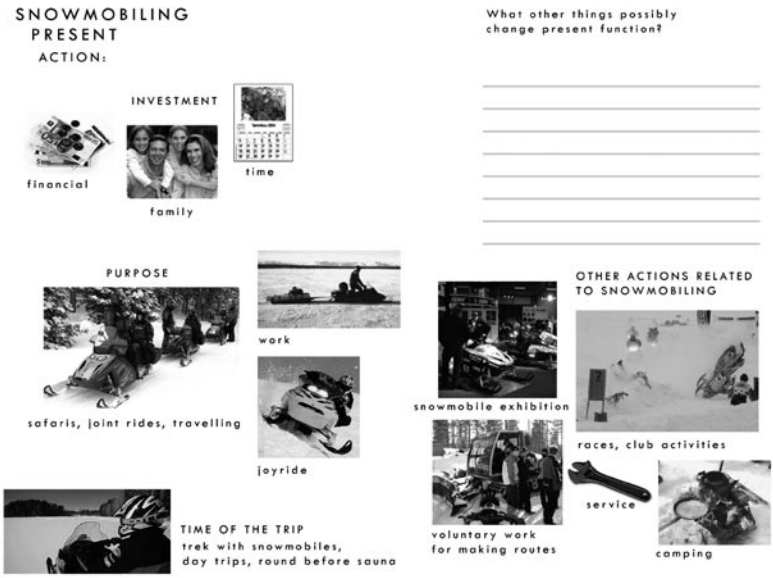
Research Data and Analysis Used in the FF Tool

The FF Tool has been designed to be relatively flexible in terms of research data. The method uses qualitative data during the research and development phases. In terms of developing the method, the utilisation of quantitative data has not yet been applied. No obstacles to using qualitative data have been found. The data gathered in developing the method has been collected through *focus group interviews*, and they have been processed in the manner required by academic/ scientific research. Data suitable for being applied to the method at this stage are *interview, observation* and *visual data* and various written *documents* (e.g. company annual reports). Besides interviews and research, a designer's or company's tacit knowledge, a corporate strategy or even pictures can be used as data. The FF Tool modifies the data into an easily understandable format. Thus, the tool also assists with improving the transparency of design. It is easy for the product development group to communicate throughout the entire design process and also to return to stages of design later on. The completed tables should be saved as they

themselves function as data in future processes. When well archived, the tables combine to form a considerable amount of data interlinked with the relevant context, corporate strategy and forecast of the future.

In the method, analysis is performed utilising written text and pictorial information. There are two stages of analysis: the present and the future. The analysis of the present is performed using the factors of a context in worded or partially pictorial form (Picture 1 and Picture 2). The objective in analysing the present is to devise a clear and comprehensive presentation of the type of everyday situation.

The illustration/analysis of the future is carried out based on the illustration of the present. The variables in the FF Tool's context offer a central framework in transferring from the present to the future. At that time, it should also be



Picture 1. Result of analysis of the present, snowmobiling/operating environment.

borne in mind that the transfer takes place from conducting research to engaging in planning/ design. The objective of visualising the future can be an illustration of a new product concept or a new product family, an illustration of a new/ developed leisure activity/ way of life or it may be a combination of these. The visualisation of the future can be made in a form suitable for the maker, either written or pictorial. An example of a scenario that combines both these means of presentation is given in Picture 1.

Picture 2. Example of visualising the future, hunting scenario.

Conclusion

In developing and applying the method, there is always the danger of believing that it will solve problems on behalf of the maker. The objective of methodology is to help bring matters and perspectives to the fore as well as to generate transparent processing. The starting point for developing this method has been to take end-user orientation into consideration. The adoption of the FF Tool method alone does not mean the arrival of end-user orientation in a company.

End-user orientation is still the aesthetic choice of the company or actor and the FF Tool provides just one possibility to carry out this selection.

References

Aula, P. 2002. Senior Citizen and Information Technology. In Ylimaula, A-M. (ed.): Designing for the Future. Future Home Institute/ University of Art and Design. Helsinki, 248-259.

Aula, P., Falin, P., Vehmas, K., Uotila, M. and Rytilahti, P. 2005. End-User Knowledge as a Tool for Strategic Design. Digital Proceedings of Joining Forces: Fostering Innovations. International Conference of Design Research, September 24th – 25th 2005. CD-Rom. University of Art and Design, Helsinki.

Cagan, J. &Vogel, C. M. 2002. Creating Breakthrough Products. Prentice Hall PTR. Upper Saddle River.

Falin, P. 2005. Luxury – Its Multiple Aspects and as Subject of Design Research. Designfacts 2. Information on design research projects financed by The Academy of Finland and Tekes (The National Technology Agency of Finland, Finnish Funding Agency for Technology and Innovation), 5-6.

du Gay P., Hall, S., Janes, L., Mackay, H. and Negus, K. 1997. Doing Cultural Studies. The Story of the Sony Walkman. Sage Publications. London.

Gross, N. 2000. Engineering Design Methods. The Open University. John Wiley and Sons LTD. Milton Keynes.

Hasu, M., Keinonen, T. and Mutanen, U-M. 2004. Johdanto teknologiateollisuuden muuttuviin muotoilukäytäntöihin. [Introduction to Changing Design Practices in Technology Industry.] In Hasu, M., Keinonen, T., Mutanen, U-M., Aaltonen, A., Hakatie, A. and Kurvinen, E. (eds.): Muotoilun muutos - Näkökulmia muotoilutyön organisoinnin ja johtamisen kehityshaasteisiin 2000-luvulla. [The Change of Design.] Teknologiateollisuus ry. Technology Industries of Finland. Helsinki, 11-44.

Järvinen, J. & Koskinen, I. 2001. Industrial Design as a Culturally Reflexive Activity in Manufacturing. Sitra Report Series 15. Gummerus. Saarijärvi.

Press M. & Cooper, R. 2003. The Design Experience. Ashgate. Corbwall.

Uotila, M., Aula, P., Vehmas, K., Pyykkönen, M., Juntunen, M. and Rytilahti, P. (eds.) 2005. FutureFinders. Strategic Design and Modelling of Future Finders. CD-Rom. Department of Textile and Clothing Design. Publications of the Faculty of Art and Design B6. Research Reports. University of Lapland. Rovaniemi.

Pluggable 3D Stereographic

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Introduction

3D stereographic denotes three dimensional (3D) images that are constructed with two dimensional (2D) images from slightly different view points. In general, 3D stereographic is produced with computers. Thus the third dimension is often denoted as depth in addition to the two previous dimensions denoted as width and height. Indeed the depth vision of human is based on our natural ability to see the world with both eyes, thus resulting two slightly different views, which the brain combine and we sense all the three dimensions. In Figure 1, an example of this phenomenon is illustrated. Finally, 3D graphics is often understood to mean images similar to photos we are familiar with. But for real, 3D stereographic is an image similar to what you actually see with your own eyes, although, the third dimension is an illusion created by our brain. So actually, you see the objects floating in the air but you cannot actually touch them.

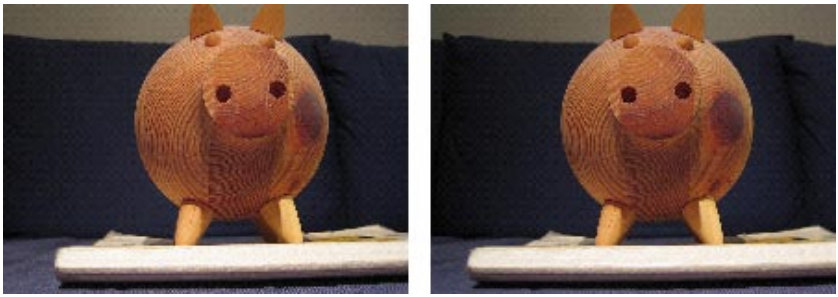

Figure 1. A wooden piggybank from two slightly different view points.

Several years ago film makers invested a lot of money to produce stereographic movies by several viewing technologies (Lipton 2001). These movies were watched, for example, with spectacles of different colour lenses. Thus, the film making and viewing with analogue technology was expensive and could not bring back the money invested. But the progress of film industry towards the aid of computer technology has made utilising of stereographic with movies once again appealing. This progress is in general trivial with movies containing only computer graphics but can also be utilised with shooted movies with live actors. Today we can buy the Shrek 3D (Copyright: DreamWorks Pictures and Pacific Data Images) video produced by the anaglyphic technology. The producers of Shrek have added some scenes to support the stereo effect especially.

Stereographic Technologies

Stereographic is more than hundred years old technology. The demand for utilising stereographic is to let both of the eyes to see the images intended for one eye only. Because if one eye sees the images intended for both of the eyes, the illusion is disturbed and sensing of the third dimension can

be lost resulting flat images only. The difference between the different view ports of the images is denoted as parallax. It determines if the objects are sensed to be front of the display that is, floating in the air, of back of the display. If the parallax is exaggerated, the illusion can also be lost. However, there are several ways to achieve this goal to enable stereographic. One of the earliest solutions was utilisation of optical constructions where the images were seen through peek holes. For example, some people are familiar with the Viewmaster that was utilised to watch stereographic image pairs on discs. Nowadays, it is common to use computers for producing stereographic for product modelling and virtual reality applications such as Lumeportti at VTT Technical Research Centre of Finland.

The light is an electromagnetic wave that has polarization, and according to ray model, reflection and refraction as aspects of propagation. In addition, the optical properties of the material have impact on light dispersion. (Young & Freedman 1996.) The light visible for human, that is, the visible spectrum containing all of the colours, can be illustrated with a prism. Indeed, black is lacking of light and white light is achieved when all of the different colours (lights), are added. This is denoted as additive colour theory that is utilized, for example, with televisions and computer monitors. In contrast subtracting colour theory is utilized, for example, with the print technology. Also some other colour theories exist such as Goethe's used by artists. For now on, we concentrate on the additive colour theory because it is in practice utilised with the computer display technology and human eye.

The human eye is capable to sense red, green and blue light often denoted as RGB (Red Green Blue). These are also the basic colours that can produce all the other colours when they are mixed or added with different proportions. Each pair of the basic colours forms a complementary colour for the third basis colour. These complementary colours are

cyan (green plus blue), magenta (red + blue) and yellow (red plus green) also denoted as CMY (Cyan, Magenta, Yellow). According to the additive colour theory, any of the colours of RGB with its complementary colour produces white light, that is, all of the colours. When utilising the RGB/CMYK colour theory an HLS colour space is normally used to view the qualities of the colours: Hue = the actual spectral color-value, Lightness = means the amount of white in the colour (all colour components) and Saturation = the amount of black (lack of light) in the colour. Other similar type of colour spaces are: CIE, Munsell and GATF (Kuukkanen 1978).

Anaglyphic technology utilises one basic and the corresponding complementary colours for producing stereographic. Thus two images from different viewpoints are combined to an overlaid image where one image of the stereographic image pair does not contain one basic colour and the other does not contain its complementary colour. When the resulting image is viewed with spectacles so that the other lens of the spectacles is the corresponding basic colour and the other is a complementary colour, a stereographic image is seen. A common choice is red for the left lens and cyan for the right lens. In Figure 2, the piggybank shown earlier has been constructed with anaglyph technology. In addition the spectacles for viewing it are shown.

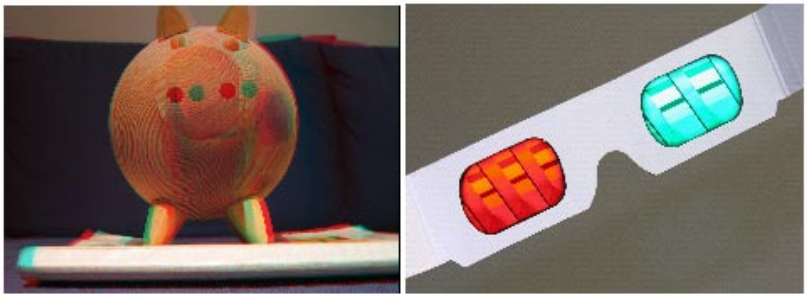

Figure 2. Anaglyph image of piggybank and spectacles for viewing it.

The other technologies for producing 3D stereographic utilised the other properties of light. For example, with polarisation technology, a polarizing filter can be used to pass light waves with a specific direction of polarization. Thus two projectors with different kind of polarisation filters are casting the images from the different view points on the same canvas, thus, producing an overlaid image. That image is then viewed with spectacles with correspondingly polarised lenses to see the stereographic image.

Both anaglyphic and polarization stereoscopic technologies are denoted as passive stereo technologies. An example of active stereo technology is shutter glasses. There the two images from different viewpoints are constantly switched and the corresponding lens of the shutter glasses is opened and the other is closed. If this is done rapidly enough and synchronously one eye does neither notice the shutter lens nor see the image intended for the other eye. The term frame denotes one image and frame rates how man images are shown in a certain time, normally in a second (frames per second, fps). If frame rate is high enough, the human eye does not notice single frames but sees continual movements. For example, the current television standard agreed in Finland states that frame rate is 25 fps. With frame rate too low, the movements can be jerky such as in some old silent films.

Another technology denoted as autostereoscopic 3D displays takes the stereographic experience even further because one does not even have to wear any special spectacles (Dodgson 2005). This is based on the sequence of half barrels or grid in front of the screen that refracts so that each of the eyes sees different pixels of the screen. A pixel is the smallest area on the screen that can contain one colour. For example, nowadays a usual screen resolution of a 19 inch computer monitor is 1280 pixels width and 1024 pixels height thus ca. 1.3 million pixels (1.3 Mega pixels).

Remarks on Stereographic

All of the stereographic technologies have pros and cons. In theory shades are not lost but in practice some attenuation can be seen. It should also be noted that stereographic is not the only possible way to achieve depth cues. Other visual depth cues can be utilised to provide the relative distance of objects in the view such as a photograph. Some example of the monoscopic depth cues are 1) *interposition*, an object is closer if it blots out other object, 2) *size*, similar object is larger if it is closer than it is further, and 3) *perspective*, the parallel lines converge at a single vanishing point. In addition there are depth cues based on motion and physiology. (Sherman & Craig 2003.)

There are situations when the stereographic can not be applied. First, some of the people are not able to see stereographic images. The sight can be impaired or lost for the other of both of the eyes. However, when the distance to the object is great enough, the stereographic effect is lost anyway. For people with colour blindness, the anaglyph technology can be improper. In addition, the anaglyph and shutter glass technologies can cause indisposition based on the disturbance on the images. With polarization and autostereoscopic 3D displays technologies this should be avoided at least if the parallax is not exaggerated.

From the economic point of view, the anaglyph technology is by far the most inexpensive. All you need to see the depth illusion is a pair of red/cyan spectacles worth of not more than ~30 cents. No expensive investments will be needed because any single display device, such as television, computer monitor, projectors, head mounted display, hand-based display such as mobile phone or handheld etc. can be utilised. Instead, for the polarization technology two projectors and a canvas are demanded that increase costs although the spectacles are quite cheap. For the shutter glass

technology it is demanded that the display device can switch images with high enough frame rates also the spectacles are expensive than with anaglyph or polarisation technology. Finally, for the autostereoscopic 3D display exactly that display is needed, and it still is a developing technology. For large audiences the canvas is perhaps a suitable choice. But, for more than one user with the same display the view port is applicable for a certain user only. This does not make a difference in general but as a solution different users could use their own displays that are networked together for a common experience.

Research on Anaglyphic Technology

During the StereoGames project VTT Technical Research Centre of Finland is developing a stereo viewing plug-in to 3D game applications denoted as StereoGames technology. The idea of the StereoGames is to easily achieve the most compatible stereo viewing software for the games. In web applications the stereo viewing focuses only to the window where the 3D game is running and leaves the rest of the screen untouched. This means full readability of the rest of the page, or even the text inside the 3D screen. This will be useful in several type of games where game status will be visible during the game or when viewing the game result. The prototyping has produced interesting and encouraging result. The plug-in is in test use at the moment and can view a couple of different type of 3D games in stereo mode without any touch of the original game code.

Even though Finland has been in speeches and news paper articles the land of advanced technology, the first license has been sold to Mobile Solutions Ltd. in Italy with the VTT Technical Research Centre of Finland table tennis mobile-phone game. Finnish enterprises are very slow or late

adapters of new technology and by no means want to pay anything about the research and development today.

Conclusion

The analogue TV set is not the best possible screen. Thus, stereographic technology is on its best on digital screens where the colour palette is deep and the picture stays sharp. As well the most reasonable is to produce the stereo illusion on demand and not as any separate product which will raise production expenses. With StereoGames technology this leads stereographic technology directly to the general purpose computers such as PC, Macintosh etc. and other digital games in game consoles, mobile phones, possibly in near future as well to digital televisions and high density television (HDTV).

When thinking forward, this technology is easy to adopt in different type of game and other applications on the field of entertainment or even in business. VTT Technical Research Centre of Finland has described the vision about the future of this technology as well. We call this by the name "Mono3DStereo" technology concept. This term wraps several types of applications where 2D picture taken by one camera can be converted up to stereo illusion by software designed for this special task. Services can be produced as web services or as local service in your own mobile phone, home PC or by any other terminal equipment with some processing power where this software has been installed. Finally, 3D cartoons need just double rendering and pre-filtering to produce the anaglyphic stereo illusion. For the normal viewing and stereo viewing there has to be rendered one extra version, which will take some extra rendering time, anything more.

References

Dodgson, N. A. 2005. Autostereoscopic 3D Displays. Computer 38(8), August. Institute of Electrical and Electronics Engineers, IEEE, 31-36.

Kuukkanen, H. 1978. Värin reproduktio. [The Reproduction of Colour.] Kuvallisen viestinnän laitos. University of Technology, Teknillinen korkeakoulu. Helsinki.

Lipton, L. 2001. The Stereoscopic Cinema: From Film to Digital Projection. SMPTE Journal – Technical paper. Society of Motion Picture and Television Engineers. September, 586-593.

Sherman, W. R. & Craig, A. B. 2003. Understanding Virtual Reality. Morgan Kaufmann Publishers. San Francisco.

Young H. D. & Freedman R. A. 1996. University Physics. 9th Edition. Addison-Wesley Publishing Company. Reading.

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- Arts & Experience

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