

**İSTANBUL TECHNICAL UNIVERSITY ★ INSTITUTE OF SCIENCE AND TECHNOLOGY**

**“DESIGN AND NEW MEDIA”  
TOWARDS AN ANALYSIS OF NEW MEDIA  
CULTURE THROUGH DESIGN PERSPECTIVE**

**M.Sc. Thesis by  
Remzi Ateş GÜRŞİMŞEK**

**Department : Industrial Product Design**

**Programme: Industrial Product Design**

**JUNE 2007**

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**JUNE 2007**

**“TASARIM VE YENİ MEDYA”  
YENİ MEDYA KÜLTÜRÜNE TASARIM PERSPEKTİFİNDEN  
ÇÖZÜMSEL BİR YAKLAŞIM**

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JUNE 2007

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**“DESIGN AND NEW MEDIA”  
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THROUGH DESIGN PERSPECTIVE**

**SUMMARY**

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The general aims and theoretical framework of this study is constituted by the cultural and functional associations between new media applications and profession of industrial design in contemporary consumer culture. By investigating the possible definitions and expansions of new media with reference to interactive media appliances, virtual environments and computer-mediated-communication (CMC) mediums, this study seeks major points of relevance between designed product (as physical commodity) and its virtual extensions (as digital content).

Another major framework of the theoretical part, through which the arguments will be concluded, is the ‘object-user-consumption’ model that is categorized as such to provide a discursive base for an examination of new media objects, user experiences and their exclusive consumption patterns in contemporary societies. Consequent to the contextual analysis of new media within this categorization, the final part of the study focuses on a specified case study; a product which essentially involves new media content as an interaction component, in addition to physical man-machine- interaction features. Ultimately, the intended conclusions of this thesis would provide the reader with a comprehensive understanding of the subject matter by outlining the significant theoretical associations between new media and product design, and by combining these arguments with the observation of practical cases and user experiences through the intersection of virtual worlds and designed products.

**Keywords:** Product Design, New Media, Interaction, New Media Object, New Media Culture, Sony PlayStation

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YENİ MEDYA KÜLTÜRÜNE TASARIM PERSPEKTİFİNDEN  
ÇÖZÜMSSEL BİR YAKLAŞIM**

**ÖZET**

GÜRŞİMŞEK, Remzi Ateş

Yüksek Lisans, Endüstri Ürünleri Tasarımı Bölümü

Danışman: Yrd. Doç. Dr. Şebnem Timur ÖĞÜT

Haziran, 2007

Çalışmanın genel çerçevesini, yeni medya ve ürün tasarımı alanlarının güncel tüketim kültürü yapısındaki kültürel ve işlevsel birlikteliklerinin araştırılması oluşturmaktadır. Yeni medya kavramının olası tanım ve açılımları – etkileşimli medya araçları, sanal mekânlar ve bilgisayar destekli iletişim ortamları– araştırılmaya çalışılacak; böylece, somut meta olarak ‘tasarım ürünü’ ile (burada ele alınan şekliyle) bu ürünlerin sanal uzantıları olarak görülen dijital içeriğin ilişkilendirmesi amaçlanacaktır.

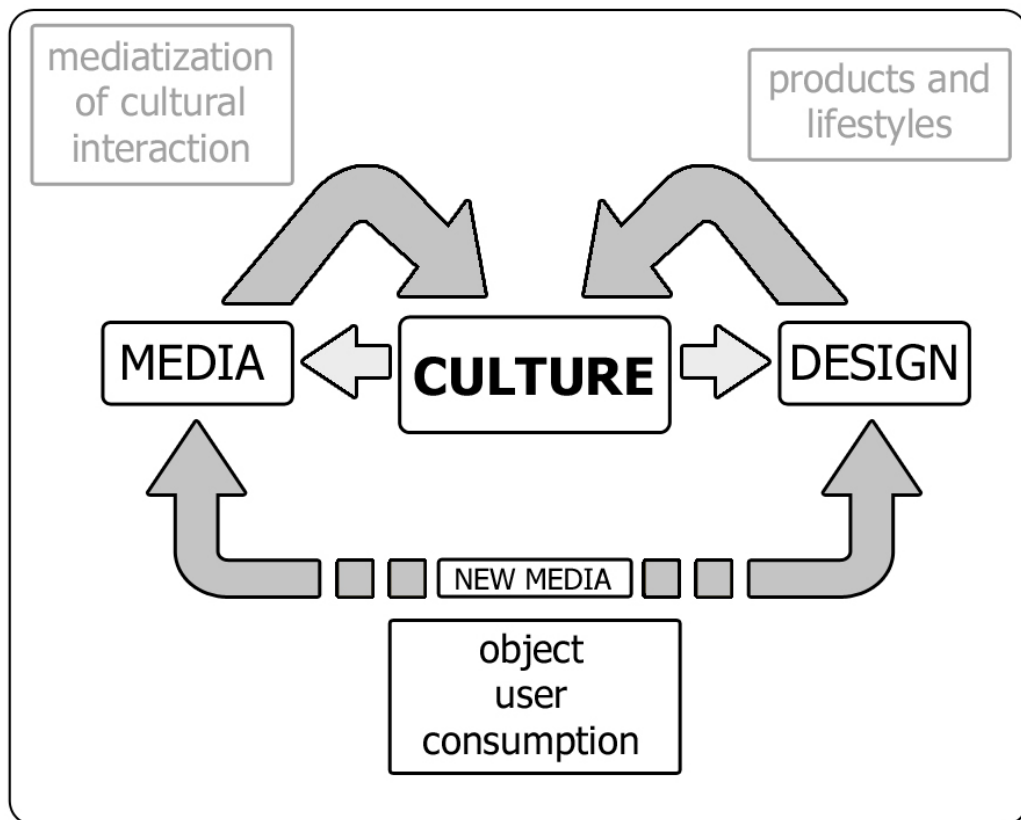
Teorik bağlamda öne sürülen tartışmaların sonuçlandırılması için geliştirilen bir diğer kavramsal çerçeve de, tez içerisinde detaylandırılacağı şekliyle, ‘*nesne-kullanıcı-tüketim*’ modeli olarak belirlenmiştir. Bu üç kavramın temel kategoriler olarak belirlenmesindeki amaç, yeni medya nesnelerinin, tüketici deneyimlerinin ve bunlar üzerinden tüketim kalıplarının incelenebilmesi için tutarlı bir teorik temel belirlenmesidir. Bu sınıflandırma üzerinden yapılacak olan yeni medya incelemelerinden sonra, çalışmanın son bölümü olarak, belirli bir örnek ürün üzerinde teoriler sınanacak ve gözlemlenecektir. Bu bağlamda seçilen ürünün temel nitelikleri arasında, fiziksel kullanıcı-ürün etkileşimine ek olarak, yeni medya tabanlı etkileşim ortamlarını içermesi aranmıştır. Sonuç olarak, bu tez bağlamında özetlenen çıkarım ve tartışmalar, okuyucuya konu hakkında kapsamlı bilgi ve görüş sağlamayı hedeflemekte; bu amaçla çalışma, öncelikle yeni medya ve ürün tasarımı hakkındaki kuramsal ilişkileri özetlemekte, devamında bu kuramsal altyapıyı sanal içeriğe sahip güncel bir örnek-ürün üzerinden kullanıcı deneyimlerini inceleyerek desteklemektedir.

Anahtar Kelimeler: Ürün Tasarımı, Yeni Medya, Etkileşim, Yeni Medya Nesneleri, Yeni Medya Kültürü, Sony PlayStation

# 1. INTRODUCTION

## 1.1. Problem Definition and structure of the thesis

The major goal of this thesis is to investigate the functional involvement and conceptual integration of New Media to the field of design and to design terminology by a critical examination of their social interaction in contemporary consumer culture.



**Fig.1.1.** Schematic view of the general context and framework of the thesis

As outlined in a schematic view above, the central arguments of this text will be associated with the interrelations between media, culture and design; and the mutual affects and reflections of these fundamental paradigms on each other by their applications within the general social structure. What is fundamental for this

thesis is the mutual relationship between media and design in contemporary consumer culture (or “post-industrial society” as coined by Bell [1996]) and the condition of New Media as an emerging paradigm among these cultural denominators.

To offer a broad definition of New Media, as it is implied here, several categories of cultural production may be taken into consideration: computers, computer-mediated-communication (CMC) tools, cyberspace and information networks (such as World Wide Web), other types of virtual environments (such as Microsoft Windows and alternative operating systems), user-interfaces of software applications, computer games, electronic consumer-products and information appliances; to name a few.

In the second chapter of the thesis “What is New Media”, the essential features the term “new media”, which differentiate it from conventional media and relocate it as an exclusive and authentic form of cultural communication, will be explored. In this respect, these fundamental aspects of new media that are proposed by Lev Manovich, in his book named “The Language of New Media”, are summarized below:

1. New media is analog media converted to a digital representation. In contrast to analog media, which is continuous, digitally encoded media is discrete.
2. All digital media (texts, still images, visual or audio time data, shapes, 3-D spaces) share the same digital code. This allows different media types to be displayed using one machine-a computer-which acts as a multimedia display device.
3. New media allows for random access. In contrast to film or videotape, which store data sequentially, computer storage devices make it possible to access any data element equally fast.
4. Digitization inevitably involves loss of information. In contrast to an analog representation, a digitally encoded representation contains a fixed amount of information.
5. In contrast to analog media where each successive copy loses quality, digitally encoded media can be copied endlessly without degradation.
6. New media is interactive. In contrast to old media where the order of presentation is fixed, the user can now interact with a media object. In the process of interaction the user can choose which elements to display or which paths to follow, thus generating a unique work. In this way the user becomes the co-author of the work (Manovich, 2001).

The theories of Manovich and several other researchers on new media and its structural (as well as cultural and technological) features will often be quoted and mentioned in relevant chapters of the thesis. In addition to the theories on new media and computer-mediated environments, the survey of relevant theories on

subject matter covers a multi-disciplinary range of literature for a comprehensive analysis of the emerging “new media” paradigm.

One fundamental motive behind the determination of aims for this thesis is the requirement for combining new media and design theories as well as integrating other relevant research fields to outline the promising expansions of subject matter. Virtual environments, digitized media objects and interactive media applications became increasingly popular topics of discussion within popular culture, and of academic discourse within various fields of research – including visual culture, design and media studies, and so on. While new media theorists focus on the technological and structural features of digital environments, virtual reality systems and global information networks; researchers on the domains of social sciences and visual culture prefer to study the cultural reflections of social paradigms that emerge with the introduction of virtual environments and computer-mediated-communication. However, a comprehensive social theory of the forthcoming digital culture requires the collaborative work of a multi-disciplinary research methodology.

Since each field discusses the subject matter from different (and subjective) points of view, it is evident that a solid academic discourse on interactive products and mediums should also be argued from a designer perspective; mainly because the social comprehensions and developing definitions of contemporary product forms would re-structure the product design profession, as well. For this purpose, a part of the second chapter includes literary and fictional visions on ‘Cyberpunk’ movement with reference to its renowned representatives (William Gibson’s novel *Neuromancer* and post-cyberpunk movies such as Cronenberg’s *eXistenZ* or Wachowsky Brothers’ *Matrix*, i.e.) to explore the fictional basis for ‘cyberculture’ vision. Nourished by relevant theories on social sciences and media studies, it is intended to re-interpret these notions within the specific (design-based) framework of this study.

Consequent to the analysis of the fundamental and exclusive features of new media, third chapter of the thesis aims to propose an explanatory discourse on the relevance of new media to the domains of design profession and research.

The development of virtual environments and digital interaction tools that has emerged with the introduction of computerized new media is considered to reshape the conventional design paradigm. The basis of these conceptual changes in the structure and the definition of design profession may be investigated through a range of focal points; through the essence of the objects of study or the method by

which users interact with them as well as the involvement of these new paradigms to design process itself. Rivka Oxman, author of the article “Theory and Design in the First Digital Age” (Oxman, 2006), reflects the critical relocation of essential conventions of design thinking with digital design tools and states:

Digital technology has contributed to the emergence of new roles for the designer according to the nature of his interaction with the media. The designer today interacts with, controls and moderates generative and performative processes and mechanisms. Information has become a ‘new material’ for the designer (Oxman, 2006).

As Oxman discusses how digital technology has affected the design process and the materials that are employed by the designer, it is also meaningful to propose another dimension of discourse – an expanded view that involves the outcomes of the design process (the products) and the consumption sequence of these outcomes by the users through similar technologies but different tools. Since the central intention of this thesis is to explore the integration and involvement of new media to the mediatization of cultural communication and consumption processes – rather than to tools of design and production phases -, the essential arguments of this part is based on new media objects and user experiences in virtual environments.

However, it is also critical to investigate the life-cycle of interactive digital products with a broader perspective - including different steps of design, production, reproduction and consumption- mainly because the roles of conjectural participants –designer, author, producer, user, consumer, etc. - and their definitions may coincide or overlap during the whole process. Prior to the examination of new media objects and the exclusive patterns of consumption within new media, the roles of these participants are discussed and possible relocations in their conditions are outlined. As quoted from Manovich previously, new media applications (and computerized interaction tools) provide their users with the possibilities of personalization, customization, and interaction with system components; thus, redefine their consumers as co-authors. In a historical sense, this co-dependence of media consumption to the active participation of its consumer may be considered to emerge with the introduction of mass-produced photography devices; most notably by KODAK in late 1800s. Consequent to the developments in consumer electronics and involvement of interactive user interfaces in end-user products, consumers are provided not only by the ability to produce their own media objects, but also by a



wide range of possibilities to configure their personal mediums of cultural production.



**Fig.1.2.** Screenshot from Barbie Fashion Show (developed by Vivendi Universal)

As illustrated by the screenshot from “Barbie Fashion Show” software that is created for children to design their own Barbie outlooks, or the user preferences in configuration of visual or structural features of their user-interfaces, users of these media are offered with the process of designing their own platforms to consume within. Quoted from Amazon.com’s promotion page for Barbie Fashion Show, the features of the product as described by Vivendi Universal are:

- Help Barbie get ready for fashion week in Paris
- Complete 10 exciting fashion assignments
- Advance through 3 different design studios
- Choose the styles, fabrics, and colors
- Select the stage, music, and special poses (Amazon.com<sup>1</sup>)

One major observation in the light this particular software and similar products is that the work of design is expanded to provide user with the experience to simulate

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<sup>1</sup> <http://www.amazon.com/Vivendi-Universal-72191-Barbie-Fashion/dp/B0001BR9O8>

the design processes through visual manipulation of information. This twofold dimension of existence has a major importance in the definition of new media objects (or new forms of products within new media) as they are examined in the thesis. Given that the mediums of cultural production (such as Barbie Fashion Show software above, or operating systems as MS Windows) are subjected to material and symbolic exchange as consumption utilities, Rivka Oxman's statement of "information being a new material for designer" (Oxman, 2006) gains importance. This is to say; not only the outcomes of user-interaction with the software or the electronic appliance are defined as new media objects, but also are these mediums and appliances in the proposed paradigm set of "new media".

In the fourth chapter, entitled "New Media and Re-interpretation of Design Paradigms: Object, User, Consumption", a theoretical model for outlining the main arguments in this thesis will be proposed. A categorization of design paradigms, which are considered to be subjected to semantic and functional relocation by emerging new media, will be described within the framework of 'object-user-consumption' model. In this part of the thesis, the intricate nature of contemporary object-consumption cycle will be explored by investigating the essential features of digital objects and virtual environments; their connotative resemblances and distinctions from our existing codes of representation and the methods by which we interact with them. Contemporary theories on the nature and construction of 'new media objects' will be analyzed and reflected to the examination of user experiences in virtual environments. Furthermore, investigations and ideas on the 'consumption' processes of these objects/experiences will be outlined with reference to their similarities and distinctions from conventional patterns of consumption. While one major argument of this chapter is to redefine 'new media objects' as artifacts of contemporary post-industrial consumption; a complementary discourse on the reshaped definition of 'consumption' as a 'reproduction process' will be proposed in order to solidify this initial statement.

Consequent to the analysis and descriptions of the theoretical expansions of the subject matter in the previous chapters, fifth chapter focuses on the reflections of these arguments on the practical field. By examining a specific case example and users' experiences with the specified device, it is intended to test (as well as to support) some critical aspects of the theory. The selected product for this examination is Sony's renowned game console 'PlayStation'. Before introducing the product with its evolutionary progression, its market competition with similar products and its significant features of user interaction; it is necessary to outline the

relevance of Sony PlayStation with the general arguments on new media and industrial design. In this respect, the first part of this chapter focuses on the product and system features of PlayStation as an 'information appliance' in the domain of entertainment industry, the general references in video games to social theories (cyberculture and related notions) and to cultural communication; as well as the possible expansion of the subject to further studies.

The seventh chapter intends to present the findings of an analytical study, which is conducted by examination and categorization of specific themes on user experiences. For observing the critical themes and categories in this study, on-line discussion platforms (user forums) – the major subjects of which are specifically game consoles – are selected as the major information source. The primary reason for this resource preference is the possibility to collect large numbers of users' comments from actual 'discussions' of PlayStation players. On the other hand, the contextual relevance of this resource comes from the fact that these on-line platforms (both on internet and on PlayStation Network) are considered as a fundamental 'extensions' of contemporary game systems. As it will be further explained in this chapter, the 'next generation' of game console industry's increasing tendency on taking part in cyberspace causes a noticeable relocation in the primary definitions of game consoles. By developing special game networks, establishing official discussion platforms and supporting distributing computing projects (such as Sony's Folding@Home), Sony attempts to promote the new PlayStation (PS3) as a device that is more than just a introverted game-box. Therefore, the advertisement series of PS3 entitled "This Is Living" may be read as a clear illustration of how 'next generation' of home entertainment systems will be defined. In short, the investigation of user experiences in the on-line extension of the specified product is intended to provide coherent outcomes with the general aims of this thesis; which is to study the affects of new media and design integration in end-user products and to examine the reflections of this progress on consumption habits of contemporary societies.

Ultimately, the thesis explores the major promises and contributions of interactive new media applications to design research field by focusing on three key concepts of design: *object, user and consumption* - the recent connotations of which require the involvement of metaphorical and representational associations with the conventional social structure. It is intended to figure out the evolutionary patterns of the alteration in their conventional descriptions and cultural connotations; by investigating the distinguishing features of computerized media and virtual objects

as 'new' cultural products, identifying their involvement in the product design field and outlining the consequences of this identification on socially structured system of values.

## 2. WHAT IS NEW MEDIA?

### 2.1. Identifying “New” Media

A new medium is new only until it is established and no longer new; but since any usage of a medium is based upon communicative conventions, a new medium is somewhat of a contradiction. By defining the medium as “new”, we acknowledge the transitory stage of integration of our current analysis, limited though this may be by its temporal frame (Brody, 1999).

Studying new media and the new object requires focusing not on a specific time period or a set of technological developments but considering the social motives and conventions of its evolutionary pattern. The most noticeable and authentic contribution of contemporary “new media” would be proposing new conceptual features (such as interactivity, customization, ambient intelligence, etc.) and environments to enhance user-product interaction through various computerized media (Software interfaces, Cyberspace, Virtual Reality, etc).

Since the central intention of this study is to explore the affects of new media sources to existing conventions of products and the profession of industrial design, identifying the boundaries of subject matter becomes essential. Moreover, it is necessary to outline the range of possible mediums that we intend to cover within these boundaries to attain a solid and comprehensive description of *New Media* as it is implied in this text. Even though a strictly defined set of contents may not be claimed for the concept, it is often argued that contemporary digital objects such as “a digital still, digitally composited film, virtual 3-D environment, computer game, self-contained hypermedia DVD, hypermedia Web site, or the Web as a whole” (Manovich, 2001) and/or categories of Computer-Mediated-Communication such as “interactive multimedia, academic hypertexts, Web-based infotainment, computer effects-driven cinema, broadcast graphics” (Brody, 1999) are definitive features of New Media.

Manovich (2001) offers a rather reasonable description for New Media and New Media Objects as: ‘Translation of existing media sources – including graphics, moving images, sounds shapes, spaces and texts – into numerical data accessible by computers’. However this definition has two major deficiencies about the nature

of new media objects. The first one is about the variety of processes that are available on computerized media sources, which are obviously not limited just with the translation procedure. The second problem is about the origin of new media objects. Digitally encoded objects may either be transferred from an existing analog source or be created inside the system by special software. The connotations of these two types have differences in terms of both nature of their existence and the power of the user over their originality. Thus, a broader and more detailed definition of New Media may be constructed as follows: “*Creation, storage, classification, accessibility, manipulation and distribution of binary-coded media objects through pre-programmed algorithms.*” to include further features and processes of contemporary New Media.

For a structural analysis of New Media’s exclusive features that distinguish it from the conventional analog media, we may revisit Manovich’s theories in *The Language of New Media*. Manovich outlines these features as summarized below (Manovich, 2001):

1. **Digital Representation:** While analog media consists of a continuous set of audio/visual representations, New Media converts the object of analog media to digital representation in which the contents of its infrastructure exist as discrete units of information.
  
2. **Unified Digital Protocols:** Various forms of digital media (texts, still images, visual or audio time data, shapes, 3-D spaces) –new media objects – are designed and prepared to operate within a unified platform –a computer, i.e.- What allows this unification is the employment of shared systems for digital encoding.
  
3. **Random Access:** Since analog media can store continuous and sequential forms of data, digital data is encoded and stored in discrete and separable units. Manovich claims this method of encryption and storage allows the users to access and use the desired part or element of the data faster and more easily. Furthermore, this system of partition and storage of information allows facilities such as labeling, categorizing and classifying of the data; therefore enables the development of advanced search and access functions for the users.

4. "Digitization inevitably involves loss of information. In contrast to an analog representation, a digitally encoded representation contains a fixed amount of information" (Manovich, 2001).
5. Processes of duplication, reproduction and distribution of digital media does not necessarily involve loss of information (in contrast to conventional analog media, in which each copy loses quality)
6. **Interaction:** While the sequences of information and order of their consumption is fixed in analog media, New Media allows users' interaction with the media object. Users may be enabled to determine what type, amount and quality of information to consume and design individual patterns/paths to follow through interaction. Manovich construes this aspect of New Media as a reflection of autonomy and declares the *transformation of the user to the co-author of the work* (Manovich, 2001).

By the cultural appropriation of these new mediums and contemporary paradigms for user-product interaction, society's perception of the external reality also develops new categories and definitions. It is evident that every period has its particular mediums of cultural communication and the definition of "new" media alters (or evolves) through these periods by introducing new technologies, devices and styles. Manovich emphasizes the effects of the introduction of new media on social structure by quoting Fredric Jameson's theory on the shift from modernism to postmodernism as "*radical breaks between periods do not generally involve complete changes but rather the restructuration of a certain number of elements already given: features that in an earlier period of system were subordinate became dominant, and features that had been dominant again become secondary*" and claims that the observable structural change on society is a redistribution of weight between cultural categories, rather than a radical break with the past (Manovich, 1999).

The application of this particular concept within new media may be *interactivity* or *spatialization of time* (which may be explained by Web sites and digital video compositing software; the former spatializes time by introducing the virtual landscape to the user to surf inside for a particular reason, the latter does this by visualizing time fragments/frames in a branch-type, linear and multi-layered interface

which enables the user to surf within cut and pasted pieces of visual material). As outlined in this chapter, the originality and *newness* of New Media comes not only from the contemporary mediums and methods it involves, but also from the new paradigms of social and cultural perception it offers. The innovative patterns through which these paradigms come to surface should be traced in design theories, as well as in social studies on digital media and visual culture as such.

## **2.2. Principles of New Media**

### **2.2.1. Manovich's Principles of New Media**

As we have an updated description of what new media is with reference to Lev Manovich's statements, an investigation of the essential principles and characteristics of his New Media debate is necessary to build a solid discourse on. As outlined below, these principles are stated in Manovich (2001) as following:

1. Numerical Representation
2. Modularity
3. Automation
4. Variability
5. Transcoding

#### **Numerical Representation**

New media is fed by binary coded units of information, whether these materials are created inside the media system or converted from analog media. Manovich states the first principle of New Media and its objects as "all new media objects, whether created from scratch on computers or converted from analog media sources, are composed of digital code: they are numerical representations" (Manovich, 2001) and states two major consequences that transform conventional media to a *programmable* entity.

Putting new media as a binary-coded representation would imply that the new media object may be referred to as a mathematical function. Manovich claims that all forms of digital representations – images, texts, shapes i.e. – can be described mathematically since the encoding system is composed of numerical expressions



arranged in a specific order. Consequently, the second attribute offered by Manovich is that a new media object may be created, altered and restructured by algorithmic manipulation. By applying an appropriate algorithm, any qualitative and/or quantitative feature of an object may be changed (pixel rate of an image, speed of a movie/sound, structure of a text, i.e.). Thus, programming the contemporary digital media is always possible based on these essential characteristics.

### **Modularity**

This principle is referred as the fractal structure of new media object. This principle states that: "Just as a fractal has the same structure on different scales, a new media object has the same modular structure throughout." (Manovich, 2001) Unlike the modularity in the product design, this modularity may contain contextually irrelevant pieces of objects to create a meaningful whole because all elements may still remain their individual identities. Furthermore, the structural or formal attributes of these elements can be changed without the necessity to restructure the larger composition, such as merging a model to a 3D scene or inserting an object to a document. This combination (larger object) is just an assembly; it is still possible to manipulate the merged/inserted object with the same software in which it is created.

Nevertheless, the assembly document can also be manipulated without changing the structural features of its components. These elements are also composed of digital objects (pixels, polygons, NURBS, etc) so the context may change although the object keeps its originality.

World Wide Web may be another significant example for these modular structures within New Media since it is a global information network that is constructed by countless piles of information from various servers throughout the world. It has a wide range of protocols that includes different types of objects (images, sounds, texts, etc.), languages, user preferences and software that allows its users to operate with. However, it is the modular/fractal configuration of WWW that enables it to function properly within its multi-dimensional dynamic structure.

## **Automation**

Automation in new media is mainly enabled by the existence of the first two principles (numerical representation and modularity) as the system is supposed to automatically control discrete units with properly generated algorithms. This principle mainly aims to reduce the need for constant human control over interfaces. This is a low-level automation compared to Artificial Intelligence, since it involves the modification or creation of media objects by using templates or simple algorithms to help/guide the user rather than generation of a computer that has the capability to *understand and decide for its user*.

The level and intensity of the automation facility that is supposed to be included by the system should, obviously, be limited by the expectancies and capabilities of its intended user group; unless afforded to be adjusted by advanced users. The most common demonstrations of low-level automation may be image filters that are used by Photoshop to reduce noise in an image, artificial plants and trees that can be generated by a 3D modeling software or automatic correction of misspelled words in office software, which is used frequently during the typing process of this very text. Generation of automated responses in computer games according to certain behaviors of players may also be considered as an example to automation of Human-Computer-Interaction (HCI) over the software.

## **Variability**

This principle is mainly associated by the first two and is also thought to correspond with the “postindustrial logic of production on demand and just in time delivery”. The concept of variability also comes with “*customization*”, which defines the logic of our post-industrial society, since customized interfaces or smart human-computer-interaction (HCI) modules should not be thought separately from the expectations of modern consumers.

Here the ‘culture industry’ (a term coined by Theodor Adorno in the 1930s) is actually ahead of most other industries. The idea that a customer might determine the exact features of her desired car at the showroom, transmit specs to the factory, and hours later receive the car, remains a dream, but in the case of computer media, such immediacy is reality. Because the same machine is used as both showroom and factory, that is, the same computer generates and displays media – and because the media exists not as a material object but as data that can be sent through wires at the speed of light, the customized version created in response to the user’s input is delivered almost immediately (Manovich, 2001).

As mentioned above, the essential characteristic of new media objects that is infinitely reproducible and variable is mentioned by this principle. Since the construction of new media applications has a modular structure which is based on a fractal-based ontology and mathematically coded digital representation, numerous copies and variations of the original document/file/object is possible without any degradation. As argued in automation, these variations may be automated by the system itself as well as they can be operated by the user. In addition to the formal variations of the data (or the software), variability may be observed through updating, upgrading and scaling (changing the size or the detail level) of the new media object.

### **Transcoding**

The computer has to represent the information in its own specific way and the user can also access to the material in this specific method. All cultural data must be “computerized” to be in the field of new media.

While from one point of view computerized media still displays structural organization which makes sense to its human users — images feature recognizable objects; text files consist from grammatical sentences; virtual spaces are defined along the familiar Cartesian coordinate system; and so on — from another point of view, its structure now follows the established conventions of computer's organization of data. Examples of these conventions are different data structures such as lists, records and arrays; the already mentioned substitution of all constants by variables; the separation between algorithms and data structures; and modularity (Manovich, 2001).

The conceptual separation of human culture and the ontological dimension of computer generated reality create two distinct dimensions of culture and representations. Manovich calls these dimensions as “cultural layer” and “computer layer”. These two layers, obviously, influence each other in different areas and combine continuously to create a hybrid culture. While the computerization of culture affects patterns of cultural production, communication and classification by which we conceptualize the world, it changes the users' perception and expectancies which consequently reshapes the formation of new media objects.

## 2.2.2. Apple Human Interface Design Principles

In addition to Manovich's new media principles, which are generally focused on the nature and structure of new media objects in a broad sense, another important resource is provided by Apple Computer Inc.'s "Human Interface Guidelines" (Apple Inc. 2006).<sup>1</sup> Although the major task of the document is to outline the specific concerns and rules for designing supplementary software in Mac OS X (Macintosh's main operating system interface), the principles that Apple Inc. puts forward provides valuable insights for this thesis. With the essential employment of these principles, human interfaces are not only designed to fit Apple's brand identity, but also afforded to create a well organized and cohesive user experience:

These guidelines are designed to assist you in developing products that provide Mac OS X users with a consistent visual and behavioral experience across applications and the operating system. Following the guidelines is to your advantage because:

- Users will learn your application faster if the interface looks and behaves like applications they're already familiar with.
- Users can accomplish their tasks quickly, because well-designed applications don't get in the user's way.
- Users with special needs will find your product more accessible.
- Your application will have the same modern, elegant appearance as other Mac OS X applications.
- Your application will be easier to document, because an intuitive interface and standard behaviors don't require as much explanation.
- Customer support calls will be reduced (for the reasons cited above).
- Your application will be easier to localize, because Apple has worked through many localization issues in the Aqua design process.
- Media reviews of your product will be more positive; reviewers easily target software that doesn't look or behave the way "true" Macintosh applications do.

The implementation of Apple's human interface principles make the Macintosh what it is: intuitive, friendly, elegant, and powerful (Apple Inc., 2006).

Apart from its practical functions such as easy localization, decreasing customer calls and better media reviews, the offered benefits of these guidelines may be used to outline the general features of a successful human-computer-interaction medium. As mentioned above, Apple generalizes these features by referring to critical design

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<sup>1</sup> An updated online version of this document is available at:  
<http://developer.apple.com/documentation/UserExperience/Conceptual/OSXHIGuidelines/>

notions such as consistency of visual and behavioral experience, faster and easier learning, usability, accessibility and visual quality. Another important notion, which is implied by Apple above, is the intuitiveness of interface and user behaviors within the interface. As it will be further examined within the following chapters (particularly in Chapter 4), the intuitive user behaviors and his/her cognitive orientation in virtual environments is a fundamental aspect of human-computer-interaction. The main principles of human interface design are determined by Apple Inc. as listed below:

1. Metaphors.
2. Reflect the User's Mental Model.
3. Explicit and Implied Actions.
4. Direct Manipulation.
5. User Control.
6. Feedback and Communication.
7. Consistency.
8. WYSIWYG (What You See Is What You Get)
9. Forgiveness.
10. Perceived Stability.
11. Aesthetic Integrity
12. Modelessness.
13. Managing Complexity in Your Software

## Metaphors

Metaphors, as visual and/or functional relationships between interface elements and users' existing knowledge on the world, are often employed as a method of designing understandable, usable and user-friendly interfaces that enables the users to locate desired functions easily inside the system.



Fig.2.1. Mac OS X Dashboard Widgets (Apple Inc., 2006)

Other examples of these functional associations and metaphorical familiarity are observable in conventional basic operations, which are often involved in popular user interfaces, such as file organizations, trash bins, albums, i.e.

### **Reflect the User's Mental Model**

As it will be examined more in third chapter of the thesis, the term 'mental model' generally refer to users' prior conceptualization and intended usage pattern in mind to accomplish a specific task when encountered an object, system, product or interface. It is mentioned in "Apple Human Interface Guidelines" that these models often arise from users' experiences with other products/systems in real world, with other software and with computers in general (Apple Inc., 2006). Similar to the employment of visual metaphors, the involvement of existing mental models as operational patterns provide users with a more intuitive and familiar experience in virtual environment.

### **Explicit and Implied Actions**

These two major types of user actions are characterized by MAC OS X interface's (and also most of the contemporary user interfaces', such as MS Windows) general pattern of operation. It is outlined in the guidelines that manipulation of an object requires steps of action such as *seeing the desired object on screen, selecting and/or designating the object, and performing an action with menu commands or by direct manipulation* (with the mouse or other devices) (Apple Inc., 2006). This process of manipulation is categorized as *explicit* and *implied* actions to set principles for both actions and avoid undesirable consequences.

### **Direct Manipulation**

By direct manipulation, it intended to enable users to perceive their power to command and manipulate virtual objects that are represented by the software. This type of manipulation is considered as an implied action since the interaction, which takes place between user and the object, and its consequences are visualized according to the manipulation process. Rather than navigating through command lines and menus, users are provided with a direct interaction with the object (such as dragging and dropping a file to Trash, or stretching an image file to enlarge) to

improve usability. In addition to previous principles (metaphors, and explicit and implied actions), the importance of mental models is noteworthy for this principle.

### **User Control**

Similar to Manovich's "Automation" principle (Manovich, 2001), the notion of user control implies the control of users on the process and assistance of computer rather than performing for its user. On the other hand, the level and intensity of computer control over the initiation of tasks requires a determination of target user group. Especially for novice users, it is essential to designate the distribution of control in order to avoid dangerous irreversible actions (such as data loss or changing the system preferences).

### **Feedback and Communication**

The notions of feedback and communication are not only applicable when a problem or an error is encountered but also constantly at work during the interaction process to guide the users. Apple interfaces often use small animations to represent the action or progress in order to communicate with its user, as described below:

- When a user minimizes a window, it doesn't just disappear. Instead, it smoothly slips into the Dock, clearly telling the user where to find it again.
- To communicate the relationship between a sheet and a window, the sheet unfurls from the window's title bar.
- To emphasize the relationship between a drawer and a window, the drawer slides out from beneath the window, displaying shadowing that makes it look like a desk drawer (Apple Inc., 2006).

Another significant example of visual feedback is the metaphorization or indication of timely processes with symbols (busy signal in the form of an hourglass) or direct information (percentages, estimated times, i.e.).

### **Consistency**

Consistency of an interface is generally handled as a multi-dimensional aspect, the boundaries of which involve internal and external features of the software as well as its associations with previous user experiences. In order to achieve the desired

level of consistency, Apple Inc. (2006) suggests the designer to ask these questions below:

- Is it consistent with MAC OS X standards?
- Is it consistent within itself?
- Is it consistent with earlier versions of the product?
- Is it consistent with people's expectations?

### **WYSIWYG (What You See Is What You Get)**

Since each task is often operated to achieve a certain goal (such as formatting data for printing or for a presentation, publishing to the web, writing to a CD/DVD, storing in computer for later access, i.e.), the system should provide the expected outcomes to the users as they see it on the screen. The inconsistency between virtual object (on the screen) and its physical outcomes would probably cause confusion and misleading consequences.

### **Forgiveness**

Forgiveness refers to software's affordance to avoid or reverse unwanted outcomes, or involve necessary warnings to guide the users while they explore the interface. Since most novice users are considered to be unfamiliar with the structural components of the system, which provides its consistency and persistence, it is essential to ensure the safety of the overall system (or task) by designing a reversible system. Not only the key features of the software but also the documents, on which users are working, are subjected to this principle. In this respect, forgiveness of an interface depends on the level and quality of communication between the software and its users.

### **Perceived Stability**

For creating a perception of stability on users, the graphical elements and their associations with each other (as well as with the overall system) needs to be standardized to a certain level. A common visual language for virtual objects, menus, command lines, windows, and such elements are designated to "provide an understandable, familiar, and predictable environment" (Apple Inc., 2006). Equipped



with a certain level of knowledge on interaction style, users of the interface are intended to use the system in a more effective and robust way.

### **Aesthetic Integrity**

Especially considering the amount of time an average user spends on the user interface (for work as well as for leisure activities), the importance of designing a pleasant and usable interface is noticeable. In this respect, Apple Inc.'s general principles for aesthetic integrity are listed below:

- All icons should be rendered at the highest quality
- All text should be anti-aliased, which is automatic when you use the standard system fonts
- The font size and type should be consistent within a window
- The control size should be consistent within a window—for example, don't mix small and standard controls

Match a graphic element with a user's likely expectations of its behavior. Don't change the meaning or behavior of standard items. For example:

- Always use checkboxes for multiple choices, not for mutually exclusive choices
- Use push buttons for immediate commands such as "Open"
- Avoid using push buttons to display pop-up menus or serve as tabs
- Avoid using bevel buttons as tabs (Apple Inc., 2006)

### **Modelessness**

Modelessness principle refers to the multi-dimensional workspaces (modes) in virtual environments and interface's affordance to let users work on different tasks simultaneously and easily. Since contemporary operating systems may operate a variety of applications and media, users' access to these modes requires a clear, understandable and accessible interface that does not necessarily lock him to one operation until it is finished. One important aspect of modelessness is the need for an effective visualization in workspace, as illustrated by Apple (2006) "in many graphics applications, the pointer can look like a pencil, a cross, a paintbrush, or an eraser, depending on the function (the mode) user selects."

## **Managing Complexity in Your Software**

Although the computer, and software application is built on a complex set of algorithm, users often require a usable and enjoyable interface to operate this complex structure (of database and applications). In this respect, managing complexity is closely related with simplicity and mental models of users, and it is the functional combination of these principles within a usable and dedicated user interface. In Apple Human Interface Guidelines, the need for *managing complexity* is described as “the more complex your application’s task, the more important it is to keep the user interface simple and focused” (Apple Inc., 2006).

In this part of the second chapter, two different (however, related) perspectives on new media applications and human-computer-interaction are outlined by summarizing Lev Manovich’s (2001) general principles of new media and Apple Computer Inc.’s (2006) “Human Interface Design Principles”. Although these two perspectives are focusing on different fields of knowledge and practice, it is intended to combine the theories on the nature and structure of new media objects, and principles of contemporary new media applications to provide a base for further discussions in following chapters. For instance, Apple’s interpretation of metaphors and mental models as an essential component of human interfaces, as well as Manovich’s statements on numerical representation and transcoding will be subjected to discourse in relevant chapters on identifying new media objects and users; what is more on the relevance between product design and new media.

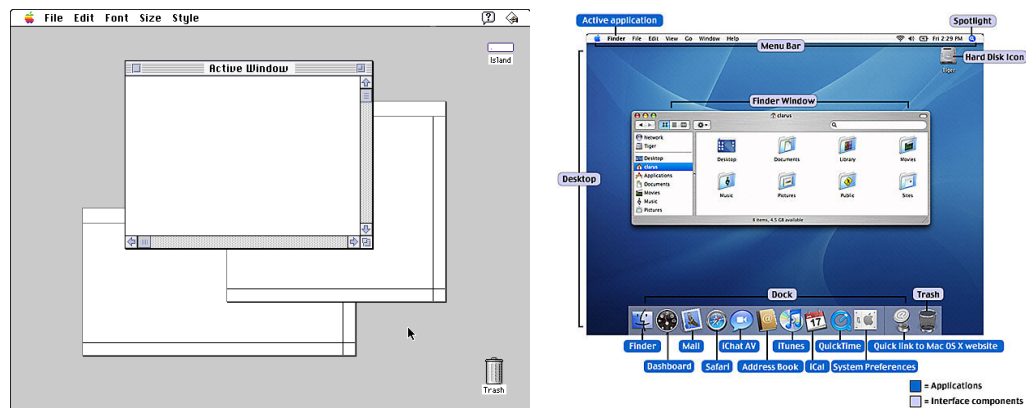
### **2.3. Mass media interfaces and computerization of cultural values**

The spectacle is not a collection of images; rather, it is a social relationship between people that is mediated by images (Debord, 1994).

Considering the fact that media objects communicate us through some visual (or sensual) interfaces, we may assume that cultural interfaces have their roots deep in the cultural values and consumer habits. The relation between cultural values and mass media interfaces is a rather mutual one, in which both sides have an effect on each other. While visual interfaces and cultural communication devices are influenced by social structure of values, these interfaces also work as mediums of cultural change through time. Harmeet Sawhney mentions to this dual effect by stating that “The metaphors that are used to study an emerging technology usually

end up influencing the shape it takes” (Sawhney, 1996) in his investigation of metaphorization and conceptualization patterns of “information highways.”

The images below are two screenshots from Apple Inc.’s Macintosh user interfaces. It is visible in these two figures that the visual expression style and methods for categorization and manipulation of information (which is stored in the computer) remained to follow a dedicated set of procedures; while the aesthetic and formal qualities of the interface is updated and improved by current styles of visual representation (graphics, colors, icons, i.e.).



**Fig.2.2.** Earlier (left)<sup>2</sup> and contemporary (right) forms of Macintosh User Interface

Consequent to Sawhney’s ideas, Manovich considers the primitive interface design of the first Macintosh personal computer (1984) as be a valid illustration; being significant visual representation of modernist design values, such as clarity and functionality. Manovich prefers to take new media objects into consideration as cultural artifacts and study their role and involvement in the cultural structure with reference to social categories and representational features they happen to include or exclude through their construction:

New media objects are cultural objects; thus, any new media object-whether a Web site, computer game, or digital image-can be said to represent, as well as help construct, some outside physically existing object, historical information presented in her documents, a system of categories currently employed by culture as a whole or by particular social groups. As is the case with all cultural representations, new media representations are also inevitably biased. They *represent/construct* some features of physical reality at the expense of others, one worldview among many, one possible system of categories among numerous others (Manovich, 2001).

<sup>2</sup> Image acquired from “Macintosh User Interface Guidelines” by Apple Inc. (1995)

Following the theories of Walter Benjamin on the social affects of mechanical production of conventional artistic production (principally citing his influential article “The Work of Art in the Age of Mechanical Reproduction”), Manovich’s observations reveal a similar discourse on new media. As Benjamin states “(...) for the first time in world history, mechanical reproduction emancipates the work of art from its parasitical dependence on ritual. (...) But the instant criterion of authenticity ceases to be applicable to artistic production; the total function of art is reversed. Instead of being based on a ritual, it begins to be based on another practice – politics” (Benjamin, 1997). Thus, Manovich’s ideas on the construction of new media may be regarded as a contemporary reflection of Benjamin’s work; as they introduce politization of new media to the discourse on how it acts as a cultural communication medium. In this respect, computers are not just “tools” anymore but “universal media machines” which is involved in almost every part of our daily lives. (Manovich, 2001)

For Manovich, the emergence of computer culture was based on the composition and reciprocal influence of two distinct cultural layers: “the cultural layer” and “the computer layer”. The social integration of these two layers result in hybrid cultural structure – “a blend of human and computer meanings, of traditional ways in which human culture modeled the world and the computer’s own means of representing it.” (Manovich, 2001) In addition, it is claimed by Manovich that the computerization of culture borrows these new meanings from computer’s ontology, epistemology and pragmatics, and substitutes conventional cultural categories and concepts. While new media acts as a forerunner of cultural reconceptualization, it also employs existing objects and metaphors of conventional media and transforms them to the new context; such as Windows Media Player or Power DVD, which still has “play/pause” or “eject buttons” and the representation of database as “My Computer” on the virtual workspace called “Desktop” in Microsoft Windows (as another significant metaphor involved in the very name of the mentioned software).

If a medium is a conveyor of memory rather than of messages, this offers us some insight into how to design for new media. This starts at the level where our memory technologies tend to define the very way we metaphorize our lives. Three generations ago, I would likely have categorized every evocative scent as inextricably linked to Proust’s Madeleine. In my youth, I saw the road to work on an average morning as one long tracking shot in a *nouvelle vague* film. Today I find it difficult to think of my life as anything but an interactive network (Brody, 1999).

Brody's argument on the affects of mass media sources to individuals' conceptualization of social identity has also significant expansions in other forms of visual media, most importantly in cinema as it is considered to have the strongest influence on our visual regime since the beginning of the century. What we encounter in a movie theater or television (or in a high-tech home theater environment with surround sound system) is not only the material consumption of utilities and services, but also the consumption of images and narrative in a broader sense.

In view of the fact that development of new media has fundamental references to (and constantly influenced by) existing cultural conventions on products, media and consumption, a generalized social theory on new media ought to approach a multi-dimensional and multi-disciplinary vision.

What unites media culture and consumer culture, then, is that both concepts deal with the hermeneutic processes through which consumer products (that is, commodities) and media products become cultural (via their incorporation within webs of significance) and, conversely, how these products enter into and become influential for the formation of webs of significance as such. The concepts refer to a socio-cultural condition in which commodities and media texts are important for the establishment and expression of cultural communities (webs of significance) and hence also for the creation and expression of cultural (Jansson, 2002).

What Jansson aims to emphasize in his study on the mediatization of consumption may also provide valuable insights for design research; most noticeably by his efforts on proposing structural associations between consumer products (commodities) and media products and their functional roles in creation and expression of cultural identities. Furthermore, he relates this assumption to contemporary structure of consumer culture and production industry to explain how computer-mediated products shape consumer market (and reflectively, product design profession).

Having outlined the fundamental associations and reflections of computerized new media applications to conventional understanding of consumer culture in post-industrial society, this study will now continue by further investigations in reflections of these theories in cultural practices (such as Cyberpunk literature) and the affects of global information networks on the conventional notion of commodity.

## **2.4. History and evolution of the concept “Cyberspace”**

The development of computer-mediated infrastructures and global information networks introduced a new notion to the field, Cyberspace. It is a virtual environment which is conceptualized by a representational space metaphor with reference to our conventional semantic appropriations (Mitchell, 1999). Unlike old media structures (such as a film or text), the condition of presence and aesthetic realization of this new structure is illustrated as “spatial wandering”.

Although the invention of the word “Cyberspace” is often accredited to William Gibson’s inspiring cyberpunk novel “Neuromancer”, Featherstone and Burrows (1995) classify the major variants of the Cyberspace notion into three main groups: Barlovian cyberspace; virtual reality (VR); and Gibsonian cyberspace.

The first variant – Barlovian cyberspace – was named after John Barlow, a founder of the political action group Electronic Frontier Foundation (cited from Sterling by Featherstone and Burrows, 1995). The cyberspace theory of Barlow was an earlier description of primitive computer network systems that operate on the conventional basis of existing telephone communication, and improving it simply by substitution of text and icons instead of voice. As Rucker quotes, Barlow’s cyberspace “is where you are when you are talking on the telephone”. Consequently, more advanced forthcoming mediums integrated more senses to the interaction sequence to obtain a contextually richer and multi-dimensional form of cyberspace, such as Virtual Reality.

Jaron Lanier, the former head of VPL Research Inc. in California, coined the term “Virtual Reality (VR)” in 1986 and the term has been widely attributed to the relevant technology ever since. As quoted from Steuer by Featherstone and Burrows (1995), the recent definition of VR is 'a real or simulated environment in which the perceiver experiences telepresence'

Essentially, VR is the term for a system that provides the user a realistic sense of presence in a virtual environment by the employment of computer mediated audio/visual and tactile multi-media experiences. The major physical tools to capture and manipulate the bodily experience of a user are headphones, head-mounted displays (‘eyephones’) and wearable computerized interaction tools (‘datasuits’) that would, collectively, create an artificial perceptive alternative to our major senses; sight, sound and touch (Featherstone and Burrows, 1995). The nature of interactivity in Virtual Reality systems is visible through the method of interaction that is generated between the user and the system. While the user is virtually, but

nevertheless physically, immersed into the simulated environment, the computer that produces the environment constantly reconfigures the variants of the system according to her body movements (her commands).

The third, and final, description of virtual worlds is Gibsonian cyberspace; which is named after William Gibson, author of the remarkably inspirational cyberpunk novel called "Neuromancer". It is not likely to find a research paper or a dissertation on new media and cyberspace without a single reference to Gibson's work, more than ever after the introduction of Wachowsky Brothers' celebrated trilogy "the Matrix", a movie that is widely considered as a reinterpretation of Gibson's work in popular culture. The notion of cyberspace according to Gibson is a global network of computers and information infrastructures which he calls "the matrix".

In this fictional world, cyberspace is a global computer network of information which Gibson calls 'the matrix', which operators can access (Jack-in') through headsets ('trodes') via a computer terminal ('cyberspace deck'). Once in the matrix, operators can 'fly' to any part of the vast three-dimensional system of data coded into various colorful iconic architectural forms laid out beneath them like a vast metropolis (Bukatman, 1993a:103-8): a city of data, a Borgesian library of vast databases containing all a culture's deposited wealth, where every document is available, every recording playable and every picture viewable. Once a particular location has been selected, it is possible to zoom in so that one moves inside the three-dimensional representation of the data in order to scan particular areas (Featherstone and Burrows, 1995).

Cyberspace in Gibson's terms can be read as a literary explanation of spatial information networks (World Wide Web, i.e.) and the integration of virtual reality technologies to the infrastructure for enabling the cognitive immersion of the participants to the system.

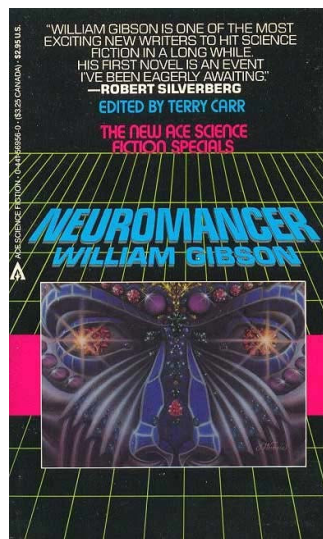
#### **2.4.1. Emergence of Cyberpunk and Cyberculture**

"I wanna burn Lewis," she said.  
"Oh fritz!" Georgie complained. "You did that last week!"  
"Well, he gave me another F on a theme."  
"I never get F's. If yu'd read books once in a -"  
"Georgie," Rayno said softly, "Lisa's on line." That settled that. Lisa's eyes were absolutely glowing.

Lisa got back into CityNet and charged a couple hundred overdue books to Lewis's libsys account. Then she ordered a complete fax sheet of Encyclopedia Britannica printed out at his office. I got next turn (Bethke, 1983).

Although it is widely associated with William Gibson's 'Neuromancer', the first coining of the term 'cyberpunk' was initially by Bruce Bethke as the title of his short

story, published in *AMAZING Science Fiction Stories* in 1983. Consequent to Bethke's publication, Gibson generated the term *cyberspace* and successfully introduced cyberpunk science fiction as a distinct form of literature. The Cyberpunk Project, an online community who explores the literary and theoretical base of cyberculture, describes the primitive social connotation of cyberpunk as "a young, technologically facile, ethically vacuous, computer-assisted vandal or criminal" and claims that the recent meanings of the term exceeds this prejudicial connotation. Cyberpunk, today, refers to a whole new (sub-) culture and a social movement of technologically mediated society.



**Fig. 2.3.** Front cover page of W. Gibson's 'Neuromancer', first edition printed by Ace Science Fiction Books.

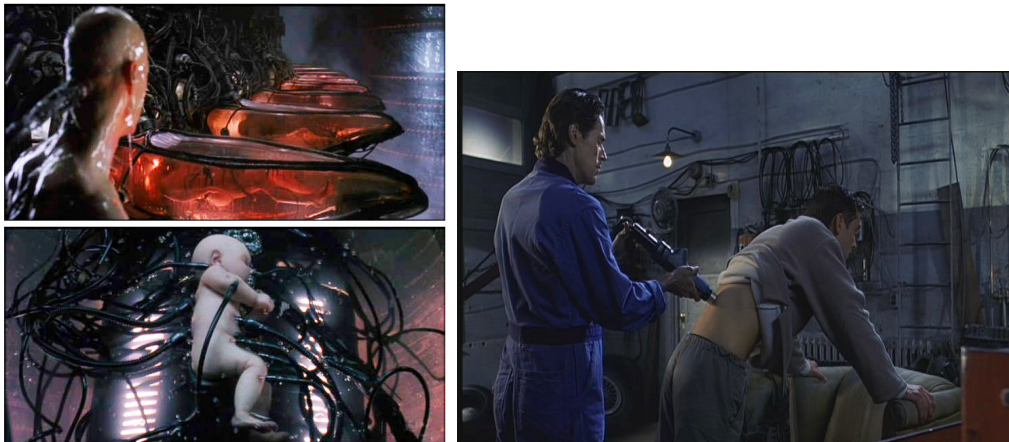
It is possible to analyze the term by a combination of two critical words it involves (*cyber + punk*); given that the essential semantic implications of these concepts collectively define a social paradigm. As coined by Norbert Wiener in 1948, 'cyber' refers to 'cybernetics'; a branch of science that studies how to develop communication and control between living creatures (particularly animals) and machines. The origin of the word comes from 'kubernetes', a Greek word meaning 'pilot' or 'steersman' (as explained by The Cyberpunk Project).

As the second structural component of the term cyberpunk, 'punk' is often used to define the anarchist and destructive (as a subjective description which is open for discussion) youth movement that was affective through the world between 1970's and early 1980's. Although the term was initially generated by members of this



movement as a title of a fanzine cover, the connotations exceeded to 'rotten, junk, antisocial rebel or hoodlum' and in literary and social theories it refers to 'counterculture or street-level anarchy'; mainly by its preferences of outlook and attitude rather than of music and criminal activities (The Cyberpunk Project). The usage of 'punk' in the 'cyberpunk' notion is for reference to its rebellious and anti-authoritarian position against popular culture.

Some of the artistic, literary and philosophical influences of cyberpunk movement are summarized as follows: "classic novels such as Frankenstein and The Big Sleep; the literary avant-garde represented by William S. Burroughs, Thomas Pynchon and Kathy Acker; the science fiction of Philip K. Dick, Michael Moorcock and J.G. Ballard; the cultural analyses of Marshall McLuhan -'to the 1960s what Baudrillard, Kroker and Cook, and Deleuze and Guattari are to the post-cyberpunk era' (Kadrey and McCaffery, 1991); the Situationist International's analysis of contemporary society (Plant, 1992); the music of the Velvet Underground, Patti Smith, the Talking Heads, mid-1970s David Bowie, Brian Eno, Laurie Anderson and, crucially, the Sex Pistols and the Clash; films such as Cronenberg's Videodrome, Roeg's The Man Who Fell to Earth and, especially, Ridley Scott's Blade Runner (itself based upon Dick's Do Androids Dream of Electric Sheep?); MTV and its 'youth TV' emulators; and, finally, one might also add the IBM PC and the Macintosh computer, the cultural and representational impact of which was at least as great as its economic and technological importance" (Burrows, 1995).



**Fig. 2.4.** (left) Two screenshots from Wachowsky Brothers' "The Matrix"

**Fig. 2.5.** (right) Willem Dafoe implementing a 'Bioport' to Jude Law, Scene from David Cronenberg's "eXistenZ"

As outlined by Burrows (1995) and supported by the scenes above, from two renowned movies that are often considered as the most popular examples of post-cyberpunk genre, the cultural and artistic resources of cyberpunk cover a wide range of works and ideas.

Another critical statement (especially by the two latter cases) may be the increasing involvement of autonomous information systems that capture the reality-effect of physical world and simulate alternative realities. One primary motive behind this fictional vision may be associated with the significant association of cyberpunk literature with the emerging paradigm of global information networks and virtual realities in computer systems. As quoted from Bethke's story, earlier works of literature on cyberculture contains evident references to these forthcoming paradigms:

"Get me into the Net," he said, handing me the term. We don't have a stored opsys yet for Netting, so Rayno gives me the fast and tricky jobs.

Through the dataphones I got us out of the libsys and into CityNet. Now, Olders will never understand. They still think a computer has got to be a brain in a single box. I can get the same results with opsys stored in a hundred places, once I tie them together. Nearly every computer has got a dataphone port, CityNet is a great linking system, and Rayno's microterm has the smarts to do the job clean and fast so nobody flags on us (Bethke, 1983).

As illustrated in Bethke's story "Cyberpunk", one of the most influential concepts that were proposed by cyberpunk literature and science-fiction was the foresights on networking possibilities of computers and development of large-scale (even global) information infrastructures, namely Cyberspace. The cyberspace visions of early cyberpunk theories were limited, nevertheless successful to foresee the forthcoming importance and dominance of computer-mediated communication networks on post-industrial cultural structure.

The future has imploded onto the present. There was no nuclear Armageddon. There's too much real estate to lose. The new battle-field is people's minds...The megacorps are the new governments... The U.S. is a big bully with lackluster economic power...The world is splintering into a trillion subcultures and de signer cults with their own language, codes and lifestyles ...Computer-generated info-domains are the next frontiers... There is better living through chemistry...Small groups or individual 'console cowboys' can wield tremendous power over governments, corporations etc...The coalescence of a computer "culture" is expressed in self-aware computer music, art, virtual communities, and a hacker/street tech subculture...the computer nerd image is passé, and people are not ashamed anymore about the role the computer has in this subculture. The computer is a cool tool, a friend, important human augmentation...We're becoming cyborgs. Our tech is getting smaller, closer to us, and it will soon merge with us (Quoted from Gareth Branwyn by Burrows, 1995).

As Branwyn illustrates the role of 'computer-generated info-domains' as new domains of attention for the consumer culture; the theoretical and literary propositions by cyberpunk science-fiction writers, such as Bethke, Sterling, Dick and Gibson, constitute useful sources for social and cultural theory. While Featherstone and Burrows (1995) mention Gibson as "the prime exemplar of postmodern poetics", Fredric Jameson refers to Gibson's cyberpunk novels by stating: "William Gibson's representational innovations, indeed, mark his work as an exceptional literary realization within a predominantly visual or aural postmodern production" (Jameson, 1996).

One critical aspect of this virtual existence is the condition of humans as participants or operands contained by the mechanical (or digital) system. In cyberpunk literature, this notion is often represented by the introduction of 'Cyborgs'. Following Featherstone and Burrows, a Cyborg may be defined as a "cybernetic organism, a self regulating human-machine system" and a "a human—machine hybrid in which the machine parts become replacements, which are integrated or act as supplements to the organism to enhance the body's power potential" (Featherstone and Burrows, 1995).

Furthermore, the involvement of Cyborgs to our physical world should not be considered only as a fictional notion which is illustrated by cyberpunk novels or science-fiction movies. The applications of several technological devices or tools to everyday life also connote the existence of human-machine hybridization in contemporary society; in a wide range from prosthetic devices that empower specific physical abilities, cosmetic surgeries to the increasing developments in biotechnology, genetic engineering and nanotechnology. As it will be further investigated in following chapters (Identifying the User and Cyberspace as Body Extension), the influential science-fiction literature of cyberpunk and the emergence of cyberculture has a noticeable contribution in theorizing the virtual presence and condition of users in computer-mediated environments.

#### **2.4.2. Global information networks and transformation of information to commodity**

As Bell (1996) argues, the major variant of the post-industrialist social structure is the cultural relocation of intellectual technology as the dominant economic feature; consequent to the domination of machine technology in industrial society. For Bell,

information and knowledge are now the foremost structural elements of post-industrial society, just as capital and labor were those of the former social structure; and this relocation of structural paradigms within contemporary culture is visible through contrasting the economic features of these two predominant eras.

In the light of previously mentioned insights and literary theories of Gibson's cyberpunk fiction, Roger Burrows states "not only has the Gibsonian concept of cyberspace begun to transmute into a tangible reality (...) but many of Gibson's fictional perspectives on cultural, economic and social phenomena have begun to find their way into social and cultural analyses as viable characterizations of our contemporary world." (Burrows, 1995). Technological vision of Gibson and other cyberpunk authors –including Bethke, Sterling and Dick and such – on the growing cultural impact of computers and computer-mediated information networks are recently considered as the fictional roots of conceptual project scenarios generated by global corporations; such as Sega, Nintendo, Sony, and so on. It is now feasible to interpret current tendencies of these global companies on integrating digital technologies into daily life - by developing interactive information appliances, on-line games and communities and design concepts such as ambient intelligence – with reference to the growing dominance of information as a commodity in post-industrial society (as coined by Bell above).

The pattern of progression in this socio-economic relocation of information within the economic and social structure of contemporary society can be traced by theories on information appliances and the concept of distributed computing<sup>3</sup>; as Donald Norman describes the process of "Making Technology Invisible" in his interview with Eric Bergman:

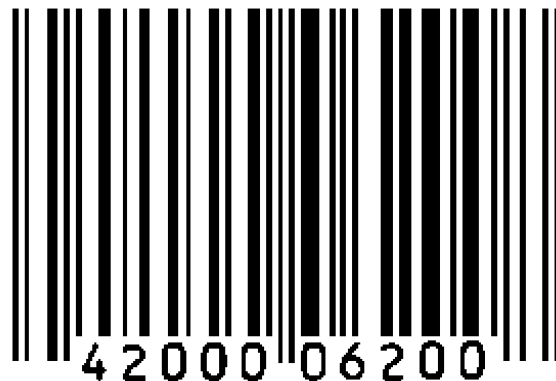
We might travel with something not unlike today's portable computer that lumps everything together, but when I get home, I'd rather use the real thing. This will only work if we have an effortless way of transferring information. If I make changes while on a trip, it should automatically update all the devices I have at home. That technology has not existed up to now, and it's just starting to appear. The underpinnings are a kind of infrastructure that the Internet has provided, coupled with software and protocol standards such as Jini that automatically let devices communicate with each other and find out their capabilities. Hewlett Packard has JetSend that allows the handshaking that says: "I have a picture, what kind of picture do you accept? Would you like JPEG? etc." In addition perhaps a radio frequency system like Bluetooth, which means that whenever my Palm comes within five feet of my home address book, they will just silently detect one another through Bluetooth and Jini and synchronize themselves. That's what's needed. All the pieces exist today, but they have not been put together yet (Bergman and Norman, 2000).

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<sup>3</sup> These notions will be further examined in the following chapter within new media and product design.

In effect, developing database structures and global information networks such as Internet and World Wide Web may be claimed to progress rapidly on their way to achieve Norman's ideals. With the standardization of fundamental aspects of new media objects and generation of unified media codes by which most devices can operate, the concepts of technological lifestyles and ambient intelligence are often employed in modern design processes. Manovich (2001) explains the essence of this integration with the World Wide Web model that classifies its objects by a standard level of importance but by different functions and thus, enables the combination and connection between all these elements for the creation of hybrid new media objects (see *numerical representation* and *modularity* principles).

For a comprehensive analysis on the affects of information networks and databases on post-industrial consumer culture, another noteworthy dimension of these entities should be explored. It is the flipside of the coin by which information technologies began to be incorporated with the production industry; namely, it is the transformation of physical commodities to information units by sampling and quantification of them in numbers and attributes for the benefit of production and distribution purposes. With developing production facilities, increasing number of produced artifacts and outsourced services, and improvements in long-distance, overseas transportation of materials, goods and services; the requirement of constant control and tracking the products and their production-distribution-consumption processes has emerged. According to Elmer, "Before techniques of solicitation could automate consumer opinions within the production loop, however, products themselves, or to be more precise business 'inventories', would have to be incorporated into existing archival technologies" (Elmer, 2002).



**Fig.2.6.** Illustration of a computer generated barcode label

It is this requirement of keeping large-scale and interactive inventories and classifying products and services (production stages, outsourcing, storage,

distribution, finance, etc.), which constituted the foundation of universal coding and labeling systems. The evolution of a simple bar code (Fig. 2.5.), which is currently included by almost every mass-produced object, is, in this sense, one of the fundamental denominators for our discourse on new media and post-industrial consumer culture.

As Elmer (2002) proposes, the structural and economic foundations of this new paradigm should be firmly established, prior to the cultural appropriation of information as a commodity and domination of information-based cultural objects on social autonomy. In his analytical essay on “The Coming of Post-industrial Society” (Bell, 1996), Daniel Bell classifies the infra-structure of communication and distribution of information as one of the three major features; thus implies the relation of developments in information technology with modern economic and social structure:

In a narrower, technical sense, the major problem of the post-industrial society will be the development of an appropriate “infra-structure” for the developing *communications* networks (the phrase is Anthony Oettinger’s) of digital information technologies that will tie the post-industrial together. The first infra-structure in society is transportation – roads, canals, rail, air – for the movement of people and goods. The second infra-structure has been the energy utilities – oil pipeline, gas, electricity – for the transmission of power. The third infra-structure has been telecommunications, principally the voice telephone, radio and television. But now with the explosive growth of computers and terminals for data (...) and the rapid decrease in the costs of computation and information storage, the question of hitching together the varied ways information is transmitted in the country becomes a major issue of economic and social policy (Bell, 1996).

It is visible in our contemporary digital culture that task-specific information appliances and interactive global networks have solidly consolidated their involvement in daily life. Even though these devices and systems still require the computer as the executive component, the increasing tendency of present-day design is directed to concealing this technical, inhuman and complex configuration of the computer and bringing the comprehensible, task-oriented features forward by designing user-friendly interactive appliances. Donald Norman presupposes the paradigmatic affect of these new appliances on digital culture by referring to the cultural influence of the development of electric motors; a significant technological improvement that reshaped most mechanical appliances and was gradually concealed from the ordinary user by the works of design.

"I believe the same kind of transition will happen with computers, that instead of one massive device that occupies considerable space on our desktop, we will have a wide range of devices that are designed to fit the tasks that we wish to do. And that inside of them there will be computers and a communication structure, but we'll be unaware of it. It will simply empower us to do our tasks. We won't think of using the computer. We won't go to use a computer, just like today we don't go to use our electric motor. We will go to write someone a letter. Or you'll go to check on the news or check on the weather. Or we'll say, "Let's see what's playing in nearby movie theaters." Or in a strange city you might ask, "Where are the good restaurants within walking distance of where I am right this minute?" (Bergman and Norman, 2000).

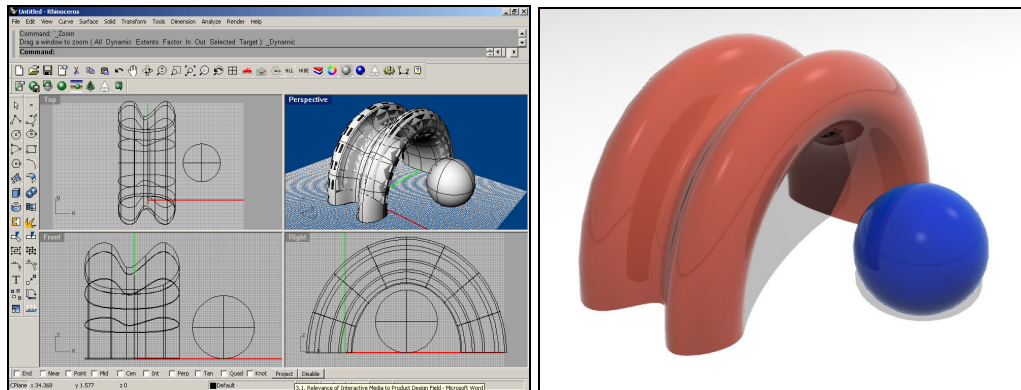
Such social theories on the foundation and cultural influences of information technologies, computer-mediated communication facilities and, consequently, new media as proposed by Bell and other authors some of whom are cited in this text – Jameson, Burrows, Manovich, Norman, Elmer and so on – would provide valuable insights not only for social studies but also for design research.

### 3. NEW MEDIA, CYBERSPACE AND VIRTUAL ENVIRONMENTS AS DETERMINANTS OF DESIGN

#### 3.1. Relevance of Interactive Media to Product Design Field

The present condition of theory and design in an age of digital media presents the need to pioneer a new understanding of the nature of design thinking in relation to digital design media. There exists a need to reformulate fundamental concepts of design theory in order to consider their appropriateness in this emerging field (Oxman, 2006).

The developments in digital technologies have significant impacts on design theories, methods and processes as well as the practical outcomes of these processes, namely the *products* themselves. Therefore, it is necessary to briefly mention the effects of digital technologies to conventional design paradigm before beginning to investigate its reflections and outcomes within contemporary material culture.



**Fig. 3.1.** (left) 3D Modeling of a scene, screenshot from Rhinoceros 3D modeling software<sup>1</sup>

**Fig. 3.2.** (right) Rendering of the same scene with Rhinoceros 3D and Flamingo plug-in

The use of digital technologies in design processes and interactive new media applications would not only provide new and extensive environments to the designer for conceptualizing, realizing and presenting their work, but also offer exclusive and promising domains of interaction between designers from various fields, companies

<sup>1</sup> The object and their configurations in the scene is created by the author of the thesis.



that employ designers, digital design toolmakers and design media (Oxman, 2006); and consequently between digital products and their users. These new relationships between major actors of design profession is considered to reshape design research field as theoretical knowledge from relevant disciplines (social sciences, philosophy, digital technology, etc.) would have to be recognized.

Among the characteristics of publications in the field [as described in the following section] is their emphasis upon the documentation, explanation and interpretation of design objects and their rationale. This appears to be a critical missing link, if we are to be able to address the central questions and future possibilities of digital design. One of these central questions relates to whether, in fact, digital design is a unique phenomenon, “a new form of design”, rather than merely a conventional design accomplished with new media. If this radical assumption is valid, then a comprehensive theoretical formulation of digital design might also contribute to new interpretations of certain of the root concepts of our extant design theories. Among these concepts challenged by digital design processes and therefore requiring the reconsideration of their formulation in design theory are fundamental ideas relevant to design thinking and concepts related to design methodology such as representation, generation, and interaction (Oxman, 2006).

As digital design forces us to reconsider conventional design rationale and methodology, the reflections of new media and interactive applications are visible not only through the design process but also in everyday products and user-product interaction. It may be argued that, with the increasing involvement of digital technologies in everyday products, a certain hybridization of hardware and software significantly changed the way we conceptualize objects (products) around us. Interactive products of today are material objects that have a computer-mediated abstract dimension further beneath its sensory interface; as Anders puts forward:

Digital technology blurs the distinction between the sensory and mediated world further. The computer is a symbiosis of hardware and software. We can touch the mouse and keyboard, but we can't see the software. Hardware is sensory, software is not. Yet one is inoperable without the other. The computer, then, is a hybrid of complex entities. Each has its own level of existence, ontologically, with respect to the user, although they are mutually dependent on each other. Such dependencies between material and electronic entities have great implications for the arts, industrial design and architecture (Anders, 2001).

What is more, this multi-dimensional existence of computer-mediated objects affects the way we define their functional values and categories. While the function of a conventional material product (such as a toaster or coffeepot) is defined by the type of physical work, Anders argues that the work of a computer is “aimed at symbolic

manipulation” and offers a dual categorization of functional domains for computer mediated systems:

Though the computer is a physical artifact, the product of its use is not. In fact, with its software, the computer straddles both concrete and symbolic worlds. It does this in more than one way. As its hardware does symbolic work, its software often mimics physical objects. Many computers use iconic displays, presenting files and codes as manipulable objects. Software buttons, dials and scrollbars emulate the mechanical tools from our material world (Anders, 1999).

Since it was mentioned in previous chapters that new media objects are using unified codes and algorithms to operate within, it is always possible to consider computer-mediated products to function and be integrated to a larger system of product networks. As Anders borrows the term from researchers at MIT MediaLab at Massachusetts Institute of Technology and Xerox PARC, the integration of electronic media and physical objects to constitute a network of products is called “distributed computing<sup>2</sup>”.

Electronic processors used in toys, cars and missiles make them increasingly “smart”. They use electronic chips for sensing and navigation, forming a basis for more sophisticated robotics. However, when compared to a computer, the work of these machines is more physical than symbolic. Their product is concrete, mechanical motion. But if they were connected into a signal network, my newly smart toaster could talk to the coffeepot – and the pot to the alarm clock. In the morning my clock would prompt the pot which in turn would wake the toaster to start breakfast – a Rube Goldberg illustration, perhaps, but one that bridges the gap between appliances and media (Anders, 1999).



**Fig.3.3.** (left) ‘smartBED’ concept developed by PHILIPS CareLAB

**Fig.3.4.** (right) ‘ILSA (Intelligent Life Style Assistant)’ concept developed by PHILIPS CareLAB<sup>3</sup>

<sup>2</sup> Another usage of the term ‘distributed computing’ refers to the method of running a complex computing process in more than one computer. While this second definition will also be mentioned in the following chapters of the thesis, Anders’ definition is implied in this chapter.

<sup>3</sup> Both images in Fig.3.3. and Fig.3.4. are acquired from “Philips Research Password”,Feb. 2007.

The concept of distributed computing, which means products interacting with each other for the execution of a collective daily function, is clearly not a recent utopia for both designers and users. However, the realization and effectiveness of this conceptual fantasy is much more feasible today, with the emerging digital technologies and computer-mediated-communication systems. These two examples above – smartBed concept that monitors vital signs to help elder users stay healthy, and ILSA concept that provides an autonomous home entertainment system for old people – show that major companies, such as PHILIPS, already conduct dedicated research and development studies on the subject.

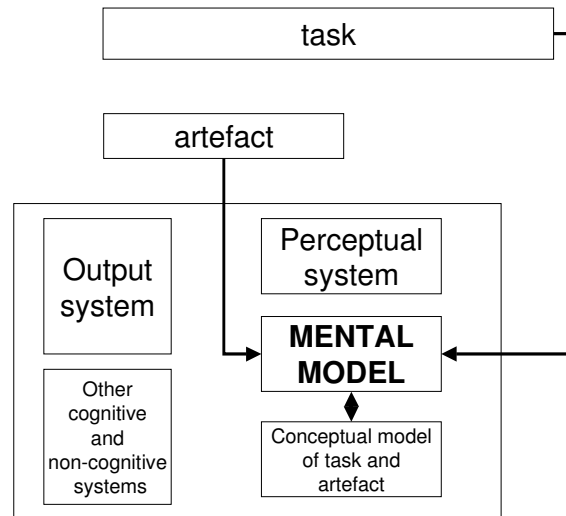
Considering the major principles of new media that are put forth by Manovich (numerical representation, modularity, automation, variability and transcoding) and increasing developments in virtual communication networks (such as World Wide Web and Internet), electronic mediation of physical products seems to offer promising new domains for design profession.

### **3.1.1. Cognitive Dimensions of interactive products and users' mental models**

The concept of mental models is originally a field of research developed by Human-Computer-Interaction (HCI) domain, which is built on the idea that exploring the understanding capability of target users and their patterns of reasoning (when they encounter a system) would enable designers of the interactive systems to imply appropriate mental models in their designs and avoid errors and misinterpretation. Consequently, the mental patterns that users form while interacting with a digital system begins to concern designers of the physical product, since these products are the material extensions within which the digital interface functions.

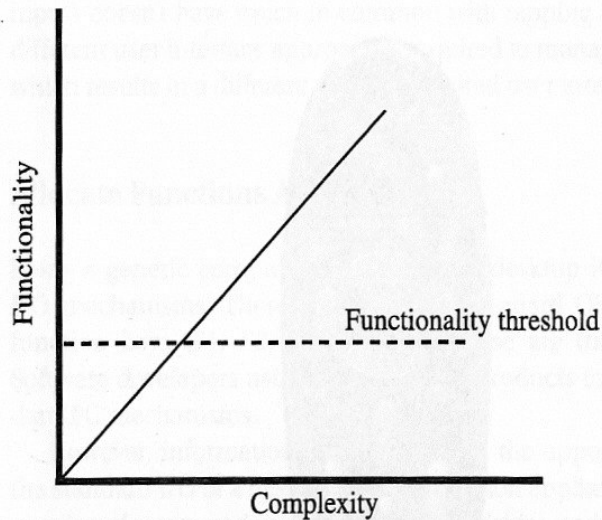
As outlined by Van der Veer and Melguizo, the earlier studies on people's development of mental models to interact with the world can be traced back to Kenneth Craik's ideas in 1943. Craik suggested that mental models are representations of encountered situations (real or imaginary) in people's minds, and they can be created by experience (perception), imagination or through discourse. Craik's description of these models were mostly visual images, however he also mentioned abstract representations of situations that cannot be visualized. Another noteworthy effort to explain people's patterns of mental reasoning is Johnson-Laird's theory which claims that the semantic content of the situation is as much applied to mental models as the syntactic (structural) content. In the light of these former explanations in the nature of mental models, it may be argued that designing an

interactive system involves consideration of a multi-dimensional perspective of users' involvement in the process.



**Fig.3.5.** The role and place of Mental Models during the interaction with a physical system. Adapted from Cañas & Antolí (1998). (cited by Van der Veer and Melguizo)

One of the major considerations while designing an interactive system or product is the fact that users of the product are not professionals and they would, supposedly, have lack of former education about the use of that particular information technology. Furthermore, the frequency of use with a specific product may sometimes be lower than a standard everyday product. In these cases, the designer cannot expect much motivation from the users to read and practice instructions nor have a training period before using the product. Anyhow, it is always the major indispensable obligation of the product (or system) to function correctly within the intended environment to accomplish the desired task by its user; and manage this with spending optimum effort. Van der Veer and Melguizo suggest that “*design methods for complex but sometimes infrequent human-machine interaction need to focus (among other things) on enabling the development of an “instant” mental model that allows useful interaction*” to overcome any possible errors during the usage of the product.



**Fig.3.6.** Functionality versus Complexity graph for information appliances (Mohageg and Wagner, 2000)

The “functionality versus complexity trade-off” graph as suggested by Mohageg and Wagner is shown above. As it is noticeable in this graph, complexity of the user interface rises as more features of functionality is added to the system. “The functionality threshold is the concept that information appliances should limit the functionality to the essential few (the threshold) that provide for a compelling product without leading to unmanageable complexity.” (Mohageg and Wagner, 2000) The trade-off between functionality and complexity (along with the renowned reciprocity between *form* and *function*) also has a remarkable significance for industrial design research and practice. In view of this statement, the two aspects of creating a perceptible user interface that are stated below could as well be re-interpreted by product designers to design a usable (interactive or non-interactive) product:

1. “Generic issues like human perception characteristics in relation to the actual work situation, the cultural meaning of symbols, etc.”
2. “The task- and situation-dependent need for specific information, like the actual system state, options for next user actions, ranges of values to be put in, etc.” (van der Veer and Melguizo)

Within their research on mental models, Van der Veer and Melguizo cite Donald Norman’s theories on mental modeling and product-user interaction. According to Norman, these models are mental representations and they are constantly modified

during the interaction process since the condition of the product/system and the feedbacks change after each modification done by the user. Because of this essential feature of mental models, as implied by Norman; they are incomplete, unstable over time, unscientific, as well as they have vague boundaries and contain aspects of superstitions. In summary, the characteristic aspects of mental representations generated by users during interaction with a product may be outlined as following:

- “The fact that mental models are incomplete means that they are constrained by such things as the user’s background, expertise, and the structure of the human information processing system.
- Because they have vague boundaries, operations and systems with certain relations or similarities can be mixed up.
- Mental models are unstable over time.
- Mental models are unscientific and contain aspects of superstitions.
- Mental models can only be run with restrictions because people experience gaps in their knowledge and insight in the process. In addition mental models tend to be parsimonious, meaning that people prefer to know a limited set of elements about the reality they model.” (Van der Veer and Melguizo).

### **3.1.2. Information Appliances and involvement of interactive technologies in end-user products**

It is observed in the previous chapter that initial research studies on user-product interaction and its cognitive extensions were generally conducted within Human-Computer-Interaction (HCI) field. This does not necessarily mean that software design is the only area of practice on which these theories would be applied. In view of the fact that information technologies seize to penetrate more and more into our lives through everyday products, the promising field of investigating the features of these products, namely *information appliances*, with a design research perspective seems to emerge.



**Fig.3.7.** Selected examples of information appliances (from left to right: SONY VAIO PDA, Apple Inc.'s iPod and iPod Nano, Apple Inc.'s iPhone and BlackBerry's model 8700c)

There exists a wide range of definitions for the term “information appliance”, varying according to the purposes of the researchers and/or the portion of the subject matter they prefer to focus on. The first set of definitions below is offered by Eric Bergman in the Introduction of his edition; *Information Appliances and Beyond*. Bergman follows Donald Norman's descriptions and re-interprets them as such:

**“Appliance n.**

A device or instrument designed to perform specific function, especially an electrical device, such as a toaster, for household use.

Synonyms: tool, instrument, implement, utensil

-American Heritage Dictionary, third edition (Electronic Version)

**Information Appliance n.**

An appliance specializing in information: knowledge, facts, graphics, images, video, or sound. An information appliance is designed to perform a specific activity, such as music, photography, or writing. A distinguishing feature of information appliances is the ability to share information among themselves.

My only amendment to the above definition is that I believe interactive products can be considered “ information appliances even if they do not have “the ability to share information among themselves”. Of course they are much less useful in that case!” (Bergman, 2000).

Another attempt to define and categorize information appliances is done by Mohageg and Wagner in their chapter called “Design Considerations for Information Appliances” within Bergman’s edition. Unlike Bergman’s description, they employ a more functionalist perspective as quoted below:

An information appliance is a computer-enhanced consumer device dedicated to a restricted cluster of tasks. A personal digital assistant (PDA), an Internet-enabled screen phone, and a pager are examples of information appliances. The concept of information appliances is borrowed from the traditional notion of appliance: it is a device that performs only a few tasks, but does them well, efficiently, and with little conscious effort from the user (Mohageg and Wagner, 2000).

The third definition of the term, as proposed by Green and Blackwell in their text called “Cognitive Dimensions of Information Artefacts: A Tutorial”, refers to the subject matter as “*information artefact*” rather than “information appliance”. The significant aspect of this distinct selection of the word, *artefact*, can be observed in their classification method and the fact that they use the term “*interactivity*” to define information artefacts, unlike the previously mentioned researchers.

Information artefacts are the tools we use to store, manipulate, and display information. They comprise two classes:

- *interactive artefacts*; such as word-processors, graphics packages, mobile telephones, radios, telephones, central heating control systems, software environments, VCRs, ....
- *non-interactive artefacts*; such as tables, graphs, music notation, programming languages, etc (Green and Blackwell, 1998).

With the development and increasing social integration of digital technologies into consumer culture, whether in the form of information networks or “distributed computing” as mentioned in the previous chapters, Cyberspace would evidently affect our spatial perception and our engagement in the world. As Anders illustrates this influence with reference to William Mitchell’s observation, the environments and buildings that constitute our physical presence in contemporary material culture will be directly affected by this technology:

If we accept similarities between perceived and cognitive spaces, we can question the need for physical realization. Taking the example of banks’ automated teller machines, we can quickly see that a distributed presence mitigates against large central facilities. Some of banks’ services have been out-placed – others may exist in no place at all (Anders, 1999).

It is clearly noticed by Anders’ observation that most information appliances are defined not only by their primary functions as physical tools; but also they bear the connotative values of the mediatization of post-industrial consumer culture. As Jansson (2002) argues, consumption of media should be considered with reference



to conventional consumption studies; mainly because the computerized and image-loaded digital utilities carry the meaningful relations to commodity-signs, entire lifestyles, and so on. The discourse on the mediatization of consumption and commodity values of new media objects will be investigated further in following chapters of this thesis.

Although personal computers (PCs) are often mentioned as having the major influence on mediatization of culture, our studies on information appliances confirms that the integration of interactive digital technologies to everyday life has a profound affect on social paradigms of consumerism. As we quoted various views on how to define these products, one significant feature has been revealed: information appliances (or artefacts) are designated to achieve a particular set of tasks for a specific group of consumers who does not necessarily have a proficiency in technological structure of the products they use. Unlike PCs, most information appliances are not expected to have the capability of functioning through various tasks, methods or environments.

These key differences (Table.3.1.) between specific products and personal computers (PCs) are outlined by Mohageg and Wagner as below:

“Some of the key characteristics of information appliances that differentiate them from PCs are:

- Limited Purpose and functionality
- Not necessarily extensible or upgradeable
- Replacement expectation (the user may have to replace the entire device within a few years)
- Perceived as less expensive (versus PCs)
- Perceived as less complicated to run and maintain (versus PCs)
- Very easy to learn and use
- No expectation of “expert users” (Mohageg and Wagner, 2000).

**Table.3.1.** Table of key differences among a screen-phone, analog TV set-top box and desktop computer. (Mohageg and Wagner, 2000)

*Some of the key differences among a screen phone, analog TV set-top box, and a desktop computer*

<i>Characteristic</i>	<i>Screen Phone</i>	<i>TV Set-Top Box</i>	<i>Desktop Computer (personal computer or workstation)</i>
Applications: telephony, voice mail, address book, email, Web browsing		TV, EPG, Web browsing, email	word processing, spreadsheets, presentations, Web browsing, email, productivity applica- tions, vertical applications
Input device: primarily finger, stylus, secondarily keyboard		remote control and remote (IR) keyboard	mouse, keyboard
Mouse support	none	none (some remote controls have trackballs)	yes
Keyboard support	on-screen and/or physical keyboard	on-screen and/or physical keyboard; keyboard usually infrared technology	physical keyboard
Viewing distance	1–1.5 feet	10–15 feet	1–2 feet
Display size (diagonal)	6–8 inches	13 inches to wall size	13–28 inches
Screen resolution: ¼ VGA (320 × 240) to full VGA (640 × 480)		broadcast television analog signal (roughly equivalent to 640 × 444 for NTSC)	640 × 480 to 1800 × 1440
Display colors	2-, 4-, or 8-bit color; both black and white and color	broadcast television; color characteristics depend on signal type (e.g., NTSC, PAL, SECAM)	8-, 16-, or 24-bit color
Pixel density	~102 dpi	N/A	~72 to 100 dpi
Multiple screens	no	no	yes
Audio input	telephone handset, microphone	microphone	microphone
Audio output	telephone handset, perhaps speaker	TV speakers up to full surround sound	computer speakers to high-end speakers
Data bandwidth	28.8 Kbps to ISDN	28.8 KBps to cable modem throughput	28.8 Kbps to T1
Printer connection	optional	optional	yes

The case-specific examples selected by the authors (screen phone, TV set-top box and desktop computer) illustrate how the requirements and design considerations may vary with respect to the characteristics of the designed product. These variations could concern the physical interaction methods of the user with the product (input device, viewing distance, i.e.), functional aspects (applications, i.e.) and/or the technological structure and requirements of the information appliance (pixel density, data bandwidth, printer connection, i.e.). In view of all these structural features and constraints in addition with the cognitive processes of users, Mohageg and Wagner (2000) propose certain aspects for designer's consideration: account for target domain, dedicated user interfaces for dedicated devices, properly allocated functions, simplification and design for responsiveness.

**Table.3.2.** "Characteristics of each target domain and associated design implications" (Mohageg and Wagner, 2000)

<i>Domain</i>	<i>Characteristics</i>	<i>Example Design Implications</i>
Entertainment	<ol style="list-style-type: none"> <li>1. Long interactions (&gt; 30 minutes)</li> <li>2. Less structured interaction (versus PC)</li> <li>3. Not very "directed" tasks</li> <li>4. More relaxed interaction</li> <li>5. Various levels of concentration</li> </ol>	<ol style="list-style-type: none"> <li>1. Content is critical so devote significant I/O bandwidth to content.</li> <li>2. Pleasant experience preferred to efficient one.</li> </ol>
Information access and communication	<ol style="list-style-type: none"> <li>1. Short interactions (&lt; 10 minutes)</li> <li>2. Structured interaction (versus entertainment)</li> <li>3. Usually "directed" tasks</li> <li>4. Various levels of concentration</li> </ol>	<ol style="list-style-type: none"> <li>1. Ease of learning and long-term use are critical.</li> <li>2. Efficiency can be a key feature of the UI.</li> </ol>
Assistant devices	Similar to information access and communication	Similar to information access and communication

As described within this chapter, digital technologies and interactive user interfaces are related to the product design field most noticeably through information appliances. The structural compositions, functional features and design considerations of these artifacts are identical with neither personal computers nor conventional non-digital physical products; then again they are significantly nourished by both. Information appliances are complex commodities since they both *are* and *contain* new media objects. Consequent to these statements; cultural reflections of interactive technologies, consumers' participation in the process as co-author and contemporary theories on designer's role and responsibilities in digital culture may come forward as topics of discussion.

### **3.2. The roles of producer, designer and user in virtual environments**

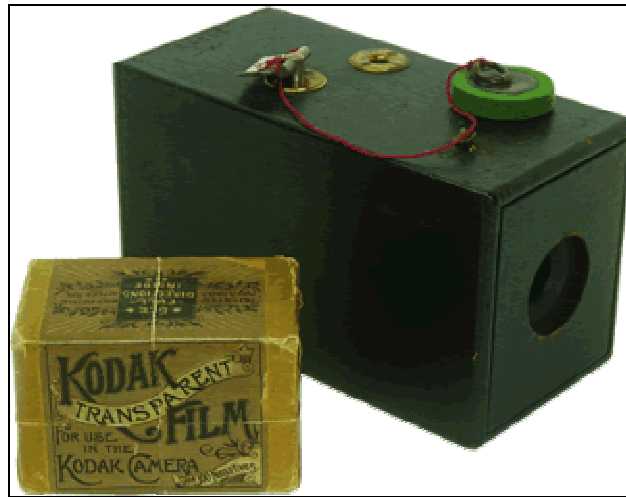
The computerization of culture and cultural objects has a considerable affect on consumer culture, market economy, and post-industrial social structure, as mentioned in previous chapter. What is more, it is often argued that this social paradigm shift has also reshaped the individuals' ways of creating and expressing their cultural identifications.

The critical aspect of the subject matter, for both software and product design fields, is the fact that various professions and research fields are now participants of this complex and intricate context. The paradigm sets of each field are visible within a common medium. With the involvement of interactive technologies in end-user products and of metaphorical references to physical product systems in user interfaces, the extensions of creative professions have widened to utilize different perspectives. Not only are the classifications of objects and forms a new subject of discourse, but also the roles of participants and their identities have new expansions for contemporary design research.

#### **3.2.1. Transformation from consumer to co-author**

The distribution of social authority by the re-definition of consumption to participation and the fusion of leisure with work inside a unified media source (namely; the computer) in post-industrial society also caused significant social changes and hybrid definitions about cultural communication. In a literal sense, the distinction between author (producer of cultural objects) and the reader (user) has blurred; in new media, it is provided by enabling the users to customize, optimize and improve their products according their demands and skills. Today, most software developers create their programs to be usable and accessible to amateurs. Most of the computer games come with level editor packages. Fashion industry also releases many designer-software for amateur use and major programs always offer optional menus, filters and plug-ins. Art and graphic design processes are also likely to be affected from this shift, considering the huge media or image libraries and pre-programmed filtering functions of Photoshop, etc. However, all this interactivity in the field of software reminds us not an absolute authorship of the new media object, but the assembly process of discrete units within a digital database. While the actual authorship is provided by the user's practice of creating an authentic object by the means of the specified media (such as typing a text to paper, shooting a photograph with a camera or creating an –image, text, i.e. – file in a computer), it is a form of co-

authorship that is offered by customization and personalization features of interactive software. Given that the user's role has affectively changed with the introduction of new '*new media*' sources through time and development of consumer culture, the traces of 'co-authorship' – as implied here – should be inspected with reference to the genealogy of new media.



**Fig.3.8.** Early KODAK camera, 1888

The development of new visual media sources is a cumulative progress, in which the former versions still remain in existence but also keep up to an evolutionary alteration by the changing social context. Meanwhile, this changing of social habits and development of visual library of codes is caused by the introduction of new kinds of representation. For instance, with the invention of photography, the dominance of the painter on visual representation of reality has drawn back to a more symbolic social condition (politics – as described by Benjamin); and the role of virtual representation has exceeded its conventional artistic connotations and develop into a 'modern' form of consumption.

Through photographs, we also have a consumer's relation to events, both to events which are part of our experience and to those which are not – a distinction between types of experience that such habit-forming consumership blurs. A third form of acquisition is that, through image-making and image-duplicating machines, we can acquire something as information (rather than experience) (Sontag, 1999).

Consequently, the marketing of photographic devices as everyday-use products (with the help of Kodak, most visibly), created a society in which anyone can be the image collector, the artist or the “producer” in this new type of media. The reflections of early discourse on this paradigm shift (see Roland Barthes’ “The Death of the Author” [Barthes, 1977] for a similar discussion within contemporary literature) may still be an area of discussion for contemporary new media, since computerized media applications provide user with the power of “customization” and “interactivity” and virtually make every user the “modifier” of itself. Manovich refers to interactivity as a major feature of new media – which was also utilized as a critical concept for identifying the authenticity of new media – and explains its influence as below:

New media is interactive. In contrast to old media where the order of presentation is fixed, the user can now interact with a media object. In the process of interaction the user can choose which elements to display or which paths to follow, thus generating a unique work. In this way the user becomes the co-author of the work (Manovich, 2001).

Visual user-interfaces on computer screens and, as its follower, Virtual Reality interfaces are also breakthroughs in a different sense, which is because these technologies broke the necessity of “imprisonment of the viewer”. The camera, point of view (physically) and the viewer’s virtually-represented self (literally) become mobile in the screen (or virtual environment). Furthermore, Virtual Reality systems introduced the possibility of virtual interfaces that operate with the tangible bodily expressions, and interpret movements of the user as executive commands.

As the ordinary “screen” which is associated with a window into a virtual space is replaced with the “windows” as virtual instrument panels, Manovich forecasts and informs us about the “emerging of a new cultural meta-language” which depends on the viewers participation and control over the virtual environment.

And in contrast to cinema where most “users” are able to understand cinematic language but not speak it (i.e., make films), all computer users can speak the language of the interface. They are active users of the interface, employing it to perform many tasks: send e-mail, organize files, run various applications, and so on (Manovich, 2001).

Although the spectator becomes the actor in the virtual environment, she is still bound to the computer, VR station or the portable device. This immobilization of the spectator causes the mobilization of media devices that enables the user to be

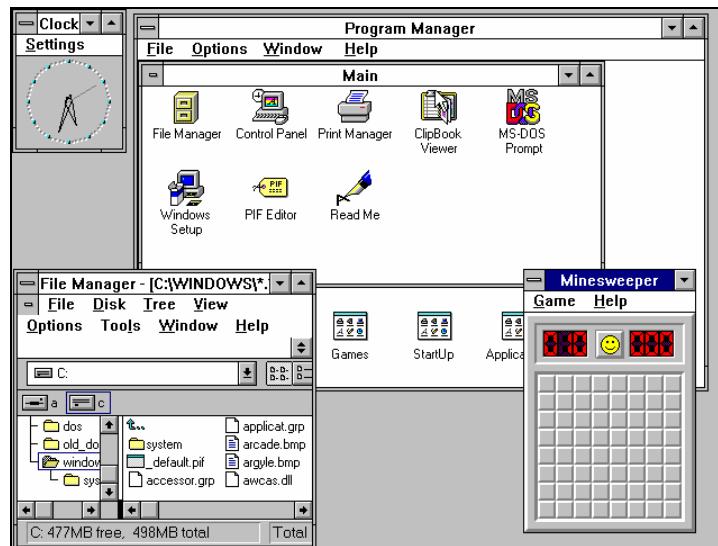
online or plugged-in everywhere. Mobilized media devices are now designed and promoted within unified data transfer protocols and database formats that enable these products to communicate and function collaboratively. As argued with reference to the terms such as *information appliances* and *distributed computing*, these new forms of commodities have the potential to reshape the design profession.

### **3.2.2. New roles and responsibilities of the designer within new cultural paradigm**

[As this book illustrates,] information technology is finally reaching maturity. The customer is no longer someone who craves neat technologies for the sake of technology but rather the everyday person who wants something that provides a real, substantive benefit. As for the device, well, it should simply work. When everyday consumers dominate the market, their needs and activities must be catered to: human-centered design moves from luxury and speculation to necessity (Norman, 2000).

As mentioned earlier, new media objects have distinct characteristics that make them new and there are certain ways to create, use, manipulate and distinguish them from our existing library of codes for conventional objects. All these principles and associations (or resemblances) form a new dimension of existence which may have different forms and processes for designers. Donald Norman, as quoted above, claims that gradually rising demands of consumers and constantly improving technologies of computerized media should meet at a feasible level by the help-of human centered design approach. Oxman's interpretation of designer's task as 'interaction, control and moderation through generative and performative processes and mechanisms' (Oxman, 2006) is also valuable in this respect since it involves the designerly processing of information with respect to the formation of a new *digital* culture. What is noticeable here is that, the work of designer today is not strictly limited by deciding on the functional and aesthetic features of an artifact, but contains the designation of proper appropriations for this promising new cultural paradigm.

In new media, we are not yet at the point where the conceptual interdependence of time and space is being fully exploited. The lack of such specificity in the new media speaks to the need to get beyond the obsession with placing button on the screen. The task of the designer is not to create a better button, but to determine if the buttons are required in the first place (Brody, 1999).



**Fig.3.9.** Screenshot from user interface of Microsoft Windows 3.1x

Utilization of different senses in a new media product, adding speech, textual, visual and acoustical forms of information to a multi-dimensional environment, offers the designer with a variety of possibilities through design process. Not only the software designer and graphic designer - who collaboratively shape the form of software - are nourished by this multi-modal expansion of conventional product-user interaction, but also the designers of information appliances; product designers, to be precise. It is the collaborative effort of various design and engineering fields that define the appropriate conceptualization and materialization of new media in post-industrial consumption culture. The effectiveness of the dialog between these fields has a crucial role in the development of a multi-disciplinary field of new media design. Given that these developments will penetrate the consumer market with everyday products, it is essential for the design research of today to acquire a multi-disciplinary perspective; including not only software development, but also media, graphic design and cultural studies. Donald Norman mentions to this interdisciplinary approach in his interview with Bergman as:

I think it's time to come to the era of products for the everyday person, products much more like the appliances in the kitchen, or for that matter the furniture in your house, that are meant to fit your lifestyle and meant to give you value and convenience, not to complicate your life. This requires, therefore, a very different approach to the design of our products. It requires an approach in which you observe the way that people live their lives, and you try to make products that fit naturally and seamlessly into people's lives. It requires a human-centered design approach where designers of all sorts—industrial design, graphics design, and interaction design—are working as a team from the very beginning of the concept of the product. First of all, to decide what the product should be in the first place. Second, to decide what its function should be, and third, how it behaves. Fourth, how it looks, how it feels, the aesthetics (Bergman and Norman, 2000).



What is noticeable in Norman's statement is that the interdisciplinary approach in design of computer-mediated appliances – as in design of any other type of commodity – should have a user-centered perspective; mainly because the expectancies and capabilities of users would be different than that of traditional products.

The power is no longer on the publisher's side. The power is on the receiving side; it is up to my device to figure out what information it wants to extract from the Web and how it wishes to display it. The graphics designer at the publishing side will no longer be in control. Instead, it will be up to the device designer to control the appearance and interaction (Bergman and Norman, 2000).

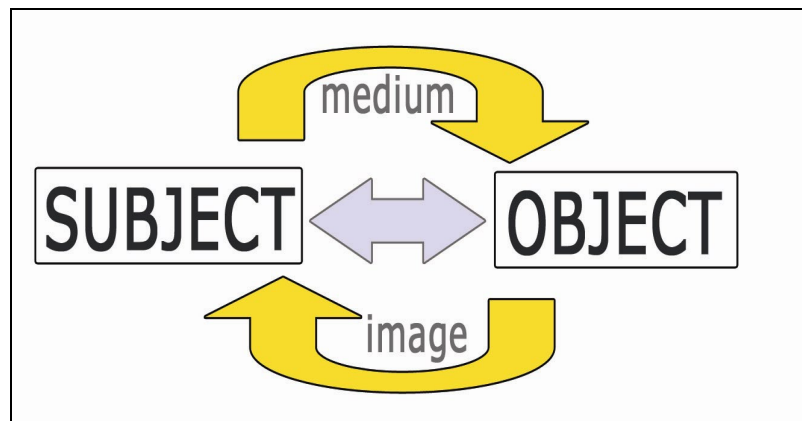
Eventually, the restructured position of product designer in the emerging paradigm of contemporary digital culture may be firmly associated with the features of new media. While the collaborative efforts of various fields of research and development make it possible to integrate information technologies to consumer culture, it is the work of product designer that provides the consumer with the first-hand experience as Donald Norman implies in his interview with Eric Bergman above.

## 4. NEW MEDIA AND RE-INTERPRETATION OF DESIGN PARADIGMS: *OBJECT, USER AND CONSUMPTION*

### 4.1. Identifying New Media Objects

I believe that the new objects that shape our lives are trans-conceptual, multi-cultural hybrids, objects that can exist anywhere in different contexts, that are natural and synthetic, that are inspired through telecommunications, information, entertainment and behavior. Our object culture can capture the energy and phenomena of this contemporary universal culture of digital age Karim Rashid (from Fiell and Fiell, 2005).

While the “*new object*” of contemporary media can be described as an original and exclusive type of existence, it would be unreasonable to claim that it has no reference to previous conventional models whatsoever. Within a broader perspective, it is evident that the interaction between the subject and object is a mutual progress. While the *subject* (the user, spectator) monitors or interacts with the *object* (the product, system, world) through a *medium* (sense, screen, interface), the object reveals itself as an *image* that is appropriate to the conventions of the specified medium. The quality of the image affects the perception and consequently improves (modifies) the expectations of the subject; thus results in a continuous processing of the medium, which is based on upgrading the means of preceding mediums.



**Fig.4.1.** Subject-Object Relations through mediums and images

In the first title within this chapter, the progression of this mutual development cycle will be investigated in order to observe the metaphorical associations and connotative resemblances that are employed by the new media. These methods of metaphORIZATION and relocation of traditional media concepts to the new context will be outlined with reference to the works of various researchers from different fields; involving new media and digital culture theories as well as social theories on hyper-reality and post-modernity.

The term “new media object” as it is mentioned in this chapter will fundamentally refer to digital objects that are created and manipulated inside a virtual electronic environment. As a reference, Peter Anders’ definition of *Cybereal* objects may be given as a suitable illustration of what is implied here:

Cybereal artifacts are symbolic objects of electronic environments. Although they are presented spatially, they have no reference to specific physical objects. In this way they are distinct from models and images used in planning and design. Examples include metaphoric objects and icons used in the operating systems of computers (Anders, 1999).

Although physical components of computer-mediated information systems, - such as computers, VR sets, other tangible interaction devices – also concern design profession in distinct ways, the preference of taking Cybereal products as the object of study reflects a specific approach: that of studying new media as a new form of commodity rather than its physical components and applications as design materials.

#### **4.1.1. Visualization of the Virtual Object: Metaphorical references within virtual realms and objects**

Cultural production has been driven back inside the mind, within the monadic subject: it can no longer look directly out of its eyes at the real world for the referent but must, as in Plato’s cave, trace its mental images of the world on its confining walls. If there’s any realism left here, it is a “realism” which springs from the shock of grasping that confinement and of realizing that, for what peculiar reasons, we seem condemned to seek the past through our own pop images and stereotypes about that past, which itself remains forever out of reach (Jameson, 1982).

Following Jameson, it may be argued that evolution and social definition of new mediums – not only computerized media, but also the former types of media such as

photography, telegraph, radio, i.e. – and physical tools have a similar pattern of metaphorization. As it is often mentioned, the primitive description of motor cars as ‘horseless carriages’ shows us that receivers of a new technology tend to appropriate the new paradigm with reference to existing products and mediums. What’s more, on the inventor’s (or developer’s) side, these conventional metaphorization patterns may lead to influence the improvement of the new technology. Harmeet Sawhney explains the influence of social conventions on the development of broadband radio technology as a radical break from existing paradigm of telegraphs. As stated by Sawhney, *radio* was primarily defined as a wireless version of telegraph technology; which was formerly framed by railroad metaphor – as point-to-point transportation of commodities, and then, information. This conceptualization would provide “a frame of reference for not only how the network should be structured but also how the institutions should be configured and how the laws should be framed”. (Sawhney, 1996). Consequently, with the materialization of the *broadcasting* analogy – spatial dispersion of information units –, the progression of the dominant social communication medium was criticized as below:

The audiences grew at a phenomenal rate and broadcasting became a big business. People in the wireless industry could not help wondering how come they could not see something as obvious as the potential for broadcasting. William C. White, a scientist at the General Electric research laboratory, later recalled ‘[I was] amazed at our blindness ... we had everything except the idea’ (Barnouw, 1966: 73-4). The problem was with the conceptual templates which were brought to bear upon the phenomenon. The telegraph metaphor guided all the speculative activity along the point-to-point dimension and blinded people to any new ‘liberties of action’ made possible by the new technology (Sawhney, 1996).

In addition to radio technology, Sawhney illustrates the significance and practical flexibility of the development of appropriate definitions for a new technology in his study about *information highway* metaphor. As stated by Sawhney, the possible expansions of metaphorization for the evolving telecommunications infrastructure were ranging from *railroad* analogy (as Karraker and Browning declares railroads are privately owned unlike highways) to *pipelines* (as cited from Stoll and other skeptical thinkers for the analogical reference of pipelines to human mind). (Sawhney, 1996).



**Fig.4.2.** System icons from user interface of Microsoft Windows XP (from left to right: My Computer, My Documents, and Recycle Bin)

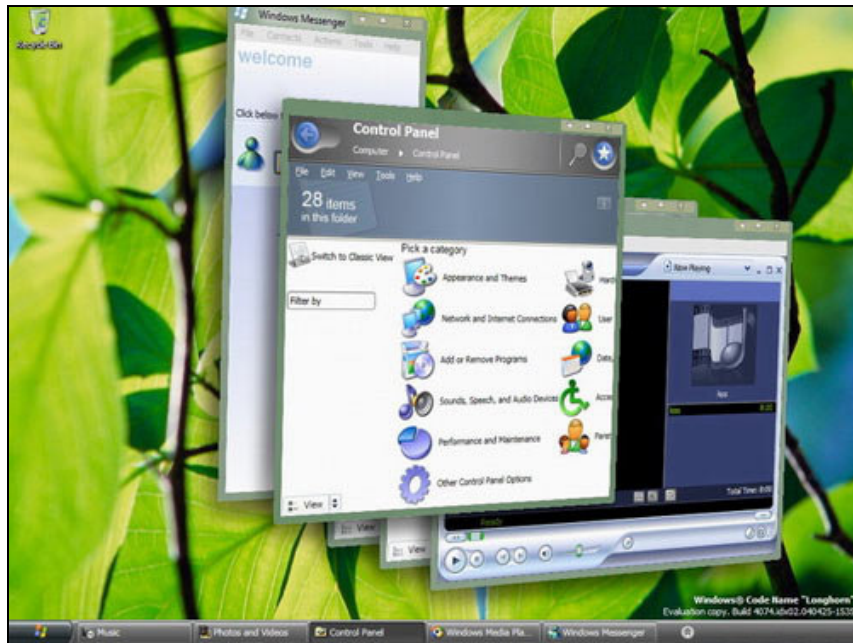
The cumulative development in the formation of an authentic language for the new media is frequently nourished by re-interpretation or adaptation of the existing conventions to the new environment. Given that the representations of material objects are still employed in contemporary digital media, we can argue that the need for formal resemblances and references are essential for the users of the new medium to metaphorize this new existence and recognize it as a new cultural layer. Only after this new paradigm is socially comprehended, its genuine language becomes the primary motive why *'our memory technologies tend to define the very way we metaphorize our lives'* as Brody (1999) states. As argued earlier, this may be mentioned as one of the major reasons of why we still have the symbols of "My Computer" on our "Desktop" in Microsoft Windows, or how we are using (almost) identical versions of usual VCRs to launch digital media documents.

Given that computer media is simply a set of characters and numbers stored in a computer, there are numerous ways in which *it* could be presented to a user. (...)

Why do cultural interfaces- Web pages, CD-ROM titles, computer games- look the way they do? Why do designers organize computer data in certain ways and not in others? Why do they employ some interface metaphors and not others? (Manovich, 2001)

To begin with, the conventional understanding of physical forms and materials may be in the verge of a spectacular alteration. The solid materialistic culture of material processing may consist of natural materials like wood, stones, ceramics or artificial substances like polymer plastics; but new media objects deals with the representations of these materials with binary codes and visual demonstrations. We may consider that this duality would also be overcome by the development of new and innovative styles for new media. All these contemporary forms are still designed by representations of our existing knowledge on traditional materials. Although it is not the primary focus of this study to forecast the possible visual features of these emerging forms, it may be stated that contemporary media objects develop their

unique expression styles first by reinterpreting its formers and consequently following a cumulative evolutionary pattern.



**Fig.4.3.** Screenshot from user interface of Microsoft Windows Vista<sup>1</sup>

The roots of this representational phase in the development of a new language may be observed not only through objects but also through spaces and environments within New Media. Brody (1999) states that: “space and time” –consequently, as in new media, spatial recognition of time – are the central categories by which we define our environments; thus they are the cornerstones of any discourse about media.

In the latter part of the twentieth century, computer and telecommunication technologies began to create an important new condition for which we had no obvious precedent and no ready name, so it seemed most natural to extend a familiar concept to cover the gap. Thus the ancient ideas of space and place – the traditional foci of architectural and urban design discourse – were reconstituted and sucked into a vortex of vigorous critical reexamination (Mitchell, 1999).

In his analysis on the involvement of spatial metaphors in virtual environments, Mitchell focuses on the setting and conditioning of the Cyberspace locations in the

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<sup>1</sup> The latest edition of MS Windows series, in which a 3-dimensional interaction environment is developed by a spatial configuration of conventional ‘windows’ metaphor, has been released worldwide in 30.1.2007, by Microsoft .

earlier versions of information networks and points out how they were arranged to resemble the primitive urban settlements. It is noticeable that the virtual locations are categorized and identified according to their themes or contents within the network and particular interactive search engines are involved to assist the users to find their way inside the system on their own. Significant categories are classified and designed in a way that an average user may satisfy specific needs effectively; such as information sources, chat spaces, leisure areas or business sites inside the network.

The very popular GeoCities directory is organized into “themed neighborhoods” – Athens, Bourbon Street, Broadway, Cape Canaveral, Capitol Hill, and so on.- These neighborhoods have chat spaces (playing the role of virtual agoras or village squares), commercial sites, residential districts organized into blocks of a hundred individual “homesteads”, and search engines to help you get round (Mitchell, 1999).

As Mitchell investigates within cyberspace, it is visible that some sort of psychological attachment in the virtual environment to its material existence has been required by the users to start a definitive/perceptive process. What causes a person to intuitively act as if she’s in a tangible environment within cyberspace has usually been these spatial metaphors and representations of the “*real* world” as interaction tools or components.

Since the spatial metaphor does turn out to work so well in so many ways, it is tempting to take the idea of electronically constituted architecture literally. And, indeed, it is not hard to find hokey examples of on-line, virtual places that have carefully been crafted to look like familiar sorts of rooms, urban public spaces, and even entire villages. But it never rains in cyberspace, so you certainly have to question all those pitched roofs. There is no gravity or weight (unless you take a great deal of trouble to program it in), so elements like beams and columns serve little purpose. Nor is there any air or sunlight, so it isn’t clear what windows might be for. You don’t really walk, so floors and stairways seem superfluous. And you can jump instantaneously from place to place at the click of a mouse, so doors and elevators seem like dumb ideas. The closer you look, the more risible all this seems (Mitchell, 1999).

In the final analysis, it is observable that the ways by which a society metaphorizes a forthcoming technology would influence the pattern through which that technology is supposed to integrate to the cultural structure. It is also unavoidable that the metaphors and references to existing paradigms would shape the products of that specific technological infrastructure; thus reforms the act of designer who performs within that infrastructure.

The process by which we are discovering new possibilities is being rapidly accelerated by computing technology – a technology that we always knew would open our minds. Indeed, it is this concept of inevitability that intrigues me especially when applied to the world we see and touch ... our physical world. As boundaries blur, this world will become stranger and less predictable – a fabulous prospect for those of us who believe that strangeness is a consequence of innovative thinking. The irony of all this is that ultimately, creativity generated by such soup-like freedom will lead mankind full circle back to nature, its organic composition, its purpose and with it forms that will no longer be limited by man's imagination - Ross Lovegrove (from Fiell and Fiell, 2005)

As Lovegrove states, the increasing development of new innovative methods in design thinking often makes the designer's reverence of conventional paradigm sets inevitable. While the need for such reasoning is considered as a fundamental rationale for most designers, who use digital design methods as a part of their design processes, a similar method of conceptualization may be observed also in users' experiences with digital product systems. Either in a conscious or a subliminal level, users frequently tend to make rational associations and references to their existing knowledge on physical interaction and commodity consumption, in virtual worlds. (see Anders, 1999; Mitchell, 1999; Manovich, 2001 and Green, 2001). In this respect, the next title of this chapter will focus on the identification of *new media users*, their representational presence in virtual systems and the nature of these virtual representative features of cyberspaces as electronic body extensions.

## 4.2. Identifying the user

(...) The spectacle's externality with respect to the acting subject is demonstrated by the fact that the individual's own gestures are no longer his own, but rather those of someone else who represents them to him. The spectator feels at home nowhere, for the spectacle is everywhere (Debord, 1994).

The discourse on the identity of the *user* in product design - and as its counterpart, of the *spectator* in visual media – has its reflections in the psychoanalytical and social theories. As in Lacanian terms, an individual's self realization requires an image of "the other", a mirror stage that the infant may observe himself as "the other"; and ultimately an external figure which fulfills the unity of the symbolic order of reality. Thus, we position our own existence consistent with how we metaphorize this order, looking from outside towards how we would like to be included (Žižek, 1992). Laura Robinson explains how the production of self identification is based on individuals' social interaction with each other and their subjective interpretation of



the 'generalized other' by borrowing the concept of 'looking glass self' from theories on 'Human Nature and the Social Order' by C.H. Cooley:

Cooley's concept of the 'looking-glass self' defines the self as the reflection generated by the 'generalized other' that is coupled with that 'generalized other's' judgment. In other words, our sense of self is really our perception of society's evaluation of us. In this process, through imagination we 'perceive in another's mind some thought of our appearance, manners, aims, deeds, character, friends, and so on, and are variously affected by it' (Cooley, 1902: 17). The concept of the looking-glass self is based on a threefold process. First, the self imagines how it appears to others. Second, the self then imagines the other's judgment. Finally, the self develops an emotional response to that judgment. In Cooley's (1902: 184) own words, the looking-glass self consists of: 'The imagination of our appearance to the other person, the imagination of his judgment of that appearance, and some sort of

self-feeling, such as pride or mortification'. In this way, the looking-glass self is the fruit of interaction; it is not static but a continual process of self-evaluation through the imagined eye of the other (Robinson, 2007).

Subsequent to written text, the invention of photography (as a method of instantaneous still imaging) and cinematography (by capturing and presenting movement-image) were both breakthroughs in the progression of society's visual regime, and of social interaction. It is a common topic of discourse that our perception of reality shifted towards photographic images; and then to cinematic intervals (time captures). Given that contemporary visual media provides us with images of external reality by the use of its own means, we may take the discourse on *identity* one step further, by including interactive media. Now, with the interactive media reorganizing our mental models by spatializing time-images within an information network structure and providing us a virtual autonomy inside, an individual can actually look through the eyes of the other. Moreover, he can control the actions of this imaginary-other to manipulate the whole *reality-setting*. Manovich points out this phenomenon by suggesting an updated version of Althusser's concept "interpellation" and stating:

Before we would look at an image and mentally follow our own private associations to other images. Now interactive computer media asks us instead to click on an image in order to go to another image. Before, we would read a sentence of a story or a line or a poem and think of other lines, images, memories. Now interactive media asks us to click on a highlighted sentence to go to another sentence. In short, we are asked to follow pre-programmed, objectively existing associations. Put differently, in what can be read as an updated version of French philosopher Louis Althusser's concept of "interpellation," we are asked to mistake the structure of somebody's else mind for our own.

This is a new kind of identification appropriate for the information age of cognitive labor. The cultural technologies of an industrial society -cinema and fashion- asked us to identify with someone else's bodily image. Interactive media ask us to identify with someone else's mental structure (Manovich, 2001).

In the first title within this sub-chapter called 'Identifying the User', the ways of representing the user's presence and her sovereignty in virtual environments will be investigated. The major illustrations of these representational figures, personas, avatars, and other abstracted interaction tools, and the nature of their connections with the external reality (where the user operates physically) will be discussed with reference to relevant theories on subject matter.

Consequently, under the second title, the functional and semantic investigations of cyberspaces and virtual interaction tools as users' digital extensions in digital environments will be argued. The order and structure of this part is arranged specifically to outline the significant alterations in the conventional paradigm of 'user' – with reference to design terminology – with the introduction of interactive digital environments and cyberspaces.

It is one of the primary intentions of this chapter to re-interpret and combine relevant knowledge on the nature of digital environments and virtual interaction mediums (as they were mentioned under previous titles) and examine their reflections on 'user' paradigm. With a proper interpretation and comprehension of (previously mentioned) *new media objects* as contemporary artifacts of consumer culture, and of *users* with their representational presence in computer-mediated environments, the definitive goal of these arguments will be concluded in the last part of this chapter; where the consumption of virtual objects and computer-mediated experiences will be scrutinized.

#### **4.2.1. Representation of Autonomous Consumer; personas, avatars, interaction components as users' virtual-self**

Prior to the examination of cyberspaces and virtual interaction tools as digital extensions of their users, it is necessary to outline the nature of users' involvement and presence inside computer-mediated environments; as they are represented with visual, functional and metaphorical associations with the surrounding physical world. The participation and performance in the digital world essentially requires a pattern of users' orientation to the new dimension since the environments and artifacts in cyberspace (and in other forms of virtual environments) are pure symbolic. Anders

claims that employment of metaphorical references as representational features is necessary to provide this orientation, given that “our scale of abstraction helps us understand these connections to our physical world, showing ways to classify the artifacts of cyberspace” (Anders, 1999).



**Fig.4.4.** Character generation in ‘My SIMS’ (Electronic Arts Games)

An effective (and frequently employed) method of creating psychological attachment to the virtual environment or system is by creating metaphorical, symbolic and/or arbitrary representations of the user as designated personas, avatars, etc. The direct connection between these representations – avatars, personas – and the physical-self are rather loose than being a direct, analog depiction of the user, they represent only the requested portion of user’s actual identity and conceal features of no significant value; in a sense they are like puppets which perform for their user in digital world. (Anders, 1999) Given that this secondary character (the *imaginary other*) is a part of the system, the limitations and restrictions of his actions are legitimized since the user –subconsciously and voluntarily- assigns his representational persona to operate for himself inside the virtual environment.

As mentioned earlier, the structural arrangement of cyberspace employs a spatial metaphorization, in which various frames of reference may provide users with the ability to create various forms of self-image. In this point, Anders borrows theories of Jacques Lacan on social identity, and describes this multi-dimensional context as: “My roles as a husband, father, pet-owner, architect and fly-fisherman all entail separate frames of reference, each with its own code of behavior and expectations. Much as we can re-situate – and replicate – our self image in other frames of reference, so too do we assume various concurrent roles throughout our lives.”

(Anders, 1999). Evidently, global information networks such as World Wide Web frequently offer its users to associate themselves with different frames of reference through a range of virtual environments and communities.

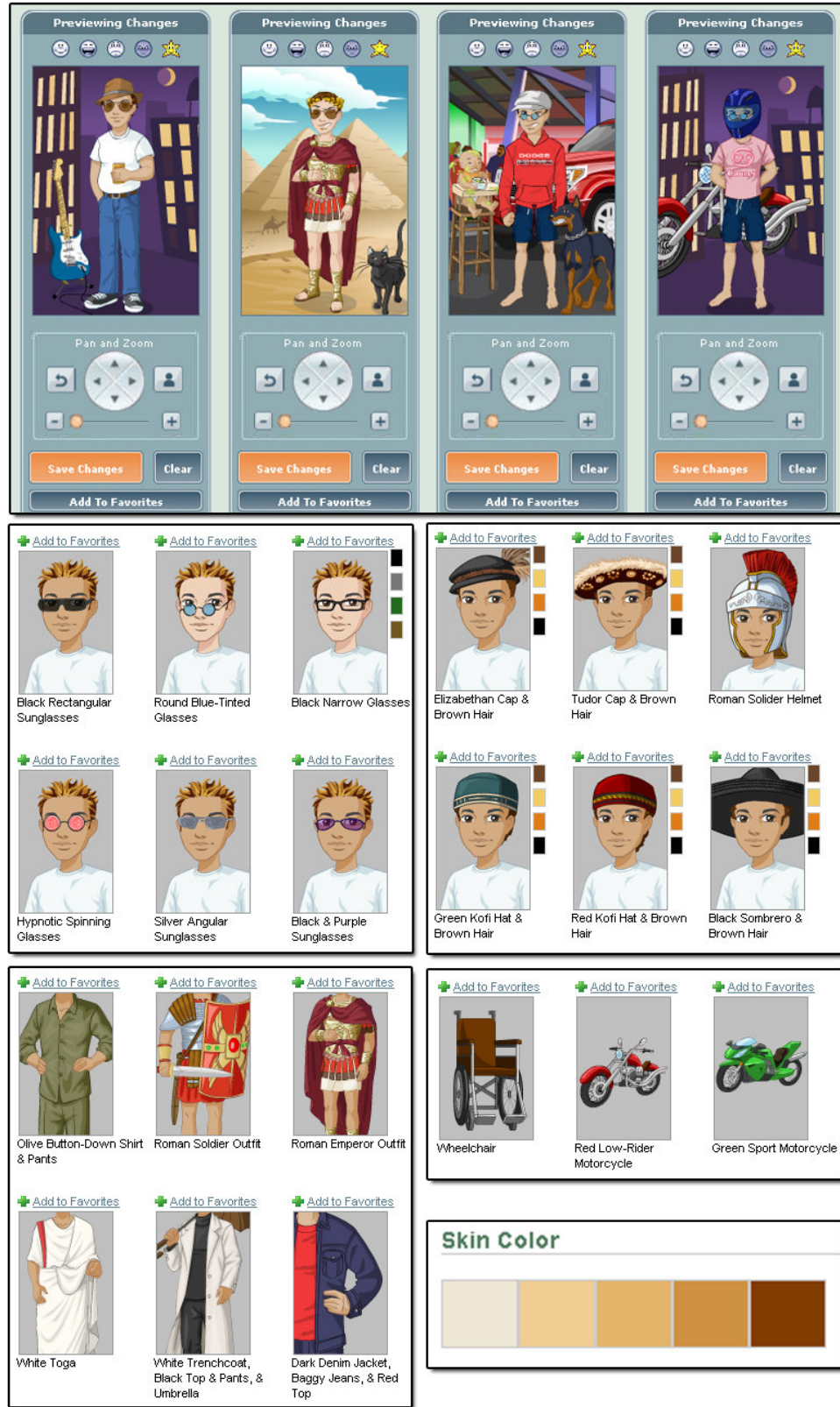
Technically, it is not difficult to use a photograph of your own face as your avatar in these sorts of environments. In systems for business use, such as the Art Technology Group's Oxygen virtual conference room, that seems appropriate. But in more playful, social environments, users seem to enjoy the chance to dress up for going out.

(...) Since they're all in disguise, though, and there's no possibility of identification or retribution, they're often tempted to spin some pretty tall tales to newcomers. (...) These are not places where everyone knows your name – not your real name, anyway (Mitchell, 1999).

With the development of these services, the discourse on virtual identities in virtual spaces and on-line communities offer a wide study area for researchers of cyberspace and new media. It is often argued that the expression of ideologically, sexually or, in general, culturally repressed identities through on-line communities – which may vary from night-time hackers with regular day-time occupations to gender switching in chat rooms or on-line communities, and so on – is a remarkable feature of social communication in the post-industrial 'information' society (see Angerer,1999; Rutsky,2002 and Boler,2007).

These frameworks are often created and promoted by popular brands and websites, such as Yahoo! Avatars (Fig.4.5.), to provide their users with the ability of identify themselves in cyberspace. With the use of an individual avatar, Yahoo! offers its subscribers to have a unique identity that represents the user in a variety of Yahoo! services (mail, groups, messenger, i.e.).

The progress of transforming self-expression to a customizable entity, and consequently, to an artifact of consumption refers to a synthesis of consumption and communication into a hybrid cultural structure; therefore reveals the significance of communication technologies and global information networks in the constitution of this new cultural paradigm. In this new structure, not only the participants (society as users of new media technologies and information networks) are represented and appropriated to the new medium, but also is the conceptual "Other", through which individuals define their identity.



**Fig.4.5.** Selected sets of options for generating an 'avatar' in Yahoo! Avatars (<http://avatars.yahoo.com/>) (collected in 06.04.2007)

Considering the cyberpunk vision of Gibson and others and spatial metaphorization of cyberspace as previously mentioned with reference to Mitchell (1999) and Anders (1999), to is possible to observe how it is visualized as a symbolic order that constitutes the reference to “the Other”.

[For that reason], it is crucial to maintain open the radical ambiguity of how cyberspace will affect our lives: this does not depend on technology as such but on the mode of its social inscription. Immersion into cyberspace can intensify our bodily experience (new sensuality, new body with more organs, new sexes...), but it also opens up the possibility for the one who manipulates the machinery which runs the cyberspace literally to steal our own (virtual) body, depriving us of the control over it, so that one no longer relates to one's body as to "one's own". What one encounters here is the constitutive ambiguity of the notion of mediatization (...) When our body is mediatized (caught in the network of electronic media), it is simultaneously exposed to the threat of a radical "proletarization": the subject is potentially reduced to the pure \$, since even my own personal experience can be stolen, manipulated, regulated by the mechanical Other (Žižek, 1999).

In his theories on the nature and progression of consumption, Bocock states that capitalist economies utilize the death instinct either by integrating it to commodities and consumer experiences or by replacing it by relevant satisfactory senses such as sexual desires. Furthermore, mass media sources such as televisions and newspapers act as denominators of this utilization by representing scenes of death and injury and reinforcing the order of simulacrum (Bocock, 1993). If we bear Bocock's arguments on mass media sources and industrial societies to the new media applications in post-industrial 'information' societies, one can notice that virtual environments and interactive representations/simulations of the physical world could offer a similar type of utilization.



**Fig.4.6.** (left) Screenshot from Counter-Strike<sup>2</sup> (<http://www.counter-strike.net>)

**Fig.4.7.** (right) Screenshot from Quake 4<sup>3</sup> (<http://www.gamespot.com>)

<sup>2</sup> Counter-Strike is a first-person shooter game released by Vivendi Universal and Microsoft Game Studios.

<sup>3</sup> Quake 4 is a fictional first-person shooter game developed by Raven Software and id Software

The creation and manipulation of user experiences in computer games and the representational performances of players' demonstrations inside the game environments (considering the *shoot-or-die* logic of first-person shooters such as Doom, Quake, Counter Strike, i.e.) support the relevance of user's self-image to Barthes' ontology of signification. Consequent to outlining this broad framework on the visual and functional patterns through which the users are represented in virtual environments, it is now necessary to explore the cyberspaces and virtual tools as digital extensions of users –by which they exist and operate inside the system.

#### **4.2.2. Cyberspace and virtual tools as Body Extensions**

The discourse on the functional incorporation of consumer technologies and products to everyday life as users' extensions – by which they interact with the physical world – is an ongoing and promising field of research for design studies. As Donald Norman illustrates, this process is a consequence of *making technology invisible* by embedding the technical features to the product functions and providing a cultural appropriation for the particular technology through everyday products (Bergman and Norman, 2000). The most observable and recent example for this cultural appropriation, for Norman, is the electric motor and its invisible function in everyday products – walkmans, sewing machines, i.e. On the other hand, the notion of products as they become *body extensions* require another kind of invisibility; one that offers a whole new relation of the product and its user which is essentially reinforced by the product's inevitable involvement to accomplish a specific task. As described by Norman:

The other kind of invisibility is of a different sort. It's when the device fits the need so perfectly that I forget that it's a complex technical device. And I think that's true of my coffee grinder and maybe my eggbeater, that I think of as an eggbeater or a coffee grinder. It's hard for me to imagine it being in any other form, and it's perfectly natural to grind my coffee beans that way. So that even in thought—it really is this device that I physically use and physically move about, but it's invisible in the sense of not occupying any psychological space. My pencil is the same way—it feels like a natural part of my body at this point even though I have to physically find, use, and carry it around with me, and even though it took me a few years to learn how to use it well (Bergman and Norman, 2000).

The tools of interaction between users and computer-mediated environments are also legitimized by their specified functions inside the digital system. This is a similar kind of legitimization which may be argued within physical tools and material products; however the virtual objects' function is generally representational and based on conveyance of information more than being a physical body extension (Anders, 1999).

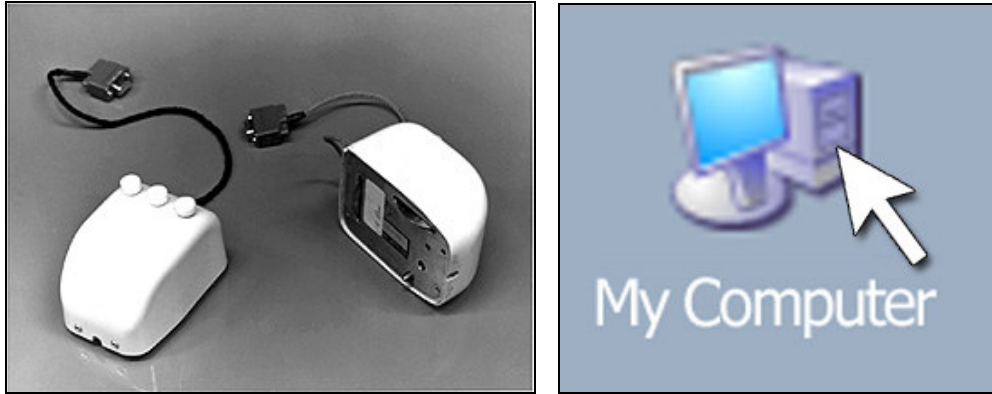
The body forms the bridge between our internal and external worlds. But we are not limited to direct sensation. Many of our artifacts are designed to extend us beyond direct experience. There are clear bodily extensions in some of our tools. A hammer extends our arm, a megaphone extends the voice, a telescope extends our vision. We use these in conjunction with the body and project our presence in clear, visible ways. Other artifacts project our presence in ways distinct from our bodies. Text and photography are arguably extensions of our voice and eyes, although the connections to the body are less obvious than with tools we use directly.

A difference between many of our electronic extensions and our physical extensions is that we make representations of ourselves in order to convey messages electronically. Television portrays an image of the newscaster that attends the news' delivery. Telephones convey a facsimile of my voice along with my message. The same is true of radio (Anders, 1999).

At this point, one may consider the mouse cursor (the arrow) that is generally employed in user interfaces as a clear example of metaphorical electronic body extension; as its main function is to aim (point) and shoot (click) at the specified virtual object. The cursor on the screen is the user's representational self to which he assigns a definite amount of authority inside the system. What's more, the cursor is a noteworthy example of another particular debate; the construction of an original language for the new media, the connotations of which exceeded the primitive metaphorical references and formal resemblances to corresponding material signifiers.

The main reason for the success of the mouse, in whatever technical version, is the fact that the two-dimensional movements that the user performs with the mouse are "directly" translated into two-dimensional movements of the cursor on a screen. Even if the mouse is in fact spatially dislocated from the screen the movement, in combination with the apparently immediate and isomorphic effect on the screen, make users perceive that they are moving their point of attention (indicated by their hand) on the screen itself. No mental translation of the movement into the effect seems to be necessary. On the other hand, the readers can find out for themselves what kind of mental effort is needed to use the mouse when the "tail" is pointed to the wrong side: even though one understands, the effort of running the mental model is considerable (van der Veer and Melguizo).





**Fig.4.8.** (left) Early 3 button mouse, 1968 (courtesy of the Bootstrap Institute).

**Fig.4.9.** Clicking on an icon with Mouse cursor (in Microsoft Windows)

Evidently, it is the geometric correspondence of two planar movements and correct functional association between user's movements in physical environment and the cursor's command sequence, which provides the appropriation of mouse as a popular interaction device. Furthermore, Anders describes this correspondence sequence between users' bodily actions and computer's interpolation as a ritualistic process:

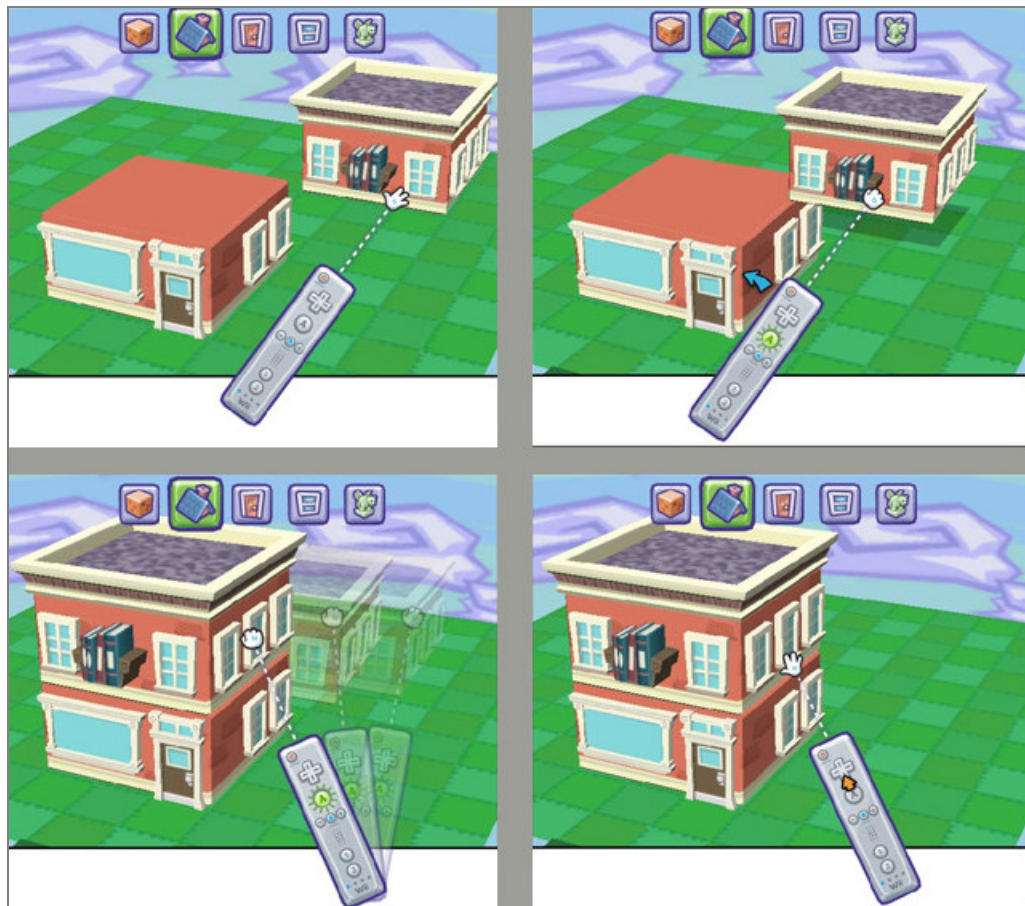
We ritualize our actions in the very act of computing. The computer attends our needs by interpreting each of our gestures – mostly hand and mouse movements – for meaning. A hand movement in physical space might be simply to scratch the nose, but at a higher level of abstraction, the computer would interpret this as a command (Anders, 1999).

For Anders, the transformation of bodily expressions to computerized commands is limited (or defined) by the range of our ability to extend ourselves into the computer-mediated environment. Similarly, the limitations of social interactions in daily life are defined by the possible range of human senses and expressions as they maintain individuals' spatial perception of physical environments. (Anders, 1999)

In addition to the (previously mentioned) metaphorical references of cyberspace to the conventional urban settlements, Green exemplifies these consistencies - with reference to Crandall - by monitoring Virtual Reality sites which offer computer-mediated experiences as a leisure activity:

The work of integrating bodies and VR machines is not unlike the 'body work' enacted in gyms, where instructors ensure the coupling of bodies and exercise machines in technical systems that embody culture through the inscription and incorporation of normative habit and gesture (Crandall, 1998) (cited from Green, 2001).

Green's comparative analysis of gyms and VR sites has a significant expansion within this title, seeing as the virtual representations and digital extensions of users essentially contain an indisputable dependence to the material embodiment of subject. Although Virtual Reality has practically vanished from the field of popular entertainment sooner than reaching its maturity, the importance of users' bodily movements as tangible interaction tools is often used in contemporary game consoles.



**Fig.4.10.** User interaction sequence in 'My Sims' designed for playing with Nintendo Wii's remote controller (EA Games)

As shown in Fig.4.10., Nintendo Wii's innovative remote controller named 'Nunchuk', and consequently Sony PlayStation's controller SIXAXIS, attempted to involve users' physical reactions with motion tracking technologies. Even though computer-mediated environments may seem to provide "options of escape from the shackles of embodiment" and "a fulfillment of the dream of leaving the flesh behind" (Cavallaro, 2004), it is the technological extensions of body and technical improvement of tangible interfaces that provide the sense escapist virtual

experience in this context. Thus, the body has not *disappeared*; on the contrary it is *empowered* by the advancement of computer-mediated-communication (CMC) technologies.



**Fig.4.11.** Representational and text-based examples of Emoticons/Smileys

The significance of body and its reflections in virtual forms of embodiment may also be observed through users' frequent tendency on "stereotyped images and descriptions of bodies in order to confer authenticity and signification to textual utterances" (Boler, 2007) in text-based communication platforms. The interaction patterns and visual expressions of users in text-based communication often involve references to human body, bodily features, or stereotypical notions of race, age and gender. Anders (1999) observes the employment of text-based facial expressions – often called *emoticons* or *smileys* (Fig.4.11.) – in this respect, and states how they are used as virtual replacements of the actual body:

Of course, text is a limited tool for conveying presence. In chat rooms, for instance, body language and vocal inflection are screened out. Sometimes conversations are obscured by concurrent dialog other occupants. Deprived of their bodies, users depict body language, particularly facial expressions, through emoticons, or smileys. Crafted from text symbols and punctuation, smileys are usually viewed sideways to convey amusement :-), laughter :-D, irony ;-), and a range of other expressions. They are used to temper a statement, to amuse or mollify the reader. The irony emoticon is used, for instance, to let readers know that the writer isn't serious. Here the smiley takes the place of the body since we usually offer clues with gesture or intonation to let listeners in on a joke (Anders, 1999).

Considering the frequent use of bodily signifiers in virtual environments for self-expression; the discourse on individuals' expressions of socially repressed identities in on-line communities – which was held within the previous title as a feature of representation – may be re-interpreted within this particular context. Although it is a mere visual representation of users that convey the information of identity to the on-line community, a number of researchers tend to mention to the process of identity swapping in a more profound social context; as a transcendence of body and social identity (see Bruckman, 1993 and Gilbert, 1996 [cited by Boler, 2007]; Haraway, 1999; and Boler, 2007). The flexibility and range of abstraction in computer-mediated social interaction offers its participants a variety of self-images and self-expressions; such as gender-swapping or assuming the role of imagined/desired social status. In his investigation of 'digital Cartesianism' and transcendence of body in cyberspaces, Boler borrows Amy Bruckman's description of on-line communities as 'identity workshops' and focuses on the fluidity of virtual identities as:

Progressive thinkers hold out the utopian hopes of transcendence, a hope that in digital environments identities may be fluid and 'queer', neither fixed nor in static form and may avoid the traps of binary and oppressive assumptions about identities. The transcendence of bodies and difference is achieved through two primary avenues: fluidity of online identities and transcending binaries (e.g. of human/machine) (Boler, 2007).

Furthermore, it is not only the on-line chat spaces that offer the users a certain range of virtual identities, but also interactive digital applications such as computer games, which are based on the adoption of a character by the player to accomplish a specific (historical, fictional, mystified, or problematic) task. Nonetheless, the physical and social aspects of embodiment – gender, social status, self-image, and such – are clearly employed, whether in a representational level, within the digital extensions of users' bodies in virtual environments.

Through the first two parts of this chapter, the emerging new definitions of objects and products, the methods of their visualization in new media, their roles as artifacts of contemporary consumer culture, and the altering position of users with respect to their conditions of presence and the digital tools they employ to interact with the virtual environments (as extensions of physical body) have been investigated. Consequent to the critical statements within previous arguments, it is now feasible to propose a third dimension to the discourse on subject matter; an updated and comprehensive analysis of *consumption* that essentially includes virtual objects and

mediatized realms of symbolic exchange. To maintain a solid discourse on new forms consumption as the concluding part of this chapter (and the overall dissertation), it was necessary to explain how social definitions of major concepts – object, product, commodity and user, image, identity in particular – are subjected to a structural revision with the introduction of new media.

### **4.3. Consumption of virtual products**

Why take the trouble to dream when you can easily consume that which has already been visualized? While the relation between the story and the apparatus has been much discussed in relation to film and television, we are only now at a point where we can develop a theoretical discourse that ties the consumption of narrative to the media that have been spawned in the computer's wake (Brody, 1999).

The final part of this chapter focuses on the possible expansions and relocations of *consumption* by the involvement of information technologies. As Brody states above, the development and domination of computers (and computer-mediated-communication mediums) in contemporary social practices has expanded the theoretical discourse on 'consumption' to embrace these indispensable notions.

Considering Brady's statements and relevant theories on contemporary consumer culture (see Bocock, 1993; Baudrillard, 1996 and Bell, 1996), the extensive possibilities of customization and personalization of interaction tools and mediums (offered by virtual products and computer-mediated environments) gains importance for this thesis.

Within the first title of this part, new media object's condition in post-industrial consumer culture and its possible repositioning as an artifact of contemporary consumption will be explored; with reference to conventional notion of consumption and the affect of information technologies on the structure of contemporary consumption. This title is meant to constitute the theoretical base of a further discourse on the consumption of virtual commodities and new media objects as an exclusive form of consumer's relationship with products.

Consequent to the analysis of new media objects and investigation of their role in the socio-cultural base of consumption, the focus of the investigation will move towards the nature of this exclusive consumption model. In this part, the central argument is based on the exclusive pattern of digital reproduction and re-distribution in computer-mediated-communication environments as a fundamental element of consuming virtual objects. With reference to the earlier arguments on the

transformation of users to 'co-authors' in this context (see Manovich, 2001), it is argued that the active and creative participation of users to the consumption of information-based artifacts constitutes the persistent survival of the system; mainly by enhancing the spread of new media objects through information networks and digital databases (Rutsky, 2002).

As the concluding part of this chapter, arguments on the new forms of consumption intends to combine the previously mentioned ideas on new media objects and user experiences in virtual environments to provide a comprehensive theoretical base for further arguments in this thesis. Since the following chapter includes the examination of practical implications of user-system interaction on a specified case example, a coherent conclusion of 'user-object-consumption' model is essential for providing a theoretical base to the analysis.

#### **4.3.1. New media object as an artifact of contemporary consumption**

There is no reason today to exclude the media from consumption studies. Nor is there any self-evident reason to treat media consumption as a separate case. Due to the mediatization process, which is integral to reflexive accumulation, most kinds of consumer goods have become increasingly image-loaded, taking on meanings in relation to media texts, other commodity-signs, entire lifestyles, and so on (Jansson, 2002).

Previously, it has been briefly discussed that media culture and consumer culture are strongly related in terms of both their increasing social interaction and their roles in creation of social identifications. These cultural notions are considered to be overlapping and have a mutual affect of influencing each other by their expansions and (re-)definitions through upgrading social conventions. Jansson argues that mediated texts (or images, environments, and so on) significantly manipulate the ways people experience their relationships with the surrounding world (which includes the world of goods or commodities) by stating: "The cultural naming of consumer goods is normally impossible to discuss and analyze without taking into account how such a process is related to the circulation and appropriation of media images." (Jansson, 2002) As for Manovich, [new] media objects are also "cultural objects" (Manovich, 2001) by definition; provided that they contain cultural (historical, ideological, i.e.) values and represent/construct features of physical reality with the help of mediatized representations of social categories. Therefore, a descriptive discourse on the re-positioned social identity of new media objects as artifacts of consumer culture will be proposed within this title, with reference to both

media theories and studies on contemporary consumption. The intended benefit of this concise approach would be providing the research study with a point of reference to investigate *mediatization* (or consumption of virtual objects) as an exclusive domain of consumer culture; as well as offering designers a new perspective on the computer-mediated communication as a possible expansion for their profession.

While digital technologies engage more and more into the consumer products and services, they also introduce their authentic styles and models to consume within; thus, these technologies re-shape the work of design as it involves certain processes to integrate and appropriate them to commodities. Oxman (2006) explains the relocation of designer's role with respect to his interaction with the media and to the emerging processes and materials of design, and analytically classifying *information* as "a '*new material*' for the designer." (Oxman, 2006) It is evident that the introduction of new paradigms for classification, ordering and distribution of *information* in contemporary societies had a significant influence on the formation of social conventions (see Brody [1999] for the cognitive shift of metaphorization from literary text to cinema and interactive networks). This paradigmatic influence of image culture on modern societies is one of its major features, through which mediatized objects, environments and experiences may be categorized in the field of consumption. For Jansson, the emergence of the image culture cannot be associated by only implying the relevance of consumption with communication. It is the socio-economic changes in cultural structure that would provide insights for the mediatization of consumption (Jansson, 2002). As outlined in his work, Jansson outlines the main characteristics of this social paradigm shift in "three transitory processes: culturalization, mediatization" and, finally, "simulation" (Jansson, 2002).

By culturalization, the flipside of Adorno and Horkheimer's Culture Industry (Adorno and Horkheimer, 1999) – as the removal of cultural production from everyday life to production industries – is implied by Jansson. Jansson also states that, with the transformation from resource-driven production to demand-driven production, the dominance of concrete material production has been replaced by *promotion* (packaging and advertising in particular). As a consequence, the cultural appropriation of new technologies and flexible product features (such as customization) has associated the culturalization process with *dematerialization*. (Jansson, 2002).

With this increasing tendency on dematerialization, media consumption has also gained a central role in post-industrial consumer culture. Individuals' framework of culture and their social orientation within the social arrangement began to be mapped by mass media. "In the realm of culture", Jansson describes, "the term mediatization refers to the process through which mediated cultural products have gained importance as cultural referents and hence contribute to the development and maintenance of cultural communities." (Jansson, 2002) Ultimately, the third process of cultural transition, *simulation*, is considered to follow the first two, culturalization and mediatization. Simulation refers to the post-modernist assumption that conventional notions of *real* experiences and functional use-values are transformed to media images and simulations.

Whence the characteristic hysteria of our time: the hysteria of production and reproduction of the real. The other production, that of goods and commodities, that of *la belle époque* of political economy, no longer makes sense of its own, and has not for some time. What society seeks through production, and overproduction, is the restoration of the real which escapes it. That is why *contemporary 'material' production is itself hyperreal*. It retains all the features, the whole discourse of traditional production, but its nothing more than its scaled-down refraction (thus the hyperrealists fasten in a striking resemblance a real from which has fled all meaning and charm, all the profundity and energy of representation). Thus the hyperrealism of simulation is expressed everywhere by the real's striking resemblance to itself (Baudrillard, 1998).

As noted by Baudrillard above, the domination of hyperreal production (and *consumption* as a social practice of this cycle) over material production, and of *image* over its referent, would distinguish the process of simulation. Taking all these theories into account, cultural transformation from the *society of commodity* to *society of spectacle*, and then, to the *society of simulacrum*, may be associated with dematerialization and re-classification of the artifacts of consumption with respect to the *simulation* principle.

In the case of mediatized artifacts of consumption – new media objects, in this context - , the primary motive in the postmodern sense of consumption retains its importance. Thus, the postmodern and post-industrialist consumption is based upon *the desire for the lack* of the unattainable, for the process of unreachable fulfillment of an imaginary emptiness within individuals (Bocock, 1993).



In point of fact, if desire is the lack of the real object, its very nature as a real entity depends on an “essence of lack” that produces the fantasized object. Desire thus conceived of as production, though merely the production of fantasies, has been explained perfectly by psychoanalysis. On the very lowest level of interpretation, this means that the real object that desire lacks is related to an extrinsic natural or social production, whereas desire intrinsically produces an imaginary object that functions as a double of reality, as though there were a “dreamed-of object behind every real object” or a mental production behind all real productions (Deleuze and Guattari, 1996).

With the proper employment of *simulation* principle, it is also this fundamental aspect of new media that defines it as an exclusive artifact of contemporary consumer culture; it’s capability of creating real-time, interactive and high-quality alternatives to Deleuzean “dreamed object” within representations of virtual environments. New media applications and its physical expansions, most noticeably in computer games and Virtual Reality (VR) systems, flawlessly utilize society’s desire for the “essence of lack” and transform it to virtual commodities by providing its users with simulated experiences in virtual worlds. What’s more, *interaction* enables the features of customization and variability to be operated by the user; therefore reinforces the symbolic fulfillment one gets by consuming ‘the virtual experience of satisfaction’.

(...) while ‘old media’ such as television and film offered only a fixed flow of information from producers to consumers, information technologies allow information to be freed from the constraints of ‘mainstream’ media channels, spread across multiple locations, thus enabling consumers to access and use data as they see fit. Viewers therefore become active users rather than passive receivers, able to manage and filter data for themselves, to choose not only what information they will consume but how they will consume it. Thus, in an age of meta-forms and meta-information, consumption necessarily becomes a matter of meta-consumption (Rutsky, 2002).

In her studies on the virtualization of mundane consumption activities, Nicola Green investigates Virtual Reality sites that offer its visitors virtual experiences such as games or 3D movies, and observes the transformation of virtual attractions, pleasures and interactions to experiential commodities within these organizations. In short, Green’s observation as “What is sold and consumed in these sites are not tangible objects, but rather a series of effects: pleasure, entertainment, spectacle, fun and thrills (Hawkins, 1990: 210–11).” (from Green, 2001) shows us how new media applications began to integrate to contemporary consumer culture.

Even though a considerable amount of materialistic possessions (computers, memberships, software licenses, i.e.) are still required to access this second-order utilization; the necessity of investigating these applications and their connotations as emerging models of consumption establish one of the main concerns within this title. As outlined with reference to its structural, socio-economic and philosophical interpretations, the definition of commodity and the range of its possible expansions are constantly reshaped by the developments in relevant technologies and their social appropriations as they infiltrate to the market by products.

#### **4.3.2. Consumption of electronic resources as a reproduction process**

On the one hand, as many commentators have observed, information has increasingly come to be constituted as a commodity, its dispersion restricted to controllable channels of distribution and governed by rules of intellectual property and exchange. On the other hand, information is dependent upon being consumed. Without consumption, information would be static and inaccessible, much like the traditional work of art. Indeed, it would not be information at all, but a ritualized, eternal knowledge or truth: logos (Rutsky, 2002).

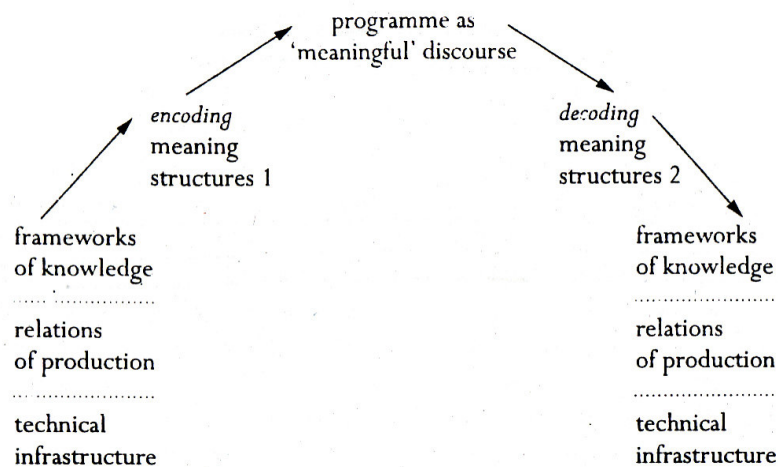
Consequent to the previous arguments on the transformation of information (in 'new media object' form) to commodity in contemporary consumer culture, as supported by Rutsky above, this title focuses on the process of consuming these virtual commodities. However, it is necessary to mention to the notions such as 'image consumption' or 'consumption of narrative' before investigating the consumption through new media. For this purpose, Stuart Hall's influential essay entitled "Encoding, Decoding" (Hall, 1999), which studies these notions through televisual communication, is quoted below:

Thus - to borrow Marx's terms - circulation and reception are, indeed, 'moments' of the production process in television and are reincorporated, via a number of skewed and structured 'feedbacks', into the production process itself. The consumption or reception of the television message is thus also itself a 'moment' of the production process in its larger sense, though the latter is 'predominant' because it is the 'point of departure for the realisation' of the message (Hall, 1999).

Hall's theoretical model for the consumption of media, with reference to television, is significant for the purposes of this chapter since he offers a framework that includes "linked but distinctive moments" (Hall, 1999) of mass communication in his model. Unlike the conventional linear model, Hall proposes a complex structure of

interrelated processes as he classifies: production, circulation, distribution, consumption and reproduction.

By the involvement of the audience's (consumer's) cognitive processes in Hall's "Encoding, Decoding" model, this study gains a noteworthy importance; mainly because it identifies the receiving part (decoder) of the communication cycle as a fundamental component. Although Hall's statements on television – as a mass-communication media which technically allows distribution of information in one direction and reception on the other – does not propose to define the consumer as a part of the production process, they may help us to initiate a discourse on "dominance relation" between the processes.



**Fig.4.12.** Encoding, Decoding pattern in mass-communication (Hall, 1999)

As shown above in Fig.4.14. , the cycle of televisual communication requires two "meaning structures": first, by the encoding of the producer of the programme; and latter by the decoding of the receiver. Therefore, this collective set of 'meaning structures' (through production and consumption) define the televisual communication with reference to the interwoven processes of "production" and "consumption".

Virtual communities and computer-mediated-communication appliances (as a broader set) may also be examined as mass-communication mediums that contain the interrelated processes of production, circulation, consumption and reproduction. Moreover, they provide their participants with wider and more heterogeneous platforms to express themselves and offer them new grounds to consume within.

What's relatively more abstract and theoretical in Hall's televisual consumption model is apparently manifested in New Media theory – by the shift from ownership to participation, and from consumership to co-authorship. This is to say, by launching and using software, surfing through world-wide web or downloading a document, an individual initiates a genuine cycle of utilization, consumption and reproduction through virtual artifacts.

Considering the fundamental component of these artifacts –the electronic signal– we may state that new media objects are essentially variable and infinitely reproducible. Modern software applications are able to modify their system features including user preferences, language modes, intensity of details, visual/functional complexities and behaviors of the interface on specific actions of the users. For instance, contemporary web pages and computer games can be programmed to contain alternative file sizes and detail levels by analyzing the connection speed, CPU power or the abilities of the users. The existence of such extensive possibilities to customize, personalize and manipulate the structure of the systems would present new responsibilities and roles to the consumer; as well as designer. The limitations of variability and customization are dependant not only on the means of technical reproduction but also on the range of possibilities the designer prefers to offer to the user.

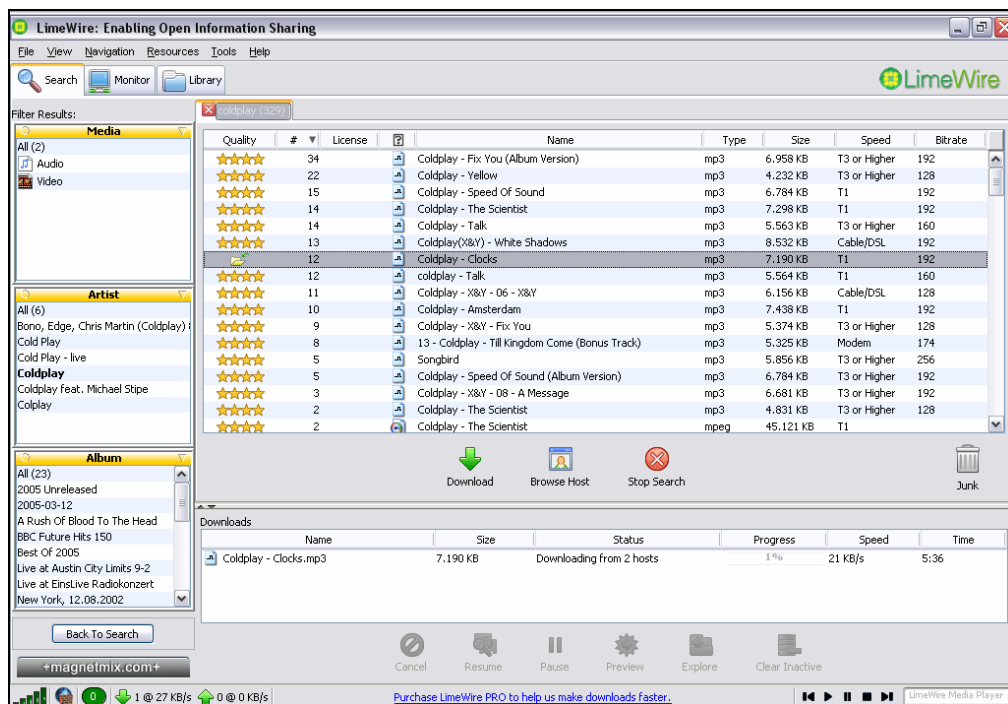


Fig.4.13. (right) User interface of “LimeWire” file sharing engine

The screenshot above (Fig.4.13) is taken from “LimeWire”, a renowned file sharing program, which operates on a basic principle of sharing the downloadable media files and downloading required file from the collective network of other users’ shared folders (which contain the file). As shown in the screenshot, a variety of media formats (music, video, picture, i.e.) are eligible to be shared among LimeWire, and those who download (or already own) a specific file is transformed to one of the distributors of that file through the software.

In a world of media and information, the distracted, dispersed reception that Benjamin saw in film – and in mass culture generally – has increasingly become a matter of consumption. Yet, this is also to say that the idea of consumption has itself changed. Unlike material commodities such as food or fuel, information does not simply disappear once it is consumed. Indeed, it is consumption that allows information to thrive and proliferate. In being consumed, information flows from one person or place to another. We see this process of dissemination everyday on the internet, where the consumption of, for example, MP3 and other software files takes place through a process of copying that allows information to be moved to different locations. Consumption, in other words, becomes the means by which information spreads. With the rise of technological reproducibility, as Benjamin so clearly saw, cultural consumption itself becomes ‘distracted’, dispersed (Rutsky, 2002).

As Rutsky states, one fundamental distinction of digital artifacts obliges us to revise our conventional theories on the relations between “object and consumption”. As mentioned above, the digital objects and systems are built on binary coded algorithms and transcoding of existing analogous sources to electronic signals. Therefore, the possession and consumption of these objects require the process of digital reproduction; such as *downloading* a document indicates creating an identical copy to your personal computer.

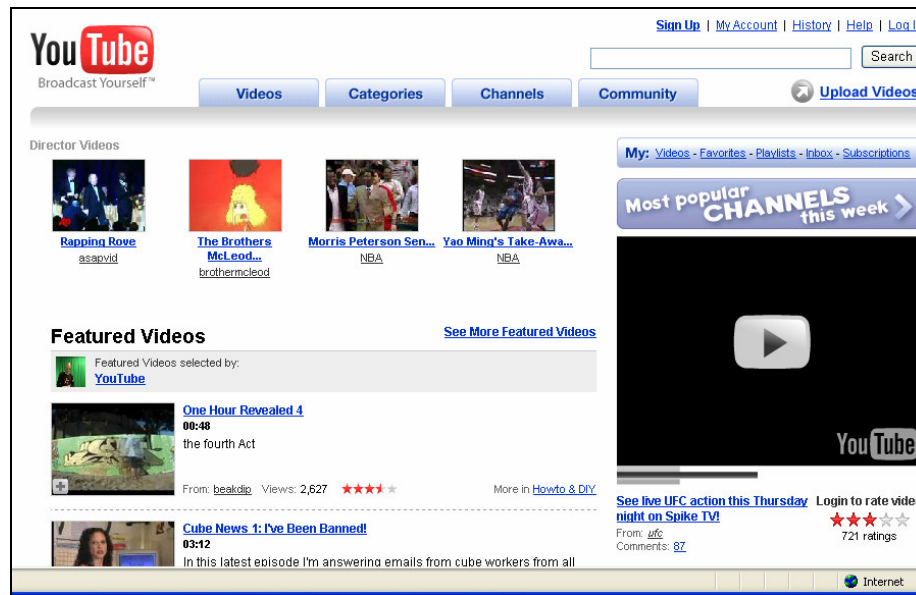


Fig.4.14. Screenshot from “YouTube” homepage (<http://www.youtube.com>)

The popular online video broadcasting website YouTube (Fig.4.12) illustrates a clear example of how consumption of these information artifacts (video clips) requires a reproduction process by the creation of temporary (video) files into each individual PC. Unnoticed by the average user, the system downloads web-pages while surfing through internet, creates temporary files to preview a picture or a text file, and constantly operates its memory to create backups for sustaining the system’s persistence. By all means, the consumption system of new media depends on a consistent process of reproduction and re-distribution. The process of reproducing the representations of the “*original*” had shifted our paradigms on object, production and consumption socially.

For some hypertext scholars database technologies have ushered in an age where readers inherently become writers, consumers, and producers. In other words, users not only read hyperlinked documents they also create links (and subsequent ‘paths’) of their own making. However, as I have recently argued, database technologies today, particularly hypertext enabled ones, increasingly redefine cultural production in decidedly passive terms.’ Simply ‘browsing’ the web, for instance, is often equated with producing or writing. What’s more, individuals are now more apt to have their behaviours, likes, and dislikes automatically integrated in proprietorial (commercial) databases, than to (pro)actively and consciously play a part in their design and/or application (Elmer, 2002).

Based on this aspect of interfaces and virtual mediums, the borders between conventional definitions of producer (designer, author) and consumer (user) becomes blurry. Most users are now capable of downloading or creating documents,

modifying their visual, formal or structural elements; and ultimately, redistributing them through information networks or a variety of mobile devices. Contemporary software tends to include more and more personalization options, filters, plug-ins or updates everyday. Even task-specialized applications (image and video editing, web design, document sharing, office software, etc.) are now designed for the average user to comprehend and use with minimum effort and proficiency.

For the real truth of the matter – the glaring, sober truth that resides in delirium – is that there is no such thing as relatively independent spheres of circuits: production is immediately consumption and a recording process without any sort of mediation, and the recording process and consumption directly determine production, though they do so within the production process itself. Hence everything is production: *production of productions*, of actions and of passions; *productions of recording processes*, of distributions and of co-ordinates that serve as points of reference; *productions of consumptions*, of sensual pleasures, of anxieties and of pain. Everything is production, since the recording processes are immediately consumed, immediately consummated, and these consumptions directly reproduced. This is the first meaning of process as we use the term: incorporating recording and consumption within production itself, thus making them the productions of one and the same process (Deleuze and Guattari, 1996).

As Deleuze and Guattari describe with the conventional cycles of cultural production, ultimately, the modern consumer culture of hyper-reality defines its own consumers as both the target and origin of its own presence; thus, constitutes an infinite cycle of production (and reproduction) through its own means.

## 5. NEW MEDIA IN ENTERTAINMENT INDUSTRY: THE CASE OF SONY PLAYSTATION

In the light of the statements and theories on new media and the effects of computer-mediated-communication (CMC) on design field, the following chapters of the thesis will propose an investigation of the practical implications of the previous arguments. For this purpose, the central object of investigation is determined as SONY Computer Entertainment Inc.'s renowned game console, PlayStation.



**Fig.5.1.** Sony's latest video game console, PlayStation 3

Before explaining the motives behind preferring this particular device, it is necessary to mention to the significance of computer/video games and their theoretical expansions in media and design theories. Sheila Murphy refers to the role of games and gaming within the framework of media research by comparing the wide range of research done on several other aspects of new media and computer-mediated-communication to the lack of research studies on video games and gaming:



At present, there are few scholarly texts on the games and no comprehensive critical history of video games and gaming. This is in sharp contrast to the academic attention paid to the history and culture of computers and computer-mediated communications – even though video games were actually among the first computers to be widely used as domestic Technologies and some of the first personal computers were designed *explicitly* to play video and computer games. What scholarship does exist on video games tends to focus upon psychological and sociological aspects of games and children's use of the medium ('media effects' research), while the public discourse around games centers on video game violence. The lack of critical scholarship on video and computer games is even more difficult to understand given the size and range of the gaming industry. At the present time, games are played worldwide in several different formats or platforms and the industry itself has an increasing share of consumers' entertainment dollars around the world (on gaming systems, games, accessories, publications, soundtracks, etc.) (Murphy, 2004).

As Murphy states, video games and various gaming appliances (including mobile devices such as Sony PSP) is a significantly promising field of consumer electronics in global market. Considering this important aspect of the preferred product group – game consoles – the intentional focus on Sony PlayStation may be associated with the global success of the product in terms of both sales numbers and the achievement of obtaining a particular loyalty to PlayStation by its target user group. The following graphics - global shipment rates of Sony's consoles PlayStation (PS), PlayStation 2 (PS2), and PSP (the mobile version of PS) – are shown to illustrate this condition of the product in global market (Fig.5.1.).

In addition to the global sales graphics, Sony PlayStation is often considered as a successful case in the challenging industry of video games and game consoles. In their business-oriented study entitled "See, Feel, Think, Do: The Power of Instinct in Business", Andy Milligan and Shaun Smith examine the success of the case with reference to Sony's (lack of) background in the field and the company's extensive leadership in the market by the release of PlayStation:

The economic power of Playstation for Sony was enormous. By 1999, (according to the BBC's website) it was making more money for the company than all its other computer electronics products combined, and had sold more than 50 million units worldwide – a staggering achievement within five years of launch, particularly for a company with no games heritage when it launched its first product. Today, Playstation continues to be the number one brand worldwide despite increasingly hot competition from Nintendo and Microsoft, and even from new entrants like Nokia. (Milligan and Smith, 2006).

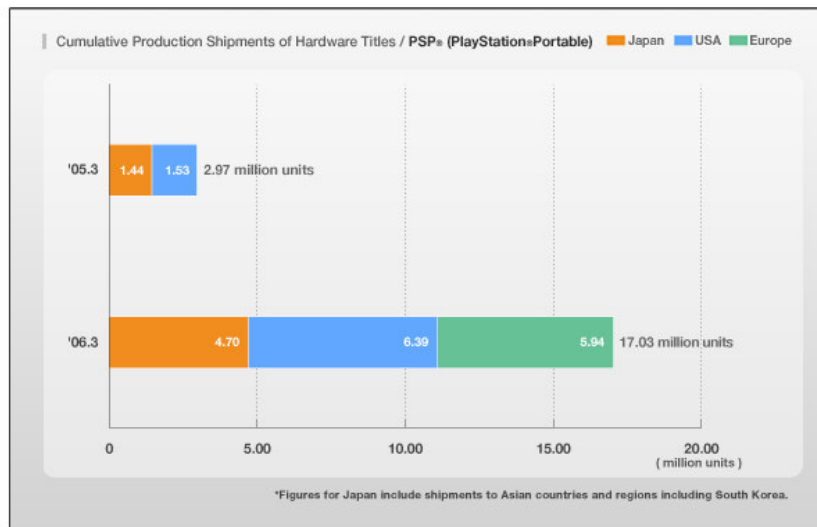
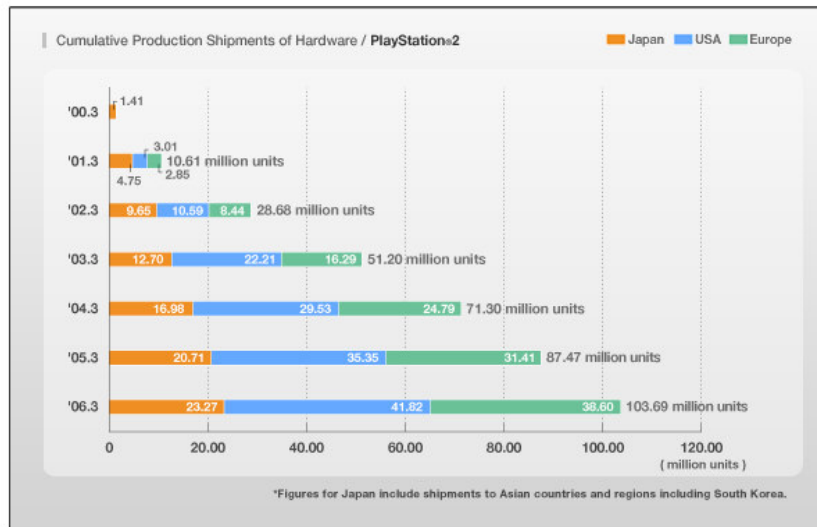
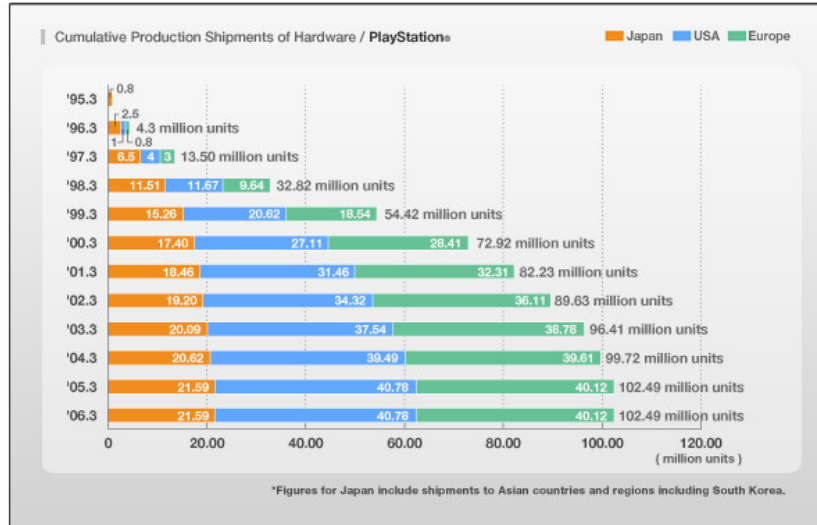


Fig 5.2. Cumulative Production Shipment Graphics of Sony PS, PS2 and PSP (from <http://www.playstation.com/business.html>)

Another noteworthy motive behind the selection of Sony PlayStation rather than its market competitors (especially the “next generation” consoles such as Nintendo’s Wii or Microsoft’s XBOX 360) is the leading position of the product in Turkish consumer market<sup>1</sup>. Although Nintendo Wii leads the sales numbers in the global competition among ‘next generation’ consoles by the help of its innovative developments, earlier release date and relatively cheaper price (almost half-price of PS3), the market share and social integration of PlayStation has considerable domination in Turkish market. As it will be mentioned in the following chapters, the initial observations from on-line user forums and discussion groups show that Turkish users generally discuss more PlayStation-related issues than those of other consoles. As a practical illustration, provided statistics of one of Turkey’s biggest on-line discussion platforms – Oynasana.com – show that the “PlayStation Series” topic contains 7654 user messages while that of “Nintendo Consoles” has 66 messages<sup>2</sup>. The contents of these user messages and their contextual categorizations will be further examined in the following chapter.

Briefly, the major topics of interest within the examination of Sony PlayStation in this thesis may be outlined as below:

1. Sony PlayStation as an information appliance in Entertainment Domain
2. Relevance of computer and console gaming to cyberpunk fiction and cyberculture
3. Product-User-Interaction with tangible interfaces and controller accessories as forms of body extension
4. Gaming as consumption of virtual experiences
5. Computerization of cultural (mundane) practices through leisure activities – the case of PlayStation Cafes as a social/collective form of computer-mediated-communication
6. Appropriateness for further studies – comparison through different cultural associations, consumption habits and behaviors through game environments, multi-player and on-line gaming as emerging forms of cultural communication.

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<sup>1</sup> Microsoft XBOX 360’s release date in Turkey is announced as in 2008 by Mustafa Çağan (Assoc. Vice-president of Microsoft Turkey) (<http://www.chip.com.tr/konu.asp?id=3077>)

<sup>2</sup> The numbers are given as they were collected in 21.4.2007 at 20:43 from <http://www.oynasana.com>

Throughout this chapter, these topics above will be examined with reference to the main arguments within the previous chapters of the thesis. However, it is necessary to mention to the evolution of video game consoles in general and of PlayStation (as a particular example) before explaining these topics of relevance.

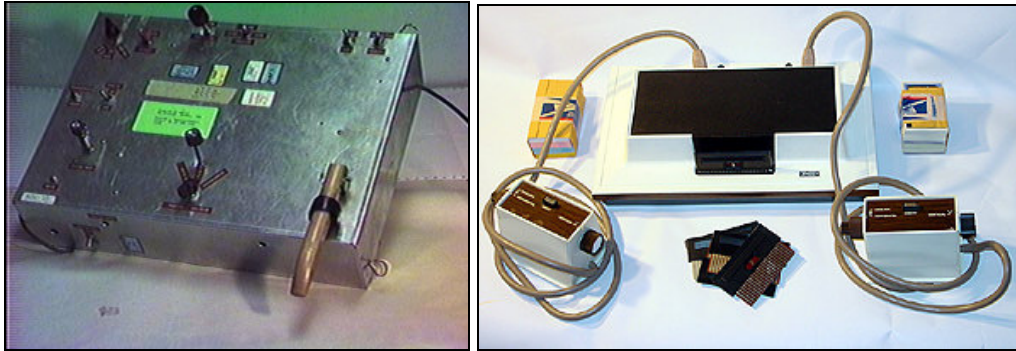
## **5.1. History of Video Game Consoles and Sony PlayStation**

### **5.1.1. History of Video Game Consoles**

Although the primary video game consoles contained similar electronic components and working principles with personal computers, they are differentiated by their task specific functionality; which is mainly determined as playing video games. However, the developments in consumer electronics and information technologies enabled the upcoming generations of game consoles to expand this primary function of simple game playing and began to redefine these products as home entertainment systems. In this part, the evolutionary development of video game consoles and their increasing integration in entertainment market will be outlined. For this purpose, the following titles will summarize the historical steps of their developments; which are categorized as 'generations of video game consoles' (Miller, 2005).

#### **First Generation (1972-1977)**

Miller (2005) states that development of first video games is initiated by governmental research studies in 1960s; as a project for developing the reflexes of military personnel. Similar to the innovations in most of the consumer electronics technologies, this military technology then spread to consumer market with the development of dedicated products. In this respect, Ralph Baer's concept of 'television gaming apparatus', which included a video tennis game and a chase game, in 1966 may be considered as the first example of video game products.



**Fig.5.3.** (left) Ralph Baer's first two-player video game console

**Fig.5.4.** (right) Magnavox Odyssey (1972)

After the development of first television gaming apparatus, Baer collaborated with Magnavox to develop a home game console. In January 27, 1972, Baer's "brown box" technology is transformed to Magnavox Odyssey (Fig.5.4) which is considered as the first home video game system. Consequent to Odyssey; Atari PONG, Coleco Telstar, RCA Studio III and Fairchild Channel F are examples of the first generation. Among those, Fairchild's Channel F has another noteworthy importance, since it is the first programmable home video game system; which used removable ROM cartridges.

### Second Generation (1977-1982)



**Fig.5.5.** Atari Video Computer System, a.k.a. 'Atari 2600' (1977)

Although Fairchild Channel F was a financial disappointment because of its untimely release and higher prices, the development of programmable game consoles enabled Atari to initiate the 'golden age' of video game consoles (Miller, 2005). With the release of Atari's 'Video Computer System (VCS)' or (a.k.a.) 'Atari 2600' in October 1977, customers were provided with better graphics, enhanced game play and programmable units with more games.

After Atari 2600, the global market of video game consoles spread widely and third-party game developers manufactured more than 200 games, among which Space Invaders, Asteroids and Pac-Man remained legendary. Following Atari 2600, Bally Professional Arcade, Magnavox Odyssey<sup>2</sup>, Mattel Intellivision and Vectrex are other examples of the second generation. Among those, Vectrex provided its customers with interchangeable plastic screen covers (inlays) to be the first console to add color to the games.

### **Third Generation (1982-1984)**

This short 2-year period is generally considered as the 'dark ages' of video game consoles (Miller, 2005) due to the significant drop of sales and decreasing quality of third party game cartridges. This period is also considered as the 'late second generation' due to the lack of technological developments and product releases. Examples may include Colecovision, Atari 5200 and Emerson Arcadia 2001.

### **Fourth Generation (1985-1989)**

With the crash of video game industry in early 1980s, developers have been required to increase technological advancements and design better games to re-establish their positions in the market. The rebirth of the industry in this generation is mainly associated with two technological innovations: "lower-cost memory chips and higher power 8-bit micro-processors" (Miller, 2005). With these developments in game console technology, home entertainment systems reached the level of competence with arcade machines. Thus, the dominancy in the market began to shift through home systems rather than public spaces. In this period both Nintendo and Sega released their first home game systems. Nintendo Entertainment System, Atari 7800 and Sega Master System are some of the products which were released through this generation.

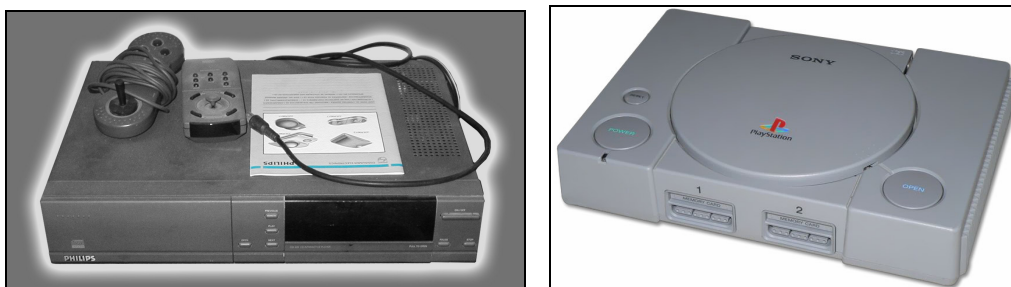


**Fig.5.6.** (left) Sega Master System game console  
**Fig.5.7.** (right) Nintendo Game Boy handheld game system

Another noteworthy product in this period is Nintendo’s handheld game system called “Game Boy”. By the help of its renowned game “Tetris”, Nintendo’s mobile product dominated the handheld market after its release in 1989.

**Fifth Generation (1989-1998)**

The early years of fifth generation was dominated by Nintendo and Sega, and the game systems offered more detailed graphics with 16-bit processors and more imaginative games (such as Sega’s renowned *Sonic the Hedgehog* in 1991). In this period, NEC TurboGrafx-16 introduced the first game console to have a CD player attachment, thus initiated a new generation in consoles. In addition, Philips developed its first CDi model console, which was designed as a ‘multimedia’ system playing Audio CDs, CDi, VCD and Karaoke CDs. Although Philips CDi caused disappointment in market (and re-launched as a mere game console in 1992), these developments are considered to lead the way to the next generation consoles of today.



**Fig.5.8.** (left) Philips CDi console  
**Fig.5.9.** (right) Sony PlayStation game console

The period between 1995 and 1998 is considered both as 'sixth generation' (see Miller, 2005) and as late fifth generation. However, the first definition is generally employed by those who categorize game consoles before the 'next generation' game consoles are released. Therefore, the game consoles of this period (Sega Saturn, Sony PlayStation, Nintendo 64) are mentioned within the fifth generation in this study. This next phase features higher powered microprocessors and more realistic graphics with the use of 32-bit systems and CD drivers. The importance of this period for our study is the introduction of Sony PlayStation to the home entertainment market.

### **Sixth Generation (1998-2005)**

In this period, graphics, performance and game play features continued to develop. One of the major contributions in sixth generation game consoles is the shift towards using DVDs as a game media rather than CDs, which resulted in higher resolutions in graphics as well as better ambient features (sounds, environments, etc.). Another significant event was the entrance of Microsoft to the game console industry.



**Fig.5.10.** (left) Sony PlayStation 2 game console



**Fig.5.11.** (right) Microsoft Xbox game console

Sega's Dreamcast (1999), Sony's PlayStation 2 (2000), Microsoft's Xbox (2001), and Nintendo's Game Cube (2001) are major competitors in this period. Among these four consoles, last three have a significant role mainly because they are the initiators of the current seventh generation of video game consoles; which is also known as 'next generation'.



### Seventh (Next) Generation (2005-...)

This generation is still being improved and introduced to the market. The foremost technological developments in next generation game consoles may be summarized as: increasing standards of gaming and video playback by Blu-Ray Discs (in Sony PS3), networking opportunities and enhanced multiplayer game environments, and improved game control appliances such as motion tracking devices (both in Nintendo Wii and Sony PS3).

Most important recent competitors in next generation game consoles are: Microsoft's Xbox 360 (2005), Sony's PlayStation 3 (2006) and Nintendo's Wii (2006).



**Fig.5.12.** Next Generation Video Game Consoles (from left to right: Microsoft Xbox360, Sony PlayStation 3, Nintendo Wii)

Microsoft Xbox 360 is the first 'next-gen' console to introduce wireless controllers; although Nintendo Wii improved the technology and designed the first motion tracking controller (Nunchuk) to enhance tangible interaction during game play. Consequently, PlayStation 3 developed SIXAXIS, another motion tracking controller device, in which the existing rumble (shock feedback) feature is replaced by motion tracking. In addition, PlayStation 3's contribution to the console systems would be the introduction of Blu-Ray Discs; which is found too expensive but promising for upcoming generations of game consoles.

With this brief outline of the history of game consoles, it was intended to show the historical and technological roots of specified product (Sony PlayStation) and to summarize the developments in video game industry through different generations.

Consequent to this outline, the focus of this part will now shift to Sony PlayStation and its product features, as well as its characteristics of game play.

### **5.1.2. History of Sony PlayStation**

Consequent to the brief outline of the video game consoles' evolution, it is necessary to mention how the specified product, Sony PlayStation, is developed and became one of the leaders in home entertainment industry. For this purpose, this part will focus on the improving versions of PlayStation in chronological order as listed below:

- PlayStation (and PS One)
- PSP (PlayStation Portable)
- PlayStation 2
- PlayStation 3

#### **PlayStation and PS One**

As mentioned in the previous title, Sony launched its first game console, which was entitled 'PlayStation', when the video game console industry began to mature as a branch of home entertainment market (see Miller, 2005). At the late portion of the fifth generation (or in the beginning of sixth generation for some), PlayStation was released in Japanese market in 1994, and one year after in American and European markets. Equipped with a 32-bit processor designed for better polygon graphics, and a relatively cheaper price than its competitors (\$299 which was \$10 cheaper than Sega Saturn), Sony rapidly dominated the market. Consequent to the developments in technology, and right before the launch of PlayStation 2, Sony introduced the smaller version of PlayStation under the name 'PS One', which also had a mounted LCD display on.



**Fig.5.13.** (left) Sony PlayStation with controller device

**Fig.5.14.** (right) Sony PS One with LCD screen

Another significant development in game play was the controller device of PlayStation, the upcoming versions of which involved a shock feedback mechanism to provide real-time haptic responses to the players by their actions in game. These controller devices were originally called 'DualShock' as they became main components of the game consoles.

### **PlayStation 2 (PS2)**

In the year 2000, Sony announced the release of the second game console of PlayStation series, namely PlayStation 2 (a.k.a. PS2). With the promotional success of the first PlayStation and the variety of its renowned game titles (such as Grand Theft Auto, Final Fantasy and Metal Gear Solid series), PS2 became one of the fastest selling new consoles of sixth generation era. Miller (2005) states that in the first two days of its release in Japanese market (in March 2000), the console sold more than 1 million units. In addition, this second console of the series had backwards compatibility, which means the ability to operate existing PlayStation and PS One games in PlayStation 2.



**Fig.5.15.** (left) PlayStation 2 Game console with box and controller device  
**Fig.5.16.** (right) PlayStation 2 Slim Version

In the late 2004, Sony announced the new slim PlayStation 2 and discontinued the production of the larger console. Also, both versions of the product contained the upgraded version of the first PlayStation's vibrating controller, named 'DualShock 2'. Other significant developments in PlayStation 2 were the integration of DVD playback technology and USB compatibility, which differentiated the console from its competitors at that period.

The forthcoming feature of online game playing was also initiated by PlayStation 2; however, this feature required the purchase of a dedicated network adapter and a fast broadband connection; which, at that period, made it hard to play network games because of constant lags. On the other hand, the development of this facility is significant since the online features of the next generation consoles would begin to take over the industry with the rapid improvements in information technologies.

### **PlayStation 3 (PS3)**

The third and latest version in PlayStation series is the 'next-generation' game console entitled 'PlayStation 3' (a.k.a. PS3), which was released in 2006 in North America and worldwide. Sony introduced PlayStation as a 'groundbreaking computer entertainment system, incorporating the world's most advanced Cell processor with super computer like power' (SCEA, 2006).

PS3 combines state-of-the-art technologies featuring Cell, a processor jointly developed by IBM, Sony Group and Toshiba Corporation, graphics processor (RSX) co developed by NVIDIA Corporation and SCEI, and XDR memory developed by Rambus Inc. It also adopts BD-ROM (Blu-ray Disc ROM) with maximum storage capacity of 54 GB (dual layer) , enabling delivery of entertainment content in full high-definition (HD) quality, under a secure environment made possible through the most advanced copyright protection technology. To match the accelerating convergence of digital consumer electronics and computer technology, PS3 supports high quality display in resolution of 1080p(\*) as standard, which is far superior to 720p/1080i (SCEA, 2006).

As described by Sony Computer Entertainment above (from PlayStation 3 press release), development of the technological infrastructure of the console is supported by the leading global computer brands. With the incorporation of improved computer facilities and multimedia features, it may be noticed that the promotion of PlayStation 3 shifted from a mere game device to a computerized home entertainment system, as Sony itself declares. Despite its relatively higher price than its competitors (599\$ in USA, 698\$ in UK, i.e.), PS3 positioned itself as one of the most popular next-generation consoles in the market after its release, along with Nintendo Wii and Microsoft Xbox 360.

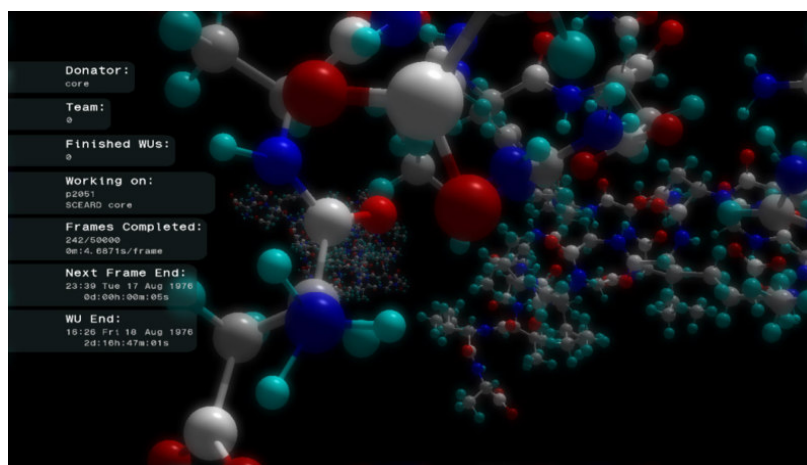


**Fig.5.17.** Sony PlayStation 3 console (left) and SIXAXIS wireless controller (right)

Another important development in PlayStation 3 is the improved game controller called SIXAXIS, which allows the physical actions of the players (such as turning, twisting, shaking) transformed as user commands by its motion tracking technology.

This new controller has a similar outlook with the previous 'DualShock' and 'DualShock 2' and has the same control buttons; however, the rumble feedback mechanism has been discarded due to technical constraints.

In addition to the new controller, PlayStation 3 introduced new and improved networking facilities with more features. First of all, multiplayer online gaming is supported by PlayStation Network (which is considered to be developed in response to Microsoft's Xbox Live network). Furthermore, Sony announced its participation to Folding @ Home project; which is mainly a distributed computing project that aims to perform complex calculations on protein folding and molecular dynamics to cure major diseases such as cancer and Alzheimer's, initiated by Stanford University.



**Fig.5.18.** PlayStation 3's Folding@Home client interface

One final networking project developed by Sony Entertainment for PlayStation 3 is entitled 'PlayStation HOME', which is a simulated virtual environment that allows its users to form their own communities online, in a 3D space. In PlayStation HOME, each user creates their own avatars to represent themselves in the community, and have their own virtual houses to decorate and live in. In addition, users are free to wonder around, communicate in action, gather with other players to play with and shop online in HOME just like they are in real world. In this respect, HOME can be described as a realistic virtual environment that simulates the experiences in real world to create a dedicated PlayStation community in a branded online network.



**Fig.5.19.** Two screenshots from PlayStation HOME Beta

Although it is still in the development stage that allows a limited number of players to participate in, the ongoing development of HOME project is significant for the purposes of this study since it is one of the initial and significant contributions of game industry to computer-mediated-communication. Formation of a global life-like online community that enables the users of PlayStation to communicate and interact with each other in virtual worlds may also be considered as an illustration of the forthcoming development of the industry; as well as the introduction of a new era in social interaction.

## **5.2. Sony PlayStation as an information appliance in Entertainment Domain**

Revisiting the statements and descriptions on *information appliances* as “a computer-enhanced consumer device dedicated to a restricted cluster of tasks” (Mohageg and Wagner, 2000; see also Bergman, 2000, Green and Blackwell, 1998), it is possible to consider PlayStation within the framework of information appliances. Although the primary task, to which the device seems to be dedicated, is to provide virtual gaming environments, contemporary game consoles (including PS) combine a variety of media applications and respond to a wide range of user needs. In addition to providing a high-tech gaming experience, these devices function as a media-center, as they are able to execute VCD/DVD format movies, audio CDs and other forms of digital media (pictures, MP3s, and such). With their ability to combine a variety of tasks and offer their users an interactive media experience beyond the conventional “televsual” image consumption, contemporary game consoles such as Sony PlayStation illustrate a critical shift in media studies; the shift from *old* media to New Media (as described in previous chapters). Raiford Guins mentions to this shift by describing it as relocation “from televsual to computer-graphics” as quoted below:

Facing the screen, the user–player–collector–builder can download ROMs of arcade as well as console video games to then play on the screen of their computer. This relocation is significant in that it differentiates medium-specificity of game attributes. It concurrently remediates the televisual as computer-graphic. In this sense, the ‘video game’ dependent upon a cathode-ray tube (the onetime core of television, older computer monitors, dedicated screens for cabinet and cocktail arcade games) exists in name alone once the ‘arcade experience’ is displayed on the TFT (Thin-Film Transistor, also known as Active Matrix)-LCD screen of a computer (Guins, 2004).

As Guins states, the integration of computers and computer-mediated product systems to the conventional arcade experience reshapes the structure of the activity itself; furthermore, relocates the definitions of conventional media applications. Parallel to the emerging forms of cultural communication (such as WWW) and consumption (as mentioned previously), the conventional object-based definitions of media products - televisions, computers, game consoles, etc. – begin to unify towards hybrid forms of new media systems.

Evidently, another important component of the game industry is the *game* itself. Within the contextual outline of this thesis, while game consoles are considered as information appliances, the computer/video games may be referred to as clear illustrations of *new media objects*. With reference to Lev Manovich’s new media principles (especially modularity, variability and transcoding in this respect), it is possible to observe the increasing expansion of game industry to engage compatibility with various platforms (PCs as well as different console systems). On the other hand, particular games are developed and promoted with specified brands of game consoles to guarantee the accomplishment of users’ loyalty to the upcoming versions; such as Rockstar Games’ Grand Theft Auto franchise and Sony PlayStation (Murphy, 2004). As quoted from Sheila Murphy’s analysis of the two allied industries – that of games and of consoles – product development processes and market competition within this domain have already reached to a certain level of hybridization:

At present, many games are released on multiple platforms simultaneously (a good example is the popular *Lord of the Rings: Fellowship of the Ring* game based on the film and book, released by Vivendi Universal, which can be played on a PC, a Sony Playstation 2, the Microsoft X-Box, or the Nintendo Gameboy Advance). In certain instances, a game design studio will have an exclusive development deal with one video game console platform, as is the case with the new titles in Rockstar Game’s *Grand Theft Auto* series for the Sony Playstation 2. The success of the *Grand Theft Auto* games in 2001 and 2002 – *Grand Theft Auto 3* sold more than 8 million copies worldwide, approximately \$400 million in sales (Kushner, 2002a: 61), while *Grand Theft Auto: Vice City*, released in October 2002, sold 3 million copies during its first 33 days of availability (Hunt, 2002: 11) – can surely be linked to Sony’s lead in the console sales sector of the gaming industry (Murphy, 2004).



With the increasing merge of game consoles and games as two essential components of this complicated industry-network, users' preferences are significantly affected by the desired game experiences that are offered by their chosen game platforms. As Murray outlines below, process of choosing a game console generally involves the variety and quality of game experiences that are specifically associated by each system:

Choosing a video game console isn't easy when each platform has some outstanding games. On the Xbox 360, Microsoft's "Gears of War" is an intense sci-fi third-person combat game that will leave you with shaking hands and ducking for cover. With Nintendo's Wii, you'll laugh out loud as you play tennis on the Wii Sports game by swinging the remote-like controller back and forth as if you were swinging a tennis racket. And with the PlayStation 3, "Resistance: Fall of Man" offers as much as 15 hours of entertainment as you mow down aliens with all sorts of exotic weapons (Murray, 2007).

In this respect, one of the major points of relevance between game consoles (and Sony PlayStation, in particular) and the general subject matter of this thesis may be traced in the essentially multi-dimensional structure of the products. This is to say; the features, variety and quality of (digital) new media objects (titles and types of games, compatibility to execute movies, music and/or digital pictures, and so on) affect the users' preference of information appliances (consoles); thus determines the design processes of the consoles. In short, these appliances are clear illustrations of how digital new media objects and virtual environments are becoming increasingly critical elements of contemporary products within consumer-electronics domain.

### **5.3. Relevance of computer and console gaming to cyberpunk fiction and cyberculture**

With a careful examination, the conceptual and fictional references in Cyberpunk vision to gaming (and to computer and/or video games) are remarkable. After all (considering Bethke's story entitled "Cyberpunk"), the technological life-style that offered new possibilities to the Cyberpunk youth has been presented as a large-scale play. Consequently, the traces of the influence of game environments has often been employed in Cyberpunk art (such as in Cronenberg's eXistenZ).



**Fig.5.20.** Screenshots from Tony Hawk's Pro Skater (Activision)  
 (<http://www.mobygames.com>)

Murphy (2004) refers to the relations between Cyberpunk fiction and contemporary video games as quoted below:

Throughout much of the academic discourse surrounding digital media culture, the cyberpunk desire to escape or transcend mundane reality – as demonstrated in countless science fiction novels, films and television programs – is oft discussed as symptomatic of a desire to leave the 'meat' of the body behind in exchange for a perfect virtual body accessed through a screen or virtual reality interface/input device. Playing a video game is a riskfree and socially acceptable way of engaging in a bit of virtual body play (...)

My actual skill at button mashing (the common gamer strategy of repeatedly hitting any and all buttons on a game controller device to progress in a game) has virtual consequences – Tony bleeds, falls, fails because of me. My meat-body has tainted his virtual-body, for together we constitute the player-character. Like a 1990s cyberpunk in mirror shades, I haven't left reality behind after all (Murphy, 2004).

Notions such as "leaving the body behind" or "playing with the virtual body", as Murphy states, are critical aspects of users' self-identification in virtual realms; thus they will also be subjected to discourse through the next title on body extensions in game environments. However, the relevant feature of the discourse to the fields of Cyberpunk and cyberculture are evident in terms of users' perception of their existence and identity during the playing sequence. As for Murphy, video and computer games constitute this certain sense of identification (in virtual environment) with the use of conventional methods; namely, those of cinematic representations:

In contemporary video and computer games, the discourses of identity and the processes of identification are complicated by the shifting aesthetics of games that combine interactive action sequences with elaborate 'cinematics' (also called 'cutscenes' or FMV – full motion video) that advance a game's main storyline and plot. These sequences often advance a game's narrative and plot and borrow their aesthetics from the continuity editing system of motion pictures. Yet gamers have

mixed feelings about these cinematic interruptions into active game play. Some gamers resent the interruption and strategically 'mash buttons' in the hopes of bypassing a cinematics sequence. Other gamers play to get to watch a particularly well-rendered cinematics sequence as a reward (Murphy, 2004).

Murphy's statements on the shifting (and in one sense not-yet-matured) aesthetics of contemporary video games provides valuable insights for this thesis; since it reconstitutes the arguments on how new media employs conventional methods of visualization and expression and transforms them to its exclusive context. As mentioned in the previous chapters, the evolutionary progress of generation of a new and authentic language for new media (see Manovich, 2001) is visible through the visual expressions in computer and video games.

#### **5.4. Product-User-Interaction with tangible interfaces and controller accessories as forms of body extension**

One thing that Sony learnt very quickly was that the user experience needed to constantly challenge and inspire, and seem as near 'realistic' within the parameters of a fantasy world as was possible. Technology would move quickly, and people's expectations would keep increasing. Therefore Sony had to produce something extraordinary, a "wow" factor each time it launched a product, otherwise there would be no compelling reason to buy. Moreover it understood that the beauty of this market is that you could demonstrate this "wow" factor in a very visual way.

When the world saw the first PlayStation, the 'hardware' looked unexceptional (no different from a conventional PC). It was the on-screen demonstration that captured the imagination. A "lifelike" dinosaur head was shown on the screen, and then merely through the use of a joystick was manipulated. The effect was so realistic that it made users feel as though they had control over a version of reality. They had the power of Playstation in their hands (Milligan and Smith, 2006).

Not unlike the computer-mediated-communication through cyberspace, playing a video game refers to users' control of and interaction with the representative digital body extensions within the virtual realm. Through the gaming experience, users (gamers) are required to convey their authority to designated characters and control their preferred character (or avatar) in order to interact with the game environment. As Murphy (2004) states, the 'closed' virtual environments in games afford the identification of gamers with their virtual identities in the game as well as they involve the active participation of their bodies as McLuhanesque 'extensions'. What is more, it is even considered as an 'investment' in the character which essentially exists in the televisual space (unlike the virtual extensions in global communication

networks and on-line communities) even if the game space is connected to a multi-player game network. (Murphy, 2004).

In the case of video games, identity is most substantially modified by the ways that gamers can *control* their digital characters – and also in the ways that gamers *surrender* control over themselves and their characters in order to play (Murphy, 2004).

Players' identification with their representative characters within the game is provided not only by the operational features but also by the visual expressions of the character, as well as the virtual environment. Users are provided with the abilities to manipulate the actions of the characters in the game and the ways of viewing the action sequences through provided perspectives (camera angles, first-person or third-person views and such). The critical difference between choosing a first-person or a third-person point-of-view lies in the cognitive patterns of users through which they prefer to identify themselves with the character. Murphy puts this difference out as describing the first-person view as "seeing the space of a game through the eyes of the avatar" and the third-person view as "a perspective where one can visually and voyeuristically watch one's avatar" (Murphy, 2004). This essential characteristics of video games, as for Murphy, has been borrowed (or evolved) from the cinematic expressions of conventional media and transformed to the new context as an interactive feature. This form of interactivity – although it presents a new form of identification between the virtual character and the actual body – solidifies the 'immersion' of the player to the virtual environment.

I thrash, ollie, and grind my way through an abandoned park, then a suburban neighborhood and a parking garage. As I move through these spaces, I get better and better at maneuvering on my skateboard and the spaces I encounter are increasingly complex. Yet as I move through these spaces I am actually relatively immobile, seated near my television screen, which I am linked to via the mediating technology of my Sony Playstation 2 video game system and the umbilical that connects my game controller to the game console and television. I am not actually the rad skateboarder making these moves – but my virtual player-character is – inside the game world of *Tony Hawk: Pro Skater III* (Murphy, 2004).

Murphy argues that the controller device and the "umbilical" that connects it to the game console (including recently-developed wireless control devices) also introduce a new paradigm to our existing debate on body extensions. As argued within the relevant chapter of this thesis and in this part on video games, the immersion of the user to the virtual environment is provided by the involvement of users digital extensions of their physical bodies into the virtual realm. Video games offer

cinematic visualizations, interactive game playing and representational player-characters to enhance the users' immersion to the game environment. On the other hand, one significant contribution of contemporary game consoles is to introduce force-feedback technologies on controllers (such as Sony PlayStation's DualShock) and allow the users to feel the haptic feedback during game play. By transforming virtual actions to physical stimulators through the controller device, these products (consoles) extend the boundaries of game from mere televisual space to actual physical surrounding of the player.

In combination with the three-dimensional graphics of the games played on these home gaming systems, force feedback motors are designed to make the virtual experiences of games more immersive, yet when I play, instead of feeling like I am drawn more deeply into the game, I also notice how the game is spilling outside of its digital space and onto the physical space in which I play. My lived space is saturated with and changed by the events occurring within a game and to my avatar (Murphy, 2004).

Furthermore, "next generation" game consoles (also called 7<sup>th</sup> Generation) introduced a new and more complex dimension to the players' physical participation to the game by the development of wireless motion-tracking controller devices. These devices, such as Nintendo Wii's Nunchuk and Sony PlayStation's SIXAXIS, track the user's bodily movements and transform them as commands to be involved in game play. As quoted from Murray (2007), playing virtual tennis by swinging the Nunchuk back and forth as it were an actual tennis racket provides the user with a more solid participation and a certain experience of realism within the virtual realm. In this respect, motion-tracking controller devices can be described as "physical extensions of users' digital body extensions outside the game environment" that extends the televisual space to the actual space.

When Sony suggests that its customers 'Live in your world, play in ours', this is not an either/or suggestion. One *both* lives in his or her world while also playing in Sony's *Playstation* world. These spaces overlap one another and are literally linked through the screen and the console of the gaming system. The in-game structures that enable the identification of the gamer with the onscreen character – perspectival modes, narration, cinematics, audio cues, force feedback, densely orchestrated game levels and worlds – all serve to deepen the connection between the game world and the real world (Murphy, 2004).

With the development of motion tracking controller devices, players' actual body movements are transformed to system commands as they hold, grab, twist, point, wave, push or pull a virtual object on the screen. One critical aspect of this tangible

interaction method is the visual feedback provided by the visual representation of game (or system) environment, which enables the user to perceive the consequences of his physical actions as they manipulate visual content inside the virtual environment.

### **5.5. Gaming as consumption of virtual experiences**

[This] reinvention of product and the marketing focus on the extraordinary feeling that customers should experience have continued right through to today. The tone of the advertising campaign changed from the satirical Society Against Playstation to a more epic and brooding “secret lives” theme – where users are featured talking to camera about the fantasy lives they lead through the power of Playstation. Again, there was little demonstration of product; instead there was an almost mesmeric concentration on the emotional experience of the consumers (Milligan and Smith, 2006).

Here, Milligan and Smith refer to the initial advertisements of Sony PlayStation (1996) with the satirical involvement of an imaginary parents’ union named ‘Society Against Playstation’. In the advertisement, as for Milligan and Smith, the target audience of the console is determined as teenage gamers who rebel or subvert against their parents’ authority and control. Thus, it is implied that Sony’s successful determination of user expectancies has provided its initial success in the market.

Apart from the material exchange values of game consoles, accessories and games; video game systems offer virtual experiences in televisual space, new forms of social identification and cultural communication through interactive game environments and ever-more developing game networks. In his article entitled “Fantasy, Realism, and the Other in Recent Video Games”, Pierre Schwartz relates the development of such features to the progression of consumerism as quoted below:

From online worlds populated by thousands of players, to single-player epic fantasy landscapes, to modern-day urban fantasy environments, the complex and varied virtual geographies of video games present interactive spaces for consumption (Schwartz, 2006).

As argued in the previous chapter, modern consumption requires a socially accepted system of symbolic exchange that provides a generalized base for individuals to identify themselves with and communicate through (see Bococok, 1993, and Baudrillard, 1996). As Schwartz states above, recent video games provide new bases and new paradigms to the field of consumption; and therefore,

the discourse on “consumption of virtual experiences in video games” may be considered in relation to the general discourse on post-industrial consumer society.



**Fig. 5.21.** Screenshots from “Grand Theft Auto: San Andreas” (Rockstar Games) (<http://www.gta-sanandreas.com>)

Kurt Squire focuses on the design of game-based learning environments - within educational research field – and mentions to video games as “Designed Experiences” (Squire, 2006). Furthermore, Squire claims that gaming experience cannot be thought separately from its ideological content; similar to the generalized system of consumption as a form of symbolic exchange. With reference to the renowned (and previously mentioned) video game called “Grand Theft Auto: San Andreas” by Rockstar Games, Squire argues that a particular ideological content is essentially involved by the game to ensure the players’ participation and adaptation to the game-setting.

To illustrate the problem with this view, it is worth examining *Grand Theft Auto: San Andreas*, a controversial game representing aspects of 1990s Los Angeles urban culture, as an interactive text. The player inhabits the character of Carl Johnson, a Black man who is returning to the city of San Andreas to attend his slain mother’s funeral. The player is handed a bicycle, which he is told to ride home, but after the first mission the player is more or less free to do as he or she pleases. The game does not require players to run over, shoot, or harm a player character in the game; these are choices that players might make. To be sure, there is a particular ideology at work in the game. The violent streets of San Andreas are rife with gang warfare, and certain actions are rewarded in ways, while others are not even possible. Thus we can talk about *San Andreas* as a *world*, and it is a world with particular rules that give consequence to actions. To survive in this world, players need to learn the underlying rule systems and how they interact (Squire, 2006).

**Table 5.1.** “Contrasting Game Types”: Exogenous and Endogenous Games (Squire, 2006)

Aspects	Exogenous Games <sup>a</sup>	Endogenous Games <sup>b</sup>
Learner is . . .	An empty receptacle. An example is <i>Math Blaster</i> , where the learner is “motivated” to learn a prescribed set of skills and facts.	An active, sense-making, social organism. An example is <i>Grand Theft Auto</i> , where the learner brings existing identities and experiences that color interpretations of the game experience.
Knowledge is . . .	Knowledge of discrete facts. The facts are “true” by authority (generally the authority of the game designer).	Tool set used to solve problems. The right answer in <i>Civilization</i> is that which is efficacious for solving problems in the game world.
Learning is . . .	Memorizing. Learners reproduce a set of prescribed facts, such as mathematics tables.	Doing, experimenting, discovering for the purposes of action in the world. Players learn in role-playing games for the purposes of acting within an identity.
Instruction is . . .	Transmission. The goal of a drill and practice game is to transmit information effectively and to “train” a set of desired responses.	Making meaning/construction, discovery, social negotiation process. Instruction in <i>Supercharged!</i> involves creating a set of well-designed experiences that elicit identities and encourage learners to confront existing beliefs, perform skills in context, and reflect on their understandings.
Social model is . . .	“Claustrophobic.” Players are expected to solve problems alone; using outside resources is generally “cheating.”	Fundamentally group oriented. Games are designed to be played collectively, in affinity groups, and distributed across multiple media. They are designed with complexity to spawn affinity groups and communities that support game play.
Pre-knowledge is . . .	Set of facts, knowledge, and skills to be assessed for proper pacing. In <i>Math Blaster</i> , players’ self-efficacy in mathematics is not addressed.	Knowledge to be leveraged, played upon. Pre-knowledge is expected to color perception, ideas, and strategies. In <i>Environmental Detectives</i> , challenges are structured so that players become increasingly competent and learn to see the value of mathematics.
Identity is . . .	Something to be cajoled. If players are not “motivated” to do math, the game developer’s job is to create an “exciting” context for the learner.	Something to be recruited, managed, built over time. In <i>Environmental Detectives</i> , learners develop identities as scientists.
Context is . . .	A motivational wrapper. The context in <i>Math Blaster</i> is something to make learning more palatable.	The “content” of the experience. In <i>Civilization</i> , the geographical-materialist game model is the argument that situates activity and drives learning.

<sup>a</sup>Games in which the context is extrinsic to the game play.

<sup>b</sup>Games in which the context and game play are inextricably linked. (These terms are from Rieber, 1996).

The table shown above (Table 5.1.) illustrates Squire’s categorization of game types with reference to Rieber’s descriptions of Exogenous and Endogenous Games. Squire claims to expand these terms and define endogenous games as the games in which ‘the context *is* the game play’, and exogenous games as the games in which ‘the context is irrelevant to the game’ (Squire, 2006). Although Squire’s interpretations are focusing more on game-based-pedagogy and learning experience through the game, his classifications are still valuable for this thesis. For instance, the social model and identity in exogenous games (mostly educational software in Squire’s categorization) and endogenous games (such as *Grand Theft Auto and Civilization*) shows that the dependence on contextual features (such as ideological content, main goal of playing the game or virtual tools that are used to solve a problem) are critical for the analysis of games as designed experiences.

Returning to Sony PlayStation in this respect, it is possible to examine the importance of the virtual content with reference to the products success in the market. In addition to their statements in the promotion of ‘fantasy’ and user



experience rather than the physical product in Sony advertisements, Milligan and Smith conclude their examination of PlayStation as below:

The point of this story is that Sony realized that the perfect customer experience was about the power of fantasy, and that in such a situation, the way the product was marketed and advertised was as much part of that experience as the product itself. The company observed and listened to its customers carefully, and responded with campaigns that talked directly to their emotions and dreams (Milligan and Smith, 2006).

This examination is also important in terms of observing the variations in players' behaviors and gaming habits (such as individual play or playing as a group activity) according to the characteristics of the game. A similar type of observation through the investigation of user experiences and comments on PlayStation will be summarized in the following parts of this chapter. Therefore, the analysis of Sony's method to develop and promote PlayStation as a source for 'gaming experience' was essential to understand the target user groups' associations with the product.

#### **5.6. Computerization of cultural (mundane) practices through leisure activities**

Introduction of video games to public spaces as a form of leisure activity has began with the 'arcades', private sites which contained a collection of arcade game machines. While the variety of the game collection in an arcade was limited with the variety of the arcade-machines (since one machine was only built to contain one single game), the public enthusiasm through these sites revealed the promising market of video games and led the way to the development of upcoming 'generations' of video game consoles and home entertainment systems. Bradford Guins mentions to this enthusiasm and its effects on leisure habits as quoted briefly below:

The 'arcade', as a site for games, became a destination rather than a passage. Movement 'through' became movement through a CRT screen into varied digital game spaces (Guins, 2004).

The worldwide success of particular games and the promising market caused the transformation of televisual space to the screen spaces of video games as concepts such as "game design, game as spatial art, screenic immersive worlds, game play, graphical user interface" gained importance. (Guins, 2004) Guins continues to examine the increasing spread of video games in public spaces with the framework

of the 'intrusion' metaphor and describes the emerging paradigm of 'video game culture' as quoted below:

Since the *Pong* prototype debuted in Andy Capp's tavern in 1972 and *Space Invaders* overtook Tokyo pachinko parlors in 1978, video games have intruded upon the thresholds of quotidian public places like laundrettes, grocery and liquor stores, on television screens in the home, on cinema screens in the form of gaming themed films, films that look like games, as well as video games in the lobby, on computer monitors in the workplace and in the home, on the internet, on one's wrist, in one's palm, on one's phone, in the air and on the road. To get further mileage out of my 'intruder' metaphor, Wolf and Perron (2003) suggest that 'as the field of video game studies grows, it may well find its way to the center of media studies' (p. 20) (Guins, 2004).

On the other hand, 'domestication' of video games in the 1990s with the development of Sega and Nintendo's consoles as home applications offered a new dimension to 'video game culture'. The leisure activities in arcade sites, as they were often considered as 'boys-club's, has been relocated to homes and a range of social and cultural consequences have occurred; such as the liberation of video games from 'street culture' of 'young boys' to 'bedroom culture' that also involves 'young girls' as target audience.

*Who was in the arcade?* Cunningham's 'Mortal Kombat and Computer Games Girls' (2000) begins with an excellent proposition: rather than remain absorbed with 'what children are watching on television', research ought to concentrate on 'what they are doing with the television set' (p. 213). Such research is invested in broadening how game play can be understood with respect to gender and speaks to changes in the games industry.<sup>2</sup> An important transformation that influences both is 'the second wave of game-playing' (p. 213). The second wave, according to Cunningham, occurred in the early 1990s when dedicated game consoles (Sega and Nintendo) relocated game play from public spaces like arcades to the home: 'the move of computer games from "street culture" in the arcades to "bedroom culture" in the home ... has transformed the experience of games-playing for young girls' (p. 217). This transformation rests on snapshots of evidence predicated upon selective memory, an imago, reinforced by popular representation (Guins, 2004).

Considering Guins' and other researchers' theories on the evolution of video game culture and the role of game appliances (consoles, arcades, controller accessories, video games), it is now possible to construct a clear and solid relevance between the central arguments of this thesis and the selected case example; Sony PlayStation as a 'next generation' game console. As a part of this chapter of the thesis, the role of contemporary game consoles and their spread in the public sphere will be examined briefly by focusing on Sony PlayStation and its employment as a public leisure artifact in PlayStation Café's in Turkey. As mentioned in the first

part of the chapter, PlayStation is chosen as a significant case example for this research study, which is conducted in Turkey; mainly because the market integration of Sony consoles to home and public entertainment field is observed as the most promising in Turkish consumer market. The existence and domination of PlayStation Cafés in public areas, the lack in this kind of arcade sites which are specifically named after other consoles (absence of sites such as Wii Café or XBOX Café) illustrates that this particular product may provide valuable insights on Turkish players. The methods of collecting information and observation from Turkish players and, partially, from international players (user forums, polls, direct questions, i.e.) which are employed in this research will be further explained in the following parts of this chapter.

Within the framework that is provided in the previous chapters of the thesis, the examination of selected case example will focus on Sony PlayStation through the 'object-user-consumption' model. First, the characteristics and technical features of the product series were investigated and put forward with reference to the earlier definitions of 'new media objects' and 'information appliances', and such. Consequently, a collection user experiences, opinions and expectations will be re-interpreted within this perspective (as argued in this part) to obtain insights on the main arguments on new media applications and computerization of cultural practices. Since the players' interaction with video games and virtual game environments are provided by the designed appliance (PlayStation console), a certain domination of the product design research perspective is considered as fundamental to acquire a comprehensive conclusion on the relations between two fields.

## **6. METHODOLOGY**

In this chapter, the general outline of the case study on Sony PlayStation will be presented. For this purpose, the primary ideas and objectives on the use of intended findings, and general methods of analysis that are used for the structure of the study will be explained first. Consequent to this chapter, the initial observations and categorizations of findings from these observations will be outlined in the following chapter. After determining noteworthy categories of interest within these initial analyses, the final part of the study will outline the field study that is conducted through investigation and collection of user experiences and comments on the specified case. Finally, the combination of previously mentioned theories and findings of these investigations on the particular case of Sony PlayStation is intended to conclude the thesis with a comprehensive and solid understanding on the subject matter.

### **6.1. Primary Objectives**

The general framework of the case study is constituted by the 'object-user-consumption' model, which was described within the previous chapter. In this respect, one of the major aims of this study is to observe how users' consumption patterns are affected by certain qualities of new media objects and by their 'immersion' to the virtual environments through 'designed experiences' (see Murphy, 2004 and Squire, 2006). Furthermore, the investigation of user experiences, expectancies and playing habits may provide valuable insights on the role of employment of new technologies and features (enhanced game play and controller functions, game networks, i.e.) in players' immersion; thus, may reveal critical outcomes for product design as a fundamental contributor to the context. In short, one major goal of this supplementary study is to examine how users interact with products, which essentially involve new media objects and digital content, and to analyze the theories on new media and product design on a mundane case example upon its users to provide – theoretically and contextually – inclusive conclusions.

## **6.2. Methods of Analysis**

Since the aim of this study is to collect individual playing experiences and interpretations of players to observe the reflections of the mentioned theories on practical field of leisure activities (namely, gaming with PlayStation) rather than to obtain generalized statistical data, a qualitative investigation method is preferred.

For this purpose, the main steps of the evaluation follow the set of procedures that are described by David R. Thomas (2006) as 'Inductive Approach for Analyzing Qualitative Evaluation Data". Although there are various other techniques and methodologies for this kind of an evaluation (such as Grounded Theory, Discourse Analysis or Phenomenology), Thomas's inductive model offers a general and functional set of actions that could be applied to this particular study. One of the major distinctions of Thomas's model is its method of selecting the core themes and expressions from the raw data to describe the most important themes (rather than focusing on the story/narrative to uncover meaning). As it will be outlined in this chapter, the investigations in this part involve more than one resource medium and more than one step of data collection (on-line forums, polls, i.e.).

As it will be further explained in the following chapter, the preference of user forums on Sony PlayStation as information resource has been grounded by several reasons. First of all, it is now visible that the online services, which are provided by the console brands and third-party developers, are constantly growing importance as a fundamental component of user-product interaction in game industry. Both as a virtual gaming environment and as a communication platform between users, these realms are considered as online 'extensions' of the product in this study. Another contribution of using these platforms is their possibility to offer researcher's access to a large number of users (players), most of whom provides the required level of knowledge on virtual experiences, online communication and video game playing. Finally, one technical opportunity of these online discussion platforms is that they enable the researcher to distinguish himself from the information source; as it is possible to investigate topics of discussions proposed by the players, and natural discussion sequences between players without the requirement of authorial direction.

Combining and re-interpreting these information sources according to Thomas's method of categorization provides a feasible ground to develop an appropriate conclusion with regard to the theoretical base of the thesis. In short, Inductive Approach aims to enable the researcher to develop a model or theory on the subject

matter by condensation of raw data into a brief summary format, establishing links between objectives and findings and, ultimately, creating meaning by a summary of themes/categories.

**Table 6.1.** Table of “The Coding Process in Inductive Analysis” that summarizes the development of the theoretical model through evaluation of categories (Thomas, 2006)

<b>The Coding Process in Inductive Analysis</b>				
Initial reading of text data	Identify specific text segments related to objectives	Label the segments of text to create categories	Reduce overlap and redundancy among the categories	Create a model incorporating most important categories
Many pages of text	Many segments of text	30 to 40 categories	15 to 20 categories	3 to 8 categories

Source: Adapted from Creswell (2002, p. 266, Figure 9.4) by permission of Pearson Education, Inc. (© 2002, Upper Saddle River, NJ).

The categorization sequence of Thomas is reinterpreted and distributed into the steps of the analysis process for enabling the methodology to be applied to this particular approach. First, a critical analysis and survey of on-line user forums is conducted as an initial observation to collect ideas on what and how users discuss particular issues on game consoles, games and, specifically, the selected product (Sony PlayStation). This process provided some initial insights on the focus and direction for the next steps of inquiry.

Titles of on-line discussion platforms, which were used in this step are listed below:

- Oynasana.com (<http://www.oynasana.com>)
- PlayStation Turk (<http://www.playstationturk.com>)
- PS3 Chat (<http://www.ps3chat.com>)
- PS3 Forums (<http://www.ps3forums.com>)
- PS3 Mob (<http://www.ps3mob.com>)
- SONY PlayStation Official Community (<http://community.eu.playstation.com>)

As seen above, the on-line forums that are used in this step contain both Turkish and international sites. One reason for the employment of international discussion forums as well as local ones is to observe possible differences and similarities between players from various locations and cultures. The other reasons for such a preference are mostly practical; such as the lack in the number of players of Sony PS3 (the latest product of the series) caused by the delay between release dates in Turkish market and International (European, American and Japanese) markets. Another major practical motive is the need for increasing the number of participants to the research to obtain a wider field of initial analysis; thus, the international forums provided more messages from all over the world in addition to the limited number of messages collected from local platforms.

With a decisive analysis of these forums and their contents (user messages), irrelevant threads are eliminated and contextually relevant titles are selected for investigation. In this step, not only irrelevant threads are discarded, but also overlapping and misleading titles are intended to be specified. After this elimination process, 396 thread topics are selected and included in the analysis. Following Thomas's methodology for classifying this raw data, several categories are generated, and selected threads are distributed into these categories to decrease the number of variants and to manage the large number of initial topics.

The content of these threads and some noteworthy replies, which helped to develop categories upon, will be further explained under the following chapters.

With the combination of various data collected from all these resources, the findings are identified and categorized (following Thomas's model) to outline the major topics of discourse. Finally, the final step of this analysis provided three major topics, which contained the initial categories of threads in more generalized contexts with reference to the previous theoretical arguments in this thesis.

## **7. FINDINGS AND OUTCOMES OF THE ANALYSIS**

### **7.1. Initial observations in user forums and on-line discussion platforms**

The primary motive behind using on-line user forums on PlayStation as a resource for collecting data on user experiences is their capacity to host a significant number of threads on various topics and from many users. In addition, on-line discussion environments, by definition, provide open-ended ‘discussions’ by which the subject can be further scrutinized, and even be shifted to another sub-topic during the discussion. As listed earlier, several Turkish and international forums are investigated for this part to collect comprehensive information of different – as well as similar – topics that are subjected to discourse by players.

Another important aspect of these dedicated user forums within the context of this thesis is their emerging functional and social engagement to the specified product group as a fundamental component of their utilization. As it will be further examined in following parts of this chapter, on-line ‘extensions’ of contemporary game consoles (either through WWW or specific game networks such as PlayStation Networks) is gaining a significant importance as a product feature. Through the increasing integration of these notions (on-line gaming, PS communities, i.e.) into the product, the preferred resources gain more importance as a dominant medium for users’ internal communication (both with other players and with the company). Since the major goal of this chapter is to observe users’ experiences and identifications in virtual environments, these on-line extensions of the product also supports the research as it provides a virtual platform to observe how users interact and communicate through subjects on a specific matter (PlayStation).

The statistics that are collected from each site on the numbers of threads (topics) and posts (messages in threads), and the number of members for each forum (see Table 7.1.) proves that these discussion platforms provide a vast collection of information for research. On the other hand, a significant amount of these messages and topics may contain irrelevant discussions, such as personal arguments, short



answers to specific questions or ‘bump’s<sup>1</sup>. For this reason, a careful and dedicated selection of relevant topics and posts require a certain level of attention and effort during the evaluation of the data.

As shown in Table 7.1., there is a significant difference in statistics between local and international communities. Therefore, the initial observation is intended to include both kinds of communities to increase the number of possible samples. In addition to the quantitative features, it is observed that there may be differences in the qualitative aspects of discussions between different platforms (mainly according to the market condition and availability of certain features of the products).

**Table 7.1.** Table of statistics for the on-line forums used in initial observation (sorted by number of members)<sup>2</sup>

<b>Name of Forum</b>	<b>Threads/ Posts (PS-PS2-PSP)</b>	<b>Threads/ Posts (PS3)</b>	<b>Threads/ Posts (Total)</b>	<b>Number of Members</b>
<b>PS Official Community</b>	5736 / 62,886 <sup>3</sup>	11,257 / 198,760 <sup>4</sup>	78,018 / 1,538,807 <sup>5</sup>	119,203
<b>PS3 Forums</b>	4676 / 73,439	26,150 / 745,502	66,058 / 1,329,385	38,624
<b>PlayStationTurk</b>	242 / 2142	390 / 4349	963 / 9998	3330
<b>PS3 MOB</b>	42 / 252	451 / 1463	619 / 2153	2863
<b>PS3 Chat</b>	N/A	1228 / 8533	1576 / 10802	1300
<b>Oynasana.com</b>	N/A / 7660	N/A	N/A / 7722 <sup>6</sup>	N/A

<sup>1</sup> Since the sorting of threads in large platforms are made by the last modification date, some users send ‘bumps’ (a short message that contains expressions such as \*bump\*) to keep their topics on top of the thread list.

<sup>2</sup> These statistics are provided by each individual website. The information is given as it is collected in 26.04.2007 – 23:12.

<sup>3</sup> Numbers are collected from Forums in English.

<sup>4</sup> Numbers are collected from Forums in English.

<sup>5</sup> Numbers are given for PS Official Community worldwide; the community has forums in 8 different languages (English, Spanish, French, Dutch, German, Italian, Scandinavian and Portuguese).

<sup>6</sup> The total number of posts from Oynasana.com includes only the “Game Consoles” part and excludes specific other forum-sites on particular games and contextually irrelevant discussions

As mentioned previously in the general description of methodology, these wide-ranging sets of threads from all 6 platforms are examined and categorized in order to determine contextually relevant sources and to eliminate others. Since these forums are independent discussion platforms, another possible obstacle would be the overlapping topics and/or arguments in each forum. However, in this elimination process, these threads are intended to be involved if such similarities would be discarded through the discussion sequences in each thread. In short, not only the general head-titles of threads are considered as a category, but also the contents of the discussion within these threads determined their placement in a specific category. Finally, 396 threads are separated and categorized as listed below:

- General Ideas and Information on Game Consoles (*49 messages*)
- Online/Multiplayer Gaming (*49 messages*)
- General Console Usage and Game Play Experiences (*36 messages*)
- Game Controllers (*32 messages*)
- Comparisons of Game Consoles (*23 messages*)
- Best Games (Selecting A Game) (*18 messages*)
- Technical Questions on Consoles (*18 messages*)
- New/Upcoming Games (*17 messages*)
- Promotion and Pricing (*17 messages*)
- Using Other Media (*15 messages*)
- Usage, Maintenance of Consoles (*14 messages*)
- Contents of Games (*14 messages*)
- Sharing/Downloading/Buying Games (*13 messages*)
- Future of PlayStation and Video Gaming (*12 messages*)
- Various Features of Consoles (*12 messages*)
- Technical Questions on Game Play (*12 messages*)
- Questions on Specific Game Titles (*10 messages*)
- General Comments and Game Experiences (*9 messages*)
- Folding @ Home Feature (*9 messages*)
- PlayStation HOME (*9 messages*)
- Old Games and Backwards Compatibility (*4 messages*)
- Comparison of Games (*4 messages*)

Following Thomas's method in combination with the 'object-user-consumption' framework, several threads on specific topics are collected and categorized broadly to transform the vast database to a manageable format. Table 7.2. (below) shows the distribution of these categories of threads into three major themes for the analysis.

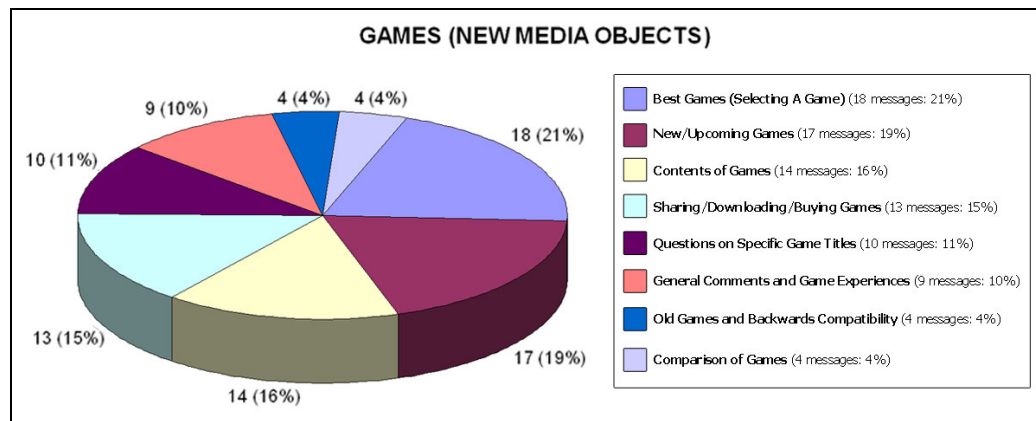
**Table 7.2.** Table of distribution for the initial thread categories to three major themes

<p style="text-align: center;"><b>GAMES AND THEIR CONTENTS</b> (<i>'new media objects'</i>)</p>	<p style="text-align: center;"><b>QUESTIONS, REMARKS AND COMPARISONS ABOUT GAME CONSOLES</b> (<i>'products'</i>)</p>	<p style="text-align: center;"><b>USER EXPERIENCES AND COMMENTS ON GAME PLAY</b> (<i>'users'</i>)</p>
<ul style="list-style-type: none"> <li>• Best Games (18 messages)</li> <li>• New/Upcoming Games (17 messages)</li> <li>• Contents of Games (14 messages)</li> <li>• Sharing/Downloading/ Buying Games (13 messages)</li> <li>• Questions on Specific Game Titles (10 messages)</li> <li>• General Comments and Game Experiences (9 messages)</li> <li>• Old Games and Backwards Compatibility (4 messages)</li> <li>• Comparison of Games (4 messages)</li> </ul>	<ul style="list-style-type: none"> <li>• General Ideas and Information on Game Consoles (49 messages)</li> <li>• Comparisons of Game Consoles (23 messages)</li> <li>• Technical Questions on Consoles (18 messages)</li> <li>• Promotion and Pricing (17 messages)</li> <li>• Usage, Maintenance of Consoles (14 messages)</li> <li>• Future of PlayStation and Video Gaming (12 messages)</li> <li>• Various Features of Consoles (12 messages)</li> </ul>	<ul style="list-style-type: none"> <li>• Online/Multiplayer Gaming (49 messages)</li> <li>• General Console Usage and Game Play Experiences (36 messages)</li> <li>• Game Controllers (32 messages)</li> <li>• Using Other Media (15 messages)</li> <li>• Technical Questions on Game Play (12 messages)</li> <li>• Folding @ Home Feature (9 messages)</li> <li>• PlayStation HOME (9 messages)</li> </ul>
89 messages	145 messages	162 messages

According to the secondary categorization above, the major themes that would generalize the initial thread categories were defined. In this step, topics that may include both obvious and (somehow) close relevance to the arguments are classified within the three major themes as listed:

1. Games and their contents ('*new media objects*')
  2. Questions, remarks and comparisons about game consoles ('*products*')
    3. User experiences and comments on game play ('*users*')
      4. ...

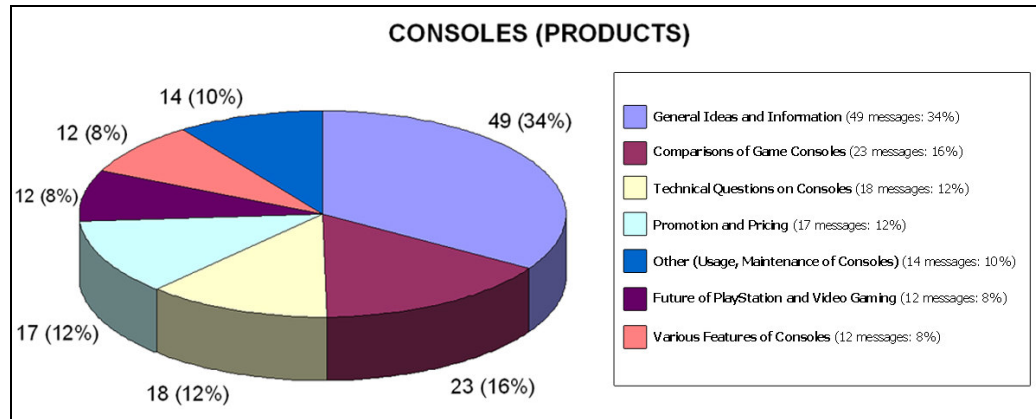
Within this broad categorization, all three themes are intended to be associated with the central arguments in this thesis. In this respect, the first theme ('games') is focusing on 'new media objects' and their qualities, while the second theme ('game consoles') groups comments on product features with relation to the other themes. Consequently, the third theme outlines user experiences and preferences; thus intends to examine how players perceive the game environments and what motivates their 'immersion' (Murphy, 2004) to the virtual experiences. The titles of these threads as categorized by the three themes are given in Appendixes A, B, C.



**Fig.7.1.** Distribution of thread topics related with "Games and Their Contents" theme

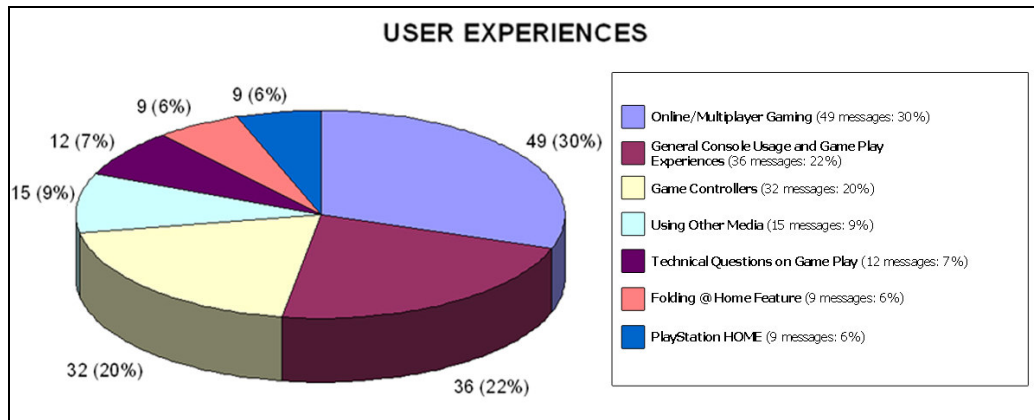
It may be observed from Fig.7.1. (above) that users' comments and questions are mostly focusing on the game preferences, upcoming games and contents of specific games. These major topics of discussion generally enable the players to share their opinions on and experiences with specific games and optimize their software purchases. In addition, players often focus on exclusive features of games and

criticize them as they have more experience with the product. The investigation of this theme is intended to provide clues on user preferences and expectancies on the game contents; and the relevance between their playing habits and certain features of software applications.



**Fig.7.2..** Distribution of thread topics related with “Questions, Remarks and Comparisons about Game Consoles” theme

The second theme on consoles focuses on players’ comments on the products as the physical components of video game systems, and intends to explore user preferences on video game appliances in the market. Along with the most popular category on *general ideas and information*, comparisons of competing console brands and comments on the promotions and prices of game consoles occupy a significant range of messages. In addition, user messages in this category also function for exchange of information between players (technical questions, usage, maintenance and such). The significance of this second theme comes mainly from its analytical perspective on users’ interaction with devices and their physical components; as well as on players’ identification with certain products and brands within the same industry.

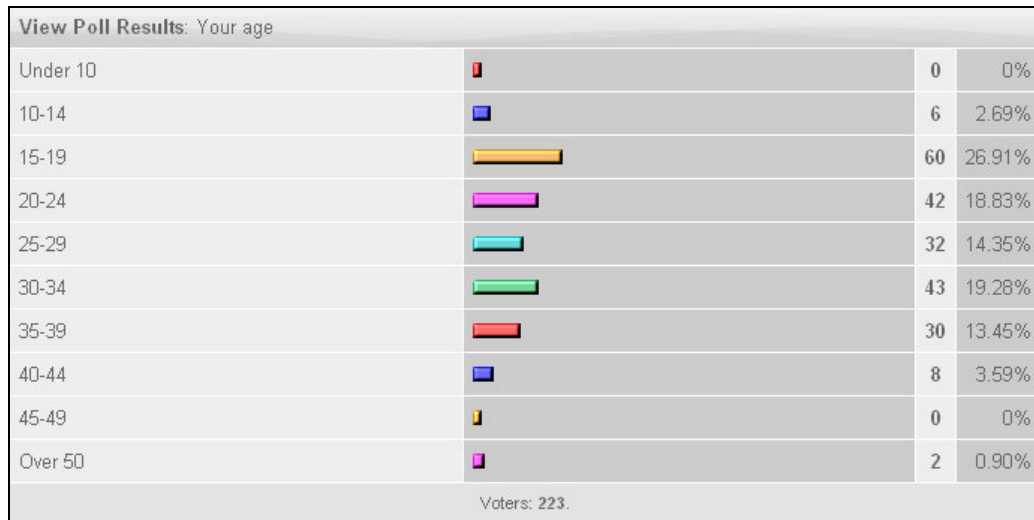


**Fig.7.3.** Distribution of thread topics related with “User Experiences and Comments on Game Play” theme

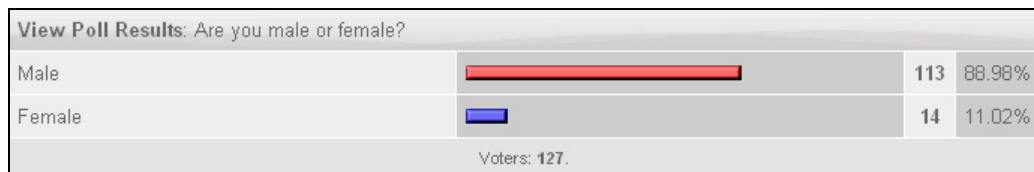
As the final theme focuses on user experiences in virtual environments through game play, the foremost category in user messages contains discussions on *online and multiplayer gaming*. As explained in the relevant titles, developments on enhanced game networks in next generation consoles shift the primary function of conventional game consoles to more interactive online game experiences. Although their ratio within this category is less than other topics, user messages on Folding@Home and PlayStation HOME features support the fact that players grow a certain tendency on these network facilities. Another significant topic of discussion may be determined as the game controllers. Especially with the development of tangible user interfaces such as motion tracking wireless controllers, next-generation consoles introduced a new dimension to user-product interaction. The effects of these new devices and features will also be investigated through user messages under the relevant title in this chapter.

## 7.2. Demographic Information on Age and Gender

Since the forums, which are used in this study, contain both local and international discussion platforms and are used by a wide range of users, the characteristics of participants may vary according to the nature of the platform. On the other hand, the exclusive possibilities of these interactive communication environments provide easier access to some usable information by their specific functions (such as making wide-ranging inquiries by polls or dedicated threads). The demographic data on the age and gender of participants in this part are collected by the examination of relevant topics.



**Fig.7.4.** Results of “Your Age” poll from PlayStation Official Community Forums



**Fig.7.5.** Results of “Are you male or female?” poll from PlayStation Official Community Forums

As shown above (in Fig.7.4 and Fig.7.5), some of these dedicated inquiries from user forums provide valuable statistical data, considering the large numbers of participants to the threads. These two examples show that the majority of participants are between ages 15-39 (207 of 223 users), and male participants are dominant over females (113 of 127 users). Evidently, collecting one resource for this demographic inquiry would not provide a solid statement on the characteristics of the participants; therefore, a similar investigation has been conducted through other platforms to compare these results. As shown below in Fig. 7.6., another poll that is replied by 153 members in PS3 FORUMS.com shows almost similar demographics in terms of both age and gender:

View Poll Results: What is your age/ gender			
Male: less than 12 yrs		0	0%
Male: 13-17 yrs		35	22.88%
Male: 18-22 yrs		46	30.07%
Male: 23-29		40	26.14%
Male: 30+ yrs		24	15.69%
Female: Less than 12 yrs		1	0.65%
Female: 13-17 yrs		1	0.65%
Female: 18-22 yrs		3	1.96%
Female: 23-29 yrs		2	1.31%
Female: 30+ yrs		1	0.65%
Voters: 153. You may not vote on this poll			

**Fig.7.6.** Results of “What is your age/gender” poll from PS3 FORUMS.com

As both of these results are collected from international sources, they are intended to provide general information on age and gender, rather than to describe location or culture specific characteristics of players. On the other hand, they are involved in this chapter to illustrate the generalized user profile of the forums on PlayStation, since the major aim of this study is to make a consistent examination of user experiences, rather than a comparison of cultural differences.

### 7.3. User comments on games and their contents

As the most dynamic element of these three topics – as well as that of the game industry -, video games offer a progressive and unstable discussion theme. While the majority of posts are directly related to specific software, the threads on these specific games may become old-news and be replaced with brand new games almost as rapidly as new games are developed and promoted. This tendency on keeping up with the brand new software for a better gaming experience also shows how much the game-industry depends on the progression of game development, since the console preferences and requirement for upgrading to a better console is often aroused by the promotion of *new and greater games that can only work in the newest console* (see Murray, 2007). Threads such as “What’s the best game” (PS3 Chat), “What game are you looking forward to the Most?” (Poll from PS3 Chat) and “Which Game Should I Get?” (PS Official Community) illustrate players’ preferences and expectancies of upcoming game titles.

A lot. Thats the only answer I can give. This is a pretty good year for gaming in my opinion. My list of games to get are:  
 1) Pirates of the Caribbean (PS3)  
 2) Burnout 5 (PS3)  
 3) Overlord (360)



- 4) Halo 3 (360)
  - 5) GTA 4 (PS3)
  - 6) Guild Wars: Eye of the North (PC)
  - 7) Warhammer Online: Age of Reckoning (PC)
- I'm sure there will be some other that take my fancy at some point too but thats my current list (Callmege)

User messages such as user 'Callmege's list show that players often track the forthcoming developments in the game industry and define their preferences with the help of these communication platforms. In this respect, these platforms may also be considered as a promising field for introduction and promotion of new games as they are discussed and criticized between players even before they are released into the market.

On the other hand, some players often create a certain devotion to existing games although they purchase a new console with an updated system. Throughout the analysis of user threads in selected forums, it is observed that the term "backwards compatibility" is mentioned by some players as they demand to continue playing their favorite games in their 'next-gen' consoles. Although it is not a major category in numbers, this demand still requires attention since it provides clues on user preferences and playing habits. One example of players' demand to operate existing games in their next-gen consoles is quoted below, as user 'TRD91whtMK3' asks "Any other idiots rush to download PSOne games?" in PS3 Forums:

I swear, i'm retarded... the moment i saw that psone games could be downloaded and finally played on the ps3 i rushed and downloaded syphon filter and destruction derby only to find out IT DOESN'T WORK!! I feel so retarded (especially 12 bux in the hole) and yay my psp has been broken for a year now! Anyone else feelin my pain or am i the only idiot? (TRD91whtMK3)

The need for playing the existing games but still demanding a new product may be interpreted as a duality in the users' attachment to these products; while the emotional attachment to the software defines the individual as a dedicated *player*, the demand for purchasing the upgraded hardware reveals social aspects of consumerism and re-defines the player as a *consumer* (of physical commodities, in this case). In these sorts of threads, it may be observed that players argue the lack of backwards compatibility in PlayStation3 although most of them have bought the new console. A similar discussion may also be observed in threads such as "Sony, please give us Amiga games!!" and "PS One Classics Now Playable on the PS3" (both from PS Official Community).

The topics on downloading games as a new form of purchasing also leads to another noteworthy subject; which focuses on players' need to download unofficial (cracked) versions of game software. Especially in Turkish platforms, the ways to find and download copies of original games seems to be a popular topic of discussion. Some examples of these threads may be “Kopya oyun gelmiyor mu yoksa?”, “İnternetteki oyunlar”, “Ne olacak bu kopya işleri”, “PS3 kopya oyun”, “PS3 Kopyada durum ne”, and “Sonunda oyunlar kırılmaya başlamış işte anlatım” (all from PlayStation Turk). Although most of the forum administrators forbid these kinds of subjects and close the thread if a possible prohibited discussion takes place, it is observed that these kinds of threads are often used for sharing information on illegal software. The fact that most of these discussions are observed in Turkish platforms rather than Internationals may be related to market conditions and relatively higher prices of original software. Another discussion on a similar topic will also be mentioned under the following titles; as Turkish players discuss the methods of cracking the hardware and upgrading their consoles in black-market.

Apart from purchasing preferences, another significant feature of the first theme is the relevance of user preferences to the characteristics of social identification. It is observed that certain aspects of particular game types (adventure, sports, fighting, etc.) are criticized and preferred by players with references to the type of gaming experiences for which they demand. A drastic illustration of this identification of players with specific features of video games is quoted from ‘Oynasana.com’:

“Merhaba arkadaşlar  
Ps3 çok güçlü bir konsol. Acaba xbox360 gibi PS3e sadece güzel kızların olduğu oyunlar çıkar mı? Bildiğiniz birkaç örnek oyun ismi varsa söyler misiniz?” (umityildiz)

Another significant example of the relevance between user preferences and their personal identification inside the virtual environments may be observed in the thread entitled “PS3 de Bir Oyun Hayal Edin” (Imagine a Game in PS3) in PlayStation Turk.com as quoted below:

“Gizli hayatta kalma yollarını ormanda biz bulalım ve bu ormandan çıkış kesinlikle en az bir ayımızı alsın. Grafikler her planda görsel bir şölen olsun ve alan genişliğinin fazlalığı her planda değişen detaylı grafiklerle bizi sürüklesin. Değişen grafikler sayesinde gideceğimiz yeri bulalım sezgilerimizle. Ormanda vahşi hayvanlarla mücadelemiz oyundaki heyecanı düşürmesin. Sonuç olarak buna benzer gerçek hayat hikâyeleri vardır. Yağmur ormanlarında kaybolan insanlar aylar sonra ormandan çıkış yapabilmişlerdir. Tabi biz bunu bir oyuna uyarlırsak daha gösterişli olanı yağmur ormanlarının en berbat en vahşi bölgesine uçağımızın düşüş yapması olur. Bir de insanlar tarafından hiç keşfedilmemiş bölgelerde yeni uygarlıkların izlerini bulabilmemiz gibi özellikler oyuna ayrı bir güzellik katar. Her bulduğumuz uygarlık da

tarihi kalıntı olmamalı tabi özellikle insan eti yemekten çok hoşlanan bir uygarlığı mutlaka geçmeli ve onlarla karşılaşmalıyız ki kovalamaca ve heyecan seviyesi oyunda giderek artsın. Her an tetikte olmayı bir süre sonra tam olarak öğrenelim ve bu bizi asla oyundan koparmasın. Su görünümündeki başarıyı ağaçlara ve kayalıklara yansıtırlarsa ve biz bu ağaçlara ve kayalıklara en iyi şekilde tırmanabilirsek ağaçtan ağaca atladığımızı bir sürü yamyam kabileyi hepsi kıyafet ve tip olarak farklı olacak şekilde düşünürsek mükemmel bir oyun hayal etmiş oluruz bana göre. Silah olarak bize bir mızrak ve bir de ok yeter. Arkadaşlar sizin de hayalinizde bir oyun vardır mutlaka.” (Username: grandia – 23.04.2007 – 21:31)

Although there are various types of games, other than the action/adventure theme for which ‘grandia’ demands, this particular post provides an extensive base for analyzing the connotations within user preferences. As argued in the previous chapter, the spatial metaphors that provide the essential orientation of users in virtual environments are often employed in video games for creating a captivating game environment. The environment is ‘imagined’ as a jungle (or rainforest) in the post above; evidently referring to a visual representation of notions such as ‘adventure’ and ‘mystery’. The representational environment inside the game helps the creation of a desired experience in a virtual setting, and an imaginary situation in which the player cannot physically exit. Nevertheless, ‘grandia’ establishes the links between real-life situations (‘a plane crash might actually have happened to a real person in a real jungle’) to enhance the reality-effect of desired experience. In addition, the participation of ‘wild’ animals, ‘cannibal’ tribes and ‘discovered’ lost civilizations are required to improve the sense of adventure; and thus providing a cause to play the game that ensures the immersion of the player to the game environment.

Parallel with the arguments in this thesis, ‘grandia’s comments are focusing on the qualities and features of game play as McLuhanesque body extensions that provide the actual participation of player’s virtual-self into the game. With reference to the developments in 3 dimensional visualization techniques (which are most visible in the virtual representation of *water* to improve the reality effect in contemporary games), the user expects a transformation of conventional environmental components (rocks and trees) to more interactive game elements. After all, players’ association of the virtual settings to real world essentially depends on the level of their interaction with the surrounding entities (objects, people, i.e.). Finally, an appropriate form of ‘body extension’ as the interaction tool (spears and arrows) is preferred to obtain the desired level of authority inside the game; also providing contextual relevance to the whole setting. Revisiting Anders’s statement on digital extensions of body as “(...) representations of ourselves in order convey messages

electronically” (Anders, 1999), the importance of this contextual relevance comes into view. The consistency of the game setting as a task-specific new media object provides a clear transition between two worlds (physical and digital) and a seamless conveyance of information that is in the form of game play (either playing against the computer or a person in a multi-player game).

#### **7.4. Questions, remarks and comparisons on game consoles**

As we move towards the second theme, on game consoles as consumer-electronics products, the focus of the analysis also shifts from the virtual domain to the physical world of commodities. Although the variety of games and their quality is one of the major variants of game console preference, the product features and players’ physical interaction with the device also offer a wide range of topics of discussion. To begin with, one of the major topics in most of the discussion platforms is the comparison of game consoles (whether only ‘next generations’ or overall) between each other and with gaming in PCs. These subjective comments and comparisons between different products within the industry is observed in order to collect ideas about what users often focus on while choosing their devices and how they perceive the market competition. For instance, user ‘ordakal’ from Oynasana.com community compares Nintendo Wii with PlayStation 3 (PS3) and claims that Wii’s target audience is mostly ‘kids’ (although they promote and advertise the console as a product for both kids and adults) and states “for those who have not get bored of seeing Mario on every console yet, Wii will offer the liveliest mushrooms ever” (ordakal).

A significant topic of discourse within this category is the users’ perception of the notion ‘next generation’ which outlines the recently developed game consoles (Nintendo Wii, Microsoft Xbox 360 and Sony PlayStation 3). While these “next-gen” consoles are already in the market, the term itself seems to offer promising new dimensions to the players; thus leads them to discuss what they would like to see in forthcoming next-generation consoles. A thread entitled “What do we consider Next Gen?” by user ‘Cliffbo’ in PS3 Forums outlines these expectancies of players with respect to the notion “Next-Gen”.

To me next gen is seeing more "action" on the screen. Whether it be the wind blowing trees, or a leaf flying by. I would like to see less "still" images. I have to agree animation is key here. That is what I am looking for.  
The other thing is customization. I like making my own avatar, my own teams, my own rules, my own car design and my own games. These things go a long way with me (bad\_calvin).

As exemplified by one of the replies to this thread above, major topics of the discussion relates to the detail levels of animation (high-resolution scenes, visualization in general), the degree of players' interaction with the game environment and customization. While these topics are generally directed towards the development of more realistic virtual environments, it may also show that players' expectancies for upcoming generations are still dominated by the level of interaction and their 'immersion' to the game.

Another noteworthy thread on this subject is entitled 'When Will the Next Gen Become Current Gen?' that initiated by user 'Tyrade' in PS3 Forums. As 'Tyrade' asks the question "what will make this generation THE generation instead of the NEXT generation?", user comments on the subject may vary as illustrated below:

I guess when the Playstation 2 stops selling more than the Next Gen Consoles? 😊  
(dc writer)

eyah, i agree, when the ps2 is done its cycle, then basically the next gen starts. but it can also mean next gen as in, this november, when each console has been given 1 years time (iLLuSionS)

I try to refer to the three new consoles as current-gen now... I think at the moment all three new consoles were on the market we should have quit referring to them then as next-gen.. at that point they became current-gen... (ptrainpope)

its not current generation, until Sony says its current generation (deadsoul)

As illustrated in the posts above, players preferences of specific game consoles are affected by the advertisements of the brands to a limited extent, but still, being the owner of a specific console (XBOX360, Wii or PS3, i.e.) refers to a preferred condition in social identification. Especially considering the last quote by user 'deadsoul', it may be observed that some users develop a certain loyalty to the brand. On the other hand, two examples below show that other players may tend to stand more critical to the promotional features and focus on the primary functions of their consoles:

"I cant see a link to a PS3 anywhere in that add, even knowing what its for! Sony trying to be too smart. "This Is Living" meant nothing to me as when I kept seeing the add, I was actually watching Living TV, lol. Thought it was something they were launching on the 23rd also. haha. Keep it basic Sony, just show the games (in game footage too btw) coz at the end of the day, thats the bread and butter of the P\$3 and what its being sold as.....a games machine. 🤔 One of my fave ads was the 360 one what shown someone getting born, growing old then landing in their grave. Very good add, made me chuckle too. But I knew what it was for and thats the whole point" (Rubber Duckie74).

"I think the idea is that Sony are trying to market the PS3 as more than a games machine, more a lifestyle accessory. It doesn't really fool anyone since most people perceive the PS3 as a games machine and nothing more. Sony should go back to basics instead of trying to come across all clever with these cryptic ads" (ScootaKuh).

In these two posts within "This is living, WTF?" thread, quoted from PS3 CHAT.com, it is noticeable that Sony's PlayStation 3 advertisement campaign entitled 'This is Living' is criticized by the players. Although advertising is an essential feature of promotion of game consoles (as it is for any other commodity), it is observed that users' actual experiences and associations with their products may noticeably shape their comments.

However, another form of this identification still reveals itself as 'brand loyalty' as mentioned above. In a large amount of the forums (especially in Turkish sites), PlayStation players often refer to themselves as 'We, PS'ers' and tend to explain (sometimes in an offensive fashion) why their product/system is better than the others in the market.

"Whom ever thinks that the PlayStation 3 [*failing*] is absolutely stupid. Believe it or not, other companies are praying to god Sony doesn't fall. Microsoft is giving mad props to Sony because without them, they wouldn't be making barely any sales. Nintendo doesn't even need to care because even without competition their console will smash the market. Right now if PlayStation 3 never released, Xbox 360 would still look the same and still be slowing in sales. But now whenever someone goes to best buy they get told the Xbox 360 is the better deal if you're looking to play games. And then they say how the PlayStation 3 is a rip off and Xbox 360 is way better. Believe me; I watched that utterly disgusting employee rag on and on. I could have slapped him in the face. But I watched the consumer sit there and nod and finally buy the Xbox 360. I then saw the same thing happen at Walmart, Kmart, and Gamestop. I should have killed people. But either way, Sony will not fail and if they do, then say goodbye to competition between consoles. Nintendo doesn't care about Microsoft and vice versa. The main competitor between both of them is PlayStation 3. That is the only reason PS3 is behind is because it's like 2 vs 1. But after taking the fall and seeing flaws it will rise and dominate. As it does in my world already!" (Cell Broadband Engine)

As quoted above, from ‘PS3 This PS3 That!!!’ thread in PS3 Chat.com, users of specific game consoles often develop a certain brand loyalty – especially on PlayStation, since a large number of users of next generation consoles have experience in earlier versions of this console – and tend to discuss product-related issues within this framework. On the other hand, a few users tend to criticize the game industry with a more objective and analytical method and intend to compare the products with a more comprehensive view; such as the thread submitted by user ‘Callmege’ to PS3 CHAT.com quoted below:

“This begs the ultimate question.....what would you put as the top gaming systems?  
1) PC - If John Romero (the western Shigeru Miyamoto) is right, and the chances are he is, this will begin to replace consoles. It does everything, often better than the consoles do.

2) Nintendo 64 - The games this console had blew PS1 and Sega Saturn clean out of the water. The problem was that there weren't enough.

3) SNES - This also had a stunning games lineup and was simply amazing at the time

4) PS2 - The largest gaming lineup like ever but unfortunately that meant it had a lot of shit games

5) GBA - A great handheld that sold extremely well and built on all the greatness of the GBC.

6) GBC - Same as GBA

7) Sega Dreamcast - Probably the most underrated console ever. If Sega had waited a few years and added a DVD player, it would have dominated.

8) Xbox - Second most underrated console ever. Great games, great controllers and a great hard drive. Let down by lack of third party (mainly Japanese) support.

9) DS - I can't fault the fact that it is selling well but I just don't like handhelds, especially ones with two screens.

10) Wii - Genius. If Nintendo gets some games out this could very well end up in the top 5.

Why didn't I include PS1? Because it was a piece of s\*\*\*. I have no idea why it sold well... it was less reliable than the 360, had a small minority of good games and a vast majority of almost unplayable games, the graphics were shit compared to its competitors and the only thing it had going for it was the ease in which you could mod chip it” (Callmege).

One major statement, which may be illustrated by these types of threads, is that a number of users in the on-line forums have a solid background on video and computer gaming along with ‘newbies’, who have less experience; thus the contents of their comments may often be more objective and comprehensive than others. This diversity in user experiences is also observable in various threads such as “About to go buy a PS3 Need Help???” (emilio07, PS3 MOB.com) or “PS3 vertical or horizontal?? Which is Better?” (virago, PS3 FORUMS.com)<sup>7</sup>. The post, which is

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<sup>7</sup> The same topic is observed under thread “Horizontal or Vertical?” post by user ‘thegeth’ to PS3 CHAT.com (29.04.2007 – 21:16)

quoted below from PS3 Forums, illustrates how users share information on specific issues about their products; such as user 'asonda', who requires advices on how to clean a newly-bought PlayStation:

Ok so, I've spent £500 odd quid on a PS3, i've had it a few weeks now, since the launch here in the UK, and It's got finger prints on it, and a bit of dust...  
I've seen numerous posts on here, about theirs being scratched etc... I don't want to scratch mine.. So how are people cleaning them without getting scratches on them?  
how do you clean yours?? (asonda)

The possibility of witnessing similar topics in both Turkish and International forums shows that a significant number of inexperienced players use these forums for getting advice or information on their products and some advanced players are ready to provide this information with inclusive replies. Therefore, it is possible to consider on-line discussion platforms as a communicative extension of the product network between users from different locations and with various levels of experience.

Another noteworthy subject of discussion (especially within Turkish forums) is the possibilities of upgrading the product with supplementary hardware, such as external hard-disks and memory chips (playwining and M.Calavera, Oynasana.com; yakupbjk, PlayStation Turk.com, i.e.). Although the major motive behind users' requirement for upgrading their consoles' capacity is the current condition of the market (mainly caused by higher prices of official game software and existence of an unofficial black-market in the country), the development of this upgrading facility also improves users' technical knowledge of the product.

"slm arkadaşlar playstation 2 yi yeni aldım şimdi üç seçeneğim var  
1. çipp taktırmak  
2. hdd taktırmak ( yeni duyduğum bişey hiç bi fikrim yok )  
3. hiç uğraşmadan oyunlarda takas olayına girmek" (playwining)

The question above, post by user 'playwining' to Oynasana.com, illustrates the novice Turkish users' dilemma on the upgrading possibilities versus using official software without modifying their consoles. It is also noteworthy that using similar keywords in forum searches in international discussion platforms provide no results whatsoever; which may offer new expansions for a multi-cultural study within a socio-economic perspective on the product and the market conditions.



The last discussion topic that will be discussed under this theme is collected from user 'GameSpawn's thread entitled "What's Your PS3's Name?" in PS3 CHAT.com forum. This subject is intended to be analyzed within two major point of relevance: both as an illustration of users' emotional attachment to their devices, and as it provides reflections of techno-cultural background and its relation with other media sources (comic books, cartoons, movies, i.e.).

"To get peoples mind off the FUD, bad news, sore firmware experiences, and just out of curiosity, what's your PS3's name? This thread is all in good fun.

Believe it or not you can name your system under the System Settings. This is mainly used to identify the PS3 to the PSP, but it is also used to identify the PS3 on a network with something other than a MAC address.

I've had fun with all my networked devices (PC, Laptop, PSP, PS3, Xbox, etc.) naming/identifying them after Tenchi Muyo<sup>8</sup> characters. So from that, I've named my PS3 Kamidake<sup>9</sup>. How about you guys?" (GameSpawn)

By a rational conceptualization, users often tend to describe their 'networked' devices by a set of pre-defined labels to constitute the authenticity of their systems (product networks) and personalize their own identifications within on-line communities. While some users treat their devices as an individual character such as user 'Zero\_24' who named his PS3 'Stella' to connote traits 'hardworking, pretty and seductive', another form of identification is illustrated in user 'Grifer's post:

"I named mine Enlightenment. (herald of new, more sophisticated era)  
I have a libertarian theme for all the gear I have:  
iPod = Schengen (Schengen Agreement is EU's freedom of movement pact)  
iBook = Liberty (to do as I please without malware/WGA intervention)  
Linux computers I had were called Emancipation (from Microsoft slavery) & Freedom (from closed source)" (Grifer).

Whether in the form of associating the devices with 'personalities' or socio-cultural 'notions' as examined in the two examples above, it is visible that players (or owners

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<sup>8</sup> "Tenchi Muyo!, is an [anime](#), [light novel](#), and [manga](#) series about a boy named [Tenchi Masaki](#) and the alien women who love him" created by Masaki Kajishima (cited from Wikipedia) ([http://en.wikipedia.org/wiki/Tenchi\\_Muyo](http://en.wikipedia.org/wiki/Tenchi_Muyo))

<sup>9</sup> Azaka and Kamidake, Ayeka's guardians, in the form of floating logs. They can generate a barrier that allows them to protect Ayeka and paralyze their target, though their powers pale in comparison to the power held by the Royal Trees of Jurai. (cited from Wikipedia) ([http://en.wikipedia.org/wiki/Azaka\\_and\\_Kamidake](http://en.wikipedia.org/wiki/Azaka_and_Kamidake))

of specific devices) tend to reflect their interests and identities through their products (and their on-line presence with their products).

“Mines called PandaQueenElite. It's the name I used to use when I played FPS's and it came about because I tried to think of the most random name I could come up with. Now I just stick with Kindayar. I always got a kick out of people thinking I was a chick” (Kindayar).

As mentioned in previous chapters, one dimension of on-line personalities refers to the expression of repressed social identities (such as on-line gender swapping). (see Haraway, 1999 and Boler, 2007) In the light of these arguments on creating on-line identities and identity-swapping in virtual environments; user 'Kindayar's comment may be given as an example as he declares that the usage of a fake identity (opposite gender) provides him a different experience than mere game play. Although this new experience may refer to 'having fun with idiots who try to hit on an actual male player', it also reveals another critical dimension on-line identification; 'the primary avenues' of transcending bodies which Boler (2007) defines as “fluidity of on-line identities” and “transcending binaries”. In short, it is observed in this particular case that the users' extension into the virtual environment can also be maintained by their textual and descriptive associations (device names, nicknames, i.e.) since they function as mediums of self-identification; in addition to their player-characters through which they operate their simulated bodies in game play (see Featherstone and Burrows, 1995 for the latter type of identification).

Following the thread entitled 'What's Your PS3's Name?', one last investigation - on the determining effects of mass-media and other cultural sources on conceptualization of media devices - is possible. As quoted in the first post by 'GameSpawn', users' preferences of labeling/naming their network devices may often follow a narrative sequence or parts of a structured plot. In these examples, sequences – or parts – are based more on actual characters within the narrative and they are somehow identified by each character.

“I always used an Alice in Wonderland theme for most of my equipment:

Wonderland - main PC  
Alice - iPod  
Cheshire Cat - Powerbook  
Caterpillar - PSP  
(White) Rabbit - USB pendrive  
euh... perhaps I should name my PS3 "The Hatter"... (Seraphus Y)

“Mine are all Ninja Turtles. I had to rename the server Splinter, he kinda watches over everything in the house. They used to be famous inventors, where the network printer was Guttenberg and stuff, but after a few years, I thought change is in order” (AndyD).

Particularly in ‘GameSpawn’s Tenchi Muyo example (PS3 associated with a floating log) and ‘AndyD’s metaphorization of his server as ‘Splinter’ (because it ‘watches over everything’), it is visible that appropriate conceptual links between narrative and the device are established to improve player’s attachment. Employment of specific themes such as Tenchi Muyo and Ninja Turtles (GameSpawn and AndyD), and more evidently, characters from techno-fictional themes like Transformers series (MonkeyClaw®) may also be read as a reflection of cyberpunk literature (on cyberculture) to contemporary consumer culture.



**Fig. 7.7.** (left) Screenshot from David Cronenberg's “eXistenZ”

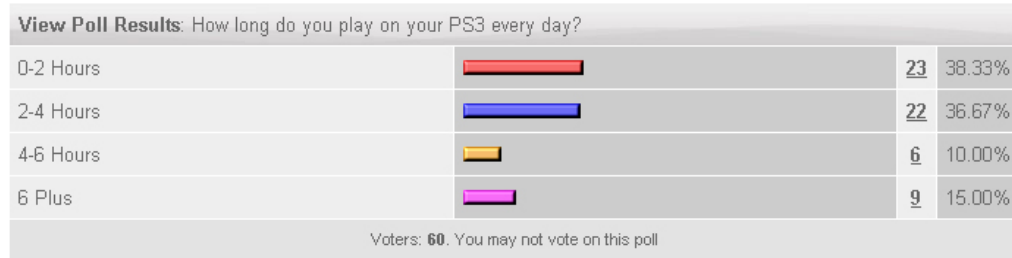
**Fig.7.8.** (right) Screenshot of ‘Follow the White Rabbit’ scene from Wachowsky Brothers’ “The Matrix”

Although this relevance reveals itself on the surface-level (when it is taken only as a label for the product); the contextual referents to cyberpunk vision in video games and movies (two major elements of a contemporary entertainment center) support the idea that traces of ‘cyberculture’ notion are still visible in this domain.

## **7.5. User experiences and comments on game play**

Consequent to the analysis and interpretations of user comments on games (virtual content) and game consoles (physical products) as two fundamental themes of our arguments, the third theme will now focus on user experiences and comments on the activity of ‘playing’. While a majority of threads on this subject are intended to ask questions and share experiences on specific games by individuals, a dedicated

process of elimination, which requires a categorization of most important topics, puts forward three major questions into consideration: ‘*when*’, ‘*how*’ and ‘*why*’ players prefer to use their devices (consoles) and their specific functions (supplementary accessories, networking options, i.e.).

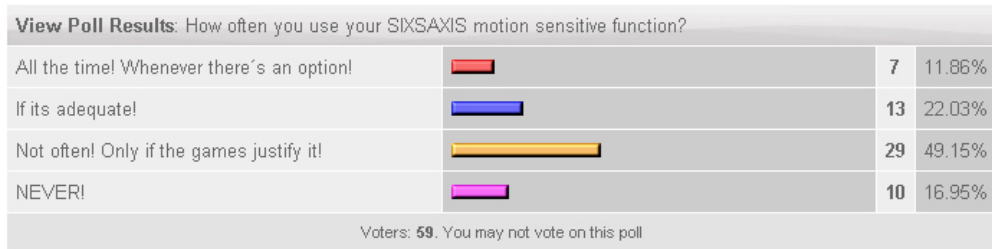


**Fig. 7.9.** Poll results for “How long do you play on your PS3 everyday?”, post by user ‘smithc02’ to PS Official Community Forums<sup>10</sup>

The statistical data, which is provided by a poll in PS Official Community Forums, show that the majority of players (from members of PS Community) prefer to use their consoles for less than 4-6 hours. With a closer examination of other user posts within this particular thread, it may be seen that the average time of usage increases on users’ free-time (weekends, i.e.). For instance, user ‘Sicknsore’ implies the usage of features other than gaming and declares that he spends several hours with his PS3 on weekends, but “1-2 hours for games then i just turn it on for the mp3 or folding”. Another significant variant that is expected (by the users) to increase the overall time spent on PlayStation is the introduction of new and improved games (users ‘HungryZombie’, ‘baskcm’, ‘smithc02’, ‘StormriderX’). The fact that users refer to forthcoming games (Oblivion, TC Vegas, i.e.) as a major determinant of their gaming practice shows how the digital content (‘games’ as virtual elements of the system) has a central role in the consumption pattern of game consoles.

The relevance of game content to the playing habits is visible not only through time spent on the console but also through the usage of specific functions of the product, which are developed to enhance the gaming experience.

<sup>10</sup> <http://community.eu.playstation.com/showthread.php?t=81361> (24.04.2007 - 23:20)



**Fig. 7.10.** Poll results for “How often do you use your SIXAXIS motion sensitive function?”, post by user ‘GrieverSoul’ to PS Official Community Forums<sup>11</sup>

The graph above illustrates the estimated usage ratio of players (from members of PS Community) of SONY PlayStation 3’s innovative controller accessory, SIXAXIS, which has motion tracking option that involves players’ body actions as commands for operating the software. With its major market competitor, Nintendo Wii’s remote controller ‘Nunchuk’, the importance of this new development comes primarily from its attempt to introduce a new form of physical interaction to its users. However, most users criticized the development of motion tracking controller accessory by two main arguments; because of the need for expertise in using the new controller (and its inaccuracy in critical moments) and because of its abandonment of the conventional DualShock feedback mechanism. As shown in the poll results, 19 of 59 users (16,95%) refuse to use this function even if they have the possibility (since they own a PS3) while the majority of players (49,15%) relates their usage to the requirements of specific games. The message/reply sequence for “How often do you use Motion Sensitive?” thread, quoted from PS3 Official Community below, illustrates the game-specific need for using the motion sensing function of SIXAXIS as users ‘LSDARBY’, ‘Johnny5\_Hull’ and ‘whites\_2003’ exchange their experiences through the forum:

“All the time, when playing resistance<sup>12</sup> online. When people tag me or set me on fire. i have to shake the controller” (LSDARBY).

“So thats how you put the flames out.....I've been running around waiting to die 😊 lol<sup>13</sup>

Thank you SOOOOOOOOOOOOOOOO much 🙏 (Johnny5\_Hull)

<sup>11</sup> <http://community.eu.playstation.com/showthread.php?t=81459> (24.04.2007 - 23:20)

<sup>12</sup> “Resistance: Fall of Man” is a PS3 compatible ‘First-person Shooter’ game developed by SCEA and Insomniac Games (<http://www.gamespot.com/ps3/action/insomniacshooter/index.html>)

<sup>13</sup> Abbreviation for “Laugh Out Loud!”

The amount of people that dont know how to de-tag or put themselves out in Resistance is unreal, I watch people just burn to death all the time and im like SHAKE THE CONTROLLER!!! Only really use the Sixaxis in Resistance really....because thats all I got! (...)" (whites\_2003)

The motion tracking controller accessories (SIXAXIS and Wii's Nunchuk, i.e.) are designated to work collaboratively with the game software for a more realistic playing experience. On the other hand, introducing a new dimension to players' physical interaction with the game environment may essentially result in confusion and misinterpretation since a direct manipulation to users' 'orientation' in virtual space requires development of new skills (see Anders, 1999). Unlike the simple translation of "two-dimensional movements that the user performs with the mouse" into "two-dimensional movements of the cursor on the screen" (van der Meer and Melguizo), SIXAXIS offers new and relatively-undefined dimensions of movement such as 'shaking'. In this respect, the limitations of players' ability to extend their physical bodies to the virtual environment are defined by the game's affordance to include motion tracking as an interaction method.

In combination with the significant role of games and their content in the selection of an appropriate game console (user preference of products) (see Murray, 2007), this central position of games on determination of player behaviors relocates them as a major category for the overall arguments in this chapter.

The last category of discussion topics that will be examined in this part intends to focus on the recent developments in game networks and players' increasing demand for socializing with other players, who have similar interests, through games. With the introduction of "PlayStation Network", Sony announced a wide range of possibilities which offer various experiences and functions more than just playing games in a plastic box and a TV set:

Got PS3? Got broadband? Then you'd do well to sign up to the PLAYSTATION Network...

By connecting to the PLAYSTATION Network, you can enjoy a range of exciting new options. Here's a brief look at what you can do with your PS3 once you're connected – and remember, this is just the start...

1. Play games online
2. Folding@Home<sup>14</sup>

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<sup>14</sup> Folding@Home is a part of the distributed computing project in collaboration with Stanford University, which aims the shared use of individual devices' calculations to obtain a larger processing of the research data on medical research (on diseases like Parkinson's, Alzheimer's, cancer, i.e.)

3. PLAYSTATION@Store
4. Browse the internet (Sony Computer Entertainment, 2007)<sup>15</sup>

With the functional integration of networking possibilities and internet browsing to the game appliance, 'next generation' consoles reshape their primary definitions and expand their field of consumption. As they offer the possibility to buy (or download) games with the device (PLAYSTATION@Store) or participate in a socially-responsible network (distributed computing project of Folding@Home), game industry attempts to take part in the domain of social communication and interaction. Therefore, the 'closed' game environment of televisual space (Guins, 2004) extends its boundaries in yet-another dimension; namely, by a global network of similar devices and their owners.

In this respect, two significant developments are often mentioned by players as they communicate through online discussion platforms: Folding@Home and PlayStation Home. Both of these online facilities were introduced by PlayStation 3, and they offer promising new domains of online interaction. As mentioned above, Folding@Home project aims to support medical research by distributing calculations to individual processors (game consoles). It was observed that the initial threads on both of these features began with questions and descriptions, but especially with the availability of Folding@Home they were transformed into a new topic of discussion between participants. Threads such as "Who has the most folded work units for their ps3" (PS3 Forums) or "PS3 Folding Vs. Cancer ☺" (PS3 Chat) illustrate the fact that users often share their experiences on the project along with games and consoles.

Just though id start a thread so people can post here as to how many work units they have completed on their ps3 systems (fumper)

40, and ranked first at the moment (tabular)

Ranked first by who? Zoshk is the first on our team, that guy is crazy I believe hes got dual 1950txx gpu's folding and a quad core plus his "old" dual core game computer and some older computers.  
I have 69 done and I am working on 3 more, one on my computer using the SMP, one on my older comp using the text console and one on my PS3 (hockeydude30)

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<sup>15</sup> <http://uk.playstation.com/games-media/news/articles/detail/item62361/The-importance-of-Networking/> (29.04.2007 – 17:04)

The discussion above is collected from “Who has the most folded work units for their ps3” thread in PS3 Forums. As seen above, the rankings and number of folded units may also offer new dimensions of challenge between users.

Another important networking feature is Sony’s recently developed online community space entitled “PlayStation HOME”. Although this community is still on Beta stage which allows a limited number of players, distributed information on HOME (through screenshots and videos online) seems to lead some players to discuss this feature in forums. For instance, the discussion on the possible affects of PS HOME in “Could HOME change our lives” thread in PS3 Forums is quoted below:

HOME gives us the potential to begin again to interact in an amicable fashion. it gives us the opportunity to learn how to get along with our fellow forum users. it could be argued that the internet has given us a plethora of venues in which to accomplish this, but has it? Text is so cold at times; to lift it from the page is a massive undertaking; to demonstrate personality, even harder. 'Second Life' has been going for a while now, but its clunky and, although admirable in its aspirations, lacks personality (cliffbo).

I think we are on the same wavelength here. I love the idea of a virtual holiday. I've fancied going to Japan, it would be great to see the sights and sounds of the place and meet people from a location to really get a sense of the place before going. The world is getting smaller and the ability to appreciate other peoples lives and beliefs through a medium like this could be a revolution. Fingers crossed (sibbo)

These two messages above illustrate that players have expectancies and forecasts about this real-time virtual environment although most of them haven’t used it yet. Other threads on the same feature also provide clues on players’ preferences and expectations about the forthcoming PS HOME network. As described in the relevant chapter, the ultimate version of PlayStation HOME is intended to provide its participants with virtual apartments to decorate and customize. Some messages from the thread “How will your place in HOME look?” thread in PS Official Community shows that some players have already generated ideas for their virtual apartments in HOME:

So anyway, in the meantime, whilst we're waiting for the fun to start, let's think about how we're going to make our mark on Home. When you design your own space within Home - how will it look? Perhaps you plan to make a "Grand Designs" type place with designer furnishings, lots of open space and huge windows (like the one in the videos for Home). Maybe you plan to make an exact replica of your lounge or bedroom? But wait, surely we can be a little more adventurous than this?! Come on let's come up with some really good ideas! (reakt)



Anyway here's a thought:

Make my home spot look like my favorite game. Example: when a favorite game of mine comes out like MGS 4, make everything the same color scheme/style of the game. Then when GTA 4 or something else big that I like comes out, do everything in that style (Calvert).

I'm gonna board my place up, wait for property prices to increase and sell 🏠  
(Hedgcutter).

Although the last message implies a new dimension of virtual properties in network societies (the examples of which may also be observed in Second Life game), this discussion gains importance by outlining user preferences and behaviors. With a design perspective, player attitudes and customization preferences in PS HOME could provide valuable insights on consumer behavior in virtual environments. Parallel with the increasing networking opportunities, players' expectancies on customization/personalization features and interaction density also increases.

As a result, the practical combination of what networked devices and on-line platforms may offer reveals itself as a method of socializing through these mediums. As quoted from thread entitled 'Buddies Required' from PS3 CHAT.com, on-line platforms are often used for searching friends and game pals to play together in game networks:

"Hi,  
Anyone over 40 wann join my buddies list ????. Or am I the only 40 something on ere" (suspectuk)

"Why do they gotta be over 40 huh!!! u raciest against young people is THAT IT, lmao j/p" (MaxTorque21)

"LOL, I just wanna know if there are any over 40's out there.  
Besides, when u get old the brain slows down..... its not fair playing u younsters.  
Am getting fed up of being shot and run over LOL !!!!!!" (suspectuk)

"Im in my late 20's, sorry, try [www.atarichat.com](http://www.atarichat.com)  
just kidding! I can be your younger buddie" (BOMBVAIN)

Similar topics on the same forum (and on other sites) exist with different titles and by different users; such as "Who wants to be friends?" thread by user 'Trane226' in PS3 CHAT.com; requesting other members to share their PS3 names for finding each other in PlayStation Network and play on-line together. In these kind of topics (in view of the number of replying members who share their on-line identities to be

located by others), it may be observed that 'having a PlayStation 3, being an active member of the forum and wanting to play together' is considered as a satisfactory amount of information for socializing through games.

For this particular example, revisiting W.J. Mitchell's observation on virtual environments - as he states "These are not places where everyone knows your name – not your real name, anyway." (Mitchell, 1999) – is necessary. In the light of previous arguments on virtual identities, one major behind system's affordance and users' appropriation of on-line socialization may be described as the essentially anonymous and implicit conservation of 'real' identities in virtual environments.<sup>16</sup>

As for conclusion of this chapter, before the overall conclusion of the thesis, it is now possible to state that the reflections of new media theories and initial objectives on the relations between new media object and product design are noticeably observable through user experiences; as intended in this chapter. With the help of the contextual references of specified user activity (gaming) and the existence of on-line 'extensions' of the selected product (Sony PlayStation), the investigation of 'object-user-consumption' relations had a significant role in examining the reliability of theoretical knowledge on the practical fields of design, production and consumption. Ultimately, the combination of the initial research problem, its theoretical arguments and practical observations through the case study aims to provide the reader with solid and comprehensive conclusions on the subject matter; as these conclusions will be outlined in the following (final) chapter of the thesis.

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<sup>16</sup> On the other hand, some threads like user 'the punish's "We 8 de her seyine oynanir (ev, araba, saat, telefon, vb)" (from Oynasana.com) shows that a number of players prefer to break the identity barrier and meet actual players to play (and bet) with/against. Although these kinds of topics are very rare both in numbers and replies, it is worth mentioning that often players (especially in Turkish communities) may tend to develop a more personal level of interaction. Other examples to this kind may be user 'sunriseanatolia's "Eşli Futbol" (Oynasana.com), user 'amethyst's "İzmir'de Bulunan PS3 Sahipleri Buraya" and user 'BLU\_RAY's "PS3 Gunleri Yapalım" (both from PlayStation Turk.com).

## 8. CONCLUSION AND DISCUSSIONS

Throughout the thesis, the main framework of the arguments is intended to outline the relations between new media and product design, and possible contributions of emerging paradigms in information technologies to the social conventions in contemporary consumer culture. Considering industrial design as one of the major participants in the construction of modern material culture, its growing integration with interactive media is mentioned as a significant expansion in progression of post-industrial social structure (see Bell, 1996).

With the general framework of design perspective as a fundamental norm of this thesis, the out coming descriptions and statements in the first four chapters were intended to guide the research to the analysis, in which a specified case study is conducted with reference to the 'object-user-consumption' model. Combination of practical knowledge on the physical and digital qualities of the product, players' experiences *with* the product and the ways in which players' prefer to communicate with each other *about* the product provided an inclusive analysis of the case example. Thus, the categorizations and findings in the relevant chapters are intended to support the formation of a comprehensive conclusion for the thesis; which essentially involves theoretical as well as practical inquiries on the subject matter.

As categorized into three major themes in the final chapter (*game* as new media object, *game console* as product, and *game play* as user experience), one important statement within this study may be the fundamental incorporation of virtual and physical components of the selected product to obtain the desired user experience. It was seen through the analysis of user messages that certain features and qualities of the virtual content (video games) is a dominant variable in players' consumption habits; as well as in their playing behaviors and in usage of certain features of game consoles. In the final chapter, it was mentioned that players' purchasing preferences of game consoles is strongly affected by the variety and quality of game titles they contain. Not only purchasing phase, but also the usage and adoption of specific features are dependant on the virtual content. For instance, the analysis of user comments on PlayStation 3's motion tracking SIXAXIS

controller showed that the usage of this innovative feature is generally preferred if only a specific game affords the easy use of tangible interaction.

In this respect, it may also be claimed that the level and intensity of interaction between players and game environment is one of the fundamental variants of users' immersion into the virtual experience. While next-generation consoles intend to enhance this interaction with motion tracking controllers and more realistic in-game graphics, it was also observed that players often mention usability problems with this new form of interaction. The six-dimensional tracking still seems to be undefined (or not properly defined) unlike primitive 2 dimensional movements (mouse, i.e.) and pressing the buttons on game pads. Furthermore, most players refer to the rumble feedback mechanism of existing Dual-Shock controllers as a more important element of interactivity than motion tracking. As an immature development in player-game interaction, these devices are still required to provide to give real-time feedback about virtual events in addition to transforming players' body movements into commands.

In addition, level of interaction between player characters (avatars) and in-game objects is also an important element of players' immersion to the game environment. As user threads on hopes and expectancies about forthcoming next-generation consoles are analyzed, it was observed that most users look forward to more interactive game play features; such as being able to climb to trees, swim in water or use environmental objects as tools within the game. Following these observations, it may be claimed that a more realistic game experience of players in game environments depends on the interactivity between virtual characters and their surrounding virtual components.

Another significant outcome of the analysis of video gaming and Sony PlayStation was on their functions as social communication platforms; not only through the game play but also through interactive network features (as in PlayStation HOME) and through online communication extensions (as in user forums). As described in the relevant chapter, online user forums on World Wide Web are important platforms for players to communicate, interact, and share knowledge with each other. Through these platforms, players may chat, ask questions, share their opinions on products and games, sell or purchase items and find friends to play with. In this respect, usage of online forums provides valuable resources to collect user experiences and investigate how they interact with each other either as local or global participants.

As mentioned in the previous chapter, the development of enhanced networking opportunities and online gaming features in next-generation consoles has a significant affect in user experiences. In the analysis of threads on game play, it was observed that the majority of discussion topics were focusing on these features (49% of the third theme). Especially with the introduction of dedicated game networks such as PlayStation Network and HOME, the importance of online virtual experiences reveal itself through the analysis of players' discussions. Increasing possibilities of online interaction may also be considered as an extension of the boundaries of televisual space to a virtual realm of networked devices and their owners as Murphy (2004) states.

While the players are beginning to become the participants of these networked realms rather than owners of mere game-boxes, another important point stands out, which is the nature of their presence and identification in these environments. As illustrated by several user messages, players need to specify their characters and devices with authentic labels and tags. Choosing a nickname (or a device tag) provides clues not only on players' self image in online spaces, but also on their interaction with their devices. The variety of these authentic labels (varying from comic book characters to ideological concepts) show how users' conceptualization of these networked devices may also differ. Within these variations, the traces of Cyberpunk culture may also be observed, since the cultural background of video gaming and online interaction also has significant references to these visions.

In addition, players' self identification in these environments and their methods of online communication relates to their foremost common characteristic, which is "being the owner of a video game console (or a next-gen console such as PlayStation 3)". As user messages on online interaction and multiplayer gaming (such as 'Buddies Required' from PS3 Chat) are investigated, it was observed that players often conceal their real identities and socialize through their network identities. In this respect, it may be claimed that having a PlayStation, being a member of that particular forum and searching for online buddies is generally sufficient to participate in the game community.

On the other hand, the analysis of both Turkish and International forums provided the study to compare the changes of player behaviors in online environments with respect to their socio-cultural backgrounds. One important difference is observed within discussions on online gaming and socializing through online game communities. International platforms are often used for socializing with other players who are also members of the forum. On the other hand, several threads in Turkish

forums were focusing on finding other Turkish players to play together against foreign players in international game networks or meeting with other players in person to play for money (or any other commodity). In addition, some members of international forums also initiate threads to meet with players from their countries (such as ‘Was wondering if there is any Scottish players?’ from PS Official Community). Although there is no sufficient data to determine specific characteristics for Turkish players, it may be claimed that playing habits and perception of online game environments may differ according to cultural conventions and socio-cultural characteristics.

Another topic, through which these socio-cultural differences may be observed, is the level and form of users’ technical knowledge over their devices. Especially with the diversity of market conditions; availability of official games for next-generation consoles and prices of original games differ from country to country. Consequently, Turkish players often discuss the topics on illegal (cracked) games or ways to upgrade their devices in order to play downloaded/copied game titles. The availability of a certain black-market in console industry in Turkey enables the users to upgrade their consoles with supplementary hardware (chips, HDDs, i.e.); and therefore increases the user’s technical knowledge on these devices. While threads such as “PS3 kopya oyun” (PlayStation Turk) illustrate the condition of illegal software within Turkish players, several other threads such as “İtina ile PS3 HACK’LENİR ☺” (PlayStation Turk) show that these technical possibilities are often discussed between players. Thus, it may be observed that there is an apparent relationship between market conditions in a country and users’ level of technical knowledge on the possible supplementary hardware features of the devices. This interrelation between users’ literacy in hardware and software components of video game consoles also provides promising expansions for a further investigation on the effects of socio-cultural diversities to user profiles.

For instance, a multi-disciplinary research on collective forms of game play (multi-player and on-line gaming, playing in public spaces) may reveal valuable data on emerging forms of cultural communication. Considering the possibilities of global information networks such as WWW or particular game networks such as PlayStation Network <sup>1</sup> , a research study focusing on global on-line gaming may

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<sup>1</sup> “In response to Microsoft’s [Xbox Live](#) network, Sony announced a unified online service for the PlayStation 3 console at the 2006 PlayStation Business Briefing meeting in Tokyo. Sony has confirmed that the service will be always connected, free and include multiplayer support; however, developers are permitted to charge a subscription fee, as is common with [MMO](#) games”. (from Wikipedia) ([http://en.wikipedia.org/wiki/Playstation\\_3#PlayStation\\_Network](http://en.wikipedia.org/wiki/Playstation_3#PlayStation_Network))

provide the possibility of comparison through different cultural associations on game play.

Once again, the massively multiplayer status of *World of Warcraft* makes it a different experience from these other games. Rather than merely accepting the fantasy and regarding virtual beings as foreign, online players engage in othering toward one another (Schwartz, 2006).

As Schwartz analyzes through the on-line community of the computer game entitled “World of Warcraft”; users’ behaviors, conceptualizations of the Other and their consumption habits (of virtual experiences) have exclusive characteristics when playing against real human-players (also against players from different nationalities). For instance, many cases of Turkish players who post messages to on-line user forums with the purpose of gathering other Turkish PS players on-line to ‘attack’ the clans of other nations (Japanese players, i.e.) are collected during the initial observations process of this study. The content and existence of these forms of collective behavior in different cultures may also lead to a study on the relevance of on-line gaming habits and national/social identification.

Another possible expansion for research in this context may be focusing on the aspects of gender and the relevance of gender-related issues on gaming habits. As quoted from Murphy below, Interactive Digital Software Association’s demographic data on user preferences shows how user preferences may vary with respect to age and gender:

According to data released by the Interactive Digital Software Association (IDSA), 62 percent of PC gamers are male and 60 percent of those gamers are under 36 years old. The numbers for video gamers are even more uniform with 72 percent of the gamers being male and 81 percent under 36 years old. The IDSA does not release information about gamers’ ethnicity or income. They do, however, indicate that more and more women are playing ‘interactive games’ (a categorization that includes both video and computer games) each year – 43 percent of interactive game players are female. The upshot of all of this demographic information is that the majority of people who are actively playing with video game identity are young men. How these gamers play games and interact with the identities they embody while playing is important to understand, for it reveals both the priorities of gamers and game designers (Murphy, 2004).

In addition to Murphy’s statements on how these demographic references would affect gamers and game designers, it is necessary to consider their affects on industrial designers who design the actual game console product for the target audience. As outlined here, possible theoretical and practical expansions of the subject matter (including both new media in general and video games in particular) may offer a wide range of research questions and topics for design research. In this

thesis, it is intended to focus on the specified range of these questions to obtain a comprehensive idea on the relations between interactive new media applications and industrial design.

The intended outcome of this analysis is to examine the reflections of relevant theories on 'new media' and 'computerization of cultural practices' within design perspective. As outlined in the previous chapters, Sony PlayStation as the selected case-example product is only one of the many possible tools that might have been employed for this investigation; however, initial observations prove that it is one of the most appropriate products to illustrate the subject matter.

Considering the contextual similarity between online communication platforms (forums) and video game environments, both of which are involved in this thesis within new media concept, the reflections of the theoretical arguments may be clearly observed in the outcomes of the case study. As this thesis intends to provide a relatively broader (but nonetheless, solid) perspective on the forthcoming integration of industrial design and new media, the possible expansions and discussions on the subject matter may be varied.

Considering the innovative improvements in information technologies and their increasing domination in daily social practices, the subject matter offers a wide range of promising areas for further research. As outlined in this text, a new culture of hyper-reality is considered to be emerged with the introduction of interactive media and virtual environments as utilities of social consumption. (see Baudrillard, 1996 and 1998; Green, 2001; Elmer, 2002; Jansson, 2002 and Oxman, 2006). This new cultural layer is formed upon the conceptual processes of reproduction, utilization and consumption of the images (representations) of physical reality as they are transposed to a new context and associated with each other through exclusive interaction patterns of new media. Consequent to the developments in information technologies and the growing involvement of interactive product systems in product design market as "consumer electronics", the conventional paradigms of design profession and design research would require a structural renovation to consider its contemporary expansions. The emergence of such terms as *ambient intelligence*, *end-user programming* and *system design* within design terminology shows us that this paradigm shift is already leading the field to a more complex and interdisciplinary state.



The conventional concepts of design knowledge and design tools became new materials for the designer, ever since the consumers ought to be equipped with the freedom of customizing, modifying and, what's more, *creating* their consumption utilities. On the other hand, the responsibility of constructing a persistent and effective product system is still burdened with the designer as he is the most active medium between technology and its users. At this point, referring to the outcomes of professional design act as "product systems" seems reasonable; in view of the fact that dominant motivation of contemporary design field is to create and manage life-styles through object systems rather than to produce and trade individually designed artifacts. Only through their incorporation with cultural system of symbolic exchange, the improvements in information technologies and social communication media may shape cultural conventions. The reflections of such a mutual relationship may be observed through a critical analysis of the developments in contemporary new media; With standardization of digital data formats, introduction of global information networks, establishment of structural and formal internal networks between consumer products and emergence of mobilized communication devices, the main concern of modern design culture is shaped within the integration of information and interaction technologies to daily-life effectively.

Since digital media has a standard structural language –binary coded algorithms- and shared platforms to function within –programming languages, operating systems and user interfaces-, the possibilities of customization and personalization are determined mostly by the efficient usage of these sources.

Although these possibilities are implied to the consumers as a form of autonomy, the management of virtual environments and on-line communities has already turned out to be a profitable market for global commerce. With constant tracking of users' certain actions and behaviors, consumption habits, system performances and even geographical locations, on-line corporations may offer user-specific functions, visual languages, messages, and cognitive/subliminal advertisements that imply the idea of their individual sovereignty on-line.

A recent patented project, which is initiated by Google, to track users' behaviors in online game environments for collecting information on their purchasing habits illustrates how these developments began to gain significance in the industry (Adam and Jonhson, 2007; Seff, 2007). According to the researchers of the project, monitoring player behaviors and then categorizing them with regard to specific personal attributes (such as *literate, profane, blunt or polite, quiet; or as cautious, risk-taker, aggressive, stealthy, honest, cooperative or non-cooperative*, etc.), the

advertising companies would be able to place their messages in games for each individual player. The intended integration of this monitoring facility to the previously mentioned next-generation consoles (PlayStation 3, Xbox 360 and Wii) may be considered as one of the most important forthcoming features of the \$1 billion-per-year game industry (Adam and Johnson, 2007). In this sense, the importance of video games and game networks for this thesis also reveals itself, as one of the significant fields of development in computer-mediated-communication. Following Slavoj Žižek's examination of the forthcoming social consequences of this paradigm below, it is possible to claim that not only cyberspace (and World Wide Web, as its primary referent) but also online games and game communities may illustrate the duality of globalized online industries versus individualized consumers:

Cyberspace was supposed to bring us all together in a Global Village; however, what effectively happens is that we are bombarded with the multitude of messages belonging to inconsistent and incompatible universes - instead of the Global Village, the big Other, we get the multitude of "small others," of tribal particular identifications at our choice (Žižek, 1999).

Ultimately, modern society is progressing through the domination of a new cultural paradigm – a world of countless individual consumers living inside a simulacrum of ideological *Global Village* (Žižek, 2002) who perceive the external reality as a physical form of information architecture. What is critical for design research in the 'new media society' is to determine its fundamental position within the emerging cultural formation, develop original definitions and connotations for this promising specialized context to help build the authentic language of new media.

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**APPENDIX A**  
**FORUM THREAD TITLES ON GAMES**

THREAD	FORUM TITLE	REPLIES	VIEWS
<b>Questions on Specific Game Titles:</b>			
Resistance (just got it)	PS3 CHAT.com	9	91
I need help with Oblivion (ps3)!!!	PS3 CHAT.com	9	116
Who's getting Oblivion?	PS3 CHAT.com	21	255
About a Game	PS3 CHAT.com	10	109
For everyone that bought oblivion	PS3 CHAT.com	3	142
GTA San Andreas	PS3 CHAT.com	5	61
Grand Theft Auto IV	PS3 CHAT.com	47	525
Casino Royal Yardım	PLAYSTATIONTURK.com	11	161
GTA SAN ANDRESS bitirenler buraya	PLAYSTATIONTURK.com	6	86
God of War 2 bi yerde takıldım yardım ederseniz sevinirim	PLAYSTATIONTURK.com	13	86
<b>Sharing/Downloading/Buying Games:</b>			
Will games ever be designed for ps3 and ported to the 360?	PS3 CHAT.com	10	84
Downloadable games	PS3 CHAT.com	4	82
Xbox360 and Wii has fallen to piracy, PS3 still resisting	PS3 FORUMS.com	127	3072
PS3'te Oynadığımız Oyunları Takas Yapalım mı?	PLAYSTATIONTURK.com	49	989
Kopya oyun gelmiyor mu yoksa?	PLAYSTATIONTURK.com	1	83
İnternetteki oyunlar	PLAYSTATIONTURK.com	7	110
Ne olacak bu kopya işleri	PLAYSTATIONTURK.com	1	71
PS3 kopya oyun	PLAYSTATIONTURK.com	1	82
PS3 Kopyada durum ne	PLAYSTATIONTURK.com	7	246
Sonunda oyunlar kırılmaya başlamış işte anlatım	PLAYSTATIONTURK.com	5	168
İnternette oyun indirme	OYNASANA.com	11	
Second hand PS3 games?	PS OFFICIAL COMMUNITY	12	133
Cheap Games!!!	PS OFFICIAL COMMUNITY	4	133
<b>Comparison of Games:</b>			
Most anticipated PS3 Game?	PS3 CHAT.com	19	243
Rainbow Six or Oblivion?	PS3 CHAT.com	23	155
Call of Duty or Motorstorm	PS3 CHAT.com	3	59
Should I stick with FFXII? Or go for Oblivion?	PS OFFICIAL COMMUNITY	29	400

### **General Comments and Game Experiences:**

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PS3 Short on Games	PS3 CHAT.com	8	84
What the F!! You call those graphics?!	PS3 CHAT.com	33	1006
Ten Things To Dislike About Video Games	PS3 FORUMS.com	15	364
In-gaming advertisement	PS3 FORUMS.com	40	531
Ps3'te Xbox360 Oyunları Çalıştırma Videosu:)	PLAYSTATIONTURK.com	7	178
What Games Will You Own By Mid 2008?	PS OFFICIAL COMMUNITY	38	342
Poor Game Selection on PS3	PS OFFICIAL COMMUNITY	24	305
PS3 Anti cheat Application to Combat Online Cheaters?	PS OFFICIAL COMMUNITY	25	600
What are playing on your ps3 now.	PS OFFICIAL COMMUNITY	35	289

### **Best Games (Selecting A Game):**

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20 Games to Shape the PS3	PS3 CHAT.com	5	110
Any really good games for ps3 yet?	PS3 CHAT.com	18	220
Top 24 most wanted	PS3 CHAT.com	6	63
Your Favourite Game So Far?	PS3 CHAT.com	16	222
Best ps3 games	PS3 CHAT.com	1	44
20 games that will shape the PS3	PS3 FORUMS.com	17	536
The 12 games that will define PlayStation 3!	PS3 FORUMS.com	40	1557
Why DOES someone get a PS3?	PS3 FORUMS.com	133	2291
PS 3 oyunları	PLAYSTATIONTURK.com	2	63
Oyun almam lazım	PLAYSTATIONTURK.com	13	156
Ps3 oyunu almak istiyorum yardım...	PLAYSTATIONTURK.com	0	29
Sizce PS3'in en iyi oyunu hangisi???	PLAYSTATIONTURK.com	7	101
Hangi oyunlar?	OYNASANA.com	17	
Official release dates big games on PS3 ?	PS OFFICIAL COMMUNITY	1	62
Poll: Best Game Yet Thread	PS OFFICIAL COMMUNITY	63	826
Poll: which game should i get?	PS OFFICIAL COMMUNITY	11	198
Choice of 3 games	PS OFFICIAL COMMUNITY	12	144
Which game next?	PS OFFICIAL COMMUNITY	22	224

### **New/Upcoming Games:**

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New Titles Your Looking Forward To This Year	PS3 CHAT.com	2	52
FF Party: What Remake The People Really Want	PS3 FORUMS.com	64	1107
First screenshots of Sega and Chunsoft's Imabikisou	PS3 FORUMS.com	7	296
Guild Wars 2 MMO coming to the PS3?	PS3 FORUMS.com	3	243
Which summer preview impressed you the most?	PS3 FORUMS.com	0	106
What happens to PS3 games in a year?	PS3 FORUMS.com	2	247
What is Sony's "exclusive games" strategy?	PS3 FORUMS.com	84	1414
PS Store'ye Üç Yeni Oyun Geliyor !!!	PLAYSTATIONTURK.com	13	298
Yeni PS3 Oyunlarının çıkış tarihleri	PLAYSTATIONTURK.com	5	146
Ps3'ün Yeni Oyunları	OYNASANA.com	6	



Yeni çıkan oyunlar neler	OYNASANA.com	4	
we9 Türk ligi çok yakında çıkıyor	OYNASANA.com	0	
PS3: What game are you most looking forward to?	PS OFFICIAL COMMUNITY	53	431
What happened to Exclusive Games for the PS3?!!!	PS OFFICIAL COMMUNITY	18	367
We are not gonna get any new games, are we?	PS OFFICIAL COMMUNITY	22	301
The future of gaming, Telekinesis?	PS OFFICIAL COMMUNITY	5	55
Poll: What PS3 game are you most looking forward too?	PS OFFICIAL COMMUNITY	48	587

### **Contents of Games:**

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Which Pro Evo Soccer is the best!!!	PS3 CHAT.com	10	81
PlayStation 3 portfolio doesn't have games for families or children	PS3 FORUMS.com	76	1892
PS3'de Dağlara Tırmanış Oyunu Yok	PLAYSTATIONTURK.com	2	87
PS3 de Bir Oyun Hayal Edin	PLAYSTATIONTURK.com	10	129
Ps3 veya ps3 türk oyunu olacak mı?	PLAYSTATIONTURK.com	8	66
PS3'de Ace Combat Türü Uçak Simulasyonları olacak mı?	PLAYSTATIONTURK.com	3	76
PS3 ve Güzel Modeller :-)	PLAYSTATIONTURK.com	7	239
Ps3 ve güzel kızlar :-)	OYNASANA.com	5	
Football games for ps3	PS OFFICIAL COMMUNITY	2	29
PS3 - the adult console?	PS OFFICIAL COMMUNITY	28	503
Why no sign of Vietnam games?	PS OFFICIAL COMMUNITY	3	50
Better Graphics??	PS OFFICIAL COMMUNITY	136	2191
Create-A-Game	PS OFFICIAL COMMUNITY	3	61
Games that make it feel next Gen !!!	PS OFFICIAL COMMUNITY	24	366

### **Old Games and Backward Compatibility:**

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Any other idiots rush to download PSOne games?	PS3 FORUMS.com	23	771
What ps1 games r u gonna download?	PS3 FORUMS.com	5	232
PS One Classics Now Playable On The PS3!	PS OFFICIAL COMMUNITY	15	634
Sony, please give us Amiga games!!	PS OFFICIAL COMMUNITY	30	377

**APPENDIX B**  
**FORUM THREAD TITLES ON GAME CONSOLES**

THREAD	FORUM TITLE	REPLIES	VIEWS
<b>Various Features and Media:</b>			
PS3Chat Folding@Home Team	PS3 CHAT.com	39	746
"Uploading" MP3's to PS3	PS3 CHAT.com	10	351
Blu-ray and PS3	PS3 CHAT.com	1	44
Why only a Black 60GB PS3 in Europe?	PS3 CHAT.com	9	92
Will PS3 be able to connect my mobile phone?	PS3 CHAT.com	0	143
Poll: Official: PS Home Thread	PS3 FORUMS.com	294	11202
THE ps3 keyboard to make all your friends jealous!	PS3 FORUMS.com	36	1311
Pink, Blue, Brown, Red PS3's (Screens inside)	PS3 FORUMS.com	42	1440
sixaxis ...anyone ever notice???	PS3 FORUMS.com	35	1285
(Anket) Siyah, Beyaz, Gri Sizce En Güzel PlayStation3 Hangisi?	PLAYSTATIONTURK.com	33	554
PS3 Alanlar PS3'ün Kutusunda Neler Var?	PLAYSTATIONTURK.com	10	289
White, Black or Silver Playstation	PS OFFICIAL COMMUNITY	7	113
<b>Technical Questions:</b>			
Will ps3 work on a CRT monitor?	PS3 CHAT.com	5	42
Help with music on ps3	PS3 CHAT.com	2	33
Help! PS3 Net Connection without PC	PS3 CHAT.com	0	28
How do you power off?	PS3 CHAT.com	22	159
PS3 Broadband Speed?	PS3 CHAT.com	2	32
Why cant i connect to the PS3 to HD?	PS3 CHAT.com	5	80
Linux on PS3?	PS3 CHAT.com	11	200
Heating...How hot does you PS3 get?	PS3MOB.com	1	295
For the people who are worried about leaving their ps3 on!	PS3 FORUMS.com	62	1559
PS3 e Ps2 çipi takılmış biz türkiyede takabilir miyiz	PLAYSTATIONTURK.com	7	63
Ps3 ler ve versiyonlar ve farkları	PLAYSTATIONTURK.com	0	43
PS3 Alma Rehberi	PLAYSTATIONTURK.com	6	138
İtina ile PS3 HACK'LENİR :)	PLAYSTATIONTURK.com	21	808
Chip?	OYNASANA.com	0	
En sorunsuz chip hangisi sorusuna cevap	OYNASANA.com	11	
En iyi chip nedir	OYNASANA.com	6	
Hdd taktiracam bilgi istiyorum	OYNASANA.com	0	
PS2 slimlere nasıl hdd de takılır	OYNASANA.com	16	

## Comparisons of Consoles:

Gametrailers 10 best systems ever	PS3 CHAT.com	2	51
Will the 360 Elite pose a threat to the PS3	PS3 CHAT.com	31	337
Insomniac explains why PS3 will win Please...Give me a completely unbiased comment, ps3 vs 360	PS3 CHAT.com	5	110
PS3 vs Wii	PS3 CHAT.com	11	144
Whats good&bad about the PS3 in comparison to other consoles?	PS3 CHAT.com	59	711
PS3 vs Wii	PS3 CHAT.com	21	201
Have you ever owned any other brand of console?	PS3 CHAT.com	1	71
Poll: Buy a 360 or ps3	PS3 CHAT.com	6	152
PS3 vs Sega Saturn	PS3MOB.com	13	1223
PS3 vs XboX Specs	PS3MOB.com	4	440
My scond console is even better	PS3MOB.com	15	2247
PS3 vs 360 (Motherboards)	PS3MOB.com	2	333
Thinking about trading in my 360 for ps3	PS3 FORUMS.com	91	1867
Poll: <b>**OFFICIAL**</b> Discussion of 360 Elite a Treat to PS3	PS3 FORUMS.com	38	855
PS3 vs WII	PLAYSTATIONTURK.com	60	1461
(Anket) Sizce Yeni Konsollar İçinde En İyi Hangisi Olacak?	PLAYSTATIONTURK.com	25	422
Konsol tercihi	OYNASANA.com	15	243
Hangi konsolu (xbox360,Ps3,wii) almak isterdiniz?neden?	OYNASANA.com	0	
PS Vs PS3	PS OFFICIAL COMMUNITY	11	
Does anyone miss their 360?	PS OFFICIAL COMMUNITY	15	53
360 V Ps3	PS OFFICIAL COMMUNITY	31	349
360 still beating PS3	PS OFFICIAL COMMUNITY	15	237
	PS OFFICIAL COMMUNITY	86	1385

## General Ideas and Information:

Why criticize the PS3!!	PS3 CHAT.com	98	600
My love for PS3 is stil great	PS3 CHAT.com	28	226
Ps3 This Ps3 That!!!	PS3 CHAT.com	12	151
PS3 Rules!!!!	PS3 CHAT.com	30	348
Has the PS3 been worth the wait?	PS3 CHAT.com	45	538
PS3 is awesome!	PS3 CHAT.com	5	88
Why buy Playstation 3?	PS3 CHAT.com	38	1874
Help! What do I need for my son?	PS3 CHAT.com	11	162
5 resons to buy a PS3	PS3 CHAT.com	12	424
Thoughts About PS3	PS3 CHAT.com	14	760
What Do You Like Must About The Playstation3	PS3 CHAT.com	3	205
23 things to know about the PS3	PS3 CHAT.com	3	337
About to go buy a ps3 need help???	PS3MOB.com	0	144
Why the PS3 does suck (a useful criticism)	PS3MOB.com	7	1326
I would've got the PS3 if...	PS3MOB.com	16	1175
PS3 is getting and getting popular	PS3MOB.com	1	391
Poll: When will you buy the PS3?	PS3MOB.com	16	1619
A look at the Playstation 3	PS3MOB.com	0	338
Consumers (peoples) thoughts about Xbox360	PS3MOB.com	2	221
PSP for my son pros and cons of	PS3MOB.com	12	318

PSP??			
PS3: Ask a Question	PS3 FORUMS.com	9932	151204
Who's feeling upbeat about PS3 again?	PS3 FORUMS.com	34	649
Has The PS3 Empire Struck Back? Things That Would Make The PS3 Unstoppable	PS3 FORUMS.com	47	1420
What do you want&have?	PS3 FORUMS.com	93	2156
100 little things we love about our PS3's	PS3 FORUMS.com	37	690
100 things i hate about the ps3!! Reply to the other thread	PS3 FORUMS.com	138	2507
Official Review your PS3 thread!	PS3 FORUMS.com	167	3174
List of PS3 False Rumours	PS3 FORUMS.com	227	21061
Omgf My Mum Just Bought Me A Ps3	PS3 FORUMS.com	32	1267
Your opinion of PS3 since launch?	PS3 FORUMS.com	82	2561
Dikkat!! PS3 Alacak Olanlar Baksın	PLAYSTATIONTURK.com	34	633
PS3 ten beklentilerim ve sorularım	PLAYSTATIONTURK.com	30	435
PS3'ü olanların İlk İzlenimleri	PLAYSTATIONTURK.com	0	34
Playstation 3 !!!	OYNASANA.com	15	554
Unofficial 'I want ...' thread	PS OFFICIAL COMMUNITY	7	
How many of u have PS3!?!?	PS OFFICIAL COMMUNITY	241	6138
Poll: What do you like most about PS3?	PS OFFICIAL COMMUNITY	22	289
Getting a PS3	PS OFFICIAL COMMUNITY	20	317
I'm officially a PS3 fanboy today	PS OFFICIAL COMMUNITY	2	51
Submit yor Ps3 ideas here	PS OFFICIAL COMMUNITY	14	172
Newly Bought PS3	PS OFFICIAL COMMUNITY	7	85
10 Tips that Sony dont tell you..	PS OFFICIAL COMMUNITY	12	174
Got my PS3 today...	PS OFFICIAL COMMUNITY	13	839
The Playstation 3 Question and Answer Thread	PS OFFICIAL COMMUNITY	38	731
I just got my ps3 woo hoo	PS OFFICIAL COMMUNITY	172	3554
Poll: Do you like the ps3	PS OFFICIAL COMMUNITY	18	287
What do you like about your PS3?	PS OFFICIAL COMMUNITY	49	726
WOW the PS3 is amazing	PS OFFICIAL COMMUNITY	35	358
	PS OFFICIAL COMMUNITY	40	759

### **Future of PlayStation and Video Games:**

Future Consoles – Any Ideas?	PS3 CHAT.com	5	189
Playstation 5	PS3 CHAT.com	4	105
PS3 Predictions for 2007	PS3 CHAT.com	3	70
PS3 future	PS3MOB.com	2	338
What do we consider Next Gen?	PS3 FORUMS.com	68	1225
Post your 150 word comment on what most needs to change about PS3	PS3 FORUMS.com	40	621
What's Next For PS3?	PS3 FORUMS.com	23	564
Poll: Whatwill have a greater impact on the outcome console war: tech or price?	PS3 FORUMS.com	52	636
When will the next gen become the current gen?	PS3 FORUMS.com	23	410
Views on how this industry will evolve	PS3 FORUMS.com	36	563
The future of gaming	PS OFFICIAL COMMUNITY	5	102
The future of Ps3	PS OFFICIAL COMMUNITY	19	329

## **Promotion and Pricing:**

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Production Cost of PS3 vs XBOX 360	PS3 CHAT.com	56	64
"This is living" WTF?	PS3 CHAT.com	4	75
This is Living' Ads - what do you think?	PS3 CHAT.com	6	86
Think PS3 is expensive??	PS3 CHAT.com	4	111
Sony grabs the market and WE pay for it	PS3 CHAT.com	15	278
What Price Do You Think The Playstation3 Should Be?	PS3 CHAT.com	3	153
PS3 Sales Figures (and other consoles)	PS3MOB.com	7	868
Cheapest place to get a PS3?	PS3 FORUMS.com	6	178
What is the PS3's launch was a year later?	PS3 FORUMS.com	15	305
If Sony is unwilling to enforce standards, should we do it with our wallets?	PS3 FORUMS.com	57	1134
Is the PS3 really overpriced?	PS3 FORUMS.com	141	1763
Poll: Who Are The Laziest Developers/Publishers?	PS3 FORUMS.com	83	1744
The Product Adoption process	PS3 FORUMS.com	20	421
PS3 Alma Zamanı mıdır?	PLAYSTATIONTURK.com	3	64
PS3 Fiyatları	PLAYSTATIONTURK.com	38	572
PS3'ü Ne Zaman Alalım	PLAYSTATIONTURK.com	7	163
This is living.... ****!	PS OFFICIAL COMMUNITY	12	228

## **Other Topics (Usage, Maintenance, etc.):**

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Horizontal or Vertical?	PS3 CHAT.com	13	161
PS3 vertical or horizontal? Which is better?	PS3 FORUMS.com	87	1932
ps3...vertical or horizontal?	PS3 FORUMS.com	36	973
Threads for fun: What's your PS3's name?	PS3 FORUMS.com	50	533
How do you clean your PS3?	PS3 FORUMS.com	14	319
PS3 TürkiyeÇıkışı Hakkında Bilgileriniz	PLAYSTATIONTURK.com	8	109
Yeni aldım napmalıyım	OYNASANA.com	20	
Playstation 2 salonu açmak isteyenlere	OYNASANA.com	1	
Playstation 2 kullanım	OYNASANA.com	3	
Playstation 2 bakımı hakkında sorularınız	OYNASANA.com	4	
Playstation 2 kafe açmak istiyorum yardım	OYNASANA.com	10	
Poll: Vertical or Horizontal poll	PS OFFICIAL COMMUNITY	30	467
Does standing ure ps3 vertical go wierd?	PS OFFICIAL COMMUNITY	11	187
Anyone damaged their PS3 Yet?	PS OFFICIAL COMMUNITY	45	844

**APPENDIX C**  
**FORUM THREAD TITLES ON USER EXPERIENCES**

<b>THREAD</b>	<b>FORUM TITLE</b>	<b>REPLIES</b>	<b>VIEWS</b>
<b>Using Various Other Media:</b>			
Adjusting photos for Slideshow	PS3 CHAT.com	5	39
I Want my PS3 in Surround Sound	PS3 CHAT.com	6	105
Making videos with ps3	PS3 CHAT.com	0	30
How to put pics on ps3?	PS3 CHAT.com	4	133
Music on the PS3	PS3 CHAT.com	5	107
PS3-download movies, music an record TV	PS3MOB.com	3	1263
Taking a screenshot from a movie or a game?	PS3 FORUMS.com	7	170
Windows XP RUNNING ON PS3!!!!!!	PS3 FORUMS.com	29	1850
Make Long-Distanve Calls on Your PS3 For Free	PS3 FORUMS.com	11	626
How can I get pictures on my playstation???	PS3 FORUMS.com	22	584
Playing Music While Playing Games	PS3 FORUMS.com	86	2108
Windows XP pn ps3?	PS3 FORUMS.com	19	666
PS3 needs a equalizer on the music player	PS3 FORUMS.com	33	664
Home cinema and ps3	PS OFFICIAL COMMUNITY	7	87
Playing music files on PS3	PS OFFICIAL COMMUNITY	2	63
<b>Online/Multiplayer Gaming:</b>			
Online trouble	PS3 CHAT.com	1	32
Anyone play in online 1v1 cash tournaments?	PS3 CHAT.com	0	30
Buddies Required	PS3 CHAT.com	4	55
Friends?	PS3 CHAT.com	1	57
Hello al from the UK	PS3 CHAT.com	9	148
Networking The Ps3	PS3 CHAT.com	10	149
Poll: Who wants to be friends?	PS3 CHAT.com	47	558
Internet connection	PS3 CHAT.com	0	53
PS3 Wireless File Sharing...Help Please	PS3 CHAT.com	7	530
Playing online	PS3 CHAT.com	12	156
Playstation Network Problems	PS3 CHAT.com	1	158
How do i get my ps3 online?	PS3 CHAT.com	1	103
Wireless connection to the internet issue	PS3MOB.com	1	510
Wi-fi gaming	PS3MOB.com	3	227
Official Sony Gamers Day 2007	PS3 FORUMS.com	433	12765

Thread			
Big Brother is coming soon to your PS3!!	PS3 FORUMS.com	17	907
Internet on PS2 Games	PS3 FORUMS.com	2	119
2 people online from console. Coming soon.	PS3 FORUMS.com	63	1563
PSN Has the Worst Online Avatars	PS3 FORUMS.com	76	1545
Has anybody tried remote play?	PS3 FORUMS.com	70	1457
New avatars	PS3 FORUMS.com	6	260
2 player online from one console, possibility	PS3 FORUMS.com	29	483
PS3 Nick'leri (PSN)	PLAYSTATIONTURK.com	35	453
İzmirde Bulunan Ps3 Sahipleri Buraya	PLAYSTATIONTURK.com	32	450
PS3 te online oyun keyfi	PLAYSTATIONTURK.com	4	88
Ankarada ki ps3 severler neredesiniz kimsiniz söyleşelim	PLAYSTATIONTURK.com	3	30
PS3 te online oyun oynayanlar buraya	PLAYSTATIONTURK.com	42	325
Psturk clanı kurulmuştur	PLAYSTATIONTURK.com	3	73
PS3 gunleri yapalım	PLAYSTATIONTURK.com	4	48
Eşli futbol	OYNASANA.com	2	
We 8 de her seyine oynanır (ev araba saat telefon vb.)	OYNASANA.com	1	
Varmı we 10 da yenecek beni :) :) )	OYNASANA.com	3	
Poll: How many psn friends/buddys do u have?	PS OFFICIAL COMMUNITY	31	291
Clan members wanted	PS OFFICIAL COMMUNITY	7	108
I Need friends	PS OFFICIAL COMMUNITY	32	275
My first ever Online Multiplayer experience!!	PS OFFICIAL COMMUNITY	18	306
Google to track online gaming activity	PS OFFICIAL COMMUNITY	10	155
Sony's Gamer's Day	PS OFFICIAL COMMUNITY	5	254
I wanna play my mate	PS OFFICIAL COMMUNITY	8	107
Avatar	PS OFFICIAL COMMUNITY	2	63
Psn - friends wanted	PS OFFICIAL COMMUNITY	8	100
Who wants a game of Motorstorm tonight 8:30?	PS OFFICIAL COMMUNITY	2	49
TEAM RESISTANCE - Recruitment	PS OFFICIAL COMMUNITY	155	2577
Resistance Fall of Man Tonight 9 till late Mature Gamers please	PS OFFICIAL COMMUNITY	N.A.	N.A.
Need Friends Add Me :)	PS OFFICIAL COMMUNITY	27	294
Recommend me some avatar pics plz!	PS OFFICIAL COMMUNITY	0	36
Any 1 wanna be friends on the ps3	PS OFFICIAL COMMUNITY	23	253
Anyone want a friend on psn???	PS OFFICIAL COMMUNITY	2	40
Was wondering if there is any Scottish players?	PS OFFICIAL COMMUNITY	34	399

### **General Console and Gaming Experiences:**

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Ok my weekend away ended in a nightmare	PS3 CHAT.com	16	144
Were we too eager?	PS3 CHAT.com	28	238
3 days and wow!	PS3 CHAT.com	10	133
IT'S ARRIVED IN THE UK!!! What are your 1st thoughts after playing with your new beast?	PS3 CHAT.com	37	518
PS let me down :( :( :(	PS3 CHAT.com	7	95
I'm finaley Able to get a PS3!	PS3 CHAT.com	6	71

What is Going to Be The First Game For Your Playstation3	PS3 CHAT.com	2	83
Need help with PS3 gamess!!	PS3 CHAT.com	1	106
PS1/PS2 Graphics look like crap on PS3	PS3 CHAT.com	3	219
Cool things to do with ps3?	PS3 CHAT.com	0	450
PS3 User Interface Walkthrough	PS3MOB.com	3	399
Favourite "wailing-line for the ps3" story	PS3MOB.com	3	336
How I got my PS3	PS3MOB.com	2	353
Got my ps3 today (sry, mods move?)	PS3 FORUMS.com	19	364
PSU.com Elder Scrolls IV: Oblivion T-Shirt Competition	PS3 FORUMS.com	14	403
Will Sony ever fix Ps3's broken browser?	PS3 FORUMS.com	54	1411
Affection/excitement for non-exclusive games	PS3 FORUMS.com	8	198
Real hardcore gamers choose the PS3	PS3 FORUMS.com	36	671
Gaming for Couples!!!!	PS3 FORUMS.com	17	480
10 PS3 tricks Sony doesn't tell you	PS3 FORUMS.com	32	3040
The future of gaming? Telekinesis!	PS3 FORUMS.com	34	714
Fun thigns to do on ps3 when you don't have games?	PS3 FORUMS.com	76	2059
PS3 v PS gaming	PS3 FORUMS.com	52	1111
A missing element in Next-Gen games	PS3 FORUMS.com	73	1583
Poll: PS3 Target Audience	PS3 FORUMS.com	37	719
Who Thinks They Should Add In-Game Messages	PS3 FORUMS.com	42	685
We the British...	PS3 FORUMS.com	142	2702
PS3 Buldum Oyunum Yok	PLAYSTATIONTURK.com	25	883
Wining eleven turnuva	OYNASANA.com	2	
Do you people like to show your ps3 off or out it away?	PS OFFICIAL COMMUNITY	30	417
Recommended Distance?	PS OFFICIAL COMMUNITY	9	113
Bad PS3 wee :(	PS OFFICIAL COMMUNITY	26	762
Poll: What do you use the PS3 for?	PS OFFICIAL COMMUNITY	16	345
Poll: How long do you spend on your PS3?	PS OFFICIAL COMMUNITY	30	414
Fun things to do on Ps3 apart from games	PS OFFICIAL COMMUNITY	55	628
It's the weekend' how many hours on PS3?	PS OFFICIAL COMMUNITY	19	196

### **Technical Questions:**

Playstation 3 help pleeeeeeeese	PS3 CHAT.com	17	275
Post your setup!	PS3 CHAT.com	0	61
Any one had this problem?	PS3 CHAT.com	1	52
CD ripping	PS3 CHAT.com	2	63
Why dont my ps2 games work on PS3!!! HELP!!!	PS3 CHAT.com	7	155
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## APPENDIX D

### **PLAYSTATION®3 LAUNCHES NEXT GENERATION OF ENTERTAINMENT IN NORTH AMERICA**

#### **High-Definition Gaming and Entertainment System Now Available; Fans Line Up for Blocks to Be Among First Owners**

**FOSTER CITY, Calif., November 17, 2006** – Sony Computer Entertainment America (SCEA) today announced the launch of the much-anticipated PLAYSTATION®3 (PS3™) computer entertainment system, the company's groundbreaking next generation computer entertainment system, for sale immediately in North America. In addition to the PS3 hardware, a software line up of more than 20 first- and third-party titles will be available at retailers nationwide.

PS3 is available today at retailers nationwide in two configurations for consumers. One features a 20-GB hard disk drive (HDD) and carries a suggested retail price of \$499, while the second features a 60-GB HDD and built in Wi-Fi adapter and multiple memory card slots for \$599. At the heart of PS3 is the Cell Broadband Engine™, one of the most-advanced computer processors in the world, that enables massive floating point calculation, and Blu-ray Disc™ (BD) drive, providing a true High Definition (1080p)\* next-generation gaming and movie experience in the home, as well as up to 50 GB of data capacity for video game developers to store content – five times the capacity of DVD.

“With today's launch of PS3, we are officially ushering in a new era in true next-generation entertainment for homes all across North America,” said Kaz Hirai, President and CEO of SCEA. “The innovative PS3 system features powerful technologies and capabilities that have never been brought together in one system, including the Cell Broadband Engine, BD drive, HDD and online connectivity as standard features of every system. The results are breathtaking new interactive worlds to explore, eye-popping multimedia functionality, and a fully integrated online

experience – all in high-definition clarity. The value we are providing consumers with PS3 is beyond compare.”

But the technological advances don't just stop in the system itself, they are also found in the controller. The PS3 system's innovative, new SIXAXIS™ wireless controller allows gamers to physically turn, twist, and bank their controllers to command the on-screen action. Every PS3 also comes equipped with an HDMI output for the best connection possible to high-definition displays, supporting Full-HD resolution up to 1080p for both games and movies\*. Built-in network capability means that all PS3 owners can enjoy online game play and services, such as Web browsing through the PlayStation® Network and downloadable content through the PlayStation® Store, immediately. Additionally, the first half million PS3 systems shipped in North America will include one of this summer's biggest blockbuster hits from Sony Pictures Home Entertainment, "Talladega Nights™: The Ballad of Ricky Bobby," starring Will Ferrell, on high-definition BD format.

"We're thrilled that PlayStation fans are anxious to get their hands on PS3 and are working around the clock to meet that demand with additional shipments during the busy holiday season and beyond," said Jack Tretton, executive vice president and co-chief operating officer of SCEA. "With the incredible technology and value packed into PS3, we expect rapid adoption of the system around the world, and we are ready to support that market growth."

Sales of PS3 began early this morning across the country, with consumers waiting in line to be the first to purchase the system. At the Sony Style retail outlet in New York City and the PlayStation store in San Francisco, Calif., thousands of fans lined the streets on November 16 waiting to be among the first owners of PS3 as it went on sale at midnight. Celebrity appearances by Grammy Award-winner Ludacris and *Chappelle Show's* Charlie Murphy entertained the New York crowds, while musical act Angels and Airwaves rocked throughout the night in San Francisco. Members of the press seeking photographs or video of PS3 launch events should contact SCEA public relations at: [mediahotline@playstation.sony.com](mailto:mediahotline@playstation.sony.com) or 1-650-655-8025

At launch and throughout the holidays more than 20 first- and third-party PS3 software titles across today's most popular genres will also be released alongside the hardware. This is one of the most robust libraries of launch titles yet seen for a computer entertainment system, with titles including *Resistance: Fall of Man™*,

*Genji: Days of the Blade™* and *NBA '07*, published by SCEA, available immediately for less than \$60.

Developed by Insomniac Games, creators of the critically acclaimed *Ratchet & Clank* franchise, *Resistance: Fall of Man* is a gripping first-person action game developed exclusively for the PS3 system. Set in a frightening, alternate 20th-century reality, *Resistance: Fall of Man* capitalizes on PS3's superior processing power to deliver a graphically-arresting, unique blend of harrowing military action and unnerving horror.

Another exclusive title for PS3, *Genji: Days of the Blade* unveils beautiful next-generation visuals and sword-wielding game play to expand on the historical accounts of feudal Japan. Players unfold an epic tale of a warrior's honor that promises to deliver a breath-taking experience on the PS3 system. Also found only on PS3 is *NBA '07*, developed by SCEA's San Diego Studio, which showcases detailed and lifelike graphics supported in Full-HD at 1080p resolution at a blazing fast 60 frames per second. *NBA '07* delivers a life-like hard court experience with advanced artificial intelligence (AI), realistic character movements, online functionality, and interaction with the new motion-sensitive SIXAXIS wireless controller.

Other titles that will be available by the end of the year for purchase and download through SCEA's online PlayStation Store include *Blast Factor*, *Lemmings™*, *Go! Sudoku*, and *Go! Swizzleblock*. Other downloadable content available on November 17th include free movie trailers and game demos.

### **The List of Launch-Window Titles Includes:**

#### SCEA Launch Titles

*Resistance: Fall of Man™*

*NBA 07*

*Genji: Days of the Blade™*

#### Third Party Publisher Titles

Blazing Angels™ Squadrons of WWII      *Ubisoft*

*Call of Duty@3*      *Activision*

*EA Sports™ Fight Night Round 3*      *Electronic Arts*

*Full Auto™2: Battlelines*      *Sega*

*Madden NFL 07*      *Electronic Arts*

MARVEL™:ULTIMATE ALLIANCE	<i>Activision</i>
Mobile Suit Gundam®: CROSSFIRE	<i>NAMCO BANDAI Games</i>
NBA 2K7	<i>2K Sports</i>
<i>Need For Speed™ Carbon</i>	<i>Electronic Arts</i>
NHL® 2K7	<i>2K Sports</i>
RIDGE RACER® 7	<i>NAMCO BANDAI Games</i>
<i>Tiger Woods PGA TOUR® 07</i>	<i>Electronic Arts</i>
<i>Tony Hawk's Project 8™</i>	<i>Activision</i>
<i>Untold Legends™ Dark Kingdom™</i>	<i>Sony Online Entertainment</i>

Beyond the standard PS3 system package, PS3 peripherals in North America will include additional SIXAXIS wireless controllers sold separately for \$49.99, a Memory Card Adaptor for transferring game save information from PlayStation® and PlayStation®2 Memory Cards onto the HDD of PS3 for \$14.99, and, coming soon, a BD remote control for \$24.99.

### **PlayStation Legacy**

Sony Computer Entertainment Inc. introduced the first PlayStation system in 1994, shipped more than 100 million units worldwide. That was followed by the PlayStation 2 system in 2000, which has shipped more than 110 million units globally and continues to outsell newer offerings from competitors. In fact, PlayStation 2 is set to be the top-selling system of 2006 in North America, more than six years after its debut. Sony Computer Entertainment Inc. entered the handheld space in 2005 with the PSP® (PlayStation®Portable) system, a revolutionary handheld entertainment system that shipped more than 20 million units around the world.

**About Sony Computer Entertainment America Inc.** Sony Computer Entertainment America Inc. continues to redefine the entertainment lifestyle with its PS one™ game console, PlayStation®2 computer entertainment system, PSP®(PlayStation®Portable) handheld entertainment system and the upcoming, much-anticipated PLAYSTATION®3 computer entertainment system. Recognized as the undisputed industry leader, Sony Computer Entertainment America Inc. markets the PlayStation family of products and develops, publishes, markets and distributes software for PS one game console, PlayStation 2 computer entertainment system and PSP handheld entertainment system for the North American market. Based in Foster City, Calif. Sony Computer Entertainment America Inc. serves as regional headquarters for all North American operations and is a wholly owned subsidiary of Sony Computer Entertainment Inc.

## APPENDIX E

### **SCE ANNOUNCES NEW CONTROLLER FOR PLAYSTATION®3**

#### ***Equipped with High-Precision, Highly Sensitive Six-Axis Sensing System***

**Los Angeles, May 8, 2006** – Sony Computer Entertainment Inc. (SCEI) today announced the new controller for PLAYSTATION®3 (PS3), which will become available as standard with the system. The new controller can be experienced at the Electronic Entertainment Expo (E3) held from May 10 through 12, 2006, in Los Angeles, California.

The controller for PS3 has been created by refining and improving the world's most popular PlayStation® controller that has shipped more than several hundred million units worldwide, while inheriting its basic concept and design. The controller for PS3 employs breakthrough technology of high-precision, highly sensitive six-axis sensing system that does not require any devices other than the controller itself for seamless interactive operation, thus eliminating additional settings to TVs. With this technology, ways to enjoy PS3 will be further enhanced by accessing PS3 through the network, while retaining the six-axis sensing capability.

In addition to the “3-posture-axis” of roll, pitch and yaw, “3-dimension acceleration information (X, Y, and Z)” can be detected in high-precision and in real-time. In addition to standard key input available in existing controllers, more natural and more intuitive play will become possible as if the controller has become part of your body.

Pursuant to the introduction of this new six-axis sensing system, the vibration feature that is currently available on DUALSHOCK® and DUALSHOCK®2 controllers for PlayStation and PlayStation®2, will be removed from the new PS3 controller as vibration itself interferes with information detected by the sensor.

The shape of L2/R2 buttons located on the top of the controller has also been enlarged with increased depth in stroke for more subtle control in games. At the same time, the tilting angle of the analog joy sticks has been slightly broadened to enable more delicate and more dynamic manipulation. Along with these improvements, precision of above information detection (L2/R2, analog joy stick) has been increased from 8 bit to 10 bit.

All input information will be immediately transferred to the PS3 system through the Bluetooth® wireless technology. By using a USB cable, the PS3 controller can be swapped seamlessly from wireless to wired, and can be charged automatically. The cable can be attached and detached at anytime.

By integrating all these features into one standard PlayStation controller, SCEI, together with content creators, expects to further expand and accelerate the world of next generation computer entertainment.

#### **About Sony Computer Entertainment Inc.**

Recognized as the global leader and company responsible for the progression of consumer-based computer entertainment, Sony Computer Entertainment Inc. (SCEI) manufactures, distributes and markets the PlayStation® game console, the PlayStation®2 computer entertainment system, the PSP™ (PlayStation®Portable) handheld entertainment system and the upcoming, much-anticipated PLAYSTATION®3 system. PlayStation has revolutionized home entertainment by introducing advanced 3D graphic processing, and PlayStation 2 further enhances the PlayStation legacy as the core of home networked entertainment. PSP is a new handheld entertainment system that allows users to enjoy 3D games, with high-quality full-motion video, and high-fidelity stereo audio. PLAYSTATION 3 is an advanced computer system, incorporating the state-of-the-art Cell processor with super computer like power. SCEI, along with its subsidiary divisions Sony Computer Entertainment America Inc., Sony Computer Entertainment Europe Ltd., and Sony Computer Entertainment Korea Inc. develops, publishes, markets and distributes software, and manages the third party licensing programs for these platforms in the respective markets worldwide. Headquartered in Tokyo, Japan, Sony Computer Entertainment Inc. is an independent business unit of the Sony Group.

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## BIOGRAPHY

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