Games That Do Not Exist:
Communication Design Beyond the Current Limits

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ABSTRACT
The digital games industry has grown to the size of the film industry and is going to leave the box office far behind.
Computers with their advanced graphics capabilities have contributed to the immersive interactive experience which attracts many to spend more leisure time playing digital games than watching television. The available CPU power of home computers and notebook PCs is setting the stage for game AI; console development shows a similar trend.

Digital games and their potential social impact are subject to a heated debate worldwide which is fueled by tragic events such as the 1999 deadly shooting at the Columbine Highschool, Littleton, CO, USA, or the 2002 amok run at the Gutenberg Highschool in Erfurt, Germany. This debate is getting even more controversial when digital games such as the Super Columbine Massacre RPG enter the stage.

Digital games may be seen as entertainment media; the established approaches of media research apply.
Digital games must be also seen as IT application systems. They are, in particular, systems of Artificial Intelligence.

The invited talk addresses issues of digital games’ impact on social behavior. Emphasis is put on an interdisciplinary approach which is new, to some extent, to digital games studies in media and communication science.

As presentation agenda, some list of problems is identified. For every problem, there will be undertaken the endeavor of developing new ideas of game playing and designing novel games such that the identified problem changes or, in the best case, possibly disappears.

Categories and Subject Descriptors
J.4 [Social and Behavioral Sciences]

General Terms
Design, Human Factors

Keywords
Digital Games, game design, cybernetic system, game AI, game type, game genre, game class, entertainment media, immersion, flow, edutainment, games that teach,

1. GAMES THAT ARE EXCITING
Which games are exciting . . . ? There can’t be a satisfying answer to such a question.

Games–digital games in particular–are entertainment media and as such they are facing different audiences. Think of film and theater. Don’t ask what a good movie or a good play is. Or ask, if you like, but don’t expect a satisfying answer.

I like to play Chess very much, preferably with a good friend and accompanied by a good bottle of red wine. I also like to play Mah-Jongg, usually with some Japanese friends. When it comes to digital games, I admit that I like the beauty of Age of Empires III: The Age of Kings and The Elder Scrolls IV: Oblivion. In contrast, I like the creepy atmosphere of games such as CALL OF CTHULHU: DARK CORNERS OF EARTH. I also like to see the progress of development in the game families of Civilization or, e.g., The Settlers. The development in Black & White is particularly exciting, when you teach your creature how to behave. Somehow similarly, I did enjoy it very much when receiving some reward for my very first good deed in Fable. I did not play it by myself, but I did enjoy the atmosphere of Splinter Cell. Resident Evil IV as well was played by a friend of mine. I did enjoy very much his tactic efforts and suffered with him when he felt victim to a chain saw attack–very bloody. I got almost seasick when watching others playing Crazy Taxi and I had my great pleasure in watching the fights of Soul Calibur II. I like–in German–the knotty criminal investigation point & click adventures like, e.g., Black Mirror, The Da Vinci Code, and also Agatha Christie: Und dann gabs keines mehr. Really no need to mention that I like the lovely funny atmosphere of Super Mario Sunshine. I got impressed as well by demonstrations of the interplay of movement and music in Need for Speed, not to forget online cooperation and confrontation in massively multi-player online role-playing games (MMORPGs, for short) such as, to mention just two famous examples, World of Warcraft or Guild Wars.

Whatever I can say about so many beautiful games, what I like most are games that do not exist. Those games are most exciting.
2. DIGITAL GAMES DEVELOPMENT IS DESIGN OF COMMUNICATION

Digital games are complex IT systems and entertainment media at once. Digital games are characterized by further peculiarities which distinguish them from other classes of IT systems and entertainment media. They incorporate quite elaborated AI and allow for much more intense interactive reception than other forms of art.

The design of digital games involves

- artistic design like writing a play or making a film,
- IT/AI system architecture and functionality design,
- anticipation and design of some cybernetic system

of human-machine interaction.

These three aspects lead to a taxonomy of digital games that is much more appropriate than the current superficial usage of the term genre. The first aspect characterizes a games' genre in a more concise sense which reflects the term's usage in other media branches. The second aspect determines the game's type. This comprises all the details usually subsumed under the term game mechanics. The third aspect, last but not least, puts most emphasis on the human player's doing, what a player can and has to do, to play the game, and how to experience game playing.

Needless to say that there is an interference of the three above-mentioned aspects. Thus, genre, type, and class of a digital game depend on each other. When pondering digital games, one may trade the one dimension for the other.

The author has developed, laid out, and discussed his own approach recently in [18], [20], [21], [22], and [19].

Designing a game’s genre, type, and—in particular—class is design of communication.

Design decisions are driven by a variety of goals. Genji, for illustration, has been equipped with a much lighter graphics than literally all previous action adventure games, a clearly purposeful artistic design decision—an issue of genre—to reach a certain audience in Japan [26].

Let us consider another question: the future of arcade games. It seems that this type—whether or not an installation of a game is arcade is clearly a question of the game mechanics—is gradually dying. If there is a future of arcade games, it may be grounded in the class potentials. The big screen and the manifold of player control actions bear the potential of not yet explored novel gameplay experiences.

Design of communication is the design of future experience. Therefore, the present paper stresses the aspect of designing novel playing experiences, i.e. new games classes.

Much of the public interest in digital games, especially the interest of politicians and, from time to time, the interest of the mass media is driven by the potential social impact of game playing.

When tragic events occur such as the 1999 deadly shooting at the Columbine Highschool, Littleton, CO, USA, or the amok run at the Gutenberg Highschool in Erfurt, Germany, in 2002, there are, among others, politicians and mass media calling for a ban of certain digital games.

But scientists are not yet sure about the way in which digital games affect human beings and, thus, have some potential social impact. Analytical research is required.

Analysis has to be complemented by synthesis—intentionally aiming at design with an anticipated impact on the human player’s reception and behavior.

3. THE NEED FOR NEW IDEAS

The business of digital games, like any other business, is clearly driven by monetary goals. In contrast to all other media businesses, it still has enormous potentials, although it has already left the box office behind. So, why to ponder new ideas of games and game playing?

Before the author is going to lay out his own motivation, let’s get an impression of some key players’ opinions, those who design digital games.

It doesn’t take a genius to see that powerful new hardware is threatening to drive development costs even higher than they already are. To drive sales to levels that justify those development costs, marketing costs are skyrocketing, too. And, if you’re paying any attention at all, it’s hard not to notice a glut of “product” not all of it original. We’re awash in licenses, sequels and “me too” games—vain attempts by publishers to increase the odds of breaking even or, dare I say it? Profiting ... (Warren Spector in [31], p. 6).

Creative designers leave their developer studios when feeling constraint by sequels after sequels and missing opportunities of innovative game design. To characterize the dominance of conservatism in game development, the New York Times reports on August 8, 2005: Electronic Arts [EA, for short] plans to release 26 new games in [2005], all but one of them a sequel, including the 16th version of NHL Hockey, the 11th of the racing game Need for Speed and the 13th of the PGA Tour golf game.

After EA’s CEO Larry Probst announced at least one new game a year, blogger Bill Harris sarcastically joked: A “goal” of one new game a year? Damn, Larry, don’t be so crazy ambitious. Remember Icarus.

Yoshihiko Okamoto left Capcom and moved to Game Republic to develop Genji [26].

Warren Spector is cited with an experience he had at EA pushed by Don Mattrick to go for the megahit, spend a ton to make a ton—instead of consistently turning out smaller games, making some money every year. I thought he was nuts at the time. Took me several more years to admit that, like it or not, he was right and I was wrong. ([37], p. 11)

Warren Spector left Origin in 1996 to work for Looking Glass, then run Ion Storm. In 2000 he produced the best-selling game, Deus Ex. The game’s genesis was a project which EA canceled shortly before Warren Spector left.

There are almost uncountably many similar stories about game designers cruising for opportunities of developing what they are dreaming of.

There are not only monetary reasons behind if a game idea does not get implemented. In a funny story about attempts of developing a sex game, Richard Bartle cites a member of a sales team saying, we can’t be associated with sex games, only with violent games ([3], p. 9).

In the digital games industries, nobody has a problem with violent games. So-called ego-shooters (synonymously, first person shooter or FPS, for short) are best-selling and award-winning.

To say it in the author’s own games terminology, a game’s success becomes manifest in the game’s class characteristics. Game design focuses genre and type hopefully affecting class as intended.

The type characteristics of FPSs are providing an excellent basis for the human player’s deep identification with his avatar, i.e. for class characteristics of immersion or flow as described and investigated by Mihalyi Csikszentmihalyi [12].
Richard Bartle has expressed it very well and made it clear: *At the persona level of immersion, the virtual world is just another place you might visit, like Sydney or Rome. Your avatar is simply the clothing you wear when you go there. There is no more vehicle, no more separate character. It’s just you, in the world* (cited after [39]). It’s actually true—when I have been playing FABLE for the first time, after my first good deed in the game, it was *me* who was rewarded, not my avatar.

Psychologists know about the difficulty to draw a sharp line between reality and virtual experience [14], an issue that is intensely debated in—not only scientific—communities.

When I do a good deed in FABLE, it’s really me who deserves the reward. When running over a pedestrian with my car in GRAND THEFT AUTO: SAN ANDREAS, is it me doing that? I am afraid, yes, the perpetrator is me. But when in an FPS my avatar is shooting an enemy, who is killing? Oh, sorry, my avatar is not really shooting. Richard Bartle is right: it’s me.

Playing LEISURE SUIT LARRY, a true classics from 1987, when going upstairs to visit some hooker, it’s also me? No, I don’t think so. And when playing PAC-MAN, it’s really not me running around and eating dots.

To model and to investigate the “player’s emotional flow” is currently seen to be a relevant issue, but is still left to future investigations [40].

It seems that the question for immersion and flow [12], for the emotional identification of the human player with characters and actions in the game is a rather involved one.

An independent approach to the fascination of digital games has been presented by Raph Koster [24] stressing the point that successful and pleasant game playing relies on gaining control in possibly different ways. Unknowingly, there is always learning involved. Learning on the level of recognizing patterns that allow for some better control (mastering moves and actions, understanding partners and adversaries, anticipating coming difficulties, getting a clue for solving a puzzle, ...) is pleasant to the human brain which is by its very nature, so to call, a “pattern inference mechanism” (see also [33]).

When playing a game, you don’t need high-end graphics, if you have “high-end imagination” [27]. Classic games such as MYSTERY HOUSE relied on text and overlaid static images, but with an enormous immersive effect.

The question for games that do not exist is the question for intended effects and for anticipated players’ behavior.

Can we get the degree of immersion we know from egress shooters without shooting? Can we get learning effects in a certain selected discipline without telling the players that they have to learn? Can we aim at a sense of ecological responsibility without impartunacy? What about shocking effects without blood?

Those are typical questions that lead the author to ponder games that do not exist.

Thinking of game design beyond the current limits, what about games particularly made for some teaching purpose? *Today, educational software can come in elaborate forms: Large courseware products with years’ of content that deliver textbook excerpts, online instruction, tiny videos of teachers scrawling on whiteboards and, of course, assessment activities, mostly of the “drill and kill” variety. They come with charts and efficacy studies, but they’re missing a key ingredient: They’re not much fun,* Chris Dahlen [13] explicates.

Indeed, it is an old dream of didactics to make teaching and learning easier both for teachers and for learners [9].

A recent study of games especially developed for teaching purposes has revealed enormous deficiencies [19]. The state of the art is: *It does not work.*

According to the insight that players usually learn when playing, we arrive at a few minimal requirements:

- For a game that teaches, there should be some declaratively described body of learning content.
- For every body of learning content, there should be some established and widely accepted criteria of learning success.

Notice that we do not claim that the criteria of success shall be implemented in the game like, for instance, tests of various forms. Whether or not evaluation of the learning effect shall be integrated is quite another issue.

Feedback is a very important issue in teaching and learning, in general, and it is a critical one in technology enhanced learning. To the author’s very best knowledge, there is not yet any scientific work on educational feedback in games that are employed for educational purpose.

Nowadays, the quality of game playing is a decisive factor for the acceptance of games that teach. On the highly competitive digital game market, the standards are set up very high. Accordingly, the expectations of the players are high.

- Every digital game that teaches has to belong to some category of games—the term genre is frequently used—which is familiar to the audience.
- In its category, the educational game has to meet the standards of games on the market.

But high quality standards shall not be confused with high resolution graphics and realistic physical simulations. The perception of digital games is considerably more involved.

One of the biggest mistakes—may be, the biggest among all—in games for educational purposes is to cause frustration originating from a conflict between game play and teaching material. If this happens, it discredits edutainment possibly for ever—at least in the eyes of the present player.

- Interactions of learning should not interrupt the flow of game play and should not disturb the player’s immersion.
- Interactions of learning shall not hinder the player from reaching her/his goals, but shall be supportive.

It may be clear, but is obviously necessary to be mentioned, that

- a game should not fall apart into its playing part and an educational add-on.
- Interactions of learning should appear as inherent constituents of the play.


Especially the two last requirements are not met by the games investigated.

The analysis exhibited how difficult it seems to be to meet those minimal requirements listed above, though all of them appear natural if not mandatory.

Let us dream of better games, of games that do not exist.
John Tynes has published an impressive example sketching the game *Embedded* that does not exist [36].

He explains the player's perspective: *You're a freelance journalist embedded with an American infantry unit in Iraq. You need to win over the soldiers, get the scoop and stay alive.* (ibid., p. 25) The game may be seen as a first-person-shooter, but the only weapon shot by is the camera.

Among the interesting features the game includes is trading: A thriving black market can supply you with cigarettes, magazines, videogames and other trinkets you can share with the soldiers to improve their opinion of you or just distract them so you can talk to someone else alone. You need to earn money to shop on the black market, though, and you can do that with the photography feature. (ibid., p. 26)

For spending money on the market, naturally, you need to earn money. As a photographer, the player gets money for selling photographs. There are two ways to take photographs: photo ops and opportunity shots (ibid., p. 26):

*A photo op is a situation the game stages for your benefit. It might be a group of soldiers playing poker on the hood of a jeep or a young Iraqi kid drinking Coca-Cola. The photo ops are scripted to happen in certain locations and times.*

In contrast, you can take opportunity shots at any time. Weaply scores to elements in the game such as soldiers, vehicles, civilians, even particle effects, and then rate your photo on the basis of what elements are present in the viewfinder at the moment you snap a picture. Situations modify these scores. Six guys and a tank sitting in the base doesn't make for a great photo, but six guys and a tank in a firefight is worth plenty of points. (ibid., pp. 26/27)

When playing the game, the player has always to balance opportunities of taking photographs to the way he behaves within the squad he is embedded with.

In extreme situations there may be conflicts between taking a shot or assisting others, e.g., wounded soldiers.

It is obviously one of the key ideas behind the game to offer alternatives to the human player. You have the choice, and in making your decision you develop your character.

John Tynes describes a sample case: *A militant suicide bomber gains access to the base and starts shouting threats and brandishing his explosives. The soldiers react and so do you. You can yell to warn people, access risky photo ops, and of course, try to stay alive when the bomb goes off. In the aftermath of swirling smoke and injuries, your actions can dramatically affect the soldiers' opinion of you while also giving you opportunities to rack up material...* (ibid., p. 28)

The game *Embedded* has been designed as a game with moral and ethical choices, a dramatic setting, crunchy game play, character development, and so on. In this publication, it serves as a prototype of what the author is interested in.

The following three chapters will present several ideas of games that do not exist.

Description of games have to be kept short due to space limitations. Descriptions of digital games are usually more spacious. There is, e.g., the impressive book describing the game *The Elder Scrolls IV: Oblivion* on 368 pages [6].

The current sketches of games are laid out on less than one page each. The motivations driving the development of a particular game idea are presented at the end of each sketch.

According to the discussion above, we begin with games that are designed with a certain educational purpose and, perhaps, with some principles of didactics in mind.

4. GAMES THAT DO NOT EXIST: PLAYING & LEARNING

Chris Dahlen [13] said that the educational games he has seen are *not much fun*. This coincides with the author's results of investigations. If a game is fun, something is wrong with its educational function. With quite some pleasure, the author has been playing the strategic development game *GENIUS Task Force Biologie*.

In the case of *GENIUS Task Force Biologie*, the field of studies are several branches of biology.

The player's task in the first and easiest level of the game consists in the renaturation of some African savannah area. The region is badly devastated.

Renaturation is expensive. Therefore, the task is to develop some industry that provides output which may be sold such that the income allows for stepwise systematic investments in renaturation.

As in every development game, there runs some simulation engine in the background. In addition to the simulated economy, the natural environment is simulated. Plants grow and animals return to the recovered environment in dependence on the progress of renaturation. Players may enjoy, e.g., returning elephants and giraffes.

There are some internal parameters of the simulated process of economic development of the present game which can not be controlled directly. Those parameters, for instances, are prices the player can get for sold goods.

Exercises are presented to the player and the successful completion of an exercise may set those internal parameters to new values.

For illustration, successfully assembling a microscope results in an increase of the price of grain.

This particular role of solving exercises may not become completely clear to players who do not think of the game as a complex dynamic process with internal and external variables, about direct and indirect control, and about other concepts of process engineering.

Those players might ask themselves what the solution of an exercise is used for.

There occurs, i.e., an exercise where the player is asked to provide a correct scientific classification of wolves. Wolves do not appear in the game, and the knowledge of such a classification is never used again. The microscope mentioned does occur in more than one exercise, but it never appears in playing the game.

It is the author's suspicion that learning and game playing fall apart. Learning is not properly integrated into the game. Players fascinated by the development task may easily forget about learning for a while. But how to test this hypothesis?

One may try to play *GENIUS Task Force Biologie* without solving any of the exercises. Does that work?

The author's report [19] contains a quite comprehensive analysis including a complete walkthrough that proves that you can arrive at 100% of renaturation within the first level of *GENIUS Task Force Biologie* without solving a single exercise. Game playing and learning fall totally apart.

The crux is to design a game such that learning is not only an excuse for playing and playing is not only the wrapper of learning. What we need are cases where we learn something useful; and that it is useful must be demonstrated within the game play without any artificial effort.

There is a very urgent need to rethink games "that teach".

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5. GAMES THAT DO NOT EXIST: IMMERSION & IDENTIFICATION

Imagine you play a game waiting for your victim. You are sitting in a good place. You are hiding, but you have an excellent overview. You see all the crowd in front of the opera house. You are well-prepared. You have had good food and enough to drink. You can wait. If necessary, you can wait for a very long time. You are sure that you will succeed today. You will lunge at him in the right moment.

There is a taxi coming. It stops in front of the opera house at the bottom step of the large flight of stairs, almost in the middle. Great! You can wait, no need to hurry. Your heart is beating faster. Indeed, it is the couple you have been waiting for. She looks beautiful, but That’s not what you are interested in. You look at him, only at him. Wait! Wait for the right moment. After he paid the driver, they climb the staircase, slowly. It is still too early, wait. They must be caught in the crowd. They are now surrounded by dozens of other visitors. That’s good. The flood of visitors is sweeping them along towards the big doors of the opera house. Only a few meters are left. That’s the right moment, my chance. With a very slight movement of my feed I jump off. In a wide curve, I am gliding over the opera square, under me hundreds of humans. There, in front, close to the door, that’s him. With a slight movement of my right wing I tune my trajectory. Now pressing and . . . fire! A fat white dropping on his right shoulder ruins the suit. The mission is completed—fifty points.

You are a bird in the novel game named BUGGER BIRDS. You play the game from a first person perspective, i.e., it’s a first person shitter.

By the way, the term first person shitter has been coined in an interview the author has been given to the German console games magazine PLAYZONE. The report about the interview is published in issue 08/2006, pp. 16–21.

To complete the description of the game BUGGER BIRDS, some supplements are necessary. This game is a strategic development game. You begin as a bird living on a tree in the suburbs of a big city. You have sufficient food and water supply, but you have a long way to find your targets. It’s not easy to collect points. You find the best targets in front of a women’s hairdresser. But the game is highly competitive. There are many other players lurking. When you have qualified to enter a higher level, you move to a nest in the city’s central park. It is a little bit more difficult to find food and drinking, but you have targets galore. There are, in addition to regular points you can score, points of attraction. You may get points of attraction, for instance, for meeting a target under some roof such as a cup of coffee or tea under a restaurant’s sun shade. With some body control, you may hit your target with an elegant effet shot. After collecting sufficiently many attraction points, you may marry another bird. This offers the opportunity of breeding and, after you have trained your offspring, to fly air raids.

The game idea of BUGGER BIRDS has been designed with the question in mind whether or not a human player might possibly identify with a shitting bird in a similar way as with a shooting soldier.

In a conventional FPS, a player might easily say and feel that it was him (her) who just shot. One might move the index finger accordingly. But in a first person shitter . . . ?!
6. Games that Do Not Exist: Ideas for Type & Class

Hunters 24/7 is a game that a player might play 24 hours a day and 7 days a week. The ideas have been developed by Heiko Paulheim. The game is played on GPS-enabled mobile devices such as modern PDAs.

The Hunters 24/7 is an MMORPG with many traditional shooter features which, however, appear different from more conventional FPSs. A first key feature is that registered players may receive their task online at any time. So, honestly playing the game involves continuous attendance.

The game server is maintaining the positioning information of all currently registered players. According to further rules of the game, the server issues tasks for one player to meet another one. The aim might be a friendly meeting or a virtual shooting.

Shooting assumes that the player has to come sufficiently close to his target in the real world. The separation between the real world and the virtual world of game playing resolves.

There is a variety of further features such as gadgets and weapons that can be acquired, virtual currencies, and the potentials of teamwork. Cooperation of virtual characters may involve the real players coming close to each other.

Let us compare Hunters 24/7 to the PDA game Treasure [1] which has been designed for a remarkably wide spectrum of investigations.

The aim of the Treasure game is to collect “coins” scattered over an urban area such as a park. The players’ goal is to get them in to the treasure chest (technically, a server). Two teams of two players compete against each other. A clock counts down, and the team with the most coins in their treasure chest at the end wins the game. The coins can only be seen on the map on the players’ PDAs.

When players come close to a treasure, they can pick it up. For saving coins to the treasure chest, they have to come into the reach of the server’s wireless network.

There is a variety of more player interactions such as picking pockets (by using the button “PickPocket” on the PDA screen), when one player comes close to another one. Playing the game needs obviously certain awareness of network connectivity issues.

Among many other issues, the authors of [1] have been interested in the players’ behavior with respect to seams. A seam is a break or gap in a number of tools or media (Medienbruch, in German). Seams appear frequently when different digital systems are used in combination, or when they are used along with the other conventional media that make up our everyday environment.

The Treasure game has been intentionally designed as a seamless one. Mastery of the game requires to perceive and master seams such as a missing connection to the server.

The Treasure game does already exist and brings the human game playing back to the natural environment. This intention overlaps with the intention of the Hunters 24/7 game by Heiko Paulheim introduced above.

Whereas Treasure aims at learning about computer networking issues, Hunters 24/7 puts more emphasis on the dovetailing of game playing with the player’s regular life. Heiko Paulheim wants to provoke players to ponder preferences of game playing and other social obligations.

Insiders is another MMORPG which runs fully in a virtual world on some server. Insiders is very much a traditional strategic development game.

It has a few features that make the Insiders game different. The crucial concept is latency. When you do a development activity in Insiders, it does not immediately result in an effect. Even more complicated, for some initial time nothing happens. For instance, when you decide to build a house, it takes some time before building activities start.

The second key concept is diversity of resources. When you build a house, for example, you have to make your choice concerning materials such as steel type or windows size.

There are constraints of the virtual environment. In certain regions, the resources that may be used are limited to a few. These limitations follow the well-known game design pattern of “paper–scissors–stone” [5]. That means that all resource combinations have advantages and disadvantages. There is no preferable one. It depends on a larger number of partially unknown conditions what fits best.

The same applies to players who work as manufacturers and provide resources to the market.

Also manufactures are facing the latency problem. When some resource is needed, it is usually too late to initiate production, because it takes some time before the output is available. Manufacturers are facing the problem of diversity as well. They need to decide what to produce, and there is no way to produce everything at the same time.

Introducing latency and diversity as described into the game mechanics means only minor modification to the simulation engine(s). This does appear a revolutionary change of the game type.

But if the change of the type is well-balanced, it has an enormous impact on the game class. The players’ behavior changes drastically.

Players of Insiders learn to observe the virtual world for trends, for competitors’ and partners’ behavior, and they try to forecast what other players are going to do and to guess what other players have recently done.

Knowledge about recent investments becomes relevant to the players’ decisions.

In MMORPG such as Second Life human players became accustomed to a large market of virtual goods. In the virtual world of Second Life, e.g., the Linden$ is the negotiable currency. Players buy and sell almost everything. In 2006, there’s a good chance $100 million USD dollars worth of transactions will flow through the virtual world of Second Life. In the world of digital games an endeavor became true in which the largest international credit institutes failed—the establishment of virtual money.

A systematic study of virtual goods is beyond the limits of the present paper. The focus will be directed to a single question: What about selling virtual knowledge? Is virtual knowledge becoming a virtual good similar to virtual estate, virtual clothes, virtual weapons, and so on?

There is no virtual knowledge. Whatever you know in a virtual world is real knowledge. You really know it.

In the MMORPG Insiders, knowledge becomes a virtual good. Knowledge about other players’ activities is valuable if gained early enough. One may buy knowledge virtually by means of virtual payment.

In addition, because Insiders has several communication channels that have to be used when playing, eavesdropping communication becomes a threat bringing up security issues.
7. CONCLUSIONS

This paper aims at a contribution to meaningful design of digital games. In game design, we mostly determine the game’s genre and type, but we aim at a certain class, i.e. at particular activities of play. By indirectly controlling the class of a game, we design the players’ game playing experiences–activities that leave a trace in the brain [32].

Once done, the act of escapism lasts forever. Your mind files it away in some remote corner, only to retrieve the moment later and replay it, cherish it, when the time is right. Even at your lowest point, you will never be abandoned by your memories of happiness.

You will never forget a videogame you’ve played. You may forget the plot and the characters and even the title, but once you have played a videogame and loved it, that happy fact remains with you when you need it most. ([11], p. 10)

Designers, producers, and publishers bear responsibility for what remains, what leaves a trace, what is remembered.

In chapter 4 we have seen digital games with a purpose of education in mind. Currently, the main deficiency is that those games fall apart into the conventional game and the learning material. There are cases where you don’t need to learn anything for playing the game and others where you are pushed to learn without any proper relation to playing.

In chapter 5 we had just the digital game BUGGER BIRDS. The question for the players’ identification with shitting birds is still open. But it is the author’s strong believe that humans do not identify easily with bugger birds. Therefore, it should be worth trying out digital games that enjoy all the fascinating features of development adventures and ego-shooters, but do not easily offer an opportunity of the human player’s identification.

Do players identify with Samus Aran in the METROID games series? Yes, they do. But do they also identify with the virtual hero Samus Aran, when she transforms into a morphing ball? To the author, it is difficult to imagine that someone feels like a ball.

In chapter 6 we have seen digital games with specific ideas of the game mechanics developed with very specific impact on the player’s behavior in mind. In HUNTER 24/7 and TREASURE, the human players are sent out into the real world. Deeply dovetailing game play with the player’s social life is the driving motivation behind the HUNTER 24/7 game. INSIDERS aims at making knowledge a virtual good for the first time ever in digital games.

In the design of digital games understood as the design of the players’ communication experience, there are literally uncountably many innovations to come. It is the author’s intention to explicate the opportunities we have to design games types that unfold to anticipated digital games classes—the human players’ behavior and experience.

8. ACKNOWLEDGEMENT

The author is grateful to his students Babak Bagherzadeh, Alexander Biedermann, Alex Bulach, Florian Dörri, Anja Ehrig, Julia Friese, Sabiba Hacebeho glu, Christoph Hannebauer, Stefanie Hels, Melanie Herber, Roman Istambuli, Diana Kalb, Thomas Kellner, Susanne Krause, Manuel Ladebeck, Heiko Paulheim, Christoph Quach, Monique Scholz, Florian Schwarzer, Alexander Skrinjar, and Moritz Wissenbach. They all contributed numerous ideas for novel digital games. Only a few could be mentioned in the present paper.

All members of the author's current research team at the Technical University of Ilmenau contributed to the team’s winning of a bid for an “excellence of research award” which allows for a year of research in ”Security in Online Games” including the preparation of the present paper.

9. REFERENCES

10. APPENDIX: GAMES DISCUSSED IN THE PRESENT PAPER

To distinguish games in the text of the present paper, the names of games have been capitalized. Here is a list of the games mentioned. Those games that do not exist are marked by an asterisk.

**Agatha Christie: Und dann gabs keines mehr**

**Age of Empires III: The Age of Kings**

**BIOLAB**

**Black Mirror**

**Black & White**

**Brain Control* [Thomas Kellner]**

**BRAND IM HAFEN**

**BUGGER BIRDS* [Klaus P. Jantke]**

**Call of Cthulhu: Dark Corners of Earth**

**Chaos am Set**

**Chess**

**Civilization**

**Crazy Taxi**

**crisefit* [Julia Friebe & Melanie Herber]**

**DEUS EX**

**Embedded* [John Tynes]**

**Fable**

**Fish & Trips* [Florian Dörre]**

**GENIUS Task Force Biologie**

**GENIUS Unternehmen Physik**

**Genji**

**Grand Theft Auto: San Andreas**

**Guild Wars: Factions**

**Hunter 24/7* [Heiko Paulheim]**

**Insiders* [Klaus P. Jantke]**

**INTRUDER* [Alexander Skrinjar]**

**Leisure Suit Larry**

**Mah-Jongg**

**Metroid**

**Need for Speed**

**Pac-Man**

**Physikus**

**Resident Evil IV**

**Second Life**

**Soul Calibur II**

**Splinter Cell**

**Super Mario Sunshine**

**The Da Vinci Code**

**The Elder Scrolls IV: Oblivion**

**The Settlers**

**Treasure**

**World of Warcraft**

For games with an asterisk, the names of authors who first sketched the related ideas are added in brackets. Authors of those games keep their copyright which has to be respected.