



Representing Users in the Design of Digital Games

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Abstract

While economic and sociological studies have generally recognised the important explicit role that users play in shaping a technological artefact – through feedback channels after launch and market trials and studies before launch – there has been less exploration into the more implicit strategies by which designers attempt to pre-figure users prior to launch. Given that design involves making choices, and framing the choices made by users, this paper suggests that Madeline Akrich's approach (1992, 1995) may provide a constructive tool for exploring more implicit strategies of representing users in the early stages of the design process. It may also prove useful in exploring how users can be excluded or alienated through design. While acknowledging that users may actively negotiate designers' representations this paper will explore the usefulness of the Akrich approach in relation to understanding the design of digital games. A study in 2001 of production in digital games companies in Ireland found that various macro, meso and micro level factors play a role in limiting the games developed and the user groups developed for. This paper will present findings from ongoing research conducted in 2002 into the reasons why and how one start-up company decided to design a multiplayer online game for males aged 25–40.

Keywords

Design, games, innovation, gender

INTRODUCTION

A game must have a clearly defined goal, and it must be expressed in terms of the effect it will have on the player.... If you select a goal to satisfy your audience but not your own taste, you will surely produce an anaemic game. [10]

In this classic text on game design Crawford says that really powerful games come straight from the heart. In his description of the game design sequence players are not mentioned once and he suggests that playtesters should be game designers and not players who make 'lousy critics' [11]. He goes on to doubt that any good film, book or song was created through market research and that such methods would only prove useful to designers of limited talents. A quick scan through the index of the book finds no entries for users, usability, playability or accessibility.

Reflecting the growing maturity of the digital game design industry a more up-to-date computer game design book takes Crawford's advice, eliminates the contentious language and gives some consideration to the target market.

Suomela
& al:
Augmented
Reality for a
Casual User

A game must have a clearly defined goal, most often stated as to how it will affect the player. The goal must establish the visions, emotions and challenges it will produce in the player.... The designer needs to identify the genre and target audience for a game as well. These questions guide every level of game creation. [21]

These books suggest that digital game design for the PC or console markets is largely an intuitive process and new game concepts are developed with little input from players other than the designers themselves. While the more recent game design books place increasing emphasis on the need for a strong user interface there is little expectation that end users can or should be involved in the design process. Contrast this loosely intuitive, supplier-driven approach to design with the approach presented in European programmes like IST 2002, which highlight the importance of user-centred design and design for all [7] and writers within the computer science and web design fields who argue that human factors and usability must be considered by designers [31]. Jacob Nielsen believes that,

the main goal of most web projects should be to make it easy for customers to perform useful tasks. I describe a very systematic approach to web design, with a sequence of methods anybody can use to discover user's needs and any difficulties they may be having using the site. Treating a web project as a software development project will make it easier to meet schedules and to ensure the quality of the site [27].

On the one hand there are those who believe design is an art, which relies on the designer's vision, i.e. supplier driven, and on the other those who believe design is a science which relies on market research and user surveys i.e. consumer driven. This paper proposes that the impression presented by these books is too simplistic and in addition may need to be altered to take account of the specificities of designing persistent online games.

The paper firstly explores theories which present a more complex understanding of design, the different roles that users can play in the process and its relationship with gender. It goes on to examine the range of factors which have influenced digital game design in a start-up Irish company designing an online strategy game for male users aged 25-40. It argues that

micro design efforts must be viewed in relation to wider structural factors and historically constructed discourses. It also argues that in order to understand the social construction of gender in digital games we need to explore how these wider societal structures interact with agency at a micro level.

GENERAL THEORIES ABOUT DESIGN AND THE ROLE OF USERS IN DESIGN

The industrial innovation, sociology of science and technology and media history literature are a rich source of information on the range of factors influencing the industrial and consumer innovation process. In this paper design is seen as synonymous with innovation, i.e. the act of getting a new process or product to the market and the related organisational, knowledge, social and other changes associated with this process. Design is fundamentally a process involving both change and continuity and having both intended and unintended consequences. To investigate design is also to investigate the relationship between structure and agency in society and the degree of freedom which individuals have to act within a wider set of relationships.

The literature demonstrates that the process of design varies from firm to firm – from large firm to small firm, from start-up to mature firm – and from innovation to innovation – some may be quite radical while others may be simply incremental innovations around an existing design. Further, innovations vary in terms of their degree of flexibility. In nearly all sectors the design process is risky and uncertain and there are numerous external and non-market factors which a firm cannot control including government regulations, standards, public policy, consumer pressure and cultural values [18].

Design is not only about production but is also fundamentally tied to consumption or use. What is particularly striking about the literature on innovation is that while on the one hand there is an overwhelming consensus that an innovation which does not take into account its target market will fail, there are equally as many empirical studies which show that companies often fail to take into account user needs or having conducted market research, usability studies and market trials their innovations still failed because they were unable or unwilling to take account of the results [7, 25, 38, 40]. A recent collection of papers on the role of users in innovation notes:

but it will not be successful (and innovations can be successes or failures) if there is no demand for it – if users do not want it. Understanding user needs was identified in early studies of innovation as an important success factor, and it is one of the justifications for market research. . . . Some entrepreneurs find out what users want, or do not want, only when their innovation fails, or when customers complain or send it back. Some innovations are commercialised by entrepreneurs who say they ‘just know’ what the market wants; or who make assumptions about customers’ needs (on the basis, for example, that the market is made up of people like themselves. [7]

A common theme emerging from this work is that while designers may try to design for certain ideal users this design process is often based upon partial or indeed mis-information about end users. Silverstone and Haddon point out that designers' knowledge of users is often tacit, contradictory and untested and in this uncertain environment organisational cultures and powerful sub-groups can compete to determine design [34]. Woolgar points out that even when explicit attempts are made to gain knowledge about end users, as in usability trials, this information may not be useful or may not be used to inform the design process if other agendas are deemed more important [40]. The Social Learning in Multimedia project (1996-1999) found that the eventual uses of products are often far removed from what the designer's intended and even when explicit experiments are invoked – from pilots, and feasibility studies to trials – the design of new media products remains experimental and racked with uncertainties.¹ Others argue that consumers are only likely to get involved in the later stages of the innovation process, particularly if the innovation is radical. Cawson et al [5] found that in large consumer electric firms ideas for innovations were more likely to emerge from technical staff rather than from market research or other departments. Oudshoorn et al. in their study of public and private multimedia design found that the design process was driven by organisational and technological factors more than the needs of end users, and the designers considered themselves as adequate models for end users [29].

For some researchers design involves configuring the user in terms of setting limits and boundaries on user actions. For Steve Woolgar a new technology is interpretively flexible, i.e. there are many different possibilities in terms of design. For him the development of a new technology can be usefully analysed through the metaphor of the machine as text [40]. Design for him is about the construction of this text (writing) and its use (reading). The text therefore mediates in the relationship between the reader and the writer and this ascription of a role to the technology is important. Of further importance is his assertion that only certain readings are possible and that these readings are made available by certain associations in the text. Design is a process of configuring the user and defining boundaries between the company, the user and the machine: a process which is often based on incomplete, tacit and contradictory information about end users. It is a process of negotiating hardware and software characteristics in relation to an ideal or real user, the designer's intentions, the functional characteristics of the machine/software and differing organisational requirements. In later writings he suggests that while the relations and conceptions embodied in technologies in general are fairly durable, the relations and conceptions embodied in software are often more malleable [8].

[T]he emergence of a new range of microcomputers crucially entails the definition, delineation and emergence of 'The User'. We could say that this process amounts to the (social) construction of the user. ... [A]long with negotiation over who the user might be, comes a set of design (and other) activities which attempt to define

and delimit the user's possible actions. ... [T]he evolving machine effectively attempts to configure the user. [40]

Conceptualising technology as 'text' borrows a key concept from media studies and serves to highlight the human/social construction of a technology and its flexibility – the term text comes from the root meaning to weave [28]. Media studies is particularly concerned with how meaning is constructed in a text and draws upon key concepts developed within semiotics, a field of study which developed within linguistics in the early part of the 20th century, to analyse the structures of meaning underlying a text. Since the 1980s audience and ethnographic research have expanded our understanding of how meaning is re-constructed by audiences and has shown how reading should be understood as a process of interpretation which is structured by social class, gender, ethnicity, space and generation [17]. Given the findings of such research there has been a re-evaluation of the power of the media in relation to the audience, a questioning of methods which rely on the researcher's subjective interpretation of a text and a move to understand users and contexts of use. Against this academic background Woolgar's conceptualisation of user configuration has been criticised by some researchers from media studies for denying the audience/user the agency which audience studies have shown they exhibit. Silverstone and Haddon [34] for example appear to suggest that Woolgar's conceptualisation of design as user *configuration* may be too deterministic. They see design as a process where the user is *imagined* rather than configured [5].

These theoretical battle lines highlight that the basic question for many sociologists of science and technology is how much power to ascribe to the designer and to the user in the design/consumption process and how best to study it. To complicate things further Woolgar's work suggests that it is important to understand the role of both human and non-human actors in the design process. In line with this view Akrich notes that even the most mundane technical objects are the product of 'diverse forces' and that technical objects participate in building networks of human and non-human elements[1]. In order to understand socio-technical change therefore we must study both the technical and the social. We must investigate how technologies constrain actants, the character of these technologies and the extent to which actants are able to reshape an object and how it is used.²

Both Akrich and Latour use a language adapted from semiotics [1, 18]. Design is seen as distributing skills, responsibilities and actions between the user, the technical object and other actants. Akrich [1] writes that designers anticipate and define the preferences, motives, tastes and competencies of potential users and inscribe these 'scripts' or 'scenarios' into the design of a new product. Thus the technical objects define a 'framework of action' within which actors are supposed to act. Akrich [2] asserts that,

innovators are from the very start constantly interested in their future users. They construct many different representations of these users, and objectify these representations in technical choices...the creation of successful artefacts depends

on the ability of innovators to generate user representations and integrate them into their designs. [2]

The mostly commonly used strategies identified by Akrich include explicit techniques like market surveys, consumer testing and feedback on experience and implicit techniques such as the I-methodology, experts and other products. Based on her research she concludes that implicit methods are often more powerful and important than explicit ones. For her the main challenge facing designers is how to coordinate and apply the information gathered and the main challenge for public authorities is to create mediators between innovators and end-users to enable new user representations to be considered where before they were excluded.

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MORE SPECIFIC RESEARCH ON DESIGN AND GENDER

Oudshoorn et al. have explored the concepts of technology as text and user configuration in the design of two multimedia online services [29]. She argues that exploring macro/meso/micro dynamics helps to explain the inscription of certain representations of users in artefacts. However in one case she found that while the aim was to design for everyone in reality a male, technologically literate, and technologically fascinated, script was articulated. She found that the I-methodology, whereby designers are guided by their own taste and desires can lead to the development of a gender bias in design if the design team is all male.

Some research has indicated that masculinity is intimately linked with technological competence and performance; indeed some argue that technology, for historical and social reasons, has a male bias [6, 37: 137]. Research into masculinity and computer technology highlights the continuing importance of control and mastery of the technology as a source of power. Sherry Turkle's research argues that for computer hackers an ability to control the latest technology is an intense need [36]. Wacjman [37] argues that mastery and control not only bestows value amongst one's peers but more widely in society as well. Nevertheless she argues it is a value which is more available to men than to women and draws heavily upon a wide system of symbols and metaphors.

[N]o matter how masculinity is defined according to this ever adaptable ideology, it always constructs women as ill-suited to technological pursuits. [37]

Many studies have observed that most computer programmers and digital game designers are men and that this has an important influence on game design. For example, J.C. Herz notes that most designers are male and can't figure out what girls want and don't want [15]. Jenkins and Cassell argue that video games offer a prime site to analyse the social construction of gender [16]. In their work they investigate female representation; culturally in terms of characters in games and proportionally in game companies. They argue

it is important that women are represented in these two domains and not excluded from gaining access to technology fields and technology use.

[H]istorically gender was an unexploited category in video game design, with male designers developing games based on their own tastes and cultural assumptions without considering how these approaches might be anything other than gender neutral. Yet as feminist critics note, as long as masculinity remains the invisible norm, ... unselfconscious efforts are likely to simply perpetuate male dominance. [16]

Håpnes and Sørensen however argue that the empirical findings to support this theory are ambiguous [13]. They question the implicit understanding that gender is the dominant force in design, noting that in feminism and constructivism gender is not pre-given. Indeed there may be many forms of masculinity. In their study of computer hacker culture in Norway they found gender ambiguities and that hackers displayed both masculine and feminine qualities.

Work by McQuail would suggest that increasing the number of female game designers might not be enough [23]. He argues that simply influencing the proportional representation of women may not have any influence on the production of content if these women have been socialised into a wider male production culture. An organisational culture will often prioritise financial necessity and induce conformity to the traditional ways of producing content. McQuail also notes that external forces, organisational goals, professional standards and personal ambitions usually shape the personal views of, for example, a journalist. Wajzman would appear to agree.

[R]arely has the problem been identified as the way engineering has been conceived and taught. ... I share Cockburn's view that this reluctance 'to enter' is to do with the sex-stereotyped definition of technology as an activity appropriate for men. As with science, the very language of technology, its symbolism, is masculine. It is not simply a question of acquiring skills because these skills are embedded in a culture of masculinity that is largely coterminous with the culture of technology. Both in school and in the workplace this culture is incompatible with femininity. Therefore, to enter this world, to learn its language, women have first to forsake their femininity. [37]

Sandra Harding distinguishes three aspects of gender; gender symbolism, gender structure and individual gender [4, 14]. We have already examined work on the representation of women at a structural level and individual genders. However symbolism also plays an important role operating at the level of the object, at the level of the content or through associated marketing materials [5]. The symbolism surrounding and within digital games is therefore important to consider in relation to gender identity. There has been much discussion for example about the portrayal of women, gender bias and stereotyping in digital games and how this might contribute to wider socialisation processes [32, 35]. While the number of female characters in games has increased, the majority of these characters are still largely sexist and racist which acts to exclude female users. This is despite the best efforts

of entrepreneurial feminists and others to raise awareness of the issue [12, 16, 32, 33, 35, 41]. Research also points to the market success of androgynous games like *Tetris* and *The Sims*. As J.C. Herz points out:

Girls are looking for experiences, and boys are looking for bragging rights. ... the problem is, videogame designers being mostly male, can't seem to figure out what girls want in a videogame... catering to boys is much more fun. Videogame companies are very good at it and it makes them rich. And they don't want to mess with a winning formula. [15]

The historical context from which the designers and companies have emerged is also important. The social history of digital games from the large science research labs to pin-ball parlours and home PCs has played a part in gendering the technology, the games and game production as masculine [11, 19]. Indeed it has been argued by some that women use computer technology more as a tool than as a play-thing and only become comfortable with it when an activity renders the technology invisible [11, 33]. PC games and the publicity surrounding them exploit the advanced technological capabilities of both the system and the user. The lack of women in the games development field may stem from their lack of access to computer technology in their early years and the fact that both boys and girls tend to label computer technology as male from early on. Computer console, mobile and handheld games presuppose much less technological knowledge and have a much more balanced gender usage.

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MACRO AND MESO LEVEL FACTORS INFLUENCING DIGITAL GAME DESIGN IN IRELAND

As noted above historical, social, political and economic factors as well as industry specificities can have an influence on micro processes of innovation [39, 9, 30, 26, 24]. Thus it is important to understand the wider innovation environment in Ireland and trends in the games industry globally before we turn our attention to one particular company.

This section builds upon a previous survey of digital games companies in Ireland in 2001 and semi-structured interviews with 15 actors in this sector. This data indicated that both industry specific factors and nationally specific factors were important in relation to understanding design in different digital games sectors (PC, console, mobile, online). These factors included:

1. The power of publishers as funders and gateways into the global distribution chain
2. The role of console manufacturers in controlling technological change and the game design process.
3. The lack of appropriate labour available in Ireland.
4. The lack of capital resources available in Ireland.
5. The inadequacy of infrastructures in Ireland.

6. The lack of knowledge resources about the industry globally.
7. The lack of specialised support in Ireland.
8. The presence of related software and media industries in Ireland.
9. The absence of a successful digital games developer as role model.
10. Strong economic growth nationally during the late 1990s.
11. A largely negative perception of games in public institutions.

These factors have been explored in more depth elsewhere and are merely presented here in order to set the stage for the developments in one particular company [20]. The first three factors would appear to have a significant impact on the types of digital games being designed by companies in Ireland.

Interviewees pointed out that publishers are risk averse and unlikely to invest in a start-up company with no track record or in a game concept which did not readily conform to existing game categories and genres. Developers who wish to approach a publisher know in advance what types of games they publish and what they are likely to publish in the coming two years. The desire for product innovation is constrained in this case by the need to fit into a product portfolio.

It wasn't my first choice of game but it is easier to develop. We've had better feedback from investors about this game. (Interview 10)

We started off in a kind of very grim, gothic kind of environment. ... Publishers kind of didn't know where they should really position it, cause it wasn't a normal motorbike racing game and it wasn't an all out combat thing. ... Most publishers wanted straight racing. ... Publishers said okay we like it but we will take it if it is a normal racing game and we put some motocross star in it. (Interview 6)

For other companies the power of the console manufacturer was significant. The console manufacturer evaluates and assesses all content distributed on their platform, the rate of technological change and by default the skills necessary to design for their console. For start-up companies concepts must again fit into a product portfolio in addition to the substantial learning and reskilling problems posed by console transitions. In economics literature a company's technological trajectory is determined by the knowledge and skills of a firm and the ability to change trajectory and avoid technological 'lock-in'. These industry specific factors have been highly significant in the Irish case. A survey of Irish digital game companies found that by 2001 there were two start-up companies producing PC games and no console developers.³ In the main start-up Irish companies were avoiding specialist publishers and console manufacturers during their start-up phase.

Another important factor in the Irish case has been the lack of available skilled labour. To date most Irish people who wished to work in the industry have emigrated to the UK and the US. Few returned. Thus people in the Irish game development industry tended to lack formal training in digital game design and some had no experience. Interviewees spoke of employees 'passion' and 'obsession' with digital games and the key importance of these

traits in the face of steep learning curves, rapidly evolving technologies and short deadlines. Employees exploited the knowledge of technological suppliers, online resources and colleagues in related companies. Key skills that were missing in the Irish labour pool were either imported from abroad or the game concept was modified according to the available knowledge and skill resources. In particular the lack of high-end 3D animation skills meant that companies were designing less animation heavy games.

You are going to have to be hiring new people with a lot of overheads involved in training them. (Interview 13)

The level of animation has increased so much in games now that, it is a very specific skill needed in games, ... so really experience counts for a lot. (Interview 10)

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At a company level the production cultures were like many small media companies – intimate, small, informal, flexible. The use of terms like design ‘house’ and ‘studio’ give a sense of the intimate culture of production involved. The companies employed teams of workers, often on contract, but all employed less than twenty people. Given the small size of the companies they tended to buy in services including music services and marketing support. All of the companies interviewed had no marketing expertise in-house relying instead on the expertise of publishers, personal contacts or service companies. There were no organisational hierarchies with CEOs working as programmers, market researchers and producers. The companies worked flexible hours, often starting work late in the morning and working until they were finished.

Where digital game companies differ from other media companies is in their gender breakdown. The proportion of women in the digital games companies interviewed in this project was very low and the development teams were almost exclusively composed of white males aged between 23-40 years of age from Ireland, the UK and the US. One company employed one female developer on a total staff of over 50. Two other companies employed one woman each but again there were no female developers, the women worked as business managers.

It is very young, it is a very male industry, we’ve only got one female developer. You will see a lot of that at the game shows as well. I mean the gameshows are tits and ass, because of who the industry is, the decision makers on buying major pieces of software are 19/20 year olds. (Interview 3)

In terms of the design process these initial interviews indicated that end users had very little explicit involvement in the design process before the game went into testing. While gender was not the main theme of this research project it emerged not only in relation to the proportional representation of women in digital games companies but also in relation to the target markets these companies were designing for. The three PC/console companies initially interviewed were developing sports, racing and strategy games for the 15–40 year old male game player. Why were they developing these types

of games and only for this target market? Clearly the political economic demands of the industry dictated that publishers, funders and platform manufacturers were risk averse and wanted to fund low risk ventures with a guaranteed market. But the production cultures may also be important. Initial interviews pointed to male dominated companies, unsocial working hours, the technological demands made by the platforms and design tools and the need to be a game player with a 'passion' for gaming. Could the latter also help to explain the type of games being designed? Were the factors different when one looked at an online game? In order to explore these questions further the author conducted more interviews with designers in one company.

COMPANY SPECIFIC FACTORS AND USER REPRESENTATIONS: GAMES.INC

Akrich [1, 2] suggests that to study design one must follow the negotiations and evolving relationship between the designer, the projected user and the real user. Bearing this in mind, an online game which is constantly updated and contains feedback channels provides an interesting opportunity to study the linkages between production and consumption. In addition it may be free from some of the external industry specific influences experienced by console and offline PC designers. However a caveat must be entered here in that this is ongoing research and to date most of the information has been from the designer's point of view.⁴

Following the first round of interviews in 2001 a more detailed analysis has been conducted in one digital game company. The aim of this research was to explore in more depth the relative importance of implicit and explicit representations of players and of a company's production culture on the construction of an online game aimed at male users. At this stage the company wishes to remain anonymous and henceforth shall be called games.inc.⁵

It is important to note that the company under examination is the only digital game design company in Ireland developing a game for the online PC market. The company is a start-up established in 2000 by a group of friends. Based in Dublin the company employs 13 full-time staff; six programmers, five designers, a producer and a writer. There are no female members of staff in the company although they do retain a female business consultant. Staff in the company regretted this but added "It seems to just interest guys." (Interview 3b).

The game designers interviewed had no previous experience in the design of digital games. As designers they did not identify with a hacker culture or indeed with hard-core gamers who forget to eat. Nevertheless they did enjoy the challenge posed by computer technology: "I get a kick out of that. ... I like to find out ways of doing things." (Interview 3) They also admitted having worked for up to two-three days continuously in the run up to deadlines. They were keen game players in the broadest sense of the term and shared a passion for digital and non-digital games.

I can't tell you what my first game was but I basically used to play table stuff, table-top strategy games. ... We would be playing them for fifteen hours a day ... big armies, big tables. We would play computer games, we would play draughts, we would play chess, we would play monopoly. (Interview 1b – CEO of company)

Our discussions focussed on an online strategy game launched in December 2001 via a German based Internet service provider's (ISP) portal. While games.inc was responsible for developing the game the German based ISP played an intermediary role between the designers and players and was responsible for marketing it. At the time of writing the game had approximately 1,000 subscribers. The following description of the game is drawn from the game's website.

An online strategy game set in a fantasy world based on a unique interpretation of Celtic mythology. You control a warband of 12 uniquely skilled characters.

There are three major aspects to the game: a Combat System, encompassing melee, ranged fire and magical incantations; a Resource and Warband Management System whereby players can move their warbands around the map of Erin and also minister to the health and skills of each of its characters; and a Trading and Political System, giving players the opportunity to barter resources or characters and to rise to a position of power and prominence on their race Council.

It also has the support of an ever-expanding Mythos section, wherein the background of Erin is detailed and the exploits of the gaming community are recorded: players will therefore have the opportunity to see their actions shape the world!

According to the designers of this game the goal was to design an online strategy game set in ancient Ireland and loosely based around mythic battles. The designers were keen to avoid the clichés and stereotypes associated with Celticism and therefore they drew inspiration from pre-Celtic Irish myths, legends and folklore for the background story and to develop an authentic environment for the game. The game concept was in development for almost 5 years before the company was established. Once the company was founded they developed a table-top version of the game to test out different game strategies and ideas.

The game offers widely available communication tools including chat, e-mail and fora where players can communicate with each other and the designers. In addition the writer posts battle reports and a continuing narrative based on the outcome of specific battles. Another feature allows both designers and players to observe ongoing battles.

It is not so much a direct game as it is a social environment – you just happen to express it in a game format that has a certain set of rules. (Interview 1b)

Three features mark this game as distinctive in the minds of the designers. Firstly, unlike many existing online strategy games this game is match based. Secondly, the game is highly stylised and cartoon-like rather than photo-realistic. The aim was to develop characters which were quite bright so that players could identify their warriors easily, a weakness the designers had

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identified in other games. Thirdly they aimed to use music creatively in the game. These are clear examples of an implicit form of user representation whereby product features are defined in opposition to existing products on the market [2].

A random allocation of powers and artefacts prior to each character before battle adds an element of chance to the game which users cannot control. In addition they chose to keep the game logic at the server end in an effort to curtail cheating. This echoes Akrich's work on how designers draw boundaries around technologies and distribute skills, responsibilities and actions between users, the technical object and other actants [1, 3]. In this case the designers retain the responsibility for making changes to the game and recording the game's history. The company's servers carry out the chance element of individual games. The players are allowed a choice of strategies, some customisation of the game – e.g. of a character's name – and to suggest changes by e-mail but no direct intervention in the game content. Marketing and promotion are the responsibility of intermediary ISPs. This network of human and non-human actors constitutes the socio-technical network involved in the design of this online game.

It is clear from interviews that during the concept design and production stage the designers formed implicit representations as to what they believed players would like. These representations were very much based on their own preferences as game players, rather than more formal and explicit user research. This conforms with Akrich's notion of an I-methodology whereby designers draw upon personal experience [2].

I suppose you could say it is aimed at people like ourselves, like you know it tends to be getting picked up by the sort of people who are interested in fantasy/strategy games. (Interview 2b)

The fact that the game was designed for game players similar to the designers presupposed that end users would have a certain level of technological literacy, experience of strategy games, income and gender. Oudshoorn et al [29] has suggested that this design process is largely unconscious but can lead to the exclusion of certain user groups and a gender bias.

It is aimed at the PC online player. The PC online player is predominantly average age 27, high income earner, unfortunately generally male. (Interview 1b)

The use of an I-methodology is informed by personal experience, wider discourses within the game design community about what appeals to whom and what is successful in the market, and wider discourses amongst the game playing community, to which the designers belong. These discourses and beliefs work like a technological frame reinforcing existing game designs and excluding others. When asked if they thought the game would appeal to female players the designers were uncertain as to what female players would like and admitted they had not considered the issue much.

Well that depends what the female player likes to do. It is not a Barbie game, ... but it is ... an addictive strategy game but it doesn't have a gore element to it. (Interview 1b)

A lot of games are developed by men they are putting in things that they like and a lot of things women may not like ... to be honest it wasn't something we considered enough. (Interview 2b)

When pressed as to why female users were not considered during the design phase they pointed to the legacy and obduracy of certain types of games and the attitude of publishers and funders.

The stark reality of games is that violent games sell and people will fund those type of games, science fiction, fantasy, any of the famous genres have a precedent. If you want to do some 17th century court life game, it might make a really good game but you will have a really hard time funding it. (Interview 2)

Following the launch of the game they were uncertain if they had any female players.

Q – Do you have any female players?

A – I have no idea, they could be all female. (Interview 2b)

In terms of explicit user involvement the designers themselves initially tested the game mainly for technical and gameplay problems and some of them became completely absorbed by it. However the more implicit representations of users came into contact with real players outside the company when it came to beta testing. At this point the projected male, 27 year old, technologically literate player met with real users around the world. There was little information on the chosen 200 beta testers except that they were mainly male and professionals or students. Many of these testers would pop in regularly to check out how the game was progressing. The designers did not report any major criticisms.

There were a lot of good suggestions. Some we took on board and some we couldn't. Things we wouldn't have thought of. (Interview 2b)

Beta testers were rewarded with a B-movie-like short horror game entitled *The Night of the Brain Eating Zombies from Beyond Mars* and invited to send feedback by e-mail. They also received a flash game trailer for download drawn by a well-known artist who had worked on the comic *2000AD* and a 40 second MP3 of the game's soundtrack. Clearly this interaction with beta testers was about building a network of socio-technical relationships. The company was enrolling players, trying to reward their efforts and create loyalty, positioning the company and the game in the marketplace by trading on the cultural capital of established icons and generating hype around the game. In addition to their direct relationship building with players the company has been projecting themselves outwards to a wider potential group of players and investors through interviews in the national press, in

international magazines like *Wired* and on specialist game review sites like Gamespy.com.

Since the launch in Germany interaction between the company and players is mainly through e-mail and the online game fora; which when last checked was mainly used to report bugs in the system and to schedule matches. The game designers watch games using a ghost system to see how the players are handling the game and challenge players to games. The short-term plan is to introduce upgrades, new features and campaigns to the game once they have enough subscribers. To this end there are inducements on the company's site to get people to refer the game to other users and the person with the most referrals wins an X-Box. The designers are learning from players through direct communications and through observing games. These more direct communications conform to one of Akrieh's more explicit forms of representation [2].

There is one player in particular who kind of has a strategy all of his own, he is probably the most avid player out there. ... I would love to know who the guy is and what he does for a living. ... He has been good for getting a completely arbitrary view of things cause we've been working so closely with it for so long. (Interview 2b)

CONCLUSIONS

This is ongoing research and the next stage is to explore the game, its symbolism and the reaction of players to it.⁶ In relation to the design process in games.inc clearly a number of external and internal factors shaped it. The project was funded by venture capitalists so they had less explicit input in terms of the game concept and target market than might have been the case with specialist publishers. One might suspect that the company would have more freedom to design an innovative game concept or target new markets. However the degree of freedom was tempered by the fact that the company was a start-up, the designers were relatively inexperienced in game design, they were the only company of this type in Ireland and there were considerable barriers to entry into the console and offline PC sectors. Their primary aim was to turn their game concept into a digital game, which would generate enough revenue to satisfy their investors and to enable them to create another game.

These economic, political and technical considerations go some way to explaining why they chose to develop an online/PC game aimed at male 25-40 year olds. However this is only part of the story. Individual identities played a role as well. The target market for the game coincided with the profile of staff in the company – male, 25-35 year olds, avid game players and people who enjoyed the challenge posed by technology – the profile of beta testers and initial information on subscribed players. They appear to have reached their target market by designing for themselves and relying upon implicit and intuitive representations of players. These implicit techniques included

comparison with other products, informal knowledge of wider industrial and social discourses, information gained through personal contacts and the experience of the designers themselves as players. Knowledge of real users was at best partial. The only explicit user involvement identified came through beta testers and after launch with real players. These findings largely conform with Oudshoorn's et al [29] when she claimed that the identities of designers are as important as the identities of users in understanding technological developments. They also confirm Akrich's [1, 2] emphasise on the role that implicit representation techniques play in the design process. Design in the digital games business would appear to have more in common with the production of media products like film than with software and consumer IT design processes.

It would be dangerous to overemphasise the role of individual gender identity in design without recognising that gender also operates at a structural and a symbolic level [14]. It is apparent that individual agency in this sector is shaped by very specific discourses in the industry more generally and gender is closely bound up with economic success and political expediency. It is clear that the designers were working in a very masculine production culture consisting solely of men who worked long hours and enjoyed struggling with technologies and competing through games. These elements of competition and control are generally associated with masculinity [13, 22, 37]. At the same time there are signs of collaboration and attention to aesthetics, which are usually associated with femininity. These ambiguities require further investigation. Nevertheless, as McQuail [23] notes, it was hard to see how the introduction of women into this culture might on its own be sufficient to change the culture. In addition while the influence of structures and individual identities have still to be explored in the game content and associated symbolism it is perhaps instructive that two themes dominate: combat and fame.

NOTES

- 1 See <http://www.rcss.ed.ac.uk/research/slim.html>
- 2 An actant is defined as whatever acts or shifts action [3].
- 3 There had been one console developer who was interviewed for the study but by the time the study was completed the company had been liquidated.
- 4 This stage will be followed by analysis of the game and gameplay.
- 5 This is a fictional name and initial searches on the Internet found no companies with the name.
- 6 Looking at patterns of use, unintended consequences and unforeseen user groups.

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