The Ethics of Entertainment Computing

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Abstract. This paper investigates a number of issues that relate to the development of entertainment computing (EC) and the home environment. The consumption of EC is closely related to the efforts of companies to market it. At the same time there are many different factors that affect the quality of life of the individual consumers that participate in the entertainment. There are a number of unresolved conflicts that are currently not answered by the providers of EC software and the manufacturers of hardware. These conflicts are explored and the ethics of an example scenario is discussed.

Keywords. Ethics, home, leisure, quality of life..

1. Introduction

The use of Entertainment computing (EC) is rooted in the home environment where much of the product is consumed. The home has an influence on the type of EC consumed and the on the way it is consumed. The home is a concept that is dependent on the many traditions and cultures of the world [1]. Different concepts of home are relevant in different cultures; and within these there are many different instances of "home". This has made generic study of "home-life" very difficult over the years for the many researchers that are interested in the subject. [2] This variability in the manifestation of the home concept has led to many generalisations in the design and production of EC and these do not necessarily give the optimum service for individuals as the development of EC tends to encapsulate the culture within which it is developed.

The rooting of the home in its culture is fundamental - it is not a standalone concept devoid of influence from the embedding social fabric, but an integral part of society, neighbourhood and culture. In many modern societies there is a move towards multiple co-existing cultures with a wide variety of home styles and configurations in evidence. This leads to even more disparity between the perceived usefulness of EC design and its use. To encompass this diversity is one of the challenges of EC for the future, but to do so requires a more ethical approach to the development EC that will enable users to be better informed and assisted in their "leisure", when they are being entertained.

There is also a wider need to incorporate the cultural diversity in different countries, and the diversity in multi-cultural environments. The development of EC should aid and assist the user where necessary without causing more problems than it solves. Central to the development of ethical EC is the recognition of the conflicts of everyday life that are exacerbated by the wider provision and use of EC and the inherent conflicts inside the various EC components that can be manifest in everyday home situations.

2. Scope of Entertainment Computing

There is a wide range of what constitutes entertainment computing product and service. The traditional concept of the computer game is one that appeals to one part of the consumer market. The use of computer-mediated entertainment is much more widespread and the blurred boundaries between leisure, education, work and home life all goes to make the definition of EC all the more difficult.

As an example, a household may use computers, and particularly the Internet, for gaming, messaging, discussion forums, teleconferencing, web browsing, information gathering and many more activities. These can be termed EC or may be a hybrid between EC, work and educational uses.

Entertainment computing can be seen to be many different types of system and service provided for users in their homes or elsewhere that gives them some form of leisure activity or a means of social support.

3. Conflicts

Within the wider domain of EC the different activities provide many opportunities for conflict. These can arise in a number of different ways and in different arenas: design, development, deployment, use, upgrade and obsolescence. In the following sections there are two areas of conflict that are of interest: that between users of systems and that between the design goals of systems.

3.1 Conflicts between users

The use of many different types of EC in the home can often lead to conflicts for the participants where there are different pulls on time and resources. With the widespread use of computers and networked resources there is now little need to restrict the home to one computing device. Indeed, it now makes sense to have a number of different devices networked together so that they and share data and provide users with a suitable standardised platform [3] for the exchange of information between the various devices and between users (both in the home and elsewhere). This allows users to customise their environment to their own particular needs and avoid conflicts with other users in the same home. This may, however, reduce the communication between the users and actually degrade the quality of their

real-time experience. An ethical perspective on provision or design of EC would assist in reducing this problem.

3.2 Design goal conflict

There are also conflicts in the provision of computer-mediated leisure, particularly in the home environment. For example, it is possible to build "smart" homes [4] with labour-saving features that allow users to have automatic control of various facilities such as lighting, audio-visual entertainment and climate control. At the same time there is a need for the human body to get regular exercise and there are tools ad devices to monitor activity levels. There seems little point in building a home that has a number of labour-saving devices if the occupants then need to take more exercise because of them!

The provision of EC in any environment that is not strictly controlled, which includes most of the application areas of EC, could modify its design goals to account for the wider perspective of users. It is unlikely to do so where commercial pressure is the main driving force for development.

The design of EC that can take account of this conflict and incorporate it into the design cycle could be useful to users. The capability of EC to incorporate such ideas would benefit the quality of life and user experience of the users and purchasers of the EC system - and be more ethical.

4. Quality of Life

The quality of life aspects of systems development are only recently coming into the equation for entertainment computing and other general systems that are used in the home. A number of studies have shown that some Internet uses can enhance quality of life whilst others have shown a detrimental correlation [5]. This may also be true of other EC technologies such as computer games, although with the increased range of interactions possible in modern gaming there is scope for the quality of life to be enhanced.

Examples of this enhancement to the quality of life are the increasing use of Internet forums for information and discussion. Many members of these forums use them as a means of gaining useful and timely information from a pool of "experts" – these are mainly those that have experience of the activity that is the focus of the discussion. Other forum members use the opportunity to gain social support and form networks of contacts that may or may not interface with their real-life or non-Internet activities.

As the above study found [5] there are some who tend to rely to heavily on this virtual support mechanism and they are less happy with this than those who use more proximate support. This finding echoes earlier work and is a common feature of many Internet support networks where the participants are relatively distant from each other.

To summarise the findings it would appear to be appropriate to point out that there is no substitute for the human touch, even the computer-mediated version is not able

to fulfil the role. However, these Internet opportunities form a useful alternative place for people to gain support if traditional resources are not available.

5. Market-driven development

The main source of devices, systems and services for EC users is the industry that sells these to consumers. The marketing push in the industry is to engage a wide range of users in the process of purchasing new equipment and systems for entertainment. Some technologies have been more successful than others and there are a number of historical studies that show that wider take-up is not necessarily because of superior technology (see Liebowitz and Margolis, [6]) and the outcome is often closer related to marketing, advertising and other non-technical factors rather than any technological, or even usability, superiority.

The market background document from the TEAHA project (Homega Research, [7]) gives some insight into the status of various technologies and their take-up around the world. This allows some perspective on the market for connected home products and as such gives some idea of the EC systems that are related to these technological advances. As is pointed out in this report the prediction of markets is fraught with danger and simple extrapolation is not a reliable indicator of future trends in such diverse markets as home electronics and leisure equipment.

The market-led nature of this technology is also a factor that does not lead to the most ethical style of development for the systems in question. The primary goal of manufacturers is to sell goods, to make profits and to continue to operate. They do not necessarily have any "emotional capital" in the goods that they sell and promote. In fact there are a number of conflicting goals for manufacturers that do not assist the user. Amongst these are the problems of compatibility and standards.

5.1. Compatibility issues

There are some complex economic issues involved in the production of goods for the EC market, as for many other markets for electronic goods and services. Many of these issues are related to the compatibility of different software and systems. The issue for companies and the goods they produce (i.e. do they produce them to be compatible with others or not?) rests on many factors and is too complex to discuss in this paper. However, the more significant side of this argument, from the EC perspective, is summarized by the following [8]:

"Society reaps significant benefits from compatibility and standardization"

It is this factor and the incompatibility of much market-driven production that are the opposing forces in the EC arena and that can determine the outcome of technological developments.

The compatibility of devices, systems, services and software is not a pre-requisite for successful EC development but it has a considerable influence on the take-up and spread of the technology. It is also clear that the ethical development of home systems, devices and services requires them to be developed using an ethical

perspective which must account for the societal need for standardization in addition to the commercial requirement for profit.

5.2 Standardisation

The issue of standardization is quite complex. The opposing views are that: on the one hand, standards are necessary to ensure compatibility of equipment and, on the other, that standards are a restriction to the successful development of new devices and systems. Both of these viewpoints are, to some extent true. The use of standardization has helped many systems to gain a bigger share of the market and many manufacturers are able to compete in a market that is led by standardization activities. Examples of this are: the CD audio and DVD video standards. These have led to many different devices being available to users to play the standard software.

Standardisation of media, such as DVD, helps both equipment manufacturers and content producers provide users with compatible devices and useable content. Indeed, without the standardization effort the market may not reach critical mass before the device or system becomes obsolete. There have been many different proprietary media standards that have faltered without the back-up of a wide variety of content to enhance sales.

The opposite problem of standards: that of restricting innovation is only problematic when the devices that are standardized become widespread and the standard becomes technically limited compared to other competing standards. This situation is the case with video recording equipment. There is a large-scale legacy investment in VCRs around the world and they are now much more limited than the digital replacements DVD recorders. However, there is still a need to support the VCR user with software content, consumables and maintenance for some time into the future. There are some moves to end support for VCRs by ending sales but the legacy of many old devices will continue for a number of years and there are still manufacturers supplying new devices for users.

The move from video-cassette to DVD as the medium of choice for consumers is likely to be driven by a number of factors: wider DVD content provision, compatibility with other devices such as PC drives, multi-function capabilities (e.g. on-screen viewing of photos), digital input, output quality factors, price (although VCRs are currently much cheaper than DVD recorders), and media cost (DVD+RW and Video-cassette prices are roughly comparable). However, one of the most useful and attractive characteristics of using discs is the indexing and random-access capabilities of the device. All these factors and the market-push of the manufacturers are likely to see the replacement of VCRs by DVD devices in a fairly short time.

The next problem that will be faced by DVD/VHS users is then likely to be the recording of family archives of legacy content onto new media. This has been an issue in the past, albeit on a smaller scale, when the introduction of home video recorders made home use of cine film unattractive. Some content was moved onto videocassette by specialist companies. Upgrading to digital formats will see more legacy content being moved to new media systems.

In other spheres of EC there are similar problems. Many computer games are marketed alongside the platforms that support them, as the platforms develop, the games are replaced by new ones. The original games may be enough for some users and the upgrade inappropriate. However, the obsolescence that is inherent in the process militates against using software for longer than the original hardware support is available.

6. Social activity

The social support mechanisms of the Internet have been discussed above. These form a small part of the wide range of social activities that take place on the Internet and between the connected systems of different users. The use of Internet forums, bulletin boards and other, more direct, Internet communication tools has revolutionised the contact between people separated by space and time. It is now commonplace to use email as a primary means of communication, although the more personal SMS text messaging seems to be common amongst certain groups, especially the young, where individual control of the "message terminal" may be an issue.

Email provides a useful means of communicating information and allows most of what can be sent with more personal means, but there is still a problem with the "sense" and "meaning" that is implied with tone of voice that is missed when email is used. This makes email useful as a social tool but not as a sole means of communication. It is often a more useful instrument when the communicators have prior knowledge of each other and they are familiar with "idiosyncrasies" and "style".

Having said that, it is possible to conduct successful online conversations with total strangers via email and in forums when each participant has a good knowledge of the other from the "clues and cues" that are part of everyday net use. One of the activities that seems to bind online groups together is a real-life meeting. The two-way exchange of information can be used to facilitate a successful outcome.

7. Ethical development

There have been a number of studies that have used co-operative design methods (for example, [9]) these are perhaps the most appropriate for the design of entertainment computing systems as they involve the end-user in the design process, although there are problems with the application of any methods to the design of systems that are primarily used for leisure purposes.

However, there remains the problem of how the design of EC systems can be made more ethical. The initial problem of how to design EC system needs to be replaced by an extra stage of analysis that asks the fundamental question "Should this device or system be designed and made?" and if it is, "How should it be made so that it can be used ethically?" and finally "Is it possible to make an ethical version by excluding or enhancing certain functionality?"

With the use of a comprehensive ethical analysis of the situation of the user and the device, put into the context of the leisure environment, devices can be designed to

include a more ethical dimension for the type of device that is in use by people for a significant amount of their free time. The idea of an ethical dimension to EC system design will be explored in the following section where a typical design scenario of an EC device will be outlined and discussed.

7.1 Design scenario – Internet forum software

It is worth considering the three questions from the previous section: "Should this device or system be designed and made?" "How should it be made so that it can be used ethically?" and "Is it possible to make an ethical version by excluding or enhancing certain functionality?"

Should this device or system be designed and made? Internet forum software can be designed that allows many types of transaction and allows users to provide and use information in different ways. A software system for multiple users can be designed that allows any user to post any information into the system. This can clearly be abused and there are usually functions available to allow moderation of posts on a forum.

How should it be made so that it can be used ethically? If the moderation option is not provided there is clearly an ethical lapse by the software developers. Allowing users to abuse systems is not in the interest of those that run the forums, and some form of "control" would seem to be the most ethical approach to a harmonious use of such a system.

Is it possible to make an ethical version by excluding or enhancing certain functionality? The levels of control by different groups of user is generally the way that Internet forums are run. The various levels of control of post information are designed to allow a hierarchy of control with minimal input from those with highest level of access. This has been seen to wok well when the members of the forum conduct their "business" in a way that is a parallel of real-life.
To exclude the facility of all users to have wide control would appear to be an option that works. To enhance the control options at the various levels also gives an approach that is workable.

8. Conclusions

Entertainment computing covers a wide area of human life and there are many ways in which the development of services and systems can take a "less then ethical" road. What is clear is that there is an ethical route through the design, development, deployment and use of systems that can lead to a much wider acceptance by the users of the systems and services, and enhance their quality of life in the process. This will need further study to determine how an ethical approach can be embedded within the full lifecycle of products and services in this domain. The main area of study has been the use of Internet forums and the approaches used by product developers and users.

The use of computer-mediated communication technology is not new, but the rapid growth on recent years has been aided by the increase in Internet speed and wider access to it by people in every walk of life. This use of the Internet as a leisure activity is one of the aspect of "Entertainment computing" that provides both an element of leisure and an element of social activity in much the same way as more formal face-to-face gatherings have done in the past.

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