

# THE CHANGING ROLE OF USERS IN ICT DEVELOPMENTS; THE CASE OF DIGITAL TELEVISION

Active user roles in digital television entertainment

Mijke Slot<sup>1</sup>

## Introduction

In the Netherlands, a four-year research project (B@Home) is being conducted to develop new business models as well as architectures for future broadband services for the residential user, initially focusing on the entertainment domain.<sup>2</sup> One part of this research project is aimed at user aspects. In B@Home, users are taken along in thinking about business models in the media entertainment domain. It is investigated if users at home take up new roles in the value chain of broadband services, for example as distributor or producer of content. Of all media entertainment domains<sup>3</sup>, the B@Home project momentarily is directed at digital television. B@Home focuses on the question how business models around digital television can be constructed and which factors play an important role in this development. To provide input to this question from the user perspective, this paper aims to provide an overview of user roles in digital television, based on desk research. The main question that defines the scope of this paper is; what active user roles concerning digital television can be distinguished and how can these be classified in a way that they can be related to business models?

In the past decade, the media entertainment domain has increasingly felt the pressure of technological progress and the way this presents difficulties to the relationship between users and producers. One often used example is, of course, the music industry (and increasingly also the film and video industry) where users have moved beyond their traditional role of consumers of content. They have been exploiting the possibilities of the Internet by copying and up- and downloading files through peer-to-peer (p2p) file sharing networks. The popularity and size of file sharing has put existing user-producer relations to the test.<sup>4</sup> Another example can be found in the press domain, where users have become their own news collectors and producers through numerous weblogs. This paper will look at another media entertainment domain; the broadcasting sector. Which roles do users take up in new interactive television applications? Digital television will provide an interesting example from the user perspective; in the first place because television historically is a particularly domestic medium, secondly because digitalization facilitates users to change their viewing habits.

This paper firstly addresses trends and developments in traditional television viewing and how this has changed since digitalisation. Secondly, it will focus on interactivity as an umbrella concept and how different authors have classified various levels of interactivity. After that, we shall look at examples of user roles in current interactive television applications. Attention will also be paid to the way users are addressed by businesses. Finally, we shall also address some developments in other related domains. Since interactive television is still in its infancy, to look beyond what is currently happening in digital and interactive television may provide useful insights. The paper will therefore close with some

---

<sup>1</sup> I would like to thank Valerie Frissen for her valuable contribution to this paper. And Andra Leurdijk, Paul Rutten and Gabriela Bodea for their reviewing comments.

<sup>2</sup> <http://www.freeband.nl/project.cfm?id=498&language=en>

<sup>3</sup> In my Ph.D. thesis, I discern five main media entertainment domains based on P. Rutten et al. (2004) 'De creatieve industrie in Amsterdam en de regio', TNO report STB-04-29 (200):the music industry, broadcasting, the film and video industry, press and the games industry.

<sup>4</sup> S. Limonard, M. Slot and R. Tee (2005) 'Investigating changing user-producer relations in broadband services: the case of music' Paper presented at the 16<sup>th</sup> ITS Conference, Porto September 4-6

examples of user interactivity offered by parties outside the traditional television content industry and with some remarks about possible (future) developments in the value chain.

### **From broadcasting to connectivity**

The technological and organizational developments in the broadcasting sector have an impact on different parties, their way of doing business and on how they address their users. Connectivity and consumer device parties for instance have to deal with increasing convergence. Traditionally separate fields have merged. This means that users are able to have access to television content through different channels (cable, satellite, broadband), and on different devices (television, computer screen, mobile phone). Broadcasting networks and cable companies at first dominated the market for television. But because of new ways of transporting content, new players, like telecommunications and computing parties, have now entered the broadcasting domain.<sup>5</sup> In the Netherlands, for example, Versatel, a mobile telecommunication company, has started offering live television on mobile phones. This company has bought the broadcasting rights to all soccer matches in the premier league to offer to their subscribers.

Because of all these new channels, the distribution bottleneck has disappeared.<sup>6</sup> This does not mean there are no other bottlenecks concerning the roll out of digital television<sup>7</sup>, it only shows that the market for content supply has extended. And also, in spite of the increased competition in the field of distribution channels, viewing time has not gone up.<sup>8</sup> To retain their audiences or attract new users, connectivity providers/ broadcasters try to offer interesting content, such as in the Versatel example mentioned above. One additional way to appeal to users is to address them through various channels. This can be called a cross-media approach like sms voting or additional website information. Another way to attract users is to address them at different levels. For example, a user can be addressed as viewer, but can also be enabled to take on a more active role such as participant in a television game show. Content providers and broadcasting parties also use these tactics to generate extra income. Especially voting through sms and telephone lines is a profitable business.<sup>9</sup> To understand these user roles better, let us take a closer look at the content side.

### **From viewer to participant**

From a content perspective, the developments in the broadcasting domain can be described broadly as a movement from 'broadcasting' to 'narrowcasting' to 'user as participant'. The broadcasting model for television was traditionally structured as a one-way system.<sup>10</sup> It did not really allow users to directly react to viewed content. Apart from some early

---

<sup>5</sup> T.M. Todreas (1999) *Value creation and branding in television's digital age* Westport: Quorum Books

<sup>6</sup> Ibidem and see also: M.L. Katz (2004) 'Industry structure and competition absent distribution bottlenecks' *Internet Television* (Eds.) E. Noam, J. Groebel and D. Gerbarg. Mahwah, New Jersey: Lawrence Erlbaum Associates, pp.31-60

<sup>7</sup> That the distribution bottleneck has disappeared does not mean there are no other bottlenecks in the roll-out of digital television. It will take a while before the majority of households in Europe have a broadband connection or a digital television with return channel at their disposal. There still are large national and regional differences in Europe. Another bottleneck is a lack of standardisation. See for more information A. Leurdijk and O. Rietkerk (2005) 'D 2.7. Market perspectives for interactive and reconfigurable media' NM2 project

<sup>8</sup> T.M. Todreas (1999) *Value creation and branding in television's digital age* p.166

<sup>9</sup> In the Netherlands for example, Idols has generated several hundreds of thousands of euros because of their sms voting system. Users paid approximately €1,60 per vote.

<sup>10</sup> P. Kim and H. Sawhney (2002) 'A machine-like new medium – theoretical examination of interactive TV', in *Media, Culture & Society*, vol. 24, pp. 217-233; see also Andersen (2002) 'Outlook of the development of technologies and markets for the European Audio-visual sector up to 2010'

experimentation with interactive television content<sup>11</sup>, viewer–programme interaction was hardly ever direct. A viewer could, for example, write a letter to the programme makers or call the television studio to make a comment or ask a question. When a programme was not what the viewer wished, he or she could change channel.

The rise of digital television in the nineties meant first and foremost more channels with better picture and sound quality.<sup>12</sup> Instead of a maximum of 30 channels, subscribers to digital television could receive for example up to 500 channels. And if you include all Internet TV channels, this number will be even larger. Ellis calls this the era of plenty<sup>13</sup>, Todreas simply the ‘digital era’.<sup>14</sup> The supply side of television used this enlargement of channels to target the user more individually through ‘narrowcasting’ (as opposed to broadcasting). There are for instance separate channels for car lovers ([www.wheelz.tv](http://www.wheelz.tv)), festival fans ([www.festivaltv.nl](http://www.festivaltv.nl)), people who love music from Dutch-speaking artists ([www.tvoranje.nl](http://www.tvoranje.nl)) or fashion addicts ([www.ftv.tv](http://www.ftv.tv)).

But besides more and better quality programmes and channels directed at various niche markets, content providers also increasingly experiment with interactive programme possibilities. This interactivity has developed from simple information services to shopping services, voting and betting.<sup>15</sup> Interactivity is not the only aspect of digital television. But because this concept is especially used to describe the role of users, and keeps on returning in articles about digital television, this seems to be a crucial concept for this study.

According to Christensen, in new interactive media, ‘users are both listeners and speakers, consumers and producers’.<sup>16</sup> The way in which users are active or interactive can be classified in different ways. In general, a distinction is made between a ‘lean back’ (TV) and a ‘lean forward’ (computer) attitude of the user. With ‘lean back’, an inactive or passive attitude is referred to (cf. ‘the couch potato’). Lean forward implies that the user is actively accessing certain content. In digital television, the borders between these two concepts are fading. It is possible to access television content through the computer screen, and check e-mail on the television. Further onwards, some examples of digital television formats that require a more ‘lean forward’ attitude of the viewer, will be discussed. But first, we will look at the concept of interactivity, for it is the umbrella concept that can be used to classify all kinds of user roles.

## **Interactivity**

Interactivity very basically means two-way communication. Williams, Rice and Rogers have defined interactivity in a generic way:

---

<sup>11</sup> See G. Einav (2002) ‘In the spotlight. Lessons from the iTV archive’ See references for weblink.

<sup>12</sup> OECD (2004) ‘Broadband audio-visual services: market developments in OECD countries’ Working Party on Telecommunication and Information Services Policies

<sup>13</sup> Ellis (2000) Seeing things: television in the age of uncertainty I.B. Tauria & Co. Ltd.

<sup>14</sup> T.M. Todreas (1999) Value creation and branding in television’s digital age Todreas lets the digital era begin in 1999

<sup>15</sup> Andersen (2002) ‘Outlook of the development of technologies and markets for the European Audio-visual sector up to 2010’

<sup>16</sup> L.H. Christensen (2002) ‘The ‘Impact’ of interactivity on television consumption. – Stay tuned, visit our website, press the red button’ Working paper Dublin City University, p.22 (see references for weblink)

*Interactivity is the degree to which participants in a communication process can exchange roles in, and have control over, their mutual discourse*<sup>17</sup>

This definition is applicable to all communication processes humans can be involved in. It stresses that there are different degrees to which people can exchange roles in and have control over their communication process. This is a workable definition for our research, but considered that interactivity in digital television happens through a medium and can also be about the interactivity between user and content or users and applications; it is better to narrow down the definition. Interactive television as a concept has been defined by different people. Below, two examples are given.

*iTV can be defined as digital television, enabling two-way communication between the consumer and the service provider*<sup>18</sup>

*Control moves away from the network and is directly placed into the hands of the potential consumer*<sup>19</sup>

These two definitions are especially adapted to the specific situation of interactive television. They give us a clue about the distribution of control, but are too limited where user roles are concerned. Jensen F. Jensen gives the most workable definition of interactivity involving the user perspective:

*Interactivity is media's potential ability to let the user exert an influence on the content and/or form of the mediated communication*<sup>20</sup>

The strength of this definition is that it is applicable to all forms of mediated communication. This enables us to use the definition also in other media entertainment domains of the B@Home project. Furthermore, it stresses the user perspective, which is also the starting point of our research.

### **Different levels of interactivity, different user roles**

Interactivity is, as it has already been mentioned, an umbrella concept. How can we classify the interactivity of users in respect to digital television in an interesting way? Different researchers have found various levels of user activity. For our own research, ideally, through this classification, we must be able to connect the concept to business models.

NM2 is a project that examines how to develop compelling new media forms for broadband networks.<sup>21</sup> It uses a classification based on research by Einav.<sup>22</sup> In this project three levels of interactivity are distinguished;

---

<sup>17</sup> F.R. Williams, R.E. Rice and E.M. Rogers (1988) *Research methods and the new media* New York: Free Press

<sup>18</sup> Andersen (2002) 'Outlook of the development of technologies and markets for the European Audio-visual sector up to 2010'

<sup>19</sup> M. Lytras, C. Lougos, P. Chozos and A. Pouloudi 'Interactive television and e-learning convergence: examining the potential of t-learning' Athens University of Economics and Business (see references for weblink)

<sup>20</sup> J.F. Jensen (1999) 'The concept of interactivity' *Interactive television* eds. J.F. Jensen and C. Toscan, Aalborg University Press

<sup>21</sup> <http://www.ist-nm2.org>, NM2 consortium (2004) Deliverable 2.2 'The Market Perspective' The NM2 project has the ambition to develop non-linear interactive television applications where users can influence the narrative.

1. Programme and content management
2. Programme-related content
3. In-programme response (simple, like voting, betting and chatting; or complex in-programme response that influences content)

Programme/content management is a very basic form of interactivity. It means for example the possibility of time shifting. People can use a digital recorder to record and sort their favourite programmes and watch them on a different time (time shifting). Programme-related content is already more interactive. Users can access programme-related content on their television screens, like background information. In-programme response is actually linked to the television programme itself. A user can vote for a candidate in a show or chat on-screen with others during the show. A more complex in-programme response for example is the opportunity of users to influence the narrative.

Van Dijk et al.<sup>23</sup> have also analysed the phenomenon of interactive television. They have made a distinction between low levels of interactivity ('enhanced television'<sup>24</sup>) and higher levels of interactivity ('real interactive television') where user input can make a difference to the television content. In general, they divide their activity indication into four levels;

1. Zapping
2. Reacting
3. Acting
4. Exchanging

The first three can be related to the levels defined by Einav. Zapping is the most basic form of activity where a user can choose programmes and channels. Within this category, also electronic programme guides are taken along and recording devices. The level of interactivity at this level is very low. Van Dijk et al. therefore call this digital television instead of interactive television. With the second level of interactivity, Van Dijk et al. mean for example Video-on-Demand, additional channels but also customizations like choice of camera angle or the choice of different story lines. Also e-commerce is a form of interactivity in this level. Van Dijk et al. classify this kind of interaction as hybrid television, for it often involves more channels for input like telephone (text messaging) and Internet. In the third level of interactivity, users produce information themselves. They react to programmes, play along with a game show or even produce their own programmes. This kind of interactivity is called Internet television by Van Dijk et al., for it uses mostly the computer with a broadband connection as an extra channel to generate the input. The fourth level of interactivity involves communication about or in parallel to television programmes.

In addition to these roles, Christensen makes a difference in the layers a user can engage in with television 'text' as he calls it.<sup>25</sup> It is the relation of the user with the actual content. In the first place, a user can interact with the television text. Hereby, Christensen means the process of active sense making. This level departs from the notion that the viewer is actively

---

<sup>22</sup> G. Einav (2004) 'Facing an illusive frontier: defining and producing interactive television' Paper presented at the second EuroITV conference. Brighton, March 2004.

<sup>23</sup> J. van Dijk, A. Heuvelman, O. Peters (2003) 'Interactive television or enhanced television? The Dutch users interest in applications of ITV via set-top boxes' Paper presented at the 2003 annual conference of the International Communication Association in San Diego USA

<sup>24</sup> The term 'enhanced television' is also used to describe interactivity directly related to television programmes. Van Dijk et al use the concept in a more classifying way. They mean that the low level of interactivity is nothing more than an extended form of television, and nothing really new.

<sup>25</sup> L.H. Christensen (2002) 'The 'Impact' of interactivity on television consumption. – Stay tuned, visit our website, press the red button' Working paper Dublin City University, p.22 (see references for weblink)

interpreting the television content. This indicates a very individual action on an abstract level. This sense-making level is not addressed by this research; it belongs to the media effect research tradition. In relation to business models this user role is of no direct importance, it is taken as a given that users independently make sense of the television content. The other levels that Christensen defines are:

1. Synchronous interactivity
2. Related or a-synchronous interactivity
3. Other services, non-television textual interactivity (for example work and goal-oriented tasks, and also programme management)

Synchronous interactivity is a direct interaction between the television programme and the user. This means, the interaction takes place at the same time the programme is showing on television. This is for example the case with voting shows like Idols. It can be questioned whether this interaction requires a live show or can also be accomplished when a user is time shifting. Synchronous activity can also be very individual, like the choice of a camera angle. Related or a-synchronous activity can take place next to the programme. Live programming is not necessary. An example of a-synchronous activity can be the search for background information. Third, Christensen discerns a level called 'other services'. These services have little to do with the television content. This level can for example cover work oriented tasks or programme management.

Research by agency Arthur Andersen has made a different division of levels of interactivity.<sup>26</sup> Only two kinds of services are defined:

1. Embedded interactive services
2. Interactive applications

The first kind of services (just like synchronous activity or programme-related content) is focussed on user roles in close connection with the actual content. Multi-camera angles, but also voting and playing along are examples of this kind of interactivity. Interactive applications on the other hand are not tied to a specific programme. These are detached forms of interactivity like multiplayer games, Internet access and instant messaging, but also a less interactive application like Video on Demand. For this paper, it is valuable to keep these distinctions of level of interaction in mind. But they are less focussed on specific user roles. Therefore, the approach taken by NM2/ Einav and Van Dijk et al. seems more suitable.

The division that has been made by Van Dijk et al. is a useful one. It is a different and little more elaborated approach than is used in the NM2 project. It clearly indicates in which ways users can interact with television, and even adds communication to the pallet of user roles. However, for our research, it is particularly useful to also pay attention to the way a user can fill in roles in a business model. This can vary from consumer roles to more business-like roles like the distribution of content (for example p2p file sharing). Furthermore, this research departs from the perspective of the user. Other theories about interactivity levels often depart from the possibilities of the medium itself and what is happening at the moment. This can be a limitation when one wants to look beyond daily practices to possible future developments.

To take a more open perspective and establish a possible link with business models, it might be an interesting exercise to look at the value chain. A value chain describes the total process from creation to use. It maps the different stages of the value adding process. This enables the user roles to be fitted into the different stages, even the more business-like roles. This more

---

<sup>26</sup> Andersen (2002) 'Outlook of the development of technologies and markets for the European Audio-visual sector up to 2010'

generic approach makes it an interesting model to use in other media entertainment domains as well.<sup>27</sup>

### Value chain approach

The first value chain was developed by Porter.<sup>28</sup> He used this model to analyse different activities within a company. By doing so, he tried to maximise the value so a company could move ahead of the competition. Later, this value chain has also been used to describe the activities within a whole sector. Different researches have adapted the value chain to their own sector. The value chain adapted to the cultural sector<sup>29</sup> may be useful when talking about interactive TV. In this case five different stages can be distinguished:

1. Content creation
2. Production
3. Packaging
4. Distribution
5. Consumption/ use

Aimed at television, the value chain can be simply adjusted by adding navigation to the chain.<sup>30</sup> Navigation is an important concept in digital television, because, as mentioned earlier, the immense offering of channels/content makes the search for interesting content a complex task. One could imagine that, in digital television, navigators like portals or search engines will be an important value-adding factor. The value chain for (digital) television is constructed as follows:

Table 1 Value chain television

<b>Creation</b>	<b>Production</b>	<b>Packaging</b>	<b>Distribution</b>	<b>Navigation</b>	<b>Consumption/ use</b>
-----------------	-------------------	------------------	---------------------	-------------------	-----------------------------

*Creation* is the invention and design of creative products or works which can possibly be produced in a later stadium.<sup>31</sup>

*Production* is the realisation of a creative idea or concept that is developed in the creation stage. The producer is responsible for the realisation and often also for the financing of the project.

*Packaging* According to Katz<sup>32</sup> packaging has several dimensions in television. It consists of filtering, timing and aggregation. Filtering means that the traditional television broadcasting

<sup>27</sup> We have used the value chain approach in an earlier research to compare user roles in the p2p file sharing of music with user roles in paid music downloading services.

<sup>28</sup> M.E. Porter (1985) *Competitive advantage. Creating and sustaining superior performance* New York: The Free Press

<sup>29</sup> P. Rutten and H. van Bockxmeer (2003) 'Cultuurpolitiek, auteursrecht en digitalisering' TNO report STB-03-26

<sup>30</sup> M.L. Katz (2004) 'Industry structure and competition absent distribution bottlenecks' *Internet Television* (Eds.) E. Noam, J. Groebel and D. Gerbarg. Mahwah, New Jersey: Lawrence Erlbaum Associates, p.14

<sup>31</sup> Part of this explanation can be found in P. Rutten, W. Manshanden et al. 'De creatieve industrie in Amsterdam en de regio', p.24-25

<sup>32</sup> M.L. Katz (2004) 'Industry structure and competition absent distribution bottlenecks' *Internet Television* (Eds.) E. Noam, J. Groebel and D. Gerbarg. Mahwah, New Jersey: Lawrence Erlbaum Associates

stations decide which programmes they are going to broadcast. Timing is basically the programming of certain programmes in different time slots. Aggregation is generally used to economize on transaction costs by bundling programmes or advertising time and selling them to different local or international parties.

*Distribution* is making cultural products accessible through reproduction on physical carriers, electronic distribution or publication on a specific location. In television distribution, this means the delivery of signals containing content to television receivers.

*Navigation* is an important concept in the television value chain, because it tells users which programmes are available. Navigation helps the users to make a choice between different programmes. This link is becoming more and more important with digital television, because the supply of channels is much more enlarged.

*Consumption/ use* This stage in the value chain is defined as the place where cultural value is communicated to the users. Here, cultural and economic value is created. Consumption actually means the 'using up' of goods. But because television content cannot be eaten, or fully absorbed, consumption means the reception of television images. Consumers pay for their television connection and therefore are allowed to consume television content. Use can be defined a little bit differently. It encloses all ways the user can interact with the television content.

How can this value chain for digital television be used in order to understand (new) roles of users in interactive television? Under the more general headings like creating and consumption, more specific user roles can be placed. As an example, the user roles that have been classified by others in their interactivity levels can help. As can be seen in table 2, except from time shifting, most defined roles can be placed under the heading consumption/ use. To expand the options, also some roles are defined that can be placed under different headings, like distribution.

Table 2 Value chain interactive television with possible user roles

Creation	Production	Packaging	Distribution	Navigation	Consumption/ use
Creation of own programme	Production of own programme	Selection of (parts of) content	Broadcasting of own product (like podcasting)	Electronic Programme Guide (EPG)	Voting
Changing content of an existing programme			P2P sharing of TV content	Time shifting	Betting
					Customisation (choice of camera angle, replay, more items, plot or storyline choice)
					Buying
					Video-on-Demand (VoD)
					Communication (chatting or sending messages)
					Gaming

### User roles in current interactive television applications

To understand possible user roles in interactive television better, we will explore some current interactive television practices.<sup>33</sup> What is happening and where in the value chain can we find users at the moment?

The first twenty case studies<sup>34</sup> focus on programmes that are actually shown on television. They are offered by traditional broadcasting parties. The case studies have been selected from the archive of broadbandbananas.com, a networking organisation for interactive television and the broadband industry that manages an online digital archive or interactive television services from, as they say themselves, around the world.<sup>35</sup> However, it needs to be stressed that broadbandbananas is a UK initiative. It is possible that the cases that are presented on their website have a UK bias. Nonetheless, I am convinced that the examples provide an interesting illustration of what can be achieved at this moment in Europe. It is a fact that BBC and SKY BSKyB are very active players in the market of interactive television formats. The number of case studies is limited and therefore does not provide an all-inclusive overview of interactive television programmes. However it does illustrate the range of interactive possibilities in programmes that have already been broadcast on television.

<sup>33</sup> Broadbandbananas.com is a networking organisation for interactive television and the broadband industry and manages an online digital archive or interactive television services from around the world. The case studies have been selected from their archive. It needs to be stressed that broadbandbananas is a UK initiative. It is possible that the cases that are presented on their website have a UK bias. Nonetheless, I am convinced that the examples provide an interesting illustration of what can be achieved at this moment in Europe.

<sup>34</sup> For a list, see Appendix 1

<sup>35</sup> www.broadbandbananas.com

Table 3 User possibilities cases broadcasting parties (N=20)

	User possibilities
Voting	9
Extra information/extra footage/news	9
Competition/quiz	7
Chat function/ message to TV screen	5
Playing along	3
Choice between different streams	3
Choice of storyline (by answering questions)	2
Repeats	1
Buying (ringtones)	1
Timetable	1
Poll	1
Camera angle	1

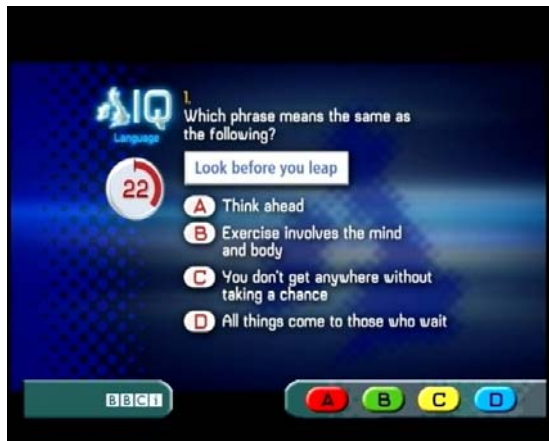
In the case studies, the focus was on the question; what interactive features do these programmes offer the user. In Table 3, an overview is presented of these user possibilities. As can be seen, most interactive television formats offer the user additional information or extra footage like interviews or background information. For example the BBC series 'Walking with Beasts Interactive' made available additional information, facts and 'The making of' footage. This kind of information can also often be found on DVD movies, where a user can navigate through an 'extra features' menu. Also voting is a very popular extra possibility. In interactive television shows like 'Pop Idol', 'I'm a Celebrity' and 'Fame Academy', viewers can vote for their favourite contestant. These votes cost money, ranging from £0.25 to £0.50. Also music channels like SKY Music or MTV UK offer viewers the possibility to vote for their favourite music clip. These votes are free of charge.



Picture 1 Voting in 'I'm a Celebrity' (source: www.broadbandbananas.com)

Quite often, the user possibilities offered are included in a quiz or competition that has no direct relation to the shown content. The quizzes are linked to the subject of the television show, but no live programming is necessary. For example in the British series 'Hell's Kitchen', ten celebrities work in a restaurant managed by Gordon Ramsey. Viewers can enter a quiz to win a table at the restaurant. To enter the competition, the user has to pay £1. Users

in some interactive programme formats are allowed to send a text message to the television screen. This is sometimes called chatting, although it is a rather general form of chatting, since everybody who has the interactive feature can read and respond. Only three examples offer the user possibilities to actually take part in the programme. One example is 'Test the Nation', the national television IQ test in Great Britain. Through their remote control (but also via the Internet) users can answer the questions of the test themselves. This participation requires a live show, for viewers have limited time for answering the questions. At the end of the show, the IQ score of the participant appears on screen.



**Picture 2** Taking part in 'Test the Nation' (source: [www.broadbandbananas.com](http://www.broadbandbananas.com))

Two programmes allow the user to choose different storylines. They are informative adventure shows 'Life of Mammals interactive' and 'Pyramid Challenge', both produced by BBC interactive ad SKY. 'Pyramid Challenge', an interactive TV adventure story broadcast 24 hours a day, offers the user four feeds which a user has to choose from by answering questions. If a user chooses the right path, a number appears onscreen that is part of a secret code. At the end of the adventure, this secret code has to be entered to unlock a tomb. By participating in this game, users can win a vacation to Egypt. All user possibilities can be accessed through the buttons on the remote control.



**Picture 3** Choosing a storyline in 'Pyramid Challenge' (source: [www.broadbandbananas.com](http://www.broadbandbananas.com))

Generally speaking, the case studies show that users are still mainly approached as consumers/ users. In some cases, the user role shifts to the navigation level, when a user is allowed to view previous episodes for example. But the interactivity was fairly limited in all cases. Even with the two programmes that allowed users to choose the storyline, the users

were only able to choose between pre-produced options. One could therefore question the actual interactivity of these programmes. The user had to actively access the extra content and participate in the programmes, but had no actual important influence on the content or form of the media message. It therefore still is traditional broadcasting, but in a little bit more active form.

### *Stay tuned and spend money*

How can this be explained? In first place, traditional content parties keep on looking at viewers as consumers. Through offering interactive options, they try to extend their viewers engagement and expand their viewers experience and choice.<sup>36</sup> In other words; the viewer must stay tuned. Also playing along with a game show is used as a tactic to get the audience more involved. Because the score of the viewer is lost when he or she changes channel, people are bound to stay even through commercial breaks. As there is an abundance of channels and increased competition, this is a logical strategy. The larger and more dedicated the audience, the more money advertisers are willing to pay for advertising time. Secondly, television broadcasters try to open up new revenue streams.<sup>37</sup> As has been explained in the previous example about Big Brother, especially voting is an important extra revenue driver for content parties.

### **Interactive television has failed?**

As we have seen in the case studies, within Europe, interactive programmes actually contain a very limited form of interactivity. And besides this limited form of interactivity, interactive television programmes have not yet reached a large audience in Europe. Because of this slow development and uptake of interactive programme content, an often heard statement is that interactive television has failed. It has not fulfilled all high hopes. Digital television serves a limited market and suffers from a lack of suitable standardisation.<sup>38</sup> Viable business models for digital television have not yet been developed.<sup>39</sup> But first and foremost, it is assumed that users do not appreciate the ‘lean forward’ attitude required for true interactive television. They really want to stay ‘lean back’ or, more blandly, a couch potato. One can also blame that on the medium itself, as a journalist has put it: ‘One can not have real interactivity with a push medium’.<sup>40</sup>

This is a rather limited view of the possibilities digitalisation and convergence offer. The discussion is often started from the point of view of traditional television practices and viewing habits. A counter-argument is that there already are clues that television viewing habits are changing. According to Rasmussen, who participated in a research project directed at interactive TV and cross-media consumption, television is still used very intensively, but has already lost its status as the dominant family medium.<sup>41</sup> Televisions are increasingly used more individually. Computers on the other hand are more often used collectively, and for a

---

<sup>36</sup> I. Kenny (2005) ‘Creating compelling content for iTV’ (Emuse); N. Leslie (2005) ‘The role of interactivity in driving digital adoption’ (Chello Media), both papers presented at the 7<sup>th</sup> Annual Interactive TV Show Europe, April 11, Rome

<sup>37</sup> N. Leslie (2005) ‘The role of interactivity in driving digital adoption’ (Chello Media), paper presented at the 7<sup>th</sup> Annual Interactive TV Show Europe, April 11, Rome

<sup>38</sup> OECD (2004) ‘Broadband audio-visual services: market developments in OECD countries’ Working Party on Telecommunication and Information Services Policies, p.9

<sup>39</sup> A. Leurdijk (2005) ‘Overheidsbeleid publieke omroepen en nieuwe diensten in vijf Europese landen’ TNO report number 33578 (see references for weblink)

<sup>40</sup> J. Naughton (2002) ‘TV? You may as well talk to a trouser press’ The Observer, June 2

<sup>41</sup> T.A. Rasmussen ‘Cross-media and (inter)active media use – a situated perspective: project and interview-results’ Aalborg University (for weblink see references)

wide range of purposes. But why should we get in a yes or no discussion? It is much more interesting to look at the possibilities than to look at the shortcomings of these new services.

Theoretically, the discussion could be much more open and diverse. We have to look beyond the issue whether or not interactive television has failed. One could for example expect that other parties entering the field of television will offer different forms of interactivity.<sup>42</sup> And when interactive television and Internet television are becoming exchangeable concepts (keeping in mind growing convergence), users will possibly become more interactive than ever before. They might even take on roles more upstream in the value chain. To give a hint of this expanded user role, we will turn to some other examples of interactive television that are being developed outside the traditional broadcasting content sector. These examples can also involve television content offered through the Internet. By paying attention to the possibilities, this study tries to contribute to an evolving understanding of users and market. Producers might take advantage of the research outcomes and adjust the way in which they are doing business.

### **Creating and distributing television programmes yourself**

Several initiatives have been developed that allow users to take up content creation roles themselves. These initiatives allow users to make their own movies or television programmes and stream them on the web or make them downloadable. Various initiatives, such as Google Video<sup>43</sup>, Dailymotion<sup>44</sup>, Youtube<sup>45</sup> and Ifeeder<sup>46</sup> may serve as an example here.<sup>47</sup> These are Internet initiatives that allow people to upload and download home made movies. People can tag their movies so they can easily be browsed through. These are interesting initiatives, but are primarily directed at home videos, not real television programmes. However, there are also some initiatives that are more focussed on television. They organize the user input in channels. Often, these channels combine targeting niche markets with active user input. Others are more general user-made streams. Some even broadcast on regular television. Or it is a combination of video and weblogging<sup>48</sup>, like *vlogging*, *vodcasting*, *vcasting*, *video podcasting*, *popcasting* or *videoblogging*

Some services use p2p file-sharing technologies to bypass distribution problems that may arise when only one server is offering content. p2p technology has proven more and more successful. Dutch soccer fans used p2p file sharing through Chinese services to have free access to soccer matches that in The Netherlands were bought and controlled by Versatel.<sup>49</sup> Versatel was not that enthusiastic about the possibilities of this technology. But there are also legal uses of p2p file sharing networks. The BBC for example employs a p2p network to

---

<sup>42</sup> This is one of the developments that were also visible in the music industry when P2P file-sharing became an important force. The traditional music industry tried to hang on to their old protectionist strategies, while new companies from different sectors like Apple conquered the market. See S. Limonard, M. Slot and R. Tee (2005) Investigating changing user-producer relations in broadband services. The case of music' Paper presented at the 16<sup>th</sup> ITS Conference, Porto September 4-6

<sup>43</sup> Video.google.com

<sup>44</sup> www.dailymotion.com

<sup>45</sup> www.youtube.com

<sup>46</sup> www.ifeeder.net

<sup>47</sup> Einav mentions some other examples of user-generated content. See: G. Einav (2002) 'The Content Landscape' (Eds.) E. Noam, J. Groebel and D. Gerbarg. Mahwah, New Jersey: Lawrence Erlbaum Associates p.218

<sup>48</sup> On the website <http://www.vlogmap.org/countries.php> there can be found an overview of all countries where vloggers are active.

<sup>49</sup> F. van Jole and T. van Ringelestijn (2005) 'P2P TV: Dump die decoder' In: Bright 05

make their broadcasts available up to seven days after the transmission date.<sup>50</sup> Let us turn to some of the more interesting initiatives.

‘Watch and show’<sup>51</sup> is a Dutch entertainment service. It offers the user a possibility to send in music videos and television programmes. Users can send in television programmes about all kinds of subjects, from entertainment to sports and nature and the environment. But with creating own content, the user role ends. Content is stored on a central server. Users can subscribe to the service for 25 euros per month. All subscribers can download the content and vote for the most interesting stream. The interesting thing about this service is that the contributor of the content receives a monetary incentive each time the content is downloaded. Users that do not have a subscription have to pay separately for the downloaded content. Most income is generated through advertising revenues.

Another initiative that allows production and distribution of programmes is called Popcast.<sup>52</sup> This free-to-use programme allows people to broadcast their own channel. The difference with other video sharing services is that Popcast actually calls its streams channels. Users can subscribe to the service and make their own video stream. Through p2p file-sharing networks, this stream is shared with other users who can browse through a channel guide and download streams and subscribe to them. They automatically receive a message when a stream is updated. Users are taking up roles as creators and producers of content, and they distribute the content through p2p networks.

Worldmadechannel<sup>53</sup> is a television channel that can be received through satellite. It is composed of photo and video footage of users around the world. People can send in their video files and be admitted in the broadcast. The videos are not accompanied by commentary, but by classical music. The user role is limited to content creation. They do not have anything to do with the production and distribution of the channel.

DTV is an initiative of the Participatory Culture Foundation.<sup>54</sup> DTV is an open-source platform for Internet television and video. Users can download this programme for free, subscribe to channels, watch videos and build a video library. Furthermore, it offers the user software through which users can actually publish their own video files and create Internet TV channels. p2p technology can be used to eliminate bandwidth problems when a stream is viewed by a large number of people. If the first case studies illustrated interactive television from a traditional perspective, this case shows the totally opposite end of the spectrum. Interactivity is not tied to fixed content. The user is free to create, produce and distribute his own content. Users fulfil roles in all parts of the value chain. Traditional broadcasting parties do not play any role of significance. And the value that is exchanged is non-monetary.

Of course, this is only a selection of services that are available online and on television. And there are no overall figures about the number of users of these services. In a news item on Dutch television<sup>55</sup>, one video logger who produced a show in New York about ‘what’s hot’ told that on average, 57.000 viewers watched his programme. This is an impressive figure for a home-made show. Probably, most initiatives will not receive this much attention.<sup>56</sup> But also

---

<sup>50</sup> [www.bbc.co.uk/imp/](http://www.bbc.co.uk/imp/)

<sup>51</sup> [www.watchandshow.nl](http://www.watchandshow.nl)

<sup>52</sup> [www.popcast.com](http://www.popcast.com)

<sup>53</sup> [www.worldmadechannel.tv](http://www.worldmadechannel.tv)

<sup>54</sup> [www.participatoryculture.org](http://www.participatoryculture.org)

<sup>55</sup> RTL 4, ‘Vlog item’ *RTL news* Monday November 14th 2005. Can be watched at [www.rtlnewyork.com](http://www.rtlnewyork.com) (accessed 15-11-2005)

<sup>56</sup> On [Vlogmap.org](http://www.vlogmap.org), 200 vloggers provide the statistics of their vlog.

(<http://www.vlogmap.org/feedburner/?days=1>) On one day, the average videolog receives approximately 70 viewers. The median of the 200 vlogs is 31, which implies there are few vlogs that

the other examples show that users can be more than mere consumers of content and cash cows for broadcasters. Their roles can shift from the end to the beginning of the value chain.

### **Concluding remarks**

We started this paper with the question what active user roles concerning digital television could be distinguished and how these could be classified in a way they could be related to business models. Interactivity has been defined as the umbrella concept that could be used to classify different user roles. To establish a link with business models, we have taken a value chain approach. By mapping user roles on a value chain, also more business-like roles can be distinguished, like the production and distribution of content. The exploratory research on current practices in interactive television has shown that users up until now are still only consumers of content, but on a little bit more active way. On the other hand, various examples of Internet television show that users do take on more active roles, like creating content themselves and making it accessible through peer-to-peer networks. This indicates the development of interactive television can be influenced by the growing convergence between television and Internet/ the computer. Disqualifying interactive television because it has not yet lived up to expectations seems premature. Instead, a more open perspective allows us to look further than current discussions about the successes or failures of interactive television.

Looking at the value chain as a whole (from the user-producer relation perspective), we can make some concluding remarks about possible changes in the total value chain.

The above analysis shows that because of Internet possibilities TV-content creation and production will not be controlled by traditional broadcasting parties alone. More and more initiatives arise that allow users to create and produce content themselves. Probably this will involve the rise of companies that channel the flow of user-generated content and mix it with content produced by production companies and broadcasters. The BBC again is a pioneer in this field, because it has opened up its archive with 6,000 hours of television material for users to play with and mix with personal content.<sup>57</sup>

The packaging in the value chain of television consisted of filtering, timing and aggregation of content. This role has traditionally been taken up by television broadcasting stations and cable operators. They could decide which programmes were available at certain time slots. Because of the growing abundance of channels, it is probable that this role is going to lose value. As it has already been noticed by Katz, value will shift from packaging before broadcast, to the navigation or filtering of all available content just before this content is being used. One could for example use a service that puts together a custom-made media programme based on personal favourites and choices. This could mean your evening will be filled with the eight o'clock news, your favourite soap opera, a game with friends, a horror movie and a home video of your sister who just returned from her holiday. Of course the choice of the evening could also be: 'anything that's on as long as I don't have to think about serious affairs'. Or you could follow the total programme of one channel.

When television content will be offered through the Internet (and viewed on the television or computer screen), an interesting new way of distribution will be p2p file-sharing services. This view has been gaining attention and has already been made the spearhead of a research project in the Netherlands; iShare.<sup>58</sup> Through p2p file-sharing networks, users help distributing the content themselves. A few examples have been described above. Especially

---

receive a lot of attention (one even counted for 2709 views per day) and a lot receive less attention. Ten percent of video logs count for almost 40 percent of viewers. (November 15 2005)

<sup>57</sup> J. Kiss (2005) 'AOP 2005: functionality just as core as content and quality, says BBC boss' October 7 (for weblink see references)

<sup>58</sup> Peak.ecn.purdue.edu/ParaMount/iShare

when content providers are increasingly shift to paid content, part of the user population will shift to other means of accessing content, either on different channels or through p2p networks. As in the music industry, this will put pressure on user-producer relations and questions of content ownership. Because of copyright questions, a lot of traditional parties will not embrace the rise of p2p networks sharing digital television content. But maybe, just as has occurred in the music industry, parties will find new ways of offering content and using p2p technologies in a way it will improve distribution. The BBC has already made a start by implementing a p2p network for the distribution of programmes that viewers have missed.

As it has been mentioned with packaging, in digital television great value will be added by navigation services. To help the user sort out the great variety of content offerings, portals will play an important role. Just like the Internet needs searching services to find websites, these services will be employed to find personalised interesting programmes to watch. The user will be more active in the sense that a personal profile must be created in order to receive the content. The user is enabled to display his or her identity through the choice of programs. And this identity can be communicated between friends.

Finally, consumption and use can change. This change will include all small and major role shifts that have been described above. A user can exert an influence on the content and/or form of the mediated communication, as described in the interactivity definition. Interactivity will not be a mere buzzword, but actual practice. This change will not happen overnight. It takes time to change user practices. Of course one can question whether these interactive roles will be sustained and if this development will continue. We do not want to claim that traditional broadcasting will disappear. But above-described examples are interesting developments and traditional broadcasting parties will have to take these new possibilities into account. It will be very interesting to observe how open and diverse the different parties in the industry will adapt to these changing circumstances.

## References

- Andersen (2002) 'Outlook of the development of technologies and markets for the European Audio-visual sector up to 2010'
- Christensen, L.H. (2002) 'The 'Impact' of interactivity on television consumption. – Stay tuned, visit our website, press the red button' Working paper Dublin City University, ([http://www.stem.dcu.ie/pdf/impact\\_of\\_interactivity.pdf](http://www.stem.dcu.ie/pdf/impact_of_interactivity.pdf))
- Dijk, J. van, Heuvelman, A., Peters, O. (2003) 'Interactive television or enhanced television? The Dutch users interest in applications of ITV via set-top boxes' Paper presented at the 2003 annual conference of the International Communication Association in San Diego USA ([http://www.gw.utwente.nl/vandijk/research/itv/itv\\_plaatje/a\\_interactive\\_of\\_enhanced\\_tv\\_i.pdf](http://www.gw.utwente.nl/vandijk/research/itv/itv_plaatje/a_interactive_of_enhanced_tv_i.pdf))
- Einav, G. (2002) 'In the spotlight. Lessons from the iTV archive' ([http://209.10.50.154/nexttv/nexttvcolumn.cfm?t\\_nexttv\\_id=622&page=1&t\\_content\\_cat\\_id=10](http://209.10.50.154/nexttv/nexttvcolumn.cfm?t_nexttv_id=622&page=1&t_content_cat_id=10))
- Einav, G. (2004) 'Facing an illusive frontier: defining and producing interactive television' Paper presented at the second EuroITV conference. Brighton, March 2004
- Einav, G. (2004) 'The Content Landscape' *Internet Television* (Eds.) E. Noam, J. Groebel and D. Gerbarg. Mahwah, New Jersey: Lawrence Erlbaum Associates p.218
- Ellis, J. (2000) *Seeing things: television in the age of uncertainty* London: I.B. Tauria & Co. Ltd
- Jensen, J.F. (1999) 'The concept of interactivity' *Interactive television* eds. J.F. Jensen and C. Toscan, Aalborg University Press
- Jole, F. van and Ringelestijn, T. van (2005) 'P2P TV: Dump die decoder' In: *Bright 05* (<http://www.bright.nl/node/21>)
- Katz, M.L. (2004) 'Industry structure and competition absent distribution bottlenecks' *Internet Television* (Eds.) E. Noam, J. Groebel and D. Gerbarg. Mahwah, New Jersey: Lawrence Erlbaum Associates
- Kenny, I. (2005) 'Creating compelling content for iTV' (Emuse); N. Leslie (2005) 'The role of interactivity in driving digital adoption' (Chello Media), presentation at the 7th Annual Interactive TV Show Europe, April 11, Rome
- Kim, P. and Sawhney, H. (2002) 'A machine-like new medium – theoretical examination of interactive TV', in *Media, Culture & Society*, vol. 24, pp. 217-233
- Kiss, J. (2005) 'AOP 2005: functionality just as core as content and quality, says BBC boss' October 7 (<http://www.journalism.co.uk/news/story1552.shtml>)
- Leslie, N. (2005) 'The role of interactivity in driving digital adoption' (Chello Media), presentation at the 7th Annual Interactive TV Show Europe, April 11, Rome
- Leurdijk, A. (2005) 'Overheidsbeleid publieke omroepen en nieuwe diensten in vijf Europese landen' TNO report number 33578 ([http://www.minocw.nl/omroep/doc/2005/europa\\_tno\\_%20april\\_2005.pdf](http://www.minocw.nl/omroep/doc/2005/europa_tno_%20april_2005.pdf))

Leurdijk, A. and Rietkerk, O. (2005) 'D 2.7. Market perspectives for interactive and reconfigurable media' NM2 project (This report can be downloaded from the NM2 website [www.ist-nm2.org](http://www.ist-nm2.org))

Limonard, S., Slot, M and Tee, R. (2005) 'Investigating changing user-producer relations in broadband services. The case of music' Paper presented at the 16th ITS Conference, Porto September 4-6

Lytras, M., Lougos, C., Chozos, P., and Pouloudi, A. 'Interactive television and e-learning convergence: examining the potential of t-learning' Athens University of Economics and Business (<http://www.eltrun.gr/papers/tlearning.pdf>)

Naughton, J. (2002) 'TV? You may as well talk to a trouser press' The Observer, June 2

NM2 consortium (2004) Deliverable 2.2 'The Market Perspective', downloadable from <http://www.ist-nm2.org>

OECD (2004) 'Broadband audio-visual services: market developments in OECD countries' Working Party on Telecommunication and Information Services Policies, p.9

Porter, M.E. (1985) Competitive advantage. Creating and sustaining superior performance New York: The Free Press

Rasmussen, T.A. 'Cross media and (inter)active media use – a situated perspective: project and interview-results' Aalborg University (<http://www.vrmedialab.dk/projects/mmih/pub/Rasmussen-raudaskoski.htm>)

Rutten, P. and Bockxmeer, H. van (2003) 'Cultuurpolitiek, auteursrecht en digitalisering' TNO report STB-03-26

Rutten, P., Manshanden, W., Muskens, J. and Koops, O. (2004) 'De creatieve industrie in Amsterdam en de regio', TNO report STB-04-29

Todreas, T.M. (1999) Value creation and branding in television's digital age Westport: Quorum Books

Williams, F.R., Rice, R.E., and Rogers, E.M. (1988) Research methods and the new media New York: Free Press

### **Websites:**

BBC service for watching archive content of maximum seven days old: [www.bbc.co.uk/imp/](http://www.bbc.co.uk/imp/)

Broadbandbananas, a networking organisation for interactive television and the broadband industry and manages an online digital archive of interactive television services from around the world: [www.broadbandbananas.com](http://www.broadbandbananas.com)

Daily motion: [www.dailymotion.com](http://www.dailymotion.com)

DTV initiative: [www.participatoryculture.org](http://www.participatoryculture.org)

Google service for video content: [Video.google.com](http://Video.google.com)

Ifeeder: [www.ifeeder.net](http://www.ifeeder.net)

iShare project: [Peak.ecn.purdue.edu/ParaMount/iShare](http://Peak.ecn.purdue.edu/ParaMount/iShare)

NM2 project: <http://www.ist-nm2.org>

Popcast: [www.popcast.com](http://www.popcast.com)

Vlog of RTL 4 in New York: [www.rtlnewyork.com](http://www.rtlnewyork.com)

Vlog overview per country: <http://www.vlogmap.org/countries.php> VlogMap.org is an online resource which shows where participating vloggers are located around the world, along with links to key information about their video blogs. Anyone can submit info to VlogMap.org to be listed on the map, as long as they run a video blog.

Watch and show: [www.watchandshow.nl](http://www.watchandshow.nl)

Worldmade channel: [www.worldmadechannel.tv](http://www.worldmadechannel.tv)

Youtube: [www.youtube.com](http://www.youtube.com)

**Appendix 1: list of case studies**

<b>Programme title</b>	<b>Broadcaster</b>	<b>Country</b>
Hells Kitchen	SKY Digital (ITV1)	UK
Disney Interactive Portal	SKY Digital	UK
Pop Idol	SKY Digital (ITV1)	UK
Big Brother 'The Wall'	NOVA	Greece
Test the Nation 2003	BBCi/ SKY Digital	UK
I'm a Celebrity	SKY Digital	UK
SKY Music Channels	SKY Digital	UK
The Murder Game	BBCi/ SKY	UK
Who wants to be a millionaire?	SKY	UK
ABC's long way to the top	AUSTAR	Australia
MTV UK Enhancement	SKY	UK
Life of Mammals Interactive	BBCi/ SKY	UK
BBCi Pyramid Challenge	BBCi/ SKY	UK
Go Mad on MadTV	NOVA	Greece
Fame Academy	SKY Digital	UK
Defectors	SKY Digital	UK
Diners	BBC Choice	UK
MCM Infoclip	Canal Satellite	France
ROFL	Danish Broadcasting Corporation	Denmark
Walking with beasts interactive	BBCi/ SKY	UK